FORMER PFIZER SITE A

243-271 WALLABOUT STREET
BROOKLYN, NEW YORK
Block 2249, Lots 23, 37, 41, and 122

SITE MANAGEMENT PLAN

NYSDEC Site Number: C224284

Prepared for:

Harrison Realty LLC
505 Flushing Avenue, Unit 1D
Brooklyn, NY 11205

Harrison Realty II LLC
505 Flushing Avenue, Unit 1D
Brooklyn, NY 11205

Prepared by:

AMC Engineering PLLC
1836 42nd Street
Astoria, NY 11105
718-545-0474

Revisions to Final Approved Site Management Plan:

Revision No.	Date Submitted	Summary of Revision	NYSDEC Approval Date

DECEMBER 2021

CERTIFICATION STATEMENT

I, Ariel Czemerinski, certify that I am currently a NYS registered professional engineer as in defined in 6 NYCRR Part 375and that this Site Management Plan was prepared in accordance with all applicable statutes and regulations and in substantial conformance with the DER Technical Guidance for Site Investigation and Remediation (DER-10).

076508 — NYS Professional Engineer #

12/20/2021 — Date

Signature

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LIST OF ACRONYMS

Acronym	Definition
AMC	AMC Engineering
AWQS	Ambient Water Quality Standards
BCA	Brownfield Cleanup Agreement
BCP	Brownfield Cleanup Program
BTEX	Benzene, Toluene, Ethylbenzene and Xylene
CAMP	Community Air Monitoring Plan
CFR	Code of Federal Regulation
COC	Certificate of Completion
CQMP	Construction Quality Management Plan
DER	Division of Environmental Remediation
DUSR	Data Usability Statement Report
EBC	Environmental Business Consultants
EC	Engineering Control
ECL	Environmental Conservation Law
ELAP	Environmental Laboratory Approval Program
EWP	Excavation Work Plan
FER	Final Engineering Report
HASP	Health and Safety Plan
HDPE	High Density Polyethylene
IC	Institutional Control
IRM	Interim Remedial Measure
NYC	New York City
NYCDEP	New York City Department of Environmental Protection
NYSDEC	New York State Department of Environmental Conservation
NYSDOH	New York State Department of Health
PID	Photo-Ionization Detector
PRR	Periodic Review Report
PS	Public School
PVC	Polyvinyl Chloride
QA/QC	Quality Assurance / Quality Control
QAPP	Quality Assurance Project Plan
RAO	Remedial Action Objectives
RAWP	Remedial Action Work Plan
RI	Remedial Investigation
RSCOs	Recommended Site Cleanup Objectives
SCO	Soil Cleanup Objectives
SMP	Site Management Plan
SMMP	Soil/Materials Management Plan

SSDS	Sub-slab Depressurization System
SWPPP	Stormwater Pollution Prevention Plan
SVOCs	Semi-Volatile Organic Compounds
TAL	Target Analyte List
TCLP	Toxicity Characteristic Leachate Procedure
USEPA	United States Environmental Protection Agency
UST	Underground Storage Tank
VOCs	Volatile Organic Compounds

ES EXECUTIVE SUMMARY

The following provides a brief summary of the controls implemented for the Track 4 portion of the Site, as well as the inspections, monitoring, maintenance and reporting activities required by this Site Management Plan:

Site Identification:	Site No: C224284 - Former Pfizer Site A 243-271 Wallabout Street, Brooklyn, New York 11206
Institutional Controls:	1. The portions of the Site covered by the environmental easement may be used for restricted residential, commercial, and industrial uses as indicated in the easement and in the detailed sections below (subject to applicable zoning). The balance of the Site that is not covered by the environmental easement has been remediated to Track 1 Unrestricted Use standards and no use restrictions apply (see environmental easement); 2. IC - An Environmental Easement was recorded for the Track 4 portion of the Site that requires the following: • The Track 4 portions of the Site may be used for: restricted residential; commercial, industrial use; • All ECs on the Track 4 portion of the Site must be operated and maintained as specified in this SMP; • All ECs on the Track 4 portion of the Site must be inspected at a frequency and in a manner defined in the SMP. • The use of groundwater underlying the property the Track 4 portion of the Site is prohibited without necessary water quality treatment as determined by the NYSDOH or the NYCDOHMH to render it safe for use as drinking water or for industrial purposes, and the user must first notify and obtain written approval to do so from the Department. • Groundwater and other environmental or public health monitoring for the Track 4 portion of the Site must be performed as defined in this SMP; • Compliance with the Environmental Easement by the Grantee and the Grantee's successors is required; • Data and information pertinent to site management for the Track 4 portion of the Site must be reported at the frequency and in a manner as defined in this SMP; • All future activities that will disturb remaining contaminated material on the Track 4 portion of the Site must be conducted in accordance with this SMP; • The potential for vapor intrusion must be evaluated for any buildings developed in the area within the IC boundaries noted on Figure 2 (Track 4 portion of the Site), and any potential impacts that are identified must be monitored or mitigated. A separate work plan will be submitted to the DEC for the post-construction soil vapor intrusion evaluation; • Access to the Track 4 portion of the Site must be provided to agents, employees or other representatives of the State of New York with reasonable prior notice to the property owner to assure compliance with the restrictions identified by the Environmental Easement; and • Vegetable gardens and farming on the Track 4 portion of the Site are prohibited.

Engineering Controls:	1. Cover system
Inspections:	**Frequency**
Cover system inspection	Annually
Evaluations:	**Frequency**
Climate Change Vulnerability Assessment	As Needed
Soil Vapor Intrusion Evaluation	As Needed, Upon Change in Use
Reporting:	**Frequency**
Periodic Review Report	Annually, or as otherwise determined by the Department

Further descriptions of the above requirements are provided in detail in the latter sections of this Site Management Plan.

1.0 INTRODUCTION

1.1 General

This Site Management Plan (SMP) is a required element of the remedial program for the Former Pfizer Site A property located in Brooklyn, New York (hereinafter referred to as the "Site"). See Figure 1. The Site is currently in the New York State (NYS) Brownfield Cleanup Program (BCP), Site No. C224284 which is administered by New York State Department of Environmental Conservation (NYSDEC).

In September 2018, Harrison Realty LLC filed an application with the New York State Department of Environmental Conservation (NYSDEC), to admit the Site into the New York State Brownfield Cleanup Program (BCP). The application was deemed complete by the NYSDEC on October 19, 2018. On December 6, 2018, the NYSDEC informed Harrison Realty LLC that the project (Site No. C224284) had been accepted into the BCP with Harrison Realty LLC classified as a Participant. The Brownfield Cleanup Agreement was executed by NYSDEC on January 9, 2019. The Brownfield Cleanup Agreement was subsequently amended to add Harrison Realty II LLC on June 1, 2021. A figure showing the site location and boundaries of this site is provided in Figure 2. The boundaries of the site are more fully described in the metes and bounds site description that is part of the Environmental Easement provided in Appendix A.

After completion of the remedial work, some contamination was left in the Track 4 portion of the Site, which is hereafter referred to as "remaining contamination". Institutional and Engineering Controls (ICs and ECs) have been incorporated into the site remedy to control exposure to remaining contamination to ensure protection of public health and the environment. An Environmental Easement granted to the NYSDEC, and recorded with the NYC Office of the City Register, requires compliance with this SMP and all ECs and ICs placed on the Track 4 portion of the Site.

This SMP was prepared to manage remaining contamination at the Track 4 portion of Site until the Environmental Easement is extinguished in accordance with ECL Article 71, Title 36. This plan has been approved by the NYSDEC, and compliance with this plan is required

by the grantor of the Environmental Easement and the grantor's successors and assigns. This SMP may only be revised with the approval of the NYSDEC.

It is important to note that:

- This SMP details the site-specific implementation procedures that are required by the Environmental Easement. Failure to properly implement the SMP is a violation of the Environmental Easement, which is grounds for revocation of the Certificate of Completion (COC);
- Failure to comply with this SMP is also a violation of Environmental Conservation Law, 6NYCRR Part 375 and the BCA (Index #C224284-11-18, Site #C224284) for the Site, and thereby subject to applicable penalties.

All reports associated with the Site can be viewed by contacting the NYSDEC or its successor agency managing environmental issues in New York State. A list of contacts for persons involved with the Site is provided in Appendix B of this SMP.

This SMP was prepared by AMC Engineering, PLLC (AMC), on behalf of Harrison Realty LLC and Harrison Realty II LLC in accordance with the requirements of the NYSDEC's DER-10 ("Technical Guidance for Site Investigation and Remediation"), dated May 2010, and the guidelines provided by the NYSDEC. This SMP addresses the means for implementing the ICs and/or ECs that are required by the Environmental Easement for the Site.

1.2 Revisions

Revisions to this plan will be proposed in writing to the NYSDEC's project manager. Revisions will be necessary upon, but not limited to, the following occurring: a change in media monitoring requirements, upgrades to or shut-down of a remedial system, post-remedial removal of contaminated sediment or soil, or other significant change to the site conditions. In accordance with the Environmental Easement for the site, the NYSDEC will provide a notice of any approved changes to the SMP, and append these notices to the SMP that is retained in its files.

1.3 Notifications

Notifications will be submitted by the property owner to the NYSDEC, as needed, in accordance with NYSDEC's DER – 10 for the following reasons:

- 60-day advance notice of any proposed changes in site use that are required under the terms of the BCA, 6NYCRR Part 375 and/or Environmental Conservation Law.
- 7-day advance notice of any field activity associated with the remedial program.
- 15-day advance notice of any proposed ground-intrusive activity pursuant to the Excavation Work Plan.
- Notice within 48-hours of any damage or defect to the foundation, structures or EC that reduces or has the potential to reduce the effectiveness of an EC, and likewise, any action to be taken to mitigate the damage or defect.
- Verbal notice by noon of the following day of any emergency, such as a fire; flood; or earthquake that reduces or has the potential to reduce the effectiveness of ECs in place at the site, with written confirmation within 7 days that includes a summary of actions taken, or to be taken, and the potential impact to the environment and the public.
- Follow-up status reports on actions taken to respond to any emergency event requiring ongoing responsive action submitted to the NYSDEC within 45 days describing and documenting actions taken to restore the effectiveness of the ECs.

Any change in the ownership of the Site or the responsibility for implementing this SMP will include the following notifications:

- At least 60 days prior to the change, the NYSDEC will be notified in writing of the proposed change. This will include a certification that the prospective purchaser/Remedial Party has been provided with a copy of the Brownfield Cleanup Agreement (BCA), and all approved work plans and reports, including this SMP.
- Within 15 days after the transfer of all or part of the site, the new owner's name, contact representative, and contact information will be confirmed in writing to the NYSDEC.

Table 1 provided below includes contact information for the above notification. The information on this table will be updated as necessary to provide accurate contact information. A full listing of site-related contact information is provided in Appendix B.

Table 1: Notifications*

Name	Contact Information
NYSDEC Project Manager Mandy Yau	mandy.yau@dec.ny.gov; (718) 482-4897
NYSDEC Regional Chief, Superfund and Brownfield Cleanup Section Jane O'Connell	jane.oconnell@dec.ny.gov; (718) 482-4599
NYSDEC Site Control Chief Kelly Lewandowski	Kelly.Lewandowski@dec.ny.gov; (518) 402-9553
NYSDOH Project Manager Stephanie Selmer	Stephanie.Selmer@health.ny.gov (518) 402-7864

* Note: Notifications are subject to change and will be updated as necessary.

2.0 SUMMARY OF PREVIOUS INVESTIGATIONS AND REMEDIAL ACTIONS

2.1 Site Location and Description

The street address for the Site is 243-271 Wallabout Street in Brooklyn, NY (Figure 1). The Site is located in the City of New York in the Broadway Triangle neighborhood of the Borough of the Brooklyn. The Site is known as Former Pfizer Site A, and is comprised of four adjacent tax parcels identified as Block 2249, Lots 23, 37, 41 and 122, totaling 71,305 sq. ft (1.64 acres). The irregular shaped Site occupies a full block and consists of approximately 450 ft of frontage along Wallabout Street, 200 feet of frontage on Harrison Avenue, 260 feet of frontage on Union Avenue and 275 feet of frontage on Walton Street (see Figure 2 – Site Layout Map). The boundaries of the Site are more fully described in Appendix B –Environmental Easement. The owner(s) of the Site parcel(s) at the time of issuance of this SMP is/are:

Harrison Realty LLC
505 Flushing Avenue, Unit 1D
Brooklyn, NY 11205

2.2 Physical Setting

2.2.1 Land Use

The redevelopment project for the Site consists of the construction of four new mixed-use buildings. A description of each of the new buildings is provided below.

TRACK 1 PORTION OF SITE

- Building A will be constructed on new Lot 41 and has been designated with the street address 269 Wallabout Street. Building A will be an 8-story, mixed use (residential, commercial, community facility) building with a full cellar.
- Building B will be constructed on new Lot 37 and has been designated with the street addresses 251 Wallabout Street and 58 Walton Street. Building B will be an 8-story, mixed use (residential, commercial, community facility) building with a full cellar.

TRACK 4 PORTION OF SITE

- Building C will be constructed on new Lot 23 and has been designated with the street address 58 Union Avenue. Building C will be a slab-on grade, 9-story, mixed use (residential, commercial, community facility) building.
- Building D will be constructed on new Lot 122 and has been designated with the street address 34 Union Avenue. Building D will be a slab-on grade, 12-story, mixed use (residential, commercial, community facility) building.

The Site is zoned R7A and R8A.

The area surrounding the Site is highly urbanized and is primarily industrial / commercial in accordance with the M1-1 and M1-2 zoning which surrounds the property (Figure 3). Adjacent land use includes residential apartment buildings to the west on the opposite side of Union Avenue, residential apartment buildings to the north on the opposite side of Walton Street, and a public school (IS 318) to the northeast, commercial (warehouses), residential buildings and a private school (Bais Ruchel High School) to the east, the former Pfizer Site C on the opposite side of Wallabout Street and a charter school (Beginning with Children) farther to the south.

2.2.2 Geology

Regional maps created by the United States Geological Survey (USGS) show bedrock as an igneous intrusive known as the Ravenswood granodiorite of middle Ordovician to middle Cambrian age. Soil borings on the site have not encountered bedrock and it is presumed to lie more than 70 feet below ground surface. Unconsolidated sediments overlie the bedrock and consist of Pleistocene-aged sand, gravel, and silt clays deposited by glacial-fluvial activity. Non-native fill materials consisting of dredge spoils, rubble and/or other materials have historically been used to reinforce and extend shoreline areas and to raise and improve the drainage of low-lying areas.

Subsurface soil at the Site consists of a mixture of a fill material consisting of bricks and other rubble in a silty-soil matrix. The thickness of the fill material varies in depth from approximately 5 to 8 feet, and in some areas to approximately 10 feet. The historic fill

material is underlain by a native silty-clay and fine sand. Groundwater is present under water table conditions at a depth of approximately 7 to 9 feet below the surface. Based upon on-site measurements, groundwater flow is to the north-northwest (Figure 3).

2.2.3 Hydrogeology

Groundwater is present under water table conditions at a depth of approximately 7 to 9 feet below the surface and was determined to flow to the north-northwest.

2.3 Investigation and Remedial History

A review of Sanborn maps indicates the Site was developed prior to 1887 with numerous 25ft wide lots, each developed with a 2 or 3-story row house. Several of the buildings also contained stores. Several of the buildings were used as a robe factory, for tailoring, as a church, and as a bakery. By 1918, the robe factory was replaced with a laundry facility and two of the row houses at the addresses 58 and 60 Walton Street had been replaced with a 5-story manufacturing building. The 1935 Sanborn map indicates most of the buildings on the western portion of the Site had been demolished, and the 1947 Sanborn map shows the western portion of the Site redeveloped for use as a lumber yard and a small auto repair facility. A 1-story parking garage building is shown at 248 Wallabout Street, and two underground gasoline storage tanks are drawn in the front of the building. One 2,000-gallon fuel oil tank is drawn within the Walton Street sidewalk immediately in front of the 5-story manufacturing building located at 58 and 60 Walton Street. The 1947 Sanborn map also depicts a 1-story building at 255 Wallabout Street being used for adhesives manufacturing. The 1965 Sanborn map indicates the western portion of the Site as being utilized by the Chas. Pfizer & Co. Inc. Buildings associated with the Chas Pfizer & Co. Inc. appear to include the former lumber yard, the 1-story parking garage building located at 245 Wallabout Street, the 1-story manufacturing building located at 255 Wallabout Street, and the 5-story manufacturing building located at 58 and 50 Wallabout Street. The 1965 Sanborn map also indicates that the majority of the former residential buildings along Harrison Avenue as being previously demolished, and now used as parking. The 1977 Sanborn map indicates more buildings were demolished, as the only remaining structures on the Site include the 1-story parking garage building located at 245 Wallabout Street, the 1-story manufacturing building located at 255 Wallabout Street, a small store on the corner

of Wallabout Street and Harrison Avenue, and a small office building on the corner of Union Avenue and Wallabout Street. Roux Associates, Inc. identified the buildings located at 245 Wallabout Street and 255 Wallabout Street as taxi garages. The remainder of the Site is identified as parking for the Chas. Pfizer & Co., Inc. According to the Sanborn maps, the remaining buildings were demolished by 1992.

The following narrative provides a remedial history timeline and a brief summary of the available project records to document key investigative and remedial milestones for the Site. Full titles for each of the reports referenced below are provided in Section 8.0 - References.

Environmental investigations performed at the Site include the following:

- UST Investigation (Roux Associates, Inc. - 1988)
- Evaluation of Soil Quality Conditions at the Solid Waste Management Units (SWMUs) Located at Site A - (Roux Associates, Inc. - August 14, 1989)
- Supplemental Soils Investigation for Site A (Roux Associates, Inc. - 1989)
- Analysis of Paint Chips and Plaster from Test Pit 12 at Site A (Roux Associates, Inc. – 1990)
- Risk Evaluation for Site A (Roux Associates, Inc. – 1990)
- Evaluation of Site A Hydrogeology (Roux Associates, Inc. – 1990)
- Site Inspection of Site A Unknown USTs (Roux Associates, Inc. – 1990)
- Geophysical Survey of Site A (Roux Associates, Inc. – 1990)
- Addendum to the Risk Evaluation for Site A Off-Site Exposure (Roux Associates, Inc. - 1990)
- Underground Storage Tank Removal Activities at Site A (Roux Associates, Inc. – 1990)
- Evaluation of the Potential Impact of Lead in Site A Soils on Underlying Groundwater (Roux Associates, Inc. – 1991)
- Remedial Investigation Report (EBC, July 2019, Revised December 10, 2019)

UST Investigation (Roux Associates, Inc. – 1988)

One 1,080-gallon former No. 2 fuel oil aboveground storage tank and one 550-gallon No. 2 fuel oil underground storage tank were removed by Roux Associates, Inc. in 1988 from former Lot 42. The tank removal activities are documented within the letter prepared by Pfizer for the New York City Public Development Corporation (NYC PDC) dated April 25, 1990.

Evaluation of Soil Quality Conditions at the Solid Waste Management Units Located at Site A (Roux Associates, Inc. – August 14, 1989)

Roux Associates, Inc. performed a soil quality investigation to determine the need for RCRA corrective action for two solid waste management units that underwent RCRA Closure in 1987 (mycelium area and former drum storage area) and to investigate a 550-gallon fuel oil UST located on the north end of the Site.

The former drum storage area was investigated by excavating four test pits around the concrete pad to depths ranging between 8 and 12 feet below grade. From the four test pits, Roux collected four soil samples for laboratory analysis. All four soil samples were submitted for laboratory analysis of VOCs, and one of the four was also analyzed for SVOCs, pesticides, PCBs, EPTOX, cyanide, and total petroleum hydrocarbons. No VOCs were detected with the exception of chloroform (maximum of 167 ppb). Several SVOCs were detected above Restricted Residential SCOs and the total petroleum hydrocarbon concentration was 480 ppm. However, Roux indicated the total petroleum hydrocarbons and SVOC concentrations were indicative of historic fill material and not attributable to a release from the drum storage pad. Based on the laboratory results of the soil samples, Roux determined corrective action was not required.

The mycelium disposal area was investigated by excavating two elongated test pits. No mycelium material was encountered in either test pit, which according to Roux, was expected because the material would have biodegraded after burial. However, an ash-like material was encountered from 3 to 7 feet below grade. Roux suspects the ask-like material is related to material imported to the Site for use as backfill with a former building basement. The basement was found to be approximately 85 feet by 30 feet, and a slab was

encountered below the ash-like material. Roux collected six soil samples for laboratory analysis. All six soil samples were submitted for laboratory analysis of cyanide, one of the six soil samples was also analyzed for SVOCs, pesticides, PCBs, and total petroleum hydrocarbons, and four of the samples were also analyzed for EPTOX.

Only background levels of cyanide were detected. Therefore, Roux concluded the mycelium had biodegraded and had not impacted soils at the Site. Roux indicated the elevated total petroleum hydrocarbons concentration and SVOC concentrations were indicative of historic fill material. The leachable lead concentrations detected within two of the soil samples (maximum of 20 ppm) exceeded the USEPA maximum allowable leachate concentration of 5 ppm. Roux noted soil at the two sampling locations would be classified as a RCRA hazardous waste in accordance with 40 CFR 261.11(a)(1). Roux recommended additional test pitting around the edges of the buried basement o better define the extend of the basement and ash-like material and the collection of additional soil samples for total and leachable lead.

One test pit was excavated around the fuel fill pipe to uncover a 550-gallon underground storage tank. The tank was found in good condition with approximately 275 gallons of fuel oil still in the tank. No staining or odor indicative of petroleum contamination was encountered in soil around the tank. The laboratory results of a soil sample collected from approximately 2 feet below the bottom of the tank verified no leakage around or beneath the tank had occurred.

Supplemental Soils Investigation for Site A (Roux Associates, Inc. – November 30, 1989)
As previously noted, Roux recommended additional test pitting around the edges of the buried basement to better define the extend of the basement and ash-like material and the collection of additional soil samples for total and leachable lead. The additional sampling was performed by Roux on November 2, 1989 and consisted of the excavation of nine test pits. Samples were collected from each of the test pits representing the intervals 1 to 3 ft, 3 to 5 ft, and 5 to 7 ft. The 27 soil samples were submitted for laboratory analysis of total lead, leachable lead, total sulfate, and total carbonate. Seven of the 27 soil samples contained a leachable lead concentration above the USEPA maximum allowable leachate

concentration of 5 ppm. Two of the samples with a leachable lead concentration greater than 5 ppm were collected from test pits where the ash-like material was not encountered.

Roux noted the ash-like material appears to be demolition debris (plaster walls, brick, etc) buried in the basements of former buildings on the northern corner of the Site. A former concrete basement slab was encountered at the bottom of each of the test pits that contained soil samples with a leachable lead concentration greater than 5 ppm.

Paint Chip and Plaster Analytical Results (Roux Associates, Inc. – January 5, 1990)
Roux collected samples of paint chips and plaster from a test pit excavated on November 29, 1989 for laboratory analysis of total lead. The laboratory results indicated the total lead concentration of the paint chips was as high as 10,000,000 ppb, and the plaster was as high as 710,000 ppb. Roux concluded the source of the elevated lead concentrations detected in soils in the northern corner of the Site may be the paint and plaster.

Risk Evaluation for Site A (Roux Associates, Inc. – January 8, 1990)
Roux prepared a risk evaluation to explore the potential risks associated with exposure to lead that might occur during the development of the Site. The evaluation determined that "occupational exposure to soils from the Site are not likely to result in any significant exposure to lead and consequently no negative health impacts are anticipated".

Subsurface Conditions at Site A (Roux Associates, Inc. – April 16, 1990)
Roux prepared a summary report to document subsurface conditions at the Site based on information obtained during the excavation of 16 test pits in March and November of 1989. Roux noted the presence of historic fill material to depths of approximately 7 to 9 feet below grade. The fill material was typically comprised of black to brown coarse sand and gravel that contain varying amounts of bricks, cinders and scrap metal. Concrete basement floors were encountered within several of the test pits. Roux stated this indicates fill material was used to fill in the former basements of the residential buildings. Immediately below the fill materials is a gray clay that is at least 2 ft thick. Roux suspects the clay reflects the former marsh environment that surrounded Wallabout Creek, which formerly

flowed through the area. Groundwater was encountered in the gray clay at depths between 7 and 9 feet below grade.

Geophysical Survey of Site A (Roux Associates, Inc. – May 22, 1990)
Roux performed a geophysical survey across the eastern half of the Site to locate any previously unidentified tanks. The geophysical survey identified 16 significant subsurface anomalies. A backhoe was used to investigate each of the anomalies, and one 550-gallon fuel oil tank was uncovered.

Addendum to the Risk Evaluation for Site A – Offsite Exposure (Roux Associates, Inc. – September 11, 1990)
Roux re-evaluated the potential risks associated with exposure to lead of both casual visitors to the area and persons working or residing in the neighborhood during the time that the Site is undergoing redevelopment. The assessment concluded that the Site does not pose an unacceptable hazard to persons living or working in the immediate vicinity of the Site.

Summary of Underground Storage Tank Removal Activities at Site A (Roux Associates, Inc. – September 26, 1990)
Roux prepared a summary of activities related to the excavation and removal of four underground storage tanks. Tanks discussed in the report include one 1,000-gallon UST in the northeast corner of the Site, one 550-gallon heating oil UST associated with the former synagogue, and two 550-gallon gasoline USTs associated with the former taxi garage.

The 1,000-gallon UST was pitted, but Roux did not identify any holes in the Tank. No evidence of a spill was noted following removal of the tank, and one confirmatory endpoint soil sample was collected at the bottom of the UST excavation. No TPH compounds were detected within the sample.

The 550-gallon heating oil UST associated with the former synagogue was removed from the sidewalk in front of the former building. Stained soil was observed around the UST, and the NYSDEC was contacted. A total of approximately 50 cubic yards of petroleum contaminated soil was excavated from a 9 ft by 21 ft area. Additional excavation toward

the street was not performed to avoid undermining the street. A slight sheen was observed on the groundwater within the open excavation, but no free produce was observed. Three post excavation endpoint soil samples were collected from three of the sidewalls, and no TPH compounds were detected. No endpoint soil sample was collected from the street side of the excavation.

One 500-gallon gasoline UST was found below the concrete floor of the taxi garage building. The tank was deeply pitted, but no holes were observed. No visual or olfactory evidence of a spill was observed, and Roux collected one post-excavation endpoint soil sample at the bottom of the excavation. BTEX was detected at elevated concentrations within the endpoint soil sample. The excavation was re-opened to investigate the elevated BTEX concentrations, and an additional 550-gallon gasoline UST was found. No evidence of contamination was found beneath the concrete saddle below the tank, and five additional post-excavation endpoint soil samples were collected. The results of the samples were not included or summarized in the report. However, they are summarized in the *Transmittal of Final Post-Excavation Sampling Results Site –A Taxi Garage USTs* (Roux, October 24, 1990) – see below.

Transmittal of Final Post-Excavation Sampling Results Site-A Taxi Garage USTs (Roux Associates, Inc. – October 24, 1990)

As previously noted, Roux collected five additional post-excavation endpoint soil samples from below the two 550-gallon gasoline USTs removed from the former taxi garage building. The laboratory results are included and summarized in the October 24, 1990, transmittal from Roux to Pfizer. No BTEX compounds were detected within the five endpoint soil samples collected from below the concrete saddles of the two 550-gallon gasoline USTs.

Potential Impact of Lead in Site A Soils on Underlying Ground Water (Roux Associates, Inc. – April 11, 1991)

Roux prepared a report do document the potential impact of lead in soils in the northeastern corner of the site on groundwater. Roux concluded that a continuous layer of clay underlies Site A and serves as a low-permeability barrier to the aquifers beneath the Site; and the

potential for contamination of the underlying aquifers with lead from the Site is low, based on calculations.

Phase II Report (Roux Associates, Inc. – October 2007)

Roux performed a Site-wide supplemental investigation of soil and perched water in October to November of 2005 (additional sampling in December 2006) to characterize the Site with respect to potential reuse. The supplemental investigation consisted of a geophysical investigation, installation of 5 monitoring wells to collect 5 groundwater samples, and the installation of 45 soil borings to collect 77 soil samples.

Geophysical Investigation

Roux performed a geophysical investigation, and identified several anomalies that were investigated by excavating test pits. No underground tanks were encountered within any of the anomalies.

Groundwater Sampling

Roux installed five 2-inch diameter monitoring wells (MW-1 through MW-5) using the hollow-stem auger drilling method. Each monitoring well was constructed of 10 feet of 0.02-inch screen, set at a depth of 7 feet below the water table. A groundwater sample was collected from each of the five monitoring wells for laboratory analysis of VOCs, SVOCs, pesticides, PCBs, and metals. No VOCs, pesticides, or PCBs were detected above GQS. Several SVOCs were detected above GQS within one of the five groundwater samples, including 2-methylnaphthlene (18 µg/L), naphthalene (59 µg/L), and phenol (5 µg/L). The metals iron, magnesium, manganese, sodium, and zinc were also detected above GQS.

A description of each of the soil investigation areas is provided below:

Ash-Like fill Material Area

Nine soil borings (AF-1 through AF-9) were performed to approximately 7 feet below grade in the ash-like fill material area and lead exceedance area. Soil samples were collected for laboratory analysis of lead and TCLP lead from each soil boring representing the intervals 1 to 3 feet, 3 to 5 feet, and 5 to 7 feet. The 3 soil samples

collected from one of the nine soil borings was also submitted for laboratory analysis of VOCs, SVOCs, pesticides, PCBs and metals.

Lead was detected above Restricted Residential SCOs within 12 of the 27 soil samples, and 9 of the 27 soil samples had a TCLP lead concentration greater than the EPA Regulatory Limit of 5.0 mg/L. The D008 Hazardous Lead soil/fill was detected within each of the three depth intervals. SVOCs were also detected above Restricted Residential SCOs within the one sample submitted for SVOC analysis.

Former Drum Storage Area

Four soil borings (DS-1 through DS-4) were performed to approximately 7 feet below grade in the former drum storage area. A soil sample was collected for laboratory analysis of lead and TCLP lead from each soil boring representing the interval 5 to 7 feet. Lead was detected at a concentration below Restricted Residential SCOs within each of the samples collected from the former drum storage area, and the TCLP lead concentration of each of the soil samples was below the EPA Regulatory Limit.

Former UST Areas

Five soil borings (UST-1 through UST-5) were performed to investigate the five former USTs previously removed. One soil sample was collected from each soil boring representing the interval located immediately above the water table for laboratory analysis of VOCs, SVOCs, and RCRA metals. No VOCs were detected above Restricted Residential SCOs, however, several SVOCs were detected above Restricted Residential SCOs. Roux associated the elevated SVOC concentrations with common historic fill material. The metals lead, barium and mercury were detected above Restricted Residential SCOs.

Additional Site Characterization

Ten soil borings (SB1 through SB10) were performed to investigate areas of the Site that had not been previously investigated. One soil sample was collected from five of the soil borings representing the interval 0 to 2 feet below grade, and an additional soil sample was collected from each soil boring representing the most impacted interval, as

determined from field observations, or the interval located immediately above the water table. Each of the soil samples was submitted for laboratory analysis of VOCs, SVOCs, pesticides, PCBs and metals. No VOCs, pesticides or PCBs were detected above Restricted Residential SCOs. Several SVOCs, and the metals arsenic, barium, copper, lead, and mercury were detected above Restricted Residential SCOs within each of the samples.

TCLP Lead Delineation

Roux performed an additional 17 delineation soil borings at the Site in December 2006, following review of the lead and TCLP lead sample analysis of the samples they had collected in 2005. Each of the delineation soil samples were submitted for laboratory analysis of TCLP Lead. A TCLP lead concentration greater that the EPA Regulatory Limit was reported within 10 of the 25 delineation soil samples.

June 2018 - Phase II Subsurface Investigation Summary (EBC)

On June 5, 2018, a total of 18 soil borings (EBC1 through EBC17 and SB7) were advanced. The soil borings were performed during the RI to identify source areas and to obtain general soil quality information present at the Site (Figure 4A). From each soil boring location, soil samples were collected continuously in 5-foot intervals to a depth of 10 feet below grade using a track-mounted Geoprobe™ model 66DT sampling system. The Geoprobe™ uses a direct push hydraulic percussion system to drive and retrieve core samplers. Soil samples were retrieved using a 2-inch diameter, 5-ft long macro-core sampler with disposable acetate liners. Each soil sample recovered from the soil borings was characterized by an experienced geologist and field screened for the presence of VOCs using a PID. The geologist's field observations and PID readings were recorded for each boring in a soil boring log.

From each of the 18 soil borings, EBC retained one soil sample representing the interval 0 to 2 feet below grade, and one additional soil sample from a 2 ft deeper interval from the fill material. Each of the soil samples were collected directly into pre-cleaned laboratory supplied glassware, stored in a cooler with ice and submitted to Phoenix Environmental Laboratories, Inc. for laboratory analysis of TAL metals, SVOCs and TCLP lead.

Several metals and SVOCs were detected above Restricted Residential and/or Commercial SCOs.

The following SVOCs were detected above Commercial SCOs;

- benz(a)anthrance (maximum of 32,000 µg/kg)
- benzo(a)pyrene (maximum of 25,000 µg/kg)
- benzo(b)fluoranthene (maximum of 20,000 µg/kg)
- dibenz(a,h)anthracene (maximum of 5,900 µg/kg)
- indeno(1,2,3-cd)pyrene (maximum of 13,000 µg/kg)

Additional SVOCs detected above Restricted Residential SCOs include the following;

- benzo(k)fluoranthene (maximum of 23,000 µg/kg)
- chrysene (maximum of 30,000 µg/kg)

The following metals were detected above Commercial SCOs;

- arsenic (maximum of 81.1 mg/kg)
- barium (maximum of 3,480 mg/kg)
- lead (maximum of 4,060 mg/kg)
- mercury (maximum of 21.2 mg/kg)

The metal cadmium (maximum of 4.61 mg/kg) was also detected above Restricted Residential SCOs.

Four of the 36 soil samples contained a TCLP lead concentration greater than the EPA Regulatory Limit of 5 mg/L. The exceedances were reported within three of the deeper soil samples and one of the shallower soil samples, and were reported evenly across the Site.

Based on the soil borings, historic fill material (black/brown silty sand with brick, concrete and wood) is present across the Site to a depth of 5 to 8 foot below grade, extending as deep as 10 feet in several of the borings. The layer of historic fill material is underlain by a grey clay. Groundwater was encountered at a depth of approximately 7 to 9 feet.

Remedial Investigation Report (EBC, July 2019, Revised December 10, 2019)

A supplemental investigation was performed from June 3, 2019, through June 18, 2019, under the NYSDEC-approved Remedial Investigation Work Plan. During the remedial investigation, samples of soil and groundwater were collected and analyzed for volatile organic compounds (VOCs), semi-volatile organic compounds (SVOCs), metals, pesticides and PCBs, and the 21 PFAS compounds by EPA Method 537 modified. Soil vapor samples were collected and analyzed for VOCs. Based on investigations conducted to date, the primary contaminants of concern are metals and SVOCs associated with historic fill material, and D008 Hazardous Lead soil/fill identified within five lead hot-spots (Hot-Spot A, Hot-Spot B, Hot-Spot C, Hot-Spot D, and Hot-Spot E).

Soil - SVOCS and metals exceeding Unrestricted Use Soil Cleanup Objectives (UUSCOs) were detected in soils throughout the site. SVOCs and metals were found to exceed UUSCOs down to 8 feet below ground surface (ft bgs). A total of 5 locations where levels of lead exceeded the hazardous waste threshold were identified across the site. For SVOCs, the maximum concentration of benzo(a)anthracene was 32 parts per million (ppm) as compared to the UUSCO of 1 ppm, benzo(a)pyrene was 25 ppm (UUSCO is 1 ppm), benzo(b)fluoranthene was 23 ppm (UUSCO is 1 ppm), chrysene was 30 ppm (UUSCO is 1 ppm), and indeno(1,2,3-cd)pyrene of 13 ppm (UUSCO is 0.5 ppm). For metals, the maximum concentration of lead was 4,310 ppm (UUSCO is 63 ppm), mercury was 15.7 ppm (UUSCO is 0.18 ppm), arsenic was 81.1 ppm (UUSCO is 13 ppm), and barium was 5,910 ppm (UUSCO is 350 ppm). Only two VOCs (acetone and methyl ethyl ketone) were detected at concentrations slightly exceeding the UUSCOs; however, these are common lab artifacts and are not considered to be site-specific contaminants of concern. Several pesticides were detected at concentrations nominally exceeding their respective UUSCOs, including 4,4-DDD at 0.035 ppm (UUSCO is 0.0033 ppm) and 4,4-DDE at 0.080 ppm (UUSCO is 0.0033 ppm). For PCBs, the maximum concentration of PCB-1260 was 0.18 ppm (UUSCO is 0.1 ppm). Emerging contaminants (ECs) were also detected in soil samples collected from the shallow intervals down to 17 ft bgs. For example, the maximum concentrations of perfluorooctanoic acid (PFOA) and perfluorooctane sulfonic acid

(PFOS) were 378 parts per trillion (ppt) and 2,490 ppt, respectively. Data does not indicate any off-site impacts in soil related to this Site.

Groundwater - Groundwater was encountered at a depth of approximately 7 to 9 feet below grade. Concentrations of naturally occurring metals were detected in groundwater at concentrations exceeding the ambient water quality standards (AWQS). The maximum concentration of iron was 871 parts per billion (ppb) (AWQS is 300 ppb), manganese was 43,900 ppb (AWQS is 300 ppb), and sodium was 193,000 ppb (AWQS is 20,000 ppb). ECs were also detected in groundwater samples. The maximum concentrations of PFOA and PFOS are 204 parts per trillion (ppt) and 154 ppt, respectively. No VOCs, PCBs or pesticides were detected at concentrations exceeding the applicable AWQS. Data does not indicate any off-site impacts in groundwater related to this Site.

Compounds detected above AWQS are posted on Figure 6.

Soil Vapor - Trichloroethene (TCE) was detected in soil vapor at concentrations up to 50.5 micrograms per cubic meter. Data does not indicate any off-site impacts in soil vapor related to this Site.

Soil vapor detections are posted on Figure 5.

A Remedial Action Work Plan (RAWP) prepared by AMC in January 2020, was approved by the NYSDEC on January 13, 2020. The remedy recommended for the Site within the RAWP was a Track 1 remedy (Alternative 1) which was to consist of the removal of all on-Site soil in exceedance of Track 1 Unrestricted Use Soil Cleanup Objectives (SCOs). It was expected that the Track 1 alternative would require excavation across the Site to a depth of 5 to 8 feet below grade with additional excavation to up to 10 feet below grade in some hotspot areas (HSA and HSC). All D008 Hazardous Lead soil/fill and all non-hazardous fill material with parameters above Unrestricted Use SCOs would be removed from the Site and properly disposed of at off-site facilities.

However, due to presence of a subway tunnel along Union Avenue, the Participant determined the complexity and permitting requirements of installing shoring along Union

Avenue above/adjacent to the subway tunnel to be too prohibitive to include a cellar below the new buildings along Union Avenue (Building C and Building D). Therefore, a Remedial Action Work Plan Amendment (AMC, April 2021) was prepared which detailed limited excavation to 4 to 5ft for the pile caps, grade beams, and footings for slab-on grade Building C (58 Union Avenue - Lot 23) and Building D (34 Union Avenue - Lot 122). The Department approved this remedy in its Remedial Work Plan Addendum letter dated June 4, 2021.

Implementation of the remedy for the Track 1 portion of the Site included the following:

1. Excavation of soil/fill exceeding Track 1 Unrestricted Use SCOs to a depth of 5 to 8 feet across the Track 1 portion of the Site to remove all D008 Hazardous Lead soil/fill and non-hazardous historic fill material and additional excavation to 7 ft in some hotspot areas (HSC, HSD, and HSE) as needed to meet Track 1 Unrestricted Use SCOs;
2. Screening for indications of contamination (by visual means, odor, and monitoring with PID) of all excavated soil during any intrusive Site work;
3. Collection and analysis of end-point samples to evaluate the performance of the remedy with respect to removal of D008 Hazardous Lead soil/fill;
4. Collection and analysis of endpoint samples from across the Track 1 area to evaluate the performance of the remedy with respect to attainment of Track 1 Unrestricted Use SCOs;
5. Appropriate off-Site disposal of all material removed from the Site in accordance with all Federal, State and local rules and regulations for handling, transport, and disposal;
6. Installation of a dewatering system to allow for excavation/removal of fill material at/below the groundwater table, and discharge of groundwater to the NYC sewer system under a NYCDEP sewer discharge permit;
7. Import of ¾" virgin mined stone for use as backfill below the Building A and Building B concrete cellar mat slab in compliance with: (1) chemical limitations and other specifications listed in the RAWP, and (2) all Federal, State, and local rules and regulations for handling and transport of material;

Implementation of the remedy for the Track 4 portion of the Site included the following:

1. Excavation of all D008 Hazardous Lead soil/fill within hotspot areas HSA, HSB and HSC;
2. Collection and analysis of endpoint samples from each of the three hotspot areas to evaluate the performance of the remedy with respect to removal of D008 Hazardous Lead soil/fill;
3. Excavation of non-hazardous historic fill material to a depth of 2 ft;
4. Collection and analysis of endpoint soil samples from across the Track 4 area to evaluate the performance of the remedy with respect to attainment of Track 4 SCOs;
5. Screening for indications of contamination (by visual means, odor, and monitoring with PID) of all excavated soil during any intrusive Site work;
6. Appropriate off-Site disposal of all material removed from the Track 4 portion of the Site in accordance with all Federal, State and local rules and regulations for handling, transport, and disposal;
7. Import of ¾" virgin mined stone for use as backfill below the Building C and Building D concrete slabs in compliance with: (1) chemical limitations and other specifications listed in the RAWP, and (2) all Federal, State, and local rules and regulations for handling and transport of material;
8. Installation of a passive sub-slab depressurization system below the vapor barrier and building slab of both Building C and Building D. The passive sub-slab depressurization system has the capability of being converted into an active sub-slab depressurization system;
9. Installation of a 20-mil vapor barrier below the building slab of Building C and Building D;
10. A post-construction soil vapor intrusion evaluation will be performed within new Building C and new Building D consisting of the collection and laboratory analysis of sub-slab soil gas samples and indoor air samples. The post-construction evaluation will include a provision for implementing actions recommended to address exposures related to soil vapor intrusion within new Building C and new Building D;
11. Construction of a site cover system consisting of:

a. Easement – Concrete stairs for MTA stairs to subway along Union Avenue;
b. Building C Concrete Slab - A 4 inch thick concrete slab; and
c. Building D Concrete Slab - A 4 inch thick concrete slab.

12. Development and implementation of a Site Management Plan for long term management of remaining contamination at the Site which includes plans for: (1) Institutional Controls, (2) inspections and (3) reporting; and
13. An Environmental Easement recorded against the Site will ensure implementation of the SMP.

2.4 Remedial Action Objectives

The Remedial Action Objectives (RAOs) for the Site as listed in the Decision Document dated January 2020, are as follows:

Groundwater

RAOs for Public Health Protection

- Prevent ingestion of groundwater with contaminant levels exceeding drinking water standards.

Soil

RAOs for Public Health Protection

- Prevent ingestion/direct contact with contaminated soil.

RAOs for Environmental Protection

- Prevent migration of contaminants that would result in groundwater or surface water contamination.

Soil Vapor

RAOs for Public Health Protection

- Mitigate impacts to public health resulting from existing, or the potential for, soil vapor intrusion into buildings at a site.

2.5 Remaining Contamination

2.5.1 Soil

The Remedial Investigation identified five lead hotspots (Hot-Spot A, Hot-Spot B, Hot-Spot C, Hot-Spot D, and Hot-Spot E) consisting of D008 Hazardous Lead soil/fill historic fill material across the Site to depths between 5 to 8 feet below grade. The historic fill material contains SVOCs, and metals including arsenic, barium, copper, chromium, lead, mercury, nickel and zinc above Unrestricted Use and/or Restricted Residential Use SCOs.

In accordance with the RAWP, each of the lead hotspots was removed. Endpoint soil samples were collected for laboratory analysis of lead and TCLP lead to confirm complete removal of each hotspot. All soil/fill above Track 1 Unrestricted Use SCOs was removed across the Track 1 portion of the Site.

Installation of the foundation and building slabs for Building C and Building D required excavation/removal of historic fill material of the Track 4 portion of the Site to a minimum depth of 2 ft below grade. Additional excavation was performed for construction purposes. Soil immediately below the foundation consists of historic fill material containing pesticides, SVOCs and metals above Unrestricted Use and/or Restricted Residential Use SCOs is capped in place by a composite cover system.

Table 2 and Figure 4 summarize the results of all soil samples collected that exceed the Unrestricted Use SCOs and the Restricted Residential Use SCOs at the Track 4 portion of the Site after completion of remedial action.

2.5.2 Groundwater

Concentrations of naturally occurring metals were detected in groundwater at concentrations exceeding the ambient water quality standards (AWQS). The maximum concentration of iron was 871 parts per billion (ppb) (AWQS is 300 ppb), manganese was 43,900 ppb (AWQS is 300 ppb), and sodium was 193,000 ppb (AWQS is 20,000 ppb). ECs were also detected in groundwater samples. The maximum concentrations of PFOA and PFOS are 204 parts per trillion (ppt) and 154 ppt, respectively. No VOCs, PCBs or pesticides were detected at concentrations exceeding the applicable AWQS.

2.5.3 Soil Vapor

Trichloroethene (TCE) was detected in soil vapor at concentrations up to 50.5 micrograms per cubic meter. A soil vapor intrusion evaluation (see Section 5.2 of this SMP) must be performed upon a change in use of the property that will result in initial occupancy of a new building. The breadth of this evaluation will be determined based upon discussion with the NYSDEC Project manager and NYSDOH. Based upon these discussion and agency requirements, a work plan may need to be developed that requires that sampling be performed upon a change in use or as deemed necessary by the aforementioned entities. Upon completion of the evaluation, if an action is required, any actions taken or to be taken must be reflected in an updated SMP.

3.0 INSTITUTIONAL AND ENGINEERING CONTROL PLAN

3.1 General

Since remaining contamination exists at the Track 4 portion of the Site, Institutional Controls (ICs) and Engineering Controls (ECs) are required to protect human health and the environment. This IC/EC Plan describes the procedures for the implementation and management of all IC/ECs at the site. The IC/EC Plan is one component of the SMP and is subject to revision by the NYSDEC.

This plan provides:

- A description of all IC/ECs on the site;
- The basic implementation and intended role of each IC/EC;
- A description of the key components of the ICs set forth in the Environmental Easement;
- A description of the controls to be evaluated during each required inspection and periodic review;
- A description of plans and procedures to be followed for implementation of IC/ECs, such as the implementation of the Excavation Work Plan (EWP) (as provided in Appendix C) for the proper handling of remaining contamination that may be disturbed during maintenance or redevelopment work on the site; and
- Any other provisions necessary to identify or establish methods for implementing the IC/ECs required by the site remedy, as determined by the NYSDEC.

3.2 Institutional Controls

A series of ICs is required by the RAWP Amendment for the Track 4 portion of the Site to: (1) implement, maintain and monitor Engineering Control systems; (2) prevent future exposure to remaining contamination; and, (3) limit the use and development of the site to restricted residential, commercial, or industrial uses only. Adherence to these ICs on the Track 4 portion of the Site is required by the Environmental Easement and will be implemented under this SMP. ICs identified in the Environmental Easement may not be discontinued without an amendment to or extinguishment of the Environmental Easement. The IC boundaries (Track 4 portion of the Site) are shown on Figure 2. These ICs are:

- The Track 4 portions of the Site may be used for: restricted residential; commercial, industrial use;
- All ECs on the Track 4 portion of the Site must be operated and maintained as specified in this SMP;
- All ECs on the Track 4 portion of the Site must be inspected at a frequency and in a manner defined in the SMP.
- The use of groundwater underlying the property the Track 4 portion of the Site is prohibited without necessary water quality treatment as determined by the NYSDOH or the NYCDOHMH to render it safe for use as drinking water or for industrial purposes, and the user must first notify and obtain written approval to do so from the Department.
- Groundwater and other environmental or public health monitoring for the Track 4 portion of the Site must be performed as defined in this SMP;
- Compliance with the Environmental Easement by the Grantee and the Grantee's successors is required;
- Data and information pertinent to site management for the Track 4 portion of the Site must be reported at the frequency and in a manner as defined in this SMP;
- All future activities that will disturb remaining contaminated material on the Track 4 portion of the Site must be conducted in accordance with this SMP;
- The potential for vapor intrusion must be evaluated for any buildings developed in the area within the IC boundaries noted on Figure 2 (Track 4 portion of the Site), and any potential impacts that are identified must be monitored or mitigated. A separate work plan will be submitted to the DEC for the post-construction soil vapor intrusion evaluation;
- Access to the Track 4 portion of the Site must be provided to agents, employees or other representatives of the State of New York with reasonable prior notice to the property owner to assure compliance with the restrictions identified by the Environmental Easement; and
- Vegetable gardens and farming on the Track 4 portion of the Site are prohibited.

3.3 Engineering Controls

3.3.1 Site Cover System

Exposure to remaining contamination at the Track 4 portion of the Site is prevented by a cover system placed over the Site. The cover system is comprised of the following:

- Easement – Concrete stairs for MTA stairs to subway along Union Avenue;
- Building C Concrete Slab - A 4 inch thick concrete slab; and
- Building D Concrete Slab - A 4 inch thick concrete slab.

Figure 7 presents the location of the cover system. The Excavation Work Plan (EWP) provided in Appendix C outlines the procedures required to be implemented in the event the cover system is breached, penetrated or temporarily removed, and any underlying remaining contamination is disturbed. Procedures for the inspection of this cover are provided in the Monitoring and Sampling Plan included in Section 4.0 of this SMP. Any work conducted pursuant to the EWP must also be conducted in accordance with the procedures defined in a Health and Safety Plan (HASP) and associated Community Air Monitoring Plan (CAMP) prepared for the Site and provided in Appendix E and F.

Procedures for operating and maintaining the site cover system are documented in the Maintenance and Inspection Plan (Section 4.0 of this SMP). Figure 7 is an as-built drawing signed and sealed by a professional engineer that shows the location of the ECs (site cover system) for the Track 4 portion of the Site. The elements of the cover system will change as development of the property progresses. This SMP will be revised periodically to include updated as-built drawings documenting the changes to the cover system over time.

3.3.2 Criteria for Completion of Remediation/Termination of Remedial Systems

Generally, remedial processes are considered completed when monitoring indicates that the remedy has achieved the remedial action objectives identified by the decision document. The framework for determining when remedial processes are complete is provided in Section 6.4 of NYSDEC DER-10.

3.3.2.1 – Site Cover System

The site cover system over the Track 4 portion of the Site is a permanent control and the

quality and integrity of this system will be inspected at defined, regular intervals in accordance with this SMP in perpetuity.

4.0 MAINTENANCE AND INSPECTION PLAN

4.1 General

The site remedy does not rely on any mechanical systems, such as groundwater treatment systems, sub-slab depressurization systems or air sparge/soil vapor extraction systems to protect public health and the environment. Therefore, the operation and maintenance of such components is not included in this SMP. The remedy for the Track 4 portion of the Site includes a passive sub-slab depressurization system that has the capability of being converted into an active sub-slab depressurization system based on the findings of the post-construction soil vapor intrusion evaluation. A separate work plan will be submitted to the DEC for the post-construction soil vapor intrusion evaluation. If the results of the post-construction soil vapor intrusion evaluation indicate the passive sub-slab depressurization system needs to be converted to an active sub-slab depressurization system, this SMP will be revised to include the operation and maintenance of the SSDS components.

4.2 Site Cover Inspection

Site cover inspections for the Track 4 portion of the Site will be performed at a minimum of once per year. Modification to the frequency of the inspections will require approval from the NYSDEC. Site inspections will also be performed after all severe weather conditions. During these inspections, an inspection form will be completed as provided in Appendix D – Site Management Forms. The form will compile sufficient information to assess the following:

- Compliance with all ICs;
- An evaluation of the condition and continued effectiveness of the site cover;
- General site conditions at the time of the inspection;
- The site inspection activities being conducted; and
- Confirm that site records are up to date.

Site cover inspections for the Track 4 portion of the Site will be conducted and documented annually, regardless of the frequency of the Periodic Review Report. The inspections will determine and document the following:

- Whether the site cover system continues to perform as designed;

- If the site cover continues to be protective of human health and the environment;
- Compliance with requirements of this SMP and the Environmental Easement;
- Achievement of remedial performance criteria; and
- If site records are complete and up to date.

Reporting requirements are outlined in Section 6.0 of this SMP.

Inspections will also be performed in the event of an emergency. If an emergency, such as a natural disaster or an unforeseen failure of the site cover system occurs that reduces or has the potential to reduce the effectiveness of the composite cover in place at the Site, verbal notice to the NYSDEC must be given by noon of the following day. In addition, an inspection of the Site will be conducted within 5 days of the event to verify the effectiveness of the composite cover by a qualified environmental professional, as determined by the NYSDEC. Written confirmation must be provided to the NYSDEC within 7 days of the event, and include a summary of actions taken, or to be taken, and the potential impact to the environment and the public.

Unscheduled inspections may take place when a suspected failure of the site over system has been reported or an emergency occurs that is deemed likely to affect the Site. The site cover system components to be inspected include, but are not limited to, the components included in Table 33 below.

Table 33 – Site Cover System Inspection Requirements and Schedule

Cover Component	Inspection Parameter	Inspection Schedule
Easement - Concrete stairs for MTA stairs to subway along Union Avenue; Building C - 4 inch thick concrete slab; and Building D - A 4 inch thick concrete slab.	Inspect for cracks, openings or other damage, and determine if repair/replacement is required.	Annual

**Note: this table will be revised as the cover system components change during site development activities.*

A complete list of inspection activities is provided in the Inspection Checklist, provided in Appendix D - Site Management Forms. If any penetrations, holes, cracks or other

disturbances are noted within the composite cover system repairs must be made immediately under a Corrective Measures Work Plan.

5.0 PERIODIC ASSESSMENTS/EVALUATIONS

5.1 Climate Change Vulnerability Assessment

Increases in both the severity and frequency of storms/weather events, an increase in sea level elevations along with accompanying flooding impacts, shifting precipitation patterns and wide temperature fluctuation, resulting from global climactic change and instability, have the potential to significantly impact the performance, effectiveness and protectiveness of a given site and associated remedial systems. Vulnerability assessments provide information so that the site and associated remedial systems are prepared for the impacts of the increasing frequency and intensity of severe storms/weather events and associated flooding.

This section provides a summary of vulnerability assessments that will be conducted for the site during periodic assessments, and briefly summarizes the vulnerability of the site and/or engineering controls to severe storms/weather events and associated flooding.

The Site is not located within a designated flood zone area. The Site is served by the NYC Municipal sewer system and the completed buildings will meet all NYC building codes for drainage.

5.2 Soil Vapor Intrusion Evaluation

A soil vapor intrusion evaluation must be performed upon a change in use of the property that will result in initial occupancy of a new building. The breadth of this evaluation will be determined based upon discussion with the NYSDEC Project manager and NYSDOH. Based upon these discussion and agency requirements, a work plan may need to be developed that requires that sampling be performed upon a change in use or as deemed necessary by the aforementioned entities. Upon completion of the evaluation, if an action is required, any actions taken or to be taken must be reflected in an updated SMP.

Track 1 Portion of Site

During the RI, soil vapor samples were retrieved at a depth of 4 ft below grade and groundwater was encountered between 7 to 9 ft below grade. For remedial purposes and for construction of the cellar slab at a depth of approximately 12 ft below grade, the entire

Track 1 portion of the Site was excavated to a depth of at least 12 ft below grade (Track 1 Unrestricted Use SCOs achieved). There are no vapor intrusion concerns for the Track 1 portion of the Site because the cellar slab was installed approximately 5 feet below the water table and eliminating the potential for remaining soil vapor.

Track 4 Portion of Site

During the RI, soil vapor samples were collected from the Track 4 portion of Site from a depth of approximately 4 ft. As part of the Site remediation, the Track 4 portion of the Site was excavated to a depth at least 4 ft below grade. As part of construction, a passive sub-slab depressurization system was installed below both Building C and Building D, and a 20-mil vapor barrier was installed below the building slab of both Building C and Building D to mitigate against the potential for soil vapor intrusion. A separate work plan will be submitted to the DEC for the post-construction soil vapor intrusion evaluation. The results of the post-construction soil vapor intrusion to be performed within Building C and Building D prior to initial occupancy will determine if the passive sub-slab depressurization system needs to be converted to an active sub-slab depressurization system.

5.3 Green Remediation Evaluation

NYSDEC's DER-31 Green Remediation requires that green remediation concepts and techniques be considered during all stages of the remedial program including site management, with the goal of improving the sustainability of the cleanup and summarizing the net environmental benefit of any implemented green technology. This section of the SMP provides a summary of any green remediation evaluations to be completed for the site during site management, and as reported in the Periodic Review Report (PRR).

5.3.1 Timing of Green Remediation Evaluations

For major remedial system components, green remediation evaluations and corresponding modifications will be undertaken as part of a formal Remedial System Optimization (RSO), or at any time that the Project Manager feels appropriate, e.g. during significant maintenance events or in conjunction with storm recovery activities.

Modifications resulting from green remediation evaluations will be routinely implemented and scheduled to occur during planned/routine operation and maintenance activities. Reporting of these modifications will be presented in the PRR.

Transportation to and from the Site and use of consumables in relation to visiting the Site in order to inspect the site cover system have direct and/or inherent energy costs. The schedule and/or means of these periodic activities have been prepared so that these tasks can be accomplished in a manner that does not impact remedy protectiveness but reduces expenditure of energy or resources.

As part of this effort, consideration shall be given to:

- Reduced site visits;
- Coordination/consolidation of activities to maximize foreman/labor time; and
- Use of mass transit for site visits, where available.

6.0 REPORTING REQUIREMENTS

6.1 Site Management Reports

All site management inspection, maintenance and monitoring events will be recorded on the appropriate site management forms provided in Appendix D. These forms are subject to NYSDEC revision.

All applicable inspection forms and other records, including media sampling data and system maintenance reports, generated for the site during the reporting period will be provided in electronic format to the NYSDEC in accordance with the requirements of Table 33 and Table 34 and summarized in the Periodic Review Report.

Table 34: Schedule of Monitoring/Inspection Reports

Task/Report	Reporting Frequency*
Site Inspection	Annually, and as needed.
Periodic Review Report	Annually, or as otherwise determined by the Department

* The frequency of events will be conducted as specified until otherwise approved by the NYSDEC.

All interim monitoring/inspections reports will include, at a minimum:

- Date of event or reporting period;
- Name, company, and position of person(s) conducting monitoring/inspection activities;
- Description of the activities performed;
- Where appropriate, color photographs or sketches showing the approximate location of any problems or incidents noted (included either on the checklist/form or on an attached sheet);
- Type of samples collected (e.g., sub-slab vapor, indoor air, outdoor air, etc);
- Copies of all field forms completed (e.g., well sampling logs, chain-of-custody documentation, etc.);
- Sampling results in comparison to appropriate standards/criteria;
- A figure illustrating sample type and sampling locations;
- Copies of all laboratory data sheets and the required laboratory data deliverables

required for all points sampled (to be submitted electronically in the NYSDEC-identified format);

- Any observations, conclusions, or recommendations; and
- A determination as to whether contaminant conditions have changed since the last reporting event.

Routine maintenance event reporting forms will include, at a minimum:

- Date of event;
- Name, company, and position of person(s) conducting maintenance activities;
- Description of maintenance activities performed;
- Any modifications to the system;
- Where appropriate, color photographs or sketches showing the approximate location of any problems or incidents noted (included either on the checklist/form or on an attached sheet); and,
- Other documentation such as copies of invoices for maintenance work, receipts for replacement equipment, etc., (attached to the checklist/form).

Non-routine maintenance event reporting forms will include, at a minimum:

- Date of event;
- Name, company, and position of person(s) conducting non-routine maintenance/repair activities;
- Description of non-routine activities performed;
- Where appropriate, color photographs or sketches showing the approximate location of any problems or incidents (included either on the form or on an attached sheet); and
- Other documentation such as copies of invoices for repair work, receipts for replacement equipment, etc. (attached to the checklist/form).

Data will be reported in digital format as determined by the NYSDEC. Currently, data is to be supplied electronically and submitted to the NYSDEC EQuIS™ database in accordance with the requirements found at this link:
http://www.dec.ny.gov/chemical/62440.html.

6.2 Periodic Review Report

A Periodic Review Report (PRR) will be submitted to the Department beginning sixteen (16) months after the Certificate of Completion is issued. After submittal of the initial Periodic Review Report, the next PRR shall be submitted annually to the Department or at another frequency as may be required by the Department. In the event that the Track 4 portion of the Site is subdivided into separate parcels with different ownership, a single Periodic Review Report will be prepared that addresses all Track 4 portions of the Site described in Appendix A - Environmental Easement. The report will be prepared in accordance with NYSDEC's DER-10 and submitted within 30 days of the end of each certification period. Media sampling results will also be incorporated into the Periodic Review Report. The report will include:

- Identification, assessment and certification of all ECs/ICs required by the remedy for the site.
- Results of the required annual site inspections and severe condition inspections, if applicable.
- All applicable site management forms and other records generated for the Site during the reporting period in the NYSDEC-approved electronic format, if not previously submitted.
- A summary of any discharge monitoring data and/or information generated during the reporting period, with comments and conclusions.
- Data summary tables and graphical representations of contaminants of concern by media (groundwater, soil vapor, etc.), which include a listing of all compounds analyzed, along with the applicable standards, with all exceedances highlighted. These will include a presentation of past data as part of an evaluation of contaminant concentration trends.
- Results of all analyses, copies of all laboratory data sheets, and the required laboratory data deliverables for all samples collected during the reporting period will be submitted in digital format as determined by the NYSDEC. Currently, data is supplied electronically and submitted to the NYSDEC EQuIS^{TM} database in accordance with the requirements found at this link:
  http://www.dec.ny.gov/chemical/62440.html.

- A site evaluation, which includes the following:
  - The compliance of the remedy with the requirements of the site-specific RAWP and Decision Document;
  - The operation and the effectiveness of all engineering controls, including identification of any needed repairs or modifications;
  - Any new conclusions or observations regarding Site contamination based on inspections;
  - Recommendations regarding any necessary changes to the remedy; and
  - The overall performance and effectiveness of the remedy.

6.2.1 Certification of Institutional and Engineering Controls

Following the last inspection of the reporting period, a Professional Engineer licensed to practice in New York State will prepare, and include in the Periodic Review Report, the following certification as per the requirements of NYSDEC DER-10:

"*For each institutional or engineering control identified for the site, I certify that all of the following statements are true:*

- *The inspection of the site to confirm the effectiveness of the institutional and engineering controls required by the remedial program was performed under my direction;*
- *The institutional control and/or engineering control employed at this site is unchanged from the date the control was put in place, or last approved by the Department;*
- *Nothing has occurred that would impair the ability of the control to protect the public health and environment;*
- *Nothing has occurred that would constitute a violation or failure to comply with any site management plan for this control;*
- *Access to the site will continue to be provided to the Department to evaluate the remedy, including access to evaluate the continued maintenance of this control;*

- *If a financial assurance mechanism is required under the oversight document for the site, the mechanism remains valid and sufficient for the intended purpose under the document;*
- *Use of the site is compliant with the environmental easement;*
- *The engineering control systems are performing as designed and are effective;*
- *To the best of my knowledge and belief, the work and conclusions described in this certification are in accordance with the requirements of the site remedial program and generally accepted engineering practices; and*
- *The information presented in this report is accurate and complete.*

I certify that all information and statements in this certification form are true. I understand that a false statement made herein is punishable as a Class "A" misdemeanor, pursuant to Section 210.45 of the Penal Law. I, [name], of [business address], am certifying as [Owner/Remedial Party or Owner's/Remedial Party's Designated Site Representative] (and if the site consists of multiple properties): *[I have been authorized and designated by all site owners/remedial parties to sign this certification] for the site."*

If the remedy requires only an institutional control, include the following:

At the end of each certifying period, as determined by the NYSDEC, the following certification will be provided to the Department:

"For each institutional identified for the site, I certify that all of the following statements are true:

- *The Institutional Control employed at this site is unchanged from the date the control was put in place, or last approved by the Department;*
- *Nothing has occurred that would impair the ability of the control to protect the public health and environment;*
- *Nothing has occurred that would constitute a violation or failure to comply with any site management plan for this control;*
- *Access to the site will continue to be provided to the Department to evaluate the remedy, including access to evaluate the continued maintenance of this control;*

- *If a financial assurance mechanism is required under the oversight document for the site, the mechanism remains valid and sufficient for the intended purpose under the document;*
- *Use of the site is compliant with the environmental easement.*
- *The information presented in this report is accurate and complete.*

I certify that all information and statements in this certification form are true. I understand that a false statement made herein is punishable as a Class "A" misdemeanor, pursuant to Section 210.45 of the Penal Law. I, [name], of [business address], am certifying as [Owner or Owner's Designated Site Representative] (and if the site consists of multiple properties): [and I have been authorized and designated by all site owners to sign this certification] for the site."

For BCP projects which the Department has determined do not represent a significant threat to public health or the environment, but where contaminants in groundwater exceed drinking water standards, the following should also be included for both IC/EC and IC scenarios listed above:

- *No new information has come to my attention, including groundwater monitoring data from wells located at the site boundary, if any, to indicate that the assumptions made in the qualitative exposure assessment of off-site contamination are no longer valid; and*

For BCP projects, every five years the following certification will be added:

- *The assumptions made in the qualitative exposure assessment remain valid.*

The signed certification will be included in the Periodic Review Report.

The Periodic Review Report will be submitted, in electronic format, to the NYSDEC Central Office, Regional Office in which the site is located and the NYSDOH Bureau of Environmental Exposure Investigation. The Periodic Review Report may need to be submitted in hard-copy format, as requested by the NYSDEC project manager.

6.3 Corrective Measures Work Plan

If any component of the remedy is found to have failed, or if the periodic certification cannot be provided due to the failure of an institutional or engineering control, a Corrective Measures Work Plan will be submitted to the NYSDEC for approval. This plan will explain the failure and provide the details and schedule for performing work necessary to correct the failure. Unless an emergency condition exists, no work will be performed pursuant to the Corrective Measures Work Plan until it has been approved by the NYSDEC.

7.0 REFERENCES

Former Pfizer Site A - BCP No. C224284. Remedial Investigation Report, prepared by EBC, dated July 2019, Revised December 10, 2019.

Former Pfizer Site A - BCP No. C224284. Remedial Action Work Plan, prepared by AMC Engineering, dated January 2020.

Decision Document, Former Pfizer Site A, Brownfield Cleanup Program Site No. C224191, prepared by NYSDEC Division of Environmental Remediation, dated January 2020.

Former Pfizer Site A - BCP No. C224284. Remedial Action Work Plan Amendment, prepared by AMC Engineering, dated February 17, 2021.

Explanation of Significant Difference, Former Pfizer Site A, Brownfield Cleanup Program Site No. C224191, prepared by NYSDEC Division of Environmental Remediation, dated April 2, 2021.

6NYCRR Part 375, Environmental Remediation Programs. December 14, 2006.

NYSDEC DER-10 – "Technical Guidance for Site Investigation and Remediation".

NYSDEC, 1998. Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations Division of Water Technical and Operational Guidance Series (TOGS) 1.1.1. June 1998 (April 2000 addendum).

TABLES

TABLE 1C
Soil Cleanup Objectives

Contaminant	CAS Number	Protection of Public Health				Protection of Ecological Resources	Protection of Ground-water
		Residential	Restricted-Residential	Commercial	Industrial		
METALS							
Arsenic	7440-38 -2	16[f]	16[f]	16[f]	16[f]	13[f]	16[f]
Barium	7440-39 -3	350[f]	400	400	10,000 [d]	433	820
Beryllium	7440-41 -7	14	72	590	2,700	10	47
Cadmium	7440-43 -9	2.5[f]	4.3	9.3	60	4	7.5
Chromium, hexavalent [h]	18540-29-9	22	110	400	800	1[e]	19
Chromium, trivalent[h]	16065-83-1	36	180	1,500	6,800	41	NS
Copper	7440-50 -8	270	270	270	10,000 [d]	50	1,720
Total Cyanide [h]		27	27	27	10,000 [d]	NS	40
Lead	7439-92 -1	400	400	1,000	3,900	63[f]	450
Manganese	7439-96 -5	2,000[f]	2,000[f]	10,000 [d]	10,000 [d]	1600[f]	2,000[f]
Total Mercury		0.81[j]	0.81[j]	2.8[j]	5.7[j]	0.18[f]	0.73
Nickel	7440-02 -0	140	310	310	10,000 [d]	30	130
Selenium	7782-49 -2	36	180	1,500	6,800	3.9[f]	4[f]
Silver	7440-22 -4	36	180	1,500	6,800	2	8.3
Zinc	7440-66 -6	2200	10,000 [d]	10,000 [d]	10,000 [d]	109[f]	2,480
PESTICIDES / PCBs							
2,4,5-TP Acid (Silvex)	93-72-1	58	100[a]	500[b]	1,000[c]	NS	3.8
4,4'-DDE	72-55-9	1.8	8.9	62	120	0.0033 [e]	17
4,4'-DDT	50-29-3	1.7	7.9	47	94	0.0033 [e]	136
4,4'-DDD	72-54-8	2.6	13	92	180	0.0033 [e]	14
Aldrin	309-00-2	0.019	0.097	0.68	1.4	0.14	0.19
alpha-BHC	319-84-6	0.097	0.48	3.4	6.8	0.04[g]	0.02
beta-BHC	319-85-7	0.072	0.36	3	14	0.6	0.09
Chlordane (alpha)	5103-71 -9	0.91	4.2	24	47	1.3	2.9
delta-BHC	319-86-8	100[a]	100[a]	500[b]	1,000[c]	0.04[g]	0.25
Dibenzofuran	132-64-9	14	59	350	1,000[c]	NS	210
Dieldrin	60-57-1	0.039	0.2	1.4	2.8	0.006	0.1
Endosulfan I	959-98-8	4.8[i]	24[i]	200[i]	920[i]	NS	102
Endosulfan II	33213-65-9	4.8[i]	24[i]	200[i]	920[i]	NS	102
Endosulfan sulfate	1031-07 -8	4.8[i]	24[i]	200[i]	920[i]	NS	1,000[c]
Endrin	72-20-8	2.2	11	89	410	0.014	0.06
Heptachlor	76-44-8	0.42	2.1	15	29	0.14	0.38
Lindane	58-89-9	0.28	1.3	9.2	23	6	0.1
Polychlorinated biphenyls	1336-36 -3	1	1	1	25	1	3.2
SEMI-VOLATILES							
Acenaphthene	83-32-9	100[a]	100[a]	500[b]	1,000[c]	20	98
Acenapthylene	208-96-8	100[a]	100[a]	500[b]	1,000[c]	NS	107
Anthracene	120-12-7	100[a]	100[a]	500[b]	1,000[c]	NS	1,000[c]
Benz(a)anthracene	56-55-3	1[f]	1[f]	5.6	11	NS	1[f]
Benzo(a)pyrene	50-32-8	1[f]	1[f]	1[f]	1.1	2.6	22
Benzo(b) fluoranthene	205-99-2	1[f]	1[f]	5.6	11	NS	1.7
Benzo(g,h,i) perylene	191-24-2	100[a]	100[a]	500[b]	1,000[c]	NS	1,000[c]
Benzo(k) fluoranthene	207-08-9	1	3.9	56	110	NS	1.7
Chrysene	218-01-9	1[f]	3.9	56	110	NS	1[f]
Dibenz(a,h) anthracene	53-70-3	0.33[e]	0.33[e]	0.56	1.1	NS	1,000[c]
Fluoranthene	206-44-0	100[a]	100[a]	500[b]	1,000[c]	NS	1,000[c]
Fluorene	86-73-7	100[a]	100[a]	500[b]	1,000[c]	30	386
Indeno(1,2,3-cd) pyrene	193-39-5	0.5[f]	0.5[f]	5.6	11	NS	8.2
m-Cresol	108-39-4	100[a]	100[a]	500[b]	1,000[c]	NS	0.33[e]
Naphthalene	91-20-3	100[a]	100[a]	500[b]	1,000[c]	NS	12
o-Cresol	95-48-7	100[a]	100[a]	500[b]	1,000[c]	NS	0.33[e]
p-Cresol	106-44-5	34	100[a]	500[b]	1,000[c]	NS	0.33[e]
Pentachlorophenol	87-86-5	2.4	6.7	6.7	55	0.8[e]	0.8[e]
Phenanthrene	85-01-8	100[a]	100[a]	500[b]	1,000[c]	NS	1,000[c]
Phenol	108-95-2	100[a]	100[a]	500[b]	1,000[c]	30	0.33[e]
Pyrene	129-00-0	100[a]	100[a]	500[b]	1,000[c]	NS	1,000[c]

TABLE 1C
Soil Cleanup Objectives

Contaminant	CAS Number	Protection of Public Health				Protection of Ecological Resources	Protection of Ground-water
		Residential	Restricted-Residential	Commercial	Industrial		
VOLATILES							
1,1,1-Trichloroethane	71-55-6	100[a]	100[a]	500[b]	1,000[c]	NS	0.68
1,1-Dichloroethane	75-34-3	19	26	240	480	NS	0.27
1,1-Dichloroethene	75-35-4	100[a]	100[a]	500[b]	1,000[c]	NS	0.33
1,2-Dichlorobenzene	95-50-1	100[a]	100[a]	500[b]	1,000[c]	NS	1.1
1,2-Dichloroethane	107-06-2	2.3	3.1	30	60	10	0.02[f]
cis-1,2-Dichloroethene	156-59-2	59	100[a]	500[b]	1,000[c]	NS	0.25
trans-1,2-Dichloroethene	156-60-5	100[a]	100[a]	500[b]	1,000[c]	NS	0.19
1,3-Dichlorobenzene	541-73-1	17	49	280	560	NS	2.4
1,4-Dichlorobenzene	106-46-7	9.8	13	130	250	20	1.8
1,4-Dioxane	123-91-1	9.8	13	130	250	0.1[e]	0.1[e]
Acetone	67-64-1	100[a]	100[b]	500[b]	1,000[c]	2.2	0.05
Benzene	71-43-2	2.9	4.8	44	89	70	0.06
Butylbenzene	104-51-8	100[a]	100[a]	500[b]	1,000[c]	NS	12
Carbon tetrachloride	56-23-5	1.4	2.4	22	44	NS	0.76
Chlorobenzene	108-90-7	100[a]	100[a]	500[b]	1,000[c]	40	1.1
Chloroform	67-66-3	10	49	350	700	12	0.37
Ethylbenzene	100-41-4	30	41	390	780	NS	1
Hexachlorobenzene	118-74-1	0.33[e]	1.2	6	12	NS	3.2
Methyl ethyl ketone	78-93-3	100[a]	100[a]	500[b]	1,000[c]	100[a]	0.12
Methyl tert-butyl ether	1634-04 -4	62	100[a]	500[b]	1,000[c]	NS	0.93
Methylene chloride	75-09-2	51	100[a]	500[b]	1,000[c]	12	0.05
n-Propylbenzene	103-65-1	100[a]	100[a]	500[b]	1,000[c]	NS	3.9
sec-Butylbenzene	135-98-8	100[a]	100[a]	500[b]	1,000[c]	NS	11
tert-Butylbenzene	98-06-6	100[a]	100[a]	500[b]	1,000[c]	NS	5.9
Tetrachloroethene	127-18-4	5.5	19	150	300	2	1.3
Toluene	108-88-3	100[a]	100[a]	500[b]	1,000[c]	36	0.7
Trichloroethene	79-01-6	10	21	200	400	2	0.47
1,2,4-Trimethylbenzene	95-63-6	47	52	190	380	NS	3.6
1,3,5-Trimethylbenzene	108-67-8	47	52	190	380	NS	8.4
Vinyl chloride	75-01-4	0.21	0.9	13	27	NS	0.02
Xylene (mixed)	1330-20 -7	100[a]	100[a]	500[b]	1,000[c]	0.26	1.6

All soil cleanup objectives (SCOs) are in parts per million (ppm). NS=Not specified. See Technical Support Document (TSD). Footnotes

a The SCOs for residential, restricted-residential and ecological resources use were capped at a maximum value of 100 ppm. See TSD section 9.3.

b The SCOs for commercial use were capped at a maximum value of 500 ppm. See TSD section 9.3.

c The SCOs for industrial use and the protection of groundwater were capped at a maximum value of 1000 ppm. See TSD section 9.3.

d The SCOs for metals were capped at a maximum value of 10,000 ppm. See TSD section 9.3.

e For constituents where the calculated SCO was lower than the contract required quantitation limit (CRQL), the CRQL is used as the SCO value.

Table 2
Former Pfizer Site A - C224284
243-271 Wallabout Street,
Broklyn, New York
Remaining Soil Sample Exceedances

COMPOUND	Range in Exceedances	Frequency of Detection	ROUX 2005 Laboratory Results						EBC 2019 Laboratory Results		
			DS-1	DS-2	DS-3	DS-4	SB-3	SB-7	EBC9	EBC26	EBC27
			5-7'	5-7'	5-7'	5-7'	5-7'	5-7'	6-8'	6-8'	6-8'
			10/28/2005	10/29/2005	10/30/2005	10/31/2005	10/27/2005	10/26/2005	6/5/2018	6/4/2019	6/4/2019
Sample Results in ug/kg											
Acetone	63	1	-	-	-	-	-	-	-	-	**63**
Methyl Ethyl Ketone (2-Butanone)	370	1	-	-	-	-	-	**370**	-	-	-
Sample Results in ug/kg											
Benz(a)anthracene	1200-6800	14	-	-	-	-	-	-	**1,400**	-	-
Benzo(a)pyrene	1400-6200	11	-	-	-	-	-	-	**1,900**	-	-
Benzo(b)fluoranthene	1100-5700	11	-	-	-	-	-	-	**1,500**	-	-
Benzo(k)fluoranthene	970-4600	12	-	-	-	-	-	-	**1,600**	-	-
Chrysene	1200-6000	14	-	-	-	-	-	-	**1,600**	-	-
Dibenz(a,h)anthracene	340-930	10	-	-	-	-	-	-	**380**	-	-
Fluoranthene	120,000	0	-	-	-	-	-	-	-	-	-
Indeno(1,2,3-cd)pyrene	550-4000	13	-	-	-	-	-	-	**1,800**	-	-
Phenanthrene	120,000	0	-	-	-	-	-	-	-	-	-
Sample Results in ug/kg											
4,4' -DDE	13	1	-	-	-	-	-	-	-	-	-
4,4' -DDT	4.1-10	5	-	-	-	-	-	-	-	-	-
Sample Results in mg/kg											
Arsenic	15.1-21.5	6	-	-	-	-	-	-	-	-	-
Barium	471-1010	7	-	-	-	-	-	-	-	-	-
Cadmium	2.54	0	-	-	-	-	-	-	-	-	-
Chromium	0-0	0	-	-	-	-	-	-	-	-	-
Chromium, Hex	3.87	0	-	-	-	-	-	-	-	-	-
Copper	51.4-207	14	-	-	-	-	-	-	-	**106**	-
Lead	86.1-833	24	**399**	**316**	**157**	**168**	**164**	-	**796**	**201**	**86.1**
Mercury	0.39-22.2	22	-	-	-	-	**0.83**	-	**1.11**	**1.15**	**4.53**
Nickel	30.1-30.7	2	-	-	-	-	-	-	-	-	-
Zinc	110-456	14	-	-	-	-	-	-	-	**110**	**119**

Notes:

* - 6 NYCRR Part 375-6 Remedial Program Soil Cleanup Objectives

RL - Reporting Limit

A - Concentration exceeds the instrument calibration range or below the reporting limit

B - Analyte detected in laboratory blank

J - Estimated Value

U - Indicates that the compound was analyzed but not detected

Bold/highlighted- Indicated exceedance of the NYSDEC UUSCO Guidance Value

Bold/highlighted- Indicated exceedance of the NYSDEC RRSCO Guidance Value

Bold/highlighted- Indicated exceedance of the NYSDEC RCSCO Guidance Value

Table 2
Former Pfizer Site A - C224284
243-271 Wallabout Street,
Broklyn, New York
Remaining Soil Sample Exceedances

COMPOUND	Range in Exceedances	Frequency of Detection	EBC Endpoint Samples										
			EP10	EP11	EP12	EP13	EP19	EP20	EP39	EP40	EP41	EP42	EP44
			4'	4.5'	4'	4'	4.5'	4'	5'	5'	4'	4'	5'
			5/5/2021	5/14/2021	5/11/2021	5/6/2021	5/14/2021	5/10/2021	6/4/2021	6/4/2021	5/6/2021	5/6/2021	6/9/2021
Sample Results in ug/kg													
Acetone	63	1	-	-	-	-	-	-	-	-	-	-	-
Methyl Ethyl Ketone (2-Butanone)	370	1	-	-	-	-	-	-	-	-	-	-	-
Sample Results in ug/kg													
Benz(a)anthracene	1200-6800	14	**1,300**	-	-	**3,300**	-	**1,700**	-	**1,200**	**2,400**	-	**5,900**
Benzo(a)pyrene	1400-6200	11	-	-	-	**2,900**	-	**1,400**	-	-	**2,400**	-	**5,400**
Benzo(b)fluoranthene	1100-5700	11	-	-	-	**2,700**	-	**1,100**	-	-	**2,200**	-	**4,300**
Benzo(k)fluoranthene	970-4600	12	-	-	-	**2,300**	-	**1,200**	-	**970**	**2,100**	-	**4,300**
Chrysene	1200-6000	14	**1,300**	-	-	**3,200**	-	**1,600**	-	**1,200**	**2,400**	-	**5,300**
Dibenz(a,h)anthracene	340-930	10	-	-	-	**490**	-	-	-	-	**430**	-	**760**
Fluoranthene	120,000	0	-	-	-	-	-	-	-	-	-	-	-
Indeno(1,2,3-cd)pyrene	550-4000	13	-	-	-	**2,000**	-	**980**	**550**	**690**	**1,800**	-	**3,900**
Phenanthrene	120,000	0	-	-	-	-	-	-	-	-	-	-	-
Sample Results in ug/kg													
4,4' -DDE	13	1	-	-	-	**13**	-	-	-	-	-	-	-
4,4' -DDT	4.1-10	5	-	-	-	**10**	-	-	-	-	-	-	**4.9**
Sample Results in mg/kg													
Arsenic	15.1-21.5	6	**17.6**	-	-	-	-	-	-	-	-	-	**17.8**
Barium	471-1010	7	**1,010**	-	-	-	-	-	-	-	-	-	-
Cadmium	2.54	0	-	-	-	-	-	-	-	-	-	-	-
Chromium	0-0	0	-	-	-	-	-	-	-	-	-	-	-
Chromium, Hex	3.87	0	-	-	-	-	-	-	-	-	-	-	-
Copper	51.4-207	14	-	-	**51.4**	**66.7**	-	**207**	**77.6**	**59.1**	**79.5**	-	**89.6**
Lead	86.1-833	24	**820**	-	**137**	**287**	**93.6**	**438**	**389**	**193**	**324**	-	**307**
Mercury	0.39-22.2	22	**1.58**	**0.39**	**2.49**	**22.2**	**1.2**	**14.9**	**5.71**	**3.74**	**5.7**	-	**4.87**
Nickel	30.1-30.7	2	-	-	-	-	-	-	-	-	-	**30.7**	-
Zinc	110-456	14	-	-	-	**283**	-	**251**	**171**	**167**	**260**	-	**234**

Notes:

* - 6 NYCRR Part 375-6 Remedial Program Soil Cleanup Objectives

RL - Reporting Limit

A - Concentration exceeds the instrument calibration range or below the reporting limit

B - Analyte detected in laboratory blank

J - Estimated Value

U - Indicates that the compound was analyzed but not detected

Bold/highlighted- Indicated exceedance of the NYSDEC UUSCO Guidance Value

Bold/highlighted- Indicated exceedance of the NYSDEC RRSCO Guidance Value

Bold/highlighted- Indicated exceedance of the NYSDEC RCSCO Guidance Value

Table 2
Former Pfizer Site A - C224284
243-271 Wallabout Street,
Broklyn, New York
Remaining Soil Sample Exceedances

COMPOUND	Range in Exceedances	Frequency of Detection	EBC Endpoint Samples								
			EP45	EP64	EP65	EP66	Soil Duplicate	Soil Duplicate	Soil Duplicate	Soil Duplicate	Soil Duplicate
			5'	5'	5.5'	5.5'	EP10	EP11	EP44	EP45	EP66
			6/9/2021	6/9/2021	6/22/2021	6/28/2021	5/5/2021	5/14/2021	6/9/2021	6/9/2021	6/28/2021
Sample Results in ug/kg											
Acetone	63	1	-	-	-	-	-	-	-	-	-
Methyl Ethyl Ketone (2-Butanone)	370	1	-	-	-	-	-	-	-	-	-
Sample Results in ug/kg											
Benz(a)anthracene	1200-6800	14	**6,800**	**2,300**	-	**6,200**	**1,400**	-	**3,600**	**6,700**	**4,000**
Benzo(a)pyrene	1400-6200	11	**6,200**	**2,200**	-	**5,600**	-	-	**3,700**	**5,700**	**3,700**
Benzo(b)fluoranthene	1100-5700	11	**4,700**	**1,700**	-	**5,700**	-	-	**2,800**	**4,600**	**3,400**
Benzo(k)fluoranthene	970-4600	12	**4,600**	**1,700**	-	**4,100**	-	-	**3,000**	**4,600**	**3,000**
Chrysene	1200-6000	14	**6,000**	**2,100**	-	**5,800**	**1,300**	-	**3,100**	**5,600**	**3,600**
Dibenz(a,h)anthracene	340-930	10	**910**	**340**	-	**810**	-	-	**580**	**930**	**500**
Fluoranthene	120,000	0	-	-	-	-	-	-	-	-	-
Indeno(1,2,3-cd)pyrene	550-4000	13	**4,000**	**1,500**	-	**3,200**	-	-	**2,500**	**3,700**	**2,100**
Phenanthrene	120,000	0	-	-	-	-	-	-	-	-	-
Sample Results in ug/kg											
4,4' -DDE	13	1	-	-	-	-	-	-	-	-	-
4,4' -DDT	4.1-10	5	**7.8**	**8**	-	-	-	-	-	**4.1**	-
Sample Results in mg/kg											
Arsenic	15.1-21.5	6	**15.1**	**16.4**	-	-	**17.1**	-	**21.5**	-	-
Barium	471-1010	7	**471**	**494**	-	**824**	**947**	-	-	**619**	**747**
Cadmium	2.54	0	-	-	-	-	-	-	-	-	-
Chromium	0-0	0	-	-	-	-	-	-	-	-	-
Chromium, Hex	3.87	0	-	-	-	-	-	-	-	-	-
Copper	51.4-207	14	**91.6**	**80.3**	-	**72.6**	-	-	**77.4**	**91.5**	**70.2**
Lead	86.1-833	24	**508**	**371**	-	**588**	**833**	-	**384**	**587**	**570**
Mercury	0.39-22.2	22	**2.65**	**4.18**	-	**0.77**	**2.13**	**0.57**	**5.61**	**2.83**	**1.25**
Nickel	30.1-30.7	2	-	-	**30.1**	-	-	-	-	-	-
Zinc	110-456	14	**372**	**352**	-	**370**	-	-	**247**	**339**	**456**

Notes:

* - 6 NYCRR Part 375-6 Remedial Program Soil Cleanup Objectives

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A - Concentration exceeds the instrument calibration range or below the reporting limit

B - Analyte detected in laboratory blank

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Bold/highlighted- Indicated exceedance of the NYSDEC RRSCO Guidance Value

Bold/highlighted- Indicated exceedance of the NYSDEC RCSCO Guidance Value

Table 3A
Former Pfizer Site A - C224284
243-271 Wallabout Street,
Brooklyn, New York
Laboratory Results - Soil Samples
Volatile Organic Compounds

COMPOUND	NYSDEC Part 375.6 Unrestricted Use Soil Cleanup Objectives*	NYDEC Part 375.6 Restricted Residential Soil Cleanup Objectives*	NYDEC Part 375.6 Restricted Commercial Soil Cleanup Objectives*	ROUX 2005 Laboratory Results						
				AF-8			SB-1		SB-2	SB-3
				1-3'	3-5'	5-7'	0-2'	6-8'	6-7'	5-7'
				10/24/2005	10/24/2005	10/24/2005	10/26/2005	10/26/2005	10/26/2005	10/26/2005
				µg/Kg	µg/Kg	µg/Kg	µg/Kg	µg/Kg	µg/Kg	µg/Kg
				Result	Result	Result	Result	Result	Result	Result
1,1,1-Trichloroethane	680	100,000	500,000	6.6U	5.6U	5.7U	5.5U	5.9U	6.3U	6.3U
1,1,2,2-Tetrachloroethane				6.6U	5.6U	5.7U	5.5U	5.9U	6.3U	6.3U
1,1,2-Trichloroethane				6.6U	5.6U	5.7U	5.5U	5.9U	6.3U	6.3U
1,1-Dichloroethane	270	26,000	240,000	6.6U	5.6U	5.7U	5.5U	5.9U	6.3U	6.3U
1,1-Dichloroethene	330	100,000	500,000	6.6U	5.6U	5.7U	5.5U	5.9U	6.3U	6.3U
1,1-Dichloropropene				6.6U	5.6U	5.7U	5.5U	5.9U	6.3U	6.3U
1,2-Dichloropropane				6.6U	5.6U	5.7U	5.5U	5.9U	6.3U	6.3U
2-Hexanone (Methyl Butyl Ketone)				13U	11U	11U	11U	12U	13U	13U
4-Methyl-2-Pentanone				13U	11U	11U	11U	12U	13U	13U
Acetone	50	100,000	500,000	**3.1JB**	**3.9JB**	**40B**	22U	5.7U	**70B**	**9.7JB**
Benzene	60	4,800	44,000	6.6U	5.6U	5.7U	5.5U	5.9U	6.3U	6.3U
Bromodichloromethane				6.6U	5.6U	5.7U	5.5U	5.9U	6.3U	6.3U
Bromoform				6.6U	5.6U	5.7U	5.5U	5.9U	6.3U	6.3U
Bromomethane				6.6U	5.6U	5.7U	5.5U	5.9U	6.3U	6.3U
Carbon Disulfide				6.6U	5.6U	5.7U	5.5U	5.9U	**2.9J**	6.3U
Carbon tetrachloride	760	2,400	22,000	6.6U	5.6U	5.7U	5.5U	5.9U	6.3U	6.3U
Chlorobenzene	1,100	100,000	500,000	6.6U	5.6U	5.7U	5.5U	5.9U	6.3U	6.3U
Chloroethane				6.6U	5.6U	5.7U	5.5U	5.9U	6.3U	6.3U
Chloroform	370	49,000	350,000	6.6U	5.6U	5.7U	5.5U	5.9U	6.3U	6.3U
Chloromethane				6.6U	5.6U	5.7U	5.5U	5.9U	6.3U	6.3U
cis-1,2-Dichloroethene	250	100,000	500,000	6.6U	5.6U	5.7U	5.5U	5.9U	6.3U	6.3U
cis-1,3-Dichloropropene				6.6U	5.6U	5.7U	5.5U	5.9U	6.3U	6.3U
Dibromochloromethane				6.6U	5.6U	5.7U	5.5U	5.9U	6.3U	6.3U
Ethylbenzene	1,000	41,000	390,000	**8.4**	5.6U	5.7U	5.5U	5.9U	6.3U	6.3U
Methyl Ethyl Ketone (2-Butanone)	120	100,000	500,000	13U	11U	**22**	11U	12U	13U	**230**
Methylene chloride	50	100,000	500,000	**14B**	**8.9JB**	**11JB**	**4.9JB**	**4.3J**	**4.5J**	**6.8J**
Styrene				6.6U	5.6U	5.7U	5.5U	5.9U	6.3U	6.3U
Tetrachloroethene	1,300	19,000	150,000	6.6U	5.6U	5.7U	5.5U	5.9U	6.3U	6.3U
Toluene	700	100,000	500,000	6.6U	5.6U	5.7U	5.5U	5.9U	6.3U	6.3U
Total Xylenes				**42**	5.6U	5.7U	5.5U	5.9U	6.3U	6.3U
trans-1,2-Dichloroethene	190	100,000	500,000	6.6U	5.6U	5.7U	5.5U	5.9U	6.3U	6.3U
trans-1,3-Dichloropropene				6.6U	5.6U	5.7U	5.5U	5.9U	6.3U	6.3U
Trichloroethene	470	21,000	200,000	6.6U	5.6U	5.7U	5.5U	5.9U	6.3U	6.3U
Vinyl Chloride	20	900	13,000	6.6U	5.6U	5.7U	5.5U	5.9U	6.3U	6.3U
Total BTEX Concentration				**50**	**0**	**0**	**0**	**0**	**0**	**0**
Total VOCs Concentration				**67.5**	**13**	**73**	**4.9**	**4**	**77.4**	**247**

Notes:

* - 6 NYCRR Part 375-6 Remedial Program Soil Cleanup Objectives

RL - Reporting Limit

Bold/highlighted- Indicated exceedance of the NYSDEC UUSCO Guidance Value

Bold/highlighted- Indicated exceedance of the NYSDEC RRSCO Guidance Value

Bold/highlighted- Indicated exceedance of the NYSDEC RCSCO Guidance Value

Table 3A
Former Pfizer Site A - C224284
243-271 Wallabout Street,
Brooklyn, New York
Laboratory Results - Soil Samples
Volatile Organic Compounds

COMPOUND	NYSDEC Part 375.6 Unrestricted Use Soil Cleanup Objectives*	NYDEC Part 375.6 Restricted Residential Soil Cleanup Objectives*	NYDEC Part 375.6 Restricted Commercial Soil Cleanup Objectives*	ROUX 2005 Laboratory Results							
				SB-4	SB-5	SB-6		SB-7		SB-8	
				6-8'	5-6'	0-2'	6-7'	0-2'	5-7'	0-2'	5-7'
				10/26/2005	10/24/2005	10/24/2005	10/24/2005	10/26/2005	10/26/2005	10/26/2005	10/26/2005
				µg/Kg	µg/Kg	µg/Kg	µg/Kg	µg/Kg	µg/Kg	µg/Kg	µg/Kg
				Result	Result	Result	Result	Result	Result	Result	Result
1,1,1-Trichloroethane	680	100,000	500,000	6.4U	6.5U	6.2U	7.3U	6.1U	6.1U	6U	7.3U
1,1,2,2-Tetrachloroethane				6.4U	6.5U	6.2U	7.3U	6.1U	6.1U	6U	7.3U
1,1,2-Trichloroethane				6.4U	6.5U	6.2U	7.3U	6.1U	6.1U	6U	7.3U
1,1-Dichloroethane	270	26,000	240,000	6.4U	6.5U	6.2U	7.3U	6.1U	6.1U	6U	7.3U
1,1-Dichloroethene	330	100,000	500,000	6.4U	6.5U	6.2U	7.3U	6.1U	6.1U	6U	7.3U
1,1-Dichloropropene				6.4U	6.5U	6.2U	7.3U	6.1U	6.1U	6U	7.3U
1,2-Dichloropropane				6.4U	6.5U	6.2U	7.3U	6.1U	6.1U	6U	7.3U
2-Hexanone (Methyl Butyl Ketone)				13U	13U	12U	15U	12U	12U	12U	7.3U
4-Methyl-2-Pentanone				13U	13U	12U	15U	12U	12U	12U	7.3U
Acetone	50	100,000	500,000	25UB	**30B**	**17B**	**7.1JB**	**12JB**	**7.3J**	**6.7JB**	**7.7JB**
Benzene	60	4,800	44,000	6.4U	6.5U	6.2U	7.3U	6.1U	6.1U	6U	7.3U
Bromodichloromethane				6.4U	6.5U	6.2U	7.3U	6.1U	6.1U	6U	7.3U
Bromoform				6.4U	6.5U	6.2U	7.3U	6.1U	6.1U	6U	7.3U
Bromomethane				6.4U	6.5U	6.2U	7.3U	6.1U	6.1U	6U	7.3U
Carbon Disulfide				6.4U	6.5U	6.2U	7.3U	6.1U	6.1U	6U	7.3U
Carbon tetrachloride	760	2,400	22,000	6.4U	6.5U	6.2U	7.3U	6.1U	6.1U	6U	7.3U
Chlorobenzene	1,100	100,000	500,000	6.4U	6.5U	6.2U	7.3U	6.1U	6.1U	6U	7.3U
Chloroethane				6.4U	6.5U	6.2U	7.3U	6.1U	6.1U	6U	7.3U
Chloroform	370	49,000	350,000	6.4U	6.5U	6.2U	7.3U	6.1U	**1.5J**	6U	7.3U
Chloromethane				6.4U	6.5U	6.2U	7.3U	6.1U	6.1U	6U	7.3U
cis-1,2-Dichloroethene	250	100,000	500,000	6.4U	6.5U	6.2U	7.3U	6.1U	6.1U	6U	7.3U
cis-1,3-Dichloropropene				6.4U	6.5U	6.2U	7.3U	6.1U	6.1U	6U	7.3U
Dibromochloromethane				6.4U	6.5U	6.2U	7.3U	6.1U	6.1U	6U	7.3U
Ethylbenzene	1,000	41,000	390,000	6.4U	6.5U	6.2U	7.3U	6.1U	6.1U	6U	7.3U
Methyl Ethyl Ketone (2-Butanone)	120	100,000	500,000	13U	13U	12U	15U	**370A**	**18**	**130**	**150**
Methylene chloride	50	100,000	500,000	**5.1J**	**44B**	**44B**	**11JB**	**24J**	**14JB**	24J	**13J**
Styrene				6.4U	6.5U	6.2U	7.3U	6.1U	6.1U	6U	7.3U
Tetrachloroethene	1,300	19,000	150,000	6.4U	6.5U	6.2U	7.3U	6.1U	6.1U	6U	7.3U
Toluene	700	100,000	500,000	6.4U	6.5U	6.2U	7.3U	**4.3J**	6.1U	**3.7J**	7.3U
Total Xylenes				6.4U	6.5U	6.2U	7.3U	**6.7**	6.1U	**7.5**	7.3U
trans-1,2-Dichloroethene	190	100,000	500,000	6.4U	6.5U	6.2U	7.3U	6.1U	6.1U	6U	7.3U
trans-1,3-Dichloropropene				6.4U	6.5U	6.2U	7.3U	6.1U	6.1U	6U	7.3U
Trichloroethene	470	21,000	200,000	6.4U	6.5U	6.2U	7.3U	**4.9J**	6.1U	**4.2J**	7.3U
Vinyl Chloride	20	900	13,000	6.4U	6.5U	6.2U	7.3U	6.1U	6.1U	6U	7.3U
Total BTEX Concentration				**0**	**0**	**0**	**0**	**11**	**0**	**11.2**	**0**
Total VOCs Concentration				**5.1**	**74**	**61.0**	**18**	**421.9**	**40.8**	**152.1**	**171**

Notes:

* - 6 NYCRR Part 375-6 Remedial Program Soil Cleanup Objectives

RL - Reporting Limit

Bold/highlighted- Indicated exceedance of the NYSDEC UUSCO Guidance Value

Bold/highlighted- Indicated exceedance of the NYSDEC RRSCO Guidance Value

Bold/highlighted- Indicated exceedance of the NYSDEC RCSCO Guidance Value

Table 3A
Former Pfizer Site A - C224284
243-271 Wallabout Street,
Brooklyn, New York
Laboratory Results - Soil Samples
Volatile Organic Compounds

COMPOUND	NYSDEC Part 375.6 Unrestricted Use Soil Cleanup Objectives*	NYDEC Part 375.6 Restricted Residential Soil Cleanup Objectives*	NYDEC Part 375.6 Restricted Commercial Soil Cleanup Objectives*	ROUX 2005 Laboratory Results							
				SB-9	SB-10		UST-1	UST-2	UST-3	UST-4	UST-5
				(5-6')	(0-2')	(6-7')	(7-8')	(6-7')	(6-7')	(6-8')	(5-7')
				10/24/2005	10/24/2005	10/24/2005	10/24/2005	10/25/2005	10/26/2005	10/27/2005	10/28/2005
				µg/Kg	µg/Kg	µg/Kg	µg/Kg	µg/Kg	µg/Kg	µg/Kg	µg/Kg
				Result	Result	Result	Result	Result	Result	Result	Result
1,1,1-Trichloroethane	680	100,000	500,000	5.9U	6.1U	6.9U	6.1U	5.9U	7.8U	6.1U	6.2U
1,1,2,2-Tetrachloroethane				5.9U	6.1U	6.9U	6.1U	5.9U	7.8U	6.1U	6.2U
1,1,2-Trichloroethane				5.9U	6.1U	6.9U	6.1U	5.9U	7.8U	6.1U	6.2U
1,1-Dichloroethane	270	26,000	240,000	5.9U	6.1U	6.9U	6.1U	5.9U	7.8U	6.1U	6.2U
1,1-Dichloroethene	330	100,000	500,000	5.9U	6.1U	6.9U	6.1U	5.9U	7.8U	6.1U	6.2U
1,1-Dichloropropene				5.9U	6.1U	6.9U	6.1U	5.9U	7.8U	6.1U	6.2U
1,2-Dichloropropane				5.9U	6.1U	6.9U	6.1U	5.9U	7.8U	6.1U	6.2U
2-Hexanone (Methyl Butyl Ketone)				12U	12U	14U	12U	12U	16U	12U	12U
4-Methyl-2-Pentanone				12U	12U	14U	12U	12U	16U	12U	12U
Acetone	50	100,000	500,000	**3.7JB**	**3.7JB**	**39B**	**16JB**	**4.2**	**58B**	24U	**46B**
Benzene	60	4,800	44,000	5.9U	6.1U	6.9U	6.1U	5.9U	7.8U	6.1U	6.2U
Bromodichloromethane				5.9U	6.1U	6.9U	6.1U	5.9U	7.8U	6.1U	6.2U
Bromoform				5.9U	6.1U	6.9U	6.1U	5.9U	7.8U	6.1U	6.2U
Bromomethane				5.9U	6.1U	6.9U	6.1U	5.9U	7.8U	6.1U	6.2U
Carbon Disulfide				5.9U	6.1U	6.9U	6.1U	5.9U	7.8U	6.1U	6.2U
Carbon tetrachloride	760	2,400	22,000	5.9U	6.1U	6.9U	6.1U	5.9U	7.8U	6.1U	6.2U
Chlorobenzene	1,100	100,000	500,000	5.9U	6.1U	6.9U	6.1U	5.9U	7.8U	6.1U	6.2U
Chloroethane				5.9U	6.1U	6.9U	6.1U	5.9U	7.8U	6.1U	6.2U
Chloroform	370	49,000	350,000	5.9U	6.1U	6.9U	6.1U	5.9U	7.8U	6.1U	6.2U
Chloromethane				5.9U	6.1U	6.9U	6.1U	5.9U	7.8U	6.1U	6.2U
cis-1,2-Dichloroethene	250	100,000	500,000	5.9U	6.1U	6.9U	6.1U	5.9U	7.8U	6.1U	6.2U
cis-1,3-Dichloropropene				5.9U	6.1U	6.9U	6.1U	5.9U	7.8U	6.1U	6.2U
Dibromochloromethane				5.9U	6.1U	6.9U	6.1U	5.9U	7.8U	6.1U	6.2U
Ethylbenzene	1,000	41,000	390,000	5.9U	6.1U	6.9U	6.1U	5.9U	7.8U	6.1U	6.2U
Methyl Ethyl Ketone (2-Butanone)	120	100,000	500,000	12U	12U	8.5J	**4.3J**	12U	**19**	12U	**15**
Methylene chloride	50	100,000	500,000	**8.2JB**	**12JB**	**9.8JB**	**13JB**	**12B**	**9.4JB**	**9.9JB**	**4.6J**
Styrene				5.9U	6.1U	6.9U	6.1U	5.9U	7.8U	6.1U	6.2U
Tetrachloroethene	1,300	19,000	150,000	5.9U	6.1U	6.9U	6.1U	5.9U	7.8U	6.1U	6.2U
Toluene	700	100,000	500,000	5.9U	**2.4J**	6.9U	6.1U	5.9U	7.8U	6.1U	6.2U
Total Xylenes				5.9U	**27**	6.9U	6.1U	5.9U	7.8U	6.1U	6.2U
trans-1,2-Dichloroethene	190	100,000	500,000	5.9U	6.1U	6.9U	6.1U	5.9U	7.8U	6.1U	6.2U
trans-1,3-Dichloropropene				5.9U	6.1U	6.9U	6.1U	5.9U	7.8U	6.1U	6.2U
Trichloroethene	470	21,000	200,000	5.9U	**7.8**	6.9U	6.1U	5.9U	7.8U	6.1U	6.2U
Vinyl Chloride	20	900	13,000	5.9U	6.1U	6.9U	6.1U	5.9U	7.8U	6.1U	6.2U
Total BTEX Concentration				**0**	**29**	**0**	**0**	**0**	**0**	**0**	**0**
Total VOCs Concentration				**11.9**	**52.9**	**49**	**33.3**	**16.2**	**86.4**	**9.9**	**65.6**

Notes:

* - 6 NYCRR Part 375-6 Remedial Program Soil Cleanup Objectives

RL - Reporting Limit

Bold/highlighted- Indicated exceedance of the NYSDEC UUSCO Guidance Value

Bold/highlighted- Indicated exceedance of the NYSDEC RRSCO Guidance Value

Bold/highlighted- Indicated exceedance of the NYSDEC RCSCO Guidance Value

Table 3B
Former Pfizer Site A - C224284
243-271 Wallabout Street,
Brooklyn, New York
Remedial Investigation Laboratory Results - Soil Samples
Volatile Organic Compounds

COMPOUND	NYSDEC Part 375.6 Unrestricted Use Soil Cleanup Objectives*	NYDEC Part 375.6 Restricted Residential Soil Cleanup Objectives*	NYDEC Part 375.6 Restricted Commercial Soil Cleanup Objectives*	EBC 2019 Laboratory Results											
				EBC 20						EBC 21					
				0-2'		6-8'		15-17'		0-2'		6-8'		15-17'	
				6/6/2019		6/6/2019		6/6/2019		6/4/2019		6/4/2019		6/4/2019	
				µg/Kg		µg/Kg		µg/Kg		µg/Kg		µg/Kg		µg/Kg	
				Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL
1,1,1,2-Tetrachlorothane				< 23	23	< 20	20	< 20	20	< 22	22	< 17	17	< 18	18
1,1,1-Trichloroethane	680	100,000	500,000	< 5.7	5.7	< 5.0	5.0	< 4.9	4.9	< 5.5	5.5	< 4.2	4.2	< 4.5	4.5
1,1,2,2-Tetrachloroethane				< 5.7	5.7	< 5.0	5.0	< 4.9	4.9	< 5.5	5.5	< 4.2	4.2	< 4.5	4.5
1,1,2-Trichloroethane				< 5.7	5.7	< 5.0	5.0	< 4.9	4.9	< 5.5	5.5	< 4.2	4.2	< 4.5	4.5
1,1-Dichloroethane	270	26,000	240,000	< 5.7	5.7	< 5.0	5.0	< 4.9	4.9	< 5.5	5.5	< 4.2	4.2	< 4.5	4.5
1,1-Dichloroethene	330	100,000	500,000	< 5.7	5.7	< 5.0	5.0	< 4.9	4.9	< 5.5	5.5	< 4.2	4.2	< 4.5	4.5
1,1-Dichloropropene				-	-	-	-	-	-	-	-	-	-	-	-
1,2,3-Trichlorobenzene				< 5.7	5.7	< 5.0	5.0	< 4.9	4.9	< 5.5	5.5	< 4.2	4.2	< 4.5	4.5
1,2,3-Trichloropropane				-	-	-	-	-	-	-	-	-	-	-	-
1,2,4-Trichlorobenzene				< 5.7	5.7	< 5.0	5.0	< 4.9	4.9	< 5.5	5.5	< 4.2	4.2	< 4.5	4.5
1,2,4-Trimethylbenzene	3,600	52,000	190,000	-	-	-	-	-	-	-	-	-	-	-	-
1,2-Dibromo-3-chloropropane				< 5.7	5.7	< 5.0	5.0	< 4.9	4.9	< 5.5	5.5	< 4.2	4.2	< 4.5	4.5
1,2-Dibromomethane				< 5.7	5.7	< 5.0	5.0	< 4.9	4.9	< 5.5	5.5	< 4.2	4.2	< 4.5	4.5
1,2-Dichlorobenzene	1,100	100,000	500,000	< 5.7	5.7	< 5.0	5.0	< 4.9	4.9	< 5.5	5.5	< 4.2	4.2	< 4.5	4.5
1,2-Dichloroethane	20	3,100	30,000	< 5.7	5.7	< 5.0	5.0	< 4.9	4.9	< 5.5	5.5	< 4.2	4.2	< 4.5	4.5
1,2-Dichloropropane				< 5.7	5.7	< 5.0	5.0	< 4.9	4.9	< 5.5	5.5	< 4.2	4.2	< 4.5	4.5
1,3,5-Trimethylbenzene	8,400	52,000	190,000	-	-	-	-	-	-	-	-	-	-	-	-
1,3-Dichlorobenzene	2,400	4,900	280,000	< 5.7	5.7	< 5.0	5.0	< 4.9	4.9	< 5.5	5.5	< 4.2	4.2	< 4.5	4.5
1,3-Dichloropropane				-	-	-	-	-	-	-	-	-	-	-	-
1,4-Dichlorobenzene	1,800	13,000	130,000	< 5.7	5.7	< 5.0	5.0	< 4.9	4.9	< 5.5	5.5	< 4.2	4.2	< 4.5	4.5
1,4- dioxane	100	13,000	130,000	< 85	85	< 75	75	< 74	74	< 71	71	< 77	77	< 78	78
2,2-Dichloropropane				-	-	-	-	-	-	-	-	-	-	-	-
2-Chlorotoluene				-	-	-	-	-	-	-	-	-	-	-	-
2-Hexanone (Methyl Butyl Ketone)				< 28	28	< 25	25	< 25	25	< 28	28	< 21	21	< 23	23
2-Isopropyltoluene				-	-	-	-	-	-	-	-	-	-	-	-
4-Chlorotoluene				-	-	-	-	-	-	-	-	-	-	-	-
4-Methyl-2-Pentanone				< 28	28	< 25	25	< 25	25	< 28	28	< 21	21	< 23	23
Acetone	50	100,000	500,000	< 28	28	< 25	25	**28**	25	**7.5**	26	**21**	21	**34**	23
Acrolein				< 5.7	5.7	< 5.0	5.0	< 4.9	4.9	< 5.5	5.5	< 4.2	4.2	< 4.5	4.5
Acrylonitrile				< 23	23	< 20	20	< 20	20	< 22	22	< 17	17	< 18	18
Benzene	60	4,800	44,000	< 5.7	5.7	< 5.0	5.0	< 4.9	4.9	< 5.5	5.5	< 4.2	4.2	< 4.5	4.5
Bromobenzene				-	-	-	-	-	-	-	-	-	-	-	-
Bromochloromethane				< 5.7	5.7	< 5.0	5.0	< 4.9	4.9	< 5.5	5.5	< 4.2	4.2	< 4.5	4.5
Bromodichloromethane				< 5.7	5.7	< 5.0	5.0	< 4.9	4.9	< 5.5	5.5	< 4.2	4.2	< 4.5	4.5
Bromoform				< 5.7	5.7	< 5.0	5.0	< 4.9	4.9	< 5.5	5.5	< 4.2	4.2	< 4.5	4.5
Bromomethane				< 5.7	5.7	< 5.0	5.0	< 4.9	4.9	< 5.5	5.5	< 4.2	4.2	< 4.5	4.5
Carbon Disulfide				< 5.7	5.7	< 5.0	5.0	< 4.9	4.9	**4.2**	5.5	**4**	4.2	**1.5**	4.5
Carbon tetrachloride	760	2,400	22,000	< 5.7	5.7	< 5.0	5.0	< 4.9	4.9	< 5.5	5.5	< 4.2	4.2	< 4.5	4.5
Chlorobenzene	1,100	100,000	500,000	< 5.7	5.7	< 5.0	5.0	< 4.9	4.9	< 5.5	5.5	< 4.2	4.2	< 4.5	4.5
Chloroethane				< 5.7	5.7	< 5.0	5.0	< 4.9	4.9	< 5.5	5.5	< 4.2	4.2	< 4.5	4.5
Chloroform	370	49,000	350,000	< 5.7	5.7	< 5.0	5.0	< 4.9	4.9	< 5.5	5.5	< 4.2	4.2	< 4.5	4.5
Chloromethane				< 5.7	5.7	< 5.0	5.0	< 4.9	4.9	< 5.5	5.5	< 4.2	4.2	< 4.5	4.5
cis-1,2-Dichloroethene	250	100,000	500,000	< 5.7	5.7	< 5.0	5.0	< 4.9	4.9	< 5.5	5.5	< 4.2	4.2	< 4.5	4.5
cis-1,3-Dichloropropene				< 5.7	5.7	< 5.0	5.0	< 4.9	4.9	< 5.5	5.5	< 4.2	4.2	< 4.5	4.5
Cyclohexane				< 5.7	5.7	< 5.0	5.0	< 4.9	4.9	< 5.5	5.5	< 4.2	4.2	< 4.5	4.5
Dibromochloromethane				< 5.7	5.7	< 5.0	5.0	< 4.9	4.9	< 5.5	5.5	< 4.2	4.2	< 4.5	4.5
Dibromomethane				-	-	-	-	-	-	-	-	-	-	-	-
Dichlorodifluoromethane				< 5.7	5.7	< 5.0	5.0	< 4.9	4.9	< 5.5	5.5	< 4.2	4.2	< 4.5	4.5
Ethylbenzene	1,000	41,000	390,000	< 5.7	5.7	< 5.0	5.0	< 4.9	4.9	< 5.5	5.5	< 4.2	4.2	< 4.5	4.5
Hexachlorobutadiene				-	-	-	-	-	-	-	-	-	-	-	-
Isopropylbenzene				< 5.7	5.7	< 5.0	5.0	< 4.9	4.9	< 5.5	5.5	< 4.2	4.2	< 4.5	4.5
m&p-Xylenes	260	100,000		< 5.7	5.7	< 5.0	5.0	< 4.9	4.9	< 5.5	5.5	< 4.2	4.2	< 4.5	4.5
Methyl Ethyl Ketone (2-Butanone)	120	100,000	500,000	< 34	34	< 30	30	< 30	30	**22**	33	< 25	25	< 27	27
Methyl t-butyl ether (MTBE)	930	100,000	500,000	< 11	11	< 10	10	< 9.9	9.9	< 11	11	< 8.3	8.3	< 9.1	9.1
Methylacetate				< 5.7	5.7	< 5.0	5.0	< 4.9	4.9	< 5.5	5.5	< 4.2	4.2	< 4.5	4.5
Methylcyclohexane				< 5.7	5.7	< 5.0	5.0	< 4.9	4.9	< 5.5	5.5	< 4.2	4.2	< 4.5	4.5
Methylene chloride	50	100,000	500,000	< 5.7	5.7	< 5.0	5.0	< 4.9	4.9	< 5.5	5.5	< 4.2	4.2	< 4.5	4.5
Naphthalene	12,000	100,000		-	-	-	-	-	-	-	-	-	-	-	-
n-Butylbenzene	12,000	100,000		-	-	-	-	-	-	-	-	-	-	-	-
n-Propylbenzene	3,900	100,000	500,000	-	-	-	-	-	-	-	-	-	-	-	-
o-Xylene	260	100,000		< 5.7	5.7	< 5.0	5.0	< 4.9	4.9	< 5.5	5.5	< 4.2	4.2	< 4.5	4.5
p-Isopropyltoluene				-	-	-	-	-	-	-	-	-	-	-	-
sec-Butylbenzene	11,000	100,000	500,000	-	-	-	-	-	-	-	-	-	-	-	-
Styrene				< 5.7	5.7	< 5.0	5.0	< 4.9	4.9	< 5.5	5.5	< 4.2	4.2	< 4.5	4.5
Tert-butyl alcohol				< 110	110	< 100	100	< 99	99	< 110	110	< 83	83	< 91	91
tert-Butylbenzene	5,900	100,000	500,000	-	-	-	-	-	-	-	-	-	-	-	-
Tetrachloroethene	1,300	19,000	150,000	< 5.7	5.7	< 5.0	5.0	< 4.9	4.9	< 5.5	5.5	< 4.2	4.2	< 4.5	4.5
Tetrahydrofuran (THF)				-	-	-	-	-	-	-	-	-	-	-	-
Toluene	700	100,000	500,000	< 5.7	5.7	< 5.0	5.0	< 4.9	4.9	**0.63**	5.5	< 4.2	4.2	< 4.5	4.5
Total Xylenes				< 5.7	5.7	< 5.0	5.0	< 4.9	4.9	< 5.5	5.5	< 4.2	4.2	< 4.5	4.5
trans-1,2-Dichloroethene	190	100,000	500,000	< 5.7	5.7	< 5.0	5.0	< 4.9	4.9	< 5.5	5.5	< 4.2	4.2	< 4.5	4.5
trans-1,3-Dichloropropene				< 5.7	5.7	< 5.0	5.0	< 4.9	4.9	< 5.5	5.5	< 4.2	4.2	< 4.5	4.5
trans-1,4-dichloro-2-butene				-	-	-	-	-	-	-	-	-	-	-	-
Trichloroethene	470	21,000	200,000	< 5.7	5.7	< 5.0	5.0	< 4.9	4.9	< 5.5	5.5	< 4.2	4.2	< 4.5	4.5
Trichlorofluoromethane				< 5.7	5.7	< 5.0	5.0	< 4.9	4.9	< 5.5	5.5	< 4.2	4.2	< 4.5	4.5
Trichlorotrifluoroethane				< 5.7	5.7	< 5.0	5.0	< 4.9	4.9	< 5.5	5.5	< 4.2	4.2	< 4.5	4.5
Vinyl Chloride	20	900	13,000	< 5.7	5.7	< 5.0	5.0	< 4.9	4.9	< 5.5	5.5	< 4.2	4.2	< 4.5	4.5
Total BTEX Concentration				**0**		**0**		**0**		**0.63**		**0**		**0**	
Total VOCs Concentration				**0**		**0**		**28**		**34.33**		**25**		**35.5**	

Notes:

* - 6 NYCRR Part 375-6 Remedial Program Soil Cleanup Objectives

RL - Reporting Limit

Bold/highlighted- Indicated exceedance of the NYSDEC UUSCO Guidance Value

Bold/highlighted- Indicated exceedance of the NYSDEC RRSCO Guidance Value

Bold/highlighted- Indicated exceedance of the NYSDEC RCSCO Guidance Value

Table 3B
Former Pfizer Site A - C224284
243-271 Wallabout Street,
Brooklyn, New York
Remedial Investigation Laboratory Results - Soil Samples
Volatile Organic Compounds

COMPOUND	NYSDEC Part 375.6 Unrestricted Use Soil Cleanup Objectives*	NYDEC Part 375.6 Restricted Residential Soil Cleanup Objectives*	NYDEC Part 375.6 Restricted Commercial Soil Cleanup Objectives*	EBC 2019 Laboratory Results											
				EBC 22						EBC 23					
				0-2'		6-8'		15-17'		0-2'		6-8'		15-17'	
				6/4/2019		6/4/2019		6/4/2019		6/4/2019		6/4/2019		6/4/2019	
				µg/Kg		µg/Kg		µg/Kg		µg/Kg		µg/Kg		µg/Kg	
				Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL
1,1,1,2-Tetrachlorothane				< 23	23	< 22	22	< 29	29	< 24	24	< 23	23	< 20	20
1,1,1-Trichloroethane	680	100,000	500,000	< 5.6	5.6	< 5.4	5.4	< 7.2	7.2	< 6.1	6.1	< 5.8	5.8	< 5.0	5.0
1,1,2,2-Tetrachloroethane				< 370	370	< 5.4	5.4	< 7.2	7.2	< 320	320	< 5.8	5.8	< 5.0	5.0
1,1,2-Trichloroethane				< 5.6	5.6	< 5.4	5.4	< 7.2	7.2	< 6.1	6.1	< 5.8	5.8	< 5.0	5.0
1,1-Dichloroethane	270	26,000	240,000	< 5.6	5.6	< 5.4	5.4	< 7.2	7.2	< 6.1	6.1	< 5.8	5.8	< 5.0	5.0
1,1-Dichloroethene	330	100,000	500,000	< 5.6	5.6	< 5.4	5.4	< 7.2	7.2	< 6.1	6.1	< 5.8	5.8	< 5.0	5.0
1,1-Dichloropropene				-	-	-	-	-	-	-	-	-	-	-	-
1,2,3-Trichlorobenzene				< 370	370	< 5.4	5.4	< 7.2	7.2	< 320	320	< 5.8	5.8	< 5.0	5.0
1,2,3-Trichloropropane				-	-	-	-	-	-	-	-	-	-	-	-
1,2,4-Trichlorobenzene				< 370	370	< 5.4	5.4	< 7.2	7.2	< 320	320	< 5.8	5.8	< 5.0	5.0
1,2,4-Trimethylbenzene	3,600	52,000	190,000	-	-	-	-	-	-	-	-	-	-	-	-
1,2-Dibromo-3-chloropropane				< 370	370	< 5.4	5.4	< 7.2	7.2	< 320	320	< 5.8	5.8	< 5.0	5.0
1,2-Dibromomethane				< 5.6	5.6	< 5.4	5.4	< 7.2	7.2	< 6.1	6.1	< 5.8	5.8	< 5.0	5.0
1,2-Dichlorobenzene	1,100	100,000	500,000	< 370	370	< 5.4	5.4	< 7.2	7.2	< 320	320	< 5.8	5.8	< 5.0	5.0
1,2-Dichloroethane	20	3,100	30,000	< 5.6	5.6	< 5.4	5.4	< 7.2	7.2	< 6.1	6.1	< 5.8	5.8	< 5.0	5.0
1,2-Dichloropropane				< 5.6	5.6	< 5.4	5.4	< 7.2	7.2	< 6.1	6.1	< 5.8	5.8	< 5.0	5.0
1,3,5-Trimethylbenzene	8,400	52,000	190,000	-	-	-	-	-	-	-	-	-	-	-	-
1,3-Dichlorobenzene	2,400	4,900	280,000	< 370	370	< 5.4	5.4	< 7.2	7.2	< 320	320	< 5.8	5.8	< 5.0	5.0
1,3-Dichloropropane				-	-	-	-	-	-	-	-	-	-	-	-
1,4-Dichlorobenzene	1,800	13,000	130,000	< 370	370	< 5.4	5.4	< 7.2	7.2	< 320	320	< 5.8	5.8	< 5.0	5.0
1,4- dioxane	100	13,000	130,000	< 75	75	< 82	82	< 95	95	< 72	72	< 83	83	< 81	81
2,2-Dichloropropane				-	-	-	-	-	-	-	-	-	-	-	-
2-Chlorotoluene				-	-	-	-	-	-	-	-	-	-	-	-
2-Hexanone (Methyl Butyl Ketone)				< 28	28	< 27	27	< 36	36	< 30	30	< 29	29	< 25	25
2-Isopropyltoluene				-	-	-	-	-	-	-	-	-	-	-	-
4-Chlorotoluene				-	-	-	-	-	-	-	-	-	-	-	-
4-Methyl-2-Pentanone				< 28	28	< 27	27	< 36	36	< 30	30	< 29	29	< 25	25
Acetone	50	100,000	500,000	**54**	28	**33**	27	**130**	35	< 30	30	**30**	29	**21**	25
Acrolein				< 5.6	5.6	< 5.4	5.4	< 7.2	7.2	< 6.1	6.1	< 5.8	5.8	< 5.0	5.0
Acrylonitrile				< 23	23	< 22	22	< 29	29	< 24	24	< 23	23	< 20	20
Benzene	60	4,800	44,000	< 5.6	5.6	< 5.4	5.4	< 7.2	7.2	< 6.1	6.1	< 5.8	5.8	< 5.0	5.0
Bromobenzene				-	-	-	-	-	-	-	-	-	-	-	-
Bromochloromethane				< 5.6	5.6	< 5.4	5.4	< 7.2	7.2	< 6.1	6.1	< 5.8	5.8	< 5.0	5.0
Bromodichloromethane				< 5.6	5.6	< 5.4	5.4	< 7.2	7.2	< 6.1	6.1	< 5.8	5.8	< 5.0	5.0
Bromoform				< 5.6	5.6	< 5.4	5.4	< 7.2	7.2	< 6.1	6.1	< 5.8	5.8	< 5.0	5.0
Bromomethane				< 5.6	5.6	< 5.4	5.4	< 7.2	7.2	< 6.1	6.1	< 5.8	5.8	< 5.0	5.0
Carbon Disulfide				< 5.6	5.6	< 5.4	5.4	**2.6**	7.2	< 6.1	6.1	< 5.8	5.8	**1.7**	5.0
Carbon tetrachloride	760	2,400	22,000	< 5.6	5.6	< 5.4	5.4	< 7.2	7.2	< 6.1	6.1	< 5.8	5.8	< 5.0	5.0
Chlorobenzene	1,100	100,000	500,000	< 5.6	5.6	< 5.4	5.4	< 7.2	7.2	< 6.1	6.1	< 5.8	5.8	< 5.0	5.0
Chloroethane				< 5.6	5.6	< 5.4	5.4	< 7.2	7.2	< 6.1	6.1	< 5.8	5.8	< 5.0	5.0
Chloroform	370	49,000	350,000	< 5.6	5.6	< 5.4	5.4	< 7.2	7.2	< 6.1	6.1	< 5.8	5.8	< 5.0	5.0
Chloromethane				< 5.6	5.6	< 5.4	5.4	< 7.2	7.2	< 6.1	6.1	< 5.8	5.8	< 5.0	5.0
cis-1,2-Dichloroethene	250	100,000	500,000	< 5.6	5.6	< 5.4	5.4	< 7.2	7.2	< 6.1	6.1	< 5.8	5.8	< 5.0	5.0
cis-1,3-Dichloropropene				< 5.6	5.6	< 5.4	5.4	< 7.2	7.2	< 6.1	6.1	< 5.8	5.8	< 5.0	5.0
Cyclohexane				< 5.6	5.6	< 5.4	5.4	< 7.2	7.2	< 6.1	6.1	< 5.8	5.8	< 5.0	5.0
Dibromochloromethane				< 5.6	5.6	< 5.4	5.4	< 7.2	7.2	< 6.1	6.1	< 5.8	5.8	< 5.0	5.0
Dibromomethane				-	-	-	-	-	-	-	-	-	-	-	-
Dichlorodifluoromethane				< 5.6	5.6	< 5.4	5.4	< 7.2	7.2	< 6.1	6.1	< 5.8	5.8	< 5.0	5.0
Ethylbenzene	1,000	41,000	390,000	< 5.6	5.6	< 5.4	5.4	< 7.2	7.2	< 6.1	6.1	< 5.8	5.8	< 5.0	5.0
Hexachlorobutadiene				-	-	-	-	-	-	-	-	-	-	-	-
Isopropylbenzene				< 370	370	< 5.4	5.4	< 7.2	7.2	< 320	320	< 5.8	5.8	< 5.0	5.0
m&p-Xylenes	260	100,000		< 5.6	5.6	< 5.4	5.4	< 7.2	7.2	< 6.1	6.1	< 5.8	5.8	**1.8**	5.0
Methyl Ethyl Ketone (2-Butanone)	120	100,000	500,000	**5.7**	34	< 33	33	**48**	43	< 36	36	**9.1**	35	< 30	30
Methyl t-butyl ether (MTBE)	930	100,000	500,000	< 11	11	< 11	11	< 14	14	< 12	12	< 12	12	< 10	10
Methylacetate				< 5.6	5.6	< 5.4	5.4	< 7.2	7.2	< 6.1	6.1	< 5.8	5.8	< 5.0	5.0
Methylcyclohexane				< 5.6	5.6	< 5.4	5.4	< 7.2	7.2	< 6.1	6.1	< 5.8	5.8	< 5.0	5.0
Methylene chloride	50	100,000	500,000	**21**	5.8	< 5.4	5.4	< 7.2	7.2	< 6.1	6.1	< 5.8	5.8	< 5.0	5.0
Naphthalene	12,000	100,000		-	-	-	-	-	-	-	-	-	-	-	-
n-Butylbenzene	12,000	100,000		-	-	-	-	-	-	-	-	-	-	-	-
n-Propylbenzene	3,900	100,000	500,000	-	-	-	-	-	-	-	-	-	-	-	-
o-Xylene	260	100,000		< 5.6	5.6	< 5.4	5.4	< 7.2	7.2	< 6.1	6.1	< 5.8	5.8	< 5.0	5.0
p-Isopropyltoluene				-	-	-	-	-	-	-	-	-	-	-	-
sec-Butylbenzene	11,000	100,000	500,000	-	-	-	-	-	-	-	-	-	-	-	-
Styrene				< 5.6	5.6	< 5.4	5.4	< 7.2	7.2	< 6.1	6.1	< 5.8	5.8	< 5.0	5.0
Tert-butyl alcohol				< 110	110	< 110	110	< 140	140	< 120	120	< 120	120	< 100	100
tert-Butylbenzene	5,900	100,000	500,000	-	-	-	-	-	-	-	-	-	-	-	-
Tetrachloroethene	1,300	19,000	150,000	< 5.6	5.6	< 5.4	5.4	< 7.2	7.2	< 6.1	6.1	< 5.8	5.8	< 5.0	5.0
Tetrahydrofuran (THF)				-	-	-	-	-	-	-	-	-	-	-	-
Toluene	700	100,000	500,000	< 5.6	5.6	< 5.4	5.4	< 7.2	7.2	< 6.1	6.1	< 5.8	5.8	< 5.0	5.0
Total Xylenes				< 5.6	5.6	< 5.4	5.4	< 7.2	7.2	< 6.1	6.1	< 5.8	5.8	< 5.0	5.0
trans-1,2-Dichloroethene	190	100,000	500,000	< 5.6	5.6	< 5.4	5.4	< 7.2	7.2	< 6.1	6.1	< 5.8	5.8	< 5.0	5.0
trans-1,3-Dichloropropene				< 5.6	5.6	< 5.4	5.4	< 7.2	7.2	< 6.1	6.1	< 5.8	5.8	< 5.0	5.0
trans-1,4-dichloro-2-butene				-	-	-	-	-	-	-	-	-	-	-	-
Trichloroethene	470	21,000	200,000	< 5.6	5.6	< 5.4	5.4	< 7.2	7.2	< 6.1	6.1	< 5.8	5.8	< 5.0	5.0
Trichlorofluoromethane				< 5.6	5.6	< 5.4	5.4	< 7.2	7.2	< 6.1	6.1	< 5.8	5.8	< 5.0	5.0
Trichlorotrifluoroethane				< 5.6	5.6	< 5.4	5.4	< 7.2	7.2	< 6.1	6.1	< 5.8	5.8	< 5.0	5.0
Vinyl Chloride	20	900	13,000	< 5.6	5.6	< 5.4	5.4	< 7.2	7.2	< 6.1	6.1	< 5.8	5.8	< 5.0	5.0
Total BTEX Concentration				**0**		**0**		**0**		**0**		**0**		**1.8**	
Total VOCs Concentration				**80.7**		**33**		**180.6**		**0**		**39.1**		**24.5**	

Notes:

* - 6 NYCRR Part 375-6 Remedial Program Soil Cleanup Objectives

RL - Reporting Limit

Bold/highlighted- Indicated exceedance of the NYSDEC UUSCO Guidance Value

Bold/highlighted- Indicated exceedance of the NYSDEC RRSCO Guidance Value

Bold/highlighted- Indicated exceedance of the NYSDEC RCSCO Guidance Value

Table 3B
Former Pfizer Site A - C224284
243-271 Wallabout Street,
Brooklyn, New York
Remedial Investigation Laboratory Results - Soil Samples
Volatile Organic Compounds

COMPOUND	NYSDEC Part 375.6 Unrestricted Use Soil Cleanup Objectives*	NYDEC Part 375.6 Restricted Residential Soil Cleanup Objectives*	NYDEC Part 375.6 Restricted Commercial Soil Cleanup Objectives*	EBC 2019 Laboratory Results											
				EBC 24						EBC 25					
				0-2'		6-8'		15-17'		0-2'		6-8'		15-17'	
				6/3/2019		6/3/2019		6/3/2019		6/6/2019		6/6/2019		6/6/2019	
				µg/Kg		µg/Kg		µg/Kg		µg/Kg		µg/Kg		µg/Kg	
				Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL
1,1,1,2-Tetrachlorothane				< 19	19	< 21	21	< 20	20	< 20	20	< 22	22	< 21	21
1,1,1-Trichloroethane	680	100,000	500,000	< 4.8	4.8	< 5.1	5.1	< 5.1	5.1	< 5.1	5.1	< 5.5	5.5	< 5.2	5.2
1,1,2,2-Tetrachloroethane				< 300	300	< 5.1	5.1	< 5.1	5.1	< 5.1	5.1	< 5.5	5.5	< 400	400
1,1,2-Trichloroethane				< 4.8	4.8	< 5.1	5.1	< 5.1	5.1	< 5.1	5.1	< 5.5	5.5	< 5.2	5.2
1,1-Dichloroethane	270	26,000	240,000	< 4.8	4.8	< 5.1	5.1	< 5.1	5.1	< 5.1	5.1	< 5.5	5.5	< 5.2	5.2
1,1-Dichloroethene	330	100,000	500,000	< 4.8	4.8	< 5.1	5.1	< 5.1	5.1	< 5.1	5.1	< 5.5	5.5	< 5.2	5.2
1,1-Dichloropropene				-	-	-	-	-	-	-	-	-	-	-	-
1,2,3-Trichlorobenzene				< 300	300	< 5.1	5.1	< 5.1	5.1	< 5.1	5.1	< 5.5	5.5	< 400	400
1,2,3-Trichloropropane				-	-	-	-	-	-	-	-	-	-	-	-
1,2,4-Trichlorobenzene				< 300	300	< 5.1	5.1	< 5.1	5.1	< 5.1	5.1	< 5.5	5.5	< 400	400
1,2,4-Trimethylbenzene	3,600	52,000	190,000	-	-	-	-	-	-	-	-	-	-	-	-
1,2-Dibromo-3-chloropropane				< 300	300	< 5.1	5.1	< 5.1	5.1	< 5.1	5.1	< 5.5	5.5	< 400	400
1,2-Dibromomethane				< 4.8	4.8	< 5.1	5.1	< 5.1	5.1	< 5.1	5.1	< 5.5	5.5	< 5.2	5.2
1,2-Dichlorobenzene	1,100	100,000	500,000	< 300	300	< 5.1	5.1	< 5.1	5.1	< 5.1	5.1	< 5.5	5.5	< 400	400
1,2-Dichloroethane	20	3,100	30,000	< 4.8	4.8	< 5.1	5.1	< 5.1	5.1	< 5.1	5.1	< 5.5	5.5	< 5.2	5.2
1,2-Dichloropropane				< 4.8	4.8	< 5.1	5.1	< 5.1	5.1	< 5.1	5.1	< 5.5	5.5	< 5.2	5.2
1,3,5-Trimethylbenzene	8,400	52,000	190,000	-	-	-	-	-	-	-	-	-	-	-	-
1,3-Dichlorobenzene	2,400	4,900	280,000	< 300	300	< 5.1	5.1	< 5.1	5.1	< 5.1	5.1	< 5.5	5.5	< 400	400
1,3-Dichloropropane				-	-	-	-	-	-	-	-	-	-	-	-
1,4-Dichlorobenzene	1,800	13,000	130,000	< 300	300	< 5.1	5.1	< 5.1	5.1	< 5.1	5.1	< 5.5	5.5	< 400	400
1,4- dioxane	100	13,000	130,000	< 73	73	< 77	77	< 76	76	< 76	76	< 82	82	< 79	79
2,2-Dichloropropane				-	-	-	-	-	-	-	-	-	-	-	-
2-Chlorotoluene				-	-	-	-	-	-	-	-	-	-	-	-
2-Hexanone (Methyl Butyl Ketone)				< 24	24	< 26	26	< 25	25	< 25	25	< 27	27	< 26	26
2-Isopropyltoluene				-	-	-	-	-	-	-	-	-	-	-	-
4-Chlorotoluene				-	-	-	-	-	-	-	-	-	-	-	-
4-Methyl-2-Pentanone				< 24	24	< 26	26	< 25	25	< 25	25	< 27	27	< 26	26
Acetone	50	100,000	500,000	**38**	24	**8.9**	26	< 25	25	< 25	25	**38**	27	**45**	30
Acrolein				< 4.8	4.8	< 5.1	5.1	< 5.1	5.1	< 5.1	5.1	< 5.5	5.5	< 5.2	5.2
Acrylonitrile				< 19	19	< 21	21	< 20	20	< 20	20	< 22	22	< 21	21
Benzene	60	4,800	44,000	< 4.8	4.8	< 5.1	5.1	< 5.1	5.1	< 5.1	5.1	< 5.5	5.5	< 5.2	5.2
Bromobenzene				-	-	-	-	-	-	-	-	-	-	-	-
Bromochloromethane				< 4.8	4.8	< 5.1	5.1	< 5.1	5.1	< 5.1	5.1	< 5.5	5.5	< 5.2	5.2
Bromodichloromethane				< 4.8	4.8	< 5.1	5.1	< 5.1	5.1	< 5.1	5.1	< 5.5	5.5	< 5.2	5.2
Bromoform				< 4.8	4.8	< 5.1	5.1	< 5.1	5.1	< 5.1	5.1	< 5.5	5.5	< 5.2	5.2
Bromomethane				< 4.8	4.8	< 5.1	5.1	< 5.1	5.1	< 5.1	5.1	< 5.5	5.5	< 5.2	5.2
Carbon Disulfide				< 4.8	4.8	< 5.1	5.1	< 5.1	5.1	< 5.1	5.1	**4.2**	5.5	**1.4**	5.2
Carbon tetrachloride	760	2,400	22,000	< 4.8	4.8	< 5.1	5.1	< 5.1	5.1	< 5.1	5.1	< 5.5	5.5	< 5.2	5.2
Chlorobenzene	1,100	100,000	500,000	< 4.8	4.8	< 5.1	5.1	< 5.1	5.1	< 5.1	5.1	< 5.5	5.5	< 5.2	5.2
Chloroethane				< 4.8	4.8	< 5.1	5.1	< 5.1	5.1	< 5.1	5.1	< 5.5	5.5	< 5.2	5.2
Chloroform	370	49,000	350,000	< 4.8	4.8	< 5.1	5.1	< 5.1	5.1	< 5.1	5.1	< 5.5	5.5	< 5.2	5.2
Chloromethane				< 4.8	4.8	< 5.1	5.1	< 5.1	5.1	< 5.1	5.1	< 5.5	5.5	< 5.2	5.2
cis-1,2-Dichloroethene	250	100,000	500,000	< 4.8	4.8	< 5.1	5.1	< 5.1	5.1	< 5.1	5.1	< 5.5	5.5	< 5.2	5.2
cis-1,3-Dichloropropene				< 4.8	4.8	< 5.1	5.1	< 5.1	5.1	< 5.1	5.1	< 5.5	5.5	< 5.2	5.2
Cyclohexane				< 4.8	4.8	< 5.1	5.1	< 5.1	5.1	< 5.1	5.1	< 5.5	5.5	< 5.2	5.2
Dibromochloromethane				< 4.8	4.8	< 5.1	5.1	< 5.1	5.1	< 5.1	5.1	< 5.5	5.5	< 5.2	5.2
Dibromomethane				-	-	-	-	-	-	-	-	-	-	-	-
Dichlorodifluoromethane				< 4.8	4.8	< 5.1	5.1	< 5.1	5.1	< 5.1	5.1	< 5.5	5.5	< 5.2	5.2
Ethylbenzene	1,000	41,000	390,000	< 4.8	4.8	< 5.1	5.1	< 5.1	5.1	< 5.1	5.1	< 5.5	5.5	< 5.2	5.2
Hexachlorobutadiene				-	-	-	-	-	-	-	-	-	-	-	-
Isopropylbenzene				< 300	300	< 5.1	5.1	< 5.1	5.1	< 5.1	5.1	< 5.5	5.5	< 400	400
m&p-Xylenes	260	100,000		< 4.8	4.8	< 5.1	5.1	< 5.1	5.1	< 5.1	5.1	< 5.5	5.5	< 5.2	5.2
Methyl Ethyl Ketone (2-Butanone)	120	100,000	500,000	< 29	29	< 31	31	< 30	30	< 30	30	< 33	33	**13**	31
Methyl t-butyl ether (MTBE)	930	100,000	500,000	< 9.7	9.7	< 10	10	< 10	10	< 10	10	< 11	11	< 10	10
Methylacetate				< 4.8	4.8	< 5.1	5.1	< 5.1	5.1	< 5.1	5.1	< 5.5	5.5	**42**	5.2
Methylcyclohexane				< 4.8	4.8	< 5.1	5.1	< 5.1	5.1	< 5.1	5.1	< 5.5	5.5	< 5.2	5.2
Methylene chloride	50	100,000	500,000	< 4.8	4.8	< 5.1	5.1	< 5.1	5.1	< 5.1	5.1	< 5.5	5.5	< 5.2	5.2
Naphthalene	12,000	100,000		-	-	-	-	-	-	-	-	-	-	-	-
n-Butylbenzene	12,000	100,000		-	-	-	-	-	-	-	-	-	-	-	-
n-Propylbenzene	3,900	100,000	500,000	-	-	-	-	-	-	-	-	-	-	-	-
o-Xylene	260	100,000		< 4.8	4.8	< 5.1	5.1	< 5.1	5.1	< 5.1	5.1	< 5.5	5.5	< 5.2	5.2
p-Isopropyltoluene				-	-	-	-	-	-	-	-	-	-	-	-
sec-Butylbenzene	11,000	100,000	500,000	-	-	-	-	-	-	-	-	-	-	-	-
Styrene				< 4.8	4.8	< 5.1	5.1	< 5.1	5.1	< 5.1	5.1	< 5.5	5.5	< 5.2	5.2
Tert-butyl alcohol				< 97	97	< 100	100	< 100	100	< 100	100	< 110	110	< 100	100
tert-Butylbenzene	5,900	100,000	500,000	-	-	-	-	-	-	-	-	-	-	-	-
Tetrachloroethene	1,300	19,000	150,000	< 4.8	4.8	< 5.1	5.1	< 5.1	5.1	< 5.1	5.1	< 5.5	5.5	< 5.2	5.2
Tetrahydrofuran (THF)				-	-	-	-	-	-	-	-	-	-	-	-
Toluene	700	100,000	500,000	< 4.8	4.8	< 5.1	5.1	< 5.1	5.1	< 5.1	5.1	< 5.5	5.5	< 5.2	5.2
Total Xylenes				< 4.8	4.8	< 5.1	5.1	< 5.1	5.1	< 5.1	5.1	< 5.5	5.5	< 5.2	5.2
trans-1,2-Dichloroethene	190	100,000	500,000	< 4.8	4.8	< 5.1	5.1	< 5.1	5.1	< 5.1	5.1	< 5.5	5.5	< 5.2	5.2
trans-1,3-Dichloropropene				< 4.8	4.8	< 5.1	5.1	< 5.1	5.1	< 5.1	5.1	< 5.5	5.5	< 5.2	5.2
trans-1,4-dichloro-2-butene				-	-	-	-	-	-	-	-	-	-	-	-
Trichloroethene	470	21,000	200,000	< 4.8	4.8	< 5.1	5.1	< 5.1	5.1	< 5.1	5.1	< 5.5	5.5	< 5.2	5.2
Trichlorofluoromethane				< 4.8	4.8	< 5.1	5.1	< 5.1	5.1	< 5.1	5.1	< 5.5	5.5	< 5.2	5.2
Trichlorotrifluoroethane				< 4.8	4.8	< 5.1	5.1	< 5.1	5.1	< 5.1	5.1	< 5.5	5.5	< 5.2	5.2
Vinyl Chloride	20	900	13,000	< 4.8	4.8	< 5.1	5.1	< 5.1	5.1	< 5.1	5.1	< 5.5	5.5	< 5.2	5.2
Total BTEX Concentration				**0**		**0**		**0**		**0**		**0**		**0**	
Total VOCs Concentration				**38**		**8.9**		**0**		**0**		**42.2**		**101.4**	

Notes:

* - 6 NYCRR Part 375-6 Remedial Program Soil Cleanup Objectives

RL - Reporting Limit

Bold/highlighted- Indicated exceedance of the NYSDEC UUSCO Guidance Value

Bold/highlighted- Indicated exceedance of the NYSDEC RRSCO Guidance Value

Bold/highlighted- Indicated exceedance of the NYSDEC RCSCO Guidance Value

Table 3B
Former Pfizer Site A - C224284
243-271 Wallabout Street,
Brooklyn, New York
Remedial Investigation Laboratory Results - Soil Samples
Volatile Organic Compounds

COMPOUND	NYSDEC Part 375.6 Unrestricted Use Soil Cleanup Objectives*	NYDEC Part 375.6 Restricted Residential Soil Cleanup Objectives*	NYDEC Part 375.6 Restricted Commercial Soil Cleanup Objectives*	EBC 2019 Laboratory Results											
				EBC 26						EBC 27					
				0-2'		6-8'		15-17'		0-2'		6-8'		15-17'	
				6/4/2019		6/4/2019		6/4/2019		6/4/2019		6/4/2019		6/4/2019	
				µg/Kg		µg/Kg		µg/Kg		µg/Kg		µg/Kg		µg/Kg	
				Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL
1,1,1,2-Tetrachlorothane				< 21	21	< 21	21	< 18	18	< 18	18	< 22	22	< 19	19
1,1,1-Trichloroethane	680	100,000	500,000	< 5.3	5.3	< 5.2	5.2	< 4.6	4.6	< 4.6	4.6	< 5.4	5.4	< 4.8	4.8
1,1,2,2-Tetrachloroethane				< 5.3	5.3	< 5.2	5.2	< 4.6	4.6	< 4.6	4.6	< 5.4	5.4	< 4.8	4.8
1,1,2-Trichloroethane				< 5.3	5.3	< 5.2	5.2	< 4.6	4.6	< 4.6	4.6	< 5.4	5.4	< 4.8	4.8
1,1-Dichloroethane	270	26,000	240,000	< 5.3	5.3	< 5.2	5.2	< 4.6	4.6	< 4.6	4.6	< 5.4	5.4	< 4.8	4.8
1,1-Dichloroethene	330	100,000	500,000	< 5.3	5.3	< 5.2	5.2	< 4.6	4.6	< 4.6	4.6	< 5.4	5.4	< 4.8	4.8
1,1-Dichloropropene				-	-	-	-	-	-	-	-	-	-	-	-
1,2,3-Trichlorobenzene				< 5.3	5.3	< 5.2	5.2	< 4.6	4.6	< 4.6	4.6	< 5.4	5.4	< 4.8	4.8
1,2,3-Trichloropropane				-	-	-	-	-	-	-	-	-	-	-	-
1,2,4-Trichlorobenzene				< 5.3	5.3	< 5.2	5.2	< 4.6	4.6	< 4.6	4.6	< 5.4	5.4	< 4.8	4.8
1,2,4-Trimethylbenzene	3,600	52,000	190,000	-	-	-	-	-	-	-	-	-	-	-	-
1,2-Dibromo-3-chloropropane				< 5.3	5.3	< 5.2	5.2	< 4.6	4.6	< 4.6	4.6	< 5.4	5.4	< 4.8	4.8
1,2-Dibromomethane				< 5.3	5.3	< 5.2	5.2	< 4.6	4.6	< 4.6	4.6	< 5.4	5.4	< 4.8	4.8
1,2-Dichlorobenzene	1,100	100,000	500,000	< 5.3	5.3	< 5.2	5.2	< 4.6	4.6	< 4.6	4.6	< 5.4	5.4	< 4.8	4.8
1,2-Dichloroethane	20	3,100	30,000	< 5.3	5.3	< 5.2	5.2	< 4.6	4.6	< 4.6	4.6	< 5.4	5.4	< 4.8	4.8
1,2-Dichloropropane				< 5.3	5.3	< 5.2	5.2	< 4.6	4.6	< 4.6	4.6	< 5.4	5.4	< 4.8	4.8
1,3,5-Trimethylbenzene	8,400	52,000	190,000	-	-	-	-	-	-	-	-	-	-	-	-
1,3-Dichlorobenzene	2,400	4,900	280,000	< 5.3	5.3	< 5.2	5.2	< 4.6	4.6	< 4.6	4.6	< 5.4	5.4	< 4.8	4.8
1,3-Dichloropropane				-	-	-	-	-	-	-	-	-	-	-	-
1,4-Dichlorobenzene	1,800	13,000	130,000	< 5.3	5.3	< 5.2	5.2	< 4.6	4.6	< 4.6	4.6	< 5.4	5.4	< 4.8	4.8
1,4- dioxane	100	13,000	130,000	< 71	71	< 78	78	< 79	79	< 71	71	< 79	79	< 79	79
2,2-Dichloropropane				-	-	-	-	-	-	-	-	-	-	-	-
2-Chlorotoluene				-	-	-	-	-	-	-	-	-	-	-	-
2-Hexanone (Methyl Butyl Ketone)				< 26	26	< 26	26	< 23	23	< 23	23	< 27	27	< 24	24
2-Isopropyltoluene				-	-	-	-	-	-	-	-	-	-	-	-
4-Chlorotoluene				-	-	-	-	-	-	-	-	-	-	-	-
4-Methyl-2-Pentanone				< 26	26	< 26	26	< 23	23	< 23	23	< 27	27	< 24	24
Acetone	50	100,000	500,000	< 26	26	**7.9**	26	**19**	23	**57**	26	**63**	30	**21**	24
Acrolein				< 5.3	5.3	< 5.2	5.2	< 4.6	4.6	< 4.6	4.6	< 5.4	5.4	< 4.8	4.8
Acrylonitrile				< 21	21	< 21	21	< 18	18	< 18	18	< 22	22	< 19	19
Benzene	60	4,800	44,000	< 5.3	5.3	< 5.2	5.2	< 4.6	4.6	< 4.6	4.6	< 5.4	5.4	< 4.8	4.8
Bromobenzene				-	-	-	-	-	-	-	-	-	-	-	-
Bromochloromethane				< 5.3	5.3	< 5.2	5.2	< 4.6	4.6	< 4.6	4.6	< 5.4	5.4	< 4.8	4.8
Bromodichloromethane				< 5.3	5.3	< 5.2	5.2	< 4.6	4.6	< 4.6	4.6	< 5.4	5.4	< 4.8	4.8
Bromoform				< 5.3	5.3	< 5.2	5.2	< 4.6	4.6	< 4.6	4.6	< 5.4	5.4	< 4.8	4.8
Bromomethane				< 5.3	5.3	< 5.2	5.2	< 4.6	4.6	< 4.6	4.6	< 5.4	5.4	< 4.8	4.8
Carbon Disulfide				< 5.3	5.3	< 5.2	5.2	**1.2**	4.6	**11**	4.6	**1.9**	5.4	< 4.8	4.8
Carbon tetrachloride	760	2,400	22,000	< 5.3	5.3	< 5.2	5.2	< 4.6	4.6	< 4.6	4.6	< 5.4	5.4	< 4.8	4.8
Chlorobenzene	1,100	100,000	500,000	< 5.3	5.3	< 5.2	5.2	< 4.6	4.6	< 4.6	4.6	< 5.4	5.4	< 4.8	4.8
Chloroethane				< 5.3	5.3	< 5.2	5.2	< 4.6	4.6	< 4.6	4.6	< 5.4	5.4	< 4.8	4.8
Chloroform	370	49,000	350,000	< 5.3	5.3	< 5.2	5.2	< 4.6	4.6	< 4.6	4.6	< 5.4	5.4	< 4.8	4.8
Chloromethane				< 5.3	5.3	< 5.2	5.2	< 4.6	4.6	< 4.6	4.6	< 5.4	5.4	< 4.8	4.8
cis-1,2-Dichloroethene	250	100,000	500,000	< 5.3	5.3	< 5.2	5.2	< 4.6	4.6	< 4.6	4.6	< 5.4	5.4	< 4.8	4.8
cis-1,3-Dichloropropene				< 5.3	5.3	< 5.2	5.2	< 4.6	4.6	< 4.6	4.6	< 5.4	5.4	< 4.8	4.8
Cyclohexane				< 5.3	5.3	< 5.2	5.2	< 4.6	4.6	< 4.6	4.6	< 5.4	5.4	< 4.8	4.8
Dibromochloromethane				< 5.3	5.3	< 5.2	5.2	< 4.6	4.6	< 4.6	4.6	< 5.4	5.4	< 4.8	4.8
Dibromomethane				-	-	-	-	-	-	-	-	-	-	-	-
Dichlorodifluoromethane				< 5.3	5.3	< 5.2	5.2	< 4.6	4.6	< 4.6	4.6	< 5.4	5.4	< 4.8	4.8
Ethylbenzene	1,000	41,000	390,000	< 5.3	5.3	< 5.2	5.2	< 4.6	4.6	< 4.6	4.6	< 5.4	5.4	< 4.8	4.8
Hexachlorobutadiene				-	-	-	-	-	-	-	-	-	-	-	-
Isopropylbenzene				< 5.3	5.3	< 5.2	5.2	< 4.6	4.6	< 4.6	4.6	< 5.4	5.4	< 4.8	4.8
m&p-Xylenes	260	100,000		< 5.3	5.3	< 5.2	5.2	< 4.6	4.6	< 4.6	4.6	< 5.4	5.4	< 4.8	4.8
Methyl Ethyl Ketone (2-Butanone)	120	100,000	500,000	< 32	32	< 31	31	< 28	28	**21**	28	**23**	33	< 29	29
Methyl t-butyl ether (MTBE)	930	100,000	500,000	< 11	11	< 10	10	< 9.2	9.2	< 9.2	9.2	< 11	11	< 9.5	9.5
Methylacetate				< 5.3	5.3	< 5.2	5.2	< 4.6	4.6	< 4.6	4.6	< 5.4	5.4	< 4.8	4.8
Methylcyclohexane				< 5.3	5.3	< 5.2	5.2	< 4.6	4.6	< 4.6	4.6	< 5.4	5.4	< 4.8	4.8
Methylene chloride	50	100,000	500,000	< 5.3	5.3	< 5.2	5.2	< 4.6	4.6	< 4.6	4.6	< 5.4	5.4	< 4.8	4.8
Naphthalene	12,000	100,000		-	-	-	-	-	-	-	-	-	-	-	-
n-Butylbenzene	12,000	100,000		-	-	-	-	-	-	-	-	-	-	-	-
n-Propylbenzene	3,900	100,000	500,000	-	-	-	-	-	-	-	-	-	-	-	-
o-Xylene	260	100,000		< 5.3	5.3	< 5.2	5.2	< 4.6	4.6	< 4.6	4.6	< 5.4	5.4	< 4.8	4.8
p-Isopropyltoluene				-	-	-	-	-	-	-	-	-	-	-	-
sec-Butylbenzene	11,000	100,000	500,000	-	-	-	-	-	-	-	-	-	-	-	-
Styrene				< 5.3	5.3	< 5.2	5.2	< 4.6	4.6	< 4.6	4.6	< 5.4	5.4	< 4.8	4.8
Tert-butyl alcohol				< 110	110	< 100	100	< 92	92	< 92	92	< 110	110	< 95	95
tert-Butylbenzene	5,900	100,000	500,000	-	-	-	-	-	-	-	-	-	-	-	-
Tetrachloroethene	1,300	19,000	150,000	< 5.3	5.3	< 5.2	5.2	< 4.6	4.6	< 4.6	4.6	< 5.4	5.4	< 4.8	4.8
Tetrahydrofuran (THF)				-	-	-	-	-	-	-	-	-	-	-	-
Toluene	700	100,000	500,000	< 5.3	5.3	< 5.2	5.2	< 4.6	4.6	< 4.6	4.6	< 5.4	5.4	< 4.8	4.8
Total Xylenes				< 5.3	5.3	< 5.2	5.2	< 4.6	4.6	< 4.6	4.6	< 5.4	5.4	< 4.8	4.8
trans-1,2-Dichloroethene	190	100,000	500,000	< 5.3	5.3	< 5.2	5.2	< 4.6	4.6	< 4.6	4.6	< 5.4	5.4	< 4.8	4.8
trans-1,3-Dichloropropene				< 5.3	5.3	< 5.2	5.2	< 4.6	4.6	< 4.6	4.6	< 5.4	5.4	< 4.8	4.8
trans-1,4-dichloro-2-butene				-	-	-	-	-	-	-	-	-	-	-	-
Trichloroethene	470	21,000	200,000	< 5.3	5.3	< 5.2	5.2	< 4.6	4.6	< 4.6	4.6	< 5.4	5.4	< 4.8	4.8
Trichlorofluoromethane				< 5.3	5.3	< 5.2	5.2	< 4.6	4.6	< 4.6	4.6	< 5.4	5.4	< 4.8	4.8
Trichlorotrifluoroethane				< 5.3	5.3	< 5.2	5.2	< 4.6	4.6	< 4.6	4.6	< 5.4	5.4	< 4.8	4.8
Vinyl Chloride	20	900	13,000	< 5.3	5.3	< 5.2	5.2	< 4.6	4.6	< 4.6	4.6	< 5.4	5.4	< 4.8	4.8
Total BTEX Concentration				**0**		**0**		**0**		**0**		**0**		**0**	
Total VOCs Concentration				**0**		**7.9**		**20.2**		**89**		**87.9**		**21**	

Notes:

* - 6 NYCRR Part 375-6 Remedial Program Soil Cleanup Objectives

RL - Reporting Limit

Bold/highlighted- Indicated exceedance of the NYSDEC UUSCO Guidance Value

Bold/highlighted- Indicated exceedance of the NYSDEC RRSCO Guidance Value

Bold/highlighted- Indicated exceedance of the NYSDEC RCSCO Guidance Value

Table 3B
Former Pfizer Site A - C224284
243-271 Wallabout Street,
Brooklyn, New York
Remedial Investigation Laboratory Results - Soil Samples
Volatile Organic Compounds

COMPOUND	NYSDEC Part 375.6 Unrestricted Use Soil Cleanup Objectives*	NYDEC Part 375.6 Restricted Residential Soil Cleanup Objectives*	NYDEC Part 375.6 Restricted Commercial Soil Cleanup Objectives*	EBC 2019 Laboratory Results											
				EBC 28								EBC 29			
				0-2'		4-6'		8-10'		14-16'		0-2'		4-6'	
				6/4/2019		6/4/2019		6/4/2019		6/4/2019		6/3/2019		6/3/2019	
				µg/Kg		µg/Kg		µg/Kg		µg/Kg		µg/Kg		µg/Kg	
				Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL
1,1,1,2-Tetrachlorothane				< 7.2	7.2	< 5.5	5.5	< 5.3	5.3	< 5.1	5.1	< 4.8	4.8	< 5.8	5.8
1,1,1-Trichloroethane	680	100,000	500,000	< 7.2	7.2	< 5.5	5.5	< 5.3	5.3	< 5.1	5.1	< 4.8	4.8	< 5.8	5.8
1,1,2,2-Tetrachloroethane				< 7.2	7.2	< 5.5	5.5	< 5.3	5.3	< 5.1	5.1	< 4.8	4.8	< 5.8	5.8
1,1,2-Trichloroethane				< 7.2	7.2	< 5.5	5.5	< 5.3	5.3	< 5.1	5.1	< 4.8	4.8	< 5.8	5.8
1,1-Dichloroethane	270	26,000	240,000	< 7.2	7.2	< 5.5	5.5	< 5.3	5.3	< 5.1	5.1	< 4.8	4.8	< 5.8	5.8
1,1-Dichloroethene	330	100,000	500,000	< 7.2	7.2	< 5.5	5.5	< 5.3	5.3	< 5.1	5.1	< 4.8	4.8	< 5.8	5.8
1,1-Dichloropropene				< 7.2	7.2	< 5.5	5.5	< 5.3	5.3	< 5.1	5.1	< 4.8	4.8	< 5.8	5.8
1,2,3-Trichlorobenzene				< 7.2	7.2	< 5.5	5.5	< 5.3	5.3	< 5.1	5.1	< 4.8	4.8	< 5.8	5.8
1,2,3-Trichloropropane				< 7.2	7.2	< 5.5	5.5	< 5.3	5.3	< 5.1	5.1	< 4.8	4.8	< 5.8	5.8
1,2,4-Trichlorobenzene				< 7.2	7.2	< 5.5	5.5	< 5.3	5.3	< 5.1	5.1	< 4.8	4.8	< 5.8	5.8
1,2,4-Trimethylbenzene	3,600	52,000	190,000	< 7.2	7.2	< 5.5	5.5	< 5.3	5.3	< 5.1	5.1	< 4.8	4.8	< 5.8	5.8
1,2-Dibromo-3-chloropropane				< 7.2	7.2	< 5.5	5.5	< 5.3	5.3	< 5.1	5.1	< 4.8	4.8	< 5.8	5.8
1,2-Dibromomethane				< 7.2	7.2	< 5.5	5.5	< 5.3	5.3	< 5.1	5.1	< 4.8	4.8	< 5.8	5.8
1,2-Dichlorobenzene	1,100	100,000	500,000	< 7.2	7.2	< 5.5	5.5	< 5.3	5.3	< 5.1	5.1	< 4.8	4.8	< 5.8	5.8
1,2-Dichloroethane	20	3,100	30,000	< 7.2	7.2	< 5.5	5.5	< 5.3	5.3	< 5.1	5.1	< 4.8	4.8	< 5.8	5.8
1,2-Dichloropropane				< 7.2	7.2	< 5.5	5.5	< 5.3	5.3	< 5.1	5.1	< 4.8	4.8	< 5.8	5.8
1,3,5-Trimethylbenzene	8,400	52,000	190,000	< 7.2	7.2	< 5.5	5.5	< 5.3	5.3	< 5.1	5.1	< 4.8	4.8	< 5.8	5.8
1,3-Dichlorobenzene	2,400	4,900	280,000	< 7.2	7.2	< 5.5	5.5	< 5.3	5.3	< 5.1	5.1	< 4.8	4.8	< 5.8	5.8
1,3-Dichloropropane				< 7.2	7.2	< 5.5	5.5	< 5.3	5.3	< 5.1	5.1	< 4.8	4.8	< 5.8	5.8
1,4-Dichlorobenzene	1,800	13,000	130,000	< 7.2	7.2	< 5.5	5.5	< 5.3	5.3	< 5.1	5.1	< 4.8	4.8	< 5.8	5.8
1,4- dioxane	100	13,000	130,000	<100	100	<83	83	<79	79	<77	77	<73	73	<87	87
2,2-Dichloropropane				< 7.2	7.2	< 5.5	5.5	< 5.3	5.3	< 5.1	5.1	< 4.8	4.8	< 5.8	5.8
2-Chlorotoluene				< 7.2	7.2	< 5.5	5.5	< 5.3	5.3	< 5.1	5.1	< 4.8	4.8	< 5.8	5.8
2-Hexanone (Methyl Butyl Ketone)				< 36	36	< 28	28	< 26	26	< 26	26	< 24	24	< 29	29
2-Isopropyltoluene				< 7.2	7.2	< 5.5	5.5	< 5.3	5.3	< 5.1	5.1	< 4.8	4.8	< 5.8	5.8
4-Chlorotoluene				< 7.2	7.2	< 5.5	5.5	< 5.3	5.3	< 5.1	5.1	< 4.8	4.8	< 5.8	5.8
4-Methyl-2-Pentanone				< 36	36	< 28	28	< 26	26	< 26	26	< 24	24	< 29	29
Acetone	50	100,000	500,000	**20**	36	< 28	28	**17**	26	**10**	26	**40**	24	< 29	29
Acrolein				<7.2	7.2	<5.5	5.5	<5.3		<5.1	5.1	<4.8	4.8	<5.8	5.8
Acrylonitrile				< 14	14	< 11	11	< 11	11	< 10	10	< 9.7	9.7	< 12	12
Benzene	60	4,800	44,000	< 7.2	7.2	< 5.5	5.5	< 5.3	5.3	< 5.1	5.1	< 4.8	4.8	< 5.8	5.8
Bromobenzene				< 7.2	7.2	< 5.5	5.5	< 5.3	5.3	< 5.1	5.1	< 4.8	4.8	< 5.8	5.8
Bromochloromethane				< 7.2	7.2	< 5.5	5.5	< 5.3	5.3	< 5.1	5.1	< 4.8	4.8	< 5.8	5.8
Bromodichloromethane				< 7.2	7.2	< 5.5	5.5	< 5.3	5.3	< 5.1	5.1	< 4.8	4.8	< 5.8	5.8
Bromoform				< 7.2	7.2	< 5.5	5.5	< 5.3	5.3	< 5.1	5.1	< 4.8	4.8	< 5.8	5.8
Bromomethane				< 7.2	7.2	< 5.5	5.5	< 5.3	5.3	< 5.1	5.1	< 4.8	4.8	< 5.8	5.8
Carbon Disulfide				< 7.2	7.2	< 5.5	5.5	**1.1**	5.3	**1.4**	5.1	< 4.8	4.8	< 5.8	5.8
Carbon tetrachloride	760	2,400	22,000	< 7.2	7.2	< 5.5	5.5	< 5.3	5.3	< 5.1	5.1	< 4.8	4.8	< 5.8	5.8
Chlorobenzene	1,100	100,000	500,000	< 7.2	7.2	< 5.5	5.5	< 5.3	5.3	< 5.1	5.1	< 4.8	4.8	< 5.8	5.8
Chloroethane				< 7.2	7.2	< 5.5	5.5	< 5.3	5.3	< 5.1	5.1	< 4.8	4.8	< 5.8	5.8
Chloroform	370	49,000	350,000	< 7.2	7.2	< 5.5	5.5	< 5.3	5.3	< 5.1	5.1	< 4.8	4.8	< 5.8	5.8
Chloromethane				< 7.2	7.2	< 5.5	5.5	< 5.3	5.3	< 5.1	5.1	< 4.8	4.8	< 5.8	5.8
cis-1,2-Dichloroethene	250	100,000	500,000	< 7.2	7.2	< 5.5	5.5	< 5.3	5.3	< 5.1	5.1	< 4.8	4.8	< 5.8	5.8
cis-1,3-Dichloropropene				< 7.2	7.2	< 5.5	5.5	< 5.3	5.3	< 5.1	5.1	< 4.8	4.8	< 5.8	5.8
Cyclohexane				-	-	-	-	-	-	-	-	-	-	-	-
Dibromochloromethane				< 7.2	7.2	< 5.5	5.5	< 5.3	5.3	< 5.1	5.1	< 4.8	4.8	< 5.8	5.8
Dibromomethane				< 7.2	7.2	< 5.5	5.5	< 5.3	5.3	< 5.1	5.1	< 4.8	4.8	< 5.8	5.8
Dichlorodifluoromethane				< 7.2	7.2	< 5.5	5.5	< 5.3	5.3	< 5.1	5.1	< 4.8	4.8	< 5.8	5.8
Ethylbenzene	1,000	41,000	390,000	< 7.2	7.2	< 5.5	5.5	< 5.3	5.3	< 5.1	5.1	< 4.8	4.8	< 5.8	5.8
Hexachlorobutadiene				< 7.2	7.2	< 5.5	5.5	< 5.3	5.3	< 5.1	5.1	< 4.8	4.8	< 5.8	5.8
Isopropylbenzene				< 7.2	7.2	< 5.5	5.5	< 5.3	5.3	< 5.1	5.1	< 4.8	4.8	< 5.8	5.8
m&p-Xylenes	260	100,000		< 7.2	7.2	< 5.5	5.5	< 5.3	5.3	< 5.1	5.1	< 4.8	4.8	< 5.8	5.8
Methyl Ethyl Ketone (2-Butanone)	120	100,000	500,000	< 43	43	< 33	33	< 32	32	< 31	31	< 29	29	< 35	35
Methyl t-butyl ether (MTBE)	930	100,000	500,000	< 14	14	< 11	11	< 11	11	< 10	10	< 9.7	9.7	< 12	12
Methylacetate				-	-	-	-	-	-	-	-	-	-	-	-
Methylcyclohexane				-	-	-	-	-	-	-	-	-	-	-	-
Methylene chloride	50	100,000	500,000	< 7.2	7.2	< 5.5	5.5	< 5.3	5.3	< 5.1	5.1	< 4.8	4.8	< 5.8	5.8
Naphthalene	12,000	100,000		< 7.2	7.2	< 5.5	5.5	< 5.3	5.3	< 5.1	5.1	< 4.8	4.8	< 5.8	5.8
n-Butylbenzene	12,000	100,000		< 7.2	7.2	< 5.5	5.5	< 5.3	5.3	< 5.1	5.1	< 4.8	4.8	< 5.8	5.8
n-Propylbenzene	3,900	100,000	500,000	< 7.2	7.2	< 5.5	5.5	< 5.3	5.3	< 5.1	5.1	< 4.8	4.8	< 5.8	5.8
o-Xylene	260	100,000		< 7.2	7.2	< 5.5	5.5	< 5.3	5.3	< 5.1	5.1	< 4.8	4.8	< 5.8	5.8
p-Isopropyltoluene				< 7.2	7.2	< 5.5	5.5	< 5.3	5.3	< 5.1	5.1	< 4.8	4.8	< 5.8	5.8
sec-Butylbenzene	11,000	100,000	500,000	< 7.2	7.2	< 5.5	5.5	< 5.3	5.3	< 5.1	5.1	< 4.8	4.8	< 5.8	5.8
Styrene				< 7.2	7.2	< 5.5	5.5	< 5.3	5.3	< 5.1	5.1	< 4.8	4.8	< 5.8	5.8
Tert-butyl alcohol				<140	140	<110	110	<110	110	<100	100	<97	97	<120	120
tert-Butylbenzene	5,900	100,000	500,000	< 7.2	7.2	< 5.5	5.5	< 5.3	5.3	< 5.1	5.1	< 4.8	4.8	< 5.8	5.8
Tetrachloroethene	1,300	19,000	150,000	< 7.2	7.2	< 5.5	5.5	< 5.3	5.3	< 5.1	5.1	< 4.8	4.8	< 5.8	5.8
Tetrahydrofuran (THF)				< 14	14	< 11	11	**2.7**	11	< 10	10	< 9.7	9.7	< 12	12
Toluene	700	100,000	500,000	< 7.2	7.2	< 5.5	5.5	< 5.3	5.3	< 5.1	5.1	< 4.8	4.8	< 5.8	5.8
Total Xylenes				-	-	-	-	-	-	-	-	-	-	-	-
trans-1,2-Dichloroethene	190	100,000	500,000	< 7.2	7.2	< 5.5	5.5	< 5.3	5.3	< 5.1	5.1	< 4.8	4.8	< 5.8	5.8
trans-1,3-Dichloropropene				< 7.2	7.2	< 5.5	5.5	< 5.3	5.3	< 5.1	5.1	< 4.8	4.8	< 5.8	5.8
trans-1,4-dichloro-2-butene				< 14	14	< 11	11	< 11	11	< 10	10	< 9.7	9.7	< 12	12
Trichloroethene	470	21,000	200,000	< 7.2	7.2	< 5.5	5.5	< 5.3	5.3	< 5.1	5.1	< 4.8	4.8	< 5.8	5.8
Trichlorofluoromethane				< 7.2	7.2	< 5.5	5.5	< 5.3	5.3	< 5.1	5.1	< 4.8	4.8	< 5.8	5.8
Trichlorotrifluoroethane				< 7.2	7.2	< 5.5	5.5	< 5.3	5.3	< 5.1	5.1	< 4.8	4.8	< 5.8	5.8
Vinyl Chloride	20	900	13,000	< 7.2	7.2	< 5.5	5.5	< 5.3	5.3	< 5.1	5.1	< 4.8	4.8	< 5.8	5.8
Total BTEX Concentration				**0**		**0**		**0**		**0**		**0**		**0**	
Total VOCs Concentration				**20**		**0**		**20.8**		**11.4**		**40**		**0**	

Notes:

* - 6 NYCRR Part 375-6 Remedial Program Soil Cleanup Objectives

RL - Reporting Limit

Bold/highlighted- Indicated exceedance of the NYSDEC UUSCO Guidance Value

Bold/highlighted- Indicated exceedance of the NYSDEC RRSCO Guidance Value

Bold/highlighted- Indicated exceedance of the NYSDEC RCSCO Guidance Value

Table 3B
Former Pfizer Site A - C224284
243-271 Wallabout Street,
Brooklyn, New York
Remedial Investigation Laboratory Results - Soil Samples
Volatile Organic Compounds

COMPOUND	NYSDEC Part 375.6 Unrestricted Use Soil Cleanup Objectives*	NYDEC Part 375.6 Restricted Residential Soil Cleanup Objectives*	NYDEC Part 375.6 Restricted Commercial Soil Cleanup Objectives*	EBC 2019 Laboratory Results									
				EBC 29				Soil Duplicate 1		Soil Duplicate 2		Soil Duplicate 3	
				8-10'		14-16'		EBC 24 (15-17')		EBC 21 (15-17')		EBC 25 (15-17')	
				6/3/2019		6/3/2019		6/3/2019		6/4/2019		6/6/2019	
				µg/Kg		µg/Kg		µg/Kg		µg/Kg		µg/Kg	
				Result	RL	Result	RL	Result	RL	Result	RL	Result	RL
1,1,1,2-Tetrachlorothane				< 4.5	4.5	< 20	20	< 21	21	< 19	19	< 17	17
1,1,1-Trichloroethane	680	100,000	500,000	< 4.5	4.5	< 5.0	5.0	< 5.2	5.2	< 4.8	4.8	< 4.1	4.1
1,1,2,2-Tetrachloroethane				< 4.5	4.5	< 5.0	5.0	< 5.2	5.2	< 4.8	4.8	< 4.1	4.1
1,1,2-Trichloroethane				< 4.5	4.5	< 5.0	5.0	< 5.2	5.2	< 4.8	4.8	< 4.1	4.1
1,1-Dichloroethane	270	26,000	240,000	< 4.5	4.5	< 5.0	5.0	< 5.2	5.2	< 4.8	4.8	< 4.1	4.1
1,1-Dichloroethene	330	100,000	500,000	< 4.5	4.5	< 5.0	5.0	< 5.2	5.2	< 4.8	4.8	< 4.1	4.1
1,1-Dichloropropene				< 4.5	4.5	< 5.0	5.0	-	-	-	-	-	-
1,2,3-Trichlorobenzene				< 4.5	4.5	< 5.0	5.0	< 5.2	5.2	< 4.8	4.8	< 4.1	4.1
1,2,3-Trichloropropane				< 4.5	4.5	< 5.0	5.0	-	-	-	-	-	-
1,2,4-Trichlorobenzene				< 4.5	4.5	< 5.0	5.0	< 5.2	5.2	< 4.8	4.8	< 4.1	4.1
1,2,4-Trimethylbenzene	3,600	52,000	190,000	< 4.5	4.5	< 5.0	5.0	-	-	-	-	-	-
1,2-Dibromo-3-chloropropane				< 4.5	4.5	< 5.0	5.0	< 5.2	5.2	< 4.8	4.8	< 4.1	4.1
1,2-Dibromomethane				< 4.5	4.5	< 5.0	5.0	< 5.2	5.2	< 4.8	4.8	< 4.1	4.1
1,2-Dichlorobenzene	1,100	100,000	500,000	< 4.5	4.5	< 5.0	5.0	< 5.2	5.2	< 4.8	4.8	< 4.1	4.1
1,2-Dichloroethane	20	3,100	30,000	< 4.5	4.5	< 5.0	5.0	< 5.2	5.2	< 4.8	4.8	< 4.1	4.1
1,2-Dichloropropane				< 4.5	4.5	< 5.0	5.0	< 5.2	5.2	< 4.8	4.8	< 4.1	4.1
1,3,5-Trimethylbenzene	8,400	52,000	190,000	< 4.5	4.5	< 5.0	5.0	-	-	-	-	-	-
1,3-Dichlorobenzene	2,400	4,900	280,000	< 4.5	4.5	< 5.0	5.0	< 5.2	5.2	< 4.8	4.8	< 4.1	4.1
1,3-Dichloropropane				< 4.5	4.5	< 5.0	5.0	-	-	-	-	-	-
1,4-Dichlorobenzene	1,800	13,000	130,000	< 4.5	4.5	< 5.0	5.0	< 5.2	5.2	< 4.8	4.8	< 4.1	4.1
1,4- dioxane	100	13,000	130,000	<67	67	<75	75	< 78	78	< 79	79	< 62	62
2,2-Dichloropropane				< 4.5	4.5	< 5.0	5.0	-	-	-	-	-	-
2-Chlorotoluene				< 4.5	4.5	< 5.0	5.0	-	-	-	-	-	-
2-Hexanone (Methyl Butyl Ketone)				< 22	22	< 25	25	< 26	26	< 24	24	< 21	21
2-Isopropyltoluene				< 4.5	4.5	< 5.0	5.0	-	-	-	-	-	-
4-Chlorotoluene				< 4.5	4.5	< 5.0	5.0	-	-	-	-	-	-
4-Methyl-2-Pentanone				< 22	22	< 25	25	< 26	26	< 24	24	< 21	21
Acetone	50	100,000	500,000	**23**	22	< 25	25	**5.6**	26	**22**	24	**33**	21
Acrolein				<4.5	4.5	<5.0	5.0	< 5.2	5.2	< 4.8	4.8	< 4.1	4.1
Acrylonitrile				< 8.9	8.9	< 20	20	< 21	21	< 19	19	< 17	17
Benzene	60	4,800	44,000	< 4.5	4.5	< 5.0	5.0	< 5.2	5.2	< 4.8	4.8	< 4.1	4.1
Bromobenzene				< 4.5	4.5	< 5.0	5.0	-	-	-	-	-	-
Bromochloromethane				< 4.5	4.5	< 5.0	5.0	< 5.2	5.2	< 4.8	4.8	< 4.1	4.1
Bromodichloromethane				< 4.5	4.5	< 5.0	5.0	< 5.2	5.2	< 4.8	4.8	< 4.1	4.1
Bromoform				< 4.5	4.5	< 5.0	5.0	< 5.2	5.2	< 4.8	4.8	< 4.1	4.1
Bromomethane				< 4.5	4.5	< 5.0	5.0	< 5.2	5.2	< 4.8	4.8	< 4.1	4.1
Carbon Disulfide				< 4.5	4.5	< 5.0	5.0	< 5.2	5.2	**1.3**	4.8	< 4.1	4.1
Carbon tetrachloride	760	2,400	22,000	< 4.5	4.5	< 5.0	5.0	< 5.2	5.2	< 4.8	4.8	< 4.1	4.1
Chlorobenzene	1,100	100,000	500,000	< 4.5	4.5	< 5.0	5.0	< 5.2	5.2	< 4.8	4.8	< 4.1	4.1
Chloroethane				< 4.5	4.5	< 5.0	5.0	< 5.2	5.2	< 4.8	4.8	< 4.1	4.1
Chloroform	370	49,000	350,000	< 4.5	4.5	< 5.0	5.0	< 5.2	5.2	< 4.8	4.8	< 4.1	4.1
Chloromethane				< 4.5	4.5	< 5.0	5.0	< 5.2	5.2	< 4.8	4.8	< 4.1	4.1
cis-1,2-Dichloroethene	250	100,000	500,000	< 4.5	4.5	< 5.0	5.0	< 5.2	5.2	< 4.8	4.8	< 4.1	4.1
cis-1,3-Dichloropropene				< 4.5	4.5	< 5.0	5.0	< 5.2	5.2	< 4.8	4.8	< 4.1	4.1
Cyclohexane				-	-	-	-	< 5.2	5.2	< 4.8	4.8	< 4.1	4.1
Dibromochloromethane				< 4.5	4.5	< 5.0	5.0	< 5.2	5.2	< 4.8	4.8	< 4.1	4.1
Dibromomethane				< 4.5	4.5	< 5.0	5.0	-	-	-	-	-	-
Dichlorodifluoromethane				< 4.5	4.5	< 5.0	5.0	< 5.2	5.2	< 4.8	4.8	< 4.1	4.1
Ethylbenzene	1,000	41,000	390,000	< 4.5	4.5	< 5.0	5.0	< 5.2	5.2	< 4.8	4.8	< 4.1	4.1
Hexachlorobutadiene				< 4.5	4.5	< 5.0	5.0	-	-	-	-	-	-
Isopropylbenzene				< 4.5	4.5	< 5.0	5.0	< 5.2	5.2	< 4.8	4.8	< 4.1	4.1
m&p-Xylenes	260	100,000		< 4.5	4.5	< 5.0	5.0	< 5.2	5.2	< 4.8	4.8	< 4.1	4.1
Methyl Ethyl Ketone (2-Butanone)	120	100,000	500,000	< 27	27	< 30	30	< 31	31	< 29	29	< 25	25
Methyl t-butyl ether (MTBE)	930	100,000	500,000	< 8.9	8.9	< 10	10	< 10	10	< 9.6	9.6	< 8.3	8.3
Methylacetate				-	-	-	-	< 5.2	5.2	< 4.8	4.8	< 4.1	4.1
Methylcyclohexane				-	-	-	-	< 5.2	5.2	< 4.8	4.8	< 4.1	4.1
Methylene chloride	50	100,000	500,000	< 4.5	4.5	< 5.0	5.0	< 5.2	5.2	< 4.8	4.8	< 4.1	4.1
Naphthalene	12,000	100,000		< 4.5	4.5	< 5.0	5.0	-	-	-	-	-	-
n-Butylbenzene	12,000	100,000		< 4.5	4.5	< 5.0	5.0	-	-	-	-	-	-
n-Propylbenzene	3,900	100,000	500,000	< 4.5	4.5	< 5.0	5.0	-	-	-	-	-	-
o-Xylene	260	100,000		< 4.5	4.5	< 5.0	5.0	< 5.2	5.2	< 4.8	4.8	< 4.1	4.1
p-Isopropyltoluene				< 4.5	4.5	< 5.0	5.0	-	-	-	-	-	-
sec-Butylbenzene	11,000	100,000	500,000	< 4.5	4.5	< 5.0	5.0	-	-	-	-	-	-
Styrene				< 4.5	4.5	< 5.0	5.0	< 5.2	5.2	< 4.8	4.8	< 4.1	4.1
Tert-butyl alcohol				<89	89	<100	100	< 100	100	< 96	96	< 83	83
tert-Butylbenzene	5,900	100,000	500,000	< 4.5	4.5	< 5.0	5.0	-	-	-	-	-	-
Tetrachloroethene	1,300	19,000	150,000	< 4.5	4.5	< 5.0	5.0	< 5.2	5.2	< 4.8	4.8	< 4.1	4.1
Tetrahydrofuran (THF)				< 8.9	8.9	< 10	10	-	-	-	-	-	-
Toluene	700	100,000	500,000	< 4.5	4.5	< 5.0	5.0	< 5.2	5.2	< 4.8	4.8	< 4.1	4.1
Total Xylenes				-	-	-	-	< 5.2	5.2	< 4.8	4.8	< 4.1	4.1
trans-1,2-Dichloroethene	190	100,000	500,000	< 4.5	4.5	< 5.0	5.0	< 5.2	5.2	< 4.8	4.8	< 4.1	4.1
trans-1,3-Dichloropropene				< 4.5	4.5	< 5.0	5.0	< 5.2	5.2	< 4.8	4.8	< 4.1	4.1
trans-1,4-dichloro-2-butene				< 8.9	8.9	< 10	10	-	-	-	-	-	-
Trichloroethene	470	21,000	200,000	< 4.5	4.5	< 5.0	5.0	< 5.2	5.2	< 4.8	4.8	< 4.1	4.1
Trichlorofluoromethane				< 4.5	4.5	< 5.0	5.0	< 5.2	5.2	< 4.8	4.8	< 4.1	4.1
Trichlorotrifluoroethane				< 4.5	4.5	< 5.0	5.0	< 5.2	5.2	< 4.8	4.8	< 4.1	4.1
Vinyl Chloride	20	900	13,000	< 4.5	4.5	< 5.0	5.0	< 5.2	5.2	< 4.8	4.8	< 4.1	4.1
Total BTEX Concentration				**0**		**0**		**0**		**0**		**0**	
Total VOCs Concentration				**23**		**0**		**5.6**		**23.3**		**33**	

Notes:

* - 6 NYCRR Part 375-6 Remedial Program Soil Cleanup Objectives

RL - Reporting Limit

Bold/highlighted- Indicated exceedance of the NYSDEC UUSCO Guidance Value

Bold/highlighted- Indicated exceedance of the NYSDEC RRSCO Guidance Value

Bold/highlighted- Indicated exceedance of the NYSDEC RCSCO Guidance Value

Table 4A
Former Pfizer Site A - C224284
243-271 Wallabout Street,
Brooklyn, New York
Laboratory Results - Soil Samples
Semi-Volatile Organic Compounds

COMPOUND	NYSDEC Part 375.6 Unrestricted Use Soil Cleanup Objectives*	NYDEC Part 375.6 Restricted Residential Soil Cleanup Objectives*	NYDEC Part 375.6 Restricted Commerical Soil Cleanup Objectives*	ROUX 2005 Laboratory Results							
				AF-8			SB-1		SB-2	SB-3	SB-4
				1-3'	3-5'	5-7'	0-2'	6-8'	6-7'	5-7'	6-8'
				10/24/2005	10/24/2005	10/24/2005	10/26/2005	10/25/2005	10/26/2005	10/26/2005	10/26/2005
				µg/Kg	µg/Kg	µg/Kg	µg/Kg	µg/Kg	µg/Kg	µg/Kg	µg/Kg
				Result	Result	Result	Result	Result	Result	Result	Result
1,2,4,5-Tetrachlorobenzene				-	-	-	-	-	-	-	-
1,2,4-Trichlorobenzene				430U	360U	360U	360U	380U	410U	410U	420U
1,2-Dichlorobenzene				430U	360U	360U	360U	380U	410U	410U	420U
1,2-Diphenylhydrazine				-	-	-	-	-	-	-	-
1,3-Dichlorobenzene				430U	360U	360U	360U	380U	410U	410U	420U
1,4-Dichlorobenzene				430U	360U	360U	360U	380U	410U	410U	420U
1- Chloropropane				430U	360U	360U	360U	380U	410U	410U	420U
2,4,5-Trichlorophenol				2100U	1700U	1700U	1700U	1900U	2000U	2000U	2000U
2,4,6-Trichlorophenol				430U	360U	360U	360U	380U	410U	410U	420U
2,4-Dichlorophenol				430U	360U	360U	360U	380U	410U	410U	420U
2,4-Dimethylphenol				430U	360U	360U	360U	380U	410U	410U	420U
2,4-Dinitrophenol				2100U	1700U	1700U	1700U	1900U	2000U	2000U	2000U
2,4-Dinitrotoluene				430U	360U	360U	360U	380U	410U	410U	420U
2,6-Dinitrotoluene				430U	360U	360U	360U	380U	410U	410U	420U
2-Chloronaphthalene				430U	360U	360U	360U	380U	410U	410U	420U
2-Chlorophenol				430U	360U	360U	360U	380U	410U	410U	420U
2-Methylnaphthalene				**160J**	360U	360U	360U	380U	410U	410U	420U
2-Methylphenol (o-cresol)	330	100,000	500,000	430U	360U	360U	360U	380U	410U	410U	420U
2-Nitroaniline				2100U	1700U	1700U	1700U	1900U	2000U	2000U	2000U
2-Nitrophenol				430U	360U	360U	360U	380U	410U	410U	420U
3&4-Methylphenol (m&p-cresol)				-	-	-	-	-	-	-	-
3,3'-Dichlorobenzidine				860U	720U	720U	710U	770U	820U	830U	840U
3-Nitroaniline				2100U	1700U	1700U	1700U	1900U	2000U	2000U	2000U
4,6-Dinitro-2-methylphenol				2100U	1700U	1700U	1700U	1900U	2000U	2000U	2000U
4-Bromophenyl phenyl ether				430U	360U	360U	360U	380U	410U	410U	420U
4-Chloro-3-methylphenol				430U	360U	360U	360U	380U	410U	410U	420U
4-Chloroaniline				430U	360U	360U	360U	380U	410U	410U	420U
4-Chlorophenyl phenyl ether				430U	360U	360U	360U	380U	410U	410U	420U
4-Methylphenol				430U	360U	360U	360U	380U	410U	410U	420U
4-Nitroaniline				860U	720U	720U	710U	770U	820U	830U	840U
4-Nitrophenol				2100U	1700U	1700U	1700U	1900U	2000U	2000U	2000U
Acenaphthene	20,000	100,000	500,000	**460**	360U	360U	**270J**	**350J**	410U	**250J**	420U
Acenaphthylene	100,000	100,000	500,000	**230J**	**92J**	360U	**450**	**230J**	**58J**	**500**	420U
Acetophenone				-	-	-	-	-	-	-	-
Aniline				-	-	-	-	-	-	-	-
Anthracene	100,000	100,000	500,000	**1,100**	**170J**	360U	**1,200**	**1,000**	**96J**	**500**	420U
Benz(a)anthracene	1,000	1,000	5,600	**2,800**	**680**	360U	**4,600**	**5,700**	**320J**	**760**	420U
Benzidine				-	-	-	-	-	-	-	-
Benzo(a)pyrene	1,000	1,000	1,000	**2,500**	**720**	360U	**3,800**	**5,100**	**280J**	**610**	420U
Benzo(b)fluoranthene	1,000	1,000	5,600	**2,800**	**800**	360U	**4,200**	**4,400**	**340J**	**640**	420U
Benzo(ghi)perylene	100,000	100,000	500,000	**2,500**	**550**	360U	**1400**	**3,400**	**300J**	**430**	**51J**
Benzo(k)fluoranthene	800	3,900	56,000	**1,100**	**310J**	360U	**1,500H**	**1,400**	**120J**	**260J**	420U
Benzoic acid				-	-	-	-	-	-	-	-
Benzyl Alcohol				430U	360U	360U	360U	380U	410U	410U	420U
Benzyl butyl phthalate				-	-	-	-	-	-	-	-
Bis(2-chloroethoxy)methane				430U	360U	360U	360U	380U	410U	410U	420U
Bis(2-chloroethyl)ether				430U	360U	360U	360U	380U	410U	410U	420U
Bis(2-chloroisopropyl)ether				-	-	-	-	-	-	-	-
Bis(2-ethylhexyl)phthalate				**180J**	360U	360U	360U	380U	410U	410U	420U
Boctyl Phthalate				430U	360U	360U	360U	380U	410U	410U	420U
Butylbenzyl Phthalate				430U	360U	360U	360U	380U	**420**	410U	420U
Butyl Phthalate				**97J**	360U	360U	**63J**	380U	410U	410U	420U
Carbazole				**460**	**70J**	360U	**340J**	**310JH**	410U	**200J**	420U
Chrysene	1,000	3,900	56,000	**2,700**	**770**	360U	**5,000**	**6,400A**	**350J**	**750**	420U
Dibenz(a,h)anthracene	330	330	560	**680**	**150J**	360U	**510**	**1,099**	410U	**150J**	420U
Dibenzofuran	7,000	59,000	350,000	**350J**	360U	360U	**150J**	**140J**	410U	**140J**	420U
Diethyl phthalate				430U	360U	360U	360U	380U	410U	410U	420U
Dimethylphthalate				430U	360U	360U	360U	380U	410U	410U	420U
Di-n-butylphthalate				-	-	-	-	-	-	-	-
Di-n-octylphthalate				-	-	-	-	-	-	-	-
Fluoranthene	100,000	100,000	500,000	**6,400**	**1,400**	360U	**1,300**	**2,799**	**600**	**1,800**	**76J**
Fluorene	30,000	100,000	500,000	**490**	360U	360U	**320J**	**320J**	410U	410U	420U
Hexachlorobenzene	330	1,200	6,000	430U	360U	360U	360U	380U	410U	410U	420U
Hexachlorobutadiene				430U	360U	360U	360U	380U	410U	410U	420U
Hexachlorocyclopentadiene				430U	360U	360U	360U	380U	410U	410U	420U
Hexachloroethane				430U	360U	360U	360U	380U	410U	410U	420U
Indeno(1,2,3-cd)pyrene	500	500	5,600	**2200**	**500**	360U	**1,300**	**2,799**	**220J**	**400J**	**46J**
Isophorone				430U	360U	360U	360U	380U	410U	410U	420U
Naphthalene	12,000	100,000	500,000	**200J**	360U	360U	**140J**	**120J**	410U	410U	420U
Nitrobenzene				420U	360U	360U	360U	380U	410U	410U	420U
N-Nitrosodimethylamine				-	-	-	-	-	-	-	-
N-Nitrosodi-n-propylamine				430U	360U	360U	360U	380U	410U	410U	420U
N-Nitrosodiphenylamine				430U	360U	360U	360U	380U	410U	410U	420U
Pentachloronitrobenzene				-	-	-	-	-	-	-	-
Pentachlorophenol	800	6,700	6,700	2100U	1700U	1700U	1700U	1900U	2000U	2000U	2000U
Phenanthrene	100,000	100,000	500,000	**4,500**	**680**	360U	**4,400**	**4,599**	**400J**	**1,900**	420U
Phenol	330	100,000	500,000	430U	360U	360U	360U	380U	410U	410U	420U
Pyrene	100,000	100,000	500,000	**4,400**	**1,300**	360U	**5,900A**	**11,000A**	**540**	**1,300**	420U
Pyridine				-	-	-	-	-	-	-	-

Notes:

* - 6 NYCRR Part 375-6 Remedial Program Soil Cleanup Objectives

RL - Reporting Limit

Bold/highlighted- Indicated exceedance of the NYSDEC UUSCO Guidance Value

Bold/highlighted- Indicated exceedance of the NYSDEC RRSCO Guidance Value

Bold/highlighted- Indicated exceedance of the NYSDEC RCSCO Guidance Value

Table 4A
Former Pfizer Site A - C224284
243-271 Wallabout Street,
Brooklyn, New York
Laboratory Results - Soil Samples
Semi-Volatile Organic Compounds

COMPOUND	NYSDEC Part 375.6 Unrestricted Use Soil Cleanup Objectives*	NYDEC Part 375.6 Restricted Residential Soil Cleanup Objectives*	NYDEC Part 375.6 Restricted Commerical Soil Cleanup Objectives*	ROUX 2005 Laboratory Results							
				SB-5	SB-6		SB-7		SB-8		SB-9
				5-6'	0-2'	6-7'	0-2'	5-7'	0-2'	5-7'	(5-6')
				10/24/2005	10/24/2005	10/24/2005	10/26/2005	10/26/2005	10/26/2005	10/26/2005	10/24/2005
				µg/Kg	µg/Kg	µg/Kg	µg/Kg	µg/Kg	µg/Kg	µg/Kg	µg/Kg
				Result	Result	Result	Result	Result	Result	Result	Result
1,2,4,5-Tetrachlorobenzene				-	-	-	-	-	-	-	-
1,2,4-Trichlorobenzene				410U	400U	480U	390U	430U	390U	470U	380U
1,2-Dichlorobenzene				410U	400U	480U	390U	430U	390U	470U	380U
1,2-Diphenylhydrazine				-	-	-	-	-	-	-	-
1,3-Dichlorobenzene				410U	400U	480U	390U	430U	390U	470U	380U
1,4-Dichlorobenzene				410U	400U	480U	390U	430U	390U	470U	380U
1- Chloropropane				410U	400U	480U	390U	430U	390U	470U	380U
2,4,5-Trichlorophenol				2000U	1900U	2300U	1900U	2100U	1900U	2300U	1900U
2,4,6-Trichlorophenol				410U	400U	480U	390U	430U	390U	470U	380U
2,4-Dichlorophenol				410U	400U	480U	390U	430U	390U	470U	380U
2,4-Dimethylphenol				410U	400U	480U	390U	430U	390U	470U	380U
2,4-Dinitrophenol				2000U	1900U	2300U	1900U	2100U	1900U	2300U	1900U
2,4-Dinitrotoluene				410U	400U	480U	390U	430U	390U	470U	380U
2,6-Dinitrotoluene				410U	400U	480U	390U	430U	390U	470U	380U
2-Chloronaphthalene				410U	400U	480U	390U	430U	390U	470U	380U
2-Chlorophenol				410U	400U	480U	390U	430U	390U	470U	380U
2-Methylnaphthalene				410U	400U	480U	390U	430U	**1,600**	470U	380U
2-Methylphenol (o-cresol)	330	100,000	500,000	410U	400U	480U	390U	430U	390U	470U	380U
2-Nitroaniline				2000U	1900U	2300U	1900U	2100U	1900U	2300U	1900U
2-Nitrophenol				400U	400U	480U	390U	430U	390U	470U	380U
3&4-Methylphenol (m&p-cresol)				-	-	-	-	-	-	-	-
3,3'-Dichlorobenzidine				820U	800U	950U	770U	860U	790U	940U	770U
3-Nitroaniline				2000U	1900U	2300U	1900U	2100U	1900U	2300U	1900U
4,6-Dinitro-2-methylphenol				2000U	1900U	2300U	1900U	2100U	1900U	2300U	1900U
4-Bromophenyl phenyl ether				410U	400U	480U	390U	430U	390U	470U	380U
4-Chloro-3-methylphenol				410U	400U	480U	390U	430U	390U	470U	380U
4-Chloroaniline				410U	400U	480U	390U	430U	390U	470U	380U
4-Chlorophenyl phenyl ether				410U	400U	480U	390U	430U	390U	470U	380U
4-Methylphenol				**300J**	400U	480U	390U	430U	390U	470U	380U
4-Nitroaniline				820U	800U	950U	770U	860U	790U	940U	770U
4-Nitrophenol				2000U	1900U	2300U	1900U	2100U	1900U	2300U	1900U
Acenaphthene	20,000	100,000	500,000	**83J**	**850**	480U	**150J**	430U	**4,400**	470U	380U
Acenaphthylene	100,000	100,000	500,000	**110J**	**400J**	480U	**89J**	430U	**1,300**	470U	380U
Acetophenone				-	-	-	-	-	-	-	-
Aniline				-	-	-	-	-	-	-	-
Anthracene	100,000	100,000	500,000	**270J**	**2100**	480U	**350J**	430U	**12,000A**	**200J**	380U
Benz(a)anthracene	1,000	1,000	5,600	**1,000**	**5,400**	480U	**1,200**	430U	**24,000A**	**390J**	**91J**
Benzidine				-	-	-	-	-	-	-	-
Benzo(a)pyrene	1,000	1,000	1,000	**960**	**4,700**	480U	**1,300**	430U	**18,000A**	**320J**	**71J**
Benzo(b)fluoranthene	1,000	1,000	5,600	**1,200**	**5,400**	480U	**1,300**	430U	**23,000A**	**350J**	380U
Benzo(ghi)perylene	100,000	100,000	500,000	**510**	**2,800**	480U	**1200**	430U	**7,000A**	**190J**	380U
Benzo(k)fluoranthene	800	3,900	56,000	**430**	**2,300**	480U	**510**	430U	**7,400A**	**110J**	380U
Benzoic acid				-	-	-	-	-	-	-	-
Benzyl Alcohol				410U	400U	480U	390U	430U	390U	470U	380U
Benzyl butyl phthalate				-	-	-	-	-	-	-	-
Bis(2-chloroethoxy)methane				410U	400U	480U	390U	430U	390U	470U	380U
Bis(2-chloroethyl)ether				410U	400U	480U	390U	430U	390U	470U	380U
Bis(2-chloroisopropyl)ether				-	-	-	-	-	-	-	-
Bis(2-ethylhexyl)phthalate				410U	400U	480U	390U	430U	390U	470U	380U
Boctyl Phthalate				410U	400U	480U	390U	430U	390U	470U	380U
Butylbenzyl Phthalate				410U	400U	480U	390U	430U	390U	470U	380U
Butyl Phthalate				410U	**220J**	480U	390U	430U	**71J**	470U	380U
Carbazole				**170J**	**960**	480U	**150J**	430U	**4,700**	**400J**	380U
Chrysene	1,000	3,900	56,000	**1,200**	**5,900**	480U	**1,200**	430U	**23,000A**	**400J**	**83J**
Dibenz(a,h)anthracene	330	330	560	**190J**	**830**	480U	**320J**	430U	**2,500H**	470U	380U
Dibenzofuran	7,000	59,000	350,000	**72J**	**540**	480U	**77J**	430U	**3,400**	470U	380U
Diethyl phthalate				410U	400U	480U	390U	430U	390U	470U	380U
Dimethylphthalate				410U	400U	480U	390U	430U	390U	470U	380U
Di-n-butylphthalate				-	-	-	-	-	-	-	-
Di-n-octylphthalate				-	-	-	-	-	-	-	-
Fluoranthene	100,000	100,000	500,000	**2,000**	**12,000A**	480U	**2,200**	430U	**46,000A**	**920**	**190J**
Fluorene	30,000	100,000	500,000	410U	400U	48-U	**120J**	430U	**5,100**	**68J**	380U
Hexachlorobenzene	330	1,200	6,000	410U	400U	480U	390U	430U	390U	470U	380U
Hexachlorobutadiene				410U	400U	480U	390U	430U	390U	470U	380U
Hexachlorocyclopentadiene				410U	400U	480U	390U	430U	390U	470U	380U
Hexachloroethane				410U	400U	480U	390U	430U	390U	470U	380U
Indeno(1,2,3-cd)pyrene	500	500	5,600	**530**	**2,600**	480U	**980**	430U	**7,000A**	**190J**	380U
Isophorone				410U	400U	480U	390U	430U	390U	470U	380U
Naphthalene	12,000	100,000	500,000	120J	**320J**	480U	380U	430U	**2,300**	470U	380U
Nitrobenzene				410U	400U	480U	390U	430U	390U	470U	380U
N-Nitrosodimethylamine				-	-	-	-	-	-	-	-
N-Nitrosodi-n-propylamine				410U	400U	480U	390U	430U	390U	470U	380U
N-Nitrosodiphenylamine				410U	400U	480U	390U	430U	390U	470U	380U
Pentachloronitrobenzene				-	-	-	-	-	-	-	-
Pentachlorophenol	800	6,700	6,700	2000U	1900U	2300U	1900U	2100U	1900U	2300U	1900U
Phenanthrene	100,000	100,000	500,000	**1,300**	**9,000A**	480U	**1,500**	430U	**48,000A**	**810**	**200J**
Phenol	330	100,000	500,000	410U	400U	480U	390U	430U	390U	470U	380U
Pyrene	100,000	100,000	500,000	**1,700**	**9,200A**	480U	**1,900**	430U	**34,000A**	**590**	**160J**
Pyridine				-	-	-	-	-	-	-	-

Notes:

* - 6 NYCRR Part 375-6 Remedial Program Soil Cleanup Objectives

RL - Reporting Limit

Bold/highlighted- Indicated exceedance of the NYSDEC UUSCO Guidance Value

Bold/highlighted- Indicated exceedance of the NYSDEC RRSCO Guidance Value

Bold/highlighted- Indicated exceedance of the NYSDEC RCSCO Guidance Value

Table 4A
Former Pfizer Site A - C224284
243-271 Wallabout Street,
Brooklyn, New York
Laboratory Results - Soil Samples
Semi-Volatile Organic Compounds

COMPOUND	NYSDEC Part 375.6 Unrestricted Use Soil Cleanup Objectives*	NYDEC Part 375.6 Restricted Residential Soil Cleanup Objectives*	NYDEC Part 375.6 Restricted Commerical Soil Cleanup Objectives*	ROUX 2005 Laboratory Results						
				SB-10		UST-1	UST-2	UST-3	UST-4	UST-5
				(0-2')	(6-7')	(7-8')	(6-7')	(6-7')	(6-8')	(5-7')
				10/24/2005	10/24/2005	10/24/2005	10/25/2005	10/26/2005	10/27/2005	10/28/2005
				µg/Kg	µg/Kg	µg/Kg	µg/Kg	µg/Kg	µg/Kg	µg/Kg
				Result	Result	Result	Result	Result	Result	Result
1,2,4,5-Tetrachlorobenzene				-	-	-	-	-	-	-
1,2,4-Trichlorobenzene				400U	450U	380U	380U	510U	380U	400U
1,2-Dichlorobenzene				400U	450U	380U	380U	510U	380U	400U
1,2-Diphenylhydrazine				-	-	-	-	-	-	-
1,3-Dichlorobenzene				400U	450U	380U	380U	510U	380U	400U
1,4-Dichlorobenzene				400U	450U	380U	380U	510U	380U	400U
1- Chloropropane				400U	450U	380U	380U	510U	380U	400U
2,4,5-Trichlorophenol				1900U	2200U	1900U	1800U	2500U	1800U	1900U
2,4,6-Trichlorophenol				400U	450U	380U	380U	510U	380U	400U
2,4-Dichlorophenol				400U	450U	380U	380U	510U	380U	400U
2,4-Dimethylphenol				400U	450U	380U	380U	510U	380U	400U
2,4-Dinitrophenol				1900U	2200U	1900U	1800U	2500U	1800U	1900U
2,4-Dinitrotoluene				400U	450U	380U	380U	510U	380U	400U
2,6-Dinitrotoluene				400U	450U	380U	380U	510U	380U	400U
2-Chloronaphthalene				400U	450U	380U	380U	510U	380U	400U
2-Chlorophenol				400U	450U	380U	380U	510U	380U	400U
2-Methylnaphthalene				**370J**	450U	380U	380U	510U	380U	**67J**
2-Methylphenol (o-cresol)	330	100,000	500,000	400U	450U	380U	380U	510U	380U	400U
2-Nitroaniline				1900U	2200U	380U	1800U	2500U	1800U	1900U
2-Nitrophenol				400U	450U	380U	380U	510U	380U	400U
3&4-Methylphenol (m&p-cresol)				-	-	-	-	-	-	-
3,3'-Dichlorobenzidine				800U	910U	770U	760U	1000U	760U	800U
3-Nitroaniline				1900U	2200U	1900U	1800U	2500U	1800U	1900U
4,6-Dinitro-2-methylphenol				1900U	2200U	1900U	1800U	2500U	1800U	1900U
4-Bromophenyl phenyl ether				400U	450U	380U	380U	510U	380U	400U
4-Chloro-3-methylphenol				400U	450U	380U	380U	510U	380U	400U
4-Chloroaniline				400U	450U	380U	380U	510U	380U	400U
4-Chlorophenyl phenyl ether				400U	450U	380U	380U	510U	380U	400U
4-Methylphenol				400U	450U	380U	380U	510U	380U	400U
4-Nitroaniline				800U	910U	770U	760U	1000U	760U	800U
4-Nitrophenol				1900U	2200U	1900U	1800U	2500U	1800U	1900U
Acenaphthene	20,000	100,000	500,000	**380J**	450U	380U	380U	510U	380U	**250J**
Acenaphthylene	100,000	100,000	500,000	**590**	450U	380U	380U	510U	**74J**	**120J**
Acetophenone				-	-	-	-	-	-	-
Aniline				-	-	-	-	-	-	-
Anthracene	100,000	100,000	500,000	**2,600**	450U	380U	380U	510U	**210J**	**760**
Benz(a)anthracene	1,000	1,000	5,600	**9,900A**	450U	380U	380U	510U	**700**	**2,200**
Benzidine				-	-	-	-	-	-	-
Benzo(a)pyrene	1,000	1,000	1,000	**6,700A**	450U	380U	380U	510U	**580**	**2,000**
Benzo(b)fluoranthene	1,000	1,000	5,600	**9,100A**	450U	380U	380U	510U	**570**	**2,000**
Benzo(ghi)perylene	100,000	100,000	500,000	**4,000**	450U	380U	380U	510U	**380**	**1,400**
Benzo(k)fluoranthene	800	3,900	56,000	400U	450U	380U	380U	510U	**250J**	**900**
Benzoic acid				-	-	-	-	-	-	-
Benzyl Alcohol				400U	450U	380U	380U	510U	380U	400U
Benzyl butyl phthalate				-	-	-	-	-	-	-
Bis(2-chloroethoxy)methane				400U	450U	380U	380U	510U	380U	400U
Bis(2-chloroethyl)ether				400U	450U	380U	380U	510U	380U	400U
Bis(2-chloroisopropyl)ether				-	-	-	-	-	-	-
Bis(2-ethylhexyl)phthalate				**340J**	450U	380U	380U	510U	380U	400U
Boctyl Phthalate				400U	450U	380U	380U	510U	380U	400U
Butylbenzyl Phthalate				**82J**	450U	380U	380U	510U	380U	400U
Butyl Phthalate				**650**	450U	380U	380U	510U	380U	400U
Carbazole				**1,100**	450U	380U	380U	510U	380U	**300J**
Chrysene	1,000	3,900	56,000	**11,000A**	450U	380U	380U	510U	**620**	**2,300**
Dibenz(a,h)anthracene	330	330	560	**1,400**	450U	380U	380U	510U	**130J**	**470**
Dibenzofuran	7,000	59,000	350,000	**450**	450U	380U	380U	510U	380U	**220J**
Diethyl phthalate				400U	450U	380U	380U	510U	380U	400U
Dimethylphthalate				400U	450U	380U	380U	510U	380U	400U
Di-n-butylphthalate				-	-	-	-	-	-	-
Di-n-octylphthalate				-	-	-	-	-	-	-
Fluoranthene	100,000	100,000	500,000	**16,000A**	450U	**61J**	380U	510U	**12,00**	**5,100**
Fluorene	30,000	100,000	500,000	**350J**	450U	380U	380U	510U	380U	**200J**
Hexachlorobenzene	330	1,200	6,000	400U	450U	380U	380U	510U	380U	400U
Hexachlorobutadiene				400U	450U	380U	380U	510U	380U	400U
Hexachlorocyclopentadiene				400U	450U	380U	380U	510U	380U	400U
Hexachloroethane				400U	450U	380U	380U	510U	380U	400U
Indeno(1,2,3-cd)pyrene	500	500	5,600	**3,800**	450U	380U	380U	510U	**380**	**1,400**
Isophorone				400U	450U	380U	380U	510U	380U	400U
Naphthalene	12,000	100,000	500,000	**480**	450U	380U	380U	510U	380U	**120J**
Nitrobenzene				400U	450U	380U	380U	510U	380U	400U
N-Nitrosodimethylamine				-	-	-	-	-	-	-
N-Nitrosodi-n-propylamine				400U	450U	380U	380U	510U	380U	400U
N-Nitrosodiphenylamine				400U	450U	380U	380U	510U	380U	400U
Pentachloronitrobenzene				-	-	-	-	-	-	-
Pentachlorophenol	800	6,700	6,700	1900U	2200U	1900U	1800U	2500U	1800U	1900U
Phenanthrene	100,000	100,000	500,000	**10,000A**	450U	380U	380U	510U	**470**	**3,600**
Phenol	330	100,000	500,000	400U	450U	380U	380U	510U	380U	400U
Pyrene	100,000	100,000	500,000	**13,000A**	450U	**120J**	380U	510U	**790**	**3,300**
Pyridine				-	-	-	-	-	-	-

Notes:

* - 6 NYCRR Part 375-6 Remedial Program Soil Cleanup Objectives

RL - Reporting Limit

Bold/highlighted- Indicated exceedance of the NYSDEC UUSCO Guidance Value

Bold/highlighted- Indicated exceedance of the NYSDEC RRSCO Guidance Value

Bold/highlighted- Indicated exceedance of the NYSDEC RCSCO Guidance Value

Table 4A
Former Pfizer Site A - C224284
243-271 Wallabout Street,
Brooklyn, New York
Laboratory Results - Soil Samples
Semi-Volatile Organic Compounds

COMPOUND	NYSDEC Part 375.6 Unrestricted Use Soil Cleanup Objectives*	NYDEC Part 375.6 Restricted Residential Soil Cleanup Objectives*	NYDEC Part 375.6 Restricted Commerical Soil Cleanup Objectives*	EBC 2018 Laboratory Results											
				EBC1				EBC2				EBC3			
				0-2'		5-7'		0-2'		5-7'		0-2'		5-7'	
				6/5/2018		6/5/2018		6/5/2018		6/5/2018		6/5/2018		6/5/2018	
				µg/Kg		µg/Kg		µg/Kg		µg/Kg		µg/Kg		µg/Kg	
				Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL
1,2,4,5-Tetrachlorobenzene				< 250	250	< 280	280	< 250	250	< 270	270	< 260	260	< 570	570
1,2,4-Trichlorobenzene				< 250	250	< 280	280	< 250	250	< 270	270	< 260	260	< 570	570
1,2-Dichlorobenzene				< 250	250	< 280	280	< 250	250	< 270	270	< 260	260	< 570	570
1,2-Diphenylhydrazine				< 250	250	< 280	280	< 250	250	< 270	270	< 260	260	< 570	570
1,3-Dichlorobenzene				< 250	250	< 280	280	< 250	250	< 270	270	< 260	260	< 570	570
1,4-Dichlorobenzene				< 250	250	< 280	280	< 250	250	< 270	270	< 260	260	< 570	570
1- Chloropropane				-	-	-	-	-	-	-	-	-	-	-	-
2,4,5-Trichlorophenol				< 250	250	< 280	280	< 250	250	< 270	270	< 260	260	< 570	570
2,4,6-Trichlorophenol				< 180	180	< 200	200	< 180	180	< 190	190	< 180	180	< 400	400
2,4-Dichlorophenol				< 180	180	< 200	200	< 180	180	< 190	190	< 180	180	< 400	400
2,4-Dimethylphenol				< 250	250	< 280	280	< 250	250	< 270	270	< 260	260	< 570	570
2,4-Dinitrophenol				< 250	250	< 280	280	< 250	250	< 270	270	< 260	260	< 570	570
2,4-Dinitrotoluene				< 180	180	< 200	200	< 180	180	< 190	190	< 180	180	< 400	400
2,6-Dinitrotoluene				< 180	180	< 200	200	< 180	180	< 190	190	< 180	180	< 400	400
2-Chloronaphthalene				< 250	250	< 280	280	< 250	250	< 270	270	< 260	260	< 570	570
2-Chlorophenol				< 250	250	< 280	280	< 250	250	< 270	270	< 260	260	< 570	570
2-Methylnaphthalene				< 250	250	< 280	280	< 250	250	< 270	270	< 260	260	**250**	570
2-Methylphenol (o-cresol)	330	100,000	500,000	< 250	250	< 280	280	< 250	250	< 270	270	< 260	260	< 330	330
2-Nitroaniline				< 250	250	< 280	280	< 250	250	< 270	270	< 260	260	< 570	570
2-Nitrophenol				< 250	250	< 280	280	< 250	250	< 270	270	< 260	260	< 570	570
3&4-Methylphenol (m&p-cresol)				< 250	250	< 280	280	< 250	250	< 270	270	< 260	260	< 570	570
3,3'-Dichlorobenzidine				< 180	180	< 200	200	< 180	180	< 190	190	< 180	180	< 400	400
3-Nitroaniline				< 360	360	< 400	400	< 360	360	< 390	390	< 360	360	< 810	810
4,6-Dinitro-2-methylphenol				< 220	220	< 240	240	< 220	220	< 230	230	< 220	220	< 480	480
4-Bromophenyl phenyl ether				< 250	250	< 280	280	< 250	250	< 270	270	< 260	260	< 570	570
4-Chloro-3-methylphenol				< 250	250	< 280	280	< 250	250	< 270	270	< 260	260	< 570	570
4-Chloroaniline				< 290	290	< 320	320	< 290	290	< 310	310	< 290	290	< 650	650
4-Chlorophenyl phenyl ether				< 250	250	< 280	280	< 250	250	< 270	270	< 260	260	< 570	570
4-Methylphenol				-	-	-	-	-	-	-	-	-	-	-	-
4-Nitroaniline				< 360	360	< 400	400	< 360	360	< 390	390	< 360	360	< 810	810
4-Nitrophenol				< 360	360	< 400	400	< 360	360	< 390	390	< 360	360	< 810	810
Acenaphthene	20,000	100,000	500,000	< 250	250	< 280	280	**140**	250	**250**	270	**130**	260	**1,400**	570
Acenaphthylene	100,000	100,000	500,000	< 250	250	< 280	280	< 250	250	**130**	270	**250**	260	**320**	570
Acetophenone				< 250	250	< 280	280	< 250	250	< 270	270	< 260	260	< 570	570
Aniline				< 290	290	< 320	320	< 290	290	< 310	310	< 290	290	< 650	650
Anthracene	100,000	100,000	500,000	**140**	250	**230**	280	**340**	250	**590**	270	**550**	260	**2,600**	570
Benz(a)anthracene	1,000	1,000	5,600	**560**	250	**680**	280	**1,300**	250	**1,700**	270	**1,800**	260	**6,300**	570
Benzidine				< 360	360	< 400	400	< 360	360	< 390	390	< 360	360	< 810	810
Benzo(a)pyrene	1,000	1,000	1,000	**570**	180	**620**	200	**1,200**	180	**1,500**	190	**1,700**	180	**5,600**	400
Benzo(b)fluoranthene	1,000	1,000	5,600	**520**	250	**530**	280	**1,100**	250	**1,300**	270	**1,500**	260	**4,800**	570
Benzo(ghi)perylene	100,000	100,000	500,000	**510**	250	**530**	280	**720**	250	**830**	270	**1,000**	260	**3,200**	570
Benzo(k)fluoranthene	800	3,900	56,000	**470**	250	**540**	280	**1,100**	250	**1,200**	270	**1,400**	260	**4,900**	570
Benzoic acid				< 1800	1,800	< 2000	2,000	< 1800	1,800	< 1900	1,900	< 1800	1,800	< 4000	4,000
Benzyl Alcohol				-	-	-	-	-	-	-	-	-	-	-	-
Benzyl butyl phthalate				< 250	250	< 280	280	< 250	250	< 270	270	< 260	260	< 570	570
Bis(2-chloroethoxy)methane				< 250	250	< 280	280	< 250	250	< 270	270	< 260	260	< 570	570
Bis(2-chloroethyl)ether				< 180	180	< 200	200	< 180	180	< 190	190	< 180	180	< 400	400
Bis(2-chloroisopropyl)ether				< 250	250	< 280	280	< 250	250	< 270	270	< 260	260	< 570	570
Bis(2-ethylhexyl)phthalate				< 250	250	< 280	280	**120**	250	< 270	270	**370**	260	< 570	570
Boctyl Phthalate				-	-	-	-	-	-	-	-	-	-	-	-
Butylbenzyl Phthalate				-	-	-	-	-	-	-	-	-	-	-	-
Butyl Phthalate				-	-	-	-	-	-	-	-	-	-	-	-
Carbazole				< 180	180	< 200	200	**190**	180	**240**	190	**220**	180	**1,600**	400
Chrysene	1,000	3,900	56,000	**590**	250	**670**	280	**1,300**	250	**1,800**	270	**1,900**	260	**6,600**	570
Dibenz(a,h)anthracene	330	330	560	**180**	180	**340**	200	**150**	180	**220**	190	**170**	180	**490**	400
Dibenzofuran	7,000	59,000	350,000	< 250	250	< 280	280	< 250	250	**190**	270	**130**	260	**740**	570
Diethyl phthalate				< 250	250	< 280	280	< 250	250	< 270	270	< 260	260	< 570	570
Dimethylphthalate				< 250	250	< 280	280	< 250	250	< 270	270	< 260	260	< 570	570
Di-n-butylphthalate				< 250	250	< 280	280	< 250	250	< 270	270	< 260	260	< 570	570
Di-n-octylphthalate				< 250	250	< 280	280	< 250	250	< 270	270	< 260	260	< 570	570
Fluoranthene	100,000	100,000	500,000	**890**	250	**1,200**	280	**2,400**	250	**3,300**	270	**3,600**	260	**16,000**	570
Fluorene	30,000	100,000	500,000	< 250	250	< 280	280	**130**	250	**240**	270	**200**	260	**1,300**	570
Hexachlorobenzene	330	1,200	6,000	< 180	180	< 200	200	< 180	180	< 190	190	< 180	180	< 330	330
Hexachlorobutadiene				< 250	250	< 280	280	< 250	250	< 270	270	< 260	260	< 570	570
Hexachlorocyclopentadiene				< 250	250	< 280	280	< 250	250	< 270	270	< 260	260	< 570	570
Hexachloroethane				< 180	180	< 200	200	< 180	180	< 190	190	< 180	180	< 400	400
Indeno(1,2,3-cd)pyrene	500	500	5,600	**610**	250	**620**	280	**830**	250	**1,100**	270	**1,300**	260	**4,200**	570
Isophorone				< 180	180	< 200	200	< 180	180	< 190	190	< 180	180	< 400	400
Naphthalene	12,000	100,000	500,000	< 250	250	< 280	280	< 250	250	**160**	270	**110**	260	**550**	570
Nitrobenzene				< 180	180	< 200	200	< 180	180	< 190	190	< 180	180	< 400	400
N-Nitrosodimethylamine				< 250	250	< 280	280	< 250	250	< 270	270	< 260	260	< 570	570
N-Nitrosodi-n-propylamine				< 180	180	< 200	200	< 180	180	< 190	190	< 180	180	< 400	400
N-Nitrosodiphenylamine				< 250	250	< 280	280	< 250	250	< 270	270	< 260	260	< 570	570
Pentachloronitrobenzene				< 250	250	< 280	280	< 250	250	< 270	270	< 260	260	< 570	570
Pentachlorophenol	800	6,700	6,700	< 220	220	< 240	240	< 220	220	< 230	230	< 220	220	< 480	480
Phenanthrene	100,000	100,000	500,000	**540**	250	**900**	280	**1,600**	250	**3,100**	270	**2,500**	260	**15,000**	570
Phenol	330	100,000	500,000	< 250	250	< 280	280	< 250	250	< 270	270	< 260	260	< 330	330
Pyrene	100,000	100,000	500,000	**800**	250	**990**	280	**2,100**	250	**3,100**	270	**3,300**	260	**13,000**	570
Pyridine				< 250	250	< 280	280	< 250	250	< 270	270	< 260	260	< 570	570

Notes:

* - 6 NYCRR Part 375-6 Remedial Program Soil Cleanup Objectives

RL - Reporting Limit

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Bold/highlighted- Indicated exceedance of the NYSDEC RRSCO Guidance Value

Bold/highlighted- Indicated exceedance of the NYSDEC RCSCO Guidance Value

Table 4A
Former Pfizer Site A - C224284
243-271 Wallabout Street,
Brooklyn, New York
Laboratory Results - Soil Samples
Semi-Volatile Organic Compounds

COMPOUND	NYSDEC Part 375.6 Unrestricted Use Soil Cleanup Objectives*	NYDEC Part 375.6 Restricted Residential Soil Cleanup Objectives*	NYDEC Part 375.6 Restricted Commerical Soil Cleanup Objectives*	EBC 2018 Laboratory Results											
				EBC4				EBC5				EBC6			
				0-2'		5-7'		0-2'		3-5'		0-2'		8-10'	
				6/5/2018		6/5/2018		6/5/2018		6/5/2018		6/5/2018		6/5/2018	
				µg/Kg		µg/Kg		µg/Kg		µg/Kg		µg/Kg		µg/Kg	
				Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL
1,2,4,5-Tetrachlorobenzene				< 260	260	< 290	290	< 250	250	< 250	250	< 240	240	< 290	290
1,2,4-Trichlorobenzene				< 260	260	< 290	290	< 250	250	< 250	250	< 240	240	< 290	290
1,2-Dichlorobenzene				< 260	260	< 290	290	< 250	250	< 250	250	< 240	240	< 290	290
1,2-Diphenylhydrazine				< 260	260	< 290	290	< 250	250	< 250	250	< 240	240	< 290	290
1,3-Dichlorobenzene				< 260	260	< 290	290	< 250	250	< 250	250	< 240	240	< 290	290
1,4-Dichlorobenzene				< 260	260	< 290	290	< 250	250	< 250	250	< 240	240	< 290	290
1- Chloropropane				-	-	-	-	-	-	-	-	-	-	-	-
2,4,5-Trichlorophenol				< 260	260	< 290	290	< 250	250	< 250	250	< 240	240	< 290	290
2,4,6-Trichlorophenol				< 190	190	< 210	210	< 180	180	< 180	180	< 170	170	< 210	210
2,4-Dichlorophenol				< 190	190	< 210	210	< 180	180	< 180	180	< 170	170	< 210	210
2,4-Dimethylphenol				< 260	260	< 290	290	< 250	250	< 250	250	< 240	240	< 290	290
2,4-Dinitrophenol				< 260	260	< 290	290	< 250	250	< 250	250	< 240	240	< 420	420
2,4-Dinitrotoluene				< 190	190	< 210	210	< 180	180	< 180	180	< 170	170	< 210	210
2,6-Dinitrotoluene				< 190	190	< 210	210	< 180	180	< 180	180	< 170	170	< 210	210
2-Chloronaphthalene				< 260	260	< 290	290	< 250	250	< 250	250	< 240	240	< 290	290
2-Chlorophenol				< 260	260	< 290	290	< 250	250	< 250	250	< 240	240	< 290	290
2-Methylnaphthalene				< 260	260	< 290	290	**150**	250	< 250	250	< 240	240	< 290	290
2-Methylphenol (o-cresol)	330	100,000	500,000	< 260	260	< 290	290	< 250	250	< 250	250	< 240	240	< 290	290
2-Nitroaniline				< 260	260	< 290	290	< 250	250	< 250	250	< 240	240	< 290	290
2-Nitrophenol				< 260	260	< 290	290	< 250	250	< 250	250	< 240	240	< 290	290
3&4-Methylphenol (m&p-cresol)				< 260	260	< 290	290	< 250	250	< 250	250	< 240	240	< 290	290
3,3'-Dichlorobenzidine				< 190	190	< 210	210	< 180	180	< 180	180	< 170	170	< 210	210
3-Nitroaniline				< 370	370	< 420	420	< 360	360	< 360	360	< 350	350	< 420	420
4,6-Dinitro-2-methylphenol				< 220	220	< 250	250	< 220	220	< 210	210	< 210	210	< 830	830
4-Bromophenyl phenyl ether				< 260	260	< 290	290	< 250	250	< 250	250	< 240	240	< 290	290
4-Chloro-3-methylphenol				< 260	260	< 290	290	< 250	250	< 250	250	< 240	240	< 290	290
4-Chloroaniline				< 300	300	< 330	330	< 290	290	< 290	290	< 280	280	< 330	330
4-Chlorophenyl phenyl ether				< 260	260	< 290	290	< 250	250	< 250	250	< 240	240	< 290	290
4-Methylphenol				-	-	-	-	-	-	-	-	-	-	-	-
4-Nitroaniline				< 370	370	< 420	420	< 360	360	< 360	360	< 350	350	< 420	420
4-Nitrophenol				< 370	370	< 420	420	< 360	360	< 360	360	< 350	350	< 420	420
Acenaphthene	20,000	100,000	500,000	**260**	260	< 290	290	**390**	250	**220**	250	< 240	240	< 290	290
Acenaphthylene	100,000	100,000	500,000	**400**	260	< 290	290	**120**	250	< 250	250	< 240	240	< 290	290
Acetophenone				< 260	260	< 290	290	< 250	250	< 250	250	< 240	240	< 290	290
Aniline				< 300	300	< 330	330	< 290	290	< 290	290	< 280	280	< 330	330
Anthracene	100,000	100,000	500,000	**840**	260	< 290	290	**870**	250	**610**	250	< 240	240	< 290	290
Benz(a)anthracene	1,000	1,000	5,600	**3,200**	260	< 290	290	**2,300**	250	**1,400**	250	< 240	240	**180**	290
Benzidine				< 370	370	< 420	420	< 360	360	< 360	360	< 350	350	< 420	420
Benzo(a)pyrene	1,000	1,000	1,000	**2,900**	190	**140**	210	**2,200**	180	**1,200**	180	< 170	170	**160**	210
Benzo(b)fluoranthene	1,000	1,000	5,600	**2,700**	260	< 290	290	**2,000**	250	**1,100**	250	< 240	240	< 290	290
Benzo(ghi)perylene	100,000	100,000	500,000	**1,600**	260	**190**	290	**1,400**	250	**660**	250	< 240	240	**150**	290
Benzo(k)fluoranthene	800	3,900	56,000	**2,300**	260	< 290	290	**1,700**	250	**980**	250	< 240	240	**140**	290
Benzoic acid				< 1900	1,900	< 2100	2,100	< 1800	1,800	< 1800	1,800	< 1700	1,700	< 2100	2,100
Benzyl Alcohol				-	-	-	-	-	-	-	-	-	-	-	-
Benzyl butyl phthalate				< 260	260	< 290	290	< 250	250	< 250	250	< 240	240	< 290	290
Bis(2-chloroethoxy)methane				< 260	260	< 290	290	< 250	250	< 250	250	< 240	240	< 290	290
Bis(2-chloroethyl)ether				< 190	190	< 210	210	< 180	180	< 180	180	< 170	170	< 210	210
Bis(2-chloroisopropyl)ether				< 260	260	< 290	290	< 250	250	< 250	250	< 240	240	< 290	290
Bis(2-ethylhexyl)phthalate				< 260	260	< 290	290	< 250	250	< 250	250	< 240	240	< 290	290
Boctyl Phthalate				-	-	-	-	-	-	-	-	-	-	-	-
Butylbenzyl Phthalate				-	-	-	-	-	-	-	-	-	-	-	-
Butyl Phthalate				-	-	-	-	-	-	-	-	-	-	-	-
Carbazole				**330**	190	< 210	210	**330**	180	**240**	180	< 170	170	< 210	210
Chrysene	1,000	3,900	56,000	**3,400**	260	< 290	290	**2,300**	250	**1,400**	250	< 240	240	**210**	290
Dibenz(a,h)anthracene	330	330	560	**290**	190	< 210	210	**500**	180	**200**	180	< 170	170	< 210	210
Dibenzofuran	7,000	59,000	350,000	**140**	260	< 290	290	**260**	250	**180**	250	< 240	240	< 290	290
Diethyl phthalate				< 260	260	< 290	290	< 250	250	< 250	250	< 240	240	< 290	290
Dimethylphthalate				< 260	260	< 290	290	< 250	250	< 250	250	< 240	240	< 290	290
Di-n-butylphthalate				< 260	260	< 290	290	< 250	250	< 250	250	< 240	240	< 290	290
Di-n-octylphthalate				< 260	260	< 290	290	< 250	250	< 250	250	< 240	240	< 290	290
Fluoranthene	100,000	100,000	500,000	**6,400**	260	< 290	290	**4,700**	250	**2,900**	250	< 240	240	**270**	290
Fluorene	30,000	100,000	500,000	**240**	260	< 290	290	**390**	250	**280**	250	< 240	240	< 290	290
Hexachlorobenzene	330	1,200	6,000	< 190	190	< 210	210	< 180	180	< 180	180	< 170	170	< 210	210
Hexachlorobutadiene				< 260	260	< 290	290	< 250	250	< 250	250	< 240	240	< 290	290
Hexachlorocyclopentadiene				< 260	260	< 290	290	< 250	250	< 250	250	< 240	240	< 290	290
Hexachloroethane				< 190	190	< 210	210	< 180	180	< 180	180	< 170	170	< 210	210
Indeno(1,2,3-cd)pyrene	500	500	5,600	**2,100**	260	**210**	290	**1,600**	250	**850**	250	< 240	240	< 290	290
Isophorone				< 190	190	< 210	210	< 180	180	< 180	180	< 170	170	< 210	210
Naphthalene	12,000	100,000	500,000	**120**	260	< 290	290	**220**	250	**140**	250	< 240	240	< 290	290
Nitrobenzene				< 190	190	< 210	210	< 180	180	< 180	180	< 170	170	< 210	210
N-Nitrosodimethylamine				< 260	260	< 290	290	< 250	250	< 250	250	< 240	240	< 290	290
N-Nitrosodi-n-propylamine				< 190	190	< 210	210	< 180	180	< 180	180	< 170	170	< 210	210
N-Nitrosodiphenylamine				< 260	260	< 290	290	< 250	250	< 250	250	< 240	240	< 290	290
Pentachloronitrobenzene				< 260	260	< 290	290	< 250	250	< 250	250	< 240	240	< 290	290
Pentachlorophenol	800	6,700	6,700	< 220	220	< 250	250	< 220	220	< 210	210	< 210	210	< 250	250
Phenanthrene	100,000	100,000	500,000	**3,700**	260	< 290	290	**3,600**	250	**2,900**	250	< 240	240	**310**	290
Phenol	330	100,000	500,000	< 260	260	< 290	290	< 250	250	< 250	250	< 240	240	< 290	290
Pyrene	100,000	100,000	500,000	**6,400**	260	< 290	290	**4,200**	250	**2,500**	250	< 240	240	**300**	290
Pyridine				< 260	260	< 290	290	< 250	250	< 250	250	< 240	240	< 290	290

Notes:

* - 6 NYCRR Part 375-6 Remedial Program Soil Cleanup Objectives

RL - Reporting Limit

Bold/highlighted- Indicated exceedance of the NYSDEC UUSCO Guidance Value

Bold/highlighted- Indicated exceedance of the NYSDEC RRSCO Guidance Value

Bold/highlighted- Indicated exceedance of the NYSDEC RCSCO Guidance Value

Table 4A
Former Pfizer Site A - C224284
243-271 Wallabout Street,
Brooklyn, New York
Laboratory Results - Soil Samples
Semi-Volatile Organic Compounds

COMPOUND	NYSDEC Part 375.6 Unrestricted Use Soil Cleanup Objectives*	NYDEC Part 375.6 Restricted Residential Soil Cleanup Objectives*	NYDEC Part 375.6 Restricted Commerical Soil Cleanup Objectives*	EBC 2018 Laboratory Results											
				EBC7				SB7				EBC8			
				0-2'		8-10'		0-2'		3-5'		0-2'		8-10'	
				6/5/2018		6/5/2018		6/5/2018		6/5/2018		6/5/2018		6/5/2018	
				µg/Kg		µg/Kg		µg/Kg		µg/Kg		µg/Kg		µg/Kg	
				Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL
1,2,4,5-Tetrachlorobenzene				< 250	250	< 260	260	< 740	740	< 270	270	< 260	260	< 240	240
1,2,4-Trichlorobenzene				< 250	250	< 260	260	< 740	740	< 270	270	< 260	260	< 240	240
1,2-Dichlorobenzene				< 250	250	< 260	260	< 740	740	< 270	270	< 260	260	< 240	240
1,2-Diphenylhydrazine				< 250	250	< 260	260	< 740	740	< 270	270	< 260	260	< 240	240
1,3-Dichlorobenzene				< 250	250	< 260	260	< 740	740	< 270	270	< 260	260	< 240	240
1,4-Dichlorobenzene				< 250	250	< 260	260	< 740	740	< 270	270	< 260	260	< 240	240
1- Chloropropane				-	-	-	-	-	-	-	-	-	-	-	-
2,4,5-Trichlorophenol				< 250	250	< 260	260	< 740	740	< 270	270	< 260	260	< 240	240
2,4,6-Trichlorophenol				< 180	180	< 190	190	< 530	530	< 190	190	< 190	190	< 170	170
2,4-Dichlorophenol				< 180	180	< 190	190	< 530	530	< 190	190	< 190	190	< 170	170
2,4-Dimethylphenol				< 250	250	< 260	260	< 740	740	< 270	270	< 260	260	< 240	240
2,4-Dinitrophenol				< 250	250	< 260	260	< 740	740	< 270	270	< 260	260	< 240	240
2,4-Dinitrotoluene				< 180	180	< 190	190	< 530	530	< 190	190	< 190	190	< 170	170
2,6-Dinitrotoluene				< 180	180	< 190	190	< 530	530	< 190	190	< 190	190	< 170	170
2-Chloronaphthalene				< 250	250	< 260	260	< 740	740	< 270	270	< 260	260	< 240	240
2-Chlorophenol				< 250	250	< 260	260	< 740	740	< 270	270	< 260	260	< 240	240
2-Methylnaphthalene				< 250	250	< 260	260	< 740	740	< 270	270	**220**	260	< 240	240
2-Methylphenol (o-cresol)	330	100,000	500,000	< 250	250	< 260	260	< 490	490	< 270	270	< 260	260	< 240	240
2-Nitroaniline				< 250	250	< 260	260	< 740	740	< 270	270	< 260	260	< 240	240
2-Nitrophenol				< 250	250	< 260	260	< 740	740	< 270	270	< 260	260	< 240	240
3&4-Methylphenol (m&p-cresol)				< 250	250	< 260	260	< 740	740	< 270	270	< 260	260	< 240	240
3,3'-Dichlorobenzidine				< 180	180	< 190	190	< 530	530	< 190	190	< 190	190	< 170	170
3-Nitroaniline				< 360	360	< 380	380	< 1100	1,100	< 390	390	< 380	380	< 350	350
4,6-Dinitro-2-methylphenol				< 210	210	< 230	230	< 630	630	< 230	230	< 230	230	< 210	210
4-Bromophenyl phenyl ether				< 250	250	< 260	260	< 740	740	< 270	270	< 260	260	< 240	240
4-Chloro-3-methylphenol				< 250	250	< 260	260	< 740	740	< 270	270	< 260	260	< 240	240
4-Chloroaniline				< 290	290	< 300	300	< 840	840	< 310	310	< 300	300	< 280	280
4-Chlorophenyl phenyl ether				< 250	250	< 260	260	< 740	740	< 270	270	< 260	260	< 240	240
4-Methylphenol				-	-	-	-	-	-	-	-	-	-	-	-
4-Nitroaniline				< 360	360	< 380	380	< 1100	1,100	< 390	390	< 380	380	< 350	350
4-Nitrophenol				< 360	360	< 380	380	< 1100	1,100	< 390	390	< 380	380	< 350	350
Acenaphthene	20,000	100,000	500,000	< 250	250	< 260	260	< 740	740	< 270	270	**660**	260	< 240	240
Acenaphthylene	100,000	100,000	500,000	< 250	250	< 260	260	< 740	740	< 270	270	**170**	260	< 240	240
Acetophenone				< 250	250	< 260	260	< 740	740	< 270	270	< 260	260	< 240	240
Aniline				< 290	290	< 300	300	< 840	840	< 310	310	< 300	300	< 280	280
Anthracene	100,000	100,000	500,000	**290**	250	< 260	260	**520**	740	< 270	270	**1,400**	260	< 240	240
Benz(a)anthracene	1,000	1,000	5,600	**860**	250	< 260	260	**1,100**	740	**280**	270	**4,200**	260	< 240	240
Benzidine				< 360	360	< 380	380	< 1100	1,100	< 390	390	< 380	380	< 350	350
Benzo(a)pyrene	1,000	1,000	1,000	**780**	180	< 190	190	**940**	530	**280**	190	**3,800**	190	< 170	170
Benzo(b)fluoranthene	1,000	1,000	5,600	**900**	250	< 260	260	**980**	740	**230**	270	**3,600**	260	< 240	240
Benzo(ghi)perylene	100,000	100,000	500,000	**510**	250	< 260	260	**860**	740	**210**	270	**2,300**	260	**170**	240
Benzo(k)fluoranthene	800	3,900	56,000	**630**	250	< 260	260	**810**	740	**270**	270	**3,400**	260	< 240	240
Benzoic acid				< 1800	1,800	< 1900	1,900	< 5300	5,300	< 1900	1,900	< 1900	1,900	< 1700	1,700
Benzyl Alcohol				-	-	-	-	-	-	-	-	-	-	-	-
Benzyl butyl phthalate				< 250	250	< 260	260	< 740	740	< 270	270	< 260	260	< 240	240
Bis(2-chloroethoxy)methane				< 250	250	< 260	260	< 740	740	< 270	270	< 260	260	< 240	240
Bis(2-chloroethyl)ether				< 180	180	< 190	190	< 530	530	< 190	190	< 190	190	< 170	170
Bis(2-chloroisopropyl)ether				< 250	250	< 260	260	< 740	740	< 270	270	< 260	260	< 240	240
Bis(2-ethylhexyl)phthalate				**180**	250	< 260	260	< 740	740	< 270	270	< 260	260	< 240	240
Boctyl Phthalate				-	-	-	-	-	-	-	-	-	-	-	-
Butylbenzyl Phthalate				-	-	-	-	-	-	-	-	-	-	-	-
Butyl Phthalate				-	-	-	-	-	-	-	-	-	-	-	-
Carbazole				< 180	180	< 190	190	< 530	530	< 190	190	**750**	190	< 170	170
Chrysene	1,000	3,900	56,000	**1,000**	250	< 260	260	**1,100**	740	**310**	270	**4,600**	260	< 240	240
Dibenz(a,h)anthracene	330	330	560	< 180	180	< 190	190	< 530	530	< 190	190	**580**	190	< 170	170
Dibenzofuran	7,000	59,000	350,000	< 250	250	< 260	260	< 330	330	< 270	270	**600**	260	< 240	240
Diethyl phthalate				< 250	250	< 260	260	< 740	740	< 270	270	< 260	260	< 240	240
Dimethylphthalate				< 250	250	< 260	260	< 740	740	< 270	270	< 260	260	< 240	240
Di-n-butylphthalate				**120**	250	< 260	260	< 740	740	< 270	270	< 260	260	< 240	240
Di-n-octylphthalate				< 250	250	< 260	260	< 740	740	< 270	270	< 260	260	< 240	240
Fluoranthene	100,000	100,000	500,000	**1,500**	250	< 260	260	**2,300**	740	**510**	270	**9,800**	1,300	< 240	240
Fluorene	30,000	100,000	500,000	< 250	250	< 260	260	< 740	740	< 270	270	**550**	260	< 240	240
Hexachlorobenzene	330	1,200	6,000	< 180	180	< 190	190	< 330	330	< 190	190	< 190	190	< 170	170
Hexachlorobutadiene				< 250	250	< 260	260	< 740	740	< 270	270	< 260	260	< 240	240
Hexachlorocyclopentadiene				< 250	250	< 260	260	< 740	740	< 270	270	< 260	260	< 240	240
Hexachloroethane				< 180	180	< 190	190	< 530	530	< 190	190	< 190	190	< 170	170
Indeno(1,2,3-cd)pyrene	500	500	5,600	**550**	250	< 260	260	**770**	740	**210**	270	**2,600**	260	**210**	240
Isophorone				< 180	180	< 190	190	< 530	530	< 190	190	< 190	190	< 170	170
Naphthalene	12,000	100,000	500,000	< 250	250	< 260	260	< 740	740	< 270	270	**440**	260	< 240	240
Nitrobenzene				< 180	180	< 190	190	< 530	530	< 190	190	< 190	190	< 170	170
N-Nitrosodimethylamine				< 250	250	< 260	260	< 740	740	< 270	270	< 260	260	< 240	240
N-Nitrosodi-n-propylamine				< 180	180	< 190	190	< 530	530	< 190	190	< 190	190	< 170	170
N-Nitrosodiphenylamine				< 250	250	< 260	260	< 740	740	< 270	270	< 260	260	< 240	240
Pentachloronitrobenzene				< 250	250	< 260	260	< 740	740	< 270	270	< 260	260	< 240	240
Pentachlorophenol	800	6,700	6,700	< 210	210	< 230	230	< 630	630	< 230	230	< 230	230	< 210	210
Phenanthrene	100,000	100,000	500,000	**1,300**	250	< 260	260	**2,200**	740	**340**	270	**9,100**	1,300	< 240	240
Phenol	330	100,000	500,000	< 250	250	< 260	260	< 340	340	< 270	270	< 260	260	< 240	240
Pyrene	100,000	100,000	500,000	**1,500**	250	< 260	260	**2,000**	740	**480**	270	**8,900**	1,300	< 240	240
Pyridine				< 250	250	< 260	260	< 740	740	< 270	270	< 260	260	< 240	240

Notes:

* - 6 NYCRR Part 375-6 Remedial Program Soil Cleanup Objectives

RL - Reporting Limit

Bold/highlighted- Indicated exceedance of the NYSDEC UUSCO Guidance Value

Bold/highlighted- Indicated exceedance of the NYSDEC RRSCO Guidance Value

Bold/highlighted- Indicated exceedance of the NYSDEC RCSCO Guidance Value

Table 4A
Former Pfizer Site A - C224284
243-271 Wallabout Street,
Brooklyn, New York
Laboratory Results - Soil Samples
Semi-Volatile Organic Compounds

COMPOUND	NYSDEC Part 375.6 Unrestricted Use Soil Cleanup Objectives*	NYDEC Part 375.6 Restricted Residential Soil Cleanup Objectives*	NYDEC Part 375.6 Restricted Commerical Soil Cleanup Objectives*	EBC 2018 Laboratory Results											
				EBC9				EBC10				EBC11			
				0-2'		6-8'		0-2'		5-7'		0-2'		5-7'	
				6/5/2018		6/5/2018		6/5/2018		6/5/2018		6/5/2018		6/5/2018	
				µg/Kg		µg/Kg		µg/Kg		µg/Kg		µg/Kg		µg/Kg	
				Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL
1,2,4,5-Tetrachlorobenzene				< 260	260	< 300	300	< 250	250	< 240	240	< 260	260	< 270	270
1,2,4-Trichlorobenzene				< 260	260	< 300	300	< 250	250	< 240	240	< 260	260	< 270	270
1,2-Dichlorobenzene				< 260	260	< 300	300	< 250	250	< 240	240	< 260	260	< 270	270
1,2-Diphenylhydrazine				< 260	260	< 300	300	< 250	250	< 240	240	< 260	260	< 270	270
1,3-Dichlorobenzene				< 260	260	< 300	300	< 250	250	< 240	240	< 260	260	< 270	270
1,4-Dichlorobenzene				< 260	260	< 300	300	< 250	250	< 240	240	< 260	260	< 270	270
1- Chloropropane				-	-	-	-	-	-	-	-	-	-	-	-
2,4,5-Trichlorophenol				< 260	260	< 300	300	< 250	250	< 240	240	< 260	260	< 270	270
2,4,6-Trichlorophenol				< 190	190	< 210	210	< 180	180	< 170	170	< 190	190	< 190	190
2,4-Dichlorophenol				< 190	190	< 210	210	< 180	180	< 170	170	< 190	190	< 190	190
2,4-Dimethylphenol				< 260	260	< 300	300	< 250	250	< 240	240	< 260	260	< 270	270
2,4-Dinitrophenol				< 260	260	< 300	300	< 250	250	< 240	240	< 260	260	< 270	270
2,4-Dinitrotoluene				< 190	190	< 210	210	< 180	180	< 170	170	< 190	190	< 190	190
2,6-Dinitrotoluene				< 190	190	< 210	210	< 180	180	< 170	170	< 190	190	< 190	190
2-Chloronaphthalene				< 260	260	< 300	300	< 250	250	< 240	240	< 260	260	< 270	270
2-Chlorophenol				< 260	260	< 300	300	< 250	250	< 240	240	< 260	260	< 270	270
2-Methylnaphthalene				**290**	260	< 300	300	< 250	250	< 240	240	**220**	260	< 270	270
2-Methylphenol (o-cresol)	330	100,000	500,000	< 260	260	< 300	300	< 250	250	< 240	240	< 260	260	< 270	270
2-Nitroaniline				< 260	260	< 300	300	< 250	250	< 240	240	< 260	260	< 270	270
2-Nitrophenol				< 260	260	< 300	300	< 250	250	< 240	240	< 260	260	< 270	270
3&4-Methylphenol (m&p-cresol)				**650**	260	< 300	300	< 250	250	< 240	240	< 260	260	< 270	270
3,3'-Dichlorobenzidine				< 190	190	< 210	210	< 180	180	< 170	170	< 190	190	< 190	190
3-Nitroaniline				< 370	370	< 430	430	< 360	360	< 350	350	< 380	380	< 380	380
4,6-Dinitro-2-methylphenol				< 220	220	< 260	260	< 210	210	< 210	210	< 230	230	< 230	230
4-Bromophenyl phenyl ether				< 260	260	< 300	300	< 250	250	< 240	240	< 260	260	< 270	270
4-Chloro-3-methylphenol				< 260	260	< 300	300	< 250	250	< 240	240	< 260	260	< 270	270
4-Chloroaniline				< 300	300	< 340	340	< 290	290	< 280	280	< 300	300	< 300	300
4-Chlorophenyl phenyl ether				< 260	260	< 300	300	< 250	250	< 240	240	< 260	260	< 270	270
4-Methylphenol				-	-	-	-	-	-	-	-	-	-	-	-
4-Nitroaniline				< 370	370	< 430	430	< 360	360	< 350	350	< 380	380	< 380	380
4-Nitrophenol				< 370	370	< 430	430	< 360	360	< 350	350	< 380	380	< 380	380
Acenaphthene	20,000	100,000	500,000	**620**	260	**180**	300	< 250	250	< 240	240	**450**	260	< 270	270
Acenaphthylene	100,000	100,000	500,000	**570**	260	**350**	300	< 250	250	< 240	240	**390**	260	< 270	270
Acetophenone				< 260	260	< 300	300	< 250	250	< 240	240	< 260	260	< 270	270
Aniline				< 300	300	< 340	340	< 290	290	< 280	280	< 300	300	< 300	300
Anthracene	100,000	100,000	500,000	**2,100**	260	**590**	300	< 250	250	< 240	240	**1,100**	260	**150**	270
Benz(a)anthracene	1,000	1,000	5,600	**8,800**	1,300	**1,400**	300	< 250	250	< 240	240	**3,400**	260	**510**	270
Benzidine				< 370	370	< 430	430	< 360	360	< 350	350	< 380	380	< 380	380
Benzo(a)pyrene	1,000	1,000	1,000	**8,600**	930	**1,900**	210	< 180	180	**140**	170	**3,100**	190	**540**	190
Benzo(b)fluoranthene	1,000	1,000	5,600	**7,600**	1,300	**1,500**	300	< 250	250	**120**	240	**2,800**	260	**450**	270
Benzo(ghi)perylene	100,000	100,000	500,000	**5,400**	260	**1,500**	300	< 250	250	**160**	240	**2,200**	260	**790**	270
Benzo(k)fluoranthene	800	3,900	56,000	**6,200**	260	**1,600**	300	< 250	250	< 240	240	**2,500**	260	**300**	270
Benzoic acid				< 1900	1,900	< 2100	2,100	< 1800	1,800	< 1700	1,700	< 1900	1,900	< 1900	1,900
Benzyl Alcohol				-	-	-	-	-	-	-	-	-	-	-	-
Benzyl butyl phthalate				< 260	260	< 300	300	< 250	250	< 240	240	< 260	260	< 270	270
Bis(2-chloroethoxy)methane				< 260	260	< 300	300	< 250	250	< 240	240	< 260	260	< 270	270
Bis(2-chloroethyl)ether				< 190	190	< 210	210	< 180	180	< 170	170	< 190	190	< 190	190
Bis(2-chloroisopropyl)ether				< 260	260	< 300	300	< 250	250	< 240	240	< 260	260	< 270	270
Bis(2-ethylhexyl)phthalate				< 260	260	< 300	300	< 250	250	< 240	240	< 260	260	**510**	270
Boctyl Phthalate				-	-	-	-	-	-	-	-	-	-	-	-
Butylbenzyl Phthalate				-	-	-	-	-	-	-	-	-	-	-	-
Butyl Phthalate				-	-	-	-	-	-	-	-	-	-	-	-
Carbazole				**850**	190	**330**	210	< 180	180	< 170	170	**480**	190	< 190	190
Chrysene	1,000	3,900	56,000	**9,800**	1,300	**1,600**	300	< 250	250	< 240	240	**3,700**	260	**760**	270
Dibenz(a,h)anthracene	330	330	560	**1,400**	190	**380**	210	< 180	180	< 170	170	**610**	190	**270**	190
Dibenzofuran	7,000	59,000	350,000	**430**	260	**170**	300	< 250	250	< 240	240	**290**	260	< 270	270
Diethyl phthalate				< 260	260	< 300	300	< 250	250	< 240	240	< 260	260	< 270	270
Dimethylphthalate				< 260	260	< 300	300	< 250	250	< 240	240	< 260	260	< 270	270
Di-n-butylphthalate				< 260	260	< 300	300	< 250	250	< 240	240	< 260	260	< 270	270
Di-n-octylphthalate				< 260	260	< 300	300	< 250	250	< 240	240	< 260	260	< 270	270
Fluoranthene	100,000	100,000	500,000	**19,000**	1,300	**3,200**	300	< 250	250	**140**	240	**5,800**	260	**940**	270
Fluorene	30,000	100,000	500,000	**670**	260	**280**	300	< 250	250	< 240	240	**440**	260	< 270	270
Hexachlorobenzene	330	1,200	6,000	< 190	190	< 210	210	< 180	180	< 170	170	< 190	190	< 190	190
Hexachlorobutadiene				< 260	260	< 300	300	< 250	250	< 240	240	< 260	260	< 270	270
Hexachlorocyclopentadiene				< 260	260	< 300	300	< 250	250	< 240	240	< 260	260	< 270	270
Hexachloroethane				< 190	190	< 210	210	< 180	180	< 170	170	< 190	190	< 190	190
Indeno(1,2,3-cd)pyrene	500	500	5,600	**5,900**	260	**1,800**	300	< 250	250	**160**	240	**2,500**	260	**600**	270
Isophorone				< 190	190	< 210	210	< 180	180	< 170	170	< 190	190	< 190	190
Naphthalene	12,000	100,000	500,000	**390**	260	**150**	300	< 250	250	< 240	240	**590**	260	< 270	270
Nitrobenzene				< 190	190	< 210	210	< 180	180	< 170	170	< 190	190	< 190	190
N-Nitrosodimethylamine				< 260	260	< 300	300	< 250	250	< 240	240	< 260	260	< 270	270
N-Nitrosodi-n-propylamine				< 190	190	< 210	210	< 180	180	< 170	170	< 190	190	< 190	190
N-Nitrosodiphenylamine				< 260	260	< 300	300	< 250	250	< 240	240	< 260	260	< 270	270
Pentachloronitrobenzene				< 260	260	< 300	300	< 250	250	< 240	240	< 260	260	< 270	270
Pentachlorophenol	800	6,700	6,700	< 220	220	< 260	260	< 210	210	< 210	210	< 230	230	< 230	230
Phenanthrene	100,000	100,000	500,000	**13,000**	1,300	**2,800**	300	< 250	250	**170**	240	**4,900**	260	**1,100**	270
Phenol	330	100,000	500,000	< 260	260	< 300	300	< 250	250	< 240	240	< 260	260	< 270	270
Pyrene	100,000	100,000	500,000	**17,000**	1,300	**2,600**	300	< 250	250	< 240	240	**6,100**	260	**1,100**	270
Pyridine				< 260	260	< 300	300	< 250	250	< 240	240	< 260	260	< 270	270

Notes:

* - 6 NYCRR Part 375-6 Remedial Program Soil Cleanup Objectives

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Bold/highlighted- Indicated exceedance of the NYSDEC RRSCO Guidance Value

Bold/highlighted- Indicated exceedance of the NYSDEC RCSCO Guidance Value

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Former Pfizer Site A - C224284
243-271 Wallabout Street,
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Laboratory Results - Soil Samples
Semi-Volatile Organic Compounds

COMPOUND	NYSDEC Part 375.6 Unrestricted Use Soil Cleanup Objectives*	NYDEC Part 375.6 Restricted Residential Soil Cleanup Objectives*	NYDEC Part 375.6 Restricted Commerical Soil Cleanup Objectives*	EBC 2018 Laboratory Results											
				EBC12				EBC13				EBC14			
				0-2'		6-8'		0-2'		5-7'		0-2'		3-5'	
				6/5/2018		6/5/2018		6/5/2018		6/5/2018		6/5/2018		6/5/2018	
				µg/Kg		µg/Kg		µg/Kg		µg/Kg		µg/Kg		µg/Kg	
				Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL
1,2,4,5-Tetrachlorobenzene				< 260	260	< 280	280	< 240	240	< 280	280	< 270	270	< 270	270
1,2,4-Trichlorobenzene				< 260	260	< 280	280	< 240	240	< 280	280	< 270	270	< 270	270
1,2-Dichlorobenzene				< 260	260	< 280	280	< 240	240	< 280	280	< 270	270	< 270	270
1,2-Diphenylhydrazine				< 260	260	< 280	280	< 240	240	< 280	280	< 270	270	< 270	270
1,3-Dichlorobenzene				< 260	260	< 280	280	< 240	240	< 280	280	< 270	270	< 270	270
1,4-Dichlorobenzene				< 260	260	< 280	280	< 240	240	< 280	280	< 270	270	< 270	270
1- Chloropropane				-	-	-	-	-	-	-	-	-	-	-	-
2,4,5-Trichlorophenol				< 260	260	< 280	280	< 240	240	< 280	280	< 270	270	< 270	270
2,4,6-Trichlorophenol				< 180	180	< 200	200	< 170	170	< 200	200	< 190	190	< 190	190
2,4-Dichlorophenol				< 180	180	< 200	200	< 170	170	< 200	200	< 190	190	< 190	190
2,4-Dimethylphenol				< 260	260	< 280	280	< 240	240	< 280	280	< 270	270	**280**	270
2,4-Dinitrophenol				< 260	260	< 280	280	< 240	240	< 280	280	< 270	270	< 270	270
2,4-Dinitrotoluene				< 180	180	< 200	200	< 170	170	< 200	200	< 190	190	< 190	190
2,6-Dinitrotoluene				< 180	180	< 200	200	< 170	170	< 200	200	< 190	190	< 190	190
2-Chloronaphthalene				< 260	260	< 280	280	< 240	240	< 280	280	< 270	270	< 270	270
2-Chlorophenol				< 260	260	< 280	280	< 240	240	< 280	280	< 270	270	< 270	270
2-Methylnaphthalene				< 260	260	**8,700**	2,800	**150**	240	**310**	280	**430**	270	**1,300**	270
2-Methylphenol (o-cresol)	330	100,000	500,000	< 260	260	< 280	280	< 240	240	< 280	280	< 270	270	**190**	270
2-Nitroaniline				< 260	260	< 280	280	< 240	240	< 280	280	< 270	270	< 270	270
2-Nitrophenol				< 260	260	< 280	280	< 240	240	< 280	280	< 270	270	< 270	270
3&4-Methylphenol (m&p-cresol)				< 260	260	< 280	280	< 240	240	< 280	280	< 270	270	**540**	270
3,3'-Dichlorobenzidine				< 180	180	< 200	200	< 170	170	< 200	200	< 190	190	< 190	190
3-Nitroaniline				< 370	370	< 390	390	< 350	350	< 400	400	< 380	380	< 390	390
4,6-Dinitro-2-methylphenol				< 220	220	< 240	240	< 210	210	< 240	240	< 230	230	< 230	230
4-Bromophenyl phenyl ether				< 260	260	< 280	280	< 240	240	< 280	280	< 270	270	< 270	270
4-Chloro-3-methylphenol				< 260	260	< 280	280	< 240	240	< 280	280	< 270	270	< 270	270
4-Chloroaniline				< 300	300	< 320	320	< 280	280	< 320	320	< 300	300	< 310	310
4-Chlorophenyl phenyl ether				< 260	260	< 280	280	< 240	240	< 280	280	< 270	270	< 270	270
4-Methylphenol				-	-	-	-	-	-	-	-	-	-	-	-
4-Nitroaniline				< 370	370	< 390	390	< 350	350	< 400	400	< 380	380	< 390	390
4-Nitrophenol				< 370	370	< 390	390	< 350	350	< 400	400	< 380	380	< 390	390
Acenaphthene	20,000	100,000	500,000	< 260	260	**5,200**	280	< 240	240	**450**	280	**400**	270	**4,400**	270
Acenaphthylene	100,000	100,000	500,000	< 260	260	**2,100**	280	< 240	240	**200**	280	**380**	270	**4,600**	270
Acetophenone				< 260	260	< 280	280	< 240	240	< 280	280	< 270	270	< 270	270
Aniline				< 300	300	< 320	320	< 280	280	< 320	320	< 300	300	< 310	310
Anthracene	100,000	100,000	500,000	**230**	260	**12,000**	2,800	**140**	240	**1,000**	280	**1,000**	270	**13,000**	2,700
Benz(a)anthracene	1,000	1,000	5,600	**920**	260	**14,000**	2,800	**460**	240	**2,300**	280	**2,500**	270	**32,000**	2,700
Benzidine				< 370	370	< 390	390	< 350	350	< 400	400	< 380	380	< 390	390
Benzo(a)pyrene	1,000	1,000	1,000	**930**	180	**10,000**	2,000	**600**	170	**2,200**	200	**2,300**	190	**25,000**	1,900
Benzo(b)fluoranthene	1,000	1,000	5,600	**930**	260	**10,000**	2,800	**560**	240	**2,000**	280	**2,200**	270	**20,000**	2,700
Benzo(ghi)perylene	100,000	100,000	500,000	**630**	260	**7,600**	280	**490**	240	**1,700**	280	**1,700**	270	**11,000**	2,700
Benzo(k)fluoranthene	800	3,900	56,000	**820**	260	**7,200**	280	**550**	240	**1,700**	280	**2,200**	270	**23,000**	2,700
Benzoic acid				< 1800	1,800	< 2000	2,000	< 1700	1,700	< 2000	2,000	< 1900	1,900	< 1900	1,900
Benzyl Alcohol				-	-	-	-	-	-	-	-	-	-	-	-
Benzyl butyl phthalate				< 260	260	< 280	280	< 240	240	< 280	280	< 270	270	< 270	270
Bis(2-chloroethoxy)methane				< 260	260	< 280	280	< 240	240	< 280	280	< 270	270	< 270	270
Bis(2-chloroethyl)ether				< 180	180	< 200	200	< 170	170	< 200	200	< 190	190	< 190	190
Bis(2-chloroisopropyl)ether				< 260	260	< 280	280	< 240	240	< 280	280	< 270	270	< 270	270
Bis(2-ethylhexyl)phthalate				**110**	260	< 280	280	**110**	240	< 280	280	**170**	270	< 270	270
Boctyl Phthalate				-	-	-	-	-	-	-	-	-	-	-	-
Butylbenzyl Phthalate				-	-	-	-	-	-	-	-	-	-	-	-
Butyl Phthalate				-	-	-	-	-	-	-	-	-	-	-	-
Carbazole				< 180	180	**7,400**	200	< 170	170	**780**	200	**580**	190	**3,500**	190
Chrysene	1,000	3,900	56,000	**960**	260	**13,000**	2,800	**520**	240	**2,500**	280	**3,000**	270	**30,000**	2,700
Dibenz(a,h)anthracene	330	330	560	**170**	180	**680**	200	**120**	170	**530**	200	**590**	190	**5,900**	190
Dibenzofuran	7,000	59,000	350,000	< 260	260	**11,000**	2,800	< 240	240	**560**	280	**350**	270	**2,600**	270
Diethyl phthalate				< 260	260	< 280	280	< 240	240	< 280	280	< 270	270	< 270	270
Dimethylphthalate				< 260	260	< 280	280	< 240	240	< 280	280	< 270	270	< 270	270
Di-n-butylphthalate				< 260	260	< 280	280	**110**	240	< 280	280	< 270	270	< 270	270
Di-n-octylphthalate				< 260	260	< 280	280	< 240	240	< 280	280	< 270	270	< 270	270
Fluoranthene	100,000	100,000	500,000	**1,800**	260	**36,000**	2,800	**850**	240	**6,200**	280	**5,800**	270	**66,000**	2,700
Fluorene	30,000	100,000	500,000	< 260	260	**11,000**	2,800	< 240	240	**590**	280	**470**	270	**5,200**	270
Hexachlorobenzene	330	1,200	6,000	< 180	180	< 200	200	< 170	170	< 200	200	< 190	190	< 190	190
Hexachlorobutadiene				< 260	260	< 280	280	< 240	240	< 280	280	< 270	270	< 270	270
Hexachlorocyclopentadiene				< 260	260	< 280	280	< 240	240	< 280	280	< 270	270	< 270	270
Hexachloroethane				< 180	180	< 200	200	< 170	170	< 200	200	< 190	190	< 190	190
Indeno(1,2,3-cd)pyrene	500	500	5,600	**700**	260	**6,900**	2,800	**530**	240	**1,900**	280	**1,900**	270	**13,000**	2,700
Isophorone				< 180	180	< 200	200	< 170	170	< 200	200	< 190	190	< 190	190
Naphthalene	12,000	100,000	500,000	< 260	260	**25,000**	2,800	< 240	240	**760**	280	**490**	270	**2,000**	270
Nitrobenzene				< 180	180	< 200	200	< 170	170	< 200	200	< 190	190	< 190	190
N-Nitrosodimethylamine				< 260	260	< 280	280	< 240	240	< 280	280	< 270	270	< 270	270
N-Nitrosodi-n-propylamine				< 180	180	< 200	200	< 170	170	< 200	200	< 190	190	< 190	190
N-Nitrosodiphenylamine				< 260	260	< 280	280	< 240	240	< 280	280	< 270	270	< 270	270
Pentachloronitrobenzene				< 260	260	< 280	280	< 240	240	< 280	280	< 270	270	< 270	270
Pentachlorophenol	800	6,700	6,700	< 220	220	< 240	240	< 210	210	< 240	240	< 230	230	< 230	230
Phenanthrene	100,000	100,000	500,000	**1,000**	260	**58,000**	2,800	**570**	240	**6,200**	280	**5,100**	270	**46,000**	2,700
Phenol	330	100,000	500,000	< 260	260	< 280	280	< 240	240	< 280	280	< 270	270	**310**	270
Pyrene	100,000	100,000	500,000	**1,700**	260	**27,000**	2,800	**780**	240	**5,000**	280	**5,300**	270	**59,000**	2,700
Pyridine				< 260	260	< 280	280	< 240	240	< 280	280	< 270	270	< 270	270

Notes:

* - 6 NYCRR Part 375-6 Remedial Program Soil Cleanup Objectives

RL - Reporting Limit

Bold/highlighted- Indicated exceedance of the NYSDEC UUSCO Guidance Value

Bold/highlighted- Indicated exceedance of the NYSDEC RRSCO Guidance Value

Bold/highlighted- Indicated exceedance of the NYSDEC RCSCO Guidance Value

Table 4A
Former Pfizer Site A - C224284
243-271 Wallabout Street,
Brooklyn, New York
Laboratory Results - Soil Samples
Semi-Volatile Organic Compounds

COMPOUND	NYSDEC Part 375.6 Unrestricted Use Soil Cleanup Objectives*	NYDEC Part 375.6 Restricted Residential Soil Cleanup Objectives*	NYDEC Part 375.6 Restricted Commerical Soil Cleanup Objectives*	EBC 2018 Laboratory Results											
				EBC15				EBC16				EBC17			
				0-2'		5-7'		0-2'		3-5'		0-2'		5-7'	
				6/5/2018		6/5/2018		6/5/2018		6/5/2018		6/5/2018		6/5/2018	
				µg/Kg		µg/Kg		µg/Kg		µg/Kg		µg/Kg		µg/Kg	
				Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL
1,2,4,5-Tetrachlorobenzene				< 260	260	< 290	290	< 250	250	< 260	260	< 260	260	< 280	280
1,2,4-Trichlorobenzene				< 260	260	< 290	290	< 250	250	< 260	260	< 260	260	< 280	280
1,2-Dichlorobenzene				< 260	260	< 290	290	< 250	250	< 260	260	< 260	260	< 280	280
1,2-Diphenylhydrazine				< 260	260	< 290	290	< 250	250	< 260	260	< 260	260	< 280	280
1,3-Dichlorobenzene				< 260	260	< 290	290	< 250	250	< 260	260	< 260	260	< 280	280
1,4-Dichlorobenzene				< 260	260	< 290	290	< 250	250	< 260	260	< 260	260	< 280	280
1- Chloropropane				-	-	-	-	-	-	-	-	-	-	-	-
2,4,5-Trichlorophenol				< 260	260	< 290	290	< 250	250	< 260	260	< 260	260	< 280	280
2,4,6-Trichlorophenol				< 180	180	< 210	210	< 180	180	< 190	190	< 190	190	< 200	200
2,4-Dichlorophenol				< 180	180	< 210	210	< 180	180	< 190	190	< 190	190	< 200	200
2,4-Dimethylphenol				< 260	260	< 290	290	< 250	250	< 260	260	< 260	260	< 280	280
2,4-Dinitrophenol				< 260	260	< 290	290	< 250	250	< 260	260	< 260	260	< 280	280
2,4-Dinitrotoluene				< 180	180	< 210	210	< 180	180	< 190	190	< 190	190	< 200	200
2,6-Dinitrotoluene				< 180	180	< 210	210	< 180	180	< 190	190	< 190	190	< 200	200
2-Chloronaphthalene				< 260	260	< 290	290	< 250	250	< 260	260	< 260	260	< 280	280
2-Chlorophenol				< 260	260	< 290	290	< 250	250	< 260	260	< 260	260	< 280	280
2-Methylnaphthalene				**120**	260	**320**	290	< 250	250	< 260	260	**180**	260	< 280	280
2-Methylphenol (o-cresol)	330	100,000	500,000	< 260	260	< 290	290	< 250	250	< 260	260	< 260	260	< 280	280
2-Nitroaniline				< 260	260	< 290	290	< 250	250	< 260	260	< 260	260	< 280	280
2-Nitrophenol				< 260	260	< 290	290	< 250	250	< 260	260	< 260	260	< 280	280
3&4-Methylphenol (m&p-cresol)				< 260	260	< 290	290	< 250	250	< 260	260	< 260	260	< 280	280
3,3'-Dichlorobenzidine				< 180	180	< 210	210	< 180	180	< 190	190	< 190	190	< 200	200
3-Nitroaniline				< 370	370	< 410	410	< 360	360	< 370	370	< 370	370	< 400	400
4,6-Dinitro-2-methylphenol				< 220	220	< 250	250	< 220	220	< 220	220	< 220	220	< 240	240
4-Bromophenyl phenyl ether				< 260	260	< 290	290	< 250	250	< 260	260	< 260	260	< 280	280
4-Chloro-3-methylphenol				< 260	260	< 290	290	< 250	250	< 260	260	< 260	260	< 280	280
4-Chloroaniline				< 290	290	< 330	330	< 290	290	< 300	300	< 300	300	< 320	320
4-Chlorophenyl phenyl ether				< 260	260	< 290	290	< 250	250	< 260	260	< 260	260	< 280	280
4-Methylphenol				-	-	-	-	-	-	-	-	-	-	-	-
4-Nitroaniline				< 370	370	< 410	410	< 360	360	< 370	370	< 370	370	< 400	400
4-Nitrophenol				< 370	370	< 410	410	< 360	360	< 370	370	< 370	370	< 400	400
Acenaphthene	20,000	100,000	500,000	**150**	260	**320**	290	< 250	250	< 260	260	**420**	260	< 280	280
Acenaphthylene	100,000	100,000	500,000	**240**	260	**550**	290	< 250	250	< 260	260	**760**	260	< 280	280
Acetophenone				< 260	260	< 290	290	< 250	250	< 260	260	< 260	260	< 280	280
Aniline				< 290	290	< 330	330	< 290	290	< 300	300	< 300	300	< 320	320
Anthracene	100,000	100,000	500,000	**560**	260	**1,500**	290	< 250	250	**130**	260	**1,500**	260	< 280	280
Benz(a)anthracene	1,000	1,000	5,600	**1,500**	260	**5,200**	290	**300**	250	**370**	260	**4,500**	260	**330**	280
Benzidine				< 370	370	< 410	410	< 360	360	< 370	370	< 370	370	< 400	400
Benzo(a)pyrene	1,000	1,000	1,000	**1,500**	180	**5,200**	210	**650**	180	**480**	190	**3,800**	190	**410**	200
Benzo(b)fluoranthene	1,000	1,000	5,600	**1,500**	260	**4,400**	290	**510**	250	**340**	260	**3,500**	260	**370**	280
Benzo(ghi)perylene	100,000	100,000	500,000	**1,000**	260	**2,500**	290	**420**	250	**350**	260	**2,600**	260	**380**	280
Benzo(k)fluoranthene	800	3,900	56,000	**1,200**	260	**4,600**	290	**520**	250	**310**	260	**3,300**	260	**430**	280
Benzoic acid				< 1800	1,800	< 2100	2,100	< 1800	1,800	< 1900	1,900	< 1900	1,900	< 2000	2,000
Benzyl Alcohol				-	-	-	-	-	-	-	-	-	-	-	-
Benzyl butyl phthalate				< 260	260	< 290	290	< 250	250	< 260	260	< 260	260	< 280	280
Bis(2-chloroethoxy)methane				< 260	260	< 290	290	< 250	250	< 260	260	< 260	260	< 280	280
Bis(2-chloroethyl)ether				< 180	180	< 210	210	< 180	180	< 190	190	< 190	190	< 200	200
Bis(2-chloroisopropyl)ether				< 260	260	< 290	290	< 250	250	< 260	260	< 260	260	< 280	280
Bis(2-ethylhexyl)phthalate				< 260	260	< 290	290	< 250	250	< 260	260	< 260	260	< 280	280
Boctyl Phthalate				-	-	-	-	-	-	-	-	-	-	-	-
Butylbenzyl Phthalate				-	-	-	-	-	-	-	-	-	-	-	-
Butyl Phthalate				-	-	-	-	-	-	-	-	-	-	-	-
Carbazole				**170**	180	**380**	210	< 180	180	< 190	190	**440**	190	< 200	200
Chrysene	1,000	3,900	56,000	**1,600**	260	**4,800**	290	**330**	250	**420**	260	**5,000**	260	**380**	280
Dibenz(a,h)anthracene	330	330	560	**350**	180	**1,000**	210	**130**	180	**130**	190	**1,000**	190	< 200	200
Dibenzofuran	7,000	59,000	350,000	**120**	260	**530**	290	< 250	250	< 260	260	**210**	260	< 280	280
Diethyl phthalate				< 260	260	< 290	290	< 250	250	< 260	260	< 260	260	< 280	280
Dimethylphthalate				< 260	260	< 290	290	< 250	250	< 260	260	< 260	260	< 280	280
Di-n-butylphthalate				< 260	260	< 290	290	< 250	250	< 260	260	< 260	260	< 280	280
Di-n-octylphthalate				< 260	260	< 290	290	< 250	250	< 260	260	< 260	260	< 280	280
Fluoranthene	100,000	100,000	500,000	**3,100**	260	**7,600**	290	**440**	250	**520**	260	**8,600**	1,300	**580**	280
Fluorene	30,000	100,000	500,000	**220**	260	**490**	290	< 250	250	< 260	260	**530**	260	< 280	280
Hexachlorobenzene	330	1,200	6,000	< 180	180	< 210	210	< 180	180	< 190	190	< 190	190	< 200	200
Hexachlorobutadiene				< 260	260	< 290	290	< 250	250	< 260	260	< 260	260	< 280	280
Hexachlorocyclopentadiene				< 260	260	< 290	290	< 250	250	< 260	260	< 260	260	< 280	280
Hexachloroethane				< 180	180	< 210	210	< 180	180	< 190	190	< 190	190	< 200	200
Indeno(1,2,3-cd)pyrene	500	500	5,600	**1,200**	260	**3,400**	290	**480**	250	**430**	260	**2,900**	260	**400**	280
Isophorone				< 180	180	< 210	210	< 180	180	< 190	190	< 190	190	< 200	200
Naphthalene	12,000	100,000	500,000	< 260	260	**600**	290	< 250	250	< 260	260	**190**	260	< 280	280
Nitrobenzene				< 180	180	< 210	210	< 180	180	< 190	190	< 190	190	< 200	200
N-Nitrosodimethylamine				< 260	260	< 290	290	< 250	250	< 260	260	< 260	260	< 280	280
N-Nitrosodi-n-propylamine				< 180	180	< 210	210	< 180	180	< 190	190	< 190	190	< 200	200
N-Nitrosodiphenylamine				< 260	260	< 290	290	< 250	250	< 260	260	< 260	260	< 280	280
Pentachloronitrobenzene				< 260	260	< 290	290	< 250	250	< 260	260	< 260	260	< 280	280
Pentachlorophenol	800	6,700	6,700	< 220	220	< 250	250	< 220	220	< 220	220	< 220	220	< 240	240
Phenanthrene	100,000	100,000	500,000	**1,700**	260	**4,400**	290	**270**	250	**410**	260	**6,700**	260	**310**	280
Phenol	330	100,000	500,000	< 260	260	< 290	290	< 250	250	< 260	260	< 260	260	< 280	280
Pyrene	100,000	100,000	500,000	**3,000**	260	**6,700**	290	**480**	250	**660**	260	**8,300**	1,300	**610**	280
Pyridine				< 260	260	< 290	290	< 250	250	< 260	260	< 260	260	< 280	280

Notes:

* - 6 NYCRR Part 375-6 Remedial Program Soil Cleanup Objectives

RL - Reporting Limit

Bold/highlighted- Indicated exceedance of the NYSDEC UUSCO Guidance Value

Bold/highlighted- Indicated exceedance of the NYSDEC RRSCO Guidance Value

Bold/highlighted- Indicated exceedance of the NYSDEC RCSCO Guidance Value

Table 4A
Former Pfizer Site A - C224284
243-271 Wallabout Street,
Brooklyn, New York
Laboratory Results - Soil Samples
Semi-Volatile Organic Compounds

COMPOUND	NYSDEC Part 375.6 Unrestricted Use Soil Cleanup Objectives*	NYDEC Part 375.6 Restricted Residential Soil Cleanup Objectives*	NYDEC Part 375.6 Restricted Commerical Soil Cleanup Objectives*	EBC 2018 Laboratory Results							
				EBC18				EBC19			
				0-2'		2-4'		0-2'		2-4'	
				11/9/2018		11/9/2018		11/9/2018		11/9/2018	
				µg/Kg		µg/Kg		µg/Kg		µg/Kg	
				Result	RL	Result	RL	Result	RL	Result	RL
1,2,4,5-Tetrachlorobenzene				< 250	250	< 240	240	< 260	260	< 250	250
1,2,4-Trichlorobenzene				< 250	250	< 240	240	< 260	260	< 250	250
1,2-Dichlorobenzene				< 250	250	< 240	240	< 260	260	< 250	250
1,2-Diphenylhydrazine				< 250	250	< 240	240	< 260	260	< 250	250
1,3-Dichlorobenzene				< 250	250	< 240	240	< 260	260	< 250	250
1,4-Dichlorobenzene				< 250	250	< 240	240	< 260	260	< 250	250
1- Chloropropane				-	-	-	-	-	-	-	-
2,4,5-Trichlorophenol				< 250	250	< 240	240	< 260	260	< 250	250
2,4,6-Trichlorophenol				< 180	180	< 170	170	< 180	180	< 180	180
2,4-Dichlorophenol				< 180	180	< 170	170	< 180	180	< 180	180
2,4-Dimethylphenol				< 250	250	< 240	240	< 260	260	< 250	250
2,4-Dinitrophenol				< 250	250	< 240	240	< 260	260	< 250	250
2,4-Dinitrotoluene				< 180	180	< 170	170	< 180	180	< 180	180
2,6-Dinitrotoluene				< 180	180	< 170	170	< 180	180	< 180	180
2-Chloronaphthalene				< 250	250	< 240	240	< 260	260	< 250	250
2-Chlorophenol				< 250	250	< 240	240	< 260	260	< 250	250
2-Methylnaphthalene				**120**	250	< 240	240	**130**	260	**230**	250
2-Methylphenol (o-cresol)	330	100,000	500,000	< 250	250	< 240	240	< 260	260	< 250	250
2-Nitroaniline				< 250	250	< 240	240	< 260	260	< 250	250
2-Nitrophenol				< 250	250	< 240	240	< 260	260	< 250	250
3&4-Methylphenol (m&p-cresol)				< 250	250	< 240	240	< 260	260	< 250	250
3,3'-Dichlorobenzidine				< 180	180	< 170	170	< 180	180	< 180	180
3-Nitroaniline				< 360	360	< 350	350	< 360	360	< 360	360
4,6-Dinitro-2-methylphenol				< 210	210	< 210	210	< 220	220	< 210	210
4-Bromophenyl phenyl ether				< 250	250	< 240	240	< 260	260	< 250	250
4-Chloro-3-methylphenol				< 250	250	< 240	240	< 260	260	< 250	250
4-Chloroaniline				< 290	290	< 280	280	< 290	290	< 280	280
4-Chlorophenyl phenyl ether				< 250	250	< 240	240	< 260	260	< 250	250
4-Methylphenol				-	-	-	-	-	-	-	-
4-Nitroaniline				< 360	360	< 350	350	< 360	360	< 360	360
4-Nitrophenol				< 360	360	< 350	350	< 360	360	< 360	360
Acenaphthene	20,000	100,000	500,000	**260**	250	< 240	240	**490**	260	**680**	250
Acenaphthylene	100,000	100,000	500,000	**190**	250	< 240	240	**240**	260	**390**	250
Acetophenone				< 250	250	< 240	240	< 260	260	< 250	250
Aniline				< 290	290	< 280	280	< 290	290	< 280	280
Anthracene	100,000	100,000	500,000	**750**	250	**210**	240	**1,300**	260	**1,700**	250
Benz(a)anthracene	1,000	1,000	5,600	**2,700**	250	**820**	240	**5,600**	260	**6,900**	250
Benzidine				< 360	360	< 350	350	< 360	360	< 360	360
Benzo(a)pyrene	1,000	1,000	1,000	**2,400**	180	**820**	170	**5,300**	180	**7,100**	180
Benzo(b)fluoranthene	1,000	1,000	5,600	**2,000**	250	**790**	240	**4,800**	260	**6,700**	250
Benzo(ghi)perylene	100,000	100,000	500,000	**1,300**	250	**550**	240	**3,000**	260	**4,000**	250
Benzo(k)fluoranthene	800	3,900	56,000	**1,700**	250	**690**	240	**3,900**	260	**5,000**	250
Benzoic acid				< 1800	1,800	< 1700	1,700	< 1800	1,800	< 1800	1,800
Benzyl Alcohol				-	-	-	-	-	-	-	-
Benzyl butyl phthalate				< 250	250	< 240	240	< 260	260	< 250	250
Bis(2-chloroethoxy)methane				< 250	250	< 240	240	< 260	260	< 250	250
Bis(2-chloroethyl)ether				< 180	180	< 170	170	< 180	180	< 180	180
Bis(2-chloroisopropyl)ether				< 250	250	< 240	240	< 260	260	< 250	250
Bis(2-ethylhexyl)phthalate				< 250	250	**180**	240	< 260	260	< 250	250
Boctyl Phthalate				-	-	**-**	-	-	-	-	-
Butylbenzyl Phthalate				-	-	**-**	-	-	-	-	-
Butyl Phthalate				-	-	**-**	-	-	-	-	-
Carbazole				**250**	180	< 170	170	**410**	180	**700**	180
Chrysene	1,000	3,900	56,000	**2,900**	250	**910**	240	**5,900**	260	**7,200**	1,200
Dibenz(a,h)anthracene	330	330	560	**330**	180	**170**	170	**1,100**	180	**1,400**	180
Dibenzofuran	7,000	59,000	350,000	**140**	250	< 240	240	**190**	260	**400**	250
Diethyl phthalate				< 250	250	< 240	240	< 260	260	< 250	250
Dimethylphthalate				< 250	250	< 240	240	< 260	260	< 250	250
Di-n-butylphthalate				< 250	250	< 240	240	< 260	260	< 250	250
Di-n-octylphthalate				< 250	250	< 240	240	< 260	260	< 250	250
Fluoranthene	100,000	100,000	500,000	**4,500**	250	**1,500**	240	**11,000**	1,300	**13,000**	1,200
Fluorene	30,000	100,000	500,000	**280**	250	< 240	240	**390**	260	**580**	250
Hexachlorobenzene	330	1,200	6,000	< 180	180	< 170	170	< 180	180	< 180	180
Hexachlorobutadiene				< 250	250	< 240	240	< 260	260	< 250	250
Hexachlorocyclopentadiene				< 250	250	< 240	240	< 260	260	< 250	250
Hexachloroethane				< 180	180	< 170	170	< 180	180	< 180	180
Indeno(1,2,3-cd)pyrene	500	500	5,600	**1,100**	250	**430**	240	**2,700**	260	**3,600**	250
Isophorone				< 180	180	< 2000	2,000	< 180	180	< 210	210
Naphthalene	12,000	100,000	500,000	**160**	250	< 240	240	**150**	260	**360**	250
Nitrobenzene				< 180	180	< 170	170	< 180	180	< 180	180
N-Nitrosodimethylamine				< 250	250	< 240	240	< 260	260	< 250	250
N-Nitrosodi-n-propylamine				< 180	180	< 170	170	< 180	180	< 180	180
N-Nitrosodiphenylamine				< 250	250	< 240	240	< 260	260	< 250	250
Pentachloronitrobenzene				< 250	250	< 240	240	< 260	260	< 250	250
Pentachlorophenol	800	6,700	6,700	< 210	210	< 210	210	< 220	220	< 210	210
Phenanthrene	100,000	100,000	500,000	**3,400**	250	**910**	240	**6,300**	260	**8,500**	1,200
Phenol	330	100,000	500,000	< 250	250	< 240	240	< 260	260	< 250	250
Pyrene	100,000	100,000	500,000	**5,000**	250	**1,500**	240	**11,000**	1,300	**13,000**	1,200
Pyridine				< 250	250	< 240	240	< 260	260	< 250	250

Notes:

* - 6 NYCRR Part 375-6 Remedial Program Soil Cleanup Objectives

RL - Reporting Limit

Bold/highlighted- Indicated exceedance of the NYSDEC UUSCO Guidance Value

Bold/highlighted- Indicated exceedance of the NYSDEC RRSCO Guidance Value

Bold/highlighted- Indicated exceedance of the NYSDEC RCSCO Guidance Value

Table 4B
Former Pfizer Site A - C224284
243-271 Wallabout Street,
Brooklyn, New York
Remedial Investigation Laboratory Results - Soil Samples
Semi-Volatile Organic Compounds

COMPOUND	NYSDEC Part 375.6 Unrestricted Use Soil Cleanup Objectives*	NYDEC Part 375.6 Restricted Residential Soil Cleanup Objectives*	NYDEC Part 375.6 Restricted Commerical Soil Cleanup Objectives*	EBC 2019 Laboratory Results											
				EBC20						EBC21					
				0-2'		6-8'		15-17'		0-2'		6-8'		15-17'	
				6/6/2019		6/6/2019		6/6/2019		6/4/2019		6/4/2019		6/4/2019	
				µg/Kg		µg/Kg		µg/Kg		µg/Kg		µg/Kg		µg/Kg	
				Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL
1,1-Biphenyl				< 270	270	< 260	260	< 270	270	**120**	250	< 280	280	< 270	270
1,2,4,5-Tetrachlorobenzene				< 270	270	< 260	260	< 270	270	< 250	250	< 280	280	< 270	270
2,3,4,6-tetrachlorophenol				< 270	270	< 260	260	< 270	270	< 250	250	< 280	280	< 270	270
2,4,5-Trichlorophenol				< 270	270	< 260	260	< 270	270	< 250	250	< 280	280	< 270	270
2,4,6-Trichlorophenol				< 150	150	< 150	150	< 150	150	< 140	140	< 160	160	< 160	160
2,4-Dichlorophenol				< 150	150	< 150	150	< 150	150	< 140	140	< 160	160	< 160	160
2,4-Dimethylphenol				< 270	270	< 260	260	< 270	270	< 250	250	< 280	280	< 270	270
2,4-Dinitrophenol				< 270	270	< 260	260	< 270	270	< 250	250	< 280	280	< 270	270
2,4-Dinitrotoluene				< 150	150	< 150	150	< 150	150	< 140	140	< 160	160	< 160	160
2,6-Dinitrotoluene				< 150	150	< 150	150	< 150	150	< 140	140	< 160	160	< 160	160
2-Chloronaphthalene				< 270	270	< 260	260	< 270	270	< 250	250	< 280	280	< 270	270
2-Chlorophenol				< 270	270	< 260	260	< 270	270	< 250	250	< 280	280	< 270	270
2-Methylnaphthalene				< 270	270	< 260	260	< 270	270	**590**	250	< 280	280	< 270	270
2-Methylphenol (o-cresol)	330	100,000	500,000	< 270	270	< 260	260	< 270	270	< 250	250	< 280	280	< 270	270
2-Nitroaniline				< 270	270	< 260	260	< 270	270	< 250	250	< 280	280	< 270	270
2-Nitrophenol				< 270	270	< 260	260	< 270	270	< 250	250	< 280	280	< 270	270
3&4-Methylphenol (m&p-cresol)				< 270	270	< 260	260	< 270	270	< 250	250	< 280	280	< 270	270
3,3'-Dichlorobenzidine				< 150	150	< 150	150	< 150	150	< 140	140	< 160	160	< 160	160
3-Nitroaniline				< 760	760	< 750	750	< 770	770	< 710	710	< 790	790	< 780	780
4,6-Dinitro-2-methylphenol				< 270	270	< 260	260	< 270	270	< 250	250	< 280	280	< 270	270
4-Bromophenyl phenyl ether				< 270	270	< 260	260	< 270	270	< 250	250	< 280	280	< 270	270
4-Chloro-3-methylphenol				< 270	270	< 260	260	< 270	270	< 250	250	< 280	280	< 270	270
4-Chloroaniline				< 760	760	< 750	750	< 770	770	< 710	710	< 790	790	< 780	780
4-Chlorophenyl phenyl ether				< 270	270	< 260	260	< 270	270	< 250	250	< 280	280	< 270	270
4-Nitroaniline				< 1900	1,900	< 1900	1,900	< 1900	1,900	< 1800	1,800	< 2000	2,000	< 2000	2,000
4-Nitrophenol				< 270	270	< 260	260	< 270	270	< 250	250	< 280	280	< 270	270
Acenaphthene	20,000	100,000	500,000	< 270	270	< 260	260	< 270	270	**1,500**	250	< 280	280	< 270	270
Acenaphthylene	100,000	100,000	500,000	< 150	150	< 150	150	< 150	150	**180**	140	< 160	160	< 160	160
Acetophenone				< 270	270	< 260	260	< 270	270	< 250	250	< 280	280	< 270	270
Anthracene	100,000	100,000	500,000	< 270	270	< 260	260	< 270	270	**2,700**	250	< 280	280	< 270	270
Atrazine				< 270	270	< 260	260	< 270	270	< 250	250	< 280	280	< 270	270
Benz(a)anthracene	1,000	1,000	5,600	**200**	270	< 260	260	< 270	270	**3,800**	250	< 280	280	< 270	270
Benzaldehyde				< 270	270	< 260	260	< 270	270	**270**	250	< 280	280	< 270	270
Benzo(a)pyrene	1,000	1,000	1,000	**190**	150	< 150	150	< 150	150	**3,300**	140	< 160	160	< 160	160
Benzo(b)fluoranthene	1,000	1,000	5,600	**170**	270	< 260	260	< 270	270	**2,800**	250	< 280	280	< 270	270
Benzo(ghi)perylene	100,000	100,000	500,000	**120**	270	< 260	260	< 270	270	**2,000**	250	< 280	280	< 270	270
Benzo(k)fluoranthene	800	3,900	56,000	**170**	270	< 260	260	< 270	270	**2,600**	250	< 280	280	< 270	270
Benzyl butyl phthalate				< 270	270	< 260	260	< 270	270	< 250	250	< 280	280	< 270	270
Bis(2-chloroethoxy)methane				< 270	270	< 260	260	< 270	270	< 250	250	< 280	280	< 270	270
Bis(2-chloroethyl)ether				< 150	150	< 150	150	< 150	150	< 140	140	< 160	160	< 160	160
Bis(2-chloroisopropyl)ether				< 270	270	< 260	260	< 270	270	< 250	250	< 280	280	< 270	270
Bis(2-ethylhexyl)phthalate				< 270	270	< 260	260	< 270	270	**330**	250	< 280	280	< 270	270
Caprolactam				< 270	270	< 260	260	< 270	270	< 250	250	< 280	280	< 270	270
Carbazole				< 270	270	< 260	260	< 270	270	**1,200**	250	< 280	280	< 270	270
Chrysene	1,000	3,900	56,000	**190**	270	< 260	260	< 270	270	**3,700**	250	< 280	280	< 270	270
Dibenz(a,h)anthracene	330	330	560	< 150	150	< 150	150	< 150	150	**540**	140	< 160	160	< 160	160
Dibenzofuran	7,000	59,000	350,000	< 270	270	< 260	260	< 270	270	**890**	250	< 280	280	< 270	270
Diethyl phthalate				< 270	270	< 260	260	< 270	270	< 250	250	< 280	280	< 270	270
Dimethylphthalate				< 270	270	< 260	260	< 270	270	< 250	250	< 280	280	< 270	270
Di-n-butylphthalate				< 270	270	< 260	260	< 270	270	< 250	250	< 280	280	< 270	270
Di-n-octylphthalate				< 270	270	< 260	260	< 270	270	< 250	250	< 280	280	< 270	270
Fluoranthene	100,000	100,000	500,000	**440**	270	**160**	260	< 270	270	**6,900**	250	< 280	280	< 270	270
Fluorene	30,000	100,000	500,000	< 270	270	< 260	260	< 270	270	**1,500**	250	< 280	280	< 270	270
Hexachlorobenzene	330	1,200	6,000	< 150	150	< 150	150	< 150	150	< 140	140	< 160	160	< 160	160
Hexachlorobutadiene				< 270	270	< 260	260	< 270	270	< 250	250	< 280	280	< 270	270
Hexachlorocyclopentadiene				< 270	270	< 260	260	< 270	270	< 250	250	< 280	280	< 270	270
Hexachloroethane				< 150	150	< 150	150	< 150	150	< 140	140	< 160	160	< 160	160
Indeno(1,2,3-cd)pyrene	500	500	5,600	**140**	270	< 260	260	< 270	270	**2,100**	250	< 280	280	< 270	270
Isophorone				< 1900	1,900	< 150	150	< 150	150	**2,000**	140	< 160	160	< 160	160
Naphthalene	12,000	100,000	500,000	< 270	270	< 260	260	< 270	270	**1,600**	250	< 280	280	< 270	270
Nitrobenzene				< 150	150	< 150	150	< 150	150	< 140	140	< 160	160	< 160	160
N-Nitrosodimethylamine				**110**	270	< 260	260	< 270	270	< 250	250	< 280	280	< 270	270
N-Nitrosodi-n-propylamine				< 150	150	< 150	150	< 150	150	< 140	140	< 160	160	< 160	160
N-Nitrosodiphenylamine				< 150	150	< 150	150	< 150	150	< 140	140	< 160	160	< 160	160
Pentachlorophenol	800	6,700	6,700	< 270	270	< 260	260	< 270	270	< 250	250	< 280	280	< 270	270
Phenanthrene	100,000	100,000	500,000	**320**	150	< 150	150	< 150	150	**6,700**	140	< 160	160	< 160	160
Phenol	330	100,000	500,000	< 270	270	< 260	260	< 270	270	< 250	250	< 280	280	< 270	270
Pyrene	100,000	100,000	500,000	**370**	270	< 260	260	< 270	270	**6,100**	250	< 280	280	< 270	270

Notes:

* - 6 NYCRR Part 375-6 Remedial Program Soil Cleanup Objectives

RL - Reporting Limit

Bold/highlighted- Indicated exceedance of the NYSDEC UUSCO Guidance Value

Bold/highlighted- Indicated exceedance of the NYSDEC RRSCO Guidance Value

Bold/highlighted- Indicated exceedance of the NYSDEC RCSCO Guidance Value

Table 4B
Former Pfizer Site A - C224284
243-271 Wallabout Street,
Brooklyn, New York
Remedial Investigation Laboratory Results - Soil Samples
Semi-Volatile Organic Compounds

COMPOUND	NYSDEC Part 375.6 Unrestricted Use Soil Cleanup Objectives*	NYDEC Part 375.6 Restricted Residential Soil Cleanup Objectives*	NYDEC Part 375.6 Restricted Commerical Soil Cleanup Objectives*	EBC 2019 Laboratory Results											
				EBC22						EBC23					
				0-2'		6-8'		15-17'		0-2'		6-8'		15-17'	
				6/4/2019		6/4/2019		6/4/2019		6/4/2019		6/4/2019		6/4/2019	
				µg/Kg		µg/Kg		µg/Kg		µg/Kg		µg/Kg		µg/Kg	
				Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL
1,1-Biphenyl				< 260	260	< 290	290	< 330	330	< 260	260	< 300	300	< 280	280
1,2,4,5-Tetrachlorobenzene				< 260	260	< 290	290	< 330	330	< 260	260	< 300	300	< 280	280
2,3,4,6-tetrachlorophenol				< 260	260	< 290	290	< 330	330	< 260	260	< 300	300	< 280	280
2,4,5-Trichlorophenol				< 260	260	< 290	290	< 330	330	< 260	260	< 300	300	< 280	280
2,4,6-Trichlorophenol				< 150	150	< 170	170	< 190	190	< 150	150	< 170	170	< 160	160
2,4-Dichlorophenol				< 150	150	< 170	170	< 190	190	< 150	150	< 170	170	< 160	160
2,4-Dimethylphenol				< 260	260	< 290	290	< 330	330	< 260	260	< 300	300	< 280	280
2,4-Dinitrophenol				< 260	260	< 290	290	< 330	330	< 260	260	< 300	300	< 280	280
2,4-Dinitrotoluene				< 150	150	< 170	170	< 190	190	< 150	150	< 170	170	< 160	160
2,6-Dinitrotoluene				< 150	150	< 170	170	< 190	190	< 150	150	< 170	170	< 160	160
2-Chloronaphthalene				< 260	260	< 290	290	< 330	330	< 260	260	< 300	300	< 280	280
2-Chlorophenol				< 260	260	< 290	290	< 330	330	< 260	260	< 300	300	< 280	280
2-Methylnaphthalene				**320**	260	< 290	290	< 330	330	< 260	260	**160**	300	< 280	280
2-Methylphenol (o-cresol)	330	100,000	500,000	< 260	260	< 290	290	< 330	330	< 260	260	< 300	300	< 280	280
2-Nitroaniline				< 260	260	< 290	290	< 330	330	< 260	260	< 300	300	< 280	280
2-Nitrophenol				< 260	260	< 290	290	< 330	330	< 260	260	< 300	300	< 280	280
3&4-Methylphenol (m&p-cresol)				< 260	260	< 290	290	< 330	330	< 260	260	**480**	300	< 280	280
3,3'-Dichlorobenzidine				< 150	150	< 170	170	< 190	190	< 150	150	< 170	170	< 160	160
3-Nitroaniline				< 760	760	< 840	840	< 950	950	< 740	740	< 850	850	< 800	800
4,6-Dinitro-2-methylphenol				< 260	260	< 290	290	< 330	330	< 260	260	< 300	300	< 280	280
4-Bromophenyl phenyl ether				< 260	260	< 290	290	< 330	330	< 260	260	< 300	300	< 280	280
4-Chloro-3-methylphenol				< 260	260	< 290	290	< 330	330	< 260	260	< 300	300	< 280	280
4-Chloroaniline				< 760	760	< 840	840	< 950	950	< 740	740	< 850	850	< 800	800
4-Chlorophenyl phenyl ether				< 260	260	< 290	290	< 330	330	< 260	260	< 300	300	< 280	280
4-Nitroaniline				< 1900	1,900	< 2100	2,100	< 2400	2,400	< 1800	1,800	< 2100	2,100	< 2000	2,000
4-Nitrophenol				< 260	260	< 290	290	< 330	330	< 260	260	< 300	300	< 280	280
Acenaphthene	20,000	100,000	500,000	**310**	260	**210**	290	< 330	330	< 260	260	< 300	300	< 280	280
Acenaphthylene	100,000	100,000	500,000	**270**	150	< 170	170	< 190	190	**160**	150	< 170	170	< 160	160
Acetophenone				< 260	260	< 290	290	< 330	330	< 260	260	< 300	300	< 280	280
Anthracene	100,000	100,000	500,000	**1,100**	260	**480**	290	< 330	330	**300**	260	< 300	300	< 280	280
Atrazine				< 260	260	< 290	290	< 330	330	< 260	260	< 300	300	< 280	280
Benz(a)anthracene	1,000	1,000	5,600	**2,100**	260	**910**	290	< 330	330	**1,000**	260	**200**	300	< 280	280
Benzaldehyde				< 260	260	< 290	290	< 330	330	< 260	260	< 300	300	< 280	280
Benzo(a)pyrene	1,000	1,000	1,000	**1,700**	150	**690**	170	< 190	190	**1,000**	150	**180**	170	< 160	160
Benzo(b)fluoranthene	1,000	1,000	5,600	**1,700**	260	**600**	290	< 330	330	**950**	260	< 300	300	< 280	280
Benzo(ghi)perylene	100,000	100,000	500,000	**1,000**	260	**420**	290	< 330	330	**700**	260	< 300	300	< 280	280
Benzo(k)fluoranthene	800	3,900	56,000	**1,600**	260	**650**	290	< 330	330	**860**	260	**160**	300	< 280	280
Benzyl butyl phthalate				< 260	260	< 290	290	< 330	330	< 260	260	< 300	300	< 280	280
Bis(2-chloroethoxy)methane				< 260	260	< 290	290	< 330	330	< 260	260	< 300	300	< 280	280
Bis(2-chloroethyl)ether				< 150	150	< 170	170	< 190	190	< 150	150	< 170	170	< 160	160
Bis(2-chloroisopropyl)ether				< 260	260	< 290	290	< 330	330	< 260	260	< 300	300	< 280	280
Bis(2-ethylhexyl)phthalate				**130**	260	< 290	290	< 330	330	**170**	260	< 300	300	< 280	280
Caprolactam				< 260	260	< 290	290	< 330	330	< 260	260	< 300	300	< 280	280
Carbazole				**570**	260	**220**	290	< 330	330	< 260	260	< 300	300	< 280	280
Chrysene	1,000	3,900	56,000	**2,100**	260	**810**	290	< 330	330	**1,100**	260	**210**	300	< 280	280
Dibenz(a,h)anthracene	330	330	560	**300**	150	< 170	170	< 190	190	**190**	150	< 170	170	< 160	160
Dibenzofuran	7,000	59,000	350,000	**380**	260	**150**	290	< 330	330	< 260	260	< 300	300	< 280	280
Diethyl phthalate				< 260	260	< 290	290	< 330	330	< 260	260	< 300	300	< 280	280
Dimethylphthalate				< 260	260	< 290	290	< 330	330	< 260	260	< 300	300	< 280	280
Di-n-butylphthalate				< 260	260	< 290	290	< 330	330	< 260	260	< 300	300	< 280	280
Di-n-octylphthalate				< 260	260	< 290	290	< 330	330	< 260	260	< 300	300	< 280	280
Fluoranthene	100,000	100,000	500,000	**4,000**	260	**1,900**	290	< 330	330	**1,800**	260	**420**	300	< 280	280
Fluorene	30,000	100,000	500,000	**540**	260	**220**	290	< 330	330	< 260	260	< 300	300	< 280	280
Hexachlorobenzene	330	1,200	6,000	< 150	150	< 170	170	< 190	190	< 150	150	< 170	170	< 160	160
Hexachlorobutadiene				< 260	260	< 290	290	< 330	330	< 260	260	< 300	300	< 280	280
Hexachlorocyclopentadiene				< 260	260	< 290	290	< 330	330	< 260	260	< 300	300	< 280	280
Hexachloroethane				< 150	150	< 170	170	< 190	190	< 150	150	< 170	170	< 160	160
Indeno(1,2,3-cd)pyrene	500	500	5,600	**990**	260	**480**	290	< 330	330	**690**	260	< 300	300	< 280	280
Isophorone				< 150	150	< 170	170	< 190	190	< 150	150	< 170	170	< 160	160
Naphthalene	12,000	100,000	500,000	**520**	260	< 290	290	< 330	330	< 260	260	< 300	300	< 280	280
Nitrobenzene				< 150	150	< 170	170	< 190	190	< 150	150	< 170	170	< 160	160
N-Nitrosodimethylamine				< 260	260	< 290	290	< 330	330	< 260	260	< 300	300	< 280	280
N-Nitrosodi-n-propylamine				< 150	150	< 170	170	< 190	190	< 150	150	< 170	170	< 160	160
N-Nitrosodiphenylamine				< 150	150	< 170	170	< 190	190	< 150	150	< 170	170	< 160	160
Pentachlorophenol	800	6,700	6,700	< 260	260	< 290	290	< 330	330	< 260	260	< 300	300	< 280	280
Phenanthrene	100,000	100,000	500,000	**4,300**	150	**1,800**	170	< 190	190	**1,100**	150	**330**	170	< 160	160
Phenol	330	100,000	500,000	< 260	260	< 290	290	< 330	330	< 260	260	< 300	300	< 280	280
Pyrene	100,000	100,000	500,000	**3,600**	260	**1,500**	290	< 330	330	**1,700**	260	**330**	300	< 280	280

Notes:

* - 6 NYCRR Part 375-6 Remedial Program Soil Cleanup Objectives

RL - Reporting Limit

Bold/highlighted- Indicated exceedance of the NYSDEC UUSCO Guidance Value

Bold/highlighted- Indicated exceedance of the NYSDEC RRSCO Guidance Value

Bold/highlighted- Indicated exceedance of the NYSDEC RCSCO Guidance Value

Table 4B
Former Pfizer Site A - C224284
243-271 Wallabout Street,
Brooklyn, New York
Remedial Investigation Laboratory Results - Soil Samples
Semi-Volatile Organic Compounds

COMPOUND	NYSDEC Part 375.6 Unrestricted Use Soil Cleanup Objectives*	NYDEC Part 375.6 Restricted Residential Soil Cleanup Objectives*	NYDEC Part 375.6 Restricted Commerical Soil Cleanup Objectives*	EBC 2019 Laboratory Results											
				EBC24						EBC25					
				0-2'		6-8'		15-17'		0-2'		6-8'		15-17'	
				6/3/2019		6/3/2019		6/3/2019		6/6/2019		6/6/2019		6/6/2019	
				µg/Kg		µg/Kg		µg/Kg		µg/Kg		µg/Kg		µg/Kg	
				Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL
1,1-Biphenyl				< 250	250	< 290	290	< 280	280	< 1300	1,300	< 310	310	< 280	280
1,2,4,5-Tetrachlorobenzene				< 250	250	< 290	290	< 280	280	< 1300	1,300	< 310	310	< 280	280
2,3,4,6-tetrachlorophenol				< 250	250	< 290	290	< 280	280	< 1300	1,300	< 310	310	< 280	280
2,4,5-Trichlorophenol				< 250	250	< 290	290	< 280	280	< 1300	1,300	< 310	310	< 280	280
2,4,6-Trichlorophenol				< 140	140	< 170	170	< 160	160	< 720	720	< 170	170	< 160	160
2,4-Dichlorophenol				< 140	140	< 170	170	< 160	160	< 720	720	< 170	170	< 160	160
2,4-Dimethylphenol				< 250	250	< 290	290	< 280	280	< 1300	1,300	< 310	310	< 280	280
2,4-Dinitrophenol				< 250	250	< 290	290	< 280	280	< 1300	1,300	< 310	310	< 280	280
2,4-Dinitrotoluene				< 140	140	< 170	170	< 160	160	< 720	720	< 170	170	< 160	160
2,6-Dinitrotoluene				< 140	140	< 170	170	< 160	160	< 720	720	< 170	170	< 160	160
2-Chloronaphthalene				< 250	250	< 290	290	< 280	280	< 1300	1,300	< 310	310	< 280	280
2-Chlorophenol				< 250	250	< 290	290	< 280	280	< 1300	1,300	< 310	310	< 280	280
2-Methylnaphthalene				< 250	250	< 290	290	< 280	280	< 1300	1,300	< 310	310	< 280	280
2-Methylphenol (o-cresol)	330	100,000	500,000	< 250	250	< 290	290	< 280	280	< 360	360	< 310	310	< 280	280
2-Nitroaniline				< 250	250	< 290	290	< 280	280	< 1300	1,300	< 310	310	< 280	280
2-Nitrophenol				< 250	250	< 290	290	< 280	280	< 1300	1,300	< 310	310	< 280	280
3&4-Methylphenol (m&p-cresol)				< 250	250	< 290	290	< 280	280	< 1300	1,300	< 310	310	< 280	280
3,3'-Dichlorobenzidine				< 140	140	< 170	170	< 160	160	< 720	720	< 170	170	< 160	160
3-Nitroaniline				< 710	710	< 830	830	< 810	810	< 3600	3,600	< 870	870	< 810	810
4,6-Dinitro-2-methylphenol				< 250	250	< 290	290	< 280	280	< 1300	1,300	< 310	310	< 280	280
4-Bromophenyl phenyl ether				< 250	250	< 290	290	< 280	280	< 1300	1,300	< 310	310	< 280	280
4-Chloro-3-methylphenol				< 250	250	< 290	290	< 280	280	< 1300	1,300	< 310	310	< 280	280
4-Chloroaniline				< 710	710	< 830	830	< 810	810	< 3600	3,600	< 870	870	< 810	810
4-Chlorophenyl phenyl ether				< 250	250	< 290	290	< 280	280	< 1300	1,300	< 310	310	< 280	280
4-Nitroaniline				< 1800	1,800	< 2100	2,100	< 2000	2,000	< 9000	9,000	< 2200	2,200	< 2000	2,000
4-Nitrophenol				< 250	250	< 290	290	< 280	280	< 1300	1,300	< 310	310	< 280	280
Acenaphthene	20,000	100,000	500,000	< 250	250	< 290	290	< 280	280	< 1300	1,300	**220**	310	< 280	280
Acenaphthylene	100,000	100,000	500,000	< 140	140	< 170	170	< 160	160	< 720	720	< 170	170	< 160	160
Acetophenone				< 250	250	< 290	290	< 280	280	< 1300	1,300	< 310	310	< 280	280
Anthracene	100,000	100,000	500,000	< 250	250	< 290	290	< 280	280	**730**	1,300	**550**	310	< 280	280
Atrazine				< 250	250	< 290	290	< 280	280	< 1300	1,300	< 310	310	< 280	280
Benz(a)anthracene	1,000	1,000	5,600	**460**	250	**270**	290	< 280	280	**2,800**	1,300	**1,200**	310	< 280	280
Benzaldehyde				< 250	250	< 290	290	< 280	280	< 1300	1,300	< 310	310	< 280	280
Benzo(a)pyrene	1,000	1,000	1,000	**480**	140	**220**	170	< 160	160	**7,400**	720	**1,100**	170	< 160	160
Benzo(b)fluoranthene	1,000	1,000	5,600	**490**	250	**200**	290	< 280	280	**5,400**	1,300	**880**	310	< 280	280
Benzo(ghi)perylene	100,000	100,000	500,000	**380**	250	< 290	290	< 280	280	**4,600**	1,300	**550**	310	< 280	280
Benzo(k)fluoranthene	800	3,900	56,000	**360**	250	**190**	290	< 280	280	**4,800**	1,300	**950**	310	< 280	280
Benzyl butyl phthalate				< 250	250	< 290	290	< 280	280	< 1300	1,300	< 310	310	< 280	280
Bis(2-chloroethoxy)methane				< 250	250	< 290	290	< 280	280	< 1300	1,300	< 310	310	< 280	280
Bis(2-chloroethyl)ether				< 140	140	< 170	170	< 160	160	< 720	720	< 170	170	< 160	160
Bis(2-chloroisopropyl)ether				< 250	250	< 290	290	< 280	280	< 1300	1,300	< 310	310	< 280	280
Bis(2-ethylhexyl)phthalate				**220**	250	< 290	290	< 280	280	< 1300	1,300	< 310	310	< 280	280
Caprolactam				< 250	250	< 290	290	< 280	280	< 1300	1,300	< 310	310	< 280	280
Carbazole				< 250	250	< 290	290	< 280	280	< 1300	1,300	**260**	310	< 280	280
Chrysene	1,000	3,900	56,000	**510**	250	**280**	290	< 280	280	**3,000**	1,300	**1,200**	310	< 280	280
Dibenz(a,h)anthracene	330	330	560	< 140	140	< 170	170	< 160	160	**1,300**	720	**150**	170	< 160	160
Dibenzofuran	7,000	59,000	350,000	< 250	250	< 290	290	< 280	280	< 360	360	**180**	310	< 280	280
Diethyl phthalate				< 250	250	< 290	290	< 280	280	< 1300	1,300	< 310	310	< 280	280
Dimethylphthalate				< 250	250	< 290	290	< 280	280	< 1300	1,300	< 310	310	< 280	280
Di-n-butylphthalate				< 250	250	< 290	290	< 280	280	< 1300	1,300	< 310	310	< 280	280
Di-n-octylphthalate				< 250	250	< 290	290	< 280	280	< 1300	1,300	< 310	310	< 280	280
Fluoranthene	100,000	100,000	500,000	**900**	250	**590**	290	< 280	280	**4,700**	1,300	**2,700**	310	< 280	280
Fluorene	30,000	100,000	500,000	< 250	250	< 290	290	< 280	280	< 1300	1,300	**220**	310	< 280	280
Hexachlorobenzene	330	1,200	6,000	< 140	140	< 170	170	< 160	160	< 360	360	< 170	170	< 160	160
Hexachlorobutadiene				< 250	250	< 290	290	< 280	280	< 1300	1,300	< 310	310	< 280	280
Hexachlorocyclopentadiene				< 250	250	< 290	290	< 280	280	< 1300	1,300	< 310	310	< 280	280
Hexachloroethane				< 140	140	< 170	170	< 160	160	< 720	720	< 170	170	< 160	160
Indeno(1,2,3-cd)pyrene	500	500	5,600	**320**	250	< 290	290	< 280	280	**5,100**	1,300	**660**	310	< 280	280
Isophorone				< 140	140	< 170	170	< 160	160	< 720	720	< 170	170	< 160	160
Naphthalene	12,000	100,000	500,000	< 250	250	< 290	290	< 280	280	< 1300	1,300	**140**	310	< 280	280
Nitrobenzene				< 140	140	< 170	170	< 160	160	< 720	720	< 170	170	< 160	160
N-Nitrosodimethylamine				< 250	250	< 290	290	< 280	280	< 1300	1,300	< 310	310	< 280	280
N-Nitrosodi-n-propylamine				< 140	140	< 170	170	< 160	160	< 720	720	< 170	170	< 160	160
N-Nitrosodiphenylamine				< 140	140	< 170	170	< 160	160	< 720	720	< 170	170	< 160	160
Pentachlorophenol	800	6,700	6,700	< 250	250	< 290	290	< 280	280	< 800	800	< 310	310	< 280	280
Phenanthrene	100,000	100,000	500,000	**440**	140	**400**	170	< 160	160	**3,100**	720	**2,400**	170	< 160	160
Phenol	330	100,000	500,000	< 250	250	< 290	290	< 280	280	< 360	360	< 310	310	< 280	280
Pyrene	100,000	100,000	500,000	**830**	250	**470**	290	< 280	280	**5,400**	1,300	**2,500**	310	< 280	280

Notes:

* - 6 NYCRR Part 375-6 Remedial Program Soil Cleanup Objectives

RL - Reporting Limit

Bold/highlighted- Indicated exceedance of the NYSDEC UUSCO Guidance Value

Bold/highlighted- Indicated exceedance of the NYSDEC RRSCO Guidance Value

Bold/highlighted- Indicated exceedance of the NYSDEC RCSCO Guidance Value

Table 4B
Former Pfizer Site A - C224284
243-271 Wallabout Street,
Brooklyn, New York
Remedial Investigation Laboratory Results - Soil Samples
Semi-Volatile Organic Compounds

COMPOUND	NYSDEC Part 375.6 Unrestricted Use Soil Cleanup Objectives*	NYDEC Part 375.6 Restricted Residential Soil Cleanup Objectives*	NYDEC Part 375.6 Restricted Commerical Soil Cleanup Objectives*	EBC 2019 Laboratory Results											
				EBC26						EBC27					
				0-2'		6-8'		15-17'		0-2'		6-8'		15-17'	
				6/4/2019		6/4/2019		6/4/2019		6/4/2019		6/4/2019		6/4/2019	
				µg/Kg		µg/Kg		µg/Kg		µg/Kg		µg/Kg		µg/Kg	
				Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL
1,1-Biphenyl				< 250	250	< 270	270	< 280	280	< 250	250	< 280	280	< 270	270
1,2,4,5-Tetrachlorobenzene				< 250	250	< 270	270	< 280	280	< 250	250	< 280	280	< 270	270
2,3,4,6-tetrachlorophenol				< 250	250	< 270	270	< 280	280	< 250	250	< 280	280	< 270	270
2,4,5-Trichlorophenol				< 250	250	< 270	270	< 280	280	< 250	250	< 280	280	< 270	270
2,4,6-Trichlorophenol				< 140	140	< 150	150	< 160	160	< 140	140	< 160	160	< 160	160
2,4-Dichlorophenol				< 140	140	< 150	150	< 160	160	< 140	140	< 160	160	< 160	160
2,4-Dimethylphenol				< 250	250	< 270	270	< 280	280	< 250	250	< 280	280	< 270	270
2,4-Dinitrophenol				< 250	250	< 270	270	< 280	280	< 250	250	< 280	280	< 270	270
2,4-Dinitrotoluene				< 140	140	< 150	150	< 160	160	< 140	140	< 160	160	< 160	160
2,6-Dinitrotoluene				< 140	140	< 150	150	< 160	160	< 140	140	< 160	160	< 160	160
2-Chloronaphthalene				< 250	250	< 270	270	< 280	280	< 250	250	< 280	280	< 270	270
2-Chlorophenol				< 250	250	< 270	270	< 280	280	< 250	250	< 280	280	< 270	270
2-Methylnaphthalene				**150**	250	< 270	270	< 280	280	< 250	250	< 280	280	< 270	270
2-Methylphenol (o-cresol)	330	100,000	500,000	< 250	250	< 270	270	< 280	280	< 250	250	< 280	280	< 270	270
2-Nitroaniline				< 250	250	< 270	270	< 280	280	< 250	250	< 280	280	< 270	270
2-Nitrophenol				< 250	250	< 270	270	< 280	280	< 250	250	< 280	280	< 270	270
3&4-Methylphenol (m&p-cresol)				< 250	250	< 270	270	< 280	280	**190**	250	< 280	280	< 270	270
3,3'-Dichlorobenzidine				< 140	140	< 150	150	< 160	160	< 140	140	< 160	160	< 160	160
3-Nitroaniline				< 720	720	< 770	770	< 790	790	< 710	710	< 800	800	< 780	780
4,6-Dinitro-2-methylphenol				< 250	250	< 270	270	< 280	280	< 250	250	< 280	280	< 270	270
4-Bromophenyl phenyl ether				< 250	250	< 270	270	< 280	280	< 250	250	< 280	280	< 270	270
4-Chloro-3-methylphenol				< 250	250	< 270	270	< 280	280	< 250	250	< 280	280	< 270	270
4-Chloroaniline				< 720	720	< 770	770	< 790	790	< 710	710	< 800	800	< 780	780
4-Chlorophenyl phenyl ether				< 250	250	< 270	270	< 280	280	< 250	250	< 280	280	< 270	270
4-Nitroaniline				< 1800	1,800	< 1900	1,900	< 2000	2,000	< 1800	1,800	< 2000	2,000	< 2000	2,000
4-Nitrophenol				< 250	250	< 270	270	< 280	280	< 250	250	< 280	280	< 270	270
Acenaphthene	20,000	100,000	500,000	**680**	250	< 270	270	< 280	280	**260**	250	< 280	280	< 270	270
Acenaphthylene	100,000	100,000	500,000	< 140	140	< 150	150	< 160	160	**520**	140	< 160	160	< 160	160
Acetophenone				< 250	250	< 270	270	< 280	280	< 250	250	< 280	280	< 270	270
Anthracene	100,000	100,000	500,000	**1,100**	250	< 270	270	< 280	280	**820**	250	< 280	280	< 270	270
Atrazine				< 250	250	< 270	270	< 280	280	< 250	250	< 280	280	< 270	270
Benz(a)anthracene	1,000	1,000	5,600	**3,300**	250	< 270	270	< 280	280	**2,200**	250	< 280	280	< 270	270
Benzaldehyde				< 250	250	< 270	270	< 280	280	< 250	250	< 280	280	< 270	270
Benzo(a)pyrene	1,000	1,000	1,000	**3,000**	140	< 150	150	< 160	160	**2,100**	140	< 160	160	< 160	160
Benzo(b)fluoranthene	1,000	1,000	5,600	**3,200**	250	< 270	270	< 280	280	**1,900**	250	< 280	280	< 270	270
Benzo(ghi)perylene	100,000	100,000	500,000	**1,800**	250	< 270	270	< 280	280	**1,400**	250	**130**	280	< 270	270
Benzo(k)fluoranthene	800	3,900	56,000	**2,500**	250	< 270	270	< 280	280	**1,800**	250	< 280	280	< 270	270
Benzyl butyl phthalate				< 250	250	< 270	270	< 280	280	< 250	250	< 280	280	< 270	270
Bis(2-chloroethoxy)methane				< 250	250	< 270	270	< 280	280	< 250	250	< 280	280	< 270	270
Bis(2-chloroethyl)ether				< 140	140	< 150	150	< 160	160	< 140	140	< 160	160	< 160	160
Bis(2-chloroisopropyl)ether				< 250	250	< 270	270	< 280	280	< 250	250	< 280	280	< 270	270
Bis(2-ethylhexyl)phthalate				**200**	250	< 270	270	< 280	280	**190**	250	< 280	280	< 270	270
Caprolactam				< 250	250	< 270	270	< 280	280	< 250	250	< 280	280	< 270	270
Carbazole				**810**	250	< 270	270	< 280	280	**400**	250	< 280	280	< 270	270
Chrysene	1,000	3,900	56,000	**3,500**	250	< 270	270	< 280	280	**2,400**	250	< 280	280	< 270	270
Dibenz(a,h)anthracene	330	330	560	**490**	140	< 150	150	< 160	160	**350**	140	< 160	160	< 160	160
Dibenzofuran	7,000	59,000	350,000	**320**	250	< 270	270	< 280	280	**190**	250	< 280	280	< 270	270
Diethyl phthalate				< 250	250	< 270	270	< 280	280	< 250	250	< 280	280	< 270	270
Dimethylphthalate				< 250	250	< 270	270	< 280	280	< 250	250	< 280	280	< 270	270
Di-n-butylphthalate				< 250	250	< 270	270	< 280	280	**120**	250	< 280	280	< 270	270
Di-n-octylphthalate				< 250	250	< 270	270	< 280	280	< 250	250	< 280	280	< 270	270
Fluoranthene	100,000	100,000	500,000	**5,400**	250	< 270	270	< 280	280	**5,200**	250	**140**	280	< 270	270
Fluorene	30,000	100,000	500,000	**450**	250	< 270	270	< 280	280	**320**	250	< 280	280	< 270	270
Hexachlorobenzene	330	1,200	6,000	< 140	140	< 150	150	< 160	160	< 140	140	< 160	160	< 160	160
Hexachlorobutadiene				< 250	250	< 270	270	< 280	280	< 250	250	< 280	280	< 270	270
Hexachlorocyclopentadiene				< 250	250	< 270	270	< 280	280	< 250	250	< 280	280	< 270	270
Hexachloroethane				< 140	140	< 150	150	< 160	160	< 140	140	< 160	160	< 160	160
Indeno(1,2,3-cd)pyrene	500	500	5,600	**2,000**	250	< 270	270	< 280	280	**1,500**	250	< 280	280	< 270	270
Isophorone				< 140	140	< 150	150	< 160	160	< 140	140	< 160	160	< 160	160
Naphthalene	12,000	100,000	500,000	**280**	250	< 270	270	< 280	280	**160**	250	< 280	280	< 270	270
Nitrobenzene				< 140	140	< 150	150	< 160	160	< 140	140	< 160	160	< 160	160
N-Nitrosodimethylamine				< 250	250	< 270	270	< 280	280	< 250	250	< 280	280	< 270	270
N-Nitrosodi-n-propylamine				< 140	140	< 150	150	< 160	160	< 140	140	< 160	160	< 160	160
N-Nitrosodiphenylamine				< 140	140	< 150	150	< 160	160	< 140	140	< 160	160	< 160	160
Pentachlorophenol	800	6,700	6,700	< 250	250	< 270	270	< 280	280	< 250	250	< 280	280	< 270	270
Phenanthrene	100,000	100,000	500,000	**5,000**	140	< 150	150	< 160	160	**3,600**	140	**140**	160	< 160	160
Phenol	330	100,000	500,000	< 250	250	< 270	270	< 280	280	< 250	250	< 280	280	< 270	270
Pyrene	100,000	100,000	500,000	**5,100**	250	< 270	270	< 280	280	**4,900**	250	**140**	280	< 270	270

Notes:

* - 6 NYCRR Part 375-6 Remedial Program Soil Cleanup Objectives

RL - Reporting Limit

Bold/highlighted- Indicated exceedance of the NYSDEC UUSCO Guidance Value

Bold/highlighted- Indicated exceedance of the NYSDEC RRSCO Guidance Value

Bold/highlighted- Indicated exceedance of the NYSDEC RCSCO Guidance Value

Table 4B
Former Pfizer Site A - C224284
243-271 Wallabout Street,
Brooklyn, New York
Remedial Investigation Laboratory Results - Soil Samples
Semi-Volatile Organic Compounds

COMPOUND	NYSDEC Part 375.6 Unrestricted Use Soil Cleanup Objectives*	NYDEC Part 375.6 Restricted Residential Soil Cleanup Objectives*	NYDEC Part 375.6 Restricted Commerical Soil Cleanup Objectives*	EBC 2019 Laboratory Results					
				Soil Duplicate 1		Soil Duplicate 2		Soil Duplicate 3	
				EBC 24 (15-17')		EBC 21 (15-17')		EBC 25 (15-17')	
				6/3/2019		6/4/2019		6/6/2019	
				µg/Kg		µg/Kg		µg/Kg	
				Result	RL	Result	RL	Result	RL
1,1-Biphenyl				< 280	280	< 270	270	< 290	290
1,2,4,5-Tetrachlorobenzene				< 280	280	< 270	270	< 290	290
2,3,4,6-tetrachlorophenol				< 280	280	< 270	270	< 290	290
2,4,5-Trichlorophenol				< 280	280	< 270	270	< 290	290
2,4,6-Trichlorophenol				< 160	160	< 160	160	< 160	160
2,4-Dichlorophenol				< 160	160	< 160	160	< 160	160
2,4-Dimethylphenol				< 280	280	< 270	270	< 290	290
2,4-Dinitrophenol				< 280	280	< 270	270	< 290	290
2,4-Dinitrotoluene				< 160	160	< 160	160	< 160	160
2,6-Dinitrotoluene				< 160	160	< 160	160	< 160	160
2-Chloronaphthalene				< 280	280	< 270	270	< 290	290
2-Chlorophenol				< 280	280	< 270	270	< 290	290
2-Methylnaphthalene				< 280	280	< 270	270	< 290	290
2-Methylphenol (o-cresol)	330	100,000	500,000	< 280	280	< 270	270	< 290	290
2-Nitroaniline				< 280	280	< 270	270	< 290	290
2-Nitrophenol				< 280	280	< 270	270	< 290	290
3&4-Methylphenol (m&p-cresol)				< 280	280	< 270	270	< 290	290
3,3'-Dichlorobenzidine				< 160	160	< 160	160	< 160	160
3-Nitroaniline				< 790	790	< 780	780	< 820	820
4,6-Dinitro-2-methylphenol				< 280	280	< 270	270	< 290	290
4-Bromophenyl phenyl ether				< 280	280	< 270	270	< 290	290
4-Chloro-3-methylphenol				< 280	280	< 270	270	< 290	290
4-Chloroaniline				< 790	790	< 780	780	< 820	820
4-Chlorophenyl phenyl ether				< 280	280	< 270	270	< 290	290
4-Nitroaniline				< 2000	2,000	< 1900	1,900	< 2100	2,100
4-Nitrophenol				< 280	280	< 270	270	< 290	290
Acenaphthene	20,000	100,000	500,000	< 280	280	< 270	270	< 290	290
Acenaphthylene	100,000	100,000	500,000	< 160	160	< 160	160	< 160	160
Acetophenone				< 280	280	< 270	270	< 290	290
Anthracene	100,000	100,000	500,000	< 280	280	< 270	270	< 290	290
Atrazine				< 280	280	< 270	270	< 290	290
Benz(a)anthracene	1,000	1,000	5,600	< 280	280	< 270	270	< 290	290
Benzaldehyde				< 280	280	< 270	270	< 290	290
Benzo(a)pyrene	1,000	1,000	1,000	< 160	160	< 160	160	< 160	160
Benzo(b)fluoranthene	1,000	1,000	5,600	< 280	280	< 270	270	< 290	290
Benzo(ghi)perylene	100,000	100,000	500,000	< 280	280	< 270	270	< 290	290
Benzo(k)fluoranthene	800	3,900	56,000	< 280	280	< 270	270	< 290	290
Benzyl butyl phthalate				< 280	280	< 270	270	< 290	290
Bis(2-chloroethoxy)methane				< 280	280	< 270	270	< 290	290
Bis(2-chloroethyl)ether				< 160	160	< 160	160	< 160	160
Bis(2-chloroisopropyl)ether				< 280	280	< 270	270	< 290	290
Bis(2-ethylhexyl)phthalate				< 280	280	< 270	270	< 290	290
Caprolactam				< 280	280	< 270	270	< 290	290
Carbazole				< 280	280	< 270	270	< 290	290
Chrysene	1,000	3,900	56,000	< 280	280	< 270	270	< 290	290
Dibenz(a,h)anthracene	330	330	560	< 160	160	< 160	160	< 160	160
Dibenzofuran	7,000	59,000	350,000	< 280	280	< 270	270	< 290	290
Diethyl phthalate				< 280	280	< 270	270	< 290	290
Dimethylphthalate				< 280	280	< 270	270	< 290	290
Di-n-butylphthalate				< 280	280	< 270	270	< 290	290
Di-n-octylphthalate				< 280	280	< 270	270	< 290	290
Fluoranthene	100,000	100,000	500,000	< 280	280	< 270	270	< 290	290
Fluorene	30,000	100,000	500,000	< 280	280	< 270	270	< 290	290
Hexachlorobenzene	330	1,200	6,000	< 160	160	< 160	160	< 160	160
Hexachlorobutadiene				< 280	280	< 270	270	< 290	290
Hexachlorocyclopentadiene				< 280	280	< 270	270	< 290	290
Hexachloroethane				< 160	160	< 160	160	< 160	160
Indeno(1,2,3-cd)pyrene	500	500	5,600	< 280	280	< 270	270	< 290	290
Isophorone				< 160	160	< 160	160	< 160	160
Naphthalene	12,000	100,000	500,000	< 280	280	< 270	270	< 290	290
Nitrobenzene				< 160	160	< 160	160	< 160	160
N-Nitrosodimethylamine				< 280	280	< 270	270	< 290	290
N-Nitrosodi-n-propylamine				< 160	160	< 160	160	< 160	160
N-Nitrosodiphenylamine				< 160	160	< 160	160	< 160	160
Pentachlorophenol	800	6,700	6,700	< 280	280	< 270	270	< 290	290
Phenanthrene	100,000	100,000	500,000	< 160	160	< 160	160	< 160	160
Phenol	330	100,000	500,000	< 280	280	< 270	270	< 290	290
Pyrene	100,000	100,000	500,000	< 280	280	< 270	270	< 290	290

Notes:

* - 6 NYCRR Part 375-6 Remedial Program Soil Cleanup Objectives

RL - Reporting Limit

Bold/highlighted- Indicated exceedance of the NYSDEC UUSCO Guidance Value

Bold/highlighted- Indicated exceedance of the NYSDEC RRSCO Guidance Value

Bold/highlighted- Indicated exceedance of the NYSDEC RCSCO Guidance Value

Table 5A
Former Pfizer Site A - C224284
243-271 Wallabout Street,
Brooklyn, New York
Laboratory Results - Soil Samples
Pesticides PCBs

	COMPOUND	NYSDEC Part 375.6 Unrestricted Use Soil Cleanup Objectives*	NYDEC Part 375.6 Restricted Residential Soil Cleanup Objectives*	NYDEC Part 375.6 Restricted Commercial Soil Cleanup Objectives*	ROUX 2005 Laboratory Results											
					AF-8			SB-1		SB-2	SB-3	SB-4	SB-5	SB-6		
					1-3'	3-5'	5-7'	0-2'	6-8'	6-7'	5-7'	6-8'	5-6'	0-2'	6-7'
					10/24/2005	10/24/2005	10/24/2005	10/26/2005	10/26/2005	10/26/2005	10/26/2005	10/26/2005	10/24/2005	10/24/2005	10/24/2005
					µg/Kg	µg/Kg	µg/Kg	µg/Kg	µg/Kg	µg/Kg	µg/Kg	µg/Kg	µg/Kg	µg/Kg	µg/Kg
					Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
Pesticides	4,4' -DDD	3.3	13,000	92,000	**19J**	93U	**1.6J**	**9.9**	**3.5J**	**21**	4.2U	4.1U	21U	41U	4.8U
	4,4' -DDE	3.3	8,900	62,000	**77**	93U	3.7U	**1.2J**	**1J**	**4.1J**	4.2U	4.1U	21U	41U	4.8U
	4,4' -DDT	3.3	7,900	47,000	**92**	93U	**2.1J**	**22**	**22**	**11**	4.2U	4.1U	21U	41U	4.8U
	a-BHC	20	480	3,400	22U	48U	1.9U	**5.3**	**2.6**	2.1U	2.1U	2.1U	11U	21U	2.5U
	a-Chlordane	94	4,200	24,000	**4.6J**	**6.1J**	**0.15J**	**2.4**	**8.1**	**9.9**	2.1U	2.1U	11U	21U	2.5U
	Aldrin	5	97	680	26U	56U	2.3U	2.2U	2.3U	**0.71J**	2.5U	2.5U	13U	25U	2..9U
	b-BHC	36	360	3,000	22U	48U	1.9U	**0.64J**	**0.54J**	2.1U	**0.42J**	2.1U	11U	21U	2.5U
	d-BHC	40	100,000	500,000	**19J**	48U	1.9U	**0.13J**	1.9U	**0.15J**	2.1U	2.1U	**9.2J**	**18J**	**0.35J**
	Dieldrin	5	200	1,400	43U	93U	3.7U	**2.1J**	**0.4J**	**3.3J**	4.2U	4.1U	21U	41U	4.8U
	Endosulfan I	2,400	24,000	200,000	**110M**	**190M**	1.9U	1.8U	1.9U	2.1U	2.1U	2.1U	**53M**	**120M**	2.5U
	Endosulfan II	2,400	24,000	200,000	43U	93U	3.7U	**2.6J**	**3.8**	**1.4J**	4.2U	4.1U	21U	41U	4.8U
	Endosulfan sulfate	2,400	24,000	200,000	**22J**	**26J**	3.7U	**1.4J**	**1.5J**	4.2U	4.2U	4.1U	**11J**	**18J**	4.8U
	Endrin	14	11,000	89,000	65U	140U	5.6U	**3.8J**	**5.2J**	6.3U	6.3U	6.2U	32U	62U	7.3U
	Endrin aldehyde				43U	93U	3.7U	**15**	**3.6J**	**4.8**	4.2U	4.1U	21U	41U	4.8U
	Endrin ketone				43U	93U	3.7U	**11**	**14**	**1.4J**	4.2U	4.1U	21U	41U	4.8U
	g-BHC				22U	48U	1.9U	1.8U	1.9U	**0.61J**	2.1U	2.1U	11U	21U	2.5U
	g-Chlordane				**3.8J**	**4.5J**	**0.14J**	**4.5**	**11**	**11**	2.1U	**0.14J**	11U	21U	2.5U
	Heptachlor	42	2,100	15,000	**3.1J**	48U	1.9U	**0.61J**	**0.94J**	**1J**	2.1U	**0.24J**	11U	**4J**	2.5U
	Heptachlor epoxide				**2.4J**	**4.9J**	1.9U	**0.82J**	1.9U	**2J**	2.1U	2.1U	**1.9J**	**3J**	2.5U
	Methoxychlor				**77J**	**110J**	19U	18U	19U	21U	21U	21U	**45J**	**73J**	25U
	Toxaphene				870U	1900U	76U	73U	77U	84U	84U	83U	430U	830U	97U
PCBs	PCB-1016	100	1,000		22U	19U	19U	18U	19U	21U	21U	21U	22U	21U	25U
	PCB-1221	100	1,000		43U	37U	37U	36U	38U	42U	42U	41U	42U	41U	48U
	PCB-1232	100	1,000		22U	19U	19U	18U	19U	21U	21U	21U	22U	21U	25U
	PCB-1242	100	1,000		22U	19U	19U	18U	19U	21U	21U	21U	22U	21U	25U
	PCB-1248	100	1,000		22U	19U	19U	18U	19U	21U	21U	21U	22U	21U	25U
	PCB-1254	100	1,000		22U	19U	19U	18U	19U	**82M**	21U	21U	**11JM**	**13JM**	25U
	PCB-1260	100	1,000		**28M**	**12JM**	19U	**31M**	**15J**	**44**	21U	21U	**9.2J**	**19J**	25U

Notes:

* - 6 NYCRR Part 375-6 Remedial Program Soil Cleanup Objectives

RL - Reporting Limit

Bold/highlighted- Indicated exceedance of the NYSDEC UUSCO Guidance Value

Bold/highlighted- Indicated exceedance of the NYSDEC RRSCO Guidance Value

Bold/highlighted- Indicated exceedance of the NYSDEC RCSCO Guidance Value

Table 5A
Former Pfizer Site A - C224284
243-271 Wallabout Street,
Brooklyn, New York
Laboratory Results - Soil Samples
Pesticides PCBs

	COMPOUND	NYSDEC Part 375.6 Unrestricted Use Soil Cleanup Objectives*	NYDEC Part 375.6 Restricted Residential Soil Cleanup Objectives*	NYDEC Part 375.6 Restricted Commercial Soil Cleanup Objectives*	ROUX 2005 Laboratory Results						
					SB-7		SB-8		SB-9	SB-10	
					0-2'	5-7'	0-2'	5-7'	5-6'	0-2'	6-7'
					10/26/2005	10/26/2005	10/26/2005	10/26/2005	10/24/2005	10/24/2005	10/24/2005
					µg/Kg	µg/Kg	µg/Kg	µg/Kg	µg/Kg	µg/Kg	µg/Kg
					Result	Result	Result	Result	Result	Result	Result
Pesticides	4,4' -DDD	3.3	13,000	92,000	**2.1J**	4.3U	**8.6**	**2.8J**	3.8U	**33J**	4.5U
	4,4' -DDE	3.3	8,900	62,000	3.9U	4.3U	**2.5J**	4.7U	3.8U	**80**	4.5U
	4,4' -DDT	3.3	7,900	47,000	**5.3**	4.3U	**60**	**7.5**	3.8U	**170**	**0.73J**
	a-BHC	20	480	3,400	2U	**1.2J**	**1.6J**	**1.6J**	2U	20U	2.3U
	a-Chlordane	94	4,200	24,000	2U	2.2U	**8.5**	2.4U	**0.13J**	**14JM**	**0.19J**
	Aldrin	5	97	680	2.4U	2.6U	**1.4J**	2.9U	2.3U	24U	2.8U
	b-BHC	36	360	3,000	**2.2**	2.2U	2U	**1J**	2U	20U	2.3U
	d-BHC	40	100,000	500,000	2U	**0.16J**	**5.1**	2.4U	**1.2J**	**17J**	**0.52J**
	Dieldrin	5	200	1,400	3.9U	4.3U	4U	4.7U	3.8U	40U	4.5U
	Endosulfan I	2,400	24,000	200,000	2U	2.2U	**0.33J**	2.4U	**1.4JM**	**130**	2.3U
	Endosulfan II	2,400	24,000	200,000	**0.39J**	4.3U	**7.7**	**0.49J**	**0.23J**	40U	4.5U
	Endosulfan sulfate	2,400	24,000	200,000	**2.6J**	4.3U	**4.9**	4.7U	**0.27J**	**20J**	**0.25J**
	Endrin	14	11,000	89,000	6U	6.5U	**23**	7.2U	5.8U	60U	6.9U
	Endrin aldehyde				**1.8J**	4.3U	**49**	**2.8J**	3.8U	40U	4.5U
	Endrin ketone				**2.4J**	4.3U	**65**	**4.9**	3.8U	40U	4.5U
	g-BHC				2U	2.2U	2U	2.4U	2U	20U	2.3U
	g-Chlordane				**0.33J**	2.2U	**28**	**1.2J**	2U	**16J**	2.3U
	Heptachlor	42	2,100	15,000	2U	**0.46J**	**7.8**	2.4U	2U	20U	2.3U
	Heptachlor epoxide				2U	2.2U	**8.1**	2.4U	**0.14J**	**2.9J**	2.3U
	Methoxychlor				20U	22U	**16J**	24U	20U	**79J**	23U
	Toxaphene				80U	87U	81U	96U	78U	800U	92U
PCBs	PCB-1016	100	1,000		20U	22U	20U	24U	20U	20U	23U
	PCB-1221	100	1,000		39U	43U	40U	47U	38U	40U	45U
	PCB-1232	100	1,000		20U	22U	20U	24U	20U	20U	23
	PCB-1242	100	1,000		20U	22U	20U	24U	20U	20U	24
	PCB-1248	100	1,000		20U	22U	20U	24U	20U	20U	25
	PCB-1254	100	1,000		20U	22U	20U	24U	20U	20U	26
	PCB-1260	100	1,000		20U	22U	20U	24U	20U	**180**	27

Notes:

* - 6 NYCRR Part 375-6 Remedial Program Soil Cleanup Objectives

RL - Reporting Limit

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Bold/highlighted- Indicated exceedance of the NYSDEC RRSCO Guidance Value

Bold/highlighted- Indicated exceedance of the NYSDEC RCSCO Guidance Value

Table 5B
Former Pfizer Site A - C224284
243-271 Wallabout Street,
Brooklyn, New York
Remedial Investigation Laboratory Results - Soil Samples
Pesticides PCBs

	COMPOUND	NYSDEC Part 375.6 Unrestricted Use Soil Cleanup Objectives*	NYDEC Part 375.6 Restricted Residential Soil Cleanup Objectives*	NYDEC Part 375.6 Restricted Commercial Soil Cleanup Objectives*	EBC 2019 Laboratory Results																	
					EBC20						EBC21						EBC22					
					0-2'		6-8'		15-17'		0-2'		6-8'		15-17'		0-2'		6-8'		15-17'	
					6/6/2019		6/6/2019		6/6/2019		6/4/2019		6/4/2019		6/4/2019		6/4/2019		6/4/2019		6/4/2019	
					µg/Kg		µg/Kg		µg/Kg		µg/Kg		µg/Kg		µg/Kg		µg/Kg		µg/Kg		µg/Kg	
					Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL
Pesticides	4,4' -DDD	3.3	13,000	92,000	< 2.3	2.3	< 2.2	2.2	< 2.3	2.3	< 2.1	2.1	< 2.4	2.4	< 2.3	2.3	< 2.3	2.3	**4**	2.5	< 2.8	2.8
	4,4' -DDE	3.3	8,900	62,000	**5.2**	2.3	**13**	2.2	< 2.3	2.3	< 5.0	5.0	< 2.4	2.4	< 2.3	2.3	**15**	2.3	< 2.5	2.5	< 2.8	2.8
	4,4' -DDT	3.3	7,900	47,000	< 2.3	2.3	**81**	2.2	< 2.3	2.3	**24**	2.1	< 2.4	2.4	< 2.3	2.3	**20**	2.3	< 2.5	2.5	< 2.8	2.8
	a-BHC	20	480	3,400	< 7.6	7.6	< 7.4	7.4	< 7.7	7.7	< 7.0	7.0	< 7.8	7.8	< 7.7	7.7	< 7.6	7.6	< 8.3	8.3	< 9.3	9.3
	a-Chlordane	94	4,200	24,000	**8.7**	3.8	< 3.7	3.7	< 3.9	3.9	**19**	3.5	< 3.9	3.9	< 3.9	3.9	**38**	3.8	< 4.2	4.2	< 4.7	4.7
	Aldrin	5	97	680	< 3.8	3.8	< 3.7	3.7	< 3.9	3.9	< 3.5	3.5	< 3.9	3.9	< 3.9	3.9	< 3.8	3.8	< 4.2	4.2	< 4.7	4.7
	b-BHC	36	360	3,000	< 7.6	7.6	< 7.4	7.4	< 7.7	7.7	< 10	10	< 7.8	7.8	< 7.7	7.7	< 7.6	7.6	< 8.3	8.3	< 9.3	9.3
	Chlordane				**54**	38	< 37	37	< 39	39	**94**	35	< 39	39	< 39	39	**130**	38	< 42	42	< 47	47
	d-BHC	40	100,000	500,000	< 7.6	7.6	< 7.4	7.4	< 7.7	7.7	< 7.0	7.0	< 7.8	7.8	< 7.7	7.7	< 7.6	7.6	< 8.3	8.3	< 9.3	9.3
	Dieldrin	5	200	1,400	< 3.8	3.8	< 3.7	3.7	< 3.9	3.9	< 3.5	3.5	< 3.9	3.9	< 3.9	3.9	< 3.8	3.8	< 4.2	4.2	< 4.7	4.7
	Endosulfan I	2,400	24,000	200,000	< 7.6	7.6	< 7.4	7.4	< 7.7	7.7	< 7.0	7.0	< 7.8	7.8	< 7.7	7.7	< 7.6	7.6	< 8.3	8.3	< 9.3	9.3
	Endosulfan II	2,400	24,000	200,000	< 7.6	7.6	< 7.4	7.4	< 7.7	7.7	< 7.0	7.0	< 7.8	7.8	< 7.7	7.7	< 7.6	7.6	< 8.3	8.3	< 9.3	9.3
	Endosulfan sulfate	2,400	24,000	200,000	< 7.6	7.6	< 7.4	7.4	< 7.7	7.7	< 7.0	7.0	< 7.8	7.8	< 7.7	7.7	< 7.6	7.6	< 8.3	8.3	< 9.3	9.3
	Endrin	14	11,000	89,000	< 7.6	7.6	< 7.4	7.4	< 7.7	7.7	< 7.0	7.0	< 7.8	7.8	< 7.7	7.7	< 7.6	7.6	< 8.3	8.3	< 9.3	9.3
	Endrin aldehyde				< 7.6	7.6	< 7.4	7.4	< 7.7	7.7	< 7.0	7.0	< 7.8	7.8	< 7.7	7.7	< 7.6	7.6	< 8.3	8.3	< 9.3	9.3
	Endrin ketone				< 7.6	7.6	< 7.4	7.4	< 7.7	7.7	< 7.0	7.0	< 7.8	7.8	< 7.7	7.7	< 7.6	7.6	< 8.3	8.3	< 9.3	9.3
	g-BHC				< 1.5	1.5	< 1.5	1.5	< 1.5	1.5	< 1.4	1.4	< 1.6	1.6	< 1.5	1.5	< 5.0	5.0	< 2.0	2.0	< 1.9	1.9
	g-Chlordane				**5.7**	3.8	< 3.7	3.7	< 3.9	3.9	**8.1**	3.5	< 3.9	3.9	< 3.9	3.9	**21**	3.8	< 4.2	4.2	< 4.7	4.7
	Heptachlor	42	2,100	15,000	< 7.6	7.6	< 7.4	7.4	< 7.7	7.7	**9.1**	7.0	< 7.8	7.8	< 7.7	7.7	< 7.6	7.6	< 8.3	8.3	< 9.3	9.3
	Heptachlor epoxide				< 7.6	7.6	< 7.4	7.4	< 7.7	7.7	< 7.0	7.0	< 7.8	7.8	< 7.7	7.7	< 7.6	7.6	< 8.3	8.3	< 9.3	9.3
	Methoxychlor				< 38	38	< 37	37	< 39	39	< 35	35	< 39	39	< 39	39	< 38	38	< 42	42	< 47	47
	Toxaphene				< 150	150	< 150	150	< 150	150	< 140	140	< 160	160	< 150	150	< 150	150	< 170	170	< 190	190
PCBs	PCB-1016	100	1,000		< 76	76	< 74	74	< 77	77	< 70	70	< 78	78	< 77	77	< 76	76	< 83	83	< 93	93
	PCB-1221	100	1,000		< 76	76	< 74	74	< 77	77	< 70	70	< 78	78	< 77	77	< 76	76	< 83	83	< 93	93
	PCB-1232	100	1,000		< 76	76	< 74	74	< 77	77	< 70	70	< 78	78	< 77	77	< 76	76	< 83	83	< 93	93
	PCB-1242	100	1,000		< 76	76	< 74	74	< 77	77	< 70	70	< 78	78	< 77	77	< 76	76	< 83	83	< 93	93
	PCB-1248	100	1,000		< 76	76	< 74	74	< 77	77	< 70	70	< 78	78	< 77	77	< 76	76	< 83	83	< 93	93
	PCB-1254	100	1,000		< 76	76	< 74	74	< 77	77	< 70	70	< 78	78	< 77	77	< 76	76	< 83	83	< 93	93
	PCB-1260	100	1,000		< 76	76	< 74	74	< 77	77	< 70	70	< 78	78	< 77	77	< 76	76	< 83	83	< 93	93
	PCB-1262	101			< 76	76	< 74	74	< 77	77	< 70	70	< 78	78	< 77	77	< 76	76	< 83	83	< 93	93
	PCB-1268	102			< 76	76	< 74	74	< 77	77	< 70	70	< 78	78	< 77	77	< 76	76	< 83	83	< 93	93

Notes:

* - 6 NYCRR Part 375-6 Remedial Program Soil Cleanup Objectives

RL - Reporting Limit

Bold/highlighted- Indicated exceedance of the NYSDEC UUSCO Guidance Value

Bold/highlighted- Indicated exceedance of the NYSDEC RRSCO Guidance Value

Bold/highlighted- Indicated exceedance of the NYSDEC RCSCO Guidance Value

Table 5B
Former Pfizer Site A - C224284
243-271 Wallabout Street,
Brooklyn, New York
Remedial Investigation Laboratory Results - Soil Samples
Pesticides PCBs

	COMPOUND	NYSDEC Part 375.6 Unrestricted Use Soil Cleanup Objectives*	NYDEC Part 375.6 Restricted Residential Soil Cleanup Objectives*	NYDEC Part 375.6 Restricted Commercial Soil Cleanup Objectives*	EBC 2019 Laboratory Results																	
					EBC23						EBC24						EBC25					
					0-2'		6-8'		15-17'		0-2'		6-8'		15-17'		0-2'		6-8'		15-17'	
					6/4/2019		6/4/2019		6/4/2019		6/3/2019		6/3/2019		6/3/2019		6/6/2019		6/6/2019		6/6/2019	
					µg/Kg		µg/Kg		µg/Kg		µg/Kg		µg/Kg		µg/Kg		µg/Kg		µg/Kg		µg/Kg	
					Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL
Pesticides	4,4' -DDD	3.3	13,000	92,000	< 2.2	2.2	< 2.5	2.5	< 2.4	2.4	< 2.1	2.1	< 2.5	2.5	< 2.4	2.4	**3.4**	2.2	< 2.6	2.6	< 2.4	2.4
	4,4' -DDE	3.3	8,900	62,000	**17**	2.2	< 2.5	2.5	< 2.4	2.4	< 2.1	2.1	< 2.5	2.5	< 2.4	2.4	**5.2**	2.2	< 2.6	2.6	< 2.4	2.4
	4,4' -DDT	3.3	7,900	47,000	**12**	2.2	< 2.5	2.5	< 2.4	2.4	**8.4**	2.1	< 2.5	2.5	< 2.4	2.4	**16**	2.2	< 2.6	2.6	< 2.4	2.4
	a-BHC	20	480	3,400	< 7.4	7.4	< 8.4	8.4	< 8.1	8.1	< 7.1	7.1	< 8.3	8.3	< 8.0	8.0	< 7.3	7.3	< 8.7	8.7	< 8.1	8.1
	a-Chlordane	94	4,200	24,000	**30**	3.7	< 4.2	4.2	< 4.1	4.1	< 3.5	3.5	< 4.1	4.1	< 4.0	4.0	**13**	3.7	< 4.3	4.3	< 4.1	4.1
	Aldrin	5	97	680	< 3.7	3.7	< 4.2	4.2	< 4.1	4.1	< 3.5	3.5	< 4.1	4.1	< 4.0	4.0	< 3.7	3.7	< 4.3	4.3	< 4.1	4.1
	b-BHC	36	360	3,000	< 7.4	7.4	< 8.4	8.4	< 8.1	8.1	< 7.1	7.1	< 8.3	8.3	< 8.0	8.0	< 7.3	7.3	< 8.7	8.7	< 8.1	8.1
	Chlordane				**100**	37	< 42	42	< 41	41	< 35	35	< 41	41	< 40	40	**47**	29	< 43	43	< 41	41
	d-BHC	40	100,000	500,000	< 7.4	7.4	< 8.4	8.4	< 8.1	8.1	< 7.1	7.1	< 8.3	8.3	< 8.0	8.0	< 7.3	7.3	< 8.7	8.7	< 8.1	8.1
	Dieldrin	5	200	1,400	< 3.7	3.7	< 4.2	4.2	< 4.1	4.1	< 3.5	3.5	< 4.1	4.1	< 4.0	4.0	< 3.7	3.7	< 4.3	4.3	< 4.1	4.1
	Endosulfan I	2,400	24,000	200,000	< 7.4	7.4	< 8.4	8.4	< 8.1	8.1	< 7.1	7.1	< 8.3	8.3	< 8.0	8.0	< 7.3	7.3	< 8.7	8.7	< 8.1	8.1
	Endosulfan II	2,400	24,000	200,000	< 7.4	7.4	< 8.4	8.4	< 8.1	8.1	< 7.1	7.1	< 8.3	8.3	< 8.0	8.0	< 7.3	7.3	< 8.7	8.7	< 8.1	8.1
	Endosulfan sulfate	2,400	24,000	200,000	< 7.4	7.4	< 8.4	8.4	< 8.1	8.1	< 7.1	7.1	< 8.3	8.3	< 8.0	8.0	< 7.3	7.3	< 8.7	8.7	< 8.1	8.1
	Endrin	14	11,000	89,000	< 7.4	7.4	< 8.4	8.4	< 8.1	8.1	< 7.1	7.1	< 8.3	8.3	< 8.0	8.0	< 7.3	7.3	< 8.7	8.7	< 8.1	8.1
	Endrin aldehyde				< 7.4	7.4	< 8.4	8.4	< 8.1	8.1	< 7.1	7.1	< 8.3	8.3	< 8.0	8.0	< 7.3	7.3	< 8.7	8.7	< 8.1	8.1
	Endrin ketone				< 7.4	7.4	< 8.4	8.4	< 8.1	8.1	< 7.1	7.1	< 8.3	8.3	< 8.0	8.0	< 7.3	7.3	< 8.7	8.7	< 8.1	8.1
	g-BHC				< 1.5	1.5	< 1.7	1.7	< 1.6	1.6	< 1.4	1.4	< 1.7	1.7	< 1.6	1.6	< 1.5	1.5	< 3.0	3.0	< 1.6	1.6
	g-Chlordane				**15**	3.7	< 4.2	4.2	< 4.1	4.1	**7.6**	3.5	< 4.1	4.1	< 4.0	4.0	**7.9**	3.7	< 4.3	4.3	< 4.1	4.1
	Heptachlor	42	2,100	15,000	< 7.4	7.4	< 8.4	8.4	< 8.1	8.1	< 7.1	7.1	< 8.3	8.3	< 8.0	8.0	< 7.3	7.3	< 8.7	8.7	< 8.1	8.1
	Heptachlor epoxide				< 7.4	7.4	< 8.4	8.4	< 8.1	8.1	< 7.1	7.1	< 8.3	8.3	< 8.0	8.0	< 7.3	7.3	< 8.7	8.7	< 8.1	8.1
	Methoxychlor				< 37	37	< 42	42	< 41	41	< 35	35	< 41	41	< 40	40	< 37	37	< 43	43	< 41	41
	Toxaphene				< 150	150	< 170	170	< 160	160	< 140	140	< 170	170	< 160	160	< 150	150	< 170	170	< 160	160
PCBs	PCB-1016	100	1,000		< 74	74	< 84	84	< 81	81	< 71	71	< 83	83	< 80	80	< 73	73	< 87	87	< 80	80
	PCB-1221	100	1,000		< 74	74	< 84	84	< 81	81	< 71	71	< 83	83	< 80	80	< 73	73	< 87	87	< 80	80
	PCB-1232	100	1,000		< 74	74	< 84	84	< 81	81	< 71	71	< 83	83	< 80	80	< 73	73	< 87	87	< 80	80
	PCB-1242	100	1,000		< 74	74	< 84	84	< 81	81	< 71	71	< 83	83	< 80	80	< 73	73	< 87	87	< 80	80
	PCB-1248	100	1,000		< 74	74	< 84	84	< 81	81	< 71	71	< 83	83	< 80	80	< 73	73	< 87	87	< 80	80
	PCB-1254	100	1,000		< 74	74	< 84	84	< 81	81	< 71	71	< 83	83	< 80	80	< 73	73	< 87	87	< 80	80
	PCB-1260	100	1,000		< 74	74	< 84	84	< 81	81	< 71	71	< 83	83	< 80	80	< 73	73	< 87	87	< 80	80
	PCB-1262	101			< 74	74	< 84	84	< 81	81	< 71	71	< 83	83	< 80	80	< 73	73	< 87	87	< 80	80
	PCB-1268	102			< 74	74	< 84	84	< 81	81	< 71	71	< 83	83	< 80	80	< 73	73	< 87	87	< 80	80

Notes:

* - 6 NYCRR Part 375-6 Remedial Program Soil Cleanup Objectives

RL - Reporting Limit

Bold/highlighted- Indicated exceedance of the NYSDEC UUSCO Guidance Value

Bold/highlighted- Indicated exceedance of the NYSDEC RRSCO Guidance Value

Bold/highlighted- Indicated exceedance of the NYSDEC RCSCO Guidance Value

Table 5B
Former Pfizer Site A - C224284
243-271 Wallabout Street,
Brooklyn, New York
Remedial Investigation Laboratory Results - Soil Samples
Pesticides PCBs

	COMPOUND	NYSDEC Part 375.6 Unrestricted Use Soil Cleanup Objectives*	NYDEC Part 375.6 Restricted Residential Soil Cleanup Objectives*	NYDEC Part 375.6 Restricted Commercial Soil Cleanup Objectives*	EBC 2019 Laboratory Results																	
					EBC26						EBC27						Soil Duplicate 1		Soil Duplicate 2		Soil Duplicate 3	
					0-2'		6-8'		15-17'		0-2'		6-8'		15-17'		EBC 24 (15-17')		EBC 21 (15-17')		EBC 25 (15-17')	
					6/4/2019		6/4/2019		6/4/2019		6/4/2019		6/4/2019		6/4/2019		6/3/2019		6/4/2019		6/6/2019	
					µg/Kg		µg/Kg		µg/Kg		µg/Kg		µg/Kg		µg/Kg		µg/Kg		µg/Kg		µg/Kg	
					Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL
Pesticides	4,4' -DDD	3.3	13,000	92,000	< 3.5	3.5	< 2.3	2.3	< 2.3	2.3	**7**	2.2	< 2.4	2.4	< 2.3	2.3	< 2.4	2.4	< 2.4	2.4	< 2.4	2.4
	4,4' -DDE	3.3	8,900	62,000	**35**	2.1	< 2.3	2.3	< 2.3	2.3	**2.9**	2.2	< 2.4	2.4	< 2.3	2.3	< 2.4	2.4	< 2.4	2.4	< 2.4	2.4
	4,4' -DDT	3.3	7,900	47,000	**77**	2.1	< 2.3	2.3	< 2.3	2.3	**5.1**	2.2	< 2.4	2.4	< 2.3	2.3	< 2.4	2.4	< 2.4	2.4	< 2.4	2.4
	a-BHC	20	480	3,400	< 7.1	7.1	< 7.8	7.8	< 7.7	7.7	< 7.2	7.2	< 7.9	7.9	< 7.8	7.8	< 7.9	7.9	< 7.9	7.9	< 8.2	8.2
	a-Chlordane	94	4,200	24,000	< 3.6	3.6	< 3.9	3.9	< 3.9	3.9	< 3.6	3.6	< 4.0	4.0	< 3.9	3.9	< 4.0	4.0	< 3.9	3.9	< 4.1	4.1
	Aldrin	5	97	680	< 3.6	3.6	< 3.9	3.9	< 3.9	3.9	< 3.6	3.6	< 4.0	4.0	< 3.9	3.9	< 4.0	4.0	< 3.9	3.9	< 4.1	4.1
	b-BHC	36	360	3,000	< 7.1	7.1	< 7.8	7.8	< 7.7	7.7	< 7.2	7.2	< 7.9	7.9	< 7.8	7.8	< 7.9	7.9	< 7.9	7.9	< 8.2	8.2
	Chlordane				< 36	36	< 39	39	< 39	39	< 36	36	< 40	40	< 39	39	< 40	40	< 39	39	< 41	41
	d-BHC	40	100,000	500,000	< 7.1	7.1	< 7.8	7.8	< 7.7	7.7	< 7.2	7.2	< 7.9	7.9	< 7.8	7.8	< 7.9	7.9	< 7.9	7.9	< 8.2	8.2
	Dieldrin	5	200	1,400	< 3.6	3.6	< 3.9	3.9	< 3.9	3.9	< 3.6	3.6	< 4.0	4.0	< 3.9	3.9	< 4.0	4.0	< 3.9	3.9	< 4.1	4.1
	Endosulfan I	2,400	24,000	200,000	< 7.1	7.1	< 7.8	7.8	< 7.7	7.7	< 7.2	7.2	< 7.9	7.9	< 7.8	7.8	< 7.9	7.9	< 7.9	7.9	< 8.2	8.2
	Endosulfan II	2,400	24,000	200,000	< 7.1	7.1	< 7.8	7.8	< 7.7	7.7	< 7.2	7.2	< 7.9	7.9	< 7.8	7.8	< 7.9	7.9	< 7.9	7.9	< 8.2	8.2
	Endosulfan sulfate	2,400	24,000	200,000	< 7.1	7.1	< 7.8	7.8	< 7.7	7.7	< 7.2	7.2	< 7.9	7.9	< 7.8	7.8	< 7.9	7.9	< 7.9	7.9	< 8.2	8.2
	Endrin	14	11,000	89,000	< 7.1	7.1	< 7.8	7.8	< 7.7	7.7	< 7.2	7.2	< 7.9	7.9	< 7.8	7.8	< 7.9	7.9	< 7.9	7.9	< 8.2	8.2
	Endrin aldehyde				< 7.1	7.1	< 7.8	7.8	< 7.7	7.7	< 7.2	7.2	< 7.9	7.9	< 7.8	7.8	< 7.9	7.9	< 7.9	7.9	< 8.2	8.2
	Endrin ketone				< 7.1	7.1	< 7.8	7.8	< 7.7	7.7	< 7.2	7.2	< 7.9	7.9	< 7.8	7.8	< 7.9	7.9	< 7.9	7.9	< 8.2	8.2
	g-BHC				< 1.4	1.4	< 1.6	1.6	< 1.5	1.5	< 1.4	1.4	< 1.6	1.6	< 1.6	1.6	< 1.6	1.6	< 1.6	1.6	< 1.6	1.6
	g-Chlordane				< 3.6	3.6	< 3.9	3.9	< 3.9	3.9	< 3.6	3.6	< 4.0	4.0	< 3.9	3.9	< 4.0	4.0	< 3.9	3.9	< 4.1	4.1
	Heptachlor	42	2,100	15,000	< 7.1	7.1	< 7.8	7.8	< 7.7	7.7	< 7.2	7.2	< 7.9	7.9	< 7.8	7.8	< 7.9	7.9	< 7.9	7.9	< 8.2	8.2
	Heptachlor epoxide				< 7.1	7.1	< 7.8	7.8	< 7.7	7.7	< 7.2	7.2	< 7.9	7.9	< 7.8	7.8	< 7.9	7.9	< 7.9	7.9	< 8.2	8.2
	Methoxychlor				< 36	36	< 39	39	< 39	39	< 36	36	< 40	40	< 39	39	< 40	40	< 39	39	< 41	41
	Toxaphene				< 140	140	< 160	160	< 150	150	< 140	140	< 160	160	< 160	160	< 160	160	< 160	160	< 160	160
PCBs	PCB-1016	100	1,000		< 71	71	< 78	78	< 77	77	< 72	72	< 79	79	< 78	78	< 79	79	< 79	79	< 82	82
	PCB-1221	100	1,000		< 71	71	< 78	78	< 77	77	< 72	72	< 79	79	< 78	78	< 79	79	< 79	79	< 82	82
	PCB-1232	100	1,000		< 71	71	< 78	78	< 77	77	< 72	72	< 79	79	< 78	78	< 79	79	< 79	79	< 82	82
	PCB-1242	100	1,000		< 71	71	< 78	78	< 77	77	< 72	72	< 79	79	< 78	78	< 79	79	< 79	79	< 82	82
	PCB-1248	100	1,000		< 71	71	< 78	78	< 77	77	< 72	72	< 79	79	< 78	78	< 79	79	< 79	79	< 82	82
	PCB-1254	100	1,000		< 71	71	< 78	78	< 77	77	< 72	72	< 79	79	< 78	78	< 79	79	< 79	79	< 82	82
	PCB-1260	100	1,000		< 71	71	< 78	78	< 77	77	< 72	72	< 79	79	< 78	78	< 79	79	< 79	79	< 82	82
	PCB-1262	101			< 71	71	< 78	78	< 77	77	< 72	72	< 79	79	< 78	78	< 79	79	< 79	79	< 82	82
	PCB-1268	102			< 71	71	< 78	78	< 77	77	< 72	72	< 79	79	< 78	78	< 79	79	< 79	79	< 82	82

Notes:

* - 6 NYCRR Part 375-6 Remedial Program Soil Cleanup Objectives

RL - Reporting Limit

Bold/highlighted- Indicated exceedance of the NYSDEC UUSCO Guidance Value

Bold/highlighted- Indicated exceedance of the NYSDEC RRSCO Guidance Value

Bold/highlighted- Indicated exceedance of the NYSDEC RCSCO Guidance Value

Table 6A
Former Pfizer Site A - C224284
243-271 Wallabout Street,
Brooklyn, New York
Laboratory Results - Soil Samples
Metals

COMPOUND	NYSDEC Part 375.6 Unrestricted Use Soil Cleanup Objectives*	NYDEC Part 375.6 Restricted Residential Soil Cleanup Objectives*	NYDEC Part 375.6 Restricted Commercial Soil Cleanup Objectives*	ROUX 2005 Laboratory Results								
				AF-1			AF-2			AF-3		
				1-3'	3-5'	5-7'	1-3'	3-5'	5-7'	1-3'	3-5'	5-7'
				10/24/2005	10/24/2005	10/25/2005	10/24/2005	10/24/2005	10/24/2005	10/24/2005	10/24/2005	10/24/2005
				mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg
				Result	Result	Result	Result	Result	Result	Result	Result	Result
Aluminum				-	-	-	-	-	-	-	-	-
Antimony				-	-	-	-	-	-	-	-	-
Arsenic	13	16	16	-	-	-	-	-	-	-	-	-
Barium	350	400	400	-	-	-	-	-	-	-	-	-
Beryllium	7.2	72	590	-	-	-	-	-	-	-	-	-
Cadmium	2.5	4.3	9.3	-	-	-	-	-	-	-	-	-
Calcium				-	-	-	-	-	-	-	-	-
Chromium	30	180	1,500	-	-	-	-	-	-	-	-	-
Cobalt				-	-	-	-	-	-	-	-	-
Copper	50	270	270	-	-	-	-	-	-	-	-	-
Cyanide				-	-	-	0.0717B	-	-	-	-	-
Iron				-	-	-	-	-	-	-	-	-
Lead	63	400	1,000	**387**	**2,720**	**37.2**	**370**	**185**	**34**	**311**	**2,070**	**1,750**
Magnesium				-	-	-	-	-	-	-	-	-
Manganese	1,600	2,000	10,000	-	-	-	-	-	-	-	-	-
Mercury	0.18	0.81	2.8	-	-	-	-	-	-	-	-	-
Nickel	30	310	310	-	-	-	-	-	-	-	-	-
Potassium				-	-	-	-	-	-	-	-	-
Selenium	3.9	180	1,500	-	-	-	-	-	-	-	-	-
Silver	2	180	1,500	-	-	-	-	-	-	-	-	-
Sodium				-	-	-	-	-	-	-	-	-
Thallium				-	-	-	-	-	-	-	-	-
Vanadium				-	-	-	-	-	-	-	-	-
Zinc	109	10,000	10,000	-	-	-	-	-	-	-	-	-

Notes:

* - 6 NYCRR Part 375-6 Remedial Program Soil Cleanup Objectives

RL - Reporting Limit

Bold/highlighted- Indicated exceedance of the NYSDEC UUSCO Guidance Value

Bold/highlighted- Indicated exceedance of the NYSDEC RRSCO Guidance Value

Bold/highlighted- Indicated exceedance of the NYSDEC RCSCO Guidance Value

Table 6A
Former Pfizer Site A - C224284
243-271 Wallabout Street,
Brooklyn, New York
Laboratory Results - Soil Samples
Metals

COMPOUND	NYSDEC Part 375.6 Unrestricted Use Soil Cleanup Objectives*	NYDEC Part 375.6 Restricted Residential Soil Cleanup Objectives*	NYDEC Part 375.6 Restricted Commercial Soil Cleanup Objectives*	ROUX 2005 Laboratory Results								
				AF-4			AF-5			AF-6		
				1-3'	3-5'	5-7'	1-3'	3-5'	5-8'	1-3'	3-5'	5-7'
				10/24/2005	10/24/2005	10/24/2005	10/24/2005	10/24/2005	10/24/2005	10/24/2005	10/24/2005	10/24/2005
				mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg
				Result	Result	Result	Result	Result	Result	Result	Result	Result
Aluminum				-	-	-	-	-	-	-	-	-
Antimony				-	-	-	-	-	-	-	-	-
Arsenic	13	16	16	-	-	-	-	-	-	-	-	-
Barium	350	400	400	-	-	-	-	-	-	-	-	-
Beryllium	7.2	72	590	-	-	-	-	-	-	-	-	-
Cadmium	2.5	4.3	9.3	-	-	-	-	-	-	-	-	-
Calcium				-	-	-	-	-	-	-	-	-
Chromium	30	180	1,500	-	-	-	-	-	-	-	-	-
Cobalt				-	-	-	-	-	-	-	-	-
Copper	50	270	270	-	-	-	-	-	-	-	-	-
Cyanide				-	-	-	-	-	-	-	-	-
Iron				-	-	-	-	-	-	-	-	-
Lead	63	400	1,000	**263**	**11.9**	**250**	**433**	**1,270**	**15.5**	**139**	**130**	**337**
Magnesium				-	-	-	-	-	-	-	-	-
Manganese	1,600	2,000	10,000	-	-	-	-	-	-	-	-	-
Mercury	0.18	0.81	2.8	-	-	-	-	-	-	-	-	-
Nickel	30	310	310	-	-	-	-	-	-	-	-	-
Potassium				-	-	-	-	-	-	-	-	-
Selenium	3.9	180	1,500	-	-	-	-	-	-	-	-	-
Silver	2	180	1,500	-	-	-	-	-	-	-	-	-
Sodium				-	-	-	-	-	-	-	-	-
Thallium				-	-	-	-	-	-	-	-	-
Vanadium				-	-	-	-	-	-	-	-	-
Zinc	109	10,000	10,000	-	-	-	-	-	-	-	-	-

Notes:

* - 6 NYCRR Part 375-6 Remedial Program Soil Cleanup Objectives

RL - Reporting Limit

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Bold/highlighted- Indicated exceedance of the NYSDEC RCSCO Guidance Value

Table 6A
Former Pfizer Site A - C224284
243-271 Wallabout Street,
Brooklyn, New York
Laboratory Results - Soil Samples
Metals

COMPOUND	NYSDEC Part 375.6 Unrestricted Use Soil Cleanup Objectives*	NYDEC Part 375.6 Restricted Residential Soil Cleanup Objectives*	NYDEC Part 375.6 Restricted Commercial Soil Cleanup Objectives*	ROUX 2005 Laboratory Results								
				AF-7			AF-8			AF-9		
				1-3'	3-5'	5-7'	1-3'	3-5'	5-7'	1-3'	3-5'	5-7'
				10/24/2005	10/24/2005	10/24/2005	10/24/2005	10/24/2005	10/24/2005	10/24/2005	10/24/2005	10/24/2005
				mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg
				Result	Result	Result	Result	Result	Result	Result	Result	Result
Aluminum				-	-	-	6,290	5,560	5,960	-	-	-
Antimony				-	-	-	15.4UN	12.4UN	14.9UN	-	-	-
Arsenic	13	16	16	-	-	-	13.4N	16N	10.2UN	-	-	-
Barium	350	400	400	-	-	-	591N	207N	19.6N	-	-	-
Beryllium	7.2	72	590	-	-	-	2.6U	2.1U	2.5U	-	-	-
Cadmium	2.5	4.3	9.3	-	-	-	1.5B	3.2U	3.8U	-	-	-
Calcium				-	-	-	14,000	7,230	807	-	-	-
Chromium	30	180	1,500	-	-	-	18.3N	15.3N	9.3N	-	-	-
Cobalt				-	-	-	4	3.8	2.7	-	-	-
Copper	50	270	270	-	-	-	91.5	50	7.3	-	-	-
Cyanide				-	-	-	-	-	-	-	-	-
Iron				-	-	-	17,000	17,500	5,760	-	-	-
Lead	63	400	1,000	628	1,440	505	354	667	5.4B	899	1060	466
Magnesium				-	-	-	4,580	1,970	1,220	-	-	-
Manganese	1,600	2,000	10,000	-	-	-	177	284	41.5	-	-	-
Mercury	0.18	0.81	2.8	-	-	-	1.2	15.7	0.022B	-	-	-
Nickel	30	310	310	-	-	-	16.7	9.8	9.2	-	-	-
Potassium				-	-	-	639N	390N	255N	-	-	-
Selenium	3.9	180	1,500	-	-	-	2.4B	17U	20.3U	-	-	-
Silver	2	180	1,500	-	-	-	3.9U	3.2U	3.8U	-	-	-
Sodium				-	-	-	219N	64.8BN	31.5BN	-	-	-
Thallium				-	-	-	13.1U	10.6U	12.7U	-	-	-
Vanadium				-	-	-	22.8	21.8	8.2	-	-	-
Zinc	109	10,000	10,000	-	-	-	451	215	16.1B	-	-	-

Notes:

* - 6 NYCRR Part 375-6 Remedial Program Soil Cleanup Objectives

RL - Reporting Limit

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Bold/highlighted- Indicated exceedance of the NYSDEC RRSCO Guidance Value

Bold/highlighted- Indicated exceedance of the NYSDEC RCSCO Guidance Value

Table 6A
Former Pfizer Site A - C224284
243-271 Wallabout Street,
Brooklyn, New York
Laboratory Results - Soil Samples
Metals

COMPOUND	NYSDEC Part 375.6 Unrestricted Use Soil Cleanup Objectives*	NYDEC Part 375.6 Restricted Residential Soil Cleanup Objectives*	NYDEC Part 375.6 Restricted Commercial Soil Cleanup Objectives*	ROUX 2005 Laboratory Results								
				DS-1	DS-2	DS-3	DS-4	SB-1		SB-2	SB-3	SB-4
				5-6'	5-6'	5-6'	5-6'	0-2'	6-8'	6-7'	5-7'	6-8'
				10/26/2005	10/26/2005	10/26/2005	10/26/2005	10/26/2005	10/26/2005	10/26/2005	10/26/2005	10/26/2005
				mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg
				Result	Result	Result	Result	Result	Result	Result	Result	Result
Aluminum				-	-	-	-	**6,890**	**6,280**	**9,790**	**7,630**	**5,870**
Antimony				-	-	-	-	**1.8BN**	16.6UN	12.8UN	17.2UN	12.4UN
Arsenic	13	16	16	-	-	-	-	**11.2**	**12.8**	**4.9B**	**5.4B**	**4.4B**
Barium	350	400	400	-	-	-	-	**186**	**232**	**108**	**143**	**133**
Beryllium	7.2	72	590	-	-	-	-	2.4U	2.8U	2.2U	2.9U	2.1U
Cadmium	2.5	4.3	9.3	-	-	-	-	3.7U	4.3U	3.3U	4.4U	3.2U
Calcium				-	-	-	-	**12,800**	**7,300**	**58,600**	**2,530**	**2,760**
Chromium	30	180	1,500	-	-	-	-	**21.7**	**21.8**	**15.6**	**15**	**10.4**
Cobalt				-	-	-	-	**6.3**	**4.9**	**4.2**	**6.1**	**4.2**
Copper	50	270	270	-	-	-	-	**72**	**92.6**	**57.4**	**48.3**	**92.9**
Cyanide				-	**93**	-	-	**0.364B**	**0.176N**	-	-	0.624U
Iron				-	-	-	-	**18,500**	**14,900**	**12,600**	**15,300**	**9,380**
Lead	63	400	1,000	**399**	**316**	**157**	**168**	**413**	**458**	**140**	**164**	**115**
Magnesium				-	-	-	-	**2,270**	**1,690**	**5,090**	**1,790**	**987**
Manganese	1,600	2,000	10,000	-	-	-	-	**389**	**251**	**306**	**252**	**178**
Mercury	0.18	0.81	2.8	-	-	-	-	**4.6**	**4.5**	**3**	**0.83**	**0.82**
Nickel	30	310	310	-	-	-	-	**15.7**	**16.4**	**12.2**	**13.1**	**8.2**
Potassium				-	-	-	-	**625**	**592**	**1040**	**717**	**338**
Selenium	3.9	180	1,500	-	-	-	-	19.5U	22.8U	17.5U	23.6U	17U
Silver	2	180	1,500	-	-	-	-	3.7U	0.57B	3.3U	4.4U	0.38B
Sodium				-	-	-	-	**179**	**160**	**335**	**153**	**122**
Thallium				-	-	-	-	12.2UN	14.2UN	10.9UN	14.7UN	10.6UN
Vanadium				-	-	-	-	**27.3N**	**26.4N**	**26N**	**28.6N**	**14.4N**
Zinc	109	10,000	10,000	-	-	-	-	**269**	**301**	**239**	**87.9**	**199**

Notes:

* - 6 NYCRR Part 375-6 Remedial Program Soil Cleanup Objectives

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Bold/highlighted- Indicated exceedance of the NYSDEC RCSCO Guidance Value

Table 6A
Former Pfizer Site A - C224284
243-271 Wallabout Street,
Brooklyn, New York
Laboratory Results - Soil Samples
Metals

COMPOUND	NYSDEC Part 375.6 Unrestricted Use Soil Cleanup Objectives*	NYDEC Part 375.6 Restricted Residential Soil Cleanup Objectives*	NYDEC Part 375.6 Restricted Commercial Soil Cleanup Objectives*	ROUX 2005 Laboratory Results									
				SB-5		SB-6		SB-7		SB-8		SB-9	
				5-6'	0-2'	0-2'	6-7'	0-2'	5-7'	0-2'	5-7'	5-6'	
				10/24/2005	10/27/2005	10/24/2005	10/24/2005	10/26/2005	10/26/2005	10/26/2005	10/26/2005	10/24/2005	
				mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	
				Result	Result	Result	Result	Result	Result	Result	Result	Result	
Aluminum				3,870	-	6,250	4,630	6,700	7,690	6,310	1,240	2,980	
Antimony				2.8BN	-	4.4BN	21.6UN	16.6UN	14.6UN	2.5BN	2.6BN	2.7BN	
Arsenic	13	16	16	15.2N	-	29.4N	23.9N	10.6B	10U	37.1	10.6B	4.4BN	
Barium	350	400	400	222N	-	864N	278N	226	29.2	468	5,910	50N	
Beryllium	7.2	72	590	2.4U	-	0.59B	3.7U	2.8U	2.5U	2.9U	3.5U	2.6U	
Cadmium	2.5	4.3	9.3	3.6U	-	3.4U	5.5U	4.3U	3.8U	3.4B	5.2U	3.9U	
Calcium				3,350	-	13,200	4,330	12,700	1,690	9,050	204,000	1,230	
Chromium	30	180	1,500	4.7N	-	23.4N	7.9N	23.1	9.8	22.7	4.6B	20.2N	
Cobalt				3.9	-	3.2	3.1B	5.4	2.8	7.8	1.4B	2.5B	
Copper	50	270	270	30.8	-	190	97.9	56.8	5.5B	225	21.7	48.2	
Cyanide				-	0.203B	0.221B	-	0.624	-	16.7	-	-	
Iron				10,600	-	16,800	6,310	16,400	5,840	47,200	3,950	7,750	
Lead	63	400	1,000	863	-	2640	196	391	12.9	1,000	4,310	60.7	
Magnesium				209	-	2,030	372	1,710	1,090	2,290	917	1,010	
Manganese	1,600	2,000	10,000	41.5	-	158	113	239	33.2	461	185	136	
Mercury	0.18	0.81	2.8	0.68	-	3.4	1.4	3.3	0.16	2.3	1.1	2.6	
Nickel	30	310	310	9	-	12.8	11.7	12.4	7.6	20.3	3.9B	8.9	
Potassium				382N	-	659N	404N	375	232B	582	158B	388N	
Selenium	3.9	180	1,500	19U	-	4.7B	3.4B	22.7U	20U	23.2U	28U	20.8U	
Silver	2	180	1,500	3.6U	-	1.2B	0.72B	0.52B	3.8U	0.77B	5.2U	3.9U	
Sodium				180N	-	541N	242N	136	34.3B	448	267	45.2BN	
Thallium				11.9U	-	11.5U	18.5U	14.2UN	12.5UN	6.5BN	17.5UN	13U	
Vanadium				29.4	-	26.9	22.9	17.9N	9.7N	32N	28.7N	11.8	
Zinc	109	10,000	10,000	212	-	161	388	731	21.6B	1,210	95.6	109	

Notes:

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Bold/highlighted- Indicated exceedance of the NYSDEC RCSCO Guidance Value

Table 6A
Former Pfizer Site A - C224284
243-271 Wallabout Street,
Brooklyn, New York
Laboratory Results - Soil Samples
Metals

COMPOUND	NYSDEC Part 375.6 Unrestricted Use Soil Cleanup Objectives*	NYDEC Part 375.6 Restricted Residential Soil Cleanup Objectives*	NYDEC Part 375.6 Restricted Commercial Soil Cleanup Objectives*	ROUX 2005 Laboratory Results							EBC RI Results 2018			
				SB-10		UST-1	UST-2	UST-3	UST-4	UST-5	EBC1			
				0-2'	6-7'	7-8'	6-7'	6-7'	6-8'	5-7'	0-2'		5-7'	
				10/24/2005	10/24/2005	10/24/2005	10/24/2005	10/24/2005	10/26/2005	10/26/2005	6/5/2018		6/5/2018	
				mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg		mg/Kg	
				Result	Result	Result	Result	Result	Result	Result	Result	RL	Result	RL
Aluminum				**3,240**	**6,210**	-	-	-	-	-	-	-	-	-
Antimony				**3.2BN**	18.2UN	-	-	-	-	-	-	-	-	-
Arsenic	13	16	16	**10.8BN**	**2.3BN**	**1.6BN**	**3.2BN**	**14N**	**8.6B**	**13.4**	**5.67**	0.73	**8.07**	0.78
Barium	350	400	400	**395N**	**43.4N**	**37.2N**	**466N**	**230N**	**197**	**246**	**122**	0.7	**402**	0.8
Beryllium	7.2	72	590	2.9U	**0.85B**	-	-	-	-	-	-	-	-	-
Cadmium	2.5	4.3	9.3	**2.2B**	4.7U	3.6U	1.4B	4.5U	4U	3.9U	**0.56**	0.37	**0.6**	0.39
Calcium				**14,600**	**3,230**	-	-	-	-	-	-	-	-	-
Chromium	30	180	1,500	**19.8N**	**8N**	**14.8N**	**11.6N**	**96.7N**	**25.5**	**29.3**	**25.6**	0.37	**36.8**	0.39
Cobalt				**3.5**	**2.9B**	-	-	-	-	-	-	-	-	-
Copper	50	270	270	**406**	**7.5B**	-	-	-	-	-	-	-	-	-
Cyanide				**0.562B**	0.658U	-	-	-	-	-	-	-	-	-
Iron				**17,600**	**6,990**	-	-	-	-	-	-	-	-	-
Lead	63	400	1,000	**13,000**	**21.1**	**44**	**240**	**324**	**236**	**709**	**125**	0.7	**398**	7.8
Magnesium				**3,310**	**852**	-	-	-	-	-	-	-	-	-
Manganese	1,600	2,000	10,000	**212**	**60.1**	-	-	-	-	-	-	-	-	-
Mercury	0.18	0.81	2.8	**0.9**	**0.078**	**0.16**	**0.06**	**0.48**	**1.2**	**3**	**0.62**	0.03	**1.94**	0.14
Nickel	30	310	310	**18.9**	**6.6B**	-	-	-	-	-	-	-	-	-
Potassium				**348N**	**200BN**	-	-	-	-	-	-	-	-	-
Selenium	3.9	180	1,500	23.3U	24.9U	19.5U	21.2U	24.3U	21.6U	21U	< 1.5	1.5	< 1.6	1.6
Silver	2	180	1,500	4.4U	4.7U	3.6U	4U	1.3B	0.54B	0.63B	< 0.37	0.37	< 0.39	0.39
Sodium				**248N**	**40.2BN**	-	-	-	-	-	-	-	-	-
Thallium				14.6U	15.6U	-	-	-	-	-	-	-	-	-
Vanadium				**23.2**	**9.2**	-	-	-	-	-	-	-	-	-
Zinc	109	10,000	10,000	**1120**	**14.4B**	-	-	-	-	-	-	-	-	-

Notes:

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Former Pfizer Site A - C224284
243-271 Wallabout Street,
Brooklyn, New York
Laboratory Results - Soil Samples
Metals

COMPOUND	NYSDEC Part 375.6 Unrestricted Use Soil Cleanup Objectives*	NYDEC Part 375.6 Restricted Residential Soil Cleanup Objectives*	NYDEC Part 375.6 Restricted Commercial Soil Cleanup Objectives*	EBC 2018 Laboratory Results															
				EBC2				EBC3				EBC4				EBC5			
				0-2'		5-7'		0-2'		5-7'		0-2'		5-7'		0-2'		3-5'	
				6/5/2018		6/5/2018		6/5/2018		6/5/2018		6/5/2018		6/5/2018		6/5/2018		6/5/2018	
				mg/Kg		mg/Kg		mg/Kg		mg/Kg		mg/Kg		mg/Kg		mg/Kg		mg/Kg	
				Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL
Aluminum				-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Antimony				-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Arsenic	13	16	16	**9.23**	0.77	**6.16**	0.80	**26.1**	0.73	**12.3**	0.71	**15.4**	0.72	**1.23**	0.77	**46.7**	0.67	**9.35**	0.76
Barium	350	400	400	**135**	0.8	**449**	0.8	**459**	0.7	**3,480**	7.1	**670**	0.7	**20.9**	0.8	**253**	0.7	**307**	0.8
Beryllium	7.2	72	590	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Cadmium	2.5	4.3	9.3	**1.01**	0.39	**0.59**	0.40	**4.61**	0.37	**2.31**	0.35	**1.89**	0.36	< 0.39	0.39	**1.28**	0.34	**0.5**	0.38
Calcium				-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Chromium	30	180	1,500	**25.6**	0.39	**16.6**	0.40	**78.9**	0.37	**29.1**	0.35	**27.9**	0.36	**11.3**	0.39	**31.5**	0.34	**21.1**	0.38
Cobalt				-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Copper	50	270	270	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Cyanide				-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Iron				-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lead	63	400	1,000	**203**	7.7	**409**	8.0	**780**	7.3	**4,060**	71	**1,010**	7.2	**6.2**	0.8	**481**	6.7	**803**	7.6
Magnesium				-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Manganese	1,600	2,000	10,000	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Mercury	0.18	0.81	2.8	**2.55**	0.15	**2.64**	0.14	**2.49**	0.15	**2.63**	0.15	**2.47**	0.14	< 0.15	0.15	**1.78**	0.13	**0.58**	0.13
Nickel	30	310	310	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Potassium				-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Selenium	3.9	180	1,500	< 1.5	1.5	< 1.6	1.6	< 1.5	1.5	< 1.4	1.4	< 1.4	1.4	< 1.5	1.5	< 1.3	1.3	< 1.5	1.5
Silver	2	180	1,500	< 0.39	0.39	< 0.40	0.40	< 0.37	0.37	< 0.35	0.35	< 0.36	0.36	< 0.39	0.39	< 0.34	0.34	< 0.38	0.38
Sodium				-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Thallium				-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Vanadium				-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Zinc	109	10,000	10,000	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Notes:

* - 6 NYCRR Part 375-6 Remedial Program Soil Cleanup Objectives

RL - Reporting Limit

Bold/highlighted- Indicated exceedance of the NYSDEC UUSCO Guidance Value

Bold/highlighted- Indicated exceedance of the NYSDEC RRSCO Guidance Value

Bold/highlighted- Indicated exceedance of the NYSDEC RCSCO Guidance Value

Table 6A
Former Pfizer Site A - C224284
243-271 Wallabout Street,
Brooklyn, New York
Laboratory Results - Soil Samples
Metals

COMPOUND	NYSDEC Part 375.6 Unrestricted Use Soil Cleanup Objectives*	NYDEC Part 375.6 Restricted Residential Soil Cleanup Objectives*	NYDEC Part 375.6 Restricted Commercial Soil Cleanup Objectives*	EBC 2018 Laboratory Results															
				EBC6				EBC7				SB7				EBC8			
				0-2'		8-10'		0-2'		8-10'		0-2'		3-5'		0-2'		8-10'	
				6/5/2018		6/5/2018		6/5/2018		6/5/2018		6/5/2018		6/5/2018		6/5/2018		6/5/2018	
				mg/Kg		mg/Kg		mg/Kg		mg/Kg		mg/Kg		mg/Kg		mg/Kg		mg/Kg	
				Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL
Aluminum				-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Antimony				-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Arsenic	13	16	16	**3.64**	0.66	**8.14**	0.79	**9.56**	0.74	**3.23**	0.74	**10.2**	0.65	**9.16**	0.78	**17.9**	0.78	**2.74**	0.66
Barium	350	400	400	**49.8**	0.7	**121**	0.8	**292**	0.7	**54.9**	0.7	**464**	0.7	**212**	0.8	**361**	0.8	**47.4**	0.7
Beryllium	7.2	72	590	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Cadmium	2.5	4.3	9.3	< 0.33	0.33	**1.57**	0.40	**1.97**	0.37	< 0.37	0.37	**0.63**	0.33	**0.54**	0.39	**2.25**	0.39	< 0.33	0.33
Calcium				-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Chromium	30	180	1,500	**20.3**	0.33	**19.5**	0.40	**27.6**	0.37	**27.2**	0.37	**18.5**	0.33	**19.6**	0.39	**28.2**	0.39	**24.1**	0.33
Cobalt				-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Copper	50	270	270	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Cyanide				-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Iron				-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lead	63	400	1,000	**24**	0.7	**2,040**	79	**423**	7.4	**25.4**	0.7	**499**	6.5	**413**	7.8	**657**	7.8	**16.2**	0.7
Magnesium				-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Manganese	1,600	2,000	10,000	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Mercury	0.18	0.81	2.8	< 0.14	0.14	**0.55**	0.17	**109**	4.1	< 0.14	0.14	**4.25**	0.13	**2.58**	0.14	**2.05**	0.14	< 0.14	0.14
Nickel	30	310	310	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Potassium				-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Selenium	3.9	180	1,500	< 1.3	1.3	< 1.6	1.6	< 1.5	1.5	< 1.5	1.5	< 1.3	1.3	< 1.6	1.6	< 1.6	1.6	< 1.3	1.3
Silver	2	180	1,500	< 0.33	0.33	< 0.40	0.40	< 0.37	0.37	< 0.37	0.37	< 0.33	0.33	< 0.39	0.39	< 0.39	0.39	< 0.33	0.33
Sodium				-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Thallium				-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Vanadium				-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Zinc	109	10,000	10,000	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Notes:

* - 6 NYCRR Part 375-6 Remedial Program Soil Cleanup Objectives

RL - Reporting Limit

Bold/highlighted- Indicated exceedance of the NYSDEC UUSCO Guidance Value

Bold/highlighted- Indicated exceedance of the NYSDEC RRSCO Guidance Value

Bold/highlighted- Indicated exceedance of the NYSDEC RCSCO Guidance Value

Table 6A
Former Pfizer Site A - C224284
243-271 Wallabout Street,
Brooklyn, New York
Laboratory Results - Soil Samples
Metals

COMPOUND	NYSDEC Part 375.6 Unrestricted Use Soil Cleanup Objectives*	NYDEC Part 375.6 Restricted Residential Soil Cleanup Objectives*	NYDEC Part 375.6 Restricted Commercial Soil Cleanup Objectives*	EBC 2018 Laboratory Results															
				EBC9				EBC10				EBC11				EBC12			
				0-2'		6-8'		0-2'		5-7'		0-2'		5-7'		0-2'		6-8'	
				6/5/2018		6/5/2018		6/5/2018		6/5/2018		6/5/2018		6/5/2018		6/5/2018		6/5/2018	
				mg/Kg		mg/Kg		mg/Kg		mg/Kg		mg/Kg		mg/Kg		mg/Kg		mg/Kg	
				Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL
Aluminum				-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Antimony				-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Arsenic	13	16	16	**15.9**	0.77	**12.3**	0.90	**27.5**	0.74	**6.41**	0.66	**39.2**	0.74	**3.23**	0.74	**7.62**	0.69	**2.42**	0.76
Barium	350	400	400	**450**	0.8	**274**	0.9	**107**	0.7	**611**	0.7	**314**	0.7	**97.2**	0.7	**163**	0.7	**47.3**	0.8
Beryllium	7.2	72	590	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Cadmium	2.5	4.3	9.3	**3.14**	0.38	**0.5**	0.45	< 0.37	0.37	**1.42**	0.33	**1.76**	0.37	**2.61**	0.37	**2.68**	0.35	< 0.38	0.38
Calcium				-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Chromium	30	180	1,500	**30**	0.38	**20.4**	0.45	**25.4**	0.37	**15.7**	0.33	**30.5**	0.37	**73.7**	0.37	**28.7**	0.35	**12.1**	0.38
Cobalt				-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Copper	50	270	270	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Cyanide				-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Iron				-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lead	63	400	1,000	**629**	7.7	**796**	9.0	**196**	7.4	**298**	6.6	**617**	7.4	**58.2**	0.7	**186**	6.9	**15.7**	0.8
Magnesium				-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Manganese	1,600	2,000	10,000	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Mercury	0.18	0.81	2.8	**2.11**	0.14	**1.11**	0.15	**0.06**	0.03	**0.21**	0.03	**4.26**	0.15	**2.08**	0.14	**1.71**	0.14	< 0.15	0.15
Nickel	30	310	310	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Potassium				-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Selenium	3.9	180	1,500	< 1.5	1.5	< 1.8	1.8	< 1.5	1.5	< 1.3	1.3	< 1.5	1.5	< 1.5	1.5	< 1.4	1.4	< 1.5	1.5
Silver	2	180	1,500	< 0.38	0.38	< 0.45	0.45	< 0.37	0.37	< 0.33	0.33	**0.65**	0.37	< 0.37	0.37	< 0.35	0.35	< 0.38	0.38
Sodium				-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Thallium				-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Vanadium				-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Zinc	109	10,000	10,000	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Notes:

* - 6 NYCRR Part 375-6 Remedial Program Soil Cleanup Objectives

RL - Reporting Limit

Bold/highlighted- Indicated exceedance of the NYSDEC UUSCO Guidance Value

Bold/highlighted- Indicated exceedance of the NYSDEC RRSCO Guidance Value

Bold/highlighted- Indicated exceedance of the NYSDEC RCSCO Guidance Value

Table 6A
Former Pfizer Site A - C224284
243-271 Wallabout Street,
Brooklyn, New York
Laboratory Results - Soil Samples
Metals

COMPOUND	NYSDEC Part 375.6 Unrestricted Use Soil Cleanup Objectives*	NYDEC Part 375.6 Restricted Residential Soil Cleanup Objectives*	NYDEC Part 375.6 Restricted Commercial Soil Cleanup Objectives*	EBC 2018 Laboratory Results															
				EBC13				EBC14				EBC15				EBC16			
				0-2'		5-7'		0-2'		3-5'		0-2'		5-7'		0-2'		3-5'	
				6/5/2018		6/5/2018		6/5/2018		6/5/2018		6/5/2018		6/5/2018		6/5/2018		6/5/2018	
				mg/Kg		mg/Kg		mg/Kg		mg/Kg		mg/Kg		mg/Kg		mg/Kg		mg/Kg	
				Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL
Aluminum				-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Antimony				-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Arsenic	13	16	16	**14.3**	0.71	**6.31**	0.71	**28.6**	0.71	**7.75**	0.77	**16**	0.69	**16.1**	0.88	**3.91**	0.67	**5.74**	0.69
Barium	350	400	400	**309**	0.7	**153**	0.7	**421**	0.7	**111**	0.8	**284**	0.7	**128**	0.9	**70.7**	0.7	**191**	0.7
Beryllium	7.2	72	590	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Cadmium	2.5	4.3	9.3	**1.99**	0.35	**0.64**	0.35	**3.08**	0.35	**0.4**	0.39	**0.93**	0.35	**0.49**	0.44	**0.36**	0.33	< 0.34	0.34
Calcium				-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Chromium	30	180	1,500	**23.1**	0.35	**24.2**	0.35	**24.2**	0.35	**19.9**	0.39	**28.4**	0.35	**11.8**	0.44	**18**	0.33	**17.7**	0.34
Cobalt				-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Copper	50	270	270	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Cyanide				-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Iron				-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lead	63	400	1,000	**1,970**	71	**127**	0.7	**888**	7.1	**137**	0.8	**175**	6.9	**407**	8.8	**69.2**	0.7	**75.3**	0.7
Magnesium				-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Manganese	1,600	2,000	10,000	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Mercury	0.18	0.81	2.8	**0.17**	0.14	**1.36**	0.15	**9.13**	1.5	**1.51**	0.14	**0.57**	0.14	**1.25**	0.16	**0.21**	0.14	**0.17**	0.14
Nickel	30	310	310	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Potassium				-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Selenium	3.9	180	1,500	< 1.4	1.4	< 1.4	1.4	**1.4**	1.4	< 1.5	1.5	< 1.4	1.4	**2**	1.8	< 1.3	1.3	< 1.4	1.4
Silver	2	180	1,500	**0.53**	0.35	< 0.35	0.35	**1.13**	0.35	< 0.39	0.39	< 0.35	0.35	< 0.44	0.44	< 0.33	0.33	< 0.34	0.34
Sodium				-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Thallium				-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Vanadium				-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Zinc	109	10,000	10,000	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Notes:

* - 6 NYCRR Part 375-6 Remedial Program Soil Cleanup Objectives

RL - Reporting Limit

Bold/highlighted- Indicated exceedance of the NYSDEC UUSCO Guidance Value

Bold/highlighted- Indicated exceedance of the NYSDEC RRSCO Guidance Value

Bold/highlighted- Indicated exceedance of the NYSDEC RCSCO Guidance Value

Table 6A
Former Pfizer Site A - C224284
243-271 Wallabout Street,
Brooklyn, New York
Laboratory Results - Soil Samples
Metals

COMPOUND	NYSDEC Part 375.6 Unrestricted Use Soil Cleanup Objectives*	NYDEC Part 375.6 Restricted Residential Soil Cleanup Objectives*	NYDEC Part 375.6 Restricted Commercial Soil Cleanup Objectives*	EBC 2018 Laboratory Results											
				EBC17				EBC18				EBC19			
				0-2'		5-7'		0-2'		2-4'		0-2'		2-4'	
				6/5/2018		6/5/2018		11/9/2018		11/9/2018		11/9/2018		11/9/2018	
				mg/Kg		mg/Kg		mg/Kg		mg/Kg		mg/Kg		mg/Kg	
				Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL
Aluminum				-	-	-	-	**7,520**	39	**6,040**	37	**6,850**	36	**6,600**	33
Antimony				-	-	-	-	< 3.9	3.9	< 3.7	3.7	**22.9**	3.6	**86.3**	3.3
Arsenic	13	16	16	**24.6**	0.73	**81.1**	0.84	**11**	0.77	**5.41**	0.74	**23.6**	0.72	**27.9**	0.66
Barium	350	400	400	**615**	0.7	**133**	0.8	**602**	0.8	**236**	0.7	**468**	0.7	**470**	0.7
Beryllium	7.2	72	590	-	-	-	-	**0.5**	0.31	**0.31**	0.30	**0.42**	0.29	**0.4**	0.26
Cadmium	2.5	4.3	9.3	**1.32**	0.36	**0.52**	0.42	**1.79**	0.39	**0.87**	0.37	**2.35**	0.36	**2.14**	0.33
Calcium				-	-	-	-	**36,600**	39	**42,800**	37	**16,800**	36	**26,700**	33
Chromium	30	180	1,500	**26.2**	0.36	**29.1**	0.42	**29.5**	0.39	**20.4**	0.37	**25.6**	0.36	**43.7**	0.33
Cobalt				-	-	-	-	**8.86**	0.39	**6.51**	0.37	**11.1**	0.36	**11.8**	0.33
Copper	50	270	270	-	-	-	-	**128**	0.8	**78**	0.7	**195**	7.2	**291**	6.6
Cyanide				-	-	-	-	-	-	-	-	-	-	-	-
Iron				-	-	-	-	**26,200**	39	**14,500**	37	**83,000**	36	**57,100**	33
Lead	63	400	1,000	**840**	7.3	**295**	8.4	**670**	7.7	**285**	7.4	**876**	7.2	**1,270**	6.6
Magnesium				-	-	-	-	**12,000**	39	**16,900**	37	**2,510**	3.6	**4,920**	3.3
Manganese	1,600	2,000	10,000	-	-	-	-	**532**	3.9	**256**	3.7	**1,760**	36	**1,180**	3.3
Mercury	0.18	0.81	2.8	**2.77**	0.15	**21.2**	1.5	**1.39**	0.15	**0.61**	0.14	**2.53**	0.13	**1.44**	0.13
Nickel	30	310	310	-	-	-	-	**22.6**	0.39	**19.9**	0.37	**22**	0.36	**49.5**	0.33
Potassium				-	-	-	-	**1,440**	8	**922**	74	**1,010**	72	**1,060**	66
Selenium	3.9	180	1,500	< 1.5	1.5	< 1.7	1.7	< 1.5	1.5	< 1.5	1.5	< 1.4	1.4	< 1.3	1.3
Silver	2	180	1,500	< 0.36	0.36	< 0.42	0.42	**0.76**	0.39	< 0.37	0.37	< 0.36	0.36	**0.66**	0.33
Sodium				-	-	-	-	**493**	8	**476**	7	**590**	7	**440**	7
Thallium				-	-	-	-	< 1.5	1.5	< 1.5	1.5	< 1.4	1.4	< 1.3	1.3
Vanadium				-	-	-	-	**34.5**	0.39	**35.5**	0.37	**31.8**	0.36	**34.8**	0.33
Zinc	109	10,000	10,000	-	-	-	-	**720**	7.7	**346**	7.4	**601**	7.2	**578**	6.6

Notes:

* - 6 NYCRR Part 375-6 Remedial Program Soil Cleanup Objectives

RL - Reporting Limit

Bold/highlighted- Indicated exceedance of the NYSDEC UUSCO Guidance Value

Bold/highlighted- Indicated exceedance of the NYSDEC RRSCO Guidance Value

Bold/highlighted- Indicated exceedance of the NYSDEC RCSCO Guidance Value

Table 6B
Former Pfizer Site A - C224284
243-271 Wallabout Street,
Brooklyn, New York
Remedial Investigation Laboratory Results - Soil Samples
Metals

COMPOUND	NYSDEC Part 375.6 Unrestricted Use Soil Cleanup Objectives*	NYDEC Part 375.6 Restricted Residential Soil Cleanup Objectives*	NYDEC Part 375.6 Restricted Commercial Soil Cleanup Objectives*	EBC 2019 Laboratory Results																	
				EBC20						EBC21						EBC22					
				0-2'		6-8'		15-17'		0-2'		6-8'		15-17'		0-2'		6-8'		15-17'	
				6/6/2019		6/6/2019		6/6/2019		6/4/2019		6/4/2019		6/4/2019		6/4/2019		6/4/2019		6/4/2019	
				mg/Kg		mg/Kg		mg/Kg		mg/Kg		mg/Kg		mg/Kg		mg/Kg		mg/Kg		mg/Kg	
				Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL
Aluminum				**8,170**	35	**9,230**	34	**2,430**	37	**5,410**	37	**8,080**	39	**3,380**	39	**7,450**	35	**7,600**	38	**7,580**	51
Antimony				< 3.5	3.5	< 3.4	3.4	< 3.7	3.7	< 3.7	3.7	< 3.9	3.9	< 3.9	3.9	< 4.0	4.0	< 3.8	3.8	< 5.1	5.1
Arsenic	13	16	16	**5.61**	0.71	**4.08**	0.68	< 0.75	0.75	**5.03**	0.75	**1.09**	0.77	**0.97**	0.77	**10.2**	0.69	**12.7**	0.75	**5.9**	1.0
Barium	350	400	400	**82.4**	0.7	**141**	0.7	**10.5**	0.7	**115**	0.7	**47.4**	0.8	**16.1**	0.8	**337**	0.7	**215**	0.8	**42.1**	1.0
Beryllium	7.2	72	590	**0.52**	0.28	**0.42**	0.27	**0.18**	0.30	**0.74**	0.30	**0.34**	0.31	**0.28**	0.31	**0.42**	0.28	**0.54**	0.30	**0.38**	0.41
Cadmium	2.5	4.3	9.3	< 0.35	0.35	**0.35**	0.34	< 0.37	0.37	**0.56**	0.37	< 0.39	0.39	< 0.39	0.39	**1.12**	0.35	**0.52**	0.38	< 0.51	0.51
Calcium				**62,000**	35	**2,200**	3.4	**613**	3.7	**63,500**	37	**1,830**	3.9	**861**	3.9	**22,000**	35	**5,800**	3.8	**2,580**	5.1
Chromium	30	180	1,500	**29.3**	0.35	**18.7**	0.34	**6.18**	0.37	**19.4**	0.37	**11.5**	0.39	**10.7**	0.39	**23.5**	0.35	**17.1**	0.38	**19**	0.51
Cobalt				**5.32**	0.35	**6.55**	0.34	**2.44**	0.37	**6.1**	0.37	**4.73**	0.39	**4.12**	0.39	**7.32**	0.35	**7.79**	0.38	**7.89**	0.51
Copper	50	270	270	**22.7**	0.7	**24.9**	0.7	**5.4**	0.7	**38.4**	0.7	**3**	0.8	**7**	0.8	**81**	0.7	**77.2**	0.8	**14.6**	1.0
Iron				**14,500**	35	**17,400**	34	**4,060**	3.7	**18,000**	37	**7,370**	3.9	**8,990**	3.9	**15,800**	35	**15,000**	38	**19,900**	51
Lead	63	400	1,000	**52.3**	0.7	**54.6**	0.7	**1.3**	0.7	**77.4**	0.7	**6.3**	0.8	**2.3**	0.8	**373**	6.9	**3,330**	75	**8.9**	1.0
Magnesium				**12,500**	35	**1,940**	3.4	**928**	3.7	**24,700**	37	**1,400**	3.9	**1,450**	3.9	**6,080**	35	**1,280**	3.8	**3,850**	5.1
Manganese	1,600	2,000	10,000	**314**	3.5	**289**	3.4	**29.8**	0.37	**271**	3.7	**52.3**	0.39	**52.2**	0.39	**239**	3.5	**224**	3.8	**228**	5.1
Mercury	0.18	0.81	2.8	< 0.14	0.14	**0.47**	0.13	< 0.14	0.14	**0.3**	0.07	**0.06**	0.03	< 0.03	0.03	**1.98**	0.08	**1.97**	0.08	< 0.09	0.09
Nickel	30	310	310	**12.2**	0.35	**14.6**	0.34	**5.65**	0.37	**12.8**	0.37	**9.74**	0.39	**9.35**	0.39	**23.5**	0.35	**18.4**	0.38	**16.4**	0.51
Potassium				**894**	7	**985**	7	**495**	7	**1,030**	7	**491**	8	**686**	8	**1,080**	7	**843**	8	**1,490**	10
Selenium	3.9	180	1,500	< 1.4	1.4	< 1.4	1.4	< 1.5	1.5	< 1.5	1.5	< 1.5	1.5	< 1.5	1.5	< 1.4	1.4	< 1.5	1.5	< 2.0	2.0
Silver	2	180	1,500	< 0.35	0.35	< 0.34	0.34	< 0.37	0.37	< 0.37	0.37	< 0.39	0.39	< 0.39	0.39	< 0.35	0.35	< 0.38	0.38	< 0.51	0.51
Sodium				**121**	7	**345**	7	**62**	7	**513**	7	**128**	8	**67**	8	**453**	7	**227**	8	**173**	10
Thallium				< 1.4	1.4	< 1.4	1.4	< 1.5	1.5	< 1.5	1.5	< 1.5	1.5	< 1.5	1.5	< 1.4	1.4	< 1.5	1.5	< 2.0	2.0
Vanadium				**25.9**	0.35	**34**	0.34	**8.11**	0.37	**33.2**	0.37	**15.7**	0.39	**19.8**	0.39	**32.6**	0.35	**24.5**	0.38	**27.6**	0.51
Zinc	109	10,000	10,000	**93.5**	0.7	**207**	6.8	**10.8**	0.7	**145**	0.7	**22.5**	0.8	**21.3**	0.8	**326**	6.9	**229**	7.5	**50.7**	1.0

Notes:

* - 6 NYCRR Part 375-6 Remedial Program Soil Cleanup Objectives

RL - Reporting Limit

Bold/highlighted- Indicated exceedance of the NYSDEC UUSCO Guidance Value

Bold/highlighted- Indicated exceedance of the NYSDEC RRSCO Guidance Value

Bold/highlighted- Indicated exceedance of the NYSDEC RCSCO Guidance Value

Table 6B
Former Pfizer Site A - C224284
243-271 Wallabout Street,
Brooklyn, New York
Remedial Investigation Laboratory Results - Soil Samples
Metals

COMPOUND	NYSDEC Part 375.6 Unrestricted Use Soil Cleanup Objectives*	NYDEC Part 375.6 Restricted Residential Soil Cleanup Objectives*	NYDEC Part 375.6 Restricted Commercial Soil Cleanup Objectives*	EBC 2019 Laboratory Results																	
				EBC23						EBC24						EBC25					
				0-2'		6-8'		15-17'		0-2'		6-8'		15-17'		0-2'		6-8'		15-17'	
				6/4/2019		6/4/2019		6/4/2019		6/3/2019		6/3/2019		6/3/2019		6/6/2019		6/6/2019		6/6/2019	
				mg/Kg		mg/Kg		mg/Kg		mg/Kg		mg/Kg		mg/Kg		mg/Kg		mg/Kg		mg/Kg	
				Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL
Aluminum				8,470	37	5,470	43	5,210	39	4,960	36	14,000	45	4,830	39	8,800	37	7,950	47	10,300	39
Antimony				< 3.7	3.7	< 4.3	4.3	< 3.9	3.9	< 3.6	3.6	< 4.5	4.5	< 3.9	3.9	5.6	3.7	< 4.7	4.7	< 3.9	3.9
Arsenic	13	16	16	7.51	0.73	9.24	0.85	2.05	0.77	3.71	0.72	3.8	0.89	1.09	0.78	12.2	0.74	9.04	0.94	1.82	0.78
Barium	350	400	400	150	0.7	224	0.9	32.7	0.8	58.8	0.7	164	0.9	26.3	0.8	273	0.7	201	0.9	41.4	0.8
Beryllium	7.2	72	590	0.38	0.29	0.26	0.34	0.33	0.31	0.29	0.29	0.4	0.36	0.33	0.31	0.44	0.30	0.41	0.38	0.54	0.31
Cadmium	2.5	4.3	9.3	0.83	0.37	< 0.43	0.43	< 0.39	0.39	0.89	0.36	< 0.45	0.45	< 0.39	0.39	1.02	0.37	0.66	0.47	0.74	0.39
Calcium				59,500	37	7,300	4.3	1,730	3.9	59,800	36	3,910	45	976	3.9	24,200	37	12,900	4.7	1,450	3.9
Chromium	30	180	1,500	22.9	0.37	17.7	0.43	13	0.39	14.1	0.36	24.4	0.45	14	0.39	20.8	0.37	21.2	0.47	22	0.39
Cobalt				6.49	0.37	5.01	0.43	5.16	0.39	5.71	0.36	7.08	0.45	4.46	0.39	8.71	0.37	7.44	0.47	9.86	0.39
Copper	50	270	270	89.5	0.7	152	0.9	8.6	0.8	40	0.7	103	0.9	9.2	0.8	84.6	0.7	66.3	0.9	14.8	0.8
Iron				20,000	37	14,800	43	10,800	39	17,200	36	12,200	45	7,560	3.9	24,200	37	25,100	47	16,900	39
Lead	63	400	1,000	262	7.3	365	8.5	4.9	0.8	76.4	0.7	121	0.9	3.2	0.8	1,670	74	350	9.4	5.8	0.8
Magnesium				6,620	37	1,600	4.3	2,500	3.9	26,100	36	2,350	4.5	1,840	3.9	4,280	3.7	1,620	4.7	3,220	3.9
Manganese	1,600	2,000	10,000	254	3.7	198	4.3	139	0.39	231	3.6	162	4.5	61	0.39	494	3.7	274	4.7	131	0.39
Mercury	0.18	0.81	2.8	1.04	0.07	2.35	0.09	0.03	0.03	5.4	0.66	1.16	0.08	< 0.03	0.03	0.56	0.13	4.84	0.17	< 0.16	0.16
Nickel	30	310	310	17	0.37	11.1	0.43	11.5	0.39	13.8	0.36	14.3	0.45	12.9	0.39	25.6	0.37	15.6	0.47	19.1	0.39
Potassium				1,440	7	923	9	1,130	8	869	7	1,520	9	900	8	1,090	7	868	9	1,750	8
Selenium	3.9	180	1,500	< 1.5	1.5	< 1.7	1.7	< 1.5	1.5	< 1.4	1.4	< 1.8	1.8	< 1.6	1.6	< 1.5	1.5	< 1.9	1.9	< 1.6	1.6
Silver	2	180	1,500	< 0.37	0.37	< 0.43	0.43	< 0.39	0.39	< 0.36	0.36	< 0.45	0.45	< 0.39	0.39	< 0.37	0.37	< 0.47	0.47	< 0.39	0.39
Sodium				749	7	524	9	334	8	482	7	1,740	9	90	8	730	7	408	9	4,410	8
Thallium				< 1.5	1.5	< 1.7	1.7	< 1.5	1.5	< 1.4	1.4	< 1.8	1.8	< 1.6	1.6	< 1.5	1.5	< 1.9	1.9	< 1.6	1.6
Vanadium				28.6	0.37	24.6	0.43	19.9	0.39	46.5	0.36	30.5	0.45	18.8	0.39	66.5	0.37	29.2	0.47	25.2	0.39
Zinc	109	10,000	10,000	210	7.3	236	8.5	26.8	0.8	100	0.7	233	8.9	24.4	0.8	383	7.4	232	9.4	49.2	0.8

Notes:

* - 6 NYCRR Part 375-6 Remedial Program Soil Cleanup Objectives

RL - Reporting Limit

Bold/highlighted- Indicated exceedance of the NYSDEC UUSCO Guidance Value

Bold/highlighted- Indicated exceedance of the NYSDEC RRSCO Guidance Value

Bold/highlighted- Indicated exceedance of the NYSDEC RCSCO Guidance Value

Table 6B
Former Pfizer Site A - C224284
243-271 Wallabout Street,
Brooklyn, New York
Remedial Investigation Laboratory Results - Soil Samples
Metals

COMPOUND	NYSDEC Part 375.6 Unrestricted Use Soil Cleanup Objectives*	NYDEC Part 375.6 Restricted Residential Soil Cleanup Objectives*	NYDEC Part 375.6 Restricted Commercial Soil Cleanup Objectives*	EBC 2019 Laboratory Results																	
				EBC26						EBC27						Soil Duplicate 1		Soil Duplicate 2		Soil Duplicate 3	
				0-2'		6-8'		15-17'		0-2'		6-8'		15-17'		EBC 24 (15-17')		EBC 21 (15-17')		EBC 25 (15-17')	
				6/4/2019		6/4/2019		6/4/2019		6/4/2019		6/4/2019		6/4/2019		6/3/2019		6/4/2019		6/6/2019	
				mg/Kg		mg/Kg		mg/Kg		mg/Kg		mg/Kg		mg/Kg		µg/Kg		µg/Kg		µg/Kg	
				Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL
Aluminum				5,060	35	8,730	35	7,400	36	6,850	34	8,910	39	3,590	37	4,350	36	3,300	41	6,890	39
Antimony				< 3.5	3.5	< 3.5	3.5	< 3.6	3.6	< 3.4	3.4	< 3.9	3.9	< 3.7	3.7	< 3.6	3.6	< 4.1	4.1	< 3.9	3.9
Arsenic	13	16	16	7.83	0.70	4.87	0.70	2.67	0.72	6.48	0.69	11.5	0.77	2.96	0.74	1.03	0.72	2.6	0.82	2.92	0.77
Barium	350	400	400	132	0.7	127	0.7	43.8	0.7	261	0.7	316	0.8	21	0.7	25	0.7	18.5	0.8	41.7	0.8
Beryllium	7.2	72	590	0.32	0.28	0.45	0.28	0.38	0.29	0.31	0.28	0.31	0.31	0.17	0.30	0.27	0.29	0.26	0.33	0.41	0.31
Cadmium	2.5	4.3	9.3	0.91	0.35	< 0.35	0.35	< 0.36	0.36	0.88	0.34	< 0.39	0.39	< 0.37	0.37	< 0.36	0.36	< 0.41	0.41	< 0.39	0.39
Calcium				15,100	35	2,670	3.5	4,090	3.6	27,100	34	1,780	3.9	850	3.7	1,100	3.6	867	4.1	1,460	3.9
Chromium	30	180	1,500	14.4	0.35	16.6	0.35	18.1	0.36	20.4	0.34	16	0.39	10.4	0.37	13.4	0.36	11.6	0.41	17.5	0.39
Cobalt				8.14	0.35	7.76	0.35	6.89	0.36	7.35	0.34	3.98	0.39	4.51	0.37	4.21	0.36	4.06	0.41	6.89	0.39
Copper	50	270	270	77.6	0.7	106	0.7	15	0.7	105	0.7	17.7	0.8	7.2	0.7	9.3	0.7	6.6	0.8	13	0.8
Iron				17,400	35	17,600	35	15,100	36	20,200	34	11,200	39	8,400	3.7	7,620	3.6	16,100	41	12,200	39
Lead	63	400	1,000	207	7.0	201	7.0	6.3	0.7	520	6.9	86.1	0.8	2.8	0.7	3.4	0.7	3.1	0.8	11.4	0.8
Magnesium				4,940	3.5	1,710	3.5	4,580	3.6	8,360	34	1,260	3.9	1,310	3.7	1,890	3.6	1,150	4.1	2,510	3.9
Manganese	1,600	2,000	10,000	348	3.5	256	3.5	331	3.6	287	3.4	65.1	0.39	76.5	0.37	60.3	0.36	64	0.41	119	0.39
Mercury	0.18	0.81	2.8	0.39	0.13	1.15	0.07	< 0.08	0.08	2.62	0.07	4.53	0.15	< 0.03	0.03	< 0.07	0.07	< 0.07	0.07	< 0.16	0.16
Nickel	30	310	310	21.7	0.35	14.1	0.35	16.1	0.36	18.1	0.34	10.3	0.39	8.08	0.37	12	0.36	10.4	0.41	13.8	0.39
Potassium				665	7	967	7	1,790	7	1,070	7	521	8	749	7	809	7	659	8	1,250	8
Selenium	3.9	180	1,500	< 1.4	1.4	< 1.4	1.4	< 1.4	1.4	< 1.4	1.4	< 1.5	1.5	< 1.5	1.5	< 1.4	1.4	< 1.6	1.6	< 1.5	1.5
Silver	2	180	1,500	< 0.35	0.35	< 0.35	0.35	< 0.36	0.36	< 0.34	0.34	< 0.39	0.39	< 0.37	0.37	< 0.36	0.36	< 0.41	0.41	< 0.39	0.39
Sodium				374	7	171	7	249	7	321	7	92	8	64	7	85	7	66	8	3,480	8
Thallium				< 1.4	1.4	< 1.4	1.4	< 1.4	1.4	< 1.4	1.4	< 1.5	1.5	< 1.5	1.5	< 1.4	1.4	< 1.6	1.6	< 1.5	1.5
Vanadium				46.4	0.35	30.5	0.35	24.9	0.36	49.5	0.34	18.1	0.39	11.7	0.37	18.2	0.36	18.9	0.41	24	0.39
Zinc	109	10,000	10,000	214	7.0	110	0.7	38.2	0.7	435	6.9	119	0.8	21	0.7	23.5	0.7	20.1	0.8	37.7	0.8

Notes:

* - 6 NYCRR Part 375-6 Remedial Program Soil Cleanup Objectives

RL - Reporting Limit

Bold/highlighted- Indicated exceedance of the NYSDEC UUSCO Guidance Value

Bold/highlighted- Indicated exceedance of the NYSDEC RRSCO Guidance Value

Bold/highlighted- Indicated exceedance of the NYSDEC RCSCO Guidance Value

Table 7A
Former Pfizer Site A - C224284
243-271 Wallabout Street,
Brooklyn, New York
Laboratory Results – Soil Samples
TCLP Metals

COMPOUND	TCLP Regulatory Limit*	ROUX 2005 Laboratory Results														
		AF-1			AF-2			AF-3			AF-4			AF-5		
		1-3'	3-5'	5-7'	1-3'	3-5'	5-7'	1-3'	3-5'	5-7'	1-3'	3-5'	5-7'	1-3'	3-5'	5-8'
		10/24/2005	10/24/2005	10/25/2005	10/24/2005	10/24/2005	10/24/2005	10/24/2005	10/24/2005	10/24/2005	10/24/2005	10/24/2005	10/24/2005	10/24/2005	10/24/2005	10/24/2005
		mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg
	(mg/L)	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
TCLP Lead	5	**0.372**	**0.367**	**0.0924**	**0.681**	**0.246**	**0.0756**	**1.01**	**8.04**	**37.8**	**0.0904**	**0.0155B**	**5.13**	**1.43**	**8.72**	**0.47**

COMPOUND	TCLP Regulatory Limit*	ROUX 2005 Laboratory Results														
		AF-5-9N		AF-5-9W		AF-5-9S		AF-5-9E		AF-6			AF-7			
		1-3'	3-5'	1-3'	3-5'	1-3'	3-5'	1-3'	3-5'	1-3'	3-5'	5-7'	1-3'	3-5'	5-7'	
		12/13/2006	12/13/2006	12/13/2006	12/13/2006	12/13/2006	12/13/2006	12/13/2006	12/13/2006	10/24/2005	10/24/2005	10/24/2005	10/24/2005	10/24/2005	10/24/2005	
		mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	
	(mg/L)	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	
TCLP Lead	5	**0.16**	**0.15**	**0.43**	**5.8**	**6.4**	**3.4**	**0.47**	**12**	**0.217**	**1.13**	**0.533**	**5.09**	**10.2**	**1.2**	

COMPOUND	TCLP Regulatory Limit*	ROUX 2005 Laboratory Results													
		AF-7S		AF-7E		AF-8			AF-8N	AF-8S	AF-8E	AF-9			DS-1
		1-3'	3-5'	1-3'	3-5'	1-3'	3-5'	5-7'	1-3'	1-3'	1-3'	1-3'	3-5'	5-7'	5-6'
		12/13/2006	12/13/2006	12/13/2006	12/13/2006	10/24/2005	10/24/2005	10/24/2005	12/13/2006	12/13/2006	12/13/2006	10/24/2005	10/24/2005	10/24/2005	10/26/2005
		mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg
	(mg/L)	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
TCLP Lead	5	**29**	0.15U	**0.43**	**0.5**	**23.5**	**0.454**	**0.0767**	**10**	**0.49**	0.15U	**7.95**	**6.07**	**0.433**	**0.313N**

COMPOUND	TCLP Regulatory Limit*	ROUX 2005 Laboratory Results												
		DS-2	DS-3	DS-4	SB-6B		SB-6S	SB-8B	SB-10B		SB-10N	SB-10W	SB-10S	SB-10E
		5-6'	5-6'	5-6'	0-2'	2-4'	2-4'	5-7'	0-2'	2-4'	2-4'	2-4'	2-4'	2-4'
		10/26/2005	10/26/2005	10/26/2005	12/13/2006	12/13/2006	12/13/2006	12/13/2006	12/13/2006	12/13/2006	12/13/2006	12/13/2006	12/13/2006	12/13/2006
		mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg
	(mg/L)	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
TCLP Lead	5	**0.189N**	**0.140N**	**0.584**	**570**	0.15U	0.15U	0.15U	**47**	**5.4**	**5.6**	0.15U	**7.1**	**4.3**

Notes:

* - 6 NYCRR Part 375-6 Remedial Program Soil Cleanup Objectives

Bold/highlighted- Indicated exceedance of the TCLP Regulatory Limit

Table 7A
Former Pfizer Site A - C224284
243-271 Wallabout Street,
Brooklyn, New York
Laboratory Results – Soil Samples
TCLP Metals

COMPOUND	TCLP Regulatory Limit*	EBC 2018 Laboratory Results																							
		EBC1				EBC2				EBC3				EBC4				EBC5				EBC6				EBC7			
		0-2'		5-7'		0-2'		5-7'		0-2'		5-7'		0-2'		5-7'		0-2'		3-5'		0-2'		8-10'		0-2'		8-10'	
		6/5/2018		6/5/2018		6/5/2018		6/5/2018		6/5/2018		6/5/2018		6/5/2018		6/5/2018		6/5/2018		6/5/2018		6/5/2018		6/5/2018		6/5/2018		6/5/2018	
		mg/Kg		mg/Kg		mg/Kg		mg/Kg		mg/Kg		mg/Kg		mg/Kg		mg/Kg		mg/Kg		mg/Kg		mg/Kg		mg/Kg		mg/Kg		mg/Kg	
	(mg/L)	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL
TCLP Arsenic	5	< 0.10	0.10	< 0.10	0.10	**0.06**	0.10	< 0.10	0.10	< 0.10	0.10	< 0.10	0.10	< 0.10	0.10	< 0.10	0.10	< 0.10	0.10	**0.07**	0.10	< 0.10	0.10	**0.05**	0.10	< 0.10	0.10	< 0.10	0.10
TCLP Barium	100	**0.54**	0.10	**0.64**	0.10	**0.62**	0.10	**0.78**	0.10	**0.83**	0.10	**0.33**	0.10	**1.38**	0.10	**0.12**	0.10	**1.75**	0.10	**2.38**	0.10	**0.63**	0.10	**0.46**	0.10	**1.52**	0.10	**0.52**	0.10
TCLP Cadmium	1	< 0.050	0.050	< 0.050	0.050	< 0.050	0.050	**0.006**	0.050	< 0.050	0.050	**0.025**	0.050	**0.008**	0.050	< 0.050	0.050	**0.005**	0.050	**0.006**	0.050	< 0.050	0.050	< 0.050	0.050	**0.012**	0.050	< 0.050	0.050
TCLP Chromium	5	**0.04**	0.10	< 0.10	0.10	**0.02**	0.10	< 0.10	0.10	< 0.10	0.10	< 0.10	0.10	< 0.10	0.10	< 0.10	0.10	< 0.10	0.10	< 0.10	0.10	< 0.10	0.10	< 0.10	0.10	< 0.10	0.10	< 0.10	0.10
TCLP Lead	5	**0.03**	0.10	**0.16**	0.10	**0.05**	0.10	**2.11**	0.10	**0.09**	0.10	**11.3**	0.10	**0.49**	0.10	< 0.10	0.10	**0.71**	0.10	**2.82**	0.10	**0.04**	0.10	**19.7**	1.0	**0.42**	0.10	< 0.10	0.10
TCLP Mercury	0.2	< 0.0002	0.0002	< 0.0002	0.0002	< 0.0002	0.0002	< 0.0002	0.0002	< 0.0002	0.0002	< 0.0002	0.0002	< 0.0002	0.0002	< 0.0002	0.0002	< 0.0002	0.0002	< 0.0002	0.0002	< 0.0002	0.0002	< 0.0002	0.0002	**0.0005**	0.0002	< 0.0002	0.0002
TCLP Selenium	1	< 0.10	0.10	< 0.10	0.10	< 0.10	0.10	< 0.10	0.10	< 0.10	0.10	< 0.10	0.10	< 0.10	0.10	< 0.10	0.10	< 0.10	0.10	< 0.10	0.10	< 0.10	0.10	< 0.10	0.10	< 0.10	0.10	< 0.10	0.10
TCLP Silver	5	< 0.10	0.10	< 0.10	0.10	< 0.10	0.10	< 0.10	0.10	< 0.10	0.10	< 0.10	0.10	< 0.10	0.10	< 0.10	0.10	< 0.10	0.10	< 0.10	0.10	< 0.10	0.10	< 0.10	0.10	< 0.10	0.10	< 0.10	0.10

COMPOUND	TCLP Regulatory Limit*	EBC 2018 Laboratory Results																							
		SB7				EBC8				EBC9				EBC10				EBC11				EBC12				EBC13			
		0-2'		3-5'		0-2'		8-10'		0-2'		6-8'		0-2'		5-7'		0-2'		5-7'		0-2'		6-8'		0-2'		5-7'	
		6/5/2018		6/5/2018		6/5/2018		6/5/2018		6/5/2018		6/5/2018		6/5/2018		6/5/2018		6/5/2018		6/5/2018		6/5/2018		6/5/2018		6/5/2018		6/5/2018	
		mg/Kg		mg/Kg		mg/Kg		mg/Kg		mg/Kg		mg/Kg		mg/Kg		mg/Kg		mg/Kg		mg/Kg		mg/Kg		mg/Kg		mg/Kg		mg/Kg	
	(mg/L)	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL
TCLP Arsenic	5	< 0.10	0.10	< 0.10	0.10	< 0.10	0.10	< 0.10	0.10	**0.07**	0.10	< 0.10	0.10	**0.08**	0.10	< 0.10	0.10	< 0.10	0.10	< 0.10	0.10	**0.04**	0.10	< 0.10	0.10	< 0.10	0.10	**0.07**	0.10
TCLP Barium	100	**0.9**	0.10	**0.55**	0.10	**1.46**	0.10	**0.37**	0.10	**1.97**	0.10	**1.21**	0.10	**1.02**	0.10	**0.98**	0.10	**1.62**	0.10	**0.41**	0.10	**0.72**	0.10	**0.19**	0.10	**0.62**	0.10	**1**	0.10
TCLP Cadmium	1	< 0.050	0.050	< 0.050	0.050	**0.01**	0.050	< 0.050	0.050	**0.021**	0.050	< 0.050	0.050	< 0.050	0.050	**0.013**	0.050	**0.012**	0.050	**0.074**	0.050	**0.021**	0.050	< 0.050	0.050	**0.037**	0.050	**0.006**	0.050
TCLP Chromium	5	< 0.10	0.10	< 0.10	0.10	< 0.10	0.10	**0.01**	0.10	< 0.10	0.10	< 0.10	0.10	< 0.10	0.10	< 0.10	0.10	< 0.10	0.10	< 0.10	0.10	< 0.10	0.10	< 0.10	0.10	< 0.10	0.10	< 0.10	0.10
TCLP Lead	5	**0.15**	0.10	**0.1**	0.10	**0.58**	0.10	**0.03**	0.10	**1.39**	0.10	**0.22**	0.10	**0.84**	0.10	**5.63**	0.10	**0.33**	0.10	**0.09**	0.10	**0.07**	0.10	**0.02**	0.10	**26.2**	1.0	**0.6**	0.10
TCLP Mercury	0.2	< 0.0002	0.0002	< 0.0002	0.0002	< 0.0002	0.0002	< 0.0002	0.0002	< 0.0002	0.0002	< 0.0002	0.0002	< 0.0002	0.0002	**0.0003**	0.0002	< 0.0002	0.0002	< 0.0002	0.0002	< 0.0002	0.0002	< 0.0002	0.0002	< 0.0002	0.0002	< 0.0002	0.0002
TCLP Selenium	1	< 0.10	0.10	< 0.10	0.10	< 0.10	0.10	< 0.10	0.10	< 0.10	0.10	< 0.10	0.10	< 0.10	0.10	< 0.10	0.10	< 0.10	0.10	< 0.10	0.10	< 0.10	0.10	< 0.10	0.10	< 0.10	0.10	< 0.10	0.10
TCLP Silver	5	< 0.10	0.10	< 0.10	0.10	< 0.10	0.10	< 0.10	0.10	< 0.10	0.10	< 0.10	0.10	< 0.10	0.10	< 0.10	0.10	< 0.10	0.10	< 0.10	0.10	< 0.10	0.10	< 0.10	0.10	< 0.10	0.10	< 0.10	0.10

COMPOUND	TCLP Regulatory Limit*	EBC 2018 Laboratory Results																			
		EBC14				EBC15				EBC16				EBC17				EBC18				EBC19			
		0-2'		3-5'		0-2'		5-7'		0-2'		3-5'		0-2'		5-7'		0-2'		2-4'		0-2'		2-4'	
		6/5/2018		6/5/2018		6/5/2018		6/5/2018		6/5/2018		6/5/2018		6/5/2018		6/5/2018		11/9/2018		11/9/2018		11/9/2018		11/9/2018	
		mg/Kg		mg/Kg		mg/Kg		mg/Kg		mg/Kg		mg/Kg		mg/Kg		mg/Kg		mg/Kg		mg/Kg		mg/Kg		mg/Kg	
	(mg/L)	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL
TCLP Arsenic	5	**0.05**	0.10	< 0.10	0.10	< 0.10	0.10	< 0.10	0.10	< 0.10	0.10	< 0.10	0.10	**0.08**	0.10	< 0.10	0.10	< 0.10	0.10	< 0.10	0.10	< 0.10	0.10	< 0.10	0.10
TCLP Barium	100	**1.04**	0.10	**0.38**	0.10	**0.94**	0.10	**0.69**	0.10	**0.54**	0.10	**0.44**	0.10	**0.82**	0.10	**0.71**	0.10	**1.28**	0.10	**1.05**	0.10	**0.98**	0.10	**0.89**	0.10
TCLP Cadmium	1	**0.016**	0.050	< 0.050	0.050	**0.006**	0.050	< 0.050	0.050	< 0.050	0.050	< 0.050	0.050	**0.011**	0.050	< 0.050	0.050	< 0.050	0.050	< 0.050	0.050	< 0.050	0.050	< 0.050	0.050
TCLP Chromium	5	< 0.10	0.10	< 0.10	0.10	< 0.10	0.10	**0.02**	0.10	< 0.10	0.10	**0.04**	0.10	< 0.10	0.10	**0.01**	0.10	< 0.10	0.10	< 0.10	0.10	< 0.10	0.10	< 0.10	0.10
TCLP Lead	5	**0.6**	0.10	**0.14**	0.10	**0.08**	0.10	**0.29**	0.10	**0.02**	0.10	**0.19**	0.10	**0.22**	0.10	**0.45**	0.10	**0.35**	0.10	**0.12**	0.10	**0.63**	0.10	**0.44**	0.10
TCLP Mercury	0.2	< 0.0002	0.0002	< 0.0002	0.0002	< 0.0002	0.0002	< 0.0002	0.0002	< 0.0002	0.0002	< 0.0002	0.0002	< 0.0002	0.0002	**0.0002**	0.0002	< 0.0002	0.0002	< 0.0002	0.0002	< 0.0002	0.0002	< 0.0002	0.0002
TCLP Selenium	1	< 0.10	0.10	< 0.10	0.10	< 0.10	0.10	< 0.10	0.10	< 0.10	0.10	< 0.10	0.10	< 0.10	0.10	< 0.10	0.10	< 0.10	0.10	< 0.10	0.10	< 0.10	0.10	< 0.10	0.10
TCLP Silver	5	< 0.10	0.10	< 0.10	0.10	< 0.10	0.10	< 0.10	0.10	< 0.10	0.10	< 0.10	0.10	< 0.10	0.10	< 0.10	0.10	< 0.10	0.10	< 0.10	0.10	< 0.10	0.10	< 0.10	0.10

Notes:

* - 6 NYCRR Part 375-6 Remedial Program Soil Cleanup Objectives

Bold/highlighted- Indicated exceedance of the TCLP Regulatory Limit

Table 7B
Former Pfizer Site A - C224284
243-271 Wallabout Street,
Brooklyn, New York
Remedial Investigaiton Laboratory Results – Soil Samples
TCLP Lead

COMPOUND	TCLP Regulatory Limit*	EBC 2019 Laboratory Results																					
		A1				A2				HSA 1A		HSA 2A		B1				HSB 1A		HSB 2A		HSB2B		HSB 3A	
		8'		10'		8'		10'		(8-10')		(8-10')		5'		7'		(5-7')		(5-7')		(5-7')		(5-7')	
		6/5/2019		6/5/2019		6/5/2019		6/5/2019		6/5/2019		6/5/2019		6/11/2019		6/11/2019		6/11/2019		6/11/2019		6/11/2019		6/11/2019	
		mg/Kg		mg/Kg		mg/Kg		mg/Kg		mg/Kg		mg/Kg		mg/Kg		mg/Kg		mg/Kg		mg/Kg		mg/Kg		mg/Kg	
	(mg/L)	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL
Total Lead	5	**0.02**	0.10	**0.01**	0.10	< 0.10	0.10	**0.03**	0.10	**0.02**	0.10	< 0.10	0.10	**4.48**	0.10	**3.46**	0.10	**2.66**	0.10	**17.6**	0.10	< 0.10	0.1	**4.72**	0.10

COMPOUND	TCLP Regulatory Limit*	EBC 2019 Laboratory Results																					
		HSB 4A		HSB 4B		C1				HSC 1A		HSC 2A		HSC 3A		HSC 4A		B		Z1		Z2		Z3	
		(5-7')		(5-7')		5'		7'		(5-7')		(5-7')		(5-7')		(5-7')		7'		(5-7')		(5-7')		(5-7')	
		6/6/11/2019		6/5/2019		6/5/2019		6/5/2019		6/5/2019		6/5/2019		6/5/2019		6/5/2019		6/6/2019		6/6/2019		6/6/2019		6/6/2019	
		mg/Kg		mg/Kg		mg/Kg		mg/Kg		mg/Kg		mg/Kg		mg/Kg		mg/Kg		mg/Kg		mg/Kg		mg/Kg		mg/Kg	
	(mg/L)	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL
TCLP Lead	5	**6.37**	0.10	**0.4**	0.10	**0.01**	0.10	< 0.10	0.10	**0.34**	0.10	**0.03**	0.10	**0.07**	0.10	**0.29**	0.10	< 0.10	0.10	**0.26**	0.10	< 0.10	0.10	**0.07**	0.10

COMPOUND	TCLP Regulatory Limit*	EBC 2019 Laboratory Results																					
		D1		D2		D3		D4		D5				D6		D7		HSD1A				HSD1B			
		5'		5'		5'		5'		5'		6'		5'		5'		(1-3')		(3-5')		(1-3')		(3-5')	
		6/14/2019		6/14/2019		6/14/2019		6/14/2019		6/6/2019		6/6/2019		6/14/2019		6/6/2019		6/6/2019		6/6/2019		6/6/2019		6/6/2019	
		mg/Kg		mg/Kg		mg/Kg		mg/Kg		mg/Kg		mg/Kg		mg/Kg		mg/Kg		mg/Kg		mg/Kg		mg/Kg		mg/Kg	
	(mg/L)	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL
Total Lead	5	**3.71**	0.10	**0.04**	0.10	**0.12**	0.10	**0.12**	0.10	**8.91**	0.10	**0.03**	0.10	**0.05**	0.10	< 0.10	0.10	**2.81**	0.10	**14.4**	0.10	**0.09**	0.10	**0.27**	0.10

COMPOUND	TCLP Regulatory Limit*	EBC 2019 Laboratory Results																					
		HSD2A				HSD3A				HSD4A				HSD5A				HSD6A				HSD6B			
		(1-3')		(3-5')		(1-3')		(3-5')		(1-3')		(3-5')		(1-3')		(3-5')		(1-3')		(3-5')		(1-3')		(3-5')	
		6/14/2019		6/14/2019		6/11/2019		6/11/2019		6/11/2019		6/11/2019		6/14/2019		6/14/2019		6/14/2019		6/14/2019		6/14/2019		6/14/2019	
		mg/Kg		mg/Kg		mg/Kg		mg/Kg		mg/Kg		mg/Kg		mg/Kg		mg/Kg		mg/Kg		mg/Kg		mg/Kg		mg/Kg	
	(mg/L)	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL
TCLP Lead	5	< 0.10	0.10	**0.03**	0.10	**0.01**	0.10	**4.9**	0.10	**0.09**	0.10	**3.55**	0.10	**0.15**	0.10	**0.6**	0.10	**1.73**	0.10	**19.2**	0.10	**0.28**	0.1	**196**	10

COMPOUND	TCLP Regulatory Limit*	EBC 2019 Laboratory Results																					
		HSD6C		HSD7A				HSD8A				E1		E2		E3				HSE1A				HSE1B	
		(3-5')		(1-3')		(3-5')		(1-3')		(3-5')		4'		4'		4'		5'		(0-2)		(2-4')		(2-4')	
		6/14/2019		6/14/2019		6/14/2019		6/14/2019		6/14/2019		6/3/2019		6/3/2019		6/3/2019		6/3/2019		6/3/2019		6/3/2019		6/3/2019	
		mg/Kg		mg/Kg		mg/Kg		mg/Kg		mg/Kg		mg/Kg		mg/Kg		mg/Kg		mg/Kg		mg/Kg		mg/Kg		mg/Kg	
	(mg/L)	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL
Total Lead	5	< 0.10	0.10	**3.32**	0.10	**0.08**	0.10	**0.24**	0.10	**1.13**	0.10	**0.25**	0.10	**0.08**	0.10	**15.8**	0.10	**1.9**	0.10	**0.04**	0.10	**10.6**	0.10	**0.18**	0.10

COMPOUND	TCLP Regulatory Limit*	EBC 2019 Laboratory Results																			
		HSE2A				HSE2B		HSE3A				HSE4A				Duplicate 4		Duplicate 5			
		(1-3')		(3-5')		(3-5')		(1-3')		(3-5')		(1-3')		(3-5')		HSB4A (5-7')		HSD7A (3-5')			
		6/3/2019		6/3/2019		6/3/2019		6/3/2019		6/3/2019		6/3/2019		6/3/2019		6/11/2019		6/14/2019			
		mg/Kg		mg/Kg		mg/Kg		mg/Kg		mg/Kg		mg/Kg		mg/Kg		mg/Kg		mg/Kg			
	(mg/L)	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL		
TCLP Lead	5	**0.03**	0.10	**67.4**	1.0	**0.13**	0.1	**0.05**	0.10	**2.57**	0.10	**0.02**	0.10	**0.04**	0.10	**7.18**	0.10	**0.06**	0.10		

Notes:

* - 6 NYCRR Part 375-6 Remedial Program Soil Cleanup Objectives

Dash- Not Analyzed

Bold/highlighted- Indicated exceedance of the TCLP Regulatory Limit

Table 8
Former Pfizer Site A - C224284
243-271 Wallabout Street,
Brooklyn, New York
Remedial Investigation Laboratory Results - Soil Samples
Total Lead

COMPOUND	NYSDEC Part 375.6 Unrestricted Use Soil Cleanup Objectives*	NYDEC Part 375.6 Restricted Residential Soil Cleanup Objectives*	NYDEC Part 375.6 Restricted Commercial Soil Cleanup Objectives*	EBC 2019 Laboratory Results																			
				A1				A2				HSA 1A		HSA 2A		B1				HSB 1A		E2		E3			
				8'		10'		8'		10'		(8-10')		(8-10')		5'		7'		(5-7')		4'		4'		5'	
				6/5/2019		6/5/2019		6/5/2019		6/5/2019		6/5/2019		6/5/2019		6/11/2019		6/11/2019		6/11/2019		6/3/2019		6/3/2019		6/3/2019	
				mg/Kg		mg/Kg		mg/Kg		mg/Kg		mg/Kg		mg/Kg		mg/Kg		mg/Kg		mg/Kg		mg/Kg		mg/Kg		mg/Kg	
				Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL
Total Lead	63	400	1,000	**175**	7.5	**62.2**	0.8	**185**	7.3	**59.5**	1.0	**136**	0.7	**34**	0.8	**3,630**	39	**4,300**	40	**1,780**	37	**348**	7.4	**46,700**	730	**1,780**	5.0

COMPOUND	NYSDEC Part 375.6 Unrestricted Use Soil Cleanup Objectives*	NYDEC Part 375.6 Restricted Residential Soil Cleanup Objectives*	NYDEC Part 375.6 Restricted Commercial Soil Cleanup Objectives*	EBC 2019 Laboratory Results																			
				HSB 2A		HSB 2B		HSB 3A		HSB 4A		HSB 4B		C1				HSC 1A		HSC 2A		HSE1A			HSE1B	
				(5-7')		(5-7')		(5-7')		(5-7')		(5-7')		5'		7'		(5-7')		(5-7')		(0-2)		(2-4')		(2-4')	
				6/11/2019		6/11/2019		6/11/2019		6/11/2019		6/5/2019		6/5/2019		6/5/2019		6/5/2019		6/5/2019		6/3/2019		6/3/2019		6/3/2019	
				mg/Kg		mg/Kg		mg/Kg		mg/Kg		mg/Kg		mg/Kg		mg/Kg		mg/Kg		mg/Kg		mg/Kg		mg/Kg		mg/Kg	
				Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL
Total Lead	63	400	1,000	**10,200**	42	**229**	3	**1,410**	8.6	**3,350**	34	**387**	3.5	**156**	6.6	**116**	0.8	**281**	0.7	**133**	7.8	**7.4**	0.6	**3,760**	71	**201**	3.4

COMPOUND	NYSDEC Part 375.6 Unrestricted Use Soil Cleanup Objectives*	NYDEC Part 375.6 Restricted Residential Soil Cleanup Objectives*	NYDEC Part 375.6 Restricted Commercial Soil Cleanup Objectives*	EBC 2019 Laboratory Results																			
				HSC 3A		HSC 4A		B		Z1		Z2		Z3		D1		D2		D3		HSE2A			HSE2B	
				(5-7')		(5-7')		7'		(5-7')		(5-7')		(5-7')		5'		5'		5'		(0-2')		(2-4')		(2-4')	
				6/5/2019		6/5/2019		6/6/2019		6/6/2019		6/6/2019		6/6/2019		6/14/2019		6/14/2019		6/14/2019		6/3/2019		6/3/2019		6/3/2019	
				mg/Kg		mg/Kg		mg/Kg		mg/Kg		mg/Kg		mg/Kg		mg/Kg		mg/Kg		mg/Kg		mg/Kg		mg/Kg		mg/Kg	
				Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL
Total Lead	63	400	1,000	**75**	0.7	**145**	6.5	**24.2**	0.8	**241**	8.4	**22.7**	0.8	**105**	0.9	**716**	7.2	**167**	7.7	**270**	6.7	**7.6**	0.6	**82,700**	790	**111**	0.36

COMPOUND	NYSDEC Part 375.6 Unrestricted Use Soil Cleanup Objectives*	NYDEC Part 375.6 Restricted Residential Soil Cleanup Objectives*	NYDEC Part 375.6 Restricted Commercial Soil Cleanup Objectives*	EBC 2019 Laboratory Results																			
				D4		D5				D6		D7		HSD1A				HSD1B				HSE3A			
				5'		5'		6'		5'		5'		(1-3')		(3-5')		(1-3')		(3-5')		(0-2')		(2-4')	
				6/14/2019		6/6/2019		6/6/2019		6/14/2019		6/6/2019		6/6/2019		6/6/2019		6/6/2019		6/6/2019		6/3/2019		6/3/2019	
				mg/Kg		mg/Kg		mg/Kg		mg/Kg		mg/Kg		mg/Kg		mg/Kg		mg/Kg		mg/Kg		mg/Kg		mg/Kg	
				Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL
Total Lead	63	400	1,000	**150**	6.6	**958**	6.8	**398**	3.2	**199**	6.2	**16.5**	0.9	**1,220**	6.9	**8,950**	63	**107**	0.7	**93.7**	0.31	**11.2**	7.0	**745**	6.9

COMPOUND	NYSDEC Part 375.6 Unrestricted Use Soil Cleanup Objectives*	NYDEC Part 375.6 Restricted Residential Soil Cleanup Objectives*	NYDEC Part 375.6 Restricted Commercial Soil Cleanup Objectives*	EBC 2019 Laboratory Results																			
				HSD2A				HSD3A				HSD4A				HSD5A				HSD6A		HSE4A			
				(1-3')		(3-5')		(1-3')		(3-5')		(1-3')		(3-5')		(1-3')		(3-5')		(1-3')		(0-2')		(2-4')	
				6/14/2019		6/14/2019		6/11/2019		6/11/2019		6/11/2019		6/11/2019		6/14/2019		6/14/2019		6/14/2019		6/3/2019		6/3/2019	
				mg/Kg		mg/Kg		mg/Kg		mg/Kg		mg/Kg		mg/Kg		mg/Kg		mg/Kg		mg/Kg		mg/Kg		mg/Kg	
				Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL
Total Lead	63	400	1,000	**7.3**	0.7	**556**	7.8	**16**	0.32	**3,340**	39	**10.4**	0.33	**5,450**	41	**363**	7.6	**266**	7.3	**1,110**	6.5	**6.4**	6.3	**544**	8.0

COMPOUND	NYSDEC Part 375.6 Unrestricted Use Soil Cleanup Objectives*	NYDEC Part 375.6 Restricted Residential Soil Cleanup Objectives*	NYDEC Part 375.6 Restricted Commercial Soil Cleanup Objectives*	EBC 2019 Laboratory Results																			
				HSD6A		HSD6B				HSD6C		HSD7A				HSD8A				E1		Duplicate 4		Duplicate 5	
				(3-5')		(1-3')		(3-5')		(3-5')		(1-3')		(3-5')		(1-3')		(3-5')		4'		HSB4A (5-7')		HSD7A (3-5')	
				6/14/2019		6/14/2019		6/14/2019		6/14/2019		6/14/2019		6/14/2019		6/14/2019		6/14/2019		6/3/2019		6/11/2019		6/14/2019	
				mg/Kg		mg/Kg		mg/Kg		mg/Kg		mg/Kg		mg/Kg		mg/Kg		mg/Kg		mg/Kg		mg/Kg		mg/Kg	
				Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL
Total Lead	63	400	1,000	**1,900**	78	**360**	6.3	**15,200**	77	**39.2**	0.7	**635**	7.0	**295**	8.2	**196**	7.7	**721**	6.9	**142**	6.7	**5,730**	36	**244**	6.2

Notes:

* - 6 NYCRR Part 375-6 Remedial Program Soil Cleanup Objectives

RL - Reporting Limit

Bold/highlighted- Indicated exceedance of the NYSDEC UUSCO Guidance Value

Bold/highlighted- Indicated exceedance of the NYSDEC RRSCO Guidance Value

Bold/highlighted- Indicated exceedance of the NYSDEC RCSCO Guidance Value

Table 9
Former Pfizer Site A - C224284
243-271 Wallabout Street,
Brooklyn, New York
Remedial Investigation Laboratory Results – Soil Samples
PFAs

Compound	EBC 2019 Laboratory Results											
	EBC 20						EBC 21					
	0-2'		6-8'		15-17'		0-2'		6-8'		15-17'	
	6/6/2019		6/6/2019		6/6/2019		6/4/2019		6/4/2019		6/4/2019	
	µg/Kg		µg/Kg		µg/Kg		µg/Kg		µg/Kg		µg/Kg	
	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL
Perfluorobutanoic Acid (PFBA)	ND	1.06	ND	1.02	ND	0.98	**0.041J**	1.13	ND	0.999	ND	0.989
Perfluoropentanoic Acid (PFPeA)	ND	1.06	ND	1.02	ND	0.98	**0.072J**	1.13	**0.051J**	0.999	ND	0.989
Perfluorobutanesulfonic Acid (PFBS)	ND	1.06	ND	1.02	ND	0.98	ND	1.13	ND	0.999	ND	0.989
Perfluorohexanoic Acid (PFHxA)	ND	1.06	ND	1.02	ND	0.98	**0.069J**	1.13	**0.055J**	0.999	ND	0.989
Perfluoroheptanoic Acid (PFHpA)	ND	1.06	ND	1.02	ND	0.98	**0.096J**	1.13	**0.080J**	0.999	ND	0.989
Perfluorohexanesulfonic Acid (PFHxS)	ND	1.06	ND	1.02	ND	0.98	ND	1.13	ND	0.999	ND	0.989
Perfluorooctanoic Acid (PFOA)	**0.066J**	1.06	**0.051J**	1.02	**0.061J**	0.98	**0.209J**	1.13	**0.128J**	0.999	ND	0.989
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	**5.04**	1.06	**6.82**	1.02	**4.46**	0.98	**10.2**	1.13	**5.95**	0.999	**4.62**	0.989
Perfluoroheptanesulfonic Acid (PFHpS)	ND	1.06	ND	1.02	ND	0.98	ND	1.13	ND	0.999	ND	0.989
Perfluorononanoic Acid (PFNA)	ND	1.06	ND	1.02	ND	0.98	**0.104J**	1.13	ND	0.999	ND	0.989
Perfluorooctanesulfonic Acid (PFOS)	**0.184J**	1.06	ND	1.02	ND	0.98	**0.588J**	1.13	**0.183J**	0.999	ND	0.989
Perfluorodecanoic Acid (PFDA)	ND	1.06	ND	1.02	ND	0.98	**0.116J**	1.13	ND	0.999	ND	0.989
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	**0.505J**	1.06	ND	1.02	ND	0.98	ND	1.13	ND	0.999	ND	0.989
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND	1.06	ND	1.02	ND	0.98	ND	1.13	ND	0.999	ND	0.989
Perfluoroundecanoic Acid (PFUnA)	ND	1.06	ND	1.02	ND	0.98	**0.105J**	1.13	ND	0.999	ND	0.989
Perfluorodecanesulfonic Acid (PFDS)	ND	1.06	ND	1.02	ND	0.98	ND	1.13	ND	0.999	ND	0.989
Perfluorooctanesulfonamide (FOSA)	ND	1.06	ND	1.02	ND	0.98	ND	1.13	ND	0.999	ND	0.989
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	**0.141J**	1.06	ND	1.02	ND	0.98	ND	1.13	ND	0.999	ND	0.989
Perfluorododecanoic Acid (PFDoA)	ND	1.06	ND	1.02	ND	0.98	**0.093J**	1.13	ND	0.999	ND	0.989
Perfluorotridecanoic Acid (PFTrDA)	ND	1.06	ND	1.02	ND	0.98	ND	1.13	ND	0.999	ND	0.989
Perfluorotetradecanoic Acid (PFTA)	ND	1.06	ND	1.02	ND	0.98	ND	1.13	ND	0.999	ND	0.989
Combined PFOA and PFOS	**0.250J**		**0.051J**		**0.061J**		**0.797J**		**0.311J**		**ND**	
Combined Total Detections	**5.04**		**6.82**		**4.46**		**10.2**		**5.95**		**4.62**	

Notes:

DL- Detection Limit

J- The value is estimated.

ND- Not Detected

The USEPA Health Advisory Level for drinking water is 70 ng/L (ppt) for combined detections of PFOA and PFOs

Table 9
Former Pfizer Site A - C224284
243-271 Wallabout Street,
Brooklyn, New York
Remedial Investigation Laboratory Results – Soil Samples
PFAs

Compound	EBC 2019 Laboratory Results											
	EBC 22						EBC 23					
	0-2'		6-8'		15-17'		0-2'		6-8'		15-17'	
	6/4/2019		6/4/2019		6/4/2019		6/4/2019		6/4/2019		6/4/2019	
	µg/Kg		µg/Kg		µg/Kg		µg/Kg		µg/Kg		µg/Kg	
	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL
Perfluorobutanoic Acid (PFBA)	ND	0.927	ND	1.27	ND	1.18	ND	0.922	ND	1.18	ND	1.03
Perfluoropentanoic Acid (PFPeA)	ND	0.927	ND	1.27	ND	1.18	ND	0.922	ND	1.18	ND	1.03
Perfluorobutanesulfonic Acid (PFBS)	ND	0.927	ND	1.27	ND	1.18	ND	0.922	ND	1.18	ND	1.03
Perfluorohexanoic Acid (PFHxA)	ND	0.927	ND	1.27	ND	1.18	ND	0.922	ND	1.18	ND	1.03
Perfluoroheptanoic Acid (PFHpA)	ND	0.927	ND	1.27	ND	1.18	ND	0.922	ND	1.18	ND	1.03
Perfluorohexanesulfonic Acid (PFHxS)	ND	0.927	ND	1.27	ND	1.18	ND	0.922	ND	1.18	ND	1.03
Perfluorooctanoic Acid (PFOA)	ND	0.927	**0.287J**	1.27	ND	1.18	**0.127J**	0.922	**0.187J**	1.18	**0.057J**	1.03
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	**1.43**	0.927	**1.58**	1.27	**1.12J**	1.18	**3.29**	0.922	**6.22**	1.18	**2.91**	1.03
Perfluoroheptanesulfonic Acid (PFHpS)	ND	0.927	ND	1.27	ND	1.18	ND	0.922	ND	1.18	ND	1.03
Perfluorononanoic Acid (PFNA)	ND	0.927	ND	1.27	ND	1.18	ND	0.922	ND	1.18	ND	1.03
Perfluorooctanesulfonic Acid (PFOS)	**0.231J**	0.927	**2.49**	1.27	ND	1.18	**0.327J**	0.922	ND	1.18	ND	1.03
Perfluorodecanoic Acid (PFDA)	ND	0.927	ND	1.27	ND	1.18	ND	0.922	ND	1.18	ND	1.03
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND	0.927	ND	1.27	ND	1.18	ND	0.922	ND	1.18	ND	1.03
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND	0.927	ND	1.27	ND	1.18	ND	0.922	ND	1.18	ND	1.03
Perfluoroundecanoic Acid (PFUnA)	ND	0.927	ND	1.27	ND	1.18	ND	0.922	ND	1.18	ND	1.03
Perfluorodecanesulfonic Acid (PFDS)	ND	0.927	ND	1.27	ND	1.18	ND	0.922	ND	1.18	ND	1.03
Perfluorooctanesulfonamide (FOSA)	ND	0.927	ND	1.27	ND	1.18	ND	0.922	ND	1.18	ND	1.03
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND	0.927	ND	1.27	ND	1.18	ND	0.922	ND	1.18	ND	1.03
Perfluorododecanoic Acid (PFDoA)	ND	0.927	ND	1.27	ND	1.18	ND	0.922	ND	1.18	ND	1.03
Perfluorotridecanoic Acid (PFTrDA)	ND	0.927	ND	1.27	ND	1.18	ND	0.922	ND	1.18	ND	1.03
Perfluorotetradecanoic Acid (PFTA)	ND	0.927	ND	1.27	ND	1.18	ND	0.922	ND	1.18	ND	1.03
Combined PFOA and PFOS	**0.231J**		**2.78J**		**ND**		**0.454J**		**0.187J**		**0.057J**	
Combined Total Detections	**1.43**		**4.07**		**0**		**3.29**		**6.22**		**2.91**	

Notes:

DL- Detection Limit

J- The value is estimated.

ND- Not Detected

The USEPA Health Advisory Level for drinking water is 70 ng/L (ppt) for combined detections of PFOA and PFOs

Table 9
Former Pfizer Site A - C224284
243-271 Wallabout Street,
Brooklyn, New York
Remedial Investigation Laboratory Results – Soil Samples
PFAs

Compound	EBC 2019 Laboratory Results											
	EBC 24						EBC 25					
	0-2'		6-8'		15-17'		0-2'		6-8'		15-17'	
	6/3/2019		6/3/2019		6/3/2019		6/6/2019		6/6/2019		6/6/2019	
	µg/Kg		µg/Kg		µg/Kg		µg/Kg		µg/Kg		µg/Kg	
	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL
Perfluorobutanoic Acid (PFBA)	ND	0.915	ND	1.01	ND	1.12	0.041J	0.995	ND	2.24	ND	1.04
Perfluoropentanoic Acid (PFPeA)	ND	0.915	ND	1.01	ND	1.12	0.076J	0.995	ND	2.24	ND	1.04
Perfluorobutanesulfonic Acid (PFBS)	ND	0.915	ND	1.01	ND	1.12	ND	0.995	ND	2.24	ND	1.04
Perfluorohexanoic Acid (PFHxA)	ND	0.915	ND	1.01	ND	1.12	0.110J	0.995	ND	2.24	ND	1.04
Perfluoroheptanoic Acid (PFHpA)	ND	0.915	ND	1.01	ND	1.12	0.083J	0.995	ND	2.24	ND	1.04
Perfluorohexanesulfonic Acid (PFHxS)	ND	0.915	ND	1.01	ND	1.12	0.097J	0.995	ND	2.24	ND	1.04
Perfluorooctanoic Acid (PFOA)	0.082J	0.915	0.073J	1.01	0.067J	1.12	0.233J	0.995	0.224J	2.24	0.059J	1.04
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	1.22	0.915	0.602J	1.01	1.54	1.12	2.97	0.995	4.63	2.24	ND	1.04
Perfluoroheptanesulfonic Acid (PFHpS)	ND	0.915	ND	1.01	ND	1.12	ND	0.995	ND	2.24	ND	1.04
Perfluorononanoic Acid (PFNA)	ND	0.915	ND	1.01	ND	1.12	ND	0.995	ND	2.24	ND	1.04
Perfluorooctanesulfonic Acid (PFOS)	0.556J	0.915	ND	1.01	ND	1.12	2.19	0.995	0.519J	2.24	ND	1.04
Perfluorodecanoic Acid (PFDA)	ND	0.915	ND	1.01	ND	1.12	0.275J	0.995	ND	2.24	ND	1.04
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND	0.915	ND	1.01	ND	1.12	ND	0.995	ND	2.24	ND	1.04
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND	0.915	ND	1.01	ND	1.12	ND	0.995	ND	2.24	ND	1.04
Perfluoroundecanoic Acid (PFUnA)	0.071J	0.915	ND	1.01	ND	1.12	0.192J	0.995	ND	2.24	ND	1.04
Perfluorodecanesulfonic Acid (PFDS)	0.150J	0.915	ND	1.01	ND	1.12	0.179J	0.995	ND	2.24	ND	1.04
Perfluorooctanesulfonamide (FOSA)	ND	0.915	ND	1.01	ND	1.12	ND	0.995	ND	2.24	ND	1.04
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND	0.915	ND	1.01	ND	1.12	ND	0.995	ND	2.24	ND	1.04
Perfluorododecanoic Acid (PFDoA)	0.080J	0.915	ND	1.01	ND	1.12	0.189J	0.995	ND	2.24	ND	1.04
Perfluorotridecanoic Acid (PFTrDA)	ND	0.915	ND	1.01	ND	1.12	ND	0.995	ND	2.24	ND	1.04
Perfluorotetradecanoic Acid (PFTA)	0.055J	0.915	ND	1.01	ND	1.12	0.085J	0.995	ND	2.24	ND	1.04
Combined PFOA and PFOS	**0.638J**		**0.073J**		**0.067J**		**2.42J**		**0.743J**		**0.059J**	
Combined Total Detections	**1.22**		**0**		**1.54**		**5.16**		**4.63**		**0**	

Notes:

DL- Detection Limit

J- The value is estimated.

ND- Not Detected

The USEPA Health Advisory Level for drinking water is 70 ng/L (ppt) for combined detections of PFOA and PFOs

Table 9
Former Pfizer Site A - C224284
243-271 Wallabout Street,
Brooklyn, New York
Remedial Investigation Laboratory Results – Soil Samples
PFAs

Compound	EBC 2019 Laboratory Results															
	EBC 26						EBC 27						Soil Duplicate 1		Soil Duplicate 2	
	0-2'		6-8'		15-17'		0-2'		6-8'		15-17'		EBC 24 (6-8')		EBC 21 (15-17')	
	6/4/2019		6/4/2019		6/4/2019		6/4/2019		6/4/2019		6/4/2019		6/3/2019		6/4/2019	
	µg/Kg		µg/Kg		µg/Kg		µg/Kg		µg/Kg		µg/Kg		µg/Kg		µg/Kg	
	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL
Perfluorobutanoic Acid (PFBA)	ND	0.967	0.025J	1.03	ND	1.15	ND	0.938	ND	1.04	ND	0.958	ND	1.05	ND	1.21
Perfluoropentanoic Acid (PFPeA)	ND	0.967	ND	1.03	ND	1.15	ND	0.938	0.056J	1.04	ND	0.958	ND	1.05	ND	1.21
Perfluorobutanesulfonic Acid (PFBS)	ND	0.967	ND	1.03	ND	1.15	ND	0.938	ND	1.04	ND	0.958	ND	1.05	ND	1.21
Perfluorohexanoic Acid (PFHxA)	ND	0.967	ND	1.03	ND	1.15	ND	0.938	0.078J	1.04	ND	0.958	ND	1.05	ND	1.21
Perfluoroheptanoic Acid (PFHpA)	ND	0.967	ND	1.03	ND	1.15	ND	0.938	0.079J	1.04	ND	0.958	ND	1.05	ND	1.21
Perfluorohexanesulfonic Acid (PFHxS)	ND	0.967	ND	1.03	ND	1.15	ND	0.938	0.483J	1.04	ND	0.958	ND	1.05	ND	1.21
Perfluorooctanoic Acid (PFOA)	0.079J	0.967	0.060J	1.03	0.057J	1.15	0.065J	0.938	0.378J	1.04	0.059J	0.958	0.148J	1.05	0.059J	1.21
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	2.78	0.967	1.81	1.03	2.7	1.15	ND	0.938	0.247J	1.04	1.41	0.958	0.373J	1.05	5.18	1.21
Perfluoroheptanesulfonic Acid (PFHpS)	ND	0.967	ND	1.03	ND	1.15	ND	0.938	ND	1.04	ND	0.958	ND	1.05	ND	1.21
Perfluorononanoic Acid (PFNA)	ND	0.967	ND	1.03	ND	1.15	ND	0.938	0.079J	1.04	ND	0.958	ND	1.05	ND	1.21
Perfluorooctanesulfonic Acid (PFOS)	0.569J	0.967	ND	1.03	ND	1.15	0.533J	0.938	2.36	1.04	ND	0.958	0.208J	1.05	ND	1.21
Perfluorodecanoic Acid (PFDA)	0.126J	0.967	ND	1.03	ND	1.15	ND	0.938	ND	1.04	ND	0.958	ND	1.05	ND	1.21
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND	0.967	ND	1.03	ND	1.15	ND	0.938	ND	1.04	ND	0.958	ND	1.05	ND	1.21
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND	0.967	ND	1.03	ND	1.15	ND	0.938	ND	1.04	ND	0.958	ND	1.05	ND	1.21
Perfluoroundecanoic Acid (PFUnA)	0.056J	0.967	ND	1.03	ND	1.15	ND	0.938	ND	1.04	ND	0.958	ND	1.05	ND	1.21
Perfluorodecanesulfonic Acid (PFDS)	ND	0.967	ND	1.03	ND	1.15	ND	0.938	ND	1.04	ND	0.958	ND	1.05	ND	1.21
Perfluorooctanesulfonamide (FOSA)	ND	0.967	ND	1.03	ND	1.15	ND	0.938	ND	1.04	ND	0.958	ND	1.05	ND	1.21
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND	0.967	ND	1.03	ND	1.15	ND	0.938	ND	1.04	ND	0.958	ND	1.05	ND	1.21
Perfluorododecanoic Acid (PFDoA)	ND	0.967	ND	1.03	ND	1.15	ND	0.938	ND	1.04	ND	0.958	ND	1.05	ND	1.21
Perfluorotridecanoic Acid (PFTrDA)	ND	0.967	ND	1.03	ND	1.15	ND	0.938	ND	1.04	ND	0.958	ND	1.05	ND	1.21
Perfluorotetradecanoic Acid (PFTA)	ND	0.967	ND	1.03	ND	1.15	ND	0.938	ND	1.04	ND	0.958	ND	1.05	ND	1.21
Combined PFOA and PFOS	**0.648J**		**0.060J**		**0.057J**		**0.598J**		**2.74J**		**0.059J**		**0.356J**		**0.059J**	
Combined Total Detections	**2.78**		**1.81**		**2.7**		**0**		**2.36**		**1.41**		**0**		**5.18**	

Notes:

DL- Detection Limit

J- The value is estimated.

ND- Not Detected

The USEPA Health Advisory Level for drinking water is 70 ng/L (ppt) for combined detections of PFOA and PFOs

Table 10
Former Pfizer Site A - C224284
243-271 Wallabout Street,
Brooklyn, New York
Laboratory Results – Groundwater Samples
Volatile Organic Compounds

Compound	NYSDEC Groundwater Quality Standards	ROUX 2005 Laboratory Results				
		MW1	MW2	MW3	MW4	MW5
		11/4/2005	11/4/2005	11/4/2005	11/4/2005	11/4/2005
		µg/L	µg/L	µg/L	µg/L	µg/L
	µg/L	Results	Results	Results	Results	Results
1,1,1,2-Tetrachloroethane	5	5U	5U	5U	5U	5U
1,1,1-Trichloroethane	5	5U	5U	5U	5U	5U
1,1,2-Trichloroethane	1	5U	5U	5U	5U	5U
1,1-Dichloroethane	5	5U	5U	5U	5U	5U
1,1-Dichloroethene	5	5U	5U	5U	5U	5U
1,1-Dichloropropene		5U	5U	5U	5U	5U
1,2,3-Trichlorobenzene		5U	5U	5U	5U	5U
2-Hexanone		10U	10U	10U	10U	10U
4-Methyl-2-pentanone		10U	10U	10U	10U	10U
Acetone	50	**2.5J**	**2.1J**	**1.8J**	**2.3J**	10U
Bromodichloromethane		5U	5U	5U	5U	5U
Bromoform		5U	5U	5U	5U	5U
Bromomethane	5	5U	5U	5U	5U	5U
Carbon Disulfide	60	5U	5U	5U	5U	5U
Carbon tetrachloride	5	5U	5U	5U	5U	5U
Chlorobenzene	5	5U	5U	5U	5U	5U
Chloroethane	5	5U	5U	5U	5U	5U
Chloroform	7	5U	5U	**0.87J**	5U	5U
Chloromethane	60	5U	5U	5U	5U	5U
cis-1,2-Dichloroethene	5	5U	5U	5U	5U	5U
cis-1,3-Dichloropropene		5U	5U	5U	5U	5U
Dibromochloromethane		5U	5U	5U	5U	5U
Ethylbenzene	5	5U	5U	5U	5U	5U
Methyl ethyl ketone	50	10U	10U	10U	10U	10U
Methylene chloride	5	**0.42JB**	5UB	**0.4JB**	5UB	5UB
Styrene	5	5U	5U	5U	5U	5U
Tetrachloroethene	5	5U	5U	5U	5U	5U
Toluene	5	5U	5U	5U	**1.1J**	5U
Total Xylene		5U	5U	5U	5U	5U
trans-1,2-Dichloroethene	5	5U	5U	5U	5U	5U
trans-1,3-Dichloropropene	0.4	5U	5U	5U	5U	5U
Trichloroethene	5	5U	5U	5U	5U	5U
Vinyl chloride	2	5U	5U	5U	5U	5U

Notes:
RL- Reporting Limit
Bold/highlighted- Indicated exceedance of the NYSDEC Groundwater Standard

Table 11
Former Pfizer Site A - C224284
243-271 Wallabout Street,
Brooklyn, New York
Laboratory Results – Groundwater Samples
Semi-Volatile Organic Compounds

Compound	NYSDEC Groundwater Quality Standards	ROUX 2005 Laboratory Results				
		MW1	MW2	MW3	MW4	MW5
		11/4/2005	11/4/2005	11/4/2005	11/4/2005	11/4/2005
		µg/L	µg/L	µg/L	µg/L	µg/L
	µg/L	Results	Results	Results	Results	Results
1,2,4-Trichlorobenzene		11U	11U	11U	10U	11U
1,2-Dichlorobenzene		11U	11U	11U	10U	11U
1,3-Dichlorobenzene	3	11U	11U	11U	10U	11U
1,4-Dichlorobenzene		11U	11U	11U	10U	11U
2,4,5-Trichlorophenol	1	54U	54U	53U	52U	53U
2,4,6-Trichlorophenol	1	11U	11U	11U	10U	11U
2,4-Dichlorophenol		11U	11U	11U	10U	11U
2,4-Dimethylphenol		11U	11U	11U	10U	11U
2,4-Dinitrophenol	5	11U	11U	11U	10U	11U
2,4-Dinitrotoluene	5	11U	11U	11U	10U	11U
2,6-Dinitrotoluene	5	11U	11U	11U	10U	11U
2-Chloronaphthalene	10	11U	11U	11U	10U	11U
2-Chlorophenol	1	11U	11U	11U	10U	11U
2-Methylnaphthalene		11U	11U	11U	**8J**	11U
2-Methylphenol (o-cresol)	1	11U	11U	11U	**18**	11U
2-Nitroaniline	5	54U	54U	53U	52U	53U
2-Nitrophenol	1	11U	11U	11U	10U	11U
3&4-Methylphenol (m&p-cresol)		11U	11U	11U	**49**	11U
3,3'-Dichlorobenzidine	5	22U	22U	21U	21U	21U
3-Nitroaniline	5	54U	54U	53U	52U	53U
4,6-Dinitro-2-methylphenol	1	54U	54U	53U	52U	53U
4-Bromophenyl phenyl ether		11U	11U	11U	10U	11U
4-Chloro-3-methylphenol	1	11U	11U	11U	10U	11U
4-Chloroaniline	5	11U	11U	11U	10U	11U
4-Chlorophenyl phenyl ether		11U	11U	11U	10U	11U
4-Nitroaniline	5	22U	22U	21U	21U	21U
4-Nitrophenol		54U	54U	53U	52U	53U
Acenaphthene	20	11U	11U	11U	**5J**	11U
Acenaphthylene		11U	11U	11U	**2J**	11U
Benz(a)anthracene	0.002	11U	11U	11U	10U	11U
Benzo(a)pyrene		11U	11U	11U	10U	11U
Benzo(b)fluoranthene	0.002	11U	11U	11U	10U	11U
Benzo(ghi)perylene		11U	11U	11U	10U	11U
Benzo(k)fluoranthene	0.002	11U	11U	11U	10U	11U
Bis(2-chloroethoxy)methane		11U	11U	11U	10U	11U
Bis(2-chloroethyl)ether		11U	11U	11U	10U	11U
Bis(2-ethylhexyl)phthalate	50	11U	11U	11U	10U	11U
Carbazole		11U	11U	11U	**15**	11U
Chrysene	0.002	11U	11U	11U	10U	11U
Dibenz(a,h)anthracene		11U	11U	11U	10U	11U
Dibenzofuran		11U	11U	11U	**6J**	11U
Diethyl phthalate	50	11U	11U	11U	10U	11U
Dimethylphthalate	50	11U	11U	11U	10U	11U
Di-n-butylphthalate	50	11U	11U	11U	10U	11U
Di-n-octylphthalate	50	11U	11U	11U	10U	11U
Fluoranthene	50	11U	11U	11U	**2J**	11U
Fluorene	50	11U	11U	11U	**6J**	11U
Hexachlorobenzene	0.04	11U	11U	11U	10U	11U
Hexachlorobutadiene	0.5	11U	11U	11U	10U	11U
Indeno(1,2,3-cd)pyrene	0.002	11U	11U	11U	10U	11U
Isophorone	50	11U	11U	11U	10U	11U
Naphthalene	10	11U	11U	11U	**59**	11U
Nitrobenzene	0.4	11U	11U	11U	10U	11U
N-Nitrosodi-n-propylamine		11U	11U	11U	10U	11U
N-Nitrosodiphenylamine	50	11U	11U	11U	10U	11U
Pentachlorophenol	1	54U	54U	53U	52U	53U
Phenanthrene	50	11U	11U	11U	**12**	11U
Phenol	50	11U	11U	11U	**5J**	11U
Pyrene	50	11U	11U	11U	**1J**	11U

Notes:

RL - Reporting Limit

Bold/highlighted- Indicated exceedance of the NYSDEC Groundwater Standard

Table 12
Former Pfizer Site A - C224284
243-271 Wallabout Street,
Brooklyn, New York
Laboratory Results – Groundwater Samples
Pesticides/PCBs

	Compound	NYSDEC Groundwater Quality Standards µg/L	ROUX 2005 Laboratory Results				
			MW1	MW2	MW3	MW4	MW5
			11/4/2005	11/4/2005	11/4/2005	11/4/2005	11/4/2005
			µg/L	µg/L	µg/L	µg/L	µg/L
			Results	Results	Results	Results	Results
Pesticides	4,4-DDD	0.3	0.15U	0.15U	0.15U	0.15U	0.15U
	4,4-DDE	0.2	0.1U	0.1U	0.1U	0.1U	0.1U
	4,4-DDT	0.11	0.1U	0.1U	0.1U	0.1U	0.1U
	a-BHC	0.94	0.05U	0.05U	0.05U	0.05U	0.05U
	a-Chlordane		0.05U	0.05U	0.05U	0.05U	0.05U
	Aldrin		0.05U	0.05U	0.05U	0.05U	0.05U
	b-BHC	0.04	0.05U	0.05U	0.05U	0.05U	0.05U
	d-BHC	0.04	0.05U	0.05U	0.05U	**0.0025J**	0.05U
	Dieldrin	0.004	0.1U	0.1U	0.1U	0.1U	0.1U
	Endosulfan I		0.05U	0.05U	0.05U	**0.0058J**	0.05U
	Endosulfan II		0.1U	0.1U	0.1U	0.1U	0.1U
	Endosulfan Sulfate		0.1U	0.1U	0.1U	0.1U	0.1U
	Endrin		0.1U	0.1U	0.1U	0.1U	0.1U
	Endrin aldehyde	5	0.1U	0.1U	0.1U	0.1U	0.1U
	Endrin ketone		0.1U	0.1U	0.1U	0.1U	0.1U
	gamma-BHC	0.05	0.05U	0.05U	0.05U	0.05U	0.05U
	g-Chlordane		0.05U	0.05U	0.05U	0.05U	0.05U
	Heptachlor	0.04	0.05U	0.05U	0.05U	0.05U	0.05U
	Heptachlor epoxide	0.03	0.05U	0.05U	0.05U	0.05U	0.05U
	Methoxychlor	35	0.05U	0.05U	0.05U	0.05U	0.5U
	Toxaphene		0.05U	0.05U	0.05U	0.05U	2.5U
PCBs	PCB-1016	0.09	0.5U	0.5U	0.5U	0.5U	0.5U
	PCB-1221	0.09	1U	1U	1U	1U	1U
	PCB-1232	0.09	0.5U	0.5U	0.5U	0.5U	0.5U
	PCB-1242	0.09	0.5U	0.5U	0.5U	0.5U	0.5U
	PCB-1248	0.09	0.5U	0.5U	0.5U	0.5U	0.5U
	PCB-1254	0.09	0.5U	0.5U	0.5U	0.5U	0.5U
	PCB-1260	0.09	0.5U	0.5U	0.5U	0.5U	0.5U

Notes:
RL - Reporting Limit
Bold/highlighted- Indicated exceedance of the NYSDEC Groundwater Standard

Table 13
Former Pfizer Site A - C224284
243-271 Wallabout Street,
Brooklyn, New York
Laboratory Results – Groundwater Samples
TAL Filtered Metals

Compound	NYSDEC Groundwater Quality Standards	ROUX 2005 Laboratory Results				
		MW1	MW2	MW3	MW4	MW5
		11/4/2005	11/4/2005	11/4/2005	11/4/2005	11/4/2005
		mg/L	mg/L	mg/L	mg/L	mg/L
	mg/L	Results	Results	Results	Results	Results
Aluminum	0.1	**0.494B**	500U	500U	500U	500U
Antimony	0.003	20U	20U	20U	20U	20U
Arsenic	0.025	40U	40U	40U	40U	40U
Barium	1	**0.0566**	**0.136**	**0.127**	**0.225**	**0.081**
Beryllium	0.003	5U	5U	5U	5U	5U
Cadmium	0.005	10U	10U	10U	10U	10U
Calcium		**202**	**265**	**250**	**397**	**202**
Chromium	0.05	10U	10U	10U	10U	10U
Cobalt		10U	10U	10U	**0.0038B**	10U
Copper	0.2	10U	10U	10U	10U	10U
Cyanide		10U	**0.0013B**	**0.0013B**	10U	10U
Iron	0.3	**2.57**	200U	200U	**0.871**	**0.571**
Lead	0.025	10U	10U	10U	10U	10U
Magnesium	35	**35**	**22**	**17**	**43**	**15**
Manganese	0.3	**Ta**	**0.169**	**0.126**	**0.682**	**0.453**
Mercury	0.0007	0.2U	0.2U	0.2U	0.2U	0.2U
Nickel	0.1	**0.0045B**	**0.0039B**	**0.0023B**	**0.0298**	**0.0031B**
Potassium		**36.6**	**23.2**	**9.69**	**38.4**	**11.7**
Selenium	0.01	30U	30U	30U	**0.0064B**	30U
Silver	0.05	6U	6U	6U	6U	6U
Sodium	20	**17**	**93**	**27**	**104**	**37**
Thallium	0.0005	40U	40U	40U	40U	40U
Vanadium		**0.0043B**	6U	6U	**3.9B**	6U
Zinc	5	50U	**0.0207B**	**0.146**	**2.13**	**0.151**

Notes:

RL - Reporting Limit

Bold/highlighted- Indicated exceedance of the NYSDEC Groundwater Standard

Table 14
Former Pfizer Site A - C224284
243-271 Wallabout Street,
Brooklyn, New York
Remedial Investigation Laboratory Results – Groundwater Samples
Volatile Organic Compounds

Compound	NYSDEC Groundwater Quality Standards	EBC 2019 Laboratory Results											
		MW6S		MW6D		MW7		MW8S		MW8D		MW9	
		6/17/2019		6/17/2019		6/14/2019		6/14/2019		6/14/2019		6/14/2019	
		µg/L		µg/L		µg/L		µg/L		µg/L		µg/L	
	µg/L	Results	RL	Results	RL	Results	RL	Results	RL	Results	RL	Results	RL
1,1,1,2-Tetrachloroethane	5	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0
1,1,1-Trichloroethane	5	< 2.0	2.0	< 2.0	2.0	< 2.0	2.0	< 2.0	2.0	< 2.0	2.0	< 2.0	2.0
1,1,2,2-Tetrachloroethane	5	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0
1,1,2-Trichloroethane	1	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0
1,1-Dichloroethane	5	< 2.0	2.0	< 2.0	2.0	< 2.0	2.0	< 2.0	2.0	< 2.0	2.0	< 2.0	2.0
1,1-Dichloroethene	5	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0
1,2,3-Trichlorobenzene		< 1.0	1.0	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0
1,2,4-Trichlorobenzene		< 1.0	1.0	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0
1,2-Dibromo-3-chloropropane	0.04	< 0.50	0.50	< 0.50	0.50	< 0.50	0.50	< 0.50	0.50	< 0.50	0.50	< 0.50	0.50
1,2-Dibromoethane		< 0.25	0.25	< 0.25	0.25	< 0.25	0.25	< 0.25	0.25	< 0.25	0.25	< 0.25	0.25
1,2-Dichlorobenzene	5	< 2.0	2.0	< 2.0	2.0	< 2.0	2.0	< 2.0	2.0	< 2.0	2.0	< 2.0	2.0
1,2-Dichloroethane	0.6	< 0.60	0.60	< 0.60	0.60	< 0.60	0.60	< 0.60	0.60	< 0.60	0.60	< 0.60	0.60
1,2-Dichloropropane	0.94	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0
1,3-Dichlorobenzene		< 2.0	2.0	< 2.0	2.0	< 2.0	2.0	< 2.0	2.0	< 2.0	2.0	< 2.0	2.0
1,4-Dichlorobenzene	5	< 2.0	2.0	< 2.0	2.0	< 2.0	2.0	< 2.0	2.0	< 2.0	2.0	< 2.0	2.0
1,4-dioxane		< 100	100	< 100	100	< 100	100	< 100	100	< 100	100	< 100	100
2-Hexanone		< 2.5	2.5	< 2.5	2.5	< 2.5	2.5	< 2.5	2.5	< 2.5	2.5	< 2.5	2.5
4-Methyl-2-pentanone		< 2.5	2.5	< 2.5	2.5	< 2.5	2.5	< 2.5	2.5	< 2.5	2.5	< 2.5	2.5
Acetone	50	**3**	5.0	**3.1**	5.0	**5.1**	5.0	< 5.0	5.0	< 5.0	5.0	**4.9**	5.0
Acrolein		< 5.0	5.0	< 5.0	5.0	< 5.0	5.0	< 5.0	5.0	< 5.0	5.0	< 5.0	5.0
Acrylonitrile	5	< 5.0	5.0	< 5.0	5.0	< 5.0	5.0	< 5.0	5.0	< 5.0	5.0	< 5.0	5.0
Benzene	1	< 0.70	0.70	< 0.70	0.70	< 0.70	0.70	< 0.70	0.70	< 0.70	0.70	< 0.70	0.70
Bromochloromethane	5	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0
Bromodichloromethane		< 1.0	1.0	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0
Bromoform		< 1.0	1.0	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0
Bromomethane	5	< 2.0	2.0	< 2.0	2.0	< 2.0	2.0	< 2.0	2.0	< 2.0	2.0	< 2.0	2.0
Carbon Disulfide	60	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0
Carbon tetrachloride	5	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0
Chlorobenzene	5	< 2.0	2.0	< 2.0	2.0	< 2.0	2.0	< 2.0	2.0	< 2.0	2.0	< 2.0	2.0
Chloroethane	5	< 2.0	2.0	< 2.0	2.0	< 2.0	2.0	< 2.0	2.0	< 2.0	2.0	< 2.0	2.0
Chloroform	7	< 2.0	2.0	< 2.0	2.0	< 2.0	2.0	< 2.0	2.0	< 2.0	2.0	< 2.0	2.0
Chloromethane	60	< 2.0	2.0	< 2.0	2.0	< 2.0	2.0	< 2.0	2.0	< 2.0	2.0	< 2.0	2.0
cis-1,2-Dichloroethene	5	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0
cis-1,3-Dichloropropene		< 0.40	0.40	< 0.40	0.40	< 0.40	0.40	< 0.40	0.40	< 0.40	0.40	< 0.40	0.40
Cyclohexane		< 5.0	5.0	< 5.0	5.0	< 5.0	5.0	< 5.0	5.0	< 5.0	5.0	< 5.0	5.0
Dibromochloromethane		< 1.0	1.0	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0
Dichlorodifluoromethane	5	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0
Ethylbenzene	5	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0
Isopropylbenzene	5	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0
m&p-Xylene	5	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0
Methyl ethyl ketone	50	< 5.0	5.0	< 5.0	5.0	< 5.0	5.0	**2.6**	5.0	< 5.0	5.0	< 5.0	5.0
Methyl t-butyl ether (MTBE)	10	**1.2**	1.0	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0	**9.5**	1.0	< 1.0	1.0
Methylacetate		< 2.5	2.5	< 2.5	2.5	< 2.5	2.5	< 2.5	2.5	< 2.5	2.5	< 2.5	2.5
Methylcyclohexane		< 2.0	2.0	< 2.0	2.0	< 2.0	2.0	< 2.0	2.0	< 2.0	2.0	< 2.0	2.0
Methylene chloride	5	< 3.0	3.0	< 3.0	3.0	< 3.0	3.0	< 3.0	3.0	< 3.0	3.0	< 3.0	3.0
o-Xylene	5	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0
Styrene	5	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0
Tert-butyl alcohol		< 50	50	< 50	50	< 50	50	< 50	50	< 50	50	< 50	50
Tetrachloroethene	5	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0
Toluene	5	< 2.0	2.0	< 2.0	2.0	< 2.0	2.0	< 2.0	2.0	< 2.0	2.0	< 2.0	2.0
Total Xylene		< 1.0	1.0	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0
trans-1,2-Dichloroethene	5	< 2.0	2.0	< 2.0	2.0	< 2.0	2.0	< 2.0	2.0	< 2.0	2.0	< 2.0	2.0
trans-1,3-Dichloropropene	0.4	< 0.40	0.40	< 0.40	0.40	< 0.40	0.40	< 0.40	0.40	< 0.40	0.40	< 0.40	0.40
Trichloroethene	5	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0
Trichlorofluoromethane	5	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0
Trichlorotrifluoroethane		< 1.0	1.0	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0
Vinyl chloride	2	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0

Notes:
RL- Reporting Limit
Bold/highlighted- Indicated exceedance of the NYSDEC Groundwater Standard

Table 14
Former Pfizer Site A - C224284
243-271 Wallabout Street,
Brooklyn, New York
Remedial Investigation Laboratory Results – Groundwater Samples
Volatile Organic Compounds

Compound	NYSDEC Groundwater Quality Standards	EBC 2019 Laboratory Results											
		MW10		MW-11		MW12		MW Duplicate 1		MW Duplicate 2		MW Duplicate 3	
		6/14/2019		6/18/2019		6/17/2019		MW-8D		MW-12		MW-11	
		µg/L		µg/L		µg/L		µg/L		µg/L		µg/L	
	µg/L	Results	RL	Results	RL	Results	RL	Results	RL	Results	RL	Results	RL
1,1,1,2-Tetrachloroethane	5	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0
1,1,1-Trichloroethane	5	< 2.0	2.0	< 2.0	2.0	< 2.0	2.0	< 2.0	2.0	< 2.0	2.0	< 2.0	2.0
1,1,2,2-Tetrachloroethane	5	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0
1,1,2-Trichloroethane	1	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0
1,1-Dichloroethane	5	< 2.0	2.0	< 2.0	2.0	< 2.0	2.0	< 2.0	2.0	< 2.0	2.0	< 2.0	2.0
1,1-Dichloroethene	5	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0
1,2,3-Trichlorobenzene		< 1.0	1.0	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0
1,2,4-Trichlorobenzene		< 1.0	1.0	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0
1,2-Dibromo-3-chloropropane	0.04	< 0.50	0.50	< 0.50	0.50	< 0.50	0.50	< 0.50	0.50	< 0.50	0.50	< 0.50	0.50
1,2-Dibromoethane		< 0.25	0.25	< 0.25	0.25	< 0.25	0.25	< 0.25	0.25	< 0.25	0.25	< 0.25	0.25
1,2-Dichlorobenzene	5	< 2.0	2.0	< 2.0	2.0	< 2.0	2.0	< 2.0	2.0	< 2.0	2.0	< 2.0	2.0
1,2-Dichloroethane	0.6	< 0.60	0.60	< 0.60	0.60	< 0.60	0.60	< 0.60	0.60	< 0.60	0.60	< 0.60	0.60
1,2-Dichloropropane	0.94	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0
1,3-Dichlorobenzene		< 2.0	2.0	< 2.0	2.0	< 2.0	2.0	< 2.0	2.0	< 2.0	2.0	< 2.0	2.0
1,4-Dichlorobenzene	5	< 2.0	2.0	< 2.0	2.0	< 2.0	2.0	< 2.0	2.0	< 2.0	2.0	< 2.0	2.0
1,4-dioxane		< 100	100	< 100	100	< 100	100	< 100	100	< 100	100	< 100	100
2-Hexanone		< 2.5	2.5	< 2.5	2.5	< 2.5	2.5	< 2.5	2.5	< 2.5	2.5	< 2.5	2.5
4-Methyl-2-pentanone		< 2.5	2.5	< 2.5	2.5	< 2.5	2.5	< 2.5	2.5	< 2.5	2.5	< 2.5	2.5
Acetone	50	**9.3**	5.0	< 5.0	5.0	< 5.0	5.0	< 5.0	5.0	**3.4**	5.0	**2.8**	5.0
Acrolein		< 5.0	5.0	< 5.0	5.0	< 5.0	5.0	< 5.0	5.0	< 5.0	5.0	< 5.0	5.0
Acrylonitrile	5	< 5.0	5.0	< 5.0	5.0	< 5.0	5.0	< 5.0	5.0	< 5.0	5.0	< 5.0	5.0
Benzene	1	< 0.70	0.70	< 0.70	0.70	< 0.70	0.70	< 0.70	0.70	< 0.70	0.70	< 0.70	0.70
Bromochloromethane	5	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0
Bromodichloromethane		< 1.0	1.0	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0
Bromoform		< 1.0	1.0	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0
Bromomethane	5	< 2.0	2.0	< 2.0	2.0	< 2.0	2.0	< 2.0	2.0	< 2.0	2.0	< 2.0	2.0
Carbon Disulfide	60	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0
Carbon tetrachloride	5	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0
Chlorobenzene	5	< 2.0	2.0	< 2.0	2.0	< 2.0	2.0	< 2.0	2.0	< 2.0	2.0	< 2.0	2.0
Chloroethane	5	< 2.0	2.0	< 2.0	2.0	< 2.0	2.0	< 2.0	2.0	< 2.0	2.0	< 2.0	2.0
Chloroform	7	< 2.0	2.0	< 2.0	2.0	**0.34**	2.0	< 2.0	2.0	**0.31**	2.0	< 2.0	2.0
Chloromethane	60	< 2.0	2.0	< 2.0	2.0	< 2.0	2.0	< 2.0	2.0	< 2.0	2.0	< 2.0	2.0
cis-1,2-Dichloroethene	5	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0
cis-1,3-Dichloropropene		< 0.40	0.40	< 0.40	0.40	< 0.40	0.40	< 0.40	0.40	< 0.40	0.40	< 0.40	0.40
Cyclohexane		< 5.0	5.0	< 5.0	5.0	< 5.0	5.0	< 5.0	5.0	< 5.0	5.0	< 5.0	5.0
Dibromochloromethane		< 1.0	1.0	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0
Dichlorodifluoromethane	5	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0
Ethylbenzene	5	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0
Isopropylbenzene	5	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0
m&p-Xylene	5	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0
Methyl ethyl ketone	50	< 5.0	5.0	< 5.0	5.0	< 5.0	5.0	< 5.0	5.0	< 5.0	5.0	< 5.0	5.0
Methyl t-butyl ether (MTBE)	10	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0	**9.2**	1.0	< 1.0	1.0	< 1.0	1.0
Methylacetate		< 2.5	2.5	< 2.5	2.5	< 2.5	2.5	< 2.5	2.5	< 2.5	2.5	< 2.5	2.5
Methylcyclohexane		< 2.0	2.0	< 2.0	2.0	< 2.0	2.0	< 2.0	2.0	< 2.0	2.0	< 2.0	2.0
Methylene chloride	5	< 3.0	3.0	< 3.0	3.0	< 3.0	3.0	< 3.0	3.0	< 3.0	3.0	< 3.0	3.0
o-Xylene	5	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0
Styrene	5	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0
Tert-butyl alcohol		< 50	50	< 50	50	< 50	50	< 50	50	< 50	50	< 50	50
Tetrachloroethene	5	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0
Toluene	5	< 2.0	2.0	< 2.0	2.0	< 2.0	2.0	< 2.0	2.0	< 2.0	2.0	< 2.0	2.0
Total Xylene		< 1.0	1.0	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0
trans-1,2-Dichloroethene	5	< 2.0	2.0	< 2.0	2.0	< 2.0	2.0	< 2.0	2.0	< 2.0	2.0	< 2.0	2.0
trans-1,3-Dichloropropene	0.4	< 0.40	0.40	< 0.40	0.40	< 0.40	0.40	< 0.40	0.40	< 0.40	0.40	< 0.40	0.40
Trichloroethene	5	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0
Trichlorofluoromethane	5	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0
Trichlorotrifluoroethane		< 1.0	1.0	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0
Vinyl chloride	2	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0

Notes:
RL- Reporting Limit
Bold/highlighted- Indicated exceedance of the NYSDEC Groundwater Standard

Table 15
Former Pfizer Site A - C224284
243-271 Wallabout Street,
Brooklyn, New York
Remedial Investigation Laboratory Results – Groundwater Samples
Semi-Volatile Organic Compounds

Compound	NYSDEC Groundwater Quality Standards	EBC 2019 Laboratory Results											
		MW6S		MW6D		MW7		MW8S		MW8D		MW9	
		6/17/2019		6/17/2019		6/14/2019		6/14/2019		6/14/2019		6/14/2019	
		µg/L		µg/L		µg/L		µg/L		µg/L		µg/L	
	µg/L	Results	RL	Results	RL	Results	RL	Results	RL	Results	RL	Results	RL
1,1-Biphenyl		< 3.7	3.7	< 3.6	3.6	< 3.3	3.3	< 3.3	3.3	< 3.3	3.3	< 3.3	3.3
1,2,4,5-Tetrachlorobenzene		< 3.7	3.7	< 3.6	3.6	< 3.3	3.3	< 3.3	3.3	< 3.3	3.3	< 3.3	3.3
2,3,4,6-tetrachlorophenol		< 1.0	1.0	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0
2,4,5-Trichlorophenol	1	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0
2,4,6-Trichlorophenol	1	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0
2,4-Dichlorophenol		< 1.0	1.0	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0
2,4-Dimethylphenol		< 1.0	1.0	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0
2,4-Dinitrophenol	5	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0
2,4-Dinitrotoluene	5	< 5.0	5.0	< 5.0	5.0	< 4.7	4.7	< 4.7	4.7	< 4.7	4.7	< 4.7	4.7
2,6-Dinitrotoluene	5	< 5.0	5.0	< 5.0	5.0	< 4.7	4.7	< 4.7	4.7	< 4.7	4.7	< 4.7	4.7
2-Chloronaphthalene	10	< 5.3	5.3	< 5.1	5.1	< 4.7	4.7	< 4.7	4.7	< 4.7	4.7	< 4.7	4.7
2-Chlorophenol	1	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0
2-Methylnaphthalene		< 5.3	5.3	< 5.1	5.1	< 4.7	4.7	< 4.7	4.7	< 4.7	4.7	< 4.7	4.7
2-Methylphenol (o-cresol)	1	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0
2-Nitroaniline	5	< 5.0	5.0	< 5.0	5.0	< 4.7	4.7	< 4.7	4.7	< 4.7	4.7	< 4.7	4.7
2-Nitrophenol	1	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0
3&4-Methylphenol (m&p-cresol)		< 5.3	5.3	< 5.1	5.1	< 4.7	4.7	< 4.7	4.7	< 4.7	4.7	< 4.7	4.7
3,3'-Dichlorobenzidine	5	< 5.0	5.0	< 5.0	5.0	< 4.7	4.7	< 4.7	4.7	< 4.7	4.7	< 4.7	4.7
3-Nitroaniline	5	< 5.0	5.0	< 5.0	5.0	< 4.7	4.7	< 4.7	4.7	< 4.7	4.7	< 4.7	4.7
4,6-Dinitro-2-methylphenol	1	< 1.1	1.1	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0
4-Bromophenyl phenyl ether		< 5.3	5.3	< 5.1	5.1	< 4.7	4.7	< 4.7	4.7	< 4.7	4.7	< 4.7	4.7
4-Chloro-3-methylphenol	1	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0
4-Chloroaniline	5	< 5.0	5.0	< 5.0	5.0	< 4.7	4.7	< 4.7	4.7	< 4.7	4.7	< 4.7	4.7
4-Chlorophenyl phenyl ether		< 5.3	5.3	< 5.1	5.1	< 4.7	4.7	< 4.7	4.7	< 4.7	4.7	< 4.7	4.7
4-Nitroaniline	5	< 5.0	5.0	< 5.0	5.0	< 4.7	4.7	< 4.7	4.7	< 4.7	4.7	< 4.7	4.7
4-Nitrophenol		< 1.0	1.0	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0
Acenaphthene	20	< 5.3	5.3	< 5.1	5.1	< 4.7	4.7	< 4.7	4.7	< 4.7	4.7	< 4.7	4.7
Acenaphthylene		< 0.53	0.53	< 0.51	0.51	< 0.47	0.47	< 0.47	0.47	< 0.47	0.47	< 0.47	0.47
Acetophenone		< 5.3	5.3	< 5.1	5.1	< 4.7	4.7	< 4.7	4.7	< 4.7	4.7	< 4.7	4.7
Anthracene	50	< 0.53	0.53	< 0.51	0.51	< 0.47	0.47	< 0.47	0.47	< 0.47	0.47	< 0.47	0.47
Atrazine		< 1.1	1.1	< 1.0	1.0	< 0.94	0.94	< 0.94	0.94	< 0.94	0.94	< 0.94	0.94
Benz(a)anthracene	0.002	< 0.02	0.02	**0.03**	0.02	**0.8**	0.02	**0.14**	0.02	< 0.02	0.02	**0.78**	0.02
Benzaldehyde		< 5.3	5.3	< 5.1	5.1	< 4.7	4.7	< 4.7	4.7	< 4.7	4.7	< 4.7	4.7
Benzo(a)pyrene		< 0.02	0.02	**0.03**	0.02	**0.74**	0.02	**0.12**	0.02	< 0.02	0.02	**0.73**	0.02
Benzo(b)fluoranthene	0.002	< 0.02	0.02	**0.02**	0.02	**0.59**	0.02	**0.12**	0.02	< 0.02	0.02	**0.63**	0.02
Benzo(ghi)perylene		< 0.53	0.53	< 0.51	0.51	< 0.47	0.47	< 0.47	0.47	< 0.47	0.47	< 0.47	0.47
Benzo(k)fluoranthene	0.002	< 0.02	0.02	**0.02**	0.02	**0.58**	0.02	**0.1**	0.02	< 0.02	0.02	**0.6**	0.02
Benzyl butyl phthalate	50	< 5.3	5.3	< 5.1	5.1	< 4.7	4.7	< 4.7	4.7	< 4.7	4.7	< 4.7	4.7
Bis(2-chloroethoxy)methane		< 5.0	5.0	< 5.0	5.0	< 4.7	4.7	< 4.7	4.7	< 4.7	4.7	< 4.7	4.7
Bis(2-chloroethyl)ether		< 0.53	0.53	< 0.51	0.51	< 0.47	0.47	< 0.47	0.47	< 0.47	0.47	< 0.47	0.47
Bis(2-chloroisopropyl)ether		< 5.3	5.3	< 5.1	5.1	< 4.7	4.7	< 4.7	4.7	< 4.7	4.7	< 4.7	4.7
Bis(2-ethylhexyl)phthalate	50	< 1.1	1.1	< 1.0	1.0	< 0.94	0.94	< 0.94	0.94	< 0.94	0.94	< 0.94	0.94
Caprolactam		< 5.3	5.3	< 5.1	5.1	< 4.7	4.7	< 4.7	4.7	< 4.7	4.7	< 4.7	4.7
Carbazole		< 5.3	5.3	< 5.1	5.1	< 4.7	4.7	< 4.7	4.7	< 4.7	4.7	< 4.7	4.7
Chrysene	0.002	< 0.02	0.02	**0.03**	0.02	**0.73**	0.02	**0.13**	0.02	< 0.02	0.02	**0.77**	0.02
Dibenz(a,h)anthracene		< 0.53	0.53	< 0.51	0.51	< 0.47	0.47	< 0.47	0.47	< 0.47	0.47	< 0.47	0.47
Dibenzofuran		< 5.0	5.0	< 5.0	5.0	< 4.7	4.7	< 4.7	4.7	< 4.7	4.7	< 4.7	4.7
Diethyl phthalate	50	< 5.3	5.3	< 5.1	5.1	**2.6**	4.7	< 4.7	4.7	< 4.7	4.7	< 4.7	4.7
Dimethylphthalate	50	< 5.3	5.3	< 5.1	5.1	< 4.7	4.7	< 4.7	4.7	< 4.7	4.7	< 4.7	4.7
Di-n-butylphthalate	50	< 5.3	5.3	< 5.1	5.1	< 4.7	4.7	< 4.7	4.7	< 4.7	4.7	< 4.7	4.7
Di-n-octylphthalate	50	< 5.3	5.3	< 5.1	5.1	< 4.7	4.7	< 4.7	4.7	< 4.7	4.7	< 4.7	4.7
Fluoranthene	50	< 0.53	0.53	< 0.51	0.51	**2**	0.47	< 0.47	0.47	< 0.47	0.47	**1.6**	0.47
Fluorene	50	< 0.53	0.53	< 0.51	0.51	< 0.47	0.47	< 0.47	0.47	< 0.47	0.47	< 0.47	0.47
Hexachlorobenzene	0.04	< 0.04	0.04	< 0.04	0.04	< 0.04	0.04	< 0.04	0.04	< 0.04	0.04	< 0.04	0.04
Hexachlorobutadiene	0.5	< 0.50	0.50	< 0.50	0.50	< 0.47	0.47	< 0.47	0.47	< 0.47	0.47	< 0.47	0.47
Hexachlorocyclopentadiene		< 5.0	5.0	< 5.0	5.0	< 4.7	4.7	< 4.7	4.7	< 4.7	4.7	< 4.7	4.7
Hexachloroethane		< 1.1	1.1	< 1.0	1.0	< 0.94	0.94	< 0.94	0.94	< 0.94	0.94	< 0.94	0.94
Indeno(1,2,3-cd)pyrene	0.002	< 0.02	0.02	< 0.02	0.02	**0.52**	0.02	**0.1**	0.02	< 0.02	0.02	**0.48**	0.02
Isophorone	50	< 5.3	5.3	< 5.1	5.1	< 4.7	4.7	< 4.7	4.7	< 4.7	4.7	< 4.7	4.7
Naphthalene	10	< 5.0	5.0	< 5.0	5.0	< 4.7	4.7	< 4.7	4.7	< 4.7	4.7	< 4.7	4.7
Nitrobenzene	0.4	< 0.40	0.40	< 0.40	0.40	< 0.38	0.38	< 0.38	0.38	< 0.38	0.38	< 0.38	0.38
N-Nitrosodimethylamine		< 0.21	0.21	< 0.20	0.20	< 0.19	0.19	< 0.19	0.19	< 0.19	0.19	< 0.19	0.19
N-Nitrosodi-n-propylamine		< 5.3	5.3	< 5.1	5.1	< 4.7	4.7	< 4.7	4.7	< 4.7	4.7	< 4.7	4.7
N-Nitrosodiphenylamine	50	< 5.3	5.3	< 5.1	5.1	< 4.7	4.7	< 4.7	4.7	< 4.7	4.7	< 4.7	4.7
Pentachlorophenol	1	< 0.53	0.53	< 0.51	0.51	< 0.47	0.47	< 0.47	0.47	< 0.47	0.47	< 0.47	0.47
Phenanthrene	50	< 0.53	0.53	< 0.51	0.51	**1.9**	0.47	< 0.47	0.47	< 0.47	0.47	**1**	0.47
Phenol	50	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0
Pyrene	50	< 0.53	0.53	< 0.51	0.51	**1.8**	0.47	< 0.47	0.47	< 0.47	0.47	**1.5**	0.47

Notes:

RL - Reporting Limit

Bold/highlighted- Indicated exceedance of the NYSDEC Groundwater Standard

Table 15
Former Pfizer Site A - C224284
243-271 Wallabout Street,
Brooklyn, New York
Remedial Investigation Laboratory Results – Groundwater Samples
Semi-Volatile Organic Compounds

Compound	NYSDEC Groundwater Quality Standards	EBC 2019 Laboratory Results											
		MW10		MW-11		MW12		MW Duplicate 1		MW Duplicate 2		MW Duplicate 3	
		6/14/2019		6/18/2019		6/17/2019		MW-8D		MW-12		MW-11	
		µg/L		µg/L		µg/L		µg/L		µg/L		µg/L	
	µg/L	Results	RL	Results	RL	Results	RL	Results	RL	Results	RL	Results	RL
1,1-Biphenyl		< 3.3	3.3	< 3.6	3.6	< 3.4	3.4	< 3.3	3.3	< 3.5	3.5	< 3.5	3.5
1,2,4,5-Tetrachlorobenzene		< 3.3	3.3	< 3.6	3.6	< 3.4	3.4	< 3.3	3.3	< 3.5	3.5	< 3.5	3.5
2,3,4,6-tetrachlorophenol		< 1.0	1.0	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0
2,4,5-Trichlorophenol	1	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0
2,4,6-Trichlorophenol	1	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0
2,4-Dichlorophenol		< 1.0	1.0	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0
2,4-Dimethylphenol		< 1.0	1.0	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0
2,4-Dinitrophenol	5	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0
2,4-Dinitrotoluene	5	< 4.7	4.7	< 5.0	5.0	< 4.8	4.8	< 4.7	4.7	< 5.0	5.0	< 5.0	5.0
2,6-Dinitrotoluene	5	< 4.7	4.7	< 5.0	5.0	< 4.8	4.8	< 4.7	4.7	< 5.0	5.0	< 5.0	5.0
2-Chloronaphthalene	10	< 4.7	4.7	< 5.2	5.2	< 4.8	4.8	< 4.7	4.7	< 5.0	5.0	< 5.0	5.0
2-Chlorophenol	1	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0
2-Methylnaphthalene		< 4.7	4.7	< 5.2	5.2	< 4.8	4.8	< 4.7	4.7	< 5.0	5.0	< 5.0	5.0
2-Methylphenol (o-cresol)	1	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0
2-Nitroaniline	5	< 4.7	4.7	< 5.0	5.0	< 4.8	4.8	< 4.7	4.7	< 5.0	5.0	< 5.0	5.0
2-Nitrophenol	1	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0
3&4-Methylphenol (m&p-cresol)		< 4.7	4.7	< 5.2	5.2	< 4.8	4.8	< 4.7	4.7	< 5.0	5.0	< 5.0	5.0
3,3'-Dichlorobenzidine	5	< 4.7	4.7	< 5.0	5.0	< 4.8	4.8	< 4.7	4.7	< 5.0	5.0	< 5.0	5.0
3-Nitroaniline	5	< 4.7	4.7	< 5.0	5.0	< 4.8	4.8	< 4.7	4.7	< 5.0	5.0	< 5.0	5.0
4,6-Dinitro-2-methylphenol	1	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0
4-Bromophenyl phenyl ether		< 4.7	4.7	< 5.2	5.2	< 4.8	4.8	< 4.7	4.7	< 5.0	5.0	< 5.0	5.0
4-Chloro-3-methylphenol	1	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0
4-Chloroaniline	5	< 4.7	4.7	< 5.0	5.0	< 4.8	4.8	< 4.7	4.7	< 5.0	5.0	< 5.0	5.0
4-Chlorophenyl phenyl ether		< 4.7	4.7	< 5.2	5.2	< 4.8	4.8	< 4.7	4.7	< 5.0	5.0	< 5.0	5.0
4-Nitroaniline	5	< 4.7	4.7	< 5.0	5.0	< 4.8	4.8	< 4.7	4.7	< 5.0	5.0	< 5.0	5.0
4-Nitrophenol		< 1.0	1.0	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0
Acenaphthene	20	< 4.7	4.7	< 5.2	5.2	< 4.8	4.8	< 4.7	4.7	< 5.0	5.0	< 5.0	5.0
Acenaphthylene		< 0.47	0.47	< 0.52	0.52	**0.55**	0.48	< 0.47	0.47	**1.1**	0.50	< 0.50	0.50
Acetophenone		< 4.7	4.7	< 5.2	5.2	< 4.8	4.8	< 4.7	4.7	< 5.0	5.0	< 5.0	5.0
Anthracene	50	< 0.47	0.47	< 0.52	0.52	**0.58**	0.48	< 0.47	0.47	**1**	0.50	< 0.50	0.50
Atrazine		< 0.94	0.94	< 1.0	1.0	< 0.96	0.96	< 0.94	0.94	< 0.99	0.99	< 1.0	1.0
Benz(a)anthracene	0.002	**0.15**	0.02	**0.13**	0.02	**2.9**	0.02	< 0.02	0.02	**5.2**	0.02	**0.12**	0.02
Benzaldehyde		< 4.7	4.7	< 5.2	5.2	< 4.8	4.8	< 4.7	4.7	< 5.0	5.0	< 5.0	5.0
Benzo(a)pyrene		**0.13**	0.02	**0.1**	0.02	**3.6**	0.02	< 0.02	0.02	**6.5**	0.02	**0.08**	0.02
Benzo(b)fluoranthene	0.002	**0.15**	0.02	**0.1**	0.02	**3.5**	0.02	< 0.02	0.02	**6**	0.02	**0.07**	0.02
Benzo(ghi)perylene		< 0.47	0.47	< 0.52	0.52	**1.8**	0.48	< 0.47	0.47	**3.5**	0.50	< 0.50	0.50
Benzo(k)fluoranthene	0.002	**0.12**	0.02	**0.1**	0.02	**3.3**	0.02	< 0.02	0.02	**5.8**	0.02	**0.08**	0.02
Benzyl butyl phthalate	50	< 4.7	4.7	< 5.2	5.2	< 4.8	4.8	< 4.7	4.7	< 5.0	5.0	< 5.0	5.0
Bis(2-chloroethoxy)methane		< 4.7	4.7	< 5.0	5.0	< 4.8	4.8	< 4.7	4.7	< 5.0	5.0	< 5.0	5.0
Bis(2-chloroethyl)ether		< 0.47	0.47	< 0.52	0.52	< 0.48	0.48	< 0.47	0.47	< 0.50	0.50	< 0.50	0.50
Bis(2-chloroisopropyl)ether		< 4.7	4.7	< 5.2	5.2	< 4.8	4.8	< 4.7	4.7	< 5.0	5.0	< 5.0	5.0
Bis(2-ethylhexyl)phthalate	50	< 0.94	0.94	< 1.0	1.0	< 0.96	0.96	< 0.94	0.94	< 0.99	0.99	< 1.0	1.0
Caprolactam		< 4.7	4.7	< 5.2	5.2	< 4.8	4.8	< 4.7	4.7	< 5.0	5.0	< 5.0	5.0
Carbazole		< 4.7	4.7	< 5.2	5.2	< 4.8	4.8	< 4.7	4.7	< 5.0	5.0	< 5.0	5.0
Chrysene	0.002	**0.15**	0.02	**0.12**	0.02	**3.1**	0.02	< 0.02	0.02	**5.6**	0.02	**0.11**	0.02
Dibenz(a,h)anthracene		< 0.47	0.47	< 0.52	0.52	**0.48**	0.48	< 0.47	0.47	**0.99**	0.50	< 0.50	0.50
Dibenzofuran		< 4.7	4.7	< 5.0	5.0	< 4.8	4.8	< 4.7	4.7	< 5.0	5.0	< 5.0	5.0
Diethyl phthalate	50	< 4.7	4.7	**2.4**	5.2	**1.9**	4.8	< 4.7	4.7	**2.6**	5.0	< 5.0	5.0
Dimethylphthalate	50	< 4.7	4.7	< 5.2	5.2	< 4.8	4.8	< 4.7	4.7	< 5.0	5.0	< 5.0	5.0
Di-n-butylphthalate	50	< 4.7	4.7	< 5.2	5.2	< 4.8	4.8	< 4.7	4.7	< 5.0	5.0	< 5.0	5.0
Di-n-octylphthalate	50	< 4.7	4.7	< 5.2	5.2	< 4.8	4.8	< 4.7	4.7	< 5.0	5.0	< 5.0	5.0
Fluoranthene	50	< 0.47	0.47	< 0.52	0.52	**6.2**	0.48	< 0.47	0.47	**9.4**	5.0	< 0.50	0.50
Fluorene	50	< 0.47	0.47	< 0.52	0.52	< 0.48	0.48	< 0.47	0.47	**0.56**	0.50	< 0.50	0.50
Hexachlorobenzene	0.04	< 0.04	0.04	< 0.04	0.04	< 0.04	0.04	< 0.04	0.04	< 0.04	0.04	< 0.04	0.04
Hexachlorobutadiene	0.5	< 0.47	0.47	< 0.50	0.50	< 0.48	0.48	< 0.47	0.47	< 0.50	0.50	< 0.50	0.50
Hexachlorocyclopentadiene		< 4.7	4.7	< 5.0	5.0	< 4.8	4.8	< 4.7	4.7	< 5.0	5.0	< 5.0	5.0
Hexachloroethane		< 0.94	0.94	< 1.0	1.0	< 0.96	0.96	< 0.94	0.94	< 0.99	0.99	< 1.0	1.0
Indeno(1,2,3-cd)pyrene	0.002	**0.12**	0.02	**0.04**	0.02	**2.6**	0.02	< 0.02	0.02	**5.1**	0.02	< 0.02	0.02
Isophorone	50	< 4.7	4.7	< 5.2	5.2	< 4.8	4.8	< 4.7	4.7	< 5.0	5.0	< 5.0	5.0
Naphthalene	10	< 4.7	4.7	< 5.0	5.0	< 4.8	4.8	< 4.7	4.7	< 5.0	5.0	< 5.0	5.0
Nitrobenzene	0.4	< 0.38	0.38	< 0.40	0.40	< 0.38	0.38	< 0.38	0.38	< 0.40	0.40	< 0.40	0.40
N-Nitrosodimethylamine		< 0.19	0.19	< 0.21	0.21	< 0.19	0.19	< 0.19	0.19	< 0.20	0.20	< 0.20	0.20
N-Nitrosodi-n-propylamine		< 4.7	4.7	< 5.2	5.2	< 4.8	4.8	< 4.7	4.7	< 5.0	5.0	< 5.0	5.0
N-Nitrosodiphenylamine	50	< 4.7	4.7	< 5.2	5.2	< 4.8	4.8	< 4.7	4.7	< 5.0	5.0	< 5.0	5.0
Pentachlorophenol	1	< 0.47	0.47	< 0.52	0.52	< 0.48	0.48	< 0.47	0.47	< 0.50	0.50	< 0.50	0.50
Phenanthrene	50	< 0.47	0.47	< 0.52	0.52	**3.5**	0.48	< 0.47	0.47	**6**	0.50	< 0.50	0.50
Phenol	50	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0
Pyrene	50	< 0.47	0.47	< 0.52	0.52	**4.9**	0.48	< 0.47	0.47	**8.5**	0.50	< 0.50	0.50

Notes:

RL - Reporting Limit

Bold/highlighted- Indicated exceedance of the NYSDEC Groundwater Standard

Table 16
Former Pfizer Site A - C224284
243-271 Wallabout Street,
Brooklyn, New York
Remedial Investigation Laboratory Results – Groundwater Samples
Pesticides/PCBs

	Compound	NYSDEC Groundwater Quality Standards	EBC 2019 Laboratory Results											
			MW6S		MW6D		MW7		MW8S		MW8D		MW9	
			6/17/2019		6/17/2019		6/14/2019		6/14/2019		6/14/2019		6/14/2019	
			µg/L		µg/L		µg/L		µg/L		µg/L		µg/L	
		µg/L	Results	RL	Results	RL	Results	RL	Results	RL	Results	RL	Results	RL
Pesticides	4,4-DDD	0.3	< 0.005	0.005	< 0.010	0.010	< 0.005	0.005	< 0.005	0.005	< 0.005	0.005	< 0.009	0.009
	4,4-DDE	0.2	< 0.005	0.005	< 0.005	0.005	< 0.005	0.005	< 0.005	0.005	< 0.005	0.005	< 0.009	0.009
	4,4-DDT	0.11	< 0.005	0.005	< 0.005	0.005	< 0.010	0.010	< 0.005	0.005	< 0.005	0.005	< 0.009	0.009
	a-BHC	0.94	< 0.005	0.005	< 0.005	0.005	< 0.005	0.005	< 0.005	0.005	< 0.005	0.005	< 0.009	0.009
	a-Chlordane		< 0.030	0.030	< 0.020	0.020	< 0.009	0.009	< 0.009	0.009	< 0.010	0.010	< 0.047	0.047
	Alachlor	0.5	< 0.077	0.077	< 0.079	0.079	< 0.071	0.071	< 0.071	0.071	< 0.071	0.071	< 0.35	0.35
	Aldrin		< 0.003	0.003	< 0.002	0.002	< 0.001	0.001	< 0.001	0.001	< 0.001	0.001	< 0.007	0.007
	b-BHC	0.04	< 0.005	0.005	< 0.005	0.005	< 0.005	0.005	< 0.005	0.005	< 0.005	0.005	< 0.024	0.024
	Chlordane	0.05	< 0.021	0.021	< 0.021	0.021	< 0.047	0.047	< 0.047	0.047	< 0.048	0.048	< 0.094	0.094
	d-BHC	0.04	< 0.005	0.005	< 0.005	0.005	< 0.005	0.005	< 0.010	0.010	< 0.005	0.005	< 0.024	0.024
	Dieldrin	0.004	< 0.002	0.002	< 0.002	0.002	< 0.001	0.001	< 0.001	0.001	< 0.004	0.004	< 0.009	0.009
	Endosulfan I		**0.026**	0.010	< 0.011	0.011	< 0.009	0.009	< 0.015	0.015	< 0.010	0.010	< 0.047	0.047
	Endosulfan II		< 0.010	0.010	< 0.011	0.011	< 0.009	0.009	< 0.009	0.009	< 0.010	0.010	< 0.047	0.047
	Endosulfan Sulfate		< 0.020	0.020	< 0.011	0.011	< 0.009	0.009	< 0.030	0.030	< 0.010	0.010	< 0.047	0.047
	Endrin		< 0.005	0.005	< 0.005	0.005	< 0.009	0.009	< 0.009	0.009	< 0.010	0.010	< 0.009	0.009
	Endrin aldehyde	5	< 0.010	0.010	< 0.011	0.011	< 0.009	0.009	< 0.009	0.009	< 0.010	0.010	< 0.047	0.047
	Endrin ketone		< 0.010	0.010	< 0.011	0.011	< 0.009	0.009	< 0.009	0.009	< 0.010	0.010	< 0.047	0.047
	gamma-BHC	0.05	< 0.005	0.005	< 0.005	0.005	< 0.005	0.005	< 0.005	0.005	< 0.005	0.005	< 0.024	0.024
	g-Chlordane		< 0.010	0.010	< 0.011	0.011	< 0.009	0.009	< 0.009	0.009	< 0.010	0.010	< 0.047	0.047
	Heptachlor	0.04	< 0.005	0.005	< 0.005	0.005	< 0.009	0.009	< 0.009	0.009	< 0.010	0.010	< 0.009	0.009
	Heptachlor epoxide	0.03	< 0.005	0.005	< 0.005	0.005	< 0.009	0.009	< 0.009	0.009	< 0.010	0.010	< 0.009	0.009
	Methoxychlor	35	< 0.10	0.10	< 0.11	0.11	< 0.094	0.094	< 0.094	0.094	< 0.095	0.095	< 0.47	0.47
	Toxaphene		< 0.21	0.21	< 0.21	0.21	< 0.19	0.19	< 0.19	0.19	< 0.19	0.19	< 0.94	0.94
PCBs	PCB-1016	0.09	< 0.052	0.052	< 0.053	0.053	< 0.047	0.047	< 0.047	0.047	< 0.048	0.048	< 0.047	0.047
	PCB-1221	0.09	< 0.052	0.052	< 0.053	0.053	< 0.047	0.047	< 0.047	0.047	< 0.048	0.048	< 0.047	0.047
	PCB-1232	0.09	< 0.052	0.052	< 0.053	0.053	< 0.047	0.047	< 0.047	0.047	< 0.048	0.048	< 0.047	0.047
	PCB-1242	0.09	< 0.052	0.052	< 0.053	0.053	< 0.047	0.047	< 0.047	0.047	< 0.048	0.048	< 0.047	0.047
	PCB-1248	0.09	< 0.052	0.052	< 0.053	0.053	< 0.047	0.047	< 0.047	0.047	< 0.048	0.048	< 0.047	0.047
	PCB-1254	0.09	< 0.052	0.052	< 0.053	0.053	< 0.047	0.047	< 0.047	0.047	< 0.048	0.048	< 0.047	0.047
	PCB-1260	0.09	< 0.052	0.052	< 0.053	0.053	< 0.047	0.047	< 0.047	0.047	< 0.048	0.048	< 0.047	0.047
	PCB-1262		< 0.052	0.052	< 0.053	0.053	< 0.047	0.047	< 0.047	0.047	< 0.048	0.048	< 0.047	0.047
	PCB1268		< 0.052	0.052	< 0.053	0.053	< 0.047	0.047	< 0.047	0.047	< 0.048	0.048	< 0.047	0.047

Notes:
RL - Reporting Limit
Bold/highlighted- Indicated exceedance of the NYSDEC Groundwater Standard

Table 16
Former Pfizer Site A - C224284
243-271 Wallabout Street,
Brooklyn, New York
Remedial Investigation Laboratory Results – Groundwater Samples
Pesticides/PCBs

	Compound	NYSDEC Groundwater Quality Standards	EBC 2019 Laboratory Results											
			MW10		MW-11		MW12		MW Duplicate 1		MW Duplicate 2		MW Duplicate 3	
			6/14/2019		6/18/2019		6/17/2019		MW-8D		MW-12		MW-11	
			µg/L		µg/L		µg/L		µg/L		µg/L		µg/L	
		µg/L	Results	RL	Results	RL	Results	RL	Results	RL	Results	RL	Results	RL
Pesticides	4,4-DDD	0.3	< 0.094	0.094	< 0.005	0.005	< 0.021	0.021	< 0.005	0.005	< 0.021	0.021	< 0.005	0.005
	4,4-DDE	0.2	< 0.094	0.094	< 0.005	0.005	< 0.021	0.021	< 0.010	0.010	< 0.021	0.021	< 0.005	0.005
	4,4-DDT	0.11	< 0.094	0.094	< 0.005	0.005	< 0.021	0.021	< 0.005	0.005	< 0.021	0.021	< 0.005	0.005
	a-BHC	0.94	< 0.094	0.094	< 0.005	0.005	< 0.021	0.021	< 0.005	0.005	< 0.021	0.021	< 0.005	0.005
	a-Chlordane		< 0.47	0.47	< 0.010	0.010	< 0.10	0.10	< 0.009	0.009	< 0.10	0.10	< 0.009	0.009
	Alachlor	0.5	< 0.23	0.23	< 0.076	0.076	< 0.052	0.052	< 0.071	0.071	< 0.052	0.052	< 0.071	0.071
	Aldrin		< 0.094	0.094	< 0.002	0.002	< 0.021	0.021	< 0.001	0.001	< 0.021	0.021	< 0.001	0.001
	b-BHC	0.04	< 0.094	0.094	< 0.040	0.040	< 0.040	0.040	< 0.005	0.005	< 0.021	0.021	< 0.005	0.005
	Chlordane	0.05	< 0.94	0.94	< 0.020	0.020	< 0.21	0.21	< 0.047	0.047	< 0.21	0.21	< 0.047	0.047
	d-BHC	0.04	< 0.094	0.094	< 0.005	0.005	< 0.021	0.021	< 0.005	0.005	< 0.021	0.021	< 0.005	0.005
	Dieldrin	0.004	< 0.094	0.094	< 0.002	0.002	< 0.021	0.021	< 0.004	0.004	< 0.021	0.021	**0.019**	0.001
	Endosulfan I		< 0.23	0.23	< 0.010	0.010	< 0.052	0.052	< 0.009	0.009	< 0.052	0.052	< 0.009	0.009
	Endosulfan II		< 0.23	0.23	< 0.010	0.010	< 0.052	0.052	< 0.009	0.009	< 0.052	0.052	< 0.009	0.009
	Endosulfan Sulfate		< 0.23	0.23	< 0.010	0.010	< 0.052	0.052	< 0.009	0.009	< 0.052	0.052	< 0.009	0.009
	Endrin		< 0.23	0.23	< 0.005	0.005	< 0.052	0.052	< 0.009	0.009	< 0.052	0.052	< 0.009	0.009
	Endrin aldehyde	5	< 0.47	0.47	< 0.010	0.010	< 0.10	0.10	< 0.009	0.009	< 0.10	0.10	< 0.009	0.009
	Endrin ketone		< 0.47	0.47	< 0.010	0.010	< 0.10	0.10	< 0.009	0.009	< 0.10	0.10	< 0.009	0.009
	gamma-BHC	0.05	< 0.094	0.094	< 0.005	0.005	< 0.021	0.021	< 0.005	0.005	< 0.021	0.021	< 0.005	0.005
	g-Chlordane		< 0.094	0.094	< 0.010	0.010	< 0.021	0.021	< 0.009	0.009	< 0.021	0.021	< 0.009	0.009
	Heptachlor	0.04	< 0.23	0.23	< 0.005	0.005	< 0.052	0.052	< 0.009	0.009	< 0.052	0.052	< 0.009	0.009
	Heptachlor epoxide	0.03	< 0.23	0.23	< 0.005	0.005	< 0.052	0.052	< 0.009	0.009	< 0.052	0.052	< 0.009	0.009
	Methoxychlor	35	< 4.7	4.7	< 0.10	0.10	< 1.0	1.0	< 0.094	0.094	< 1.0	1.0	< 0.094	0.094
	Toxaphene		< 9.4	9.4	< 0.20	0.20	< 2.1	2.1	< 0.19	0.19	< 2.1	2.1	< 0.19	0.19
PCBs	PCB-1016	0.09	< 0.047	0.047	< 0.052	0.052	< 0.053	0.053	< 0.047	0.047	< 0.053	0.053	< 0.054	0.054
	PCB-1221	0.09	< 0.047	0.047	< 0.052	0.052	< 0.053	0.053	< 0.047	0.047	< 0.053	0.053	< 0.054	0.054
	PCB-1232	0.09	< 0.047	0.047	< 0.052	0.052	< 0.053	0.053	< 0.047	0.047	< 0.053	0.053	< 0.054	0.054
	PCB-1242	0.09	< 0.047	0.047	< 0.052	0.052	< 0.053	0.053	< 0.047	0.047	< 0.053	0.053	< 0.054	0.054
	PCB-1248	0.09	< 0.047	0.047	< 0.052	0.052	< 0.053	0.053	< 0.047	0.047	< 0.053	0.053	< 0.054	0.054
	PCB-1254	0.09	< 0.047	0.047	< 0.052	0.052	< 0.053	0.053	< 0.047	0.047	< 0.053	0.053	< 0.054	0.054
	PCB-1260	0.09	< 0.047	0.047	< 0.052	0.052	< 0.053	0.053	< 0.047	0.047	< 0.053	0.053	< 0.054	0.054
	PCB-1262		< 0.047	0.047	< 0.052	0.052	< 0.053	0.053	< 0.047	0.047	< 0.053	0.053	< 0.054	0.054
	PCB1268		< 0.047	0.047	< 0.052	0.052	< 0.053	0.053	< 0.047	0.047	< 0.053	0.053	< 0.054	0.054

Notes:
RL - Reporting Limit
Bold/highlighted- Indicated exceedance of the NYSDEC Groundwater Stand

Table 17
Former Pfizer Site A - C224284
243-271 Wallabout Street,
Brooklyn, New York
Remedial Investigation Laboratory Results – Groundwater Samples
TAL Metals

Compound	NYSDEC Groundwater Quality Standards	EBC 2019 Laboratory Results											
		MW6S		MW6D		MW7		MW8S		MW8D		MW9	
		6/17/2019		6/17/2019		6/14/2019		6/14/2019		6/14/2019		6/14/2019	
	mg/L	mg/L		mg/L		mg/L		mg/L		mg/L		mg/L	
		Results	RL	Results	RL	Results	RL	Results	RL	Results	RL	Results	RL
Aluminum	0.1	**29.8**	0.20	**1.83**	0.020	**11.5**	0.020	**13.1**	0.020	**0.586**	0.020	**26.6**	0.020
Antimony	0.003	**0.0014**	0.0030	< 0.0030	0.0030	**0.001**	0.0030	**0.0039**	0.0030	< 0.0030	0.0030	**0.0012**	0.0030
Arsenic	0.025	**0.015**	0.004	**0.006**	0.004	**0.019**	0.004	**0.014**	0.004	**0.004**	0.004	**0.028**	0.004
Barium	1	**0.516**	0.010	**0.1**	0.010	**0.32**	0.010	**0.428**	0.010	**0.066**	0.010	**0.595**	0.010
Beryllium	0.003	**0.002**	0.001	< 0.001	0.001	< 0.001	0.001	< 0.001	0.001	< 0.001	0.001	**0.001**	0.001
Cadmium	0.005	**0.002**	0.004	**0.001**	0.004	**0.001**	0.004	**0.001**	0.004	< 0.004	0.004	**0.003**	0.004
Calcium		**336**	0.10	**166**	0.10	**218**	0.10	**249**	0.10	**319**	0.10	**145**	0.010
Chromium	0.05	**0.085**	0.001	**0.006**	0.001	**0.033**	0.001	**0.042**	0.001	**0.002**	0.001	**0.089**	0.001
Cobalt		**0.016**	0.005	**0.003**	0.005	**0.01**	0.005	**0.011**	0.005	< 0.005	0.005	**0.019**	0.005
Copper	0.2	**0.06**	0.005	**0.005**	0.005	**0.045**	0.005	**0.104**	0.005	**0.002**	0.005	**0.097**	0.005
Iron	0.3	**39.2**	0.01	**26.3**	0.01	**32.7**	0.01	**16.6**	0.01	**14.9**	0.01	**49.6**	0.01
Lead	0.025	**0.043**	0.002	**0.007**	0.002	**0.101**	0.002	**0.526**	0.002	< 0.002	0.002	**0.508**	0.002
Magnesium	35	**24.1**	0.010	**49.8**	0.010	**24.8**	0.010	**23.3**	0.010	**116**	0.10	**19.2**	0.010
Manganese	0.3	**1.08**	0.005	**1.39**	0.005	**1.59**	0.005	**0.434**	0.005	**0.335**	0.005	**2.05**	0.050
Mercury	0.0007	**0.0004**	0.0002	< 0.0002	0.0002	< 0.0002	0.0002	**0.0014**	0.0002	< 0.0002	0.0002	**0.0008**	0.0002
Nickel	0.1	**0.049**	0.002	**0.006**	0.002	**0.019**	0.002	**0.029**	0.002	< 0.002	0.002	**0.054**	0.002
Potassium		**17.7**	0.1	**7.7**	0.1	**21.5**	0.1	**18.6**	0.1	**25.2**	0.1	**17.4**	0.1
Selenium	0.01	< 0.010	0.010	< 0.010	0.010	< 0.010	0.010	< 0.010	0.010	< 0.010	0.010	< 0.010	0.010
Silver	0.05	< 0.005	0.005	< 0.005	0.005	< 0.005	0.005	< 0.005	0.005	< 0.005	0.005	< 0.005	0.005
Sodium	20	**578**	10	**38.7**	0.10	**185**	1.0	**38.2**	0.10	**95.1**	1.0	**16.9**	0.10
Thallium	0.0005	< 0.0005	0.0005	< 0.0005	0.0005	< 0.0005	0.0005	< 0.0005	0.0005	< 0.0005	0.0005	< 0.0005	0.0005
Vanadium		**0.096**	0.010	**0.005**	0.010	**0.041**	0.010	**0.047**	0.010	< 0.010	0.010	**0.099**	0.010
Zinc	5	**0.189**	0.010	**0.02**	0.010	**0.189**	0.010	**0.417**	0.010	**0.009**	0.010	**0.41**	0.010

Notes:
RL - Reporting Limit
Bold/highlighted- Indicated exceedance of the NYSDEC Groundwater Standard

Table 17
Former Pfizer Site A - C224284
243-271 Wallabout Street,
Brooklyn, New York
Remedial Investigation Laboratory Results – Groundwater Samples
TAL Metals

Compound	NYSDEC Groundwater Quality Standards	EBC 2019 Laboratory Results											
		MW10		MW-11		MW12		MW Duplicate 1		MW Duplicate 2		MW Duplicate 3	
		6/14/2019		6/18/2019		6/17/2019		MW-8D		MW-12		MW-11	
	mg/L	mg/L		mg/L		mg/L		mg/L		mg/L		mg/L	
		Results	RL	Results	RL	Results	RL	Results	RL	Results	RL	Results	RL
Aluminum	0.1	**4.69**	0.020	**10.6**	0.020	**11**	0.020	**0.713**	0.020	**42.1**	0.20	**18**	0.020
Antimony	0.003	**0.0022**	0.0030	**0.0164**	0.0030	**0.0032**	0.0030	< 0.0030	0.0030	**0.0056**	0.0030	**0.0158**	0.0030
Arsenic	0.025	**0.005**	0.004	**0.008**	0.004	**0.012**	0.004	**0.004**	0.004	**0.049**	0.004	**0.012**	0.004
Barium	1	**0.038**	0.010	**0.13**	0.010	**0.323**	0.010	**0.069**	0.010	**1.3**	0.010	**0.19**	0.010
Beryllium	0.003	< 0.001	0.001	< 0.001	0.001	< 0.001	0.001	< 0.001	0.001	**0.002**	0.001	**0.001**	0.001
Cadmium	0.005	< 0.004	0.004	**0.001**	0.004	**0.001**	0.004	< 0.004	0.004	**0.004**	0.004	**0.002**	0.004
Calcium		**25.5**	0.010	**185**	0.10	**244**	0.10	**330**	0.10	**250**	0.10	**218**	0.10
Chromium	0.05	**0.01**	0.001	**0.031**	0.001	**0.028**	0.001	**0.002**	0.001	**0.111**	0.001	**0.057**	0.001
Cobalt		**0.003**	0.005	**0.006**	0.005	**0.009**	0.005	< 0.005	0.005	**0.033**	0.005	**0.011**	0.005
Copper	0.2	**0.022**	0.005	**0.026**	0.005	**0.08**	0.005	**0.003**	0.005	**0.353**	0.005	**0.047**	0.005
Iron	0.3	**3.82**	0.01	**13.1**	0.01	**14.6**	0.01	**15.1**	0.01	**60.9**	0.01	**21.1**	0.01
Lead	0.025	**0.025**	0.002	**0.02**	0.002	**0.482**	0.002	< 0.002	0.002	**2.4**	0.020	**0.041**	0.002
Magnesium	35	**1.38**	0.010	**27.7**	0.010	**21.1**	0.010	**117**	0.10	**25.9**	0.010	**34.3**	0.010
Manganese	0.3	**0.045**	0.005	**0.407**	0.005	**1.29**	0.005	**0.345**	0.005	**1.49**	0.005	**0.853**	0.005
Mercury	0.0007	**0.0002**	0.0002	< 0.0002	0.0002	**0.0023**	0.0002	< 0.0002	0.0002	**0.0023**	0.0002	**0.0001**	0.0002
Nickel	0.1	**0.007**	0.002	**0.018**	0.004	**0.019**	0.002	< 0.002	0.002	**0.094**	0.002	**0.031**	0.004
Potassium		**17.4**	0.1	**12.3**	0.1	**19.2**	0.1	**25**	0.1	**19.8**	0.1	**13.2**	0.1
Selenium	0.01	< 0.010	0.010	**0.003**	0.010	**0.002**	0.010	< 0.010	0.010	**0.002**	0.010	**0.003**	0.010
Silver	0.05	< 0.005	0.005	< 0.005	0.005	< 0.005	0.005	< 0.005	0.005	< 0.005	0.005	< 0.005	0.005
Sodium	20	**15**	0.10	**30.5**	1.0	**54.8**	1.0	**97.8**	1.0	**44.9**	1.0	**30.9**	1.0
Thallium	0.0005	< 0.0005	0.0005	< 0.0005	0.0005	< 0.0005	0.0005	< 0.0005	0.0005	< 0.0005	0.0005	< 0.0005	0.0005
Vanadium		**0.053**	0.010	**0.025**	0.010	**0.037**	0.010	< 0.010	0.010	**0.139**	0.010	**0.044**	0.010
Zinc	5	**0.093**	0.010	**0.617**	0.010	**0.223**	0.010	**0.009**	0.010	**1.06**	0.010	**0.755**	0.010

Notes:

RL - Reporting Limit

Bold/highlighted- Indicated exceedance of the NYSDEC Groundwat

Table 18
Former Pfizer Site A - C224284
243-271 Wallabout Street,
Brooklyn, New York
Remedial Investigation Laboratory Results – Groundwater Samples
TAL Filtered Metals

Compound	NYSDEC Groundwater Quality Standards	EBC 2019 Laboratory Results											
		MW6S		MW6D		MW7		MW8S		MW8D		MW9	
		6/17/2019		6/17/2019		6/14/2019		6/14/2019		6/14/2019		6/14/2019	
		mg/L		mg/L		mg/L		mg/L		mg/L		mg/L	
	mg/L	Results	RL	Results	RL	Results	RL	Results	RL	Results	RL	Results	RL
Aluminum	0.1	**0.083**	0.011	**0.048**	0.011	**0.065**	0.011	**0.07**	0.011	**0.073**	0.011	**0.054**	0.011
Antimony	0.003	**0.0011**	0.0003	< 0.0016	0.0016	**0.0009**	0.0003	**0.0039**	0.0003	< 0.0003	0.0003	**0.0005**	0.0003
Arsenic	0.025	**0.003**	0.003	**0.003**	0.003	**0.003**	0.003	< 0.003	0.003	**0.003**	0.003	**0.003**	0.003
Barium	1	**0.35**	0.011	**0.073**	0.011	**0.16**	0.011	**0.165**	0.011	**0.048**	0.011	**0.086**	0.011
Beryllium	0.003	< 0.001	0.001	< 0.001	0.001	< 0.001	0.001	< 0.001	0.001	< 0.001	0.001	< 0.001	0.001
Cadmium	0.005	< 0.004	0.004	< 0.004	0.004	< 0.004	0.004	< 0.004	0.004	< 0.004	0.004	< 0.004	0.004
Calcium		**287**	1.1	**147**	0.01	**225**	0.11	**250**	0.11	**304**	0.11	**129**	0.01
Chromium	0.05	< 0.001	0.001	< 0.001	0.001	< 0.001	0.001	< 0.001	0.001	< 0.001	0.001	< 0.001	0.001
Cobalt		**0.002**	0.005	**0.002**	0.005	**0.002**	0.005	**0.003**	0.005	< 0.005	0.005	**0.002**	0.005
Copper	0.2	**0.002**	0.005	< 0.005	0.005	**0.004**	0.005	**0.005**	0.005	< 0.005	0.005	**0.005**	0.005
Iron	0.3	**0.04**	0.01	**2.05**	0.01	< 0.01	0.01	< 0.01	0.01	**0.05**	0.01	**0.02**	0.01
Lead	0.025	< 0.002	0.002	< 0.002	0.002	< 0.002	0.002	< 0.002	0.002	< 0.002	0.002	< 0.002	0.002
Magnesium	35	**17.7**	0.01	**43.9**	0.01	**20.4**	0.01	**20.8**	0.01	**117**	0.11	**10.9**	0.01
Manganese	0.3	**0.808**	0.005	**1.22**	0.005	**1.23**	0.005	**0.268**	0.005	**0.312**	0.005	**1.49**	0.005
Mercury	0.0007	< 0.0002	0.0002	< 0.0002	0.0002	< 0.0002	0.0002	< 0.0002	0.0002	< 0.0002	0.0002	< 0.0002	0.0002
Nickel	0.1	**0.004**	0.004	**0.004**	0.004	< 0.004	0.004	**0.006**	0.004	< 0.004	0.004	< 0.004	0.004
Potassium		**15.2**	0.1	**7.6**	0.1	**19.2**	0.1	**16.8**	0.1	**24.4**	0.1	**14.3**	0.1
Selenium	0.01	< 0.01	0.01	**0.001**	0.011	< 0.010	0.010	< 0.010	0.010	< 0.010	0.010	< 0.010	0.010
Silver	0.05	< 0.005	0.005	< 0.005	0.005	< 0.005	0.005	< 0.005	0.005	< 0.005	0.005	< 0.005	0.005
Sodium	20	**551**	11	**37.6**	0.11	**193**	1.1	**37**	0.11	**92.9**	1.1	**15.2**	0.11
Thallium	0.0005	< 0.0003	0.0003	< 0.0003	0.0003	< 0.0003	0.0003	< 0.0003	0.0003	< 0.0003	0.0003	< 0.0003	0.0003
Vanadium		**0.002**	0.011	< 0.011	0.011	< 0.011	0.011	**0.002**	0.011	< 0.011	0.011	< 0.011	0.011
Zinc	5	**0.005**	0.011	**0.004**	0.011	**0.021**	0.011	**0.119**	0.011	**0.002**	0.011	**0.015**	0.011

Notes:
RL - Reporting Limit
Bold/highlighted- Indicated exceedance of the NYSDEC Groundwater Standard

Table 18
Former Pfizer Site A - C224284
243-271 Wallabout Street,
Brooklyn, New York
Remedial Investigation Laboratory Results – Groundwater Samples
TAL Filtered Metals

Compound	NYSDEC Groundwater Quality Standards	EBC 2019 Laboratory Results											
		MW10		MW-11		MW12		MW Duplicate 1		MW Duplicate 2		MW Duplicate 3	
		6/14/2019		6/18/2019		6/17/2019		MW-8D		MW-12		MW-11	
		mg/L		mg/L		mg/L		mg/L		mg/L		mg/L	
	mg/L	Results	RL	Results	RL	Results	RL	Results	RL	Results	RL	Results	RL
Aluminum	0.1	**0.569**	0.011	**0.071**	0.011	**0.064**	0.011	**0.079**	0.011	**0.064**	0.011	**0.063**	0.011
Antimony	0.003	**0.002**	0.0003	**0.0161**	0.0003	**0.0022**	0.0003	< 0.0003	0.0003	**0.0021**	0.0003	**0.0159**	0.0003
Arsenic	0.025	**0.003**	0.003	**0.004**	0.003	**0.002**	0.003	**0.001**	0.003	**0.003**	0.003	**0.005**	0.003
Barium	1	**0.006**	0.011	**0.062**	0.011	**0.085**	0.011	**0.049**	0.011	**0.087**	0.011	**0.062**	0.011
Beryllium	0.003	< 0.001	0.001	< 0.001	0.001	< 0.001	0.001	< 0.001	0.001	< 0.001	0.001	< 0.001	0.001
Cadmium	0.005	< 0.004	0.004	< 0.004	0.004	< 0.004	0.004	< 0.004	0.004	< 0.004	0.004	< 0.004	0.004
Calcium		**19.8**	0.01	**164**	0.11	**207**	0.11	**284**	0.11	**211**	0.11	**163**	0.11
Chromium	0.05	**0.001**	0.001	**0.002**	0.001	< 0.001	0.001	< 0.001	0.001	< 0.001	0.001	**0.002**	0.001
Cobalt		< 0.005	0.005	< 0.005	0.005	**0.003**	0.005	< 0.005	0.005	**0.003**	0.005	< 0.005	0.005
Copper	0.2	**0.008**	0.005	**0.004**	0.005	**0.004**	0.005	**0.001**	0.005	**0.004**	0.005	**0.003**	0.005
Iron	0.3	**0.03**	0.01	< 0.01	0.01	< 0.01	0.01	**0.25**	0.01	< 0.01	0.01	< 0.01	0.01
Lead	0.025	< 0.002	0.002	< 0.002	0.002	**0.006**	0.002	< 0.002	0.002	**0.006**	0.002	< 0.002	0.002
Magnesium	35	**0.31**	0.01	**20.1**	0.01	**17.8**	0.01	**105**	0.11	**17.4**	0.01	**19.7**	0.01
Manganese	0.3	**0.001**	0.005	**0.034**	0.005	**1.05**	0.005	**0.318**	0.005	**1.02**	0.005	**0.045**	0.005
Mercury	0.0007	< 0.0002	0.0002	< 0.0002	0.0002	< 0.0002	0.0002	< 0.0002	0.0002	< 0.0002	0.0002	< 0.0002	0.0002
Nickel	0.1	< 0.004	0.004	**0.004**	0.004	< 0.004	0.004	< 0.004	0.004	< 0.004	0.004	**0.004**	0.004
Potassium		**16.3**	0.1	**10.1**	0.1	**17.1**	0.1	**24.7**	0.1	**17.7**	0.1	**10.6**	0.1
Selenium	0.01	< 0.010	0.010	**0.003**	0.002	**0.001**	0.002	< 0.010	0.010	**0.001**	0.002	**0.004**	0.002
Silver	0.05	< 0.005	0.005	< 0.005	0.005	< 0.005	0.005	< 0.005	0.005	< 0.005	0.005	< 0.005	0.005
Sodium	20	**14.3**	0.11	**29.8**	1.1	**50.7**	1.1	**82.9**	1.1	**52.3**	1.1	**27.9**	0.11
Thallium	0.0005	< 0.0003	0.0003	< 0.0003	0.0003	< 0.0003	0.0003	< 0.0003	0.0003	< 0.0003	0.0003	< 0.0003	0.0003
Vanadium		**0.043**	0.011	**0.005**	0.011	**0.002**	0.011	< 0.011	0.011	**0.003**	0.011	**0.005**	0.011
Zinc	5	< 0.011	0.011	**0.402**	0.011	**0.039**	0.011	**0.002**	0.011	**0.038**	0.011	**0.347**	0.011

Notes:

RL - Reporting Limit

Bold/highlighted- Indicated exceedance of the NYSDEC Groundwat

Table 19
Former Pfizer Site A - C224284
243-271 Wallabout Street,
Brooklyn, New York
Remedial Investigation Laboratory Results – Groundwater Samples
PFAs

Compound	EBC 2019 Laboratory Results											
	MW6S		MW6D		MW7		MW8S		MW8D		MW9	
	6/17/2019		6/17/2019		6/14/2019		6/14/2019		6/14/2019		6/14/2019	
	ng/L		ng/L		ng/L		ng/L		ng/L		ng/L	
	Results	DL	Results	DL	Results	DL	Results	DL	Results	DL	Results	DL
Perfluorobutanoic Acid (PFBA)	**17.1**	2.02	**9.55**	2.02	**32.7**	1.95	**58.5**	1.92	**8.12**	2	**34.6**	1.93
Perfluoropentanoic Acid (PFPeA)	**35.5**	2.02	**8.04**	2.02	**43.4**	1.95	**108**	1.92	**5.17**	2	**38.7**	1.93
Perfluorobutanesulfonic Acid (PFBS)	**4.35**	2.02	**1.97J**	2.02	**4.03**	1.95	**6.4**	1.92	ND	2	**4.04**	1.93
Perfluorohexanoic Acid (PFHxA)	**36.6**	2.02	**8.05**	2.02	**40.5**	1.95	**105**	1.92	**6.12**	2	**34**	1.93
Perfluoroheptanoic Acid (PFHpA)	**43.2**	2.02	**7.53**	2.02	**48.2**	1.95	**136**	1.92	**5.82**	2	**24.1**	1.93
Perfluorohexanesulfonic Acid (PFHxS)	**4.3**	2.02	**1.90J**	2.02	**13.9**	1.95	**42.3**	1.92	ND	2	**12**	1.93
Perfluorooctanoic Acid (PFOA)	**82.8**	2.02	**35.9**	2.02	**111**	1.95	**204**	1.92	**7.76**	2	**107**	1.93
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND	2.02	ND	2.02	ND	1.95	ND	1.92	ND	2	ND	1.93
Perfluoroheptanesulfonic Acid (PFHpS)	ND	2.02	ND	2.02	ND	1.95	ND	1.92	ND	2	**1.35J**	1.93
Perfluorononanoic Acid (PFNA)	**12.7**	2.02	ND	2.02	**0.605J**	1.95	**1.58J**	1.92	ND	2	**2.93**	1.93
Perfluorooctanesulfonic Acid (PFOS)	**14.4**	2.02	ND	2.02	**5.42**	1.95	**7.2**	1.92	ND	2	**55.4**	1.93
Perfluorodecanoic Acid (PFDA)	**0.794J**	2.02	ND	2.02	ND	1.95	ND	1.92	ND	2	**0.869J**	1.93
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND	2.02	ND	2.02	ND	1.95	ND	1.92	ND	2	ND	1.93
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND	2.02	ND	2.02	ND	1.95	ND	1.92	ND	2	ND	1.93
Perfluoroundecanoic Acid (PFUnA)	ND	2.02	ND	2.02	ND	1.95	ND	1.92	ND	2	**1.47J**	1.93
Perfluorodecanesulfonic Acid (PFDS)	ND	2.02	ND	2.02	ND	1.95	ND	1.92	ND	2	ND	1.93
Perfluorooctanesulfonamide (FOSA)	ND	2.02	ND	2.02	ND	1.95	ND	1.92	ND	2	ND	1.93
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND	2.02	ND	2.02	ND	1.95	ND	1.92	ND	2	ND	1.93
Perfluorododecanoic Acid (PFDoA)	ND	2.02	ND	2.02	ND	1.95	ND	1.92	ND	2	ND	1.93
Perfluorotridecanoic Acid (PFTrDA)	ND	2.02	ND	2.02	ND	1.95	ND	1.92	ND	2	ND	1.93
Perfluorotetradecanoic Acid (PFTA)	ND	2.02	ND	2.02	ND	1.95	ND	1.92	ND	2	ND	1.93
Combined PFOA and PFOS	**97.2**		**35.9**		**116**		**211**		**7.76**		**162**	
Combined Total Detections	**250.95**		**69.07**		**299.15**		**667.4**		**32.99**		**312.77**	

Notes:

DL- Detection Limit

J- The value is estimated.

ND- Not Detected

The USEPA Health Advisory Level for drinking water is 70 ng/L (ppt) for combined detections of PFOA and PFOs

Table 19
Former Pfizer Site A - C224284
243-271 Wallabout Street,
Brooklyn, New York
Remedial Investigation Laboratory Results – Groundwater Samples
PFAs

Compound	EBC 2019 Laboratory Results											
	MW10		MW-11		MW12		MW Duplicate 1		MW Duplicate 2		Field Blank	
	6/14/2019		6/18/2019		6/17/2019		MW-8D		MW-12		-	
	ng/L		ng/L		ng/L		ng/L		ng/L		ng/L	
	Results	DL	Results	DL	Results	DL	Results	DL	Results	DL	Results	DL
Perfluorobutanoic Acid (PFBA)	**46.8**	1.94	**16.3**	1.85	**46.7**	1.99	**8.26**	2.04	**46.3**	2.06	ND	1.73
Perfluoropentanoic Acid (PFPeA)	**3.24**	1.94	**16.7**	1.85	**96.8**	1.99	**5.26**	2.04	**94.7**	2.06	ND	1.73
Perfluorobutanesulfonic Acid (PFBS)	ND	1.94	**4.15**	1.85	**5.86**	1.99	ND	2.04	**5.86**	2.06	ND	1.73
Perfluorohexanoic Acid (PFHxA)	**7.09**	1.94	**16.9**	1.85	**99.2**	1.99	**6.44**	2.04	**96.9**	2.06	ND	1.73
Perfluoroheptanoic Acid (PFHpA)	**3.93**	1.94	**15.4**	1.85	**112**	1.99	**6.07**	2.04	**108**	2.06	ND	1.73
Perfluorohexanesulfonic Acid (PFHxS)	ND	1.94	**6.87**	1.85	**66.7**	1.99	ND	2.04	**61.8**	2.06	ND	1.73
Perfluorooctanoic Acid (PFOA)	**6.04**	1.94	**92.7**	1.85	**142**	1.99	**8.02**	2.04	**130**	2.06	ND	1.73
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	**1.32J**	1.94	ND	1.85	ND	1.99	ND	2.04	ND	2.06	ND	1.73
Perfluoroheptanesulfonic Acid (PFHpS)	ND	1.94	**0.867J**	1.85	**1.37J**	1.99	ND	2.04	**1.54J**	2.06	ND	1.73
Perfluorononanoic Acid (PFNA)	**2**	1.94	**1.25J**	1.85	**7.87**	1.99	ND	2.04	**6.98**	2.06	ND	1.73
Perfluorooctanesulfonic Acid (PFOS)	**1.25J**	1.94	**69.6**	1.85	**154**	1.99	ND	2.04	**133**	2.06	ND	1.73
Perfluorodecanoic Acid (PFDA)	**2.17**	1.94	ND	1.85	ND	1.99	ND	2.04	ND	2.06	ND	1.73
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND	1.94	ND	1.85	ND	1.99	ND	2.04	ND	2.06	ND	1.73
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND	1.94	ND	1.85	ND	1.99	ND	2.04	ND	2.06	ND	1.73
Perfluoroundecanoic Acid (PFUnA)	**0.424J**	1.94	ND	1.85	ND	1.99	ND	2.04	ND	2.06	ND	1.73
Perfluorodecanesulfonic Acid (PFDS)	ND	1.94	ND	1.85	ND	1.99	ND	2.04	ND	2.06	ND	1.73
Perfluorooctanesulfonamide (FOSA)	ND	1.94	ND	1.85	ND	1.99	ND	2.04	ND	2.06	ND	1.73
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND	1.94	ND	1.85	ND	1.99	ND	2.04	ND	2.06	ND	1.73
Perfluorododecanoic Acid (PFDoA)	ND	1.94	ND	1.85	ND	1.99	ND	2.04	ND	2.06	ND	1.73
Perfluorotridecanoic Acid (PFTrDA)	ND	1.94	ND	1.85	ND	1.99	ND	2.04	ND	2.06	ND	1.73
Perfluorotetradecanoic Acid (PFTA)	ND	1.94	ND	1.85	ND	1.99	ND	2.04	ND	2.06	ND	1.73
Combined PFOA and PFOS	**7.29J**		**162**		**296**		**8.02**		**263**		**ND**	
Combined Total Detections	**71.27**		**238.62**		**731.13**		**34.05**		**683.54**		**0**	

Notes:

DL- Detection Limit

J- The value is estimated.

ND- Not Detected

The USEPA Health Advisory Level for drinking water is 70 ng/L (ppt) for combined detections of PFOA and PFOs

Table 20
Former Pfizer Site A - C224284
243-271 Wallabout Street,
Brooklyn, New York
Remedial Investigation Laboratory Results – Soil Vapor Samples
Volatile Organic Compounds
On Site Locations

COMPOUNDS	NYSDOH Maximum Sub-Slab Value ($\mu g/m^3$) [a]	NYSDOH Soil OutdoorBackground Levels ($\mu g/m^3$) [b]	EBC 2019 Laboratory Results											
			SG-1		SG-2		SG-3		SG-4		SG-5		SG-6	
			6/7/2019		6/7/2019		6/7/2019		6/14/2019		6/7/2019		6/7/2019	
			(µg/m3)		(µg/m3)		(µg/m3)		(µg/m3)		(µg/m3)		(µg/m3)	
			Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL
1,1,1,2-Tetrachloroethane			< 1.00	1.00	< 1.00	1.00	< 1.00	1.00	< 1.00	1.00	< 1.00	1.00	< 1.00	1.00
1,1,1-Trichloroethane	100	<2.0 - 2.8	**1.8**	1.00	**2.33**	1.00	**4.81**	1.00	< 1.00	1.00	**1.7**	1.00	< 1.00	1.00
1,1,2,2-Tetrachloroethane		<1.5	< 1.00	1.00	< 1.00	1.00	< 1.00	1.00	< 1.00	1.00	< 1.00	1.00	< 1.00	1.00
1,1,2-Trichloroethane		<1.0	< 1.00	1.00	< 1.00	1.00	< 1.00	1.00	< 1.00	1.00	< 1.00	1.00	< 1.00	1.00
1,1-Dichloroethane		<1.0	< 1.00	1.00	< 1.00	1.00	< 1.00	1.00	< 1.00	1.00	< 1.00	1.00	< 1.00	1.00
1,1-Dichloroethene		<1.0	< 0.20	0.20	< 0.20	0.20	< 0.20	0.20	< 0.20	0.20	< 0.20	0.20	< 0.20	0.20
1,2,4-Trichlorobenzene		NA	< 1.00	1.00	< 1.00	1.00	< 1.00	1.00	< 1.00	1.00	< 1.00	1.00	< 1.00	1.00
1,2,4-Trimethylbenzene		<1.0	**16.4**	1.00	**22.2**	1.00	**27.1**	1.00	**10.7**	1.00	**25.2**	1.00	**20.5**	1.00
1,2-Dibromoethane		<1.5	< 1.00	1.00	< 1.00	1.00	< 1.00	1.00	< 1.00	1.00	< 1.00	1.00	< 1.00	1.00
1,2-Dichlorobenzene		<2.0	< 1.00	1.00	< 1.00	1.00	< 1.00	1.00	< 1.00	1.00	< 1.00	1.00	< 1.00	1.00
1,2-Dichloroethane		<1.0	< 1.00	1.00	< 1.00	1.00	< 1.00	1.00	< 1.00	1.00	< 1.00	1.00	< 1.00	1.00
1,2-Dichloropropane			< 1.00	1.00	< 1.00	1.00	< 1.00	1.00	< 1.00	1.00	< 1.00	1.00	< 1.00	1.00
1,2-Dichlorotetrafluoroethane			< 1.00	1.00	< 1.00	1.00	< 1.00	1.00	< 1.00	1.00	< 1.00	1.00	< 1.00	1.00
1,3,5-Trimethylbenzene		<1.0	**5.01**	1.00	**9.78**	1.00	**7.91**	1.00	**3.66**	1.00	**7.42**	1.00	**5.9**	1.00
1,3-Butadiene		NA	< 1.00	1.00	< 1.00	1.00	< 1.00	1.00	< 1.00	1.00	< 1.00	1.00	< 1.00	1.00
1,3-Dichlorobenzene		<2.0	**6.73**	1.00	**10.8**	1.00	**7.99**	1.00	**1.35**	1.00	**14.7**	1.00	**12**	1.00
1,4-Dichlorobenzene		NA	< 1.00	1.00	< 1.00	1.00	< 1.00	1.00	< 1.00	1.00	< 1.00	1.00	< 1.00	1.00
1,4-Dioxane			< 1.00	1.00	< 1.00	1.00	< 1.00	1.00	< 1.00	1.00	< 1.00	1.00	< 1.00	1.00
2-Hexanone			< 1.00	1.00	< 1.00	1.00	< 1.00	1.00	< 1.00	1.00	< 1.00	1.00	< 1.00	1.00
4-Ethyltoluene		NA	**15.3**	1.00	**23.2**	1.00	**25.6**	1.00	**6.39**	1.00	**24.2**	1.00	**19.4**	1.00
4-Isopropyltoluene			< 1.00	1.00	< 1.00	1.00	< 1.00	1.00	**1.53**	1.00	< 1.00	1.00	< 1.00	1.00
4-Methyl-2-pentanone			**7.37**	1.00	< 1.00	1.00	**7.49**	1.00	< 1.00	1.00	**8.84**	1.00	**6.76**	1.00
Acetone		NA	**280**	5.01	**560**	9.99	**513**	9.99	**301**	9.99	**237**	5.01	**318**	5.01
Acrylonitrile			< 1.00	1.00	< 1.00	1.00	< 1.00	1.00	< 1.00	1.00	< 1.00	1.00	< 1.00	1.00
Benzene		<1.6 - 4.7	**2.48**	1.00	**73.4**	1.00	**5.01**	1.00	**6.26**	1.00	**3.19**	1.00	**2.69**	1.00
Benzyl Chloride		NA	< 1.00	1.00	< 1.00	1.00	< 1.00	1.00	< 1.00	1.00	< 1.00	1.00	< 1.00	1.00
Bromodichloromethane		<5.0	< 1.00	1.00	< 1.00	1.00	< 1.00	1.00	< 1.00	1.00	< 1.00	1.00	**2.24**	1.00
Bromoform		<1.0	< 1.00	1.00	< 1.00	1.00	< 1.00	1.00	< 1.00	1.00	< 1.00	1.00	< 1.00	1.00
Bromomethane		<1.0	< 1.00	1.00	< 1.00	1.00	< 1.00	1.00	< 1.00	1.00	< 1.00	1.00	< 1.00	1.00
Carbon Disulfide		NA	**1.34**	1.00	**3.64**	1.00	< 1.00	1.00	**4.01**	1.00	< 1.00	1.00	< 1.00	1.00
Carbon Tetrachloride	5	<3.1	**12.6**	0.20	< 0.20	0.20	**0.21**	0.20	**0.56**	0.20	**0.31**	0.20	**0.29**	0.20
Chlorobenzene		<2.0	< 1.00	1.00	< 1.00	1.00	< 1.00	1.00	< 1.00	1.00	< 1.00	1.00	< 1.00	1.00
Chloroethane		NA	< 1.00	1.00	< 1.00	1.00	< 1.00	1.00	< 1.00	1.00	< 1.00	1.00	< 1.00	1.00
Chloroform		<2.4	**36.4**	1.00	**6.2**	1.00	< 1.00	1.00	< 1.00	1.00	**3.43**	1.00	**126**	1.00
Chloromethane		<1.0 - 1.4	< 1.00	1.00	< 1.00	1.00	< 1.00	1.00	< 1.00	1.00	< 1.00	1.00	< 1.00	1.00
cis-1,2-Dichloroethene		<1.0	< 0.20	0.20	< 0.20	0.20	< 0.20	0.20	< 0.20	0.20	< 0.20	0.20	< 0.20	0.20
cis-1,3-Dichloropropene		NA	< 1.00	1.00	< 1.00	1.00	< 1.00	1.00	< 1.00	1.00	< 1.00	1.00	< 1.00	1.00
Cyclohexane		NA	< 1.00	1.00	**5.09**	1.00	**1.35**	1.00	< 1.00	1.00	**1.18**	1.00	**1.31**	1.00
Dibromochloromethane		<5.0	< 1.00	1.00	< 1.00	1.00	< 1.00	1.00	< 1.00	1.00	< 1.00	1.00	< 1.00	1.00
Dichlorodifluromethane		NA	**1.32**	1.00	**1.52**	1.00	**1.56**	1.00	**1.53**	1.00	**1.59**	1.00	**1.4**	1.00
Ethanol			**97.9**	5.01	**68.9**	1.00	**118**	10.0	**81.9**	10.0	**115**	5.01	**91.7**	5.01
Ethyl Acetate		NA	< 1.00	1.00	< 1.00	1.00	< 1.00	1.00	< 1.00	1.00	< 1.00	1.00	< 1.00	1.00
Ethylbenzene		<4.3	**13.6**	1.00	**34.8**	1.00	**20.8**	1.00	**4.9**	1.00	**18.5**	1.00	**15.2**	1.00
Heptane		NA	**4.42**	1.00	**10.1**	1.00	**6.06**	1.00	**152**	1.00	**3.77**	1.00	**5.32**	1.00
Hexachlorobutadiene		NA	< 1.00	1.00	< 1.00	1.00	< 1.00	1.00	< 1.00	1.00	< 1.00	1.00	< 1.00	1.00
Hexane		<1.5	< 1.00	1.00	< 1.00	1.00	**8.17**	1.00	**465**	5.00	**1.99**	1.00	**3.37**	1.00
Isopropylalcohol		NA	**6.26**	1.00	< 1.00	1.00	**6.88**	1.00	**1,090**	10.0	**6.61**	1.00	**7.54**	1.00
Isopropylbenzene			**1.41**	1.00	**2.98**	1.00	**1.78**	1.00	**1.17**	1.00	**2.06**	1.00	**1.5**	1.00
Xylene (m&p)		<4.3	**46**	1.00	**86.4**	1.00	**67.3**	1.00	**17.6**	1.00	**63.4**	1.00	**51.2**	1.00
Methyl Ethyl Ketone			**36.5**	1.00	**55.4**	1.00	**37.4**	1.00	< 1.00	1.00	**33.6**	1.00	**46.6**	1.00
MTBE		NA	< 1.00	1.00	< 1.00	1.00	< 1.00	1.00	< 1.00	1.00	< 1.00	1.00	< 1.00	1.00
Methylene Chloride		<3.4	**4.58**	3.00	< 3.00	3.00	**11.3**	3.00	< 3.00	3.00	< 3.00	3.00	**4.55**	3.00
n-Butylbenzene			**1.32**	1.00	**1.67**	1.00	**1.53**	1.00	**3.34**	1.00	**2.08**	1.00	**1.14**	1.00
Xylene (o)		<4.3	**14.6**	1.00	**41.4**	1.00	**19.6**	1.00	**4.77**	1.00	**20.1**	1.00	**14.4**	1.00
Propylene		NA	< 1.00	1.00	**29.4**	1.00	**6.57**	1.00	< 1.00	1.00	**8.58**	1.00	**4.99**	1.00
sec-Butylbenzene			< 1.00	1.00	< 1.00	1.00	< 1.00	1.00	**4.24**	1.00	< 1.00	1.00	< 1.00	1.00
Styrene		<1.0	**1.78**	1.00	**3.27**	1.00	**1.67**	1.00	< 1.00	1.00	**1.94**	1.00	**1.66**	1.00
Tetrachloroethene	30		**3.23**	0.25	**1.45**	0.25	**1.59**	0.25	**2.4**	0.25	**1.72**	0.25	**1.89**	0.25
Tetrahydrofuran		NA	**39.5**	1.00	**40.7**	1.00	**45.1**	1.00	< 1.00	1.00	**56**	1.00	**36.3**	1.00
Toluene		1.0 - 6.1	**26.2**	1.00	**88.1**	1.00	**45.9**	1.00	**29**	1.00	**26.2**	1.00	**26.5**	1.00
trans-1,2-Dichloroethene		NA	**1.05**	1.00	< 1.00	1.00	< 1.00	1.00	< 1.00	1.00	< 1.00	1.00	< 1.00	1.00
trans-1,3-Dichloropropene		NA	< 1.00	1.00	< 1.00	1.00	< 1.00	1.00	< 1.00	1.00	< 1.00	1.00	< 1.00	1.00
Trichloroethene	2	<1.7	**50.5**	0.20	< 0.20	0.20	< 0.20	0.20	< 0.20	0.20	**1.75**	0.20	**1.2**	0.20
Trichlorofluoromethane		NA	**1.09**	1.00	**7.75**	1.00	**3**	1.00	**1.6**	1.00	**4.46**	1.00	**2.17**	1.00
Trichlorotrifluoroethane			< 1.00	1.00	< 1.00	1.00	< 1.00	1.00	< 1.00	1.00	< 1.00	1.00	< 1.00	1.00
Vinyl Chloride		<1.0	< 0.20	0.20	< 0.20	0.20	< 0.20	0.20	< 0.20	0.20	< 0.20	0.20	< 0.20	0.20
BTEX			**102.88**		**324.10**		**158.61**		**62.53**		**131.39**		**109.99**	
CVOCs			**72.71**		**3.78**		**17.91**		**2.96**		**5.48**		**7.93**	
Total VOCs			**736.69**		**1,190.48**		**1,004.68**		**2,194.91**		**696.52**		**833.72**	

Notes:
NA No guidance value or standard available
(a) Final Guidance for Evaluating Soil Vapor Intrusion in the State of New York. October 2006. New York State Department of Health.
(b) NYSDOH Guidance for Evaluating Soil Vapor Intrusion in the State of New York, February 2005, Summary of Background Levels for Selected Compounds (NYSDOH Database, Outdoor values)
U- The compound was anlayzed for but not detected at or above the MDL.
J- The value is estimated.
N- The concentration is based on the response fo the nearest internal.
S- This compound is a solvent that is used in the laboratory.
D- The reported concentration is the result of a diluted analysis.

Table 20
Former Pfizer Site A - C224284
243-271 Wallabout Street,
Brooklyn, New York
Remedial Investigation Laboratory Results – Soil Vapor Samples
Volatile Organic Compounds
On Site Locations

COMPOUNDS	NYSDOH Maximum Sub-Slab Value ($\mu g/m^3$) [a]	NYSDOH Soil OutdoorBackground Levels ($\mu g/m^3$) [b]	EBC 2019 Laboratory Results											
			SG-7		SG-8		SG-9		SG-10		SG-11		SG-12	
			6/7/2019		6/7/2019		6/7/2019		6/7/2019		6/7/2019		6/7/20019	
			(µg/m3)		(µg/m3)		(µg/m3)		(µg/m3)		(µg/m3)		(µg/m3)	
			Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL
1,1,1,2-Tetrachloroethane			< 1.00	1.00	< 1.00	1.00	< 1.00	1.00	< 1.00	1.00	< 1.00	1.00	< 1.00	1.00
1,1,1-Trichloroethane	100	<2.0 - 2.8	**2.44**	1.00	**1.87**	1.00	**1.29**	1.00	**5.67**	1.00	**5.73**	1.00	< 1.00	1.00
1,1,2,2-Tetrachloroethane		<1.5	< 1.00	1.00	< 1.00	1.00	< 1.00	1.00	< 1.00	1.00	< 1.00	1.00	< 1.00	1.00
1,1,2-Trichloroethane		<1.0	< 1.00	1.00	< 1.00	1.00	< 1.00	1.00	< 1.00	1.00	< 1.00	1.00	< 1.00	1.00
1,1-Dichloroethane		<1.0	< 1.00	1.00	< 1.00	1.00	< 1.00	1.00	< 1.00	1.00	< 1.00	1.00	< 1.00	1.00
1,1-Dichloroethene		<1.0	< 0.20	0.20	< 0.20	0.20	< 0.20	0.20	< 0.20	0.20	< 0.20	0.20	< 0.20	0.20
1,2,4-Trichlorobenzene		NA	< 1.00	1.00	< 1.00	1.00	< 1.00	1.00	< 1.00	1.00	< 1.00	1.00	< 1.00	1.00
1,2,4-Trimethylbenzene		<1.0	**25.5**	1.00	**26.8**	1.00	**22.9**	1.00	**24**	1.00	**23.6**	1.00	**25.8**	1.00
1,2-Dibromoethane		<1.5	< 1.00	1.00	< 1.00	1.00	< 1.00	1.00	< 1.00	1.00	< 1.00	1.00	< 1.00	1.00
1,2-Dichlorobenzene		<2.0	< 1.00	1.00	< 1.00	1.00	< 1.00	1.00	< 1.00	1.00	< 1.00	1.00	< 1.00	1.00
1,2-Dichloroethane		<1.0	< 1.00	1.00	< 1.00	1.00	< 1.00	1.00	< 1.00	1.00	< 1.00	1.00	< 1.00	1.00
1,2-Dichloropropane			< 1.00	1.00	< 1.00	1.00	< 1.00	1.00	< 1.00	1.00	< 1.00	1.00	< 1.00	1.00
1,2-Dichlorotetrafluoroethane			< 1.00	1.00	< 1.00	1.00	< 1.00	1.00	< 1.00	1.00	< 1.00	1.00	< 1.00	1.00
1,3,5-Trimethylbenzene		<1.0	**7.22**	1.00	**7.17**	1.00	**6.78**	1.00	**4.6**	1.00	**6.68**	1.00	**7.91**	1.00
1,3-Butadiene		NA	< 1.00	1.00	< 1.00	1.00	< 1.00	1.00	< 1.00	1.00	< 1.00	1.00	< 1.00	1.00
1,3-Dichlorobenzene		<2.0	**11.8**	1.00	**15.1**	1.00	**10.3**	1.00	**13**	1.00	**11.8**	1.00	**10.9**	1.00
1,4-Dichlorobenzene		NA	< 1.00	1.00	< 1.00	1.00	< 1.00	1.00	< 1.00	1.00	< 1.00	1.00	< 1.00	1.00
1,4-Dioxane			< 1.00	1.00	< 1.00	1.00	< 1.00	1.00	< 1.00	1.00	< 1.00	1.00	< 1.00	1.00
2-Hexanone			**1.69**	1.00	< 1.00	1.00	< 1.00	1.00	**5.12**	1.00	< 1.00	1.00	< 1.00	1.00
4-Ethyltoluene		NA	**22.7**	1.00	**24.5**	1.00	**24**	1.00	**21.4**	1.00	**23.4**	1.00	**27.5**	1.00
4-Isopropyltoluene			< 1.00	1.00	< 1.00	1.00	< 1.00	1.00	< 1.00	1.00	< 1.00	1.00	< 1.00	1.00
4-Methyl-2-pentanone			**7.45**	1.00	**7.94**	1.00	< 1.00	1.00	**6.76**	1.00	< 1.00	1.00	**8.43**	1.00
Acetone		NA	**311**	5.01	**189**	5.01	**330**	5.01	**309**	5.01	**249**	5.01	**563**	9.99
Acrylonitrile			< 1.00	1.00	< 1.00	1.00	< 1.00	1.00	< 1.00	1.00	< 1.00	1.00	< 1.00	1.00
Benzene		<1.6 - 4.7	**3.22**	1.00	**3.09**	1.00	**6.42**	1.00	**2.6**	1.00	**2.41**	1.00	**4.66**	1.00
Benzyl Chloride		NA	< 1.00	1.00	< 1.00	1.00	< 1.00	1.00	< 1.00	1.00	< 1.00	1.00	< 1.00	1.00
Bromodichloromethane		<5.0	**1.27**	1.00	< 1.00	1.00	< 1.00	1.00	< 1.00	1.00	< 1.00	1.00	< 1.00	1.00
Bromoform		<1.0	< 1.00	1.00	< 1.00	1.00	< 1.00	1.00	< 1.00	1.00	< 1.00	1.00	< 1.00	1.00
Bromomethane		<1.0	< 1.00	1.00	< 1.00	1.00	< 1.00	1.00	< 1.00	1.00	< 1.00	1.00	< 1.00	1.00
Carbon Disulfide		NA	< 1.00	1.00	**13.6**	1.00	**6.6**	1.00	**2.99**	1.00	**1.28**	1.00	**4.85**	1.00
Carbon Tetrachloride	5	<3.1	**0.36**	0.20	< 0.20	0.20	< 0.20	0.20	**0.22**	0.20	**0.28**	0.20	< 0.20	0.20
Chlorobenzene		<2.0	< 1.00	1.00	< 1.00	1.00	< 1.00	1.00	< 1.00	1.00	< 1.00	1.00	< 1.00	1.00
Chloroethane		NA	< 1.00	1.00	< 1.00	1.00	< 1.00	1.00	< 1.00	1.00	< 1.00	1.00	< 1.00	1.00
Chloroform		<2.4	**51.2**	1.00	**1.11**	1.00	< 1.00	1.00	< 1.00	1.00	< 1.00	1.00	< 1.00	1.00
Chloromethane		<1.0 - 1.4	< 1.00	1.00	**2.19**	1.00	< 1.00	1.00	< 1.00	1.00	< 1.00	1.00	< 1.00	1.00
cis-1,2-Dichloroethene		<1.0	< 0.20	0.20	< 0.20	0.20	< 0.20	0.20	< 0.20	0.20	< 0.20	0.20	< 0.20	0.20
cis-1,3-Dichloropropene		NA	< 1.00	1.00	< 1.00	1.00	< 1.00	1.00	< 1.00	1.00	< 1.00	1.00	< 1.00	1.00
Cyclohexane		NA	**1.58**	1.00	**3.96**	1.00	< 1.00	1.00	**2.57**	1.00	**1.01**	1.00	< 1.00	1.00
Dibromochloromethane		<5.0	< 1.00	1.00	< 1.00	1.00	< 1.00	1.00	< 1.00	1.00	< 1.00	1.00	< 1.00	1.00
Dichlorodifluromethane		NA	**1.39**	1.00	**3.21**	1.00	**1.28**	1.00	**3.42**	1.00	**1.54**	1.00	**1.43**	1.00
Ethanol			**113**	5.01	**116**	5.01	**80.4**	5.01	**81.2**	5.01	**102**	1.00	**92.5**	10.0
Ethyl Acetate		NA	< 1.00	1.00	< 1.00	1.00	< 1.00	1.00	< 1.00	1.00	< 1.00	1.00	< 1.00	1.00
Ethylbenzene		<4.3	**15.9**	1.00	**19**	1.00	**26.8**	1.00	**19.1**	1.00	**18.3**	1.00	**23.1**	1.00
Heptane		NA	**4.79**	1.00	**5.82**	1.00	**255**	5.00	**5.53**	1.00	**3.88**	1.00	**147**	1.00
Hexachlorobutadiene		NA	< 1.00	1.00	< 1.00	1.00	< 1.00	1.00	< 1.00	1.00	< 1.00	1.00	< 1.00	1.00
Hexane		<1.5	**5.6**	1.00	**4.44**	1.00	**468**	5.00	**2.97**	1.00	< 1.00	1.00	**412**	10.0
Isopropylalcohol		NA	**6.58**	1.00	**5.99**	1.00	< 1.00	1.00	< 1.00	1.00	**6.17**	1.00	**6.19**	1.00
Isopropylbenzene			**1.62**	1.00	**1.93**	1.00	**1.91**	1.00	**1.75**	1.00	**1.86**	1.00	**1.94**	1.00
Xylene (m&p)		<4.3	**54.2**	1.00	**63.8**	1.00	**91.1**	1.00	**60.8**	1.00	**61.6**	1.00	**75.5**	1.00
Methyl Ethyl Ketone			**35.1**	1.00	**36.8**	1.00	**51.6**	1.00	**48**	1.00	**33.3**	1.00	**51.6**	1.00
MTBE		NA	< 1.00	1.00	< 1.00	1.00	< 1.00	1.00	< 1.00	1.00	< 1.00	1.00	< 1.00	1.00
Methylene Chloride		<3.4	**6.91**	3.00	< 3.00	3.00	< 3.00	3.00	< 3.00	3.00	< 3.00	3.00	< 3.00	3.00
n-Butylbenzene			**1.55**	1.00	< 1.00	1.00	**1.79**	1.00	**1.63**	1.00	**1.96**	1.00	**1.5**	1.00
Xylene (o)		<4.3	**15.8**	1.00	**19**	1.00	**24.6**	1.00	**18.1**	1.00	**17.3**	1.00	**20.4**	1.00
Propylene		NA	< 1.00	1.00	< 1.00	1.00	< 1.00	1.00	< 1.00	1.00	**6.62**	1.00	< 1.00	1.00
sec-Butylbenzene			< 1.00	1.00	< 1.00	1.00	< 1.00	1.00	< 1.00	1.00	< 1.00	1.00	< 1.00	1.00
Styrene		<1.0	**1.28**	1.00	**1.49**	1.00	**2**	1.00	**1.58**	1.00	**1.76**	1.00	**1.68**	1.00
Tetrachloroethene	30		**1.67**	0.25	**1.69**	0.25	**4.55**	0.25	**1.08**	0.25	**1.48**	0.25	**1.08**	0.25
Tetrahydrofuran		NA	**43.3**	1.00	**47.5**	1.00	< 1.00	1.00	**38.3**	1.00	**57.2**	1.00	< 1.00	1.00
Toluene		1.0 - 6.1	**22.5**	1.00	**27.4**	1.00	**20.5**	1.00	**25.3**	1.00	**23.7**	1.00	**29.5**	1.00
trans-1,2-Dichloroethene		NA	< 1.00	1.00	< 1.00	1.00	< 1.00	1.00	< 1.00	1.00	< 1.00	1.00	< 1.00	1.00
trans-1,3-Dichloropropene		NA	< 1.00	1.00	< 1.00	1.00	< 1.00	1.00	< 1.00	1.00	< 1.00	1.00	< 1.00	1.00
Trichloroethene	2	<1.7	**1.13**	0.20	**0.41**	0.20	**0.31**	0.20	< 0.20	0.20	**0.3**	0.20	< 0.20	0.20
Trichlorofluoromethane		NA	**7.02**	1.00	**2.7**	1.00	**1.11**	1.00	**4.19**	1.00	**2.84**	1.00	< 1.00	1.00
Trichlorotrifluoroethane			< 1.00	1.00	< 1.00	1.00	< 1.00	1.00	**1.23**	1.00	< 1.00	1.00	< 1.00	1.00
Vinyl Chloride		<1.0	< 0.20	0.20	< 0.20	0.20	< 0.20	0.20	< 0.20	0.20	< 0.20	0.20	< 0.20	0.20
BTEX			**111.62**		**132.29**		**169.42**		**125.90**		**123.31**		**153.16**	
CVOCs			**12.51**		**3.97**		**6.15**		**6.97**		**7.79**		**1.08**	
Total VOCs			**786.77**		**653.51**		**1,439.24**		**712.11**		**667.00**		**1,518.47**	

Notes:
NA No guidance value or standard available
(a) Final Guidance for Evaluating Soil Vapor Intrusion in the State of New York. October 2006. New York State Department of Health.
(b) NYSDOH Guidance for Evaluating Soil Vapor Intrusion in the State of New York, February 2005, Summary of Background Levels for Selected Compounds (NYSDOH Database, Outdoor values)
U- The compound was anlayzed for but not detected at or above the MDL.
J- The value is estimated.
N- The concentration is based on the response fo the nearest internal.
S- This compound is a solvent that is used in the laboratory.
D- The reported concentration is the result of a diluted analysis.

Table 21
Former Pfizer Site A - C224284
243-271 Wallabout Street,
Brooklyn, New York
Track 1 Area - Endpoint Soil Analytical Results
Volatile Organic Compounds

COMPOUND	NYSDEC Part 375.6 Unrestricted Use Soil Cleanup Objectives*	NYDEC Part 375.6 Restricted Residential Soil Cleanup Objectives*	NYDEC Part 375.6 Restricted Commercial Soil Cleanup Objectives*	EBC Endpoint Samples									
				EP1		EP2		EP3		EP4		EP5	
				16'		16'		16'		16'		16'	
				7/9/2020		7/9/2020		7/9/2020		7/9/2020		7/9/2020	
				µg/Kg		µg/Kg		µg/Kg		µg/Kg		µg/Kg	
				Result	RL	Result	RL	Result	RL	Result	RL	Result	RL
1,1,1,2-Tetrachlorothane				< 14	14	< 23	23	< 28	28	< 17	17	< 21	21
1,1,1-Trichloroethane	680	100,000	500,000	< 3.5	3.5	< 5.7	5.7	< 7.0	7.0	< 4.2	4.2	< 5.2	5.2
1,1,2,2-Tetrachloroethane				< 3.5	3.5	< 5.7	5.7	< 7.0	7.0	< 4.2	4.2	< 5.2	5.2
1,1,2-Trichloroethane				< 3.5	3.5	< 5.7	5.7	< 7.0	7.0	< 4.2	4.2	< 5.2	5.2
1,1-Dichloroethane	270	26,000	240,000	< 3.5	3.5	< 5.7	5.7	< 7.0	7.0	< 4.2	4.2	< 5.2	5.2
1,1-Dichloroethene	330	100,000	500,000	< 3.5	3.5	< 5.7	5.7	< 7.0	7.0	< 4.2	4.2	< 5.2	5.2
1,2,3-Trichlorobenzene				< 3.5	3.5	< 5.7	5.7	< 7.0	7.0	< 4.2	4.2	< 5.2	5.2
1,2,4-Trichlorobenzene				< 3.5	3.5	< 5.7	5.7	< 7.0	7.0	< 4.2	4.2	< 5.2	5.2
1,2-Dibromo-3-chloropropane				< 3.5	3.5	< 5.7	5.7	< 7.0	7.0	< 4.2	4.2	< 5.2	5.2
1,2-Dibromomethane				< 3.5	3.5	< 5.7	5.7	< 7.0	7.0	< 4.2	4.2	< 5.2	5.2
1,2-Dichlorobenzene	1,100	100,000	500,000	< 3.5	3.5	< 5.7	5.7	< 7.0	7.0	< 4.2	4.2	< 5.2	5.2
1,2-Dichloroethane	20	3,100	30,000	< 3.5	3.5	< 5.7	5.7	< 7.0	7.0	< 4.2	4.2	< 5.2	5.2
1,2-Dichloropropane				< 3.5	3.5	< 5.7	5.7	< 7.0	7.0	< 4.2	4.2	< 5.2	5.2
1,3-Dichlorobenzene	2,400	4,900	280,000	< 3.5	3.5	< 5.7	5.7	< 7.0	7.0	< 4.2	4.2	< 5.2	5.2
1,4-Dichlorobenzene	1,800	13,000	130,000	< 3.5	3.5	< 5.7	5.7	< 7.0	7.0	< 4.2	4.2	< 5.2	5.2
1,4- dioxane	100	13,000	130,000	< 53	53	< 86	86	< 100	100	< 63	63	< 78	78
2-Hexanone (Methyl Butyl Ketone)				< 18	18	< 29	29	< 35	35	< 21	21	< 26	26
4-Methyl-2-Pentanone				< 18	18	< 29	29	< 35	35	< 21	21	< 26	26
Acetone	50	100,000	500,000	< 18	18	< 29	29	**16**	35	< 21	21	< 26	26
Acrolein				< 3.5	3.5	< 5.7	5.7	< 7.0	7.0	< 4.2	4.2	< 5.2	5.2
Acrylonitrile				< 14	14	< 23	23	< 28	28	< 17	17	< 21	21
Benzene	60	4,800	44,000	< 3.5	3.5	< 5.7	5.7	< 7.0	7.0	< 4.2	4.2	< 5.2	5.2
Bromochloromethane				< 3.5	3.5	< 5.7	5.7	< 7.0	7.0	< 4.2	4.2	< 5.2	5.2
Bromodichloromethane				< 3.5	3.5	< 5.7	5.7	< 7.0	7.0	< 4.2	4.2	< 5.2	5.2
Bromoform				< 3.5	3.5	< 5.7	5.7	< 7.0	7.0	< 4.2	4.2	< 5.2	5.2
Bromomethane				< 3.5	3.5	< 5.7	5.7	< 7.0	7.0	< 4.2	4.2	< 5.2	5.2
Carbon Disulfide				< 3.5	3.5	< 5.7	5.7	< 7.0	7.0	< 4.2	4.2	< 5.2	5.2
Carbon tetrachloride	760	2,400	22,000	< 3.5	3.5	< 5.7	5.7	< 7.0	7.0	< 4.2	4.2	< 5.2	5.2
Chlorobenzene	1,100	100,000	500,000	< 3.5	3.5	< 5.7	5.7	< 7.0	7.0	< 4.2	4.2	< 5.2	5.2
Chloroethane				< 3.5	3.5	< 5.7	5.7	< 7.0	7.0	< 4.2	4.2	< 5.2	5.2
Chloroform	370	49,000	350,000	< 3.5	3.5	< 5.7	5.7	< 7.0	7.0	< 4.2	4.2	< 5.2	5.2
Chloromethane				< 3.5	3.5	< 5.7	5.7	< 7.0	7.0	< 4.2	4.2	< 5.2	5.2
cis-1,2-Dichloroethene	250	100,000	500,000	< 3.5	3.5	< 5.7	5.7	< 7.0	7.0	< 4.2	4.2	< 5.2	5.2
cis-1,3-Dichloropropene				< 3.5	3.5	< 5.7	5.7	< 7.0	7.0	< 4.2	4.2	< 5.2	5.2
Cyclohexane				< 3.5	3.5	< 5.7	5.7	< 7.0	7.0	< 4.2	4.2	< 5.2	5.2
Dibromochloromethane				< 3.5	3.5	< 5.7	5.7	< 7.0	7.0	< 4.2	4.2	< 5.2	5.2
Dichlorodifluoromethane				< 3.5	3.5	< 5.7	5.7	< 7.0	7.0	< 4.2	4.2	< 5.2	5.2
Ethylbenzene	1,000	41,000	390,000	< 3.5	3.5	< 5.7	5.7	< 7.0	7.0	< 4.2	4.2	< 5.2	5.2
Isopropylbenzene				< 3.5	3.5	< 5.7	5.7	< 7.0	7.0	< 4.2	4.2	< 5.2	5.2
m&p-Xylenes	260	100,000		< 3.5	3.5	< 5.7	5.7	< 7.0	7.0	< 4.2	4.2	< 5.2	5.2
Methyl Ethyl Ketone (2-Butanone)	120	100,000	500,000	< 21	21	< 34	34	< 42	42	< 25	25	< 31	31
Methyl t-butyl ether (MTBE)	930	100,000	500,000	< 7.1	7.1	< 11	11	< 14	14	< 8.4	8.4	< 10	10
Methylacetate				< 14	14	< 5.7	5.7	< 7.0	7.0	< 4.2	4.2	< 5.2	5.2
Methylcyclohexane				< 3.5	3.5	< 5.7	5.7	< 7.0	7.0	< 4.2	4.2	< 5.2	5.2
Methylene chloride	50	100,000	500,000	< 3.5	3.5	< 5.7	5.7	< 7.0	7.0	< 4.2	4.2	< 5.2	5.2
o-Xylene	260	100,000		< 3.5	3.5	< 5.7	5.7	< 7.0	7.0	< 4.2	4.2	< 5.2	5.2
Styrene				< 3.5	3.5	< 5.7	5.7	< 7.0	7.0	< 4.2	4.2	< 5.2	5.2
Tert-butyl alcohol				< 71	71	< 110	110	< 140	140	< 84	84	< 100	100
Tetrachloroethene	1,300	19,000	150,000	< 3.5	3.5	< 5.7	5.7	< 7.0	7.0	< 4.2	4.2	< 5.2	5.2
Toluene	700	100,000	500,000	< 3.5	3.5	< 5.7	5.7	< 7.0	7.0	< 4.2	4.2	< 5.2	5.2
Total Xylenes				< 3.5	3.5	< 5.7	5.7	< 7.0	7.0	< 4.2	4.2	< 5.2	5.2
trans-1,2-Dichloroethene	190	100,000	500,000	< 3.5	3.5	< 5.7	5.7	< 7.0	7.0	< 4.2	4.2	< 5.2	5.2
trans-1,3-Dichloropropene				< 3.5	3.5	< 5.7	5.7	< 7.0	7.0	< 4.2	4.2	< 5.2	5.2
Trichloroethene	470	21,000	200,000	< 3.5	3.5	< 5.7	5.7	< 7.0	7.0	< 4.2	4.2	< 5.2	5.2
Trichlorofluoromethane				< 3.5	3.5	< 5.7	5.7	< 7.0	7.0	< 4.2	4.2	< 5.2	5.2
Trichlorotrifluoroethane				< 3.5	3.5	< 5.7	5.7	< 7.0	7.0	< 4.2	4.2	< 5.2	5.2
Vinyl Chloride	20	900	13,000	< 3.5	3.5	< 5.7	5.7	< 7.0	7.0	< 4.2	4.2	< 5.2	5.2
Total BTEX Concentration				**0**		**0**		**0**		**0**		**0**	
Total VOCs Concentration				**0**		**0**		**16**		**0**		**0**	

Notes:

* - 6 NYCRR Part 375-6 Remedial Program Soil Cleanup Objectives

RL - Reporting Limit

Bold/highlighted- Indicated exceedance of the NYSDEC UUSCO Guidance Value

Bold/highlighted- Indicated exceedance of the NYSDEC RRSCO Guidance Value

Bold/highlighted- Indicated exceedance of the NYSDEC RCSCO Guidance Value

Table 21
Former Pfizer Site A - C224284
243-271 Wallabout Street,
Brooklyn, New York
Track 1 Area - Endpoint Soil Analytical Results
Volatile Organic Compounds

COMPOUND	NYSDEC Part 375.6 Unrestricted Use Soil Cleanup Objectives*	NYDEC Part 375.6 Restricted Residential Soil Cleanup Objectives*	NYDEC Part 375.6 Restricted Commercial Soil Cleanup Objectives*	EBC Endpoint Samples									
				EP6		EP7		EP8		EP9		EP21	
				16'		16'		16'		16'		16'	
				7/9/2020		10/15/2020		12/4/2020		12/4/2020		12/4/2020	
				µg/Kg		µg/Kg		µg/Kg		µg/Kg		µg/Kg	
				Result	RL	Result	RL	Result	RL	Result	RL	Result	RL
1,1,1,2-Tetrachlorothane				< 18	18	< 21	21	< 30	30	< 28	28	< 44	44
1,1,1-Trichloroethane	680	100,000	500,000	< 4.6	4.6	< 5.3	5.3	< 7.4	7.4	< 7.0	7.0	< 11	11
1,1,2,2-Tetrachloroethane				< 4.6	4.6	< 5.3	5.3	< 7.4	7.4	< 7.0	7.0	< 11	11
1,1,2-Trichloroethane				< 4.6	4.6	< 5.3	5.3	< 7.4	7.4	< 7.0	7.0	< 11	11
1,1-Dichloroethane	270	26,000	240,000	< 4.6	4.6	< 5.3	5.3	< 7.4	7.4	< 7.0	7.0	< 11	11
1,1-Dichloroethene	330	100,000	500,000	< 4.6	4.6	< 5.3	5.3	< 7.4	7.4	< 7.0	7.0	< 11	11
1,2,3-Trichlorobenzene				< 4.6	4.6	< 5.3	5.3	< 7.4	7.4	< 7.0	7.0	< 11	11
1,2,4-Trichlorobenzene				< 4.6	4.6	< 5.3	5.3	< 7.4	7.4	< 7.0	7.0	< 11	11
1,2-Dibromo-3-chloropropane				< 4.6	4.6	< 5.3	5.3	< 7.4	7.4	< 7.0	7.0	< 11	11
1,2-Dibromomethane				< 4.6	4.6	< 5.3	5.3	< 7.4	7.4	< 7.0	7.0	< 11	11
1,2-Dichlorobenzene	1,100	100,000	500,000	< 4.6	4.6	< 5.3	5.3	< 7.4	7.4	< 7.0	7.0	< 11	11
1,2-Dichloroethane	20	3,100	30,000	< 4.6	4.6	< 5.3	5.3	< 7.4	7.4	< 7.0	7.0	< 11	11
1,2-Dichloropropane				< 4.6	4.6	< 5.3	5.3	< 7.4	7.4	< 7.0	7.0	< 11	11
1,3-Dichlorobenzene	2,400	4,900	280,000	< 4.6	4.6	< 5.3	5.3	< 7.4	7.4	< 7.0	7.0	< 11	11
1,4-Dichlorobenzene	1,800	13,000	130,000	< 4.6	4.6	< 5.3	5.3	< 7.4	7.4	< 7.0	7.0	< 11	11
1,4- dioxane	100	13,000	130,000	< 69	69	< 79	79	< 100	100	< 100	100	< 100	100
2-Hexanone (Methyl Butyl Ketone)				< 23	23	< 26	26	< 37	37	< 35	35	< 55	55
4-Methyl-2-Pentanone				< 23	23	< 26	26	< 37	37	< 35	35	< 55	55
Acetone	50	100,000	500,000	< 23	23	< 26	26	**8.8**	37	< 35	35	**11**	32
Acrolein				< 4.6	4.6	< 5.3	5.3	< 7.4	7.4	< 7.0	7.0	< 11	11
Acrylonitrile				< 18	18	< 21	21	< 30	30	< 28	28	< 44	44
Benzene	60	4,800	44,000	< 4.6	4.6	< 5.3	5.3	< 7.4	7.4	< 7.0	7.0	< 11	11
Bromochloromethane				< 4.6	4.6	< 5.3	5.3	< 7.4	7.4	< 7.0	7.0	< 11	11
Bromodichloromethane				< 4.6	4.6	< 5.3	5.3	< 7.4	7.4	< 7.0	7.0	< 11	11
Bromoform				< 4.6	4.6	< 5.3	5.3	< 7.4	7.4	< 7.0	7.0	< 11	11
Bromomethane				< 4.6	4.6	< 5.3	5.3	< 7.4	7.4	< 7.0	7.0	< 11	11
Carbon Disulfide				< 4.6	4.6	< 5.3	5.3	**2.9**	7.4	< 7.0	7.0	< 11	11
Carbon tetrachloride	760	2,400	22,000	< 4.6	4.6	< 5.3	5.3	< 7.4	7.4	< 7.0	7.0	< 11	11
Chlorobenzene	1,100	100,000	500,000	< 4.6	4.6	< 5.3	5.3	< 7.4	7.4	< 14	14	< 11	11
Chloroethane				< 4.6	4.6	< 5.3	5.3	< 7.4	7.4	< 7.0	7.0	< 11	11
Chloroform	370	49,000	350,000	< 4.6	4.6	< 5.3	5.3	< 7.4	7.4	< 7.0	7.0	< 11	11
Chloromethane				< 4.6	4.6	< 5.3	5.3	< 7.4	7.4	< 7.0	7.0	< 11	11
cis-1,2-Dichloroethene	250	100,000	500,000	< 4.6	4.6	< 5.3	5.3	< 7.4	7.4	< 7.0	7.0	< 11	11
cis-1,3-Dichloropropene				< 4.6	4.6	< 5.3	5.3	< 7.4	7.4	< 7.0	7.0	< 11	11
Cyclohexane				< 4.6	4.6	< 5.3	5.3	< 7.4	7.4	< 7.0	7.0	< 11	11
Dibromochloromethane				< 4.6	4.6	< 5.3	5.3	< 7.4	7.4	< 7.0	7.0	< 11	11
Dichlorodifluoromethane				< 4.6	4.6	< 5.3	5.3	< 7.4	7.4	< 7.0	7.0	< 11	11
Ethylbenzene	1,000	41,000	390,000	< 4.6	4.6	< 5.3	5.3	< 7.4	7.4	< 7.0	7.0	< 11	11
Isopropylbenzene				< 4.6	4.6	< 5.3	5.3	< 7.4	7.4	< 7.0	7.0	< 11	11
m&p-Xylenes	260	100,000		< 4.6	4.6	< 5.3	5.3	< 7.4	7.4	< 7.0	7.0	< 11	11
Methyl Ethyl Ketone (2-Butanone)	120	100,000	500,000	< 27	27	< 32	32	< 44	44	< 42	42	**16**	66
Methyl t-butyl ether (MTBE)	930	100,000	500,000	< 9.1	9.1	< 11	11	< 15	15	< 14	14	< 22	22
Methylacetate				< 4.6	4.6	< 5.3	5.3	< 7.4	7.4	< 7.0	7.0	< 11	11
Methylcyclohexane				< 4.6	4.6	< 5.3	5.3	< 7.4	7.4	< 7.0	7.0	< 11	11
Methylene chloride	50	100,000	500,000	< 4.6	4.6	< 5.3	5.3	< 7.4	7.4	< 7.0	7.0	< 11	11
o-Xylene	260	100,000		< 4.6	4.6	< 5.3	5.3	< 7.4	7.4	< 7.0	7.0	< 11	11
Styrene				< 4.6	4.6	< 5.3	5.3	< 7.4	7.4	< 7.0	7.0	< 11	11
Tert-butyl alcohol				< 91	91	< 110	110	< 150	150	< 140	140	< 220	220
Tetrachloroethene	1,300	19,000	150,000	< 4.6	4.6	< 5.3	5.3	< 7.4	7.4	< 7.0	7.0	< 11	11
Toluene	700	100,000	500,000	< 4.6	4.6	< 5.3	5.3	< 7.4	7.4	< 7.0	7.0	< 11	11
Total Xylenes				< 4.6	4.6	< 5.3	5.3	< 7.4	7.4	< 7.0	7.0	< 11	11
trans-1,2-Dichloroethene	190	100,000	500,000	< 4.6	4.6	< 5.3	5.3	< 7.4	7.4	< 7.0	7.0	< 11	11
trans-1,3-Dichloropropene				< 4.6	4.6	< 5.3	5.3	< 7.4	7.4	< 7.0	7.0	< 11	11
Trichloroethene	470	21,000	200,000	< 4.6	4.6	< 5.3	5.3	< 7.4	7.4	< 7.0	7.0	< 11	11
Trichlorofluoromethane				< 4.6	4.6	< 5.3	5.3	< 7.4	7.4	< 7.0	7.0	< 11	11
Trichlorotrifluoroethane				< 4.6	4.6	< 5.3	5.3	< 7.4	7.4	< 7.0	7.0	< 11	11
Vinyl Chloride	20	900	13,000	< 4.6	4.6	< 5.3	5.3	< 7.4	7.4	< 7.0	7.0	< 11	11
Total BTEX Concentration				**0**		**0**		**0**		**0**		**0**	
Total VOCs Concentration				**0**		**0**		**11.7**		**0**		**27**	

Notes:

* - 6 NYCRR Part 375-6 Remedial Program Soil Cleanup Objectives

RL - Reporting Limit

Bold/highlighted- Indicated exceedance of the NYSDEC UUSCO Guidance Value

Bold/highlighted- Indicated exceedance of the NYSDEC RRSCO Guidance Value

Bold/highlighted- Indicated exceedance of the NYSDEC RCSCO Guidance Value

Table 21
Former Pfizer Site A - C224284
243-271 Wallabout Street,
Brooklyn, New York
Track 1 Area - Endpoint Soil Analytical Results
Volatile Organic Compounds

COMPOUND	NYSDEC Part 375.6 Unrestricted Use Soil Cleanup Objectives*	NYDEC Part 375.6 Restricted Residential Soil Cleanup Objectives*	NYDEC Part 375.6 Restricted Commercial Soil Cleanup Objectives*	EBC Endpoint Samples									
				EP22		EP23		EP24		EP25		EP26	
				16'		16'		16'		16'		16'	
				12/4/2020		10/15/2020		8/5/2020		8/5/2020		8/5/2020	
				µg/Kg		µg/Kg		µg/Kg		µg/Kg		µg/Kg	
				Result	RL	Result	RL	Result	RL	Result	RL	Result	RL
1,1,1,2-Tetrachlorothane				< 43	43	< 15	15	< 20	20	< 21	21	< 21	21
1,1,1-Trichloroethane	680	100,000	500,000	< 11	11	< 3.6	3.6	< 5.1	5.1	< 5.2	5.2	< 5.2	5.2
1,1,2,2-Tetrachloroethane				< 11	11	< 3.6	3.6	< 5.1	5.1	< 5.2	5.2	< 5.2	5.2
1,1,2-Trichloroethane				< 11	11	< 3.6	3.6	< 5.1	5.1	< 5.2	5.2	< 5.2	5.2
1,1-Dichloroethane	270	26,000	240,000	< 11	11	< 3.6	3.6	< 5.1	5.1	< 5.2	5.2	< 5.2	5.2
1,1-Dichloroethene	330	100,000	500,000	< 11	11	< 3.6	3.6	< 5.1	5.1	< 5.2	5.2	< 5.2	5.2
1,2,3-Trichlorobenzene				< 11	11	< 3.6	3.6	< 5.1	5.1	< 5.2	5.2	< 5.2	5.2
1,2,4-Trichlorobenzene				< 11	11	< 3.6	3.6	< 5.1	5.1	< 5.2	5.2	< 5.2	5.2
1,2-Dibromo-3-chloropropane				< 11	11	< 3.6	3.6	< 5.1	5.1	< 5.2	5.2	< 5.2	5.2
1,2-Dibromomethane				< 11	11	< 3.6	3.6	< 5.1	5.1	< 5.2	5.2	< 5.2	5.2
1,2-Dichlorobenzene	1,100	100,000	500,000	< 11	11	< 3.6	3.6	< 5.1	5.1	< 5.2	5.2	< 5.2	5.2
1,2-Dichloroethane	20	3,100	30,000	< 11	11	< 3.6	3.6	< 5.1	5.1	< 5.2	5.2	< 5.2	5.2
1,2-Dichloropropane				< 11	11	< 3.6	3.6	< 5.1	5.1	< 5.2	5.2	< 5.2	5.2
1,3-Dichlorobenzene	2,400	4,900	280,000	< 11	11	< 3.6	3.6	< 5.1	5.1	< 5.2	5.2	< 5.2	5.2
1,4-Dichlorobenzene	1,800	13,000	130,000	< 11	11	< 3.6	3.6	< 5.1	5.1	< 5.2	5.2	< 5.2	5.2
1,4- dioxane	100	13,000	130,000	< 100	100	< 55	55	< 76	76	< 79	79	< 78	78
2-Hexanone (Methyl Butyl Ketone)				< 54	54	< 18	18	< 25	25	< 26	26	< 26	26
4-Methyl-2-Pentanone				< 54	54	< 18	18	< 25	25	< 26	26	< 26	26
Acetone	50	100,000	500,000	< 50	50	< 18	18	< 25	25	< 26	26	< 26	26
Acrolein				< 11	11	< 3.6	3.6	< 5.1	5.1	< 5.2	5.2	< 5.2	5.2
Acrylonitrile				< 43	43	< 15	15	< 20	20	< 21	21	< 21	21
Benzene	60	4,800	44,000	< 11	11	< 3.6	3.6	< 5.1	5.1	< 5.2	5.2	< 5.2	5.2
Bromochloromethane				< 11	11	< 3.6	3.6	< 5.1	5.1	< 5.2	5.2	< 5.2	5.2
Bromodichloromethane				< 11	11	< 3.6	3.6	< 5.1	5.1	< 5.2	5.2	< 5.2	5.2
Bromoform				< 11	11	< 3.6	3.6	< 5.1	5.1	< 5.2	5.2	< 5.2	5.2
Bromomethane				< 11	11	< 3.6	3.6	< 5.1	5.1	< 5.2	5.2	< 5.2	5.2
Carbon Disulfide				< 11	11	< 3.6	3.6	< 5.1	5.1	< 5.2	5.2	< 5.2	5.2
Carbon tetrachloride	760	2,400	22,000	< 11	11	< 3.6	3.6	< 5.1	5.1	< 5.2	5.2	< 5.2	5.2
Chlorobenzene	1,100	100,000	500,000	< 11	11	< 3.6	3.6	< 5.1	5.1	< 5.2	5.2	< 5.2	5.2
Chloroethane				< 11	11	< 3.6	3.6	< 5.1	5.1	< 5.2	5.2	< 5.2	5.2
Chloroform	370	49,000	350,000	< 11	11	< 3.6	3.6	< 5.1	5.1	< 5.2	5.2	< 5.2	5.2
Chloromethane				< 11	11	< 3.6	3.6	< 5.1	5.1	< 5.2	5.2	< 5.2	5.2
cis-1,2-Dichloroethene	250	100,000	500,000	< 11	11	< 3.6	3.6	< 5.1	5.1	< 5.2	5.2	< 5.2	5.2
cis-1,3-Dichloropropene				< 11	11	< 3.6	3.6	< 5.1	5.1	< 5.2	5.2	< 5.2	5.2
Cyclohexane				< 11	11	< 3.6	3.6	< 5.1	5.1	< 5.2	5.2	< 5.2	5.2
Dibromochloromethane				< 11	11	< 3.6	3.6	< 5.1	5.1	< 5.2	5.2	< 5.2	5.2
Dichlorodifluoromethane				< 11	11	< 3.6	3.6	< 5.1	5.1	< 5.2	5.2	< 5.2	5.2
Ethylbenzene	1,000	41,000	390,000	< 11	11	< 3.6	3.6	< 5.1	5.1	< 5.2	5.2	< 5.2	5.2
Isopropylbenzene				< 11	11	< 3.6	3.6	< 5.1	5.1	< 5.2	5.2	< 5.2	5.2
m&p-Xylenes	260	100,000		< 11	11	< 3.6	3.6	< 5.1	5.1	< 5.2	5.2	< 5.2	5.2
Methyl Ethyl Ketone (2-Butanone)	120	100,000	500,000	< 65	65	< 22	22	< 30	30	< 31	31	< 31	31
Methyl t-butyl ether (MTBE)	930	100,000	500,000	< 22	22	< 7.3	7.3	< 10	10	< 10	10	< 10	10
Methylacetate				< 11	11	< 3.6	3.6	< 5.1	5.1	< 5.2	5.2	< 5.2	5.2
Methylcyclohexane				< 11	11	< 3.6	3.6	< 5.1	5.1	< 5.2	5.2	< 5.2	5.2
Methylene chloride	50	100,000	500,000	< 11	11	< 3.6	3.6	< 5.1	5.1	< 5.2	5.2	< 5.2	5.2
o-Xylene	260	100,000		< 11	11	< 3.6	3.6	< 5.1	5.1	< 5.2	5.2	< 5.2	5.2
Styrene				< 11	11	< 3.6	3.6	< 5.1	5.1	< 5.2	5.2	< 5.2	5.2
Tert-butyl alcohol				< 220	220	< 73	73	< 100	100	< 100	100	< 100	100
Tetrachloroethene	1,300	19,000	150,000	< 11	11	< 3.6	3.6	< 5.1	5.1	< 5.2	5.2	< 5.2	5.2
Toluene	700	100,000	500,000	< 11	11	< 3.6	3.6	< 5.1	5.1	< 5.2	5.2	< 5.2	5.2
Total Xylenes				< 11	11	< 3.6	3.6	< 5.1	5.1	< 5.2	5.2	< 5.2	5.2
trans-1,2-Dichloroethene	190	100,000	500,000	< 11	11	< 3.6	3.6	< 5.1	5.1	< 5.2	5.2	< 5.2	5.2
trans-1,3-Dichloropropene				< 11	11	< 3.6	3.6	< 5.1	5.1	< 5.2	5.2	< 5.2	5.2
Trichloroethene	470	21,000	200,000	< 11	11	< 3.6	3.6	< 5.1	5.1	< 5.2	5.2	< 5.2	5.2
Trichlorofluoromethane				< 11	11	< 3.6	3.6	< 5.1	5.1	< 5.2	5.2	< 5.2	5.2
Trichlorotrifluoroethane				< 11	11	< 3.6	3.6	< 5.1	5.1	< 5.2	5.2	< 5.2	5.2
Vinyl Chloride	20	900	13,000	< 11	11	< 3.6	3.6	< 5.1	5.1	< 5.2	5.2	< 5.2	5.2
Total BTEX Concentration				**0**		**0**		**0**		**0**		**0**	
Total VOCs Concentration				**0**		**0**		**0**		**0**		**0**	

Notes:

* - 6 NYCRR Part 375-6 Remedial Program Soil Cleanup Objectives

RL - Reporting Limit

Bold/highlighted- Indicated exceedance of the NYSDEC UUSCO Guidance Value

Bold/highlighted- Indicated exceedance of the NYSDEC RRSCO Guidance Value

Bold/highlighted- Indicated exceedance of the NYSDEC RCSCO Guidance Value

Table 21
Former Pfizer Site A - C224284
243-271 Wallabout Street,
Brooklyn, New York
Track 1 Area - Endpoint Soil Analytical Results
Volatile Organic Compounds

COMPOUND	NYSDEC Part 375.6 Unrestricted Use Soil Cleanup Objectives*	NYDEC Part 375.6 Restricted Residential Soil Cleanup Objectives*	NYDEC Part 375.6 Restricted Commercial Soil Cleanup Objectives*	EBC Endpoint Samples									
				EP27		EP28		EP29		EP30		EP31	
				16'		16'		16'		16'		16'	
				7/9/2020		7/9/2020		7/9/2020		7/9/2020		7/9/2020	
				µg/Kg		µg/Kg		µg/Kg		µg/Kg		µg/Kg	
				Result	RL	Result	RL	Result	RL	Result	RL	Result	RL
1,1,1,2-Tetrachlorothane				< 24	24	< 17	17	< 22	22	< 29	29	< 26	26
1,1,1-Trichloroethane	680	100,000	500,000	< 6.0	6.0	< 4.1	4.1	< 5.6	5.6	< 7.2	7.2	< 6.4	6.4
1,1,2,2-Tetrachloroethane				< 6.0	6.0	< 4.1	4.1	< 5.6	5.6	< 7.2	7.2	< 6.4	6.4
1,1,2-Trichloroethane				< 6.0	6.0	< 4.1	4.1	< 5.6	5.6	< 7.2	7.2	< 6.4	6.4
1,1-Dichloroethane	270	26,000	240,000	< 6.0	6.0	< 4.1	4.1	< 5.6	5.6	< 7.2	7.2	< 6.4	6.4
1,1-Dichloroethene	330	100,000	500,000	< 6.0	6.0	< 4.1	4.1	< 5.6	5.6	< 7.2	7.2	< 6.4	6.4
1,2,3-Trichlorobenzene				< 6.0	6.0	< 4.1	4.1	< 5.6	5.6	< 7.2	7.2	< 6.4	6.4
1,2,4-Trichlorobenzene				< 6.0	6.0	< 4.1	4.1	< 5.6	5.6	< 7.2	7.2	< 6.4	6.4
1,2-Dibromo-3-chloropropane				< 6.0	6.0	< 4.1	4.1	< 5.6	5.6	< 7.2	7.2	< 6.4	6.4
1,2-Dibromomethane				< 6.0	6.0	< 4.1	4.1	< 5.6	5.6	< 7.2	7.2	< 6.4	6.4
1,2-Dichlorobenzene	1,100	100,000	500,000	< 6.0	6.0	< 4.1	4.1	< 5.6	5.6	< 7.2	7.2	< 6.4	6.4
1,2-Dichloroethane	20	3,100	30,000	< 6.0	6.0	< 4.1	4.1	< 5.6	5.6	< 7.2	7.2	< 6.4	6.4
1,2-Dichloropropane				< 6.0	6.0	< 4.1	4.1	< 5.6	5.6	< 7.2	7.2	< 6.4	6.4
1,3-Dichlorobenzene	2,400	4,900	280,000	< 6.0	6.0	< 4.1	4.1	< 5.6	5.6	< 7.2	7.2	< 6.4	6.4
1,4-Dichlorobenzene	1,800	13,000	130,000	< 6.0	6.0	< 4.1	4.1	< 5.6	5.6	< 7.2	7.2	< 6.4	6.4
1,4- dioxane	100	13,000	130,000	< 90	90	< 62	62	< 84	84	< 100	100	< 96	96
2-Hexanone (Methyl Butyl Ketone)				< 30	30	< 21	21	< 28	28	< 36	36	< 32	32
4-Methyl-2-Pentanone				< 30	30	< 21	21	< 28	28	< 36	36	< 32	32
Acetone	50	100,000	500,000	**8.1**	30	< 21	21	< 28	28	**8**	36	**6.7**	32
Acrolein				< 6.0	6.0	< 4.1	4.1	< 5.6	5.6	< 7.2	7.2	< 6.4	6.4
Acrylonitrile				< 24	24	< 17	17	< 22	22	< 29	29	< 26	26
Benzene	60	4,800	44,000	< 6.0	6.0	< 4.1	4.1	< 5.6	5.6	< 7.2	7.2	< 6.4	6.4
Bromochloromethane				< 6.0	6.0	< 4.1	4.1	< 5.6	5.6	< 7.2	7.2	< 6.4	6.4
Bromodichloromethane				< 6.0	6.0	< 4.1	4.1	< 5.6	5.6	< 7.2	7.2	< 6.4	6.4
Bromoform				< 6.0	6.0	< 4.1	4.1	< 5.6	5.6	< 7.2	7.2	< 6.4	6.4
Bromomethane				< 6.0	6.0	< 4.1	4.1	< 5.6	5.6	< 7.2	7.2	< 6.4	6.4
Carbon Disulfide				**2.8**	6.0	< 4.1	4.1	< 5.6	5.6	< 7.2	7.2	< 6.4	6.4
Carbon tetrachloride	760	2,400	22,000	< 6.0	6.0	< 4.1	4.1	< 5.6	5.6	< 7.2	7.2	< 6.4	6.4
Chlorobenzene	1,100	100,000	500,000	< 6.0	6.0	< 4.1	4.1	< 5.6	5.6	< 7.2	7.2	< 6.4	6.4
Chloroethane				< 6.0	6.0	< 4.1	4.1	< 5.6	5.6	< 7.2	7.2	< 6.4	6.4
Chloroform	370	49,000	350,000	< 6.0	6.0	< 4.1	4.1	< 5.6	5.6	< 7.2	7.2	< 6.4	6.4
Chloromethane				< 6.0	6.0	< 4.1	4.1	< 5.6	5.6	< 7.2	7.2	< 6.4	6.4
cis-1,2-Dichloroethene	250	100,000	500,000	< 6.0	6.0	< 4.1	4.1	< 5.6	5.6	< 7.2	7.2	< 6.4	6.4
cis-1,3-Dichloropropene				< 6.0	6.0	< 4.1	4.1	< 5.6	5.6	< 7.2	7.2	< 6.4	6.4
Cyclohexane				< 6.0	6.0	< 4.1	4.1	< 5.6	5.6	< 7.2	7.2	< 6.4	6.4
Dibromochloromethane				< 6.0	6.0	< 4.1	4.1	< 5.6	5.6	< 7.2	7.2	< 6.4	6.4
Dichlorodifluoromethane				< 6.0	6.0	< 4.1	4.1	< 5.6	5.6	< 7.2	7.2	< 6.4	6.4
Ethylbenzene	1,000	41,000	390,000	< 6.0	6.0	< 4.1	4.1	< 5.6	5.6	< 7.2	7.2	< 6.4	6.4
Isopropylbenzene				< 6.0	6.0	< 4.1	4.1	< 5.6	5.6	< 7.2	7.2	< 6.4	6.4
m&p-Xylenes	260	100,000		< 6.0	6.0	< 4.1	4.1	< 5.6	5.6	< 7.2	7.2	< 6.4	6.4
Methyl Ethyl Ketone (2-Butanone)	120	100,000	500,000	< 36	36	< 25	25	< 34	34	< 43	43	< 39	39
Methyl t-butyl ether (MTBE)	930	100,000	500,000	< 12	12	< 8.3	8.3	< 11	11	< 14	14	< 13	13
Methylacetate				< 6.0	6.0	< 4.1	4.1	< 5.6	5.6	< 7.2	7.2	< 6.4	6.4
Methylcyclohexane				< 6.0	6.0	< 4.1	4.1	< 5.6	5.6	< 7.2	7.2	< 6.4	6.4
Methylene chloride	50	100,000	500,000	< 6.0	6.0	< 4.1	4.1	< 5.6	5.6	< 7.2	7.2	< 6.4	6.4
o-Xylene	260	100,000		< 6.0	6.0	< 4.1	4.1	< 5.6	5.6	< 7.2	7.2	< 6.4	6.4
Styrene				< 6.0	6.0	< 4.1	4.1	< 5.6	5.6	< 7.2	7.2	< 6.4	6.4
Tert-butyl alcohol				< 120	120	< 83	83	< 110	110	< 140	140	< 130	130
Tetrachloroethene	1,300	19,000	150,000	< 6.0	6.0	< 4.1	4.1	< 5.6	5.6	< 7.2	7.2	< 6.4	6.4
Toluene	700	100,000	500,000	< 6.0	6.0	< 4.1	4.1	< 5.6	5.6	< 7.2	7.2	< 6.4	6.4
Total Xylenes				< 6.0	6.0	< 4.1	4.1	< 5.6	5.6	< 7.2	7.2	< 6.4	6.4
trans-1,2-Dichloroethene	190	100,000	500,000	< 6.0	6.0	< 4.1	4.1	< 5.6	5.6	< 7.2	7.2	< 6.4	6.4
trans-1,3-Dichloropropene				< 6.0	6.0	< 4.1	4.1	< 5.6	5.6	< 7.2	7.2	< 6.4	6.4
Trichloroethene	470	21,000	200,000	< 6.0	6.0	< 4.1	4.1	< 5.6	5.6	< 7.2	7.2	< 6.4	6.4
Trichlorofluoromethane				< 6.0	6.0	< 4.1	4.1	< 5.6	5.6	< 7.2	7.2	< 6.4	6.4
Trichlorotrifluoroethane				< 6.0	6.0	< 4.1	4.1	< 5.6	5.6	< 7.2	7.2	< 6.4	6.4
Vinyl Chloride	20	900	13,000	< 6.0	6.0	< 4.1	4.1	< 5.6	5.6	< 7.2	7.2	< 6.4	6.4
Total BTEX Concentration				**0**		**0**		**0**		**0**		**0**	
Total VOCs Concentration				**10.9**		**0**		**0**		**8**		**6.7**	

Notes:

* - 6 NYCRR Part 375-6 Remedial Program Soil Cleanup Objectives

RL - Reporting Limit

Bold/highlighted- Indicated exceedance of the NYSDEC UUSCO Guidance Value

Bold/highlighted- Indicated exceedance of the NYSDEC RRSCO Guidance Value

Bold/highlighted- Indicated exceedance of the NYSDEC RCSCO Guidance Value

Table 21
Former Pfizer Site A - C224284
243-271 Wallabout Street,
Brooklyn, New York
Track 1 Area - Endpoint Soil Analytical Results
Volatile Organic Compounds

COMPOUND	NYSDEC Part 375.6 Unrestricted Use Soil Cleanup Objectives*	NYDEC Part 375.6 Restricted Residential Soil Cleanup Objectives*	NYDEC Part 375.6 Restricted Commercial Soil Cleanup Objectives*	EBC Endpoint Samples									
				EP32		EP33		EP34		EP35		EP36	
				16'		16'		16'		16'		16'	
				7/9/2020		8/5/2020		8/5/2020		8/5/2020		10/15/2020	
				µg/Kg		µg/Kg		µg/Kg		µg/Kg		µg/Kg	
				Result	RL	Result	RL	Result	RL	Result	RL	Result	RL
1,1,1,2-Tetrachlorothane				< 18	18	< 21	21	< 21	21	< 13	13	< 15	15
1,1,1-Trichloroethane	680	100,000	500,000	< 4.5	4.5	< 5.2	5.2	< 5.3	5.3	< 3.3	3.3	< 3.7	3.7
1,1,2,2-Tetrachloroethane				< 4.5	4.5	< 5.2	5.2	< 5.3	5.3	< 3.3	3.3	< 3.7	3.7
1,1,2-Trichloroethane				< 4.5	4.5	< 5.2	5.2	< 5.3	5.3	< 3.3	3.3	< 3.7	3.7
1,1-Dichloroethane	270	26,000	240,000	< 4.5	4.5	< 5.2	5.2	< 5.3	5.3	< 3.3	3.3	< 3.7	3.7
1,1-Dichloroethene	330	100,000	500,000	< 4.5	4.5	< 5.2	5.2	< 5.3	5.3	< 3.3	3.3	< 3.7	3.7
1,2,3-Trichlorobenzene				< 4.5	4.5	< 5.2	5.2	< 5.3	5.3	< 3.3	3.3	< 3.7	3.7
1,2,4-Trichlorobenzene				< 4.5	4.5	< 5.2	5.2	< 5.3	5.3	< 3.3	3.3	< 3.7	3.7
1,2-Dibromo-3-chloropropane				< 4.5	4.5	< 5.2	5.2	< 5.3	5.3	< 3.3	3.3	< 3.7	3.7
1,2-Dibromomethane				< 4.5	4.5	< 5.2	5.2	< 5.3	5.3	< 3.3	3.3	< 3.7	3.7
1,2-Dichlorobenzene	1,100	100,000	500,000	< 4.5	4.5	< 5.2	5.2	< 5.3	5.3	< 3.3	3.3	< 3.7	3.7
1,2-Dichloroethane	20	3,100	30,000	< 4.5	4.5	< 5.2	5.2	< 5.3	5.3	< 3.3	3.3	< 3.7	3.7
1,2-Dichloropropane				< 4.5	4.5	< 5.2	5.2	< 5.3	5.3	< 3.3	3.3	< 3.7	3.7
1,3-Dichlorobenzene	2,400	4,900	280,000	< 4.5	4.5	< 5.2	5.2	< 5.3	5.3	< 3.3	3.3	< 3.7	3.7
1,4-Dichlorobenzene	1,800	13,000	130,000	< 4.5	4.5	< 5.2	5.2	< 5.3	5.3	< 3.3	3.3	< 3.7	3.7
1,4- dioxane	100	13,000	130,000	< 67	67	< 79	79	< 80	80	< 50	50	< 55	55
2-Hexanone (Methyl Butyl Ketone)				< 22	22	< 26	26	< 27	27	< 17	17	< 18	18
4-Methyl-2-Pentanone				< 22	22	< 26	26	< 27	27	< 17	17	< 18	18
Acetone	50	100,000	500,000	**7.3**	22	< 26	26	< 27	27	**7.5**	17	< 18	18
Acrolein				< 4.5	4.5	< 5.2	5.2	< 5.3	5.3	< 3.3	3.3	< 3.7	3.7
Acrylonitrile				< 18	18	< 21	21	< 21	21	< 13	13	< 15	15
Benzene	60	4,800	44,000	< 4.5	4.5	< 5.2	5.2	< 5.3	5.3	< 3.3	3.3	< 3.7	3.7
Bromochloromethane				< 4.5	4.5	< 5.2	5.2	< 5.3	5.3	< 3.3	3.3	< 3.7	3.7
Bromodichloromethane				< 4.5	4.5	< 5.2	5.2	< 5.3	5.3	< 3.3	3.3	< 3.7	3.7
Bromoform				< 4.5	4.5	< 5.2	5.2	< 5.3	5.3	< 3.3	3.3	< 3.7	3.7
Bromomethane				< 4.5	4.5	< 5.2	5.2	< 5.3	5.3	< 3.3	3.3	< 3.7	3.7
Carbon Disulfide				**1.8**	4.5	< 5.2	5.2	< 5.3	5.3	< 3.3	3.3	< 3.7	3.7
Carbon tetrachloride	760	2,400	22,000	< 4.5	4.5	< 5.2	5.2	< 5.3	5.3	< 3.3	3.3	< 3.7	3.7
Chlorobenzene	1,100	100,000	500,000	< 4.5	4.5	< 5.2	5.2	< 5.3	5.3	< 3.3	3.3	< 3.7	3.7
Chloroethane				< 4.5	4.5	< 5.2	5.2	< 5.3	5.3	< 3.3	3.3	< 3.7	3.7
Chloroform	370	49,000	350,000	< 4.5	4.5	< 5.2	5.2	< 5.3	5.3	< 3.3	3.3	< 3.7	3.7
Chloromethane				< 4.5	4.5	< 5.2	5.2	< 5.3	5.3	< 3.3	3.3	< 3.7	3.7
cis-1,2-Dichloroethene	250	100,000	500,000	< 4.5	4.5	< 5.2	5.2	< 5.3	5.3	< 3.3	3.3	< 3.7	3.7
cis-1,3-Dichloropropene				< 4.5	4.5	< 5.2	5.2	< 5.3	5.3	< 3.3	3.3	< 3.7	3.7
Cyclohexane				< 4.5	4.5	< 5.2	5.2	< 5.3	5.3	< 3.3	3.3	< 3.7	3.7
Dibromochloromethane				< 4.5	4.5	< 5.2	5.2	< 5.3	5.3	< 3.3	3.3	< 3.7	3.7
Dichlorodifluoromethane				< 4.5	4.5	< 5.2	5.2	< 5.3	5.3	< 3.3	3.3	< 3.7	3.7
Ethylbenzene	1,000	41,000	390,000	< 4.5	4.5	< 5.2	5.2	< 5.3	5.3	< 3.3	3.3	< 3.7	3.7
Isopropylbenzene				< 4.5	4.5	< 5.2	5.2	< 5.3	5.3	< 3.3	3.3	< 3.7	3.7
m&p-Xylenes	260	100,000		< 4.5	4.5	< 5.2	5.2	< 5.3	5.3	< 3.3	3.3	< 3.7	3.7
Methyl Ethyl Ketone (2-Butanone)	120	100,000	500,000	< 27	27	< 31	31	< 32	32	< 20	20	< 22	22
Methyl t-butyl ether (MTBE)	930	100,000	500,000	< 8.9	8.9	< 10	10	< 11	11	< 6.7	6.7	< 7.3	7.3
Methylacetate				< 4.5	4.5	< 5.2	5.2	< 5.3	5.3	< 3.3	3.3	< 3.7	3.7
Methylcyclohexane				< 4.5	4.5	< 5.2	5.2	< 5.3	5.3	< 3.3	3.3	< 3.7	3.7
Methylene chloride	50	100,000	500,000	< 4.5	4.5	< 5.2	5.2	< 5.3	5.3	< 3.3	3.3	< 3.7	3.7
o-Xylene	260	100,000		< 4.5	4.5	< 5.2	5.2	< 5.3	5.3	< 3.3	3.3	< 3.7	3.7
Styrene				< 4.5	4.5	< 5.2	5.2	< 5.3	5.3	< 3.3	3.3	< 3.7	3.7
Tert-butyl alcohol				< 89	89	< 100	100	< 110	110	< 67	67	< 73	73
Tetrachloroethene	1,300	19,000	150,000	< 4.5	4.5	< 5.2	5.2	< 5.3	5.3	< 3.3	3.3	< 3.7	3.7
Toluene	700	100,000	500,000	< 4.5	4.5	< 5.2	5.2	< 5.3	5.3	< 3.3	3.3	< 3.7	3.7
Total Xylenes				< 4.5	4.5	< 5.2	5.2	< 5.3	5.3	< 3.3	3.3	< 3.7	3.7
trans-1,2-Dichloroethene	190	100,000	500,000	< 4.5	4.5	< 5.2	5.2	< 5.3	5.3	< 3.3	3.3	< 3.7	3.7
trans-1,3-Dichloropropene				< 4.5	4.5	< 5.2	5.2	< 5.3	5.3	< 3.3	3.3	< 3.7	3.7
Trichloroethene	470	21,000	200,000	< 4.5	4.5	< 5.2	5.2	< 5.3	5.3	< 3.3	3.3	< 3.7	3.7
Trichlorofluoromethane				< 4.5	4.5	< 5.2	5.2	< 5.3	5.3	< 3.3	3.3	< 3.7	3.7
Trichlorotrifluoroethane				< 4.5	4.5	< 5.2	5.2	< 5.3	5.3	< 3.3	3.3	< 3.7	3.7
Vinyl Chloride	20	900	13,000	< 4.5	4.5	< 5.2	5.2	< 5.3	5.3	< 3.3	3.3	< 3.7	3.7
Total BTEX Concentration				**0**		**0**		**0**		**0**		**0**	
Total VOCs Concentration				**9.1**		**0**		**0**		**7.5**		**0**	

Notes:

* - 6 NYCRR Part 375-6 Remedial Program Soil Cleanup Objectives

RL - Reporting Limit

Bold/highlighted- Indicated exceedance of the NYSDEC UUSCO Guidance Value

Bold/highlighted- Indicated exceedance of the NYSDEC RRSCO Guidance Value

Bold/highlighted- Indicated exceedance of the NYSDEC RCSCO Guidance Value

Table 21
Former Pfizer Site A - C224284
243-271 Wallabout Street,
Brooklyn, New York
Track 1 Area - Endpoint Soil Analytical Results
Volatile Organic Compounds

COMPOUND	NYSDEC Part 375.6 Unrestricted Use Soil Cleanup Objectives*	NYDEC Part 375.6 Restricted Residential Soil Cleanup Objectives*	NYDEC Part 375.6 Restricted Commercial Soil Cleanup Objectives*	EBC Endpoint Samples									
				EP37		EP38		EP46		EP47		EP48	
				16'		16'		16'		16'		16'	
				12/4/2020		12/4/2020		11/20/2020		11/20/2020		10/15/2020	
				µg/Kg		µg/Kg		µg/Kg		µg/Kg		µg/Kg	
				Result	RL	Result	RL	Result	RL	Result	RL	Result	RL
1,1,1,2-Tetrachlorothane				< 30	30	< 28	28	< 16	16	< 28	28	< 11	11
1,1,1-Trichloroethane	680	100,000	500,000	< 7.6	7.6	< 7.1	7.1	< 4.0	4.0	< 7.0	7.0	< 2.7	2.7
1,1,2,2-Tetrachloroethane				< 7.6	7.6	< 7.1	7.1	< 4.0	4.0	< 7.0	7.0	< 2.7	2.7
1,1,2-Trichloroethane				< 7.6	7.6	< 7.1	7.1	< 4.0	4.0	< 7.0	7.0	< 2.7	2.7
1,1-Dichloroethane	270	26,000	240,000	< 7.6	7.6	< 7.1	7.1	< 4.0	4.0	< 7.0	7.0	< 2.7	2.7
1,1-Dichloroethene	330	100,000	500,000	< 7.6	7.6	< 7.1	7.1	< 4.0	4.0	< 7.0	7.0	< 2.7	2.7
1,2,3-Trichlorobenzene				< 7.6	7.6	< 7.1	7.1	< 4.0	4.0	< 7.0	7.0	< 2.7	2.7
1,2,4-Trichlorobenzene				< 7.6	7.6	< 7.1	7.1	< 4.0	4.0	< 7.0	7.0	< 2.7	2.7
1,2-Dibromo-3-chloropropane				< 7.6	7.6	< 7.1	7.1	< 4.0	4.0	< 7.0	7.0	< 2.7	2.7
1,2-Dibromomethane				< 7.6	7.6	< 7.1	7.1	< 4.0	4.0	< 7.0	7.0	< 2.7	2.7
1,2-Dichlorobenzene	1,100	100,000	500,000	< 7.6	7.6	< 7.1	7.1	< 4.0	4.0	< 7.0	7.0	< 2.7	2.7
1,2-Dichloroethane	20	3,100	30,000	< 7.6	7.6	< 7.1	7.1	< 4.0	4.0	< 7.0	7.0	< 2.7	2.7
1,2-Dichloropropane				< 7.6	7.6	< 7.1	7.1	< 4.0	4.0	< 7.0	7.0	< 2.7	2.7
1,3-Dichlorobenzene	2,400	4,900	280,000	< 7.6	7.6	< 7.1	7.1	< 4.0	4.0	< 7.0	7.0	< 2.7	2.7
1,4-Dichlorobenzene	1,800	13,000	130,000	< 7.6	7.6	< 7.1	7.1	< 4.0	4.0	< 7.0	7.0	< 2.7	2.7
1,4- dioxane	100	13,000	130,000	< 100	100	< 100	100	< 59	59	< 100	100	< 40	40
2-Hexanone (Methyl Butyl Ketone)				< 38	38	< 35	35	< 20	20	< 35	35	< 13	13
4-Methyl-2-Pentanone				< 38	38	< 35	35	< 20	20	< 35	35	< 13	13
Acetone	50	100,000	500,000	< 38	38	**7.8**	35	< 20	20	**20**	35	**4.6**	13
Acrolein				< 7.6	7.6	< 7.1	7.1	< 4.0	4.0	< 7.0	7.0	< 2.7	2.7
Acrylonitrile				< 30	30	< 28	28	< 16	16	< 28	28	< 11	11
Benzene	60	4,800	44,000	< 7.6	7.6	< 7.1	7.1	< 4.0	4.0	< 7.0	7.0	< 2.7	2.7
Bromochloromethane				< 7.6	7.6	< 7.1	7.1	< 4.0	4.0	< 7.0	7.0	< 2.7	2.7
Bromodichloromethane				< 7.6	7.6	< 7.1	7.1	< 4.0	4.0	< 7.0	7.0	< 2.7	2.7
Bromoform				< 7.6	7.6	< 7.1	7.1	< 4.0	4.0	< 7.0	7.0	< 2.7	2.7
Bromomethane				< 7.6	7.6	< 7.1	7.1	< 4.0	4.0	< 7.0	7.0	< 2.7	2.7
Carbon Disulfide				< 7.6	7.6	< 7.1	7.1	< 4.0	4.0	< 7.0	7.0	< 2.7	2.7
Carbon tetrachloride	760	2,400	22,000	< 7.6	7.6	< 7.1	7.1	< 4.0	4.0	< 7.0	7.0	< 2.7	2.7
Chlorobenzene	1,100	100,000	500,000	< 7.6	7.6	< 7.1	7.1	< 4.0	4.0	< 7.0	7.0	< 2.7	2.7
Chloroethane				< 7.6	7.6	< 7.1	7.1	< 4.0	4.0	< 7.0	7.0	< 2.7	2.7
Chloroform	370	49,000	350,000	< 7.6	7.6	< 7.1	7.1	< 4.0	4.0	< 7.0	7.0	< 2.7	2.7
Chloromethane				< 7.6	7.6	< 7.1	7.1	< 4.0	4.0	< 7.0	7.0	< 2.7	2.7
cis-1,2-Dichloroethene	250	100,000	500,000	< 7.6	7.6	< 7.1	7.1	< 4.0	4.0	< 7.0	7.0	< 2.7	2.7
cis-1,3-Dichloropropene				< 7.6	7.6	< 7.1	7.1	< 4.0	4.0	< 7.0	7.0	< 2.7	2.7
Cyclohexane				< 7.6	7.6	< 7.1	7.1	< 4.0	4.0	< 7.0	7.0	< 2.7	2.7
Dibromochloromethane				< 7.6	7.6	< 7.1	7.1	< 4.0	4.0	< 7.0	7.0	< 2.7	2.7
Dichlorodifluoromethane				< 7.6	7.6	< 7.1	7.1	< 4.0	4.0	< 7.0	7.0	< 2.7	2.7
Ethylbenzene	1,000	41,000	390,000	< 7.6	7.6	< 7.1	7.1	< 4.0	4.0	< 7.0	7.0	< 2.7	2.7
Isopropylbenzene				< 7.6	7.6	< 7.1	7.1	< 4.0	4.0	< 7.0	7.0	< 2.7	2.7
m&p-Xylenes	260	100,000		< 7.6	7.6	< 7.1	7.1	< 4.0	4.0	< 7.0	7.0	< 2.7	2.7
Methyl Ethyl Ketone (2-Butanone)	120	100,000	500,000	< 45	45	< 43	43	< 24	24	< 42	42	< 16	16
Methyl t-butyl ether (MTBE)	930	100,000	500,000	< 15	15	< 14	14	< 7.9	7.9	< 14	14	< 5.3	5.3
Methylacetate				< 7.6	7.6	< 7.1	7.1	< 4.0	4.0	< 7.0	7.0	< 2.7	2.7
Methylcyclohexane				< 7.6	7.6	< 7.1	7.1	< 4.0	4.0	< 7.0	7.0	< 2.7	2.7
Methylene chloride	50	100,000	500,000	< 7.6	7.6	< 7.1	7.1	< 4.0	4.0	< 7.0	7.0	< 2.7	2.7
o-Xylene	260	100,000		< 7.6	7.6	< 7.1	7.1	< 4.0	4.0	< 7.0	7.0	< 2.7	2.7
Styrene				< 7.6	7.6	< 7.1	7.1	< 4.0	4.0	< 7.0	7.0	< 2.7	2.7
Tert-butyl alcohol				< 150	150	< 140	140	< 79	79	< 140	140	< 53	53
Tetrachloroethene	1,300	19,000	150,000	< 7.6	7.6	< 7.1	7.1	< 4.0	4.0	< 7.0	7.0	< 2.7	2.7
Toluene	700	100,000	500,000	< 7.6	7.6	< 7.1	7.1	< 4.0	4.0	< 7.0	7.0	< 2.7	2.7
Total Xylenes				< 7.6	7.6	< 7.1	7.1	< 4.0	4.0	< 7.0	7.0	< 2.7	2.7
trans-1,2-Dichloroethene	190	100,000	500,000	< 7.6	7.6	< 7.1	7.1	< 4.0	4.0	< 7.0	7.0	< 2.7	2.7
trans-1,3-Dichloropropene				< 7.6	7.6	< 7.1	7.1	< 4.0	4.0	< 7.0	7.0	< 2.7	2.7
Trichloroethene	470	21,000	200,000	< 7.6	7.6	< 7.1	7.1	< 4.0	4.0	< 7.0	7.0	< 2.7	2.7
Trichlorofluoromethane				< 7.6	7.6	< 7.1	7.1	< 4.0	4.0	< 7.0	7.0	< 2.7	2.7
Trichlorotrifluoroethane				< 7.6	7.6	< 7.1	7.1	< 4.0	4.0	< 7.0	7.0	< 2.7	2.7
Vinyl Chloride	20	900	13,000	< 7.6	7.6	< 7.1	7.1	< 4.0	4.0	< 7.0	7.0	< 2.7	2.7
Total BTEX Concentration				**0**		**0**		**0**		**0**		**0**	
Total VOCs Concentration				**0**		**7.8**		**0**		**20**		**4.6**	

Notes:

* - 6 NYCRR Part 375-6 Remedial Program Soil Cleanup Objectives

RL - Reporting Limit

Bold/highlighted- Indicated exceedance of the NYSDEC UUSCO Guidance Value

Bold/highlighted- Indicated exceedance of the NYSDEC RRSCO Guidance Value

Bold/highlighted- Indicated exceedance of the NYSDEC RCSCO Guidance Value

Table 21
Former Pfizer Site A - C224284
243-271 Wallabout Street,
Brooklyn, New York
Track 1 Area - Endpoint Soil Analytical Results
Volatile Organic Compounds

COMPOUND	NYSDEC Part 375.6 Unrestricted Use Soil Cleanup Objectives*	NYDEC Part 375.6 Restricted Residential Soil Cleanup Objectives*	NYDEC Part 375.6 Restricted Commercial Soil Cleanup Objectives*	EBC Endpoint Samples									
				EP49		EP50		EP51		EP52		EP53	
				16'		16'		16'		16'		16'	
				8/10/2020		8/10/2020		8/10/2020		8/5/2020		8/5/2020	
				µg/Kg		µg/Kg		µg/Kg		µg/Kg		µg/Kg	
				Result	RL	Result	RL	Result	RL	Result	RL	Result	RL
1,1,1,2-Tetrachlorothane				< 20	20	< 18	18	< 19	19	< 21	21	< 23	23
1,1,1-Trichloroethane	680	100,000	500,000	< 4.9	4.9	< 4.4	4.4	< 4.6	4.6	< 5.3	5.3	< 5.8	5.8
1,1,2,2-Tetrachloroethane				< 4.9	4.9	< 4.4	4.4	< 4.6	4.6	< 5.3	5.3	< 5.8	5.8
1,1,2-Trichloroethane				< 4.9	4.9	< 4.4	4.4	< 4.6	4.6	< 5.3	5.3	< 5.8	5.8
1,1-Dichloroethane	270	26,000	240,000	< 4.9	4.9	< 4.4	4.4	< 4.6	4.6	< 5.3	5.3	< 5.8	5.8
1,1-Dichloroethene	330	100,000	500,000	< 4.9	4.9	< 4.4	4.4	< 4.6	4.6	< 5.3	5.3	< 5.8	5.8
1,2,3-Trichlorobenzene				< 4.9	4.9	< 4.4	4.4	< 4.6	4.6	< 5.3	5.3	< 5.8	5.8
1,2,4-Trichlorobenzene				< 4.9	4.9	< 4.4	4.4	< 4.6	4.6	< 5.3	5.3	< 5.8	5.8
1,2-Dibromo-3-chloropropane				< 4.9	4.9	< 4.4	4.4	< 4.6	4.6	< 5.3	5.3	< 5.8	5.8
1,2-Dibromomethane				< 4.9	4.9	< 4.4	4.4	< 4.6	4.6	< 5.3	5.3	< 5.8	5.8
1,2-Dichlorobenzene	1,100	100,000	500,000	< 4.9	4.9	< 4.4	4.4	< 4.6	4.6	< 5.3	5.3	< 5.8	5.8
1,2-Dichloroethane	20	3,100	30,000	< 4.9	4.9	< 4.4	4.4	< 4.6	4.6	< 5.3	5.3	< 5.8	5.8
1,2-Dichloropropane				< 4.9	4.9	< 4.4	4.4	< 4.6	4.6	< 5.3	5.3	< 5.8	5.8
1,3-Dichlorobenzene	2,400	4,900	280,000	< 4.9	4.9	< 4.4	4.4	< 4.6	4.6	< 5.3	5.3	< 5.8	5.8
1,4-Dichlorobenzene	1,800	13,000	130,000	< 4.9	4.9	< 4.4	4.4	< 4.6	4.6	< 5.3	5.3	< 5.8	5.8
1,4- dioxane	100	13,000	130,000	< 73	73	< 66	66	< 70	70	< 79	79	< 86	86
2-Hexanone (Methyl Butyl Ketone)				< 24	24	< 22	22	< 23	23	< 26	26	< 29	29
4-Methyl-2-Pentanone				< 24	24	< 22	22	< 23	23	< 26	26	< 29	29
Acetone	50	100,000	500,000	< 24	24	< 22	22	**14**	23	< 26	26	< 29	29
Acrolein				< 4.9	4.9	< 4.4	4.4	< 4.6	4.6	< 5.3	5.3	< 5.8	5.8
Acrylonitrile				< 20	20	< 18	18	< 19	19	< 21	21	< 23	23
Benzene	60	4,800	44,000	< 4.9	4.9	< 4.4	4.4	< 4.6	4.6	< 5.3	5.3	< 5.8	5.8
Bromochloromethane				< 4.9	4.9	< 4.4	4.4	< 4.6	4.6	< 5.3	5.3	< 5.8	5.8
Bromodichloromethane				< 4.9	4.9	< 4.4	4.4	< 4.6	4.6	< 5.3	5.3	< 5.8	5.8
Bromoform				< 4.9	4.9	< 4.4	4.4	< 4.6	4.6	< 5.3	5.3	< 5.8	5.8
Bromomethane				< 4.9	4.9	< 4.4	4.4	< 4.6	4.6	< 5.3	5.3	< 5.8	5.8
Carbon Disulfide				< 4.9	4.9	< 4.4	4.4	**1.2**	4.6	< 5.3	5.3	< 5.8	5.8
Carbon tetrachloride	760	2,400	22,000	< 4.9	4.9	< 4.4	4.4	< 4.6	4.6	< 5.3	5.3	< 5.8	5.8
Chlorobenzene	1,100	100,000	500,000	< 4.9	4.9	< 4.4	4.4	< 4.6	4.6	< 5.3	5.3	< 5.8	5.8
Chloroethane				< 4.9	4.9	< 4.4	4.4	< 4.6	4.6	< 5.3	5.3	< 5.8	5.8
Chloroform	370	49,000	350,000	< 4.9	4.9	< 4.4	4.4	< 4.6	4.6	< 5.3	5.3	< 5.8	5.8
Chloromethane				< 4.9	4.9	< 4.4	4.4	< 4.6	4.6	< 5.3	5.3	< 5.8	5.8
cis-1,2-Dichloroethene	250	100,000	500,000	< 4.9	4.9	< 4.4	4.4	< 4.6	4.6	< 5.3	5.3	< 5.8	5.8
cis-1,3-Dichloropropene				< 4.9	4.9	< 4.4	4.4	< 4.6	4.6	< 5.3	5.3	< 5.8	5.8
Cyclohexane				< 4.9	4.9	< 4.4	4.4	< 4.6	4.6	< 5.3	5.3	< 5.8	5.8
Dibromochloromethane				< 4.9	4.9	< 4.4	4.4	< 4.6	4.6	< 5.3	5.3	< 5.8	5.8
Dichlorodifluoromethane				< 4.9	4.9	< 4.4	4.4	< 4.6	4.6	< 5.3	5.3	< 5.8	5.8
Ethylbenzene	1,000	41,000	390,000	< 4.9	4.9	< 4.4	4.4	< 4.6	4.6	< 5.3	5.3	< 5.8	5.8
Isopropylbenzene				< 4.9	4.9	< 4.4	4.4	< 4.6	4.6	< 5.3	5.3	< 5.8	5.8
m&p-Xylenes	260	100,000		< 4.9	4.9	< 4.4	4.4	< 4.6	4.6	< 5.3	5.3	< 5.8	5.8
Methyl Ethyl Ketone (2-Butanone)	120	100,000	500,000	< 29	29	< 27	27	< 28	28	< 32	32	< 35	35
Methyl t-butyl ether (MTBE)	930	100,000	500,000	< 9.8	9.8	< 8.8	8.8	< 9.3	9.3	< 11	11	< 12	12
Methylacetate				< 4.9	4.9	< 4.4	4.4	< 4.6	4.6	< 5.3	5.3	< 5.8	5.8
Methylcyclohexane				< 4.9	4.9	< 4.4	4.4	< 4.6	4.6	< 5.3	5.3	< 5.8	5.8
Methylene chloride	50	100,000	500,000	< 4.9	4.9	< 4.4	4.4	< 4.6	4.6	< 5.3	5.3	< 5.8	5.8
o-Xylene	260	100,000		< 4.9	4.9	< 4.4	4.4	< 4.6	4.6	< 5.3	5.3	< 5.8	5.8
Styrene				< 4.9	4.9	< 4.4	4.4	< 4.6	4.6	< 5.3	5.3	< 5.8	5.8
Tert-butyl alcohol				< 98	98	< 88	88	< 93	93	< 110	110	< 120	120
Tetrachloroethene	1,300	19,000	150,000	< 4.9	4.9	< 4.4	4.4	< 4.6	4.6	< 5.3	5.3	< 5.8	5.8
Toluene	700	100,000	500,000	< 4.9	4.9	< 4.4	4.4	< 4.6	4.6	< 5.3	5.3	< 5.8	5.8
Total Xylenes				< 4.9	4.9	< 4.4	4.4	< 4.6	4.6	< 5.3	5.3	< 5.8	5.8
trans-1,2-Dichloroethene	190	100,000	500,000	< 4.9	4.9	< 4.4	4.4	< 4.6	4.6	< 5.3	5.3	< 5.8	5.8
trans-1,3-Dichloropropene				< 4.9	4.9	< 4.4	4.4	< 4.6	4.6	< 5.3	5.3	< 5.8	5.8
Trichloroethene	470	21,000	200,000	< 4.9	4.9	< 4.4	4.4	< 4.6	4.6	< 5.3	5.3	< 5.8	5.8
Trichlorofluoromethane				< 4.9	4.9	< 4.4	4.4	< 4.6	4.6	< 5.3	5.3	< 5.8	5.8
Trichlorotrifluoroethane				< 4.9	4.9	< 4.4	4.4	< 4.6	4.6	< 5.3	5.3	< 5.8	5.8
Vinyl Chloride	20	900	13,000	< 4.9	4.9	< 4.4	4.4	< 4.6	4.6	< 5.3	5.3	< 5.8	5.8
Total BTEX Concentration				**0**		**0**		**0**		**0**		**0**	
Total VOCs Concentration				**0**		**0**		**15.2**		**0**		**0**	

Notes:

* - 6 NYCRR Part 375-6 Remedial Program Soil Cleanup Objectives

RL - Reporting Limit

Bold/highlighted- Indicated exceedance of the NYSDEC UUSCO Guidance Value

Bold/highlighted- Indicated exceedance of the NYSDEC RRSCO Guidance Value

Bold/highlighted- Indicated exceedance of the NYSDEC RCSCO Guidance Value

Table 21
Former Pfizer Site A - C224284
243-271 Wallabout Street,
Brooklyn, New York
Track 1 Area - Endpoint Soil Analytical Results
Volatile Organic Compounds

COMPOUND	NYSDEC Part 375.6 Unrestricted Use Soil Cleanup Objectives*	NYDEC Part 375.6 Restricted Residential Soil Cleanup Objectives*	NYDEC Part 375.6 Restricted Commercial Soil Cleanup Objectives*	EBC Endpoint Samples									
				EP54		EP55		EP56		EP57		EP58	
				16'		16'		16'		16'		16'	
				8/5/2020		8/5/2020		8/5/2020		8/10/2020		8/10/2020	
				µg/Kg		µg/Kg		µg/Kg		µg/Kg		µg/Kg	
				Result	RL	Result	RL	Result	RL	Result	RL	Result	RL
1,1,1,2-Tetrachlorothane				< 21	21	< 20	20	< 31	31	< 22	22	< 21	21
1,1,1-Trichloroethane	680	100,000	500,000	< 5.3	5.3	< 5.1	5.1	< 7.7	7.7	< 5.6	5.6	< 5.2	5.2
1,1,2,2-Tetrachloroethane				< 5.3	5.3	< 5.1	5.1	< 7.7	7.7	< 5.6	5.6	< 5.2	5.2
1,1,2-Trichloroethane				< 5.3	5.3	< 5.1	5.1	< 7.7	7.7	< 5.6	5.6	< 5.2	5.2
1,1-Dichloroethane	270	26,000	240,000	< 5.3	5.3	< 5.1	5.1	< 7.7	7.7	< 5.6	5.6	< 5.2	5.2
1,1-Dichloroethene	330	100,000	500,000	< 5.3	5.3	< 5.1	5.1	< 7.7	7.7	< 5.6	5.6	< 5.2	5.2
1,2,3-Trichlorobenzene				< 5.3	5.3	< 5.1	5.1	< 7.7	7.7	< 5.6	5.6	< 5.2	5.2
1,2,4-Trichlorobenzene				< 5.3	5.3	< 5.1	5.1	< 7.7	7.7	< 5.6	5.6	< 5.2	5.2
1,2-Dibromo-3-chloropropane				< 5.3	5.3	< 5.1	5.1	< 7.7	7.7	< 5.6	5.6	< 5.2	5.2
1,2-Dibromomethane				< 5.3	5.3	< 5.1	5.1	< 7.7	7.7	< 5.6	5.6	< 5.2	5.2
1,2-Dichlorobenzene	1,100	100,000	500,000	< 5.3	5.3	< 5.1	5.1	< 7.7	7.7	< 5.6	5.6	< 5.2	5.2
1,2-Dichloroethane	20	3,100	30,000	< 5.3	5.3	< 5.1	5.1	< 7.7	7.7	< 5.6	5.6	< 5.2	5.2
1,2-Dichloropropane				< 5.3	5.3	< 5.1	5.1	< 7.7	7.7	< 5.6	5.6	< 5.2	5.2
1,3-Dichlorobenzene	2,400	4,900	280,000	< 5.3	5.3	< 5.1	5.1	< 7.7	7.7	< 5.6	5.6	< 5.2	5.2
1,4-Dichlorobenzene	1,800	13,000	130,000	< 5.3	5.3	< 5.1	5.1	< 7.7	7.7	< 5.6	5.6	< 5.2	5.2
1,4- dioxane	100	13,000	130,000	< 79	79	< 76	76	< 100	100	< 84	84	< 78	78
2-Hexanone (Methyl Butyl Ketone)				< 26	26	< 25	25	< 39	39	< 28	28	< 26	26
4-Methyl-2-Pentanone				< 26	26	< 25	25	< 39	39	< 28	28	< 26	26
Acetone	50	100,000	500,000	**5.5**	26	< 25	25	**9.2**	39	**9.7**	28	**27**	26
Acrolein				< 5.3	5.3	< 5.1	5.1	< 7.7	7.7	< 5.6	5.6	< 5.2	5.2
Acrylonitrile				< 21	21	< 20	20	< 31	31	< 22	22	< 21	21
Benzene	60	4,800	44,000	< 5.3	5.3	< 5.1	5.1	< 7.7	7.7	< 5.6	5.6	< 5.2	5.2
Bromochloromethane				< 5.3	5.3	< 5.1	5.1	< 7.7	7.7	< 5.6	5.6	< 5.2	5.2
Bromodichloromethane				< 5.3	5.3	< 5.1	5.1	< 7.7	7.7	< 5.6	5.6	< 5.2	5.2
Bromoform				< 5.3	5.3	< 5.1	5.1	< 7.7	7.7	< 5.6	5.6	< 5.2	5.2
Bromomethane				< 5.3	5.3	< 5.1	5.1	< 7.7	7.7	< 5.6	5.6	< 5.2	5.2
Carbon Disulfide				< 5.3	5.3	< 5.1	5.1	< 7.7	7.7	< 5.6	5.6	< 5.2	5.2
Carbon tetrachloride	760	2,400	22,000	< 5.3	5.3	< 5.1	5.1	< 7.7	7.7	< 5.6	5.6	< 5.2	5.2
Chlorobenzene	1,100	100,000	500,000	< 5.3	5.3	< 5.1	5.1	< 7.7	7.7	< 5.6	5.6	< 5.2	5.2
Chloroethane				< 5.3	5.3	< 5.1	5.1	< 7.7	7.7	< 5.6	5.6	< 5.2	5.2
Chloroform	370	49,000	350,000	< 5.3	5.3	< 5.1	5.1	< 7.7	7.7	< 5.6	5.6	< 5.2	5.2
Chloromethane				< 5.3	5.3	< 5.1	5.1	< 7.7	7.7	< 5.6	5.6	< 5.2	5.2
cis-1,2-Dichloroethene	250	100,000	500,000	< 5.3	5.3	< 5.1	5.1	< 7.7	7.7	< 5.6	5.6	< 5.2	5.2
cis-1,3-Dichloropropene				< 5.3	5.3	< 5.1	5.1	< 7.7	7.7	< 5.6	5.6	< 5.2	5.2
Cyclohexane				< 5.3	5.3	< 5.1	5.1	< 7.7	7.7	< 5.6	5.6	< 5.2	5.2
Dibromochloromethane				< 5.3	5.3	< 5.1	5.1	< 7.7	7.7	< 5.6	5.6	< 5.2	5.2
Dichlorodifluoromethane				< 5.3	5.3	< 5.1	5.1	< 7.7	7.7	< 5.6	5.6	< 5.2	5.2
Ethylbenzene	1,000	41,000	390,000	< 5.3	5.3	< 5.1	5.1	< 7.7	7.7	< 5.6	5.6	< 5.2	5.2
Isopropylbenzene				< 5.3	5.3	< 5.1	5.1	< 7.7	7.7	< 5.6	5.6	< 5.2	5.2
m&p-Xylenes	260	100,000		< 5.3	5.3	< 5.1	5.1	< 7.7	7.7	< 5.6	5.6	< 5.2	5.2
Methyl Ethyl Ketone (2-Butanone)	120	100,000	500,000	< 32	32	< 30	30	< 46	46	< 34	34	< 31	31
Methyl t-butyl ether (MTBE)	930	100,000	500,000	< 11	11	< 10	10	< 15	15	< 11	11	< 10	10
Methylacetate				< 5.3	5.3	< 5.1	5.1	< 7.7	7.7	< 5.6	5.6	< 5.2	5.2
Methylcyclohexane				< 5.3	5.3	< 5.1	5.1	< 7.7	7.7	< 5.6	5.6	< 5.2	5.2
Methylene chloride	50	100,000	500,000	< 5.3	5.3	< 5.1	5.1	< 7.7	7.7	< 5.6	5.6	< 5.2	5.2
o-Xylene	260	100,000		< 5.3	5.3	< 5.1	5.1	< 7.7	7.7	< 5.6	5.6	< 5.2	5.2
Styrene				< 5.3	5.3	< 5.1	5.1	< 7.7	7.7	< 5.6	5.6	< 5.2	5.2
Tert-butyl alcohol				< 110	110	< 100	100	< 150	150	< 110	110	< 100	100
Tetrachloroethene	1,300	19,000	150,000	< 5.3	5.3	< 5.1	5.1	< 7.7	7.7	< 5.6	5.6	< 5.2	5.2
Toluene	700	100,000	500,000	< 5.3	5.3	< 5.1	5.1	< 7.7	7.7	< 5.6	5.6	< 5.2	5.2
Total Xylenes				< 5.3	5.3	< 5.1	5.1	< 7.7	7.7	< 5.6	5.6	< 5.2	5.2
trans-1,2-Dichloroethene	190	100,000	500,000	< 5.3	5.3	< 5.1	5.1	< 7.7	7.7	< 5.6	5.6	< 5.2	5.2
trans-1,3-Dichloropropene				< 5.3	5.3	< 5.1	5.1	< 7.7	7.7	< 5.6	5.6	< 5.2	5.2
Trichloroethene	470	21,000	200,000	< 5.3	5.3	< 5.1	5.1	< 7.7	7.7	< 5.6	5.6	< 5.2	5.2
Trichlorofluoromethane				< 5.3	5.3	< 5.1	5.1	< 7.7	7.7	< 5.6	5.6	< 5.2	5.2
Trichlorotrifluoroethane				< 5.3	5.3	< 5.1	5.1	< 7.7	7.7	< 5.6	5.6	< 5.2	5.2
Vinyl Chloride	20	900	13,000	< 5.3	5.3	< 5.1	5.1	< 7.7	7.7	< 5.6	5.6	< 5.2	5.2
Total BTEX Concentration				**0**		**0**		**0**		**0**		**0**	
Total VOCs Concentration				**5.5**		**0**		**9.2**		**9.7**		**27**	

Notes:

* - 6 NYCRR Part 375-6 Remedial Program Soil Cleanup Objectives

RL - Reporting Limit

Bold/highlighted- Indicated exceedance of the NYSDEC UUSCO Guidance Value

Bold/highlighted- Indicated exceedance of the NYSDEC RRSCO Guidance Value

Bold/highlighted- Indicated exceedance of the NYSDEC RCSCO Guidance Value

Table 21
Former Pfizer Site A - C224284
243-271 Wallabout Street,
Brooklyn, New York
Track 1 Area - Endpoint Soil Analytical Results
Volatile Organic Compounds

COMPOUND	NYSDEC Part 375.6 Unrestricted Use Soil Cleanup Objectives*	NYDEC Part 375.6 Restricted Residential Soil Cleanup Objectives*	NYDEC Part 375.6 Restricted Commercial Soil Cleanup Objectives*	EBC Endpoint Samples									
				EP59		EP60		EP61		EP62		EP63	
				16'		16'		16'		16'		16'	
				8/10/2020		8/10/2020		10/15/2020		11/20/2020		11/20/2020	
				µg/Kg		µg/Kg		µg/Kg		µg/Kg		µg/Kg	
				Result	RL	Result	RL	Result	RL	Result	RL	Result	RL
1,1,1,2-Tetrachlorothane				< 19	19	< 19	19	< 15	15	< 22	22	< 21	21
1,1,1-Trichloroethane	680	100,000	500,000	< 4.8	4.8	< 4.8	4.8	< 3.7	3.7	< 5.5	5.5	< 5.2	5.2
1,1,2,2-Tetrachloroethane				< 4.8	4.8	< 4.8	4.8	< 3.7	3.7	< 5.5	5.5	< 5.2	5.2
1,1,2-Trichloroethane				< 4.8	4.8	< 4.8	4.8	< 3.7	3.7	< 5.5	5.5	< 5.2	5.2
1,1-Dichloroethane	270	26,000	240,000	< 4.8	4.8	< 4.8	4.8	< 3.7	3.7	< 5.5	5.5	< 5.2	5.2
1,1-Dichloroethene	330	100,000	500,000	< 4.8	4.8	< 4.8	4.8	< 3.7	3.7	< 5.5	5.5	< 5.2	5.2
1,2,3-Trichlorobenzene				< 4.8	4.8	< 4.8	4.8	< 3.7	3.7	< 5.5	5.5	< 5.2	5.2
1,2,4-Trichlorobenzene				< 4.8	4.8	< 4.8	4.8	< 3.7	3.7	< 5.5	5.5	< 5.2	5.2
1,2-Dibromo-3-chloropropane				< 4.8	4.8	< 4.8	4.8	< 3.7	3.7	< 5.5	5.5	< 5.2	5.2
1,2-Dibromomethane				< 4.8	4.8	< 4.8	4.8	< 3.7	3.7	< 5.5	5.5	< 5.2	5.2
1,2-Dichlorobenzene	1,100	100,000	500,000	< 4.8	4.8	< 4.8	4.8	< 3.7	3.7	< 5.5	5.5	< 5.2	5.2
1,2-Dichloroethane	20	3,100	30,000	< 4.8	4.8	< 4.8	4.8	< 3.7	3.7	< 5.5	5.5	< 5.2	5.2
1,2-Dichloropropane				< 4.8	4.8	< 4.8	4.8	< 3.7	3.7	< 5.5	5.5	< 5.2	5.2
1,3-Dichlorobenzene	2,400	4,900	280,000	< 4.8	4.8	< 4.8	4.8	< 3.7	3.7	< 5.5	5.5	< 5.2	5.2
1,4-Dichlorobenzene	1,800	13,000	130,000	< 4.8	4.8	< 4.8	4.8	< 3.7	3.7	< 5.5	5.5	< 5.2	5.2
1,4- dioxane	100	13,000	130,000	< 72	72	< 71	71	< 55	55	< 82	82	< 78	78
2-Hexanone (Methyl Butyl Ketone)				< 24	24	< 24	24	< 18	18	< 27	27	< 26	26
4-Methyl-2-Pentanone				< 24	24	< 24	24	< 18	18	< 27	27	< 26	26
Acetone	50	100,000	500,000	< 24	24	< 24	24	**4**	18	**8.5**	27	**12**	26
Acrolein				< 4.8	4.8	< 4.8	4.8	< 3.7	3.7	< 5.5	5.5	< 5.2	5.2
Acrylonitrile				< 19	19	< 19	19	< 15	15	< 22	22	< 21	21
Benzene	60	4,800	44,000	< 4.8	4.8	< 4.8	4.8	< 3.7	3.7	< 5.5	5.5	< 5.2	5.2
Bromochloromethane				< 4.8	4.8	< 4.8	4.8	< 3.7	3.7	< 5.5	5.5	< 5.2	5.2
Bromodichloromethane				< 4.8	4.8	< 4.8	4.8	< 3.7	3.7	< 5.5	5.5	< 5.2	5.2
Bromoform				< 4.8	4.8	< 4.8	4.8	< 3.7	3.7	< 5.5	5.5	< 5.2	5.2
Bromomethane				< 4.8	4.8	< 4.8	4.8	< 3.7	3.7	< 5.5	5.5	< 5.2	5.2
Carbon Disulfide				< 4.8	4.8	< 4.8	4.8	< 3.7	3.7	< 5.5	5.5	< 5.2	5.2
Carbon tetrachloride	760	2,400	22,000	< 4.8	4.8	< 4.8	4.8	< 3.7	3.7	< 5.5	5.5	< 5.2	5.2
Chlorobenzene	1,100	100,000	500,000	< 4.8	4.8	< 4.8	4.8	< 3.7	3.7	< 5.5	5.5	< 5.2	5.2
Chloroethane				< 4.8	4.8	< 4.8	4.8	< 3.7	3.7	< 5.5	5.5	< 5.2	5.2
Chloroform	370	49,000	350,000	< 4.8	4.8	< 4.8	4.8	< 3.7	3.7	< 5.5	5.5	< 5.2	5.2
Chloromethane				< 4.8	4.8	< 4.8	4.8	< 3.7	3.7	< 5.5	5.5	< 5.2	5.2
cis-1,2-Dichloroethene	250	100,000	500,000	< 4.8	4.8	< 4.8	4.8	< 3.7	3.7	< 5.5	5.5	< 5.2	5.2
cis-1,3-Dichloropropene				< 4.8	4.8	< 4.8	4.8	< 3.7	3.7	< 5.5	5.5	< 5.2	5.2
Cyclohexane				< 4.8	4.8	< 4.8	4.8	< 3.7	3.7	< 5.5	5.5	< 5.2	5.2
Dibromochloromethane				< 4.8	4.8	< 4.8	4.8	< 3.7	3.7	< 5.5	5.5	< 5.2	5.2
Dichlorodifluoromethane				< 4.8	4.8	< 4.8	4.8	< 3.7	3.7	< 5.5	5.5	< 5.2	5.2
Ethylbenzene	1,000	41,000	390,000	< 4.8	4.8	< 4.8	4.8	< 3.7	3.7	< 5.5	5.5	< 5.2	5.2
Isopropylbenzene				< 4.8	4.8	< 4.8	4.8	< 3.7	3.7	< 5.5	5.5	< 5.2	5.2
m&p-Xylenes	260	100,000		< 4.8	4.8	< 4.8	4.8	< 3.7	3.7	< 5.5	5.5	< 5.2	5.2
Methyl Ethyl Ketone (2-Butanone)	120	100,000	500,000	< 29	29	< 29	29	< 22	22	< 33	33	< 31	31
Methyl t-butyl ether (MTBE)	930	100,000	500,000	< 9.6	9.6	< 9.5	9.5	< 7.4	7.4	< 11	11	< 10	10
Methylacetate				< 4.8	4.8	< 4.8	4.8	< 3.7	3.7	< 5.5	5.5	< 5.2	5.2
Methylcyclohexane				< 4.8	4.8	< 4.8	4.8	< 3.7	3.7	< 5.5	5.5	< 5.2	5.2
Methylene chloride	50	100,000	500,000	< 4.8	4.8	< 4.8	4.8	< 3.7	3.7	< 5.5	5.5	< 5.2	5.2
o-Xylene	260	100,000		< 4.8	4.8	< 4.8	4.8	< 3.7	3.7	< 5.5	5.5	< 5.2	5.2
Styrene				< 4.8	4.8	< 4.8	4.8	< 3.7	3.7	< 5.5	5.5	< 5.2	5.2
Tert-butyl alcohol				< 96	96	< 95	95	< 74	74	< 110	110	< 100	100
Tetrachloroethene	1,300	19,000	150,000	< 4.8	4.8	< 4.8	4.8	< 3.7	3.7	< 5.5	5.5	< 5.2	5.2
Toluene	700	100,000	500,000	< 4.8	4.8	< 4.8	4.8	< 3.7	3.7	< 5.5	5.5	< 5.2	5.2
Total Xylenes				< 4.8	4.8	< 4.8	4.8	< 3.7	3.7	< 5.5	5.5	< 5.2	5.2
trans-1,2-Dichloroethene	190	100,000	500,000	< 4.8	4.8	< 4.8	4.8	< 3.7	3.7	< 5.5	5.5	< 5.2	5.2
trans-1,3-Dichloropropene				< 4.8	4.8	< 4.8	4.8	< 3.7	3.7	< 5.5	5.5	< 5.2	5.2
Trichloroethene	470	21,000	200,000	< 4.8	4.8	< 4.8	4.8	< 3.7	3.7	< 5.5	5.5	< 5.2	5.2
Trichlorofluoromethane				< 4.8	4.8	< 4.8	4.8	< 3.7	3.7	< 5.5	5.5	< 5.2	5.2
Trichlorotrifluoroethane				< 4.8	4.8	< 4.8	4.8	< 3.7	3.7	< 5.5	5.5	< 5.2	5.2
Vinyl Chloride	20	900	13,000	< 4.8	4.8	< 4.8	4.8	< 3.7	3.7	< 5.5	5.5	< 5.2	5.2
Total BTEX Concentration				**0**		**0**		**0**		**0**		**0**	
Total VOCs Concentration				**0**		**0**		**4**		**8.5**		**12**	

Notes:

* - 6 NYCRR Part 375-6 Remedial Program Soil Cleanup Objectives

RL - Reporting Limit

Bold/highlighted- Indicated exceedance of the NYSDEC UUSCO Guidance Value

Bold/highlighted- Indicated exceedance of the NYSDEC RRSCO Guidance Value

Bold/highlighted- Indicated exceedance of the NYSDEC RCSCO Guidance Value

Table 21
Former Pfizer Site A - C224284
243-271 Wallabout Street,
Brooklyn, New York
Track 1 Area - Endpoint Soil Analytical Results
Volatile Organic Compounds

COMPOUND	NYSDEC Part 375.6 Unrestricted Use Soil Cleanup Objectives*	NYDEC Part 375.6 Restricted Residential Soil Cleanup Objectives*	NYDEC Part 375.6 Restricted Commercial Soil Cleanup Objectives*	EBC Endpoint Samples									
				EP67		EP68		EP69		EP70		EP71	
				16'		16'		16'		16'		16'	
				11/23/2020		11/20/2020		10/15/2020		8/10/2020		8/10/2020	
				µg/Kg		µg/Kg		µg/Kg		µg/Kg		µg/Kg	
				Result	RL	Result	RL	Result	RL	Result	RL	Result	RL
1,1,1,2-Tetrachlorothane				< 20	20	< 19	19	< 18	18	< 20	20	< 20	20
1,1,1-Trichloroethane	680	100,000	500,000	< 5.1	5.1	< 4.7	4.7	< 4.6	4.6	< 5.0	5.0	< 5.0	5.0
1,1,2,2-Tetrachloroethane				< 5.1	5.1	< 4.7	4.7	< 4.6	4.6	< 5.0	5.0	< 5.0	5.0
1,1,2-Trichloroethane				< 5.1	5.1	< 4.7	4.7	< 4.6	4.6	< 5.0	5.0	< 5.0	5.0
1,1-Dichloroethane	270	26,000	240,000	< 5.1	5.1	< 4.7	4.7	< 4.6	4.6	< 5.0	5.0	< 5.0	5.0
1,1-Dichloroethene	330	100,000	500,000	< 5.1	5.1	< 4.7	4.7	< 4.6	4.6	< 5.0	5.0	< 5.0	5.0
1,2,3-Trichlorobenzene				< 5.1	5.1	< 4.7	4.7	< 4.6	4.6	< 5.0	5.0	< 5.0	5.0
1,2,4-Trichlorobenzene				< 5.1	5.1	< 4.7	4.7	< 4.6	4.6	< 5.0	5.0	< 5.0	5.0
1,2-Dibromo-3-chloropropane				< 5.1	5.1	< 4.7	4.7	< 4.6	4.6	< 5.0	5.0	< 5.0	5.0
1,2-Dibromomethane				< 5.1	5.1	< 4.7	4.7	< 4.6	4.6	< 5.0	5.0	< 5.0	5.0
1,2-Dichlorobenzene	1,100	100,000	500,000	< 5.1	5.1	< 4.7	4.7	< 4.6	4.6	< 5.0	5.0	< 5.0	5.0
1,2-Dichloroethane	20	3,100	30,000	< 5.1	5.1	< 4.7	4.7	< 4.6	4.6	< 5.0	5.0	< 5.0	5.0
1,2-Dichloropropane				< 5.1	5.1	< 4.7	4.7	< 4.6	4.6	< 5.0	5.0	< 5.0	5.0
1,3-Dichlorobenzene	2,400	4,900	280,000	< 5.1	5.1	< 4.7	4.7	< 4.6	4.6	< 5.0	5.0	< 5.0	5.0
1,4-Dichlorobenzene	1,800	13,000	130,000	< 5.1	5.1	< 4.7	4.7	< 4.6	4.6	< 5.0	5.0	< 5.0	5.0
1,4- dioxane	100	13,000	130,000	< 76	76	< 71	71	< 69	69	< 75	75	< 75	75
2-Hexanone (Methyl Butyl Ketone)				< 25	25	< 24	24	< 23	23	< 25	25	< 25	25
4-Methyl-2-Pentanone				< 25	25	< 24	24	< 23	23	< 25	25	< 25	25
Acetone	50	100,000	500,000	< 25	25	**8.1**	24	**5.1**	23	**16**	25	**12**	25
Acrolein				< 5.1	5.1	< 4.7	4.7	< 4.6	4.6	< 5.0	5.0	< 5.0	5.0
Acrylonitrile				< 20	20	< 19	19	< 18	18	< 20	20	< 20	20
Benzene	60	4,800	44,000	< 5.1	5.1	< 4.7	4.7	< 4.6	4.6	< 5.0	5.0	< 5.0	5.0
Bromochloromethane				< 5.1	5.1	< 4.7	4.7	< 4.6	4.6	< 5.0	5.0	< 5.0	5.0
Bromodichloromethane				< 5.1	5.1	< 4.7	4.7	< 4.6	4.6	< 5.0	5.0	< 5.0	5.0
Bromoform				< 5.1	5.1	< 4.7	4.7	< 4.6	4.6	< 5.0	5.0	< 5.0	5.0
Bromomethane				< 5.1	5.1	< 4.7	4.7	< 4.6	4.6	< 5.0	5.0	< 5.0	5.0
Carbon Disulfide				< 5.1	5.1	< 4.7	4.7	< 4.6	4.6	< 5.0	5.0	< 5.0	5.0
Carbon tetrachloride	760	2,400	22,000	< 5.1	5.1	< 4.7	4.7	< 4.6	4.6	< 5.0	5.0	< 5.0	5.0
Chlorobenzene	1,100	100,000	500,000	< 5.1	5.1	< 4.7	4.7	< 4.6	4.6	< 5.0	5.0	< 5.0	5.0
Chloroethane				< 5.1	5.1	< 4.7	4.7	< 4.6	4.6	< 5.0	5.0	< 5.0	5.0
Chloroform	370	49,000	350,000	< 5.1	5.1	< 4.7	4.7	< 4.6	4.6	< 5.0	5.0	< 5.0	5.0
Chloromethane				< 5.1	5.1	< 4.7	4.7	< 4.6	4.6	< 5.0	5.0	< 5.0	5.0
cis-1,2-Dichloroethene	250	100,000	500,000	< 5.1	5.1	< 4.7	4.7	< 4.6	4.6	< 5.0	5.0	< 5.0	5.0
cis-1,3-Dichloropropene				< 5.1	5.1	< 4.7	4.7	< 4.6	4.6	< 5.0	5.0	< 5.0	5.0
Cyclohexane				< 5.1	5.1	< 4.7	4.7	< 4.6	4.6	< 5.0	5.0	< 5.0	5.0
Dibromochloromethane				< 5.1	5.1	< 4.7	4.7	< 4.6	4.6	< 5.0	5.0	< 5.0	5.0
Dichlorodifluoromethane				< 5.1	5.1	< 4.7	4.7	< 4.6	4.6	< 5.0	5.0	< 5.0	5.0
Ethylbenzene	1,000	41,000	390,000	< 5.1	5.1	< 4.7	4.7	< 4.6	4.6	< 5.0	5.0	< 5.0	5.0
Isopropylbenzene				< 5.1	5.1	< 4.7	4.7	< 4.6	4.6	< 5.0	5.0	< 5.0	5.0
m&p-Xylenes	260	100,000		< 5.1	5.1	< 4.7	4.7	< 4.6	4.6	< 5.0	5.0	< 5.0	5.0
Methyl Ethyl Ketone (2-Butanone)	120	100,000	500,000	< 30	30	< 28	28	< 28	28	< 30	30	< 30	30
Methyl t-butyl ether (MTBE)	930	100,000	500,000	< 10	10	< 9.4	9.4	< 9.2	9.2	< 10	10	< 10	10
Methylacetate				< 5.1	5.1	< 4.7	4.7	< 4.6	4.6	< 5.0	5.0	< 5.0	5.0
Methylcyclohexane				< 5.1	5.1	< 4.7	4.7	< 4.6	4.6	< 5.0	5.0	< 5.0	5.0
Methylene chloride	50	100,000	500,000	< 5.1	5.1	< 4.7	4.7	< 4.6	4.6	< 5.0	5.0	< 5.0	5.0
o-Xylene	260	100,000		< 5.1	5.1	< 4.7	4.7	< 4.6	4.6	< 5.0	5.0	< 5.0	5.0
Styrene				< 5.1	5.1	< 4.7	4.7	< 4.6	4.6	< 5.0	5.0	< 5.0	5.0
Tert-butyl alcohol				< 100	100	< 94	94	< 92	92	< 100	100	< 100	100
Tetrachloroethene	1,300	19,000	150,000	< 5.1	5.1	< 4.7	4.7	< 4.6	4.6	< 5.0	5.0	< 5.0	5.0
Toluene	700	100,000	500,000	< 5.1	5.1	< 4.7	4.7	< 4.6	4.6	< 5.0	5.0	< 5.0	5.0
Total Xylenes				< 5.1	5.1	< 4.7	4.7	< 4.6	4.6	< 5.0	5.0	< 5.0	5.0
trans-1,2-Dichloroethene	190	100,000	500,000	< 5.1	5.1	< 4.7	4.7	< 4.6	4.6	< 5.0	5.0	< 5.0	5.0
trans-1,3-Dichloropropene				< 5.1	5.1	< 4.7	4.7	< 4.6	4.6	< 5.0	5.0	< 5.0	5.0
Trichloroethene	470	21,000	200,000	< 5.1	5.1	< 4.7	4.7	< 4.6	4.6	< 5.0	5.0	< 5.0	5.0
Trichlorofluoromethane				< 5.1	5.1	< 4.7	4.7	< 4.6	4.6	< 5.0	5.0	< 5.0	5.0
Trichlorotrifluoroethane				< 5.1	5.1	< 4.7	4.7	< 4.6	4.6	< 5.0	5.0	< 5.0	5.0
Vinyl Chloride	20	900	13,000	< 5.1	5.1	< 4.7	4.7	< 4.6	4.6	< 5.0	5.0	< 5.0	5.0
Total BTEX Concentration				**0**		**0**		**0**		**0**		**0**	
Total VOCs Concentration				**0**		**8.1**		**5.1**		**16**		**12**	

Notes:

* - 6 NYCRR Part 375-6 Remedial Program Soil Cleanup Objectives

RL - Reporting Limit

Bold/highlighted- Indicated exceedance of the NYSDEC UUSCO Guidance Value

Bold/highlighted- Indicated exceedance of the NYSDEC RRSCO Guidance Value

Bold/highlighted- Indicated exceedance of the NYSDEC RCSCO Guidance Value

Table 21
Former Pfizer Site A - C224284
243-271 Wallabout Street,
Brooklyn, New York
Track 1 Area - Endpoint Soil Analytical Results
Volatile Organic Compounds

COMPOUND	NYSDEC Part 375.6 Unrestricted Use Soil Cleanup Objectives*	NYDEC Part 375.6 Restricted Residential Soil Cleanup Objectives*	NYDEC Part 375.6 Restricted Commercial Soil Cleanup Objectives*	EBC Endpoint Samples									
				EP72		EP73		EP74		EP75		EP76	
				16'		16'		16'		16'		16'	
				8/10/2020		8/10/2020		8/5/2020		8/5/2020		8/5/2020	
				µg/Kg		µg/Kg		µg/Kg		µg/Kg		µg/Kg	
				Result	RL	Result	RL	Result	RL	Result	RL	Result	RL
1,1,1,2-Tetrachlorothane				< 19	19	< 21	21	< 28	28	< 23	23	< 22	22
1,1,1-Trichloroethane	680	100,000	500,000	< 4.7	4.7	< 5.3	5.3	< 7.0	7.0	< 5.8	5.8	< 5.5	5.5
1,1,2,2-Tetrachloroethane				< 4.7	4.7	< 5.3	5.3	< 7.0	7.0	< 5.8	5.8	< 5.5	5.5
1,1,2-Trichloroethane				< 4.7	4.7	< 5.3	5.3	< 7.0	7.0	< 5.8	5.8	< 5.5	5.5
1,1-Dichloroethane	270	26,000	240,000	< 4.7	4.7	< 5.3	5.3	< 7.0	7.0	< 5.8	5.8	< 5.5	5.5
1,1-Dichloroethene	330	100,000	500,000	< 4.7	4.7	< 5.3	5.3	< 7.0	7.0	< 5.8	5.8	< 5.5	5.5
1,2,3-Trichlorobenzene				< 4.7	4.7	< 5.3	5.3	< 7.0	7.0	< 5.8	5.8	< 5.5	5.5
1,2,4-Trichlorobenzene				< 4.7	4.7	< 5.3	5.3	< 7.0	7.0	< 5.8	5.8	< 5.5	5.5
1,2-Dibromo-3-chloropropane				< 4.7	4.7	< 5.3	5.3	< 7.0	7.0	< 5.8	5.8	< 5.5	5.5
1,2-Dibromomethane				< 4.7	4.7	< 5.3	5.3	< 7.0	7.0	< 5.8	5.8	< 5.5	5.5
1,2-Dichlorobenzene	1,100	100,000	500,000	< 4.7	4.7	< 5.3	5.3	< 7.0	7.0	< 5.8	5.8	< 5.5	5.5
1,2-Dichloroethane	20	3,100	30,000	< 4.7	4.7	< 5.3	5.3	< 7.0	7.0	< 5.8	5.8	< 5.5	5.5
1,2-Dichloropropane				< 4.7	4.7	< 5.3	5.3	< 7.0	7.0	< 5.8	5.8	< 5.5	5.5
1,3-Dichlorobenzene	2,400	4,900	280,000	< 4.7	4.7	< 5.3	5.3	< 7.0	7.0	< 5.8	5.8	< 5.5	5.5
1,4-Dichlorobenzene	1,800	13,000	130,000	< 4.7	4.7	< 5.3	5.3	< 7.0	7.0	< 5.8	5.8	< 5.5	5.5
1,4- dioxane	100	13,000	130,000	< 70	70	< 80	80	< 100	100	< 88	88	< 83	83
2-Hexanone (Methyl Butyl Ketone)				< 23	23	< 27	27	< 35	35	< 29	29	< 28	28
4-Methyl-2-Pentanone				< 23	23	< 27	27	< 35	35	< 29	29	< 28	28
Acetone	50	100,000	500,000	**8**	23	< 27	27	< 35	35	< 29	29	< 28	28
Acrolein				< 4.7	4.7	< 5.3	5.3	< 7.0	7.0	< 5.8	5.8	< 5.5	5.5
Acrylonitrile				< 19	19	< 21	21	< 28	28	< 23	23	< 22	22
Benzene	60	4,800	44,000	< 4.7	4.7	< 5.3	5.3	< 7.0	7.0	< 5.8	5.8	< 5.5	5.5
Bromochloromethane				< 4.7	4.7	< 5.3	5.3	< 7.0	7.0	< 5.8	5.8	< 5.5	5.5
Bromodichloromethane				< 4.7	4.7	< 5.3	5.3	< 7.0	7.0	< 5.8	5.8	< 5.5	5.5
Bromoform				< 4.7	4.7	< 5.3	5.3	< 7.0	7.0	< 5.8	5.8	< 5.5	5.5
Bromomethane				< 4.7	4.7	< 5.3	5.3	< 7.0	7.0	< 5.8	5.8	< 5.5	5.5
Carbon Disulfide				< 4.7	4.7	< 5.3	5.3	< 7.0	7.0	< 5.8	5.8	< 5.5	5.5
Carbon tetrachloride	760	2,400	22,000	< 4.7	4.7	< 5.3	5.3	< 7.0	7.0	< 5.8	5.8	< 5.5	5.5
Chlorobenzene	1,100	100,000	500,000	< 4.7	4.7	< 5.3	5.3	< 7.0	7.0	< 5.8	5.8	< 5.5	5.5
Chloroethane				< 4.7	4.7	< 5.3	5.3	< 7.0	7.0	< 5.8	5.8	< 5.5	5.5
Chloroform	370	49,000	350,000	< 4.7	4.7	< 5.3	5.3	< 7.0	7.0	< 5.8	5.8	< 5.5	5.5
Chloromethane				< 4.7	4.7	< 5.3	5.3	< 7.0	7.0	< 5.8	5.8	< 5.5	5.5
cis-1,2-Dichloroethene	250	100,000	500,000	< 4.7	4.7	< 5.3	5.3	< 7.0	7.0	< 5.8	5.8	< 5.5	5.5
cis-1,3-Dichloropropene				< 4.7	4.7	< 5.3	5.3	< 7.0	7.0	< 5.8	5.8	< 5.5	5.5
Cyclohexane				< 4.7	4.7	< 5.3	5.3	< 7.0	7.0	< 5.8	5.8	< 5.5	5.5
Dibromochloromethane				< 4.7	4.7	< 5.3	5.3	< 7.0	7.0	< 5.8	5.8	< 5.5	5.5
Dichlorodifluoromethane				< 4.7	4.7	< 5.3	5.3	< 7.0	7.0	< 5.8	5.8	< 5.5	5.5
Ethylbenzene	1,000	41,000	390,000	< 4.7	4.7	< 5.3	5.3	< 7.0	7.0	< 5.8	5.8	< 5.5	5.5
Isopropylbenzene				< 4.7	4.7	< 5.3	5.3	< 7.0	7.0	< 5.8	5.8	< 5.5	5.5
m&p-Xylenes	260	100,000		< 4.7	4.7	< 5.3	5.3	< 7.0	7.0	< 5.8	5.8	< 5.5	5.5
Methyl Ethyl Ketone (2-Butanone)	120	100,000	500,000	< 28	28	< 32	32	< 42	42	< 35	35	< 33	33
Methyl t-butyl ether (MTBE)	930	100,000	500,000	< 9.4	9.4	< 11	11	< 14	14	< 12	12	< 11	11
Methylacetate				< 4.7	4.7	< 5.3	5.3	< 7.0	7.0	< 5.8	5.8	< 5.5	5.5
Methylcyclohexane				< 4.7	4.7	< 5.3	5.3	< 7.0	7.0	< 5.8	5.8	< 5.5	5.5
Methylene chloride	50	100,000	500,000	< 4.7	4.7	< 5.3	5.3	< 7.0	7.0	< 5.8	5.8	< 5.5	5.5
o-Xylene	260	100,000		< 4.7	4.7	< 5.3	5.3	< 7.0	7.0	< 5.8	5.8	< 5.5	5.5
Styrene				< 4.7	4.7	< 5.3	5.3	< 7.0	7.0	< 5.8	5.8	< 5.5	5.5
Tert-butyl alcohol				< 94	94	< 110	110	< 140	140	< 120	120	< 110	110
Tetrachloroethene	1,300	19,000	150,000	< 4.7	4.7	< 5.3	5.3	< 7.0	7.0	< 5.8	5.8	< 5.5	5.5
Toluene	700	100,000	500,000	< 4.7	4.7	< 5.3	5.3	< 7.0	7.0	< 5.8	5.8	< 5.5	5.5
Total Xylenes				< 4.7	4.7	< 5.3	5.3	< 7.0	7.0	< 5.8	5.8	< 5.5	5.5
trans-1,2-Dichloroethene	190	100,000	500,000	< 4.7	4.7	< 5.3	5.3	< 7.0	7.0	< 5.8	5.8	< 5.5	5.5
trans-1,3-Dichloropropene				< 4.7	4.7	< 5.3	5.3	< 7.0	7.0	< 5.8	5.8	< 5.5	5.5
Trichloroethene	470	21,000	200,000	< 4.7	4.7	< 5.3	5.3	< 7.0	7.0	< 5.8	5.8	< 5.5	5.5
Trichlorofluoromethane				< 4.7	4.7	< 5.3	5.3	< 7.0	7.0	< 5.8	5.8	< 5.5	5.5
Trichlorotrifluoroethane				< 4.7	4.7	< 5.3	5.3	< 7.0	7.0	< 5.8	5.8	< 5.5	5.5
Vinyl Chloride	20	900	13,000	< 4.7	4.7	< 5.3	5.3	< 7.0	7.0	< 5.8	5.8	< 5.5	5.5
Total BTEX Concentration				**0**		**0**		**0**		**0**		**0**	
Total VOCs Concentration				**8**		**0**		**0**		**0**		**0**	

Notes:

* - 6 NYCRR Part 375-6 Remedial Program Soil Cleanup Objectives

RL - Reporting Limit

Bold/highlighted- Indicated exceedance of the NYSDEC UUSCO Guidance Value

Bold/highlighted- Indicated exceedance of the NYSDEC RRSCO Guidance Value

Bold/highlighted- Indicated exceedance of the NYSDEC RCSCO Guidance Value

Table 21
Former Pfizer Site A - C224284
243-271 Wallabout Street,
Brooklyn, New York
Track 1 Area - Endpoint Soil Analytical Results
Volatile Organic Compounds

COMPOUND	NYSDEC Part 375.6 Unrestricted Use Soil Cleanup Objectives*	NYDEC Part 375.6 Restricted Residential Soil Cleanup Objectives*	NYDEC Part 375.6 Restricted Commercial Soil Cleanup Objectives*	EBC Endpoint Samples									
				EP77		EP78		EP79		EP Duplicate 1		Soil Duplicate	
				16'		16'		16'		EP2		EP52	
				8/10/2020		10/15/2020		11/23/2020		7/9/2020		8/5/2020	
				µg/Kg		µg/Kg		µg/Kg		µg/Kg		µg/Kg	
				Result	RL	Result	RL	Result	RL	Result	RL	Result	RL
1,1,1,2-Tetrachlorothane				< 19	19	< 13	13	< 31	31	< 19	19	< 20	20
1,1,1-Trichloroethane	680	100,000	500,000	< 4.8	4.8	< 3.3	3.3	< 7.7	7.7	< 4.6	4.6	< 5.0	5.0
1,1,2,2-Tetrachloroethane				< 4.8	4.8	< 3.3	3.3	< 7.7	7.7	< 4.6	4.6	< 5.0	5.0
1,1,2-Trichloroethane				< 4.8	4.8	< 3.3	3.3	< 7.7	7.7	< 4.6	4.6	< 5.0	5.0
1,1-Dichloroethane	270	26,000	240,000	< 4.8	4.8	< 3.3	3.3	< 7.7	7.7	< 4.6	4.6	< 5.0	5.0
1,1-Dichloroethene	330	100,000	500,000	< 4.8	4.8	< 3.3	3.3	< 7.7	7.7	< 4.6	4.6	< 5.0	5.0
1,2,3-Trichlorobenzene				< 4.8	4.8	< 3.3	3.3	< 7.7	7.7	< 4.6	4.6	< 5.0	5.0
1,2,4-Trichlorobenzene				< 4.8	4.8	< 3.3	3.3	< 7.7	7.7	< 4.6	4.6	< 5.0	5.0
1,2-Dibromo-3-chloropropane				< 4.8	4.8	< 3.3	3.3	< 7.7	7.7	< 4.6	4.6	< 5.0	5.0
1,2-Dibromomethane				< 4.8	4.8	< 3.3	3.3	< 7.7	7.7	< 4.6	4.6	< 5.0	5.0
1,2-Dichlorobenzene	1,100	100,000	500,000	< 4.8	4.8	< 3.3	3.3	< 7.7	7.7	< 4.6	4.6	< 5.0	5.0
1,2-Dichloroethane	20	3,100	30,000	< 4.8	4.8	< 3.3	3.3	< 7.7	7.7	< 4.6	4.6	< 5.0	5.0
1,2-Dichloropropane				< 4.8	4.8	< 3.3	3.3	< 7.7	7.7	< 4.6	4.6	< 5.0	5.0
1,3-Dichlorobenzene	2,400	4,900	280,000	< 4.8	4.8	< 3.3	3.3	< 7.7	7.7	< 4.6	4.6	< 5.0	5.0
1,4-Dichlorobenzene	1,800	13,000	130,000	< 4.8	4.8	< 3.3	3.3	< 7.7	7.7	< 4.6	4.6	< 5.0	5.0
1,4- dioxane	100	13,000	130,000	< 72	72	< 49	49	< 100	100	< 70	70	< 75	75
2-Hexanone (Methyl Butyl Ketone)				< 24	24	< 16	16	< 39	39	< 23	23	< 25	25
4-Methyl-2-Pentanone				< 24	24	< 16	16	< 39	39	< 23	23	< 25	25
Acetone	50	100,000	500,000	< 24	24	**19**	16	< 39	39	< 23	23	< 25	25
Acrolein				< 4.8	4.8	< 3.3	3.3	< 7.7	7.7	< 4.6	4.6	< 5.0	5.0
Acrylonitrile				< 19	19	< 13	13	< 31	31	< 19	19	< 20	20
Benzene	60	4,800	44,000	< 4.8	4.8	< 3.3	3.3	< 7.7	7.7	< 4.6	4.6	< 5.0	5.0
Bromochloromethane				< 4.8	4.8	< 3.3	3.3	< 7.7	7.7	< 4.6	4.6	< 5.0	5.0
Bromodichloromethane				< 4.8	4.8	< 3.3	3.3	< 7.7	7.7	< 4.6	4.6	< 5.0	5.0
Bromoform				< 4.8	4.8	< 3.3	3.3	< 7.7	7.7	< 4.6	4.6	< 5.0	5.0
Bromomethane				< 4.8	4.8	< 3.3	3.3	< 7.7	7.7	< 4.6	4.6	< 5.0	5.0
Carbon Disulfide				< 4.8	4.8	< 3.3	3.3	< 7.7	7.7	< 4.6	4.6	< 5.0	5.0
Carbon tetrachloride	760	2,400	22,000	< 4.8	4.8	< 3.3	3.3	< 7.7	7.7	< 4.6	4.6	< 5.0	5.0
Chlorobenzene	1,100	100,000	500,000	< 4.8	4.8	< 3.3	3.3	< 7.7	7.7	< 4.6	4.6	< 5.0	5.0
Chloroethane				< 4.8	4.8	< 3.3	3.3	< 7.7	7.7	< 4.6	4.6	< 5.0	5.0
Chloroform	370	49,000	350,000	< 4.8	4.8	< 3.3	3.3	< 7.7	7.7	< 4.6	4.6	< 5.0	5.0
Chloromethane				< 4.8	4.8	< 3.3	3.3	< 7.7	7.7	< 4.6	4.6	< 5.0	5.0
cis-1,2-Dichloroethene	250	100,000	500,000	< 4.8	4.8	< 3.3	3.3	< 7.7	7.7	< 4.6	4.6	< 5.0	5.0
cis-1,3-Dichloropropene				< 4.8	4.8	< 3.3	3.3	< 7.7	7.7	< 4.6	4.6	< 5.0	5.0
Cyclohexane				< 4.8	4.8	< 3.3	3.3	< 7.7	7.7	< 4.6	4.6	< 5.0	5.0
Dibromochloromethane				< 4.8	4.8	< 3.3	3.3	< 7.7	7.7	< 4.6	4.6	< 5.0	5.0
Dichlorodifluoromethane				< 4.8	4.8	< 3.3	3.3	< 7.7	7.7	< 4.6	4.6	< 5.0	5.0
Ethylbenzene	1,000	41,000	390,000	< 4.8	4.8	< 3.3	3.3	< 7.7	7.7	< 4.6	4.6	< 5.0	5.0
Isopropylbenzene				< 4.8	4.8	< 3.3	3.3	< 7.7	7.7	< 4.6	4.6	< 5.0	5.0
m&p-Xylenes	260	100,000		< 4.8	4.8	< 3.3	3.3	< 7.7	7.7	< 4.6	4.6	< 5.0	5.0
Methyl Ethyl Ketone (2-Butanone)	120	100,000	500,000	< 29	29	**6.6**	20	< 46	46	< 28	28	< 30	30
Methyl t-butyl ether (MTBE)	930	100,000	500,000	< 9.6	9.6	< 6.5	6.5	< 15	15	< 9.3	9.3	< 10	10
Methylacetate				< 4.8	4.8	< 3.3	3.3	< 7.7	7.7	< 4.6	4.6	< 5.0	5.0
Methylcyclohexane				< 4.8	4.8	< 3.3	3.3	< 7.7	7.7	< 4.6	4.6	< 5.0	5.0
Methylene chloride	50	100,000	500,000	< 4.8	4.8	< 3.3	3.3	< 7.7	7.7	< 4.6	4.6	< 5.0	5.0
o-Xylene	260	100,000		< 4.8	4.8	< 3.3	3.3	< 7.7	7.7	< 4.6	4.6	< 5.0	5.0
Styrene				< 4.8	4.8	< 3.3	3.3	< 7.7	7.7	< 4.6	4.6	< 5.0	5.0
Tert-butyl alcohol				< 96	96	< 65	65	< 150	150	< 93	93	< 100	100
Tetrachloroethene	1,300	19,000	150,000	< 4.8	4.8	< 3.3	3.3	< 7.7	7.7	< 4.6	4.6	< 5.0	5.0
Toluene	700	100,000	500,000	< 4.8	4.8	< 3.3	3.3	< 7.7	7.7	< 4.6	4.6	< 5.0	5.0
Total Xylenes				< 4.8	4.8	< 3.3	3.3	< 7.7	7.7	< 4.6	4.6	< 5.0	5.0
trans-1,2-Dichloroethene	190	100,000	500,000	< 4.8	4.8	< 3.3	3.3	< 7.7	7.7	< 4.6	4.6	< 5.0	5.0
trans-1,3-Dichloropropene				< 4.8	4.8	< 3.3	3.3	< 7.7	7.7	< 4.6	4.6	< 5.0	5.0
Trichloroethene	470	21,000	200,000	< 4.8	4.8	< 3.3	3.3	< 7.7	7.7	< 4.6	4.6	< 5.0	5.0
Trichlorofluoromethane				< 4.8	4.8	< 3.3	3.3	< 7.7	7.7	< 4.6	4.6	< 5.0	5.0
Trichlorotrifluoroethane				< 4.8	4.8	< 3.3	3.3	< 7.7	7.7	< 4.6	4.6	< 5.0	5.0
Vinyl Chloride	20	900	13,000	< 4.8	4.8	< 3.3	3.3	< 7.7	7.7	< 4.6	4.6	< 5.0	5.0
Total BTEX Concentration				**0**		**0**		**0**		**0**		**0**	
Total VOCs Concentration				**0**		**25.6**		**0**		**0**		**0**	

Notes:

* - 6 NYCRR Part 375-6 Remedial Program Soil Cleanup Objectives

RL - Reporting Limit

Bold/highlighted- Indicated exceedance of the NYSDEC UUSCO Guidance Value

Bold/highlighted- Indicated exceedance of the NYSDEC RRSCO Guidance Value

Bold/highlighted- Indicated exceedance of the NYSDEC RCSCO Guidance Value

Table 21
Former Pfizer Site A - C224284
243-271 Wallabout Street,
Brooklyn, New York
Track 1 Area - Endpoint Soil Analytical Results
Volatile Organic Compounds

COMPOUND	NYSDEC Part 375.6 Unrestricted Use Soil Cleanup Objectives*	NYDEC Part 375.6 Restricted Residential Soil Cleanup Objectives*	NYDEC Part 375.6 Restricted Commercial Soil Cleanup Objectives*	EBC Endpoint Samples									
				Soil Duplicate 3		Soil Duplicate		Soil Duplicate		Soil Duplicate		Soil Duplicate	
				EP49		EP7							
				8/10/2020		10/15/2020		11/20/2020		11/23/2020		12/4/2020	
				µg/Kg		µg/Kg		µg/Kg		µg/Kg		µg/Kg	
				Result	RL	Result	RL	Result	RL	Result	RL	Result	RL
1,1,1,2-Tetrachlorothane				< 19	19	< 21	21	< 26	26	< 26	26	< 23	23
1,1,1-Trichloroethane	680	100,000	500,000	< 4.8	4.8	< 5.1	5.1	< 6.5	6.5	< 6.5	6.5	< 5.9	5.9
1,1,2,2-Tetrachloroethane				< 4.8	4.8	< 5.1	5.1	< 6.5	6.5	< 6.5	6.5	< 5.9	5.9
1,1,2-Trichloroethane				< 4.8	4.8	< 5.1	5.1	< 6.5	6.5	< 6.5	6.5	< 5.9	5.9
1,1-Dichloroethane	270	26,000	240,000	< 4.8	4.8	< 5.1	5.1	< 6.5	6.5	< 6.5	6.5	< 5.9	5.9
1,1-Dichloroethene	330	100,000	500,000	< 4.8	4.8	< 5.1	5.1	< 6.5	6.5	< 6.5	6.5	< 5.9	5.9
1,2,3-Trichlorobenzene				< 4.8	4.8	< 5.1	5.1	< 6.5	6.5	< 6.5	6.5	< 5.9	5.9
1,2,4-Trichlorobenzene				< 4.8	4.8	< 5.1	5.1	< 6.5	6.5	< 6.5	6.5	< 5.9	5.9
1,2-Dibromo-3-chloropropane				< 4.8	4.8	< 5.1	5.1	< 6.5	6.5	< 6.5	6.5	< 5.9	5.9
1,2-Dibromomethane				< 4.8	4.8	< 5.1	5.1	< 6.5	6.5	< 6.5	6.5	< 5.9	5.9
1,2-Dichlorobenzene	1,100	100,000	500,000	< 4.8	4.8	< 5.1	5.1	< 6.5	6.5	< 6.5	6.5	< 5.9	5.9
1,2-Dichloroethane	20	3,100	30,000	< 4.8	4.8	< 5.1	5.1	< 6.5	6.5	< 6.5	6.5	< 5.9	5.9
1,2-Dichloropropane				< 4.8	4.8	< 5.1	5.1	< 6.5	6.5	< 6.5	6.5	< 5.9	5.9
1,3-Dichlorobenzene	2,400	4,900	280,000	< 4.8	4.8	< 5.1	5.1	< 6.5	6.5	< 6.5	6.5	< 5.9	5.9
1,4-Dichlorobenzene	1,800	13,000	130,000	< 4.8	4.8	< 5.1	5.1	< 6.5	6.5	< 6.5	6.5	< 5.9	5.9
1,4- dioxane	100	13,000	130,000	< 72	72	< 77	77	< 97	97	< 97	97	< 88	88
2-Hexanone (Methyl Butyl Ketone)				< 24	24	< 26	26	< 32	32	< 32	32	< 29	29
4-Methyl-2-Pentanone				< 24	24	< 26	26	< 32	32	< 32	32	< 29	29
Acetone	50	100,000	500,000	< 24	24	< 26	26	< 32	32	< 32	32	< 29	29
Acrolein				< 4.8	4.8	< 5.1	5.1	< 6.5	6.5	< 6.5	6.5	< 5.9	5.9
Acrylonitrile				< 19	19	< 21	21	< 26	26	< 26	26	< 23	23
Benzene	60	4,800	44,000	< 4.8	4.8	< 5.1	5.1	< 6.5	6.5	< 6.5	6.5	< 5.9	5.9
Bromochloromethane				< 4.8	4.8	< 5.1	5.1	< 6.5	6.5	< 6.5	6.5	< 5.9	5.9
Bromodichloromethane				< 4.8	4.8	< 5.1	5.1	< 6.5	6.5	< 6.5	6.5	< 5.9	5.9
Bromoform				< 4.8	4.8	< 5.1	5.1	< 6.5	6.5	< 6.5	6.5	< 5.9	5.9
Bromomethane				< 4.8	4.8	< 5.1	5.1	< 6.5	6.5	< 6.5	6.5	< 5.9	5.9
Carbon Disulfide				< 4.8	4.8	< 5.1	5.1	< 6.5	6.5	< 6.5	6.5	< 5.9	5.9
Carbon tetrachloride	760	2,400	22,000	< 4.8	4.8	< 5.1	5.1	< 6.5	6.5	< 6.5	6.5	< 5.9	5.9
Chlorobenzene	1,100	100,000	500,000	< 4.8	4.8	< 5.1	5.1	< 6.5	6.5	< 6.5	6.5	< 5.9	5.9
Chloroethane				< 4.8	4.8	< 5.1	5.1	< 6.5	6.5	< 6.5	6.5	< 5.9	5.9
Chloroform	370	49,000	350,000	< 4.8	4.8	< 5.1	5.1	< 6.5	6.5	< 6.5	6.5	< 5.9	5.9
Chloromethane				< 4.8	4.8	< 5.1	5.1	< 6.5	6.5	< 6.5	6.5	< 5.9	5.9
cis-1,2-Dichloroethene	250	100,000	500,000	< 4.8	4.8	< 5.1	5.1	< 6.5	6.5	< 6.5	6.5	< 5.9	5.9
cis-1,3-Dichloropropene				< 4.8	4.8	< 5.1	5.1	< 6.5	6.5	< 6.5	6.5	< 5.9	5.9
Cyclohexane				< 4.8	4.8	< 5.1	5.1	< 6.5	6.5	< 6.5	6.5	< 5.9	5.9
Dibromochloromethane				< 4.8	4.8	< 5.1	5.1	< 6.5	6.5	< 6.5	6.5	< 5.9	5.9
Dichlorodifluoromethane				< 4.8	4.8	< 5.1	5.1	< 6.5	6.5	< 6.5	6.5	< 5.9	5.9
Ethylbenzene	1,000	41,000	390,000	< 4.8	4.8	< 5.1	5.1	< 6.5	6.5	< 6.5	6.5	< 5.9	5.9
Isopropylbenzene				< 4.8	4.8	< 5.1	5.1	< 6.5	6.5	< 6.5	6.5	< 5.9	5.9
m&p-Xylenes	260	100,000		< 4.8	4.8	< 5.1	5.1	< 6.5	6.5	< 6.5	6.5	< 5.9	5.9
Methyl Ethyl Ketone (2-Butanone)	120	100,000	500,000	< 29	29	< 31	31	< 39	39	< 39	39	< 35	35
Methyl t-butyl ether (MTBE)	930	100,000	500,000	< 9.6	9.6	< 10	10	< 13	13	< 13	13	< 12	12
Methylacetate				< 4.8	4.8	< 5.1	5.1	< 6.5	6.5	< 6.5	6.5	< 5.9	5.9
Methylcyclohexane				< 4.8	4.8	< 5.1	5.1	< 6.5	6.5	< 6.5	6.5	< 5.9	5.9
Methylene chloride	50	100,000	500,000	< 4.8	4.8	< 5.1	5.1	< 6.5	6.5	< 6.5	6.5	< 5.9	5.9
o-Xylene	260	100,000		< 4.8	4.8	< 5.1	5.1	< 6.5	6.5	< 6.5	6.5	< 5.9	5.9
Styrene				< 4.8	4.8	< 5.1	5.1	< 6.5	6.5	< 6.5	6.5	< 5.9	5.9
Tert-butyl alcohol				< 96	96	< 100	100	< 130	130	< 130	130	< 120	120
Tetrachloroethene	1,300	19,000	150,000	< 4.8	4.8	< 5.1	5.1	< 6.5	6.5	< 6.5	6.5	< 5.9	5.9
Toluene	700	100,000	500,000	< 4.8	4.8	< 5.1	5.1	< 6.5	6.5	< 6.5	6.5	< 5.9	5.9
Total Xylenes				< 4.8	4.8	< 5.1	5.1	< 6.5	6.5	< 6.5	6.5	< 5.9	5.9
trans-1,2-Dichloroethene	190	100,000	500,000	< 4.8	4.8	< 5.1	5.1	< 6.5	6.5	< 6.5	6.5	< 5.9	5.9
trans-1,3-Dichloropropene				< 4.8	4.8	< 5.1	5.1	< 6.5	6.5	< 6.5	6.5	< 5.9	5.9
Trichloroethene	470	21,000	200,000	< 4.8	4.8	< 5.1	5.1	< 6.5	6.5	< 6.5	6.5	< 5.9	5.9
Trichlorofluoromethane				< 4.8	4.8	< 5.1	5.1	< 6.5	6.5	< 6.5	6.5	< 5.9	5.9
Trichlorotrifluoroethane				< 4.8	4.8	< 5.1	5.1	< 6.5	6.5	< 6.5	6.5	< 5.9	5.9
Vinyl Chloride	20	900	13,000	< 4.8	4.8	< 5.1	5.1	< 6.5	6.5	< 6.5	6.5	< 5.9	5.9
Total BTEX Concentration				**0**		**0**		**0**		**0**		**0**	
Total VOCs Concentration				**0**		**0**		**0**		**0**		**0**	

Notes:

* - 6 NYCRR Part 375-6 Remedial Program Soil Cleanup Objectives

RL - Reporting Limit

Bold/highlighted- Indicated exceedance of the NYSDEC UUSCO Guidance Value

Bold/highlighted- Indicated exceedance of the NYSDEC RRSCO Guidance Value

Bold/highlighted- Indicated exceedance of the NYSDEC RCSCO Guidance Value

Table 22
Former Pfizer Site A - C224284
243-271 Wallabout Street,
Brooklyn, New York
Track 1 Area - Endpoint Soil Analytical Results
Semi-Volatile Organic Compounds

COMPOUND	NYSDEC Part 375.6 Unrestricted Use Soil Cleanup Objectives*	NYDEC Part 375.6 Restricted Residential Soil Cleanup Objectives*	NYDEC Part 375.6 Restricted Commerical Soil Cleanup Objectives*	Endpoint Samples									
				EP1		EP2		EP3		EP4		EP5	
				16'		16'		16'		16'		16'	
				7/9/2020		7/9/2020		7/9/2020		7/9/2020		7/9/2020	
				µg/Kg		µg/Kg		µg/Kg		µg/Kg		µg/Kg	
				Result	RL	Result	RL	Result	RL	Result	RL	Result	RL
1,1-Biphenyl				< 270	270	< 280	280	< 280	280	< 270	270	< 280	280
1,2,4,5-Tetrachlorobenzene				< 270	270	< 280	280	< 280	280	< 270	270	< 280	280
2,3,4,6-tetrachlorophenol				< 270	270	< 280	280	< 280	280	< 270	270	< 280	280
2,4,5-Trichlorophenol				< 270	270	< 280	280	< 280	280	< 270	270	< 280	280
2,4,6-Trichlorophenol				< 150	150	< 160	160	< 160	160	< 160	160	< 160	160
2,4-Dichlorophenol				< 150	150	< 160	160	< 160	160	< 160	160	< 160	160
2,4-Dimethylphenol				< 270	270	< 280	280	< 280	280	< 270	270	< 280	280
2,4-Dinitrophenol				< 270	270	< 280	280	< 280	280	< 270	270	< 280	280
2,4-Dinitrotoluene				< 150	150	< 160	160	< 160	160	< 160	160	< 160	160
2,6-Dinitrotoluene				< 150	150	< 160	160	< 160	160	< 160	160	< 160	160
2-Chloronaphthalene				< 270	270	< 280	280	< 280	280	< 270	270	< 280	280
2-Chlorophenol				< 270	270	< 280	280	< 280	280	< 270	270	< 280	280
2-Methylnaphthalene				< 270	270	< 280	280	< 280	280	< 270	270	< 280	280
2-Methylphenol (o-cresol)	330	100,000	500,000	< 270	270	< 280	280	< 280	280	< 270	270	< 280	280
2-Nitroaniline				< 270	270	< 280	280	< 280	280	< 270	270	< 280	280
2-Nitrophenol				< 270	270	< 280	280	< 280	280	< 270	270	< 280	280
3&4-Methylphenol (m&p-cresol)				< 270	270	< 280	280	< 280	280	< 270	270	< 280	280
3,3'-Dichlorobenzidine				< 150	150	< 160	160	< 160	160	< 160	160	< 160	160
3-Nitroaniline				< 760	760	< 790	790	< 810	810	< 780	780	< 810	810
4,6-Dinitro-2-methylphenol				< 270	270	< 280	280	< 280	280	< 270	270	< 280	280
4-Bromophenyl phenyl ether				< 270	270	< 280	280	< 280	280	< 270	270	< 280	280
4-Chloro-3-methylphenol				< 270	270	< 280	280	< 280	280	< 270	270	< 280	280
4-Chloroaniline				< 760	760	< 790	790	< 810	810	< 780	780	< 810	810
4-Chlorophenyl phenyl ether				< 270	270	< 280	280	< 280	280	< 270	270	< 280	280
4-Nitroaniline				< 1900	1,900	< 2000	2,000	< 2000	2,000	< 2000	2,000	< 2000	2,000
4-Nitrophenol				< 270	270	< 280	280	< 280	280	< 270	270	< 280	280
Acenaphthene	20,000	100,000	500,000	< 270	270	< 280	280	< 280	280	< 270	270	< 280	280
Acenaphthylene	100,000	100,000	500,000	< 150	150	< 160	160	< 160	160	< 160	160	< 160	160
Acetophenone				< 270	270	< 280	280	< 280	280	< 270	270	< 280	280
Anthracene	100,000	100,000	500,000	< 270	270	< 280	280	< 280	280	< 270	270	< 280	280
Atrazine				< 270	270	< 280	280	< 280	280	< 270	270	< 280	280
Benz(a)anthracene	1,000	1,000	5,600	< 270	270	< 280	280	< 280	280	< 270	270	< 280	280
Benzaldehyde				< 270	270	< 280	280	< 280	280	< 270	270	< 280	280
Benzo(a)pyrene	1,000	1,000	1,000	< 150	150	< 160	160	< 160	160	< 160	160	< 160	160
Benzo(b)fluoranthene	1,000	1,000	5,600	< 270	270	< 280	280	< 280	280	< 270	270	< 280	280
Benzo(ghi)perylene	100,000	100,000	500,000	< 270	270	< 280	280	< 280	280	< 270	270	< 280	280
Benzo(k)fluoranthene	800	3,900	56,000	< 270	270	< 280	280	< 280	280	< 270	270	< 280	280
Benzyl butyl phthalate				< 270	270	< 280	280	< 280	280	< 270	270	< 280	280
Bis(2-chloroethoxy)methane				< 270	270	< 280	280	< 280	280	< 270	270	< 280	280
Bis(2-chloroethyl)ether				< 150	150	< 160	160	< 160	160	< 160	160	< 160	160
Bis(2-chloroisopropyl)ether				< 270	270	< 280	280	< 280	280	< 270	270	< 280	280
Bis(2-ethylhexyl)phthalate				**140**	270	< 280	280	< 280	280	< 270	270	< 280	280
Caprolactam				< 270	270	< 280	280	< 280	280	< 270	270	< 280	280
Carbazole				< 270	270	< 280	280	< 280	280	< 270	270	< 280	280
Chrysene	1,000	3,900	56,000	< 270	270	< 280	280	< 280	280	< 270	270	< 280	280
Dibenz(a,h)anthracene	330	330	560	< 150	150	< 160	160	< 160	160	< 160	160	< 160	160
Dibenzofuran	7,000	59,000	350,000	< 270	270	< 280	280	< 280	280	< 270	270	< 280	280
Diethyl phthalate				< 270	270	< 280	280	< 280	280	< 270	270	< 280	280
Dimethylphthalate				< 270	270	< 280	280	< 280	280	< 270	270	< 280	280
Di-n-butylphthalate				< 270	270	< 280	280	< 280	280	< 270	270	< 280	280
Di-n-octylphthalate				**450**	270	< 280	280	< 280	280	< 270	270	< 280	280
Fluoranthene	100,000	100,000	500,000	< 270	270	< 280	280	< 280	280	< 270	270	< 280	280
Fluorene	30,000	100,000	500,000	< 270	270	< 280	280	< 280	280	< 270	270	< 280	280
Hexachlorobenzene	330	1,200	6,000	< 150	150	< 160	160	< 160	160	< 160	160	< 160	160
Hexachlorobutadiene				< 270	270	< 280	280	< 280	280	< 270	270	< 280	280
Hexachlorocyclopentadiene				< 270	270	< 280	280	< 280	280	< 270	270	< 280	280
Hexachloroethane				< 150	150	< 160	160	< 160	160	< 160	160	< 160	160
Indeno(1,2,3-cd)pyrene	500	500	5,600	< 270	270	< 280	280	< 280	280	< 270	270	< 280	280
Isophorone				< 150	150	< 160	160	< 160	160	< 160	160	< 160	160
Naphthalene	12,000	100,000	500,000	< 270	270	< 280	280	< 280	280	< 270	270	< 280	280
Nitrobenzene				< 150	150	< 160	160	< 160	160	< 160	160	< 160	160
N-Nitrosodimethylamine				< 270	270	< 280	280	< 280	280	< 270	270	< 280	280
N-Nitrosodi-n-propylamine				< 150	150	< 160	160	< 160	160	< 160	160	< 160	160
N-Nitrosodiphenylamine				< 150	150	< 160	160	< 160	160	< 160	160	< 160	160
Pentachlorophenol	800	6,700	6,700	< 270	270	< 280	280	< 280	280	< 270	270	< 280	280
Phenanthrene	100,000	100,000	500,000	< 150	150	< 160	160	< 160	160	< 160	160	< 160	160
Phenol	330	100,000	500,000	< 270	270	< 280	280	< 280	280	< 270	270	< 280	280
Pyrene	100,000	100,000	500,000	< 270	270	< 280	280	< 280	280	< 270	270	< 280	280

Notes:

* - 6 NYCRR Part 375-6 Remedial Program Soil Cleanup Objectives

RL - Reporting Limit

Bold/highlighted- Indicated exceedance of the NYSDEC UUSCO Guidance Value

Bold/highlighted- Indicated exceedance of the NYSDEC RRSCO Guidance Value

Bold/highlighted- Indicated exceedance of the NYSDEC RCSCO Guidance Value

Table 22
Former Pfizer Site A - C224284
243-271 Wallabout Street,
Brooklyn, New York
Track 1 Area - Endpoint Soil Analytical Results
Semi-Volatile Organic Compounds

COMPOUND	NYSDEC Part 375.6 Unrestricted Use Soil Cleanup Objectives*	NYDEC Part 375.6 Restricted Residential Soil Cleanup Objectives*	NYDEC Part 375.6 Restricted Commerical Soil Cleanup Objectives*	Endpoint Samples									
				EP6		EP7		EP8		EP9		EP21	
				16'		16'		16'		16'		16'	
				7/9/2020		10/15/2020		12/4/2020		12/4/2020		12/4/2020	
				µg/Kg		µg/Kg		µg/Kg		µg/Kg		µg/Kg	
				Result	RL	Result	RL	Result	RL	Result	RL	Result	RL
1,1-Biphenyl				< 280	280	< 290	290	< 290	290	< 300	300	< 310	310
1,2,4,5-Tetrachlorobenzene				< 280	280	< 290	290	< 290	290	< 300	300	< 310	310
2,3,4,6-tetrachlorophenol				< 280	280	< 290	290	< 290	290	< 300	300	< 310	310
2,4,5-Trichlorophenol				< 280	280	< 290	290	< 290	290	< 300	300	< 310	310
2,4,6-Trichlorophenol				< 160	160	< 170	170	< 170	170	< 170	170	< 170	170
2,4-Dichlorophenol				< 160	160	< 170	170	< 170	170	< 170	170	< 170	170
2,4-Dimethylphenol				< 280	280	< 290	290	< 290	290	< 300	300	< 310	310
2,4-Dinitrophenol				< 280	280	< 290	290	< 290	290	< 300	300	< 310	310
2,4-Dinitrotoluene				< 160	160	< 170	170	< 170	170	< 170	170	< 170	170
2,6-Dinitrotoluene				< 160	160	< 170	170	< 170	170	< 170	170	< 170	170
2-Chloronaphthalene				< 280	280	< 290	290	< 290	290	< 300	300	< 310	310
2-Chlorophenol				< 280	280	< 290	290	< 290	290	< 300	300	< 310	310
2-Methylnaphthalene				< 280	280	< 290	290	< 290	290	< 300	300	< 310	310
2-Methylphenol (o-cresol)	330	100,000	500,000	< 280	280	< 290	290	< 290	290	< 300	300	< 310	310
2-Nitroaniline				< 280	280	< 290	290	< 290	290	< 300	300	< 310	310
2-Nitrophenol				< 280	280	< 290	290	< 290	290	< 300	300	< 310	310
3&4-Methylphenol (m&p-cresol)				< 280	280	< 290	290	< 290	290	< 300	300	< 310	310
3,3'-Dichlorobenzidine				< 160	160	< 170	170	< 170	170	< 170	170	< 170	170
3-Nitroaniline				< 800	800	< 830	830	< 840	840	< 850	850	< 870	870
4,6-Dinitro-2-methylphenol				< 280	280	< 290	290	< 290	290	< 300	300	< 310	310
4-Bromophenyl phenyl ether				< 280	280	< 290	290	< 290	290	< 300	300	< 310	310
4-Chloro-3-methylphenol				< 280	280	< 290	290	< 290	290	< 300	300	< 310	310
4-Chloroaniline				< 800	800	< 830	830	< 840	840	< 850	850	< 870	870
4-Chlorophenyl phenyl ether				< 280	280	< 290	290	< 290	290	< 300	300	< 310	310
4-Nitroaniline				< 2000	2,000	< 2100	2,100	< 2100	2,100	< 2100	2,100	< 2200	2,200
4-Nitrophenol				< 280	280	< 290	290	< 290	290	< 300	300	< 310	310
Acenaphthene	20,000	100,000	500,000	< 280	280	< 290	290	< 290	290	< 300	300	< 310	310
Acenaphthylene	100,000	100,000	500,000	< 160	160	< 170	170	< 170	170	< 170	170	< 170	170
Acetophenone				< 280	280	< 290	290	< 290	290	< 300	300	< 310	310
Anthracene	100,000	100,000	500,000	< 280	280	< 290	290	< 290	290	< 300	300	< 310	310
Atrazine				< 280	280	< 290	290	< 290	290	< 300	300	< 310	310
Benz(a)anthracene	1,000	1,000	5,600	< 280	280	< 290	290	< 290	290	< 300	300	< 310	310
Benzaldehyde				< 280	280	< 290	290	< 290	290	< 300	300	< 310	310
Benzo(a)pyrene	1,000	1,000	1,000	< 160	160	< 170	170	< 170	170	< 170	170	< 170	170
Benzo(b)fluoranthene	1,000	1,000	5,600	< 280	280	< 290	290	< 290	290	< 300	300	< 310	310
Benzo(ghi)perylene	100,000	100,000	500,000	< 280	280	< 290	290	< 290	290	< 300	300	< 310	310
Benzo(k)fluoranthene	800	3,900	56,000	< 280	280	< 290	290	< 290	290	< 300	300	< 310	310
Benzyl butyl phthalate				< 280	280	< 290	290	< 290	290	< 300	300	< 310	310
Bis(2-chloroethoxy)methane				< 280	280	< 290	290	< 290	290	< 300	300	< 310	310
Bis(2-chloroethyl)ether				< 160	160	< 170	170	< 170	170	< 170	170	< 170	170
Bis(2-chloroisopropyl)ether				< 280	280	< 290	290	< 290	290	< 300	300	< 310	310
Bis(2-ethylhexyl)phthalate				< 280	280	< 290	290	< 290	290	< 300	300	< 310	310
Caprolactam				< 280	280	< 290	290	< 290	290	< 300	300	< 310	310
Carbazole				< 280	280	< 290	290	< 290	290	< 300	300	< 310	310
Chrysene	1,000	3,900	56,000	< 280	280	< 290	290	< 290	290	< 300	300	< 310	310
Dibenz(a,h)anthracene	330	330	560	< 160	160	< 170	170	< 170	170	< 170	170	< 170	170
Dibenzofuran	7,000	59,000	350,000	< 280	280	< 290	290	< 290	290	< 300	300	< 310	310
Diethyl phthalate				< 280	280	< 290	290	< 290	290	< 300	300	< 310	310
Dimethylphthalate				< 280	280	< 290	290	< 290	290	< 300	300	< 310	310
Di-n-butylphthalate				< 280	280	< 290	290	< 290	290	< 300	300	< 310	310
Di-n-octylphthalate				< 280	280	< 290	290	< 290	290	< 300	300	< 310	310
Fluoranthene	100,000	100,000	500,000	< 280	280	< 290	290	< 290	290	< 300	300	< 310	310
Fluorene	30,000	100,000	500,000	< 280	280	< 290	290	< 290	290	< 300	300	< 310	310
Hexachlorobenzene	330	1,200	6,000	< 160	160	< 170	170	< 170	170	< 170	170	< 170	170
Hexachlorobutadiene				< 280	280	< 290	290	< 290	290	< 300	300	< 310	310
Hexachlorocyclopentadiene				< 280	280	< 290	290	< 290	290	< 300	300	< 310	310
Hexachloroethane				< 160	160	< 170	170	< 170	170	< 170	170	< 170	170
Indeno(1,2,3-cd)pyrene	500	500	5,600	< 280	280	< 290	290	< 290	290	< 300	300	< 310	310
Isophorone				< 160	160	< 170	170	< 170	170	< 170	170	< 170	170
Naphthalene	12,000	100,000	500,000	< 280	280	< 290	290	< 290	290	< 300	300	< 310	310
Nitrobenzene				< 160	160	< 170	170	< 170	170	< 170	170	< 170	170
N-Nitrosodimethylamine				< 280	280	< 290	290	< 290	290	< 300	300	< 310	310
N-Nitrosodi-n-propylamine				< 160	160	< 170	170	< 170	170	< 170	170	< 170	170
N-Nitrosodiphenylamine				< 160	160	< 170	170	< 170	170	< 170	170	< 170	170
Pentachlorophenol	800	6,700	6,700	< 280	280	< 290	290	< 290	290	< 300	300	< 310	310
Phenanthrene	100,000	100,000	500,000	< 160	160	< 170	170	< 170	170	< 170	170	< 170	170
Phenol	330	100,000	500,000	< 280	280	< 290	290	< 290	290	< 300	300	< 310	310
Pyrene	100,000	100,000	500,000	< 280	280	< 290	290	< 290	290	< 300	300	< 310	310

Notes:

* - 6 NYCRR Part 375-6 Remedial Program Soil Cleanup Objectives

RL - Reporting Limit

Bold/highlighted- Indicated exceedance of the NYSDEC UUSCO Guidance Value

Bold/highlighted- Indicated exceedance of the NYSDEC RRSCO Guidance Value

Bold/highlighted- Indicated exceedance of the NYSDEC RCSCO Guidance Value

Table 22
Former Pfizer Site A - C224284
243-271 Wallabout Street,
Brooklyn, New York
Track 1 Area - Endpoint Soil Analytical Results
Semi-Volatile Organic Compounds

COMPOUND	NYSDEC Part 375.6 Unrestricted Use Soil Cleanup Objectives*	NYDEC Part 375.6 Restricted Residential Soil Cleanup Objectives*	NYDEC Part 375.6 Restricted Commerical Soil Cleanup Objectives*	Endpoint Samples							
				EP22		EP23		EP24		EP25	
				16'		16'		16'		16'	
				12/4/2020		10/15/2020		8/5/2020		8/5/2020	
				µg/Kg		µg/Kg		µg/Kg		µg/Kg	
				Result	RL	Result	RL	Result	RL	Result	RL
1,1-Biphenyl				< 290	290	< 290	290	< 260	260	< 270	270
1,2,4,5-Tetrachlorobenzene				< 290	290	< 290	290	< 260	260	< 270	270
2,3,4,6-tetrachlorophenol				< 290	290	< 290	290	< 260	260	< 270	270
2,4,5-Trichlorophenol				< 290	290	< 290	290	< 260	260	< 270	270
2,4,6-Trichlorophenol				< 170	170	< 160	160	< 150	150	< 160	160
2,4-Dichlorophenol				< 170	170	< 160	160	< 150	150	< 160	160
2,4-Dimethylphenol				< 290	290	< 290	290	< 260	260	< 270	270
2,4-Dinitrophenol				< 290	290	< 290	290	< 260	260	< 270	270
2,4-Dinitrotoluene				< 170	170	< 160	160	< 150	150	< 160	160
2,6-Dinitrotoluene				< 170	170	< 160	160	< 150	150	< 160	160
2-Chloronaphthalene				< 290	290	< 290	290	< 260	260	< 270	270
2-Chlorophenol				< 290	290	< 290	290	< 260	260	< 270	270
2-Methylnaphthalene				< 290	290	< 290	290	< 260	260	< 270	270
2-Methylphenol (o-cresol)	330	100,000	500,000	< 290	290	< 290	290	< 260	260	< 270	270
2-Nitroaniline				< 290	290	< 290	290	< 260	260	< 270	270
2-Nitrophenol				< 290	290	< 290	290	< 260	260	< 270	270
3&4-Methylphenol (m&p-cresol)				< 290	290	< 290	290	< 260	260	< 270	270
3,3'-Dichlorobenzidine				< 170	170	< 160	160	< 150	150	< 160	160
3-Nitroaniline				< 840	840	< 820	820	< 750	750	< 780	780
4,6-Dinitro-2-methylphenol				< 290	290	< 290	290	< 260	260	< 270	270
4-Bromophenyl phenyl ether				< 290	290	< 290	290	< 260	260	< 270	270
4-Chloro-3-methylphenol				< 290	290	< 290	290	< 260	260	< 270	270
4-Chloroaniline				< 840	840	< 820	820	< 750	750	< 780	780
4-Chlorophenyl phenyl ether				< 290	290	< 290	290	< 260	260	< 270	270
4-Nitroaniline				< 2100	2,100	< 2100	2,100	< 1900	1,900	< 2000	2,000
4-Nitrophenol				< 290	290	< 290	290	< 260	260	< 270	270
Acenaphthene	20,000	100,000	500,000	< 290	290	< 290	290	< 260	260	< 270	270
Acenaphthylene	100,000	100,000	500,000	< 170	170	< 160	160	< 150	150	< 160	160
Acetophenone				< 290	290	< 290	290	< 260	260	< 270	270
Anthracene	100,000	100,000	500,000	< 290	290	< 290	290	< 260	260	< 270	270
Atrazine				< 290	290	< 290	290	< 260	260	< 270	270
Benz(a)anthracene	1,000	1,000	5,600	< 290	290	< 290	290	< 260	260	< 270	270
Benzaldehyde				< 290	290	< 290	290	< 260	260	< 270	270
Benzo(a)pyrene	1,000	1,000	1,000	< 170	170	< 160	160	< 150	150	< 160	160
Benzo(b)fluoranthene	1,000	1,000	5,600	< 290	290	< 290	290	< 260	260	< 270	270
Benzo(ghi)perylene	100,000	100,000	500,000	< 290	290	< 290	290	< 260	260	< 270	270
Benzo(k)fluoranthene	800	3,900	56,000	< 290	290	< 290	290	< 260	260	< 270	270
Benzyl butyl phthalate				< 290	290	< 290	290	< 260	260	< 270	270
Bis(2-chloroethoxy)methane				< 290	290	< 290	290	< 260	260	< 270	270
Bis(2-chloroethyl)ether				< 170	170	< 160	160	< 150	150	< 160	160
Bis(2-chloroisopropyl)ether				< 290	290	< 290	290	< 260	260	< 270	270
Bis(2-ethylhexyl)phthalate				< 290	290	< 290	290	< 260	260	< 270	270
Caprolactam				< 290	290	< 290	290	< 260	260	< 270	270
Carbazole				< 290	290	< 290	290	< 260	260	< 270	270
Chrysene	1,000	3,900	56,000	< 290	290	< 290	290	< 260	260	< 270	270
Dibenz(a,h)anthracene	330	330	560	< 170	170	< 160	160	< 150	150	< 160	160
Dibenzofuran	7,000	59,000	350,000	< 290	290	< 290	290	< 260	260	< 270	270
Diethyl phthalate				< 290	290	< 290	290	< 260	260	< 270	270
Dimethylphthalate				< 290	290	< 290	290	< 260	260	< 270	270
Di-n-butylphthalate				< 290	290	< 290	290	< 260	260	< 270	270
Di-n-octylphthalate				< 290	290	< 290	290	< 260	260	< 270	270
Fluoranthene	100,000	100,000	500,000	< 290	290	< 290	290	< 260	260	< 270	270
Fluorene	30,000	100,000	500,000	< 290	290	< 290	290	< 260	260	< 270	270
Hexachlorobenzene	330	1,200	6,000	< 170	170	< 160	160	< 150	150	< 160	160
Hexachlorobutadiene				< 290	290	< 290	290	< 260	260	< 270	270
Hexachlorocyclopentadiene				< 290	290	< 290	290	< 260	260	< 270	270
Hexachloroethane				< 170	170	< 160	160	< 150	150	< 160	160
Indeno(1,2,3-cd)pyrene	500	500	5,600	< 290	290	< 290	290	< 260	260	< 270	270
Isophorone				< 170	170	< 160	160	< 150	150	< 160	160
Naphthalene	12,000	100,000	500,000	< 290	290	< 290	290	< 260	260	< 270	270
Nitrobenzene				< 170	170	< 160	160	< 150	150	< 160	160
N-Nitrosodimethylamine				< 290	290	< 290	290	< 260	260	< 270	270
N-Nitrosodi-n-propylamine				< 170	170	< 160	160	< 150	150	< 160	160
N-Nitrosodiphenylamine				< 170	170	< 160	160	< 150	150	< 160	160
Pentachlorophenol	800	6,700	6,700	< 290	290	< 290	290	< 260	260	< 270	270
Phenanthrene	100,000	100,000	500,000	< 170	170	< 160	160	< 150	150	< 160	160
Phenol	330	100,000	500,000	< 290	290	< 290	290	< 260	260	< 270	270
Pyrene	100,000	100,000	500,000	< 290	290	< 290	290	< 260	260	< 270	270

Notes:

* - 6 NYCRR Part 375-6 Remedial Program Soil Cleanup Objectives

RL - Reporting Limit

Bold/highlighted- Indicated exceedance of the NYSDEC UUSCO Guidance Value

Bold/highlighted- Indicated exceedance of the NYSDEC RRSCO Guidance Value

Bold/highlighted- Indicated exceedance of the NYSDEC RCSCO Guidance Value

Table 22
Former Pfizer Site A - C224284
243-271 Wallabout Street,
Brooklyn, New York
Track 1 Area - Endpoint Soil Analytical Results
Semi-Volatile Organic Compounds

COMPOUND	NYSDEC Part 375.6 Unrestricted Use Soil Cleanup Objectives*	NYDEC Part 375.6 Restricted Residential Soil Cleanup Objectives*	NYDEC Part 375.6 Restricted Commerical Soil Cleanup Objectives*	Endpoint Samples									
				EP26		EP27		EP28		EP29		EP30	
				16'		16'		16'		16'		16'	
				8/5/2020		7/9/2020		7/9/2020		7/9/2020		7/9/2020	
				µg/Kg		µg/Kg		µg/Kg		µg/Kg		µg/Kg	
				Result	RL	Result	RL	Result	RL	Result	RL	Result	RL
1,1-Biphenyl				< 260	260	< 270	270	< 290	290	< 300	300	< 300	300
1,2,4,5-Tetrachlorobenzene				< 260	260	< 270	270	< 290	290	< 300	300	< 300	300
2,3,4,6-tetrachlorophenol				< 260	260	< 270	270	< 290	290	< 300	300	< 300	300
2,4,5-Trichlorophenol				< 260	260	< 270	270	< 290	290	< 300	300	< 300	300
2,4,6-Trichlorophenol				< 150	150	< 160	160	< 170	170	< 170	170	< 170	170
2,4-Dichlorophenol				< 150	150	< 160	160	< 170	170	< 170	170	< 170	170
2,4-Dimethylphenol				< 260	260	< 270	270	< 290	290	< 300	300	< 300	300
2,4-Dinitrophenol				< 260	260	< 270	270	< 290	290	< 300	300	< 300	300
2,4-Dinitrotoluene				< 150	150	< 160	160	< 170	170	< 170	170	< 170	170
2,6-Dinitrotoluene				< 150	150	< 160	160	< 170	170	< 170	170	< 170	170
2-Chloronaphthalene				< 260	260	< 270	270	< 290	290	< 300	300	< 300	300
2-Chlorophenol				< 260	260	< 270	270	< 290	290	< 300	300	< 300	300
2-Methylnaphthalene				< 260	260	< 270	270	< 290	290	< 300	300	< 300	300
2-Methylphenol (o-cresol)	330	100,000	500,000	< 260	260	< 270	270	< 290	290	< 300	300	< 300	300
2-Nitroaniline				< 260	260	< 270	270	< 290	290	< 300	300	< 300	300
2-Nitrophenol				< 260	260	< 270	270	< 290	290	< 300	300	< 300	300
3&4-Methylphenol (m&p-cresol)				< 260	260	< 270	270	< 290	290	< 300	300	< 300	300
3,3'-Dichlorobenzidine				< 150	150	< 160	160	< 170	170	< 170	170	< 170	170
3-Nitroaniline				< 760	760	< 790	790	< 830	830	< 860	860	< 850	850
4,6-Dinitro-2-methylphenol				< 260	260	< 270	270	< 290	290	< 300	300	< 300	300
4-Bromophenyl phenyl ether				< 260	260	< 270	270	< 290	290	< 300	300	< 300	300
4-Chloro-3-methylphenol				< 260	260	< 270	270	< 290	290	< 300	300	< 300	300
4-Chloroaniline				< 760	760	< 790	790	< 830	830	< 860	860	< 850	850
4-Chlorophenyl phenyl ether				< 260	260	< 270	270	< 290	290	< 300	300	< 300	300
4-Nitroaniline				< 1900	1,900	< 2000	2,000	< 2100	2,100	< 2100	2,100	< 2100	2,100
4-Nitrophenol				< 260	260	< 270	270	< 290	290	< 300	300	< 300	300
Acenaphthene	20,000	100,000	500,000	< 260	260	< 270	270	< 290	290	< 300	300	< 300	300
Acenaphthylene	100,000	100,000	500,000	< 150	150	< 160	160	< 170	170	< 170	170	< 170	170
Acetophenone				< 260	260	< 270	270	< 290	290	< 300	300	< 300	300
Anthracene	100,000	100,000	500,000	< 260	260	< 270	270	< 290	290	< 300	300	< 300	300
Atrazine				< 260	260	< 270	270	< 290	290	< 300	300	< 300	300
Benz(a)anthracene	1,000	1,000	5,600	< 260	260	< 270	270	< 290	290	< 300	300	< 300	300
Benzaldehyde				< 260	260	< 270	270	< 290	290	< 300	300	< 300	300
Benzo(a)pyrene	1,000	1,000	1,000	< 150	150	< 160	160	< 170	170	< 170	170	< 170	170
Benzo(b)fluoranthene	1,000	1,000	5,600	< 260	260	< 270	270	< 290	290	< 300	300	< 300	300
Benzo(ghi)perylene	100,000	100,000	500,000	< 260	260	< 270	270	< 290	290	< 300	300	< 300	300
Benzo(k)fluoranthene	800	3,900	56,000	< 260	260	< 270	270	< 290	290	< 300	300	< 300	300
Benzyl butyl phthalate				< 260	260	< 270	270	< 290	290	< 300	300	< 300	300
Bis(2-chloroethoxy)methane				< 260	260	< 270	270	< 290	290	< 300	300	< 300	300
Bis(2-chloroethyl)ether				< 150	150	< 160	160	< 170	170	< 170	170	< 170	170
Bis(2-chloroisopropyl)ether				< 260	260	< 270	270	< 290	290	< 300	300	< 300	300
Bis(2-ethylhexyl)phthalate				< 260	260	< 270	270	< 290	290	< 300	300	< 300	300
Caprolactam				< 260	260	< 270	270	< 290	290	< 300	300	< 300	300
Carbazole				< 260	260	< 270	270	< 290	290	< 300	300	< 300	300
Chrysene	1,000	3,900	56,000	< 260	260	< 270	270	< 290	290	< 300	300	< 300	300
Dibenz(a,h)anthracene	330	330	560	< 150	150	< 160	160	< 170	170	< 170	170	< 170	170
Dibenzofuran	7,000	59,000	350,000	< 260	260	< 270	270	< 290	290	< 300	300	< 300	300
Diethyl phthalate				< 260	260	< 270	270	< 290	290	< 300	300	< 300	300
Dimethylphthalate				< 260	260	< 270	270	< 290	290	< 300	300	< 300	300
Di-n-butylphthalate				< 260	260	< 270	270	< 290	290	< 300	300	< 300	300
Di-n-octylphthalate				< 260	260	< 270	270	< 290	290	< 300	300	< 300	300
Fluoranthene	100,000	100,000	500,000	< 260	260	< 270	270	< 290	290	< 300	300	< 300	300
Fluorene	30,000	100,000	500,000	< 260	260	< 270	270	< 290	290	< 300	300	< 300	300
Hexachlorobenzene	330	1,200	6,000	< 150	150	< 160	160	< 170	170	< 170	170	< 170	170
Hexachlorobutadiene				< 260	260	< 270	270	< 290	290	< 300	300	< 300	300
Hexachlorocyclopentadiene				< 260	260	< 270	270	< 290	290	< 300	300	< 300	300
Hexachloroethane				< 150	150	< 160	160	< 170	170	< 170	170	< 170	170
Indeno(1,2,3-cd)pyrene	500	500	5,600	< 260	260	< 270	270	< 290	290	< 300	300	< 300	300
Isophorone				< 150	150	< 160	160	< 170	170	< 170	170	< 170	170
Naphthalene	12,000	100,000	500,000	< 260	260	< 270	270	< 290	290	< 300	300	< 300	300
Nitrobenzene				< 150	150	< 160	160	< 170	170	< 170	170	< 170	170
N-Nitrosodimethylamine				< 260	260	< 270	270	< 290	290	< 300	300	< 300	300
N-Nitrosodi-n-propylamine				< 150	150	< 160	160	< 170	170	< 170	170	< 170	170
N-Nitrosodiphenylamine				< 150	150	< 160	160	< 170	170	< 170	170	< 170	170
Pentachlorophenol	800	6,700	6,700	< 260	260	< 270	270	< 290	290	< 300	300	< 300	300
Phenanthrene	100,000	100,000	500,000	< 150	150	< 160	160	< 170	170	< 170	170	< 170	170
Phenol	330	100,000	500,000	< 260	260	< 270	270	< 290	290	< 300	300	< 300	300
Pyrene	100,000	100,000	500,000	< 260	260	< 270	270	< 290	290	< 300	300	< 300	300

Notes:

* - 6 NYCRR Part 375-6 Remedial Program Soil Cleanup Objectives

RL - Reporting Limit

Bold/highlighted- Indicated exceedance of the NYSDEC UUSCO Guidance Value

Bold/highlighted- Indicated exceedance of the NYSDEC RRSCO Guidance Value

Bold/highlighted- Indicated exceedance of the NYSDEC RCSCO Guidance Value

Table 22
Former Pfizer Site A - C224284
243-271 Wallabout Street,
Brooklyn, New York
Track 1 Area - Endpoint Soil Analytical Results
Semi-Volatile Organic Compounds

COMPOUND	NYSDEC Part 375.6 Unrestricted Use Soil Cleanup Objectives*	NYDEC Part 375.6 Restricted Residential Soil Cleanup Objectives*	NYDEC Part 375.6 Restricted Commerical Soil Cleanup Objectives*	Endpoint Samples									
				EP31		EP32		EP33		EP34		EP35	
				16'		16'		16'		16'		16'	
				7/9/2020		7/9/2020		8/5/2020		8/5/2020		8/5/2020	
				µg/Kg		µg/Kg		µg/Kg		µg/Kg		µg/Kg	
				Result	RL	Result	RL	Result	RL	Result	RL	Result	RL
1,1-Biphenyl				< 260	260	< 300	300	< 270	270	< 280	280	< 280	280
1,2,4,5-Tetrachlorobenzene				< 260	260	< 300	300	< 270	270	< 280	280	< 280	280
2,3,4,6-tetrachlorophenol				< 260	260	< 300	300	< 270	270	< 280	280	< 280	280
2,4,5-Trichlorophenol				< 260	260	< 300	300	< 270	270	< 280	280	< 280	280
2,4,6-Trichlorophenol				< 150	150	< 170	170	< 160	160	< 160	160	< 160	160
2,4-Dichlorophenol				< 150	150	< 170	170	< 160	160	< 160	160	< 160	160
2,4-Dimethylphenol				< 260	260	< 300	300	< 270	270	< 280	280	< 280	280
2,4-Dinitrophenol				< 260	260	< 300	300	< 270	270	< 280	280	< 280	280
2,4-Dinitrotoluene				< 150	150	< 170	170	< 160	160	< 160	160	< 160	160
2,6-Dinitrotoluene				< 150	150	< 170	170	< 160	160	< 160	160	< 160	160
2-Chloronaphthalene				< 260	260	< 300	300	< 270	270	< 280	280	< 280	280
2-Chlorophenol				< 260	260	< 300	300	< 270	270	< 280	280	< 280	280
2-Methylnaphthalene				< 260	260	< 300	300	< 270	270	< 280	280	< 280	280
2-Methylphenol (o-cresol)	330	100,000	500,000	< 260	260	< 300	300	< 270	270	< 280	280	< 280	280
2-Nitroaniline				< 260	260	< 300	300	< 270	270	< 280	280	< 280	280
2-Nitrophenol				< 260	260	< 300	300	< 270	270	< 280	280	< 280	280
3&4-Methylphenol (m&p-cresol)				< 260	260	< 300	300	< 270	270	< 280	280	< 280	280
3,3'-Dichlorobenzidine				< 150	150	< 170	170	< 160	160	< 160	160	< 160	160
3-Nitroaniline				< 730	730	< 870	870	< 780	780	< 790	790	< 810	810
4,6-Dinitro-2-methylphenol				< 260	260	< 300	300	< 270	270	< 280	280	< 280	280
4-Bromophenyl phenyl ether				< 260	260	< 300	300	< 270	270	< 280	280	< 280	280
4-Chloro-3-methylphenol				< 260	260	< 300	300	< 270	270	< 280	280	< 280	280
4-Chloroaniline				< 730	730	< 870	870	< 780	780	< 790	790	< 810	810
4-Chlorophenyl phenyl ether				< 260	260	< 300	300	< 270	270	< 280	280	< 280	280
4-Nitroaniline				< 1800	1,800	< 2200	2,200	< 1900	1,900	< 2000	2,000	< 2000	2,000
4-Nitrophenol				< 260	260	< 300	300	< 270	270	< 280	280	< 280	280
Acenaphthene	20,000	100,000	500,000	< 260	260	< 300	300	< 270	270	< 280	280	< 280	280
Acenaphthylene	100,000	100,000	500,000	< 150	150	< 170	170	< 160	160	< 160	160	< 160	160
Acetophenone				< 260	260	< 300	300	< 270	270	< 280	280	< 280	280
Anthracene	100,000	100,000	500,000	< 260	260	< 300	300	< 270	270	< 280	280	< 280	280
Atrazine				< 260	260	< 300	300	< 270	270	< 280	280	< 280	280
Benz(a)anthracene	1,000	1,000	5,600	< 260	260	< 300	300	< 270	270	< 280	280	< 280	280
Benzaldehyde				< 260	260	< 300	300	< 270	270	< 280	280	< 280	280
Benzo(a)pyrene	1,000	1,000	1,000	< 150	150	< 170	170	< 160	160	< 160	160	< 160	160
Benzo(b)fluoranthene	1,000	1,000	5,600	< 260	260	< 300	300	< 270	270	< 280	280	< 280	280
Benzo(ghi)perylene	100,000	100,000	500,000	< 260	260	< 300	300	< 270	270	< 280	280	< 280	280
Benzo(k)fluoranthene	800	3,900	56,000	< 260	260	< 300	300	< 270	270	< 280	280	< 280	280
Benzyl butyl phthalate				< 260	260	< 300	300	< 270	270	< 280	280	< 280	280
Bis(2-chloroethoxy)methane				< 260	260	< 300	300	< 270	270	< 280	280	< 280	280
Bis(2-chloroethyl)ether				< 150	150	< 170	170	< 160	160	< 160	160	< 160	160
Bis(2-chloroisopropyl)ether				< 260	260	< 300	300	< 270	270	< 280	280	< 280	280
Bis(2-ethylhexyl)phthalate				< 260	260	< 300	300	< 270	270	< 280	280	< 280	280
Caprolactam				< 260	260	< 300	300	< 270	270	< 280	280	< 280	280
Carbazole				< 260	260	< 300	300	< 270	270	< 280	280	< 280	280
Chrysene	1,000	3,900	56,000	< 260	260	< 300	300	< 270	270	< 280	280	< 280	280
Dibenz(a,h)anthracene	330	330	560	< 150	150	< 170	170	< 160	160	< 160	160	< 160	160
Dibenzofuran	7,000	59,000	350,000	< 260	260	< 300	300	< 270	270	< 280	280	< 280	280
Diethyl phthalate				< 260	260	< 300	300	< 270	270	< 280	280	< 280	280
Dimethylphthalate				< 260	260	< 300	300	< 270	270	< 280	280	< 280	280
Di-n-butylphthalate				< 260	260	< 300	300	< 270	270	< 280	280	< 280	280
Di-n-octylphthalate				< 260	260	< 300	300	< 270	270	< 280	280	< 280	280
Fluoranthene	100,000	100,000	500,000	< 260	260	< 300	300	< 270	270	< 280	280	< 280	280
Fluorene	30,000	100,000	500,000	< 260	260	< 300	300	< 270	270	< 280	280	< 280	280
Hexachlorobenzene	330	1,200	6,000	< 150	150	< 170	170	< 160	160	< 160	160	< 160	160
Hexachlorobutadiene				< 260	260	< 300	300	< 270	270	< 280	280	< 280	280
Hexachlorocyclopentadiene				< 260	260	< 300	300	< 270	270	< 280	280	< 280	280
Hexachloroethane				< 150	150	< 170	170	< 160	160	< 160	160	< 160	160
Indeno(1,2,3-cd)pyrene	500	500	5,600	< 260	260	< 300	300	< 270	270	< 280	280	< 280	280
Isophorone				< 150	150	< 170	170	< 160	160	< 160	160	< 160	160
Naphthalene	12,000	100,000	500,000	< 260	260	< 300	300	< 270	270	< 280	280	< 280	280
Nitrobenzene				< 150	150	< 170	170	< 160	160	< 160	160	< 160	160
N-Nitrosodimethylamine				< 260	260	< 300	300	< 270	270	< 280	280	< 280	280
N-Nitrosodi-n-propylamine				< 150	150	< 170	170	< 160	160	< 160	160	< 160	160
N-Nitrosodiphenylamine				< 150	150	< 170	170	< 160	160	< 160	160	< 160	160
Pentachlorophenol	800	6,700	6,700	< 260	260	< 300	300	< 270	270	< 280	280	< 280	280
Phenanthrene	100,000	100,000	500,000	< 150	150	< 170	170	< 160	160	< 160	160	< 160	160
Phenol	330	100,000	500,000	< 260	260	< 300	300	< 270	270	< 280	280	< 280	280
Pyrene	100,000	100,000	500,000	< 260	260	< 300	300	< 270	270	< 280	280	< 280	280

Notes:

* - 6 NYCRR Part 375-6 Remedial Program Soil Cleanup Objectives

RL - Reporting Limit

Bold/highlighted- Indicated exceedance of the NYSDEC UUSCO Guidance Value

Bold/highlighted- Indicated exceedance of the NYSDEC RRSCO Guidance Value

Bold/highlighted- Indicated exceedance of the NYSDEC RCSCO Guidance Value

Table 22
Former Pfizer Site A - C224284
243-271 Wallabout Street,
Brooklyn, New York
Track 1 Area - Endpoint Soil Analytical Results
Semi-Volatile Organic Compounds

COMPOUND	NYSDEC Part 375.6 Unrestricted Use Soil Cleanup Objectives*	NYDEC Part 375.6 Restricted Residential Soil Cleanup Objectives*	NYDEC Part 375.6 Restricted Commerical Soil Cleanup Objectives*	Endpoint Samples									
				EP36		EP37		EP38		EP46		EP47	
				16'		16'		16'		16'		16'	
				10/15/2020		12/4/2020		12/4/2020		11/20/2020		11/20/2020	
				µg/Kg		µg/Kg		µg/Kg		µg/Kg		µg/Kg	
				Result	RL	Result	RL	Result	RL	Result	RL	Result	RL
1,1-Biphenyl				< 260	260	< 270	270	< 280	280	< 280	280	< 270	270
1,2,4,5-Tetrachlorobenzene				< 260	260	< 270	270	< 280	280	< 280	280	< 270	270
2,3,4,6-tetrachlorophenol				< 260	260	< 270	270	< 280	280	< 280	280	< 270	270
2,4,5-Trichlorophenol				< 260	260	< 270	270	< 280	280	< 280	280	< 270	270
2,4,6-Trichlorophenol				< 150	150	< 150	150	< 160	160	< 160	160	< 160	160
2,4-Dichlorophenol				< 150	150	< 150	150	< 160	160	< 160	160	< 160	160
2,4-Dimethylphenol				< 260	260	< 270	270	< 280	280	< 280	280	< 270	270
2,4-Dinitrophenol				< 260	260	< 270	270	< 280	280	< 280	280	< 270	270
2,4-Dinitrotoluene				< 150	150	< 150	150	< 160	160	< 160	160	< 160	160
2,6-Dinitrotoluene				< 150	150	< 150	150	< 160	160	< 160	160	< 160	160
2-Chloronaphthalene				< 260	260	< 270	270	< 280	280	< 280	280	< 270	270
2-Chlorophenol				< 260	260	< 270	270	< 280	280	< 280	280	< 270	270
2-Methylnaphthalene				< 260	260	< 270	270	< 280	280	< 280	280	< 270	270
2-Methylphenol (o-cresol)	330	100,000	500,000	< 260	260	< 270	270	< 280	280	< 280	280	< 270	270
2-Nitroaniline				< 260	260	< 270	270	< 280	280	< 280	280	< 270	270
2-Nitrophenol				< 260	260	< 270	270	< 280	280	< 280	280	< 270	270
3&4-Methylphenol (m&p-cresol)				< 260	260	< 270	270	< 280	280	< 280	280	< 270	270
3,3'-Dichlorobenzidine				< 150	150	< 150	150	< 160	160	< 160	160	< 160	160
3-Nitroaniline				< 730	730	< 760	760	< 810	810	< 800	800	< 780	780
4,6-Dinitro-2-methylphenol				< 260	260	< 270	270	< 280	280	< 280	280	< 270	270
4-Bromophenyl phenyl ether				< 260	260	< 270	270	< 280	280	< 280	280	< 270	270
4-Chloro-3-methylphenol				< 260	260	< 270	270	< 280	280	< 280	280	< 270	270
4-Chloroaniline				< 730	730	< 760	760	< 810	810	< 800	800	< 780	780
4-Chlorophenyl phenyl ether				< 260	260	< 270	270	< 280	280	< 280	280	< 270	270
4-Nitroaniline				< 1800	1,800	< 1900	1,900	< 2000	2,000	< 2000	2,000	< 2000	2,000
4-Nitrophenol				< 260	260	< 270	270	< 280	280	< 280	280	< 270	270
Acenaphthene	20,000	100,000	500,000	< 260	260	< 270	270	< 280	280	< 280	280	< 270	270
Acenaphthylene	100,000	100,000	500,000	< 150	150	< 150	150	< 160	160	< 160	160	< 160	160
Acetophenone				< 260	260	< 270	270	< 280	280	< 280	280	< 270	270
Anthracene	100,000	100,000	500,000	< 260	260	< 270	270	< 280	280	< 280	280	< 270	270
Atrazine				< 260	260	< 270	270	< 280	280	< 280	280	< 270	270
Benz(a)anthracene	1,000	1,000	5,600	< 260	260	< 270	270	< 280	280	< 280	280	< 270	270
Benzaldehyde				< 260	260	< 270	270	< 280	280	< 280	280	< 270	270
Benzo(a)pyrene	1,000	1,000	1,000	< 150	150	< 150	150	< 160	160	< 160	160	< 160	160
Benzo(b)fluoranthene	1,000	1,000	5,600	< 260	260	< 270	270	< 280	280	< 280	280	< 270	270
Benzo(ghi)perylene	100,000	100,000	500,000	< 260	260	< 270	270	< 280	280	< 280	280	< 270	270
Benzo(k)fluoranthene	800	3,900	56,000	< 260	260	< 270	270	< 280	280	< 280	280	< 270	270
Benzyl butyl phthalate				< 260	260	< 270	270	< 280	280	< 280	280	< 270	270
Bis(2-chloroethoxy)methane				< 260	260	< 270	270	< 280	280	< 280	280	< 270	270
Bis(2-chloroethyl)ether				< 150	150	< 150	150	< 160	160	< 160	160	< 160	160
Bis(2-chloroisopropyl)ether				< 260	260	< 270	270	< 280	280	< 280	280	< 270	270
Bis(2-ethylhexyl)phthalate				< 260	260	< 270	270	< 280	280	< 280	280	< 270	270
Caprolactam				< 260	260	< 270	270	< 280	280	< 280	280	< 270	270
Carbazole				< 260	260	< 270	270	< 280	280	< 280	280	< 270	270
Chrysene	1,000	3,900	56,000	< 260	260	< 270	270	< 280	280	< 280	280	< 270	270
Dibenz(a,h)anthracene	330	330	560	< 150	150	< 150	150	< 160	160	< 160	160	< 160	160
Dibenzofuran	7,000	59,000	350,000	< 260	260	< 270	270	< 280	280	< 280	280	< 270	270
Diethyl phthalate				< 260	260	< 270	270	< 280	280	< 280	280	< 270	270
Dimethylphthalate				< 260	260	< 270	270	< 280	280	< 280	280	< 270	270
Di-n-butylphthalate				< 260	260	< 270	270	< 280	280	< 280	280	< 270	270
Di-n-octylphthalate				< 260	260	< 270	270	< 280	280	< 280	280	< 270	270
Fluoranthene	100,000	100,000	500,000	< 260	260	< 270	270	< 280	280	< 280	280	< 270	270
Fluorene	30,000	100,000	500,000	< 260	260	< 270	270	< 280	280	< 280	280	< 270	270
Hexachlorobenzene	330	1,200	6,000	< 150	150	< 150	150	< 160	160	< 160	160	< 160	160
Hexachlorobutadiene				< 260	260	< 270	270	< 280	280	< 280	280	< 270	270
Hexachlorocyclopentadiene				< 260	260	< 270	270	< 280	280	< 280	280	< 270	270
Hexachloroethane				< 150	150	< 150	150	< 160	160	< 160	160	< 160	160
Indeno(1,2,3-cd)pyrene	500	500	5,600	< 260	260	< 270	270	< 280	280	< 280	280	< 270	270
Isophorone				< 150	150	< 150	150	< 160	160	< 160	160	< 160	160
Naphthalene	12,000	100,000	500,000	< 260	260	< 270	270	< 280	280	< 280	280	< 270	270
Nitrobenzene				< 150	150	< 150	150	< 160	160	< 160	160	< 160	160
N-Nitrosodimethylamine				< 260	260	< 270	270	< 280	280	< 280	280	< 270	270
N-Nitrosodi-n-propylamine				< 150	150	< 150	150	< 160	160	< 160	160	< 160	160
N-Nitrosodiphenylamine				< 150	150	< 150	150	< 160	160	< 160	160	< 160	160
Pentachlorophenol	800	6,700	6,700	< 260	260	< 270	270	< 280	280	< 280	280	< 270	270
Phenanthrene	100,000	100,000	500,000	< 150	150	< 150	150	< 160	160	< 160	160	< 160	160
Phenol	330	100,000	500,000	< 260	260	< 270	270	< 280	280	< 280	280	< 270	270
Pyrene	100,000	100,000	500,000	< 260	260	< 270	270	< 280	280	< 280	280	< 270	270

Notes:

* - 6 NYCRR Part 375-6 Remedial Program Soil Cleanup Objectives

RL - Reporting Limit

Bold/highlighted- Indicated exceedance of the NYSDEC UUSCO Guidance Value

Bold/highlighted- Indicated exceedance of the NYSDEC RRSCO Guidance Value

Bold/highlighted- Indicated exceedance of the NYSDEC RCSCO Guidance Value

Table 22
Former Pfizer Site A - C224284
243-271 Wallabout Street,
Brooklyn, New York
Track 1 Area - Endpoint Soil Analytical Results
Semi-Volatile Organic Compounds

COMPOUND	NYSDEC Part 375.6 Unrestricted Use Soil Cleanup Objectives*	NYDEC Part 375.6 Restricted Residential Soil Cleanup Objectives*	NYDEC Part 375.6 Restricted Commerical Soil Cleanup Objectives*	Endpoint Samples									
				EP48		EP49		EP50		EP51		EP52	
				16'		16'		16'		16'		16'	
				10/15/2020		8/10/2020		8/10/2020		8/10/2020		8/5/2020	
				µg/Kg		µg/Kg		µg/Kg		µg/Kg		µg/Kg	
				Result	RL	Result	RL	Result	RL	Result	RL	Result	RL
1,1-Biphenyl				< 270	270	< 270	270	< 270	270	< 280	280	< 270	270
1,2,4,5-Tetrachlorobenzene				< 270	270	< 270	270	< 270	270	< 280	280	< 270	270
2,3,4,6-tetrachlorophenol				< 270	270	< 270	270	< 270	270	< 280	280	< 270	270
2,4,5-Trichlorophenol				< 270	270	< 270	270	< 270	270	< 280	280	< 270	270
2,4,6-Trichlorophenol				< 160	160	< 160	160	< 150	150	< 160	160	< 150	150
2,4-Dichlorophenol				< 160	160	< 160	160	< 150	150	< 160	160	< 150	150
2,4-Dimethylphenol				< 270	270	< 270	270	< 270	270	< 280	280	< 270	270
2,4-Dinitrophenol				< 270	270	< 270	270	< 270	270	< 280	280	< 270	270
2,4-Dinitrotoluene				< 160	160	< 160	160	< 150	150	< 160	160	< 150	150
2,6-Dinitrotoluene				< 160	160	< 160	160	< 150	150	< 160	160	< 150	150
2-Chloronaphthalene				< 270	270	< 270	270	< 270	270	< 280	280	< 270	270
2-Chlorophenol				< 270	270	< 270	270	< 270	270	< 280	280	< 270	270
2-Methylnaphthalene				< 270	270	< 270	270	< 270	270	< 280	280	< 270	270
2-Methylphenol (o-cresol)	330	100,000	500,000	< 270	270	< 270	270	< 270	270	< 280	280	< 270	270
2-Nitroaniline				< 270	270	< 270	270	< 270	270	< 280	280	< 270	270
2-Nitrophenol				< 270	270	< 270	270	< 270	270	< 280	280	< 270	270
3&4-Methylphenol (m&p-cresol)				< 270	270	< 270	270	< 270	270	< 280	280	< 270	270
3,3'-Dichlorobenzidine				< 160	160	< 160	160	< 150	150	< 160	160	< 150	150
3-Nitroaniline				< 780	780	< 780	780	< 770	770	< 790	790	< 760	760
4,6-Dinitro-2-methylphenol				< 270	270	< 270	270	< 270	270	< 280	280	< 270	270
4-Bromophenyl phenyl ether				< 270	270	< 270	270	< 270	270	< 280	280	< 270	270
4-Chloro-3-methylphenol				< 270	270	< 270	270	< 270	270	< 280	280	< 270	270
4-Chloroaniline				< 780	780	< 780	780	< 770	770	< 790	790	< 760	760
4-Chlorophenyl phenyl ether				< 270	270	< 270	270	< 270	270	< 280	280	< 270	270
4-Nitroaniline				< 2000	2,000	< 1900	1,900	< 1900	1,900	< 2000	2,000	< 1900	1,900
4-Nitrophenol				< 270	270	< 270	270	< 270	270	< 280	280	< 270	270
Acenaphthene	20,000	100,000	500,000	< 270	270	< 270	270	< 270	270	< 280	280	< 270	270
Acenaphthylene	100,000	100,000	500,000	< 160	160	< 160	160	< 150	150	< 160	160	< 150	150
Acetophenone				< 270	270	< 270	270	< 270	270	< 280	280	< 270	270
Anthracene	100,000	100,000	500,000	< 270	270	< 270	270	**250**	270	< 280	280	< 270	270
Atrazine				< 270	270	< 270	270	< 270	270	< 280	280	< 270	270
Benz(a)anthracene	1,000	1,000	5,600	< 270	270	< 270	270	**330**	270	< 280	280	< 270	270
Benzaldehyde				< 270	270	< 270	270	< 270	270	< 280	280	< 270	270
Benzo(a)pyrene	1,000	1,000	1,000	< 160	160	< 160	160	**230**	150	< 160	160	< 150	150
Benzo(b)fluoranthene	1,000	1,000	5,600	< 270	270	< 270	270	**160**	270	< 280	280	< 270	270
Benzo(ghi)perylene	100,000	100,000	500,000	< 270	270	< 270	270	< 270	270	< 280	280	< 270	270
Benzo(k)fluoranthene	800	3,900	56,000	< 270	270	< 270	270	**150**	270	< 280	280	< 270	270
Benzyl butyl phthalate				< 270	270	< 270	270	< 270	270	< 280	280	< 270	270
Bis(2-chloroethoxy)methane				< 270	270	< 270	270	< 270	270	< 280	280	< 270	270
Bis(2-chloroethyl)ether				< 160	160	< 160	160	< 150	150	< 160	160	< 150	150
Bis(2-chloroisopropyl)ether				< 270	270	< 270	270	< 270	270	< 280	280	< 270	270
Bis(2-ethylhexyl)phthalate				< 270	270	< 270	270	< 270	270	< 280	280	< 270	270
Caprolactam				< 270	270	< 270	270	< 270	270	< 280	280	< 270	270
Carbazole				< 270	270	< 270	270	< 270	270	< 280	280	< 270	270
Chrysene	1,000	3,900	56,000	< 270	270	< 270	270	**360**	270	< 280	280	< 270	270
Dibenz(a,h)anthracene	330	330	560	< 160	160	< 160	160	< 150	150	< 160	160	< 150	150
Dibenzofuran	7,000	59,000	350,000	< 270	270	< 270	270	< 270	270	< 280	280	< 270	270
Diethyl phthalate				< 270	270	< 270	270	< 270	270	< 280	280	< 270	270
Dimethylphthalate				< 270	270	< 270	270	< 270	270	< 280	280	< 270	270
Di-n-butylphthalate				< 270	270	< 270	270	< 270	270	< 280	280	< 270	270
Di-n-octylphthalate				< 270	270	< 270	270	< 270	270	< 280	280	< 270	270
Fluoranthene	100,000	100,000	500,000	< 270	270	< 270	270	**820**	270	< 280	280	< 270	270
Fluorene	30,000	100,000	500,000	< 270	270	< 270	270	< 270	270	< 280	280	< 270	270
Hexachlorobenzene	330	1,200	6,000	< 160	160	< 160	160	< 150	150	< 160	160	< 150	150
Hexachlorobutadiene				< 270	270	< 270	270	< 270	270	< 280	280	< 270	270
Hexachlorocyclopentadiene				< 270	270	< 270	270	< 270	270	< 280	280	< 270	270
Hexachloroethane				< 160	160	< 160	160	< 150	150	< 160	160	< 150	150
Indeno(1,2,3-cd)pyrene	500	500	5,600	< 270	270	< 270	270	< 270	270	< 280	280	< 270	270
Isophorone				< 160	160	< 160	160	< 150	150	< 160	160	< 150	150
Naphthalene	12,000	100,000	500,000	< 270	270	< 270	270	< 270	270	< 280	280	< 270	270
Nitrobenzene				< 160	160	< 160	160	< 150	150	< 160	160	< 150	150
N-Nitrosodimethylamine				< 270	270	< 270	270	< 270	270	< 280	280	< 270	270
N-Nitrosodi-n-propylamine				< 160	160	< 160	160	< 150	150	< 160	160	< 150	150
N-Nitrosodiphenylamine				< 160	160	< 160	160	< 150	150	< 160	160	< 150	150
Pentachlorophenol	800	6,700	6,700	< 270	270	< 270	270	< 270	270	< 280	280	< 270	270
Phenanthrene	100,000	100,000	500,000	< 160	160	< 160	160	**1,200**	150	< 160	160	< 150	150
Phenol	330	100,000	500,000	< 270	270	< 270	270	< 270	270	< 280	280	< 270	270
Pyrene	100,000	100,000	500,000	< 270	270	< 270	270	**990**	270	< 280	280	< 270	270

Notes:

* - 6 NYCRR Part 375-6 Remedial Program Soil Cleanup Objectives

RL - Reporting Limit

Bold/highlighted- Indicated exceedance of the NYSDEC UUSCO Guidance Value

Bold/highlighted- Indicated exceedance of the NYSDEC RRSCO Guidance Value

Bold/highlighted- Indicated exceedance of the NYSDEC RCSCO Guidance Value

Table 22
Former Pfizer Site A - C224284
243-271 Wallabout Street,
Brooklyn, New York
Track 1 Area - Endpoint Soil Analytical Results
Semi-Volatile Organic Compounds

COMPOUND	NYSDEC Part 375.6 Unrestricted Use Soil Cleanup Objectives*	NYDEC Part 375.6 Restricted Residential Soil Cleanup Objectives*	NYDEC Part 375.6 Restricted Commerical Soil Cleanup Objectives*	Endpoint Samples									
				EP53		EP54		EP55		EP56		EP57	
				16'		16'		16'		16'		16'	
				8/5/2020		8/5/2020		8/5/2020		8/5/2020		8/10/2020	
				µg/Kg		µg/Kg		µg/Kg		µg/Kg		µg/Kg	
				Result	RL	Result	RL	Result	RL	Result	RL	Result	RL
1,1-Biphenyl				< 270	270	< 240	240	< 290	290	< 280	280	< 280	280
1,2,4,5-Tetrachlorobenzene				< 270	270	< 240	240	< 290	290	< 280	280	< 280	280
2,3,4,6-tetrachlorophenol				< 270	270	< 240	240	< 290	290	< 280	280	< 280	280
2,4,5-Trichlorophenol				< 270	270	< 240	240	< 290	290	< 280	280	< 280	280
2,4,6-Trichlorophenol				< 150	150	< 140	140	< 170	170	< 160	160	< 160	160
2,4-Dichlorophenol				< 150	150	< 140	140	< 170	170	< 160	160	< 160	160
2,4-Dimethylphenol				< 270	270	< 240	240	< 290	290	< 280	280	< 280	280
2,4-Dinitrophenol				< 270	270	< 240	240	< 290	290	< 280	280	< 280	280
2,4-Dinitrotoluene				< 150	150	< 140	140	< 170	170	< 160	160	< 160	160
2,6-Dinitrotoluene				< 150	150	< 140	140	< 170	170	< 160	160	< 160	160
2-Chloronaphthalene				< 270	270	< 240	240	< 290	290	< 280	280	< 280	280
2-Chlorophenol				< 270	270	< 240	240	< 290	290	< 280	280	< 280	280
2-Methylnaphthalene				< 270	270	< 240	240	< 290	290	< 280	280	< 280	280
2-Methylphenol (o-cresol)	330	100,000	500,000	< 270	270	< 240	240	< 290	290	< 280	280	< 280	280
2-Nitroaniline				< 270	270	< 240	240	< 290	290	< 280	280	< 280	280
2-Nitrophenol				< 270	270	< 240	240	< 290	290	< 280	280	< 280	280
3&4-Methylphenol (m&p-cresol)				< 270	270	< 240	240	< 290	290	< 280	280	< 280	280
3,3'-Dichlorobenzidine				< 150	150	< 140	140	< 170	170	< 160	160	< 160	160
3-Nitroaniline				< 760	760	< 700	700	< 830	830	< 800	800	< 800	800
4,6-Dinitro-2-methylphenol				< 270	270	< 240	240	< 290	290	< 280	280	< 280	280
4-Bromophenyl phenyl ether				< 270	270	< 240	240	< 290	290	< 280	280	< 280	280
4-Chloro-3-methylphenol				< 270	270	< 240	240	< 290	290	< 280	280	< 280	280
4-Chloroaniline				< 760	760	< 700	700	< 830	830	< 800	800	< 800	800
4-Chlorophenyl phenyl ether				< 270	270	< 240	240	< 290	290	< 280	280	< 280	280
4-Nitroaniline				< 1900	1,900	< 1700	1,700	< 2100	2,100	< 2000	2,000	< 2000	2,000
4-Nitrophenol				< 270	270	< 240	240	< 290	290	< 280	280	< 280	280
Acenaphthene	20,000	100,000	500,000	< 270	270	< 240	240	< 290	290	< 280	280	< 280	280
Acenaphthylene	100,000	100,000	500,000	< 150	150	< 140	140	< 170	170	< 160	160	< 160	160
Acetophenone				< 270	270	< 240	240	< 290	290	< 280	280	< 280	280
Anthracene	100,000	100,000	500,000	< 270	270	< 240	240	< 290	290	< 280	280	< 280	280
Atrazine				< 270	270	< 240	240	< 290	290	< 280	280	< 280	280
Benz(a)anthracene	1,000	1,000	5,600	< 270	270	< 240	240	< 290	290	< 280	280	< 280	280
Benzaldehyde				< 270	270	< 240	240	< 290	290	< 280	280	< 280	280
Benzo(a)pyrene	1,000	1,000	1,000	< 150	150	< 140	140	< 170	170	< 160	160	< 160	160
Benzo(b)fluoranthene	1,000	1,000	5,600	< 270	270	< 240	240	< 290	290	< 280	280	< 280	280
Benzo(ghi)perylene	100,000	100,000	500,000	< 270	270	< 240	240	< 290	290	< 280	280	< 280	280
Benzo(k)fluoranthene	800	3,900	56,000	< 270	270	< 240	240	< 290	290	< 280	280	< 280	280
Benzyl butyl phthalate				< 270	270	< 240	240	< 290	290	< 280	280	< 280	280
Bis(2-chloroethoxy)methane				< 270	270	< 240	240	< 290	290	< 280	280	< 280	280
Bis(2-chloroethyl)ether				< 150	150	< 140	140	< 170	170	< 160	160	< 160	160
Bis(2-chloroisopropyl)ether				< 270	270	< 240	240	< 290	290	< 280	280	< 280	280
Bis(2-ethylhexyl)phthalate				< 270	270	< 240	240	< 290	290	< 280	280	< 280	280
Caprolactam				< 270	270	< 240	240	< 290	290	< 280	280	< 280	280
Carbazole				< 270	270	< 240	240	< 290	290	< 280	280	< 280	280
Chrysene	1,000	3,900	56,000	< 270	270	< 240	240	< 290	290	< 280	280	< 280	280
Dibenz(a,h)anthracene	330	330	560	< 150	150	< 140	140	< 170	170	< 160	160	< 160	160
Dibenzofuran	7,000	59,000	350,000	< 270	270	< 240	240	< 290	290	< 280	280	< 280	280
Diethyl phthalate				< 270	270	< 240	240	< 290	290	< 280	280	< 280	280
Dimethylphthalate				< 270	270	< 240	240	< 290	290	< 280	280	< 280	280
Di-n-butylphthalate				< 270	270	< 240	240	< 290	290	< 280	280	< 280	280
Di-n-octylphthalate				< 270	270	< 240	240	< 290	290	< 280	280	< 280	280
Fluoranthene	100,000	100,000	500,000	< 270	270	< 240	240	< 290	290	< 280	280	< 280	280
Fluorene	30,000	100,000	500,000	< 270	270	< 240	240	< 290	290	< 280	280	< 280	280
Hexachlorobenzene	330	1,200	6,000	< 150	150	< 140	140	< 170	170	< 160	160	< 160	160
Hexachlorobutadiene				< 270	270	< 240	240	< 290	290	< 280	280	< 280	280
Hexachlorocyclopentadiene				< 270	270	< 240	240	< 290	290	< 280	280	< 280	280
Hexachloroethane				< 150	150	< 140	140	< 170	170	< 160	160	< 160	160
Indeno(1,2,3-cd)pyrene	500	500	5,600	< 270	270	< 240	240	< 290	290	< 280	280	< 280	280
Isophorone				< 150	150	< 140	140	< 170	170	< 160	160	< 160	160
Naphthalene	12,000	100,000	500,000	< 270	270	< 240	240	< 290	290	< 280	280	< 280	280
Nitrobenzene				< 150	150	< 140	140	< 170	170	< 160	160	< 160	160
N-Nitrosodimethylamine				< 270	270	< 240	240	< 290	290	< 280	280	< 280	280
N-Nitrosodi-n-propylamine				< 150	150	< 140	140	< 170	170	< 160	160	< 160	160
N-Nitrosodiphenylamine				< 150	150	< 140	140	< 170	170	< 160	160	< 160	160
Pentachlorophenol	800	6,700	6,700	< 270	270	< 240	240	< 290	290	< 280	280	< 280	280
Phenanthrene	100,000	100,000	500,000	< 150	150	< 140	140	< 170	170	< 160	160	< 160	160
Phenol	330	100,000	500,000	< 270	270	< 240	240	< 290	290	< 280	280	< 280	280
Pyrene	100,000	100,000	500,000	< 270	270	< 240	240	< 290	290	< 280	280	< 280	280

Notes:

* - 6 NYCRR Part 375-6 Remedial Program Soil Cleanup Objectives

RL - Reporting Limit

Bold/highlighted- Indicated exceedance of the NYSDEC UUSCO Guidance Value

Bold/highlighted- Indicated exceedance of the NYSDEC RRSCO Guidance Value

Bold/highlighted- Indicated exceedance of the NYSDEC RCSCO Guidance Value

Table 22
Former Pfizer Site A - C224284
243-271 Wallabout Street,
Brooklyn, New York
Track 1 Area - Endpoint Soil Analytical Results
Semi-Volatile Organic Compounds

COMPOUND	NYSDEC Part 375.6 Unrestricted Use Soil Cleanup Objectives*	NYDEC Part 375.6 Restricted Residential Soil Cleanup Objectives*	NYDEC Part 375.6 Restricted Commerical Soil Cleanup Objectives*	Endpoint Samples									
				EP58		EP59		EP60		EP61		EP62	
				16'		16'		16'		16'		16'	
				8/10/2020		8/10/2020		8/10/2020		10/15/2020		11/20/2020	
				µg/Kg		µg/Kg		µg/Kg		µg/Kg		µg/Kg	
				Result	RL	Result	RL	Result	RL	Result	RL	Result	RL
1,1-Biphenyl				< 270	270	< 270	270	< 280	280	< 280	280	< 280	280
1,2,4,5-Tetrachlorobenzene				< 270	270	< 270	270	< 280	280	< 280	280	< 280	280
2,3,4,6-tetrachlorophenol				< 270	270	< 270	270	< 280	280	< 280	280	< 280	280
2,4,5-Trichlorophenol				< 270	270	< 270	270	< 280	280	< 280	280	< 280	280
2,4,6-Trichlorophenol				< 150	150	< 160	160	< 160	160	< 160	160	< 160	160
2,4-Dichlorophenol				< 150	150	< 160	160	< 160	160	< 160	160	< 160	160
2,4-Dimethylphenol				< 270	270	< 270	270	< 280	280	< 280	280	< 280	280
2,4-Dinitrophenol				< 270	270	< 270	270	< 280	280	< 280	280	< 280	280
2,4-Dinitrotoluene				< 150	150	< 160	160	< 160	160	< 160	160	< 160	160
2,6-Dinitrotoluene				< 150	150	< 160	160	< 160	160	< 160	160	< 160	160
2-Chloronaphthalene				< 270	270	< 270	270	< 280	280	< 280	280	< 280	280
2-Chlorophenol				< 270	270	< 270	270	< 280	280	< 280	280	< 280	280
2-Methylnaphthalene				< 270	270	< 270	270	< 280	280	< 280	280	< 280	280
2-Methylphenol (o-cresol)	330	100,000	500,000	< 270	270	< 270	270	< 280	280	< 280	280	< 280	280
2-Nitroaniline				< 270	270	< 270	270	< 280	280	< 280	280	< 280	280
2-Nitrophenol				< 270	270	< 270	270	< 280	280	< 280	280	< 280	280
3&4-Methylphenol (m&p-cresol)				< 270	270	< 270	270	< 280	280	< 280	280	< 280	280
3,3'-Dichlorobenzidine				< 150	150	< 160	160	< 160	160	< 160	160	< 160	160
3-Nitroaniline				< 760	760	< 780	780	< 790	790	< 810	810	< 800	800
4,6-Dinitro-2-methylphenol				< 270	270	< 270	270	< 280	280	< 280	280	< 280	280
4-Bromophenyl phenyl ether				< 270	270	< 270	270	< 280	280	< 280	280	< 280	280
4-Chloro-3-methylphenol				< 270	270	< 270	270	< 280	280	< 280	280	< 280	280
4-Chloroaniline				< 760	760	< 780	780	< 790	790	< 810	810	< 800	800
4-Chlorophenyl phenyl ether				< 270	270	< 270	270	< 280	280	< 280	280	< 280	280
4-Nitroaniline				< 1900	1,900	< 1900	1,900	< 2000	2,000	< 2000	2,000	< 2000	2,000
4-Nitrophenol				< 270	270	< 270	270	< 280	280	< 280	280	< 280	280
Acenaphthene	20,000	100,000	500,000	< 270	270	< 270	270	< 280	280	< 280	280	< 280	280
Acenaphthylene	100,000	100,000	500,000	< 150	150	< 160	160	< 160	160	< 160	160	< 160	160
Acetophenone				< 270	270	< 270	270	< 280	280	< 280	280	< 280	280
Anthracene	100,000	100,000	500,000	< 270	270	< 270	270	< 280	280	< 280	280	< 280	280
Atrazine				< 270	270	< 270	270	< 280	280	< 280	280	< 280	280
Benz(a)anthracene	1,000	1,000	5,600	< 270	270	< 270	270	**290**	280	< 280	280	< 280	280
Benzaldehyde				< 270	270	< 270	270	< 280	280	< 280	280	< 280	280
Benzo(a)pyrene	1,000	1,000	1,000	< 150	150	< 160	160	**250**	160	< 160	160	< 160	160
Benzo(b)fluoranthene	1,000	1,000	5,600	< 270	270	< 270	270	**170**	280	< 280	280	< 280	280
Benzo(ghi)perylene	100,000	100,000	500,000	< 270	270	< 270	270	**150**	280	< 280	280	< 280	280
Benzo(k)fluoranthene	800	3,900	56,000	< 270	270	< 270	270	**170**	280	< 280	280	< 280	280
Benzyl butyl phthalate				< 270	270	< 270	270	< 280	280	< 280	280	< 280	280
Bis(2-chloroethoxy)methane				< 270	270	< 270	270	< 280	280	< 280	280	< 280	280
Bis(2-chloroethyl)ether				< 150	150	< 160	160	< 160	160	< 160	160	< 160	160
Bis(2-chloroisopropyl)ether				< 270	270	< 270	270	< 280	280	< 280	280	< 280	280
Bis(2-ethylhexyl)phthalate				< 270	270	< 270	270	< 280	280	< 280	280	< 280	280
Caprolactam				< 270	270	< 270	270	< 280	280	< 280	280	< 280	280
Carbazole				< 270	270	< 270	270	< 280	280	< 280	280	< 280	280
Chrysene	1,000	3,900	56,000	< 270	270	< 270	270	**300**	280	< 280	280	< 280	280
Dibenz(a,h)anthracene	330	330	560	< 150	150	< 160	160	< 160	160	< 160	160	< 160	160
Dibenzofuran	7,000	59,000	350,000	< 270	270	< 270	270	< 280	280	< 280	280	< 280	280
Diethyl phthalate				< 270	270	< 270	270	< 280	280	< 280	280	< 280	280
Dimethylphthalate				< 270	270	< 270	270	< 280	280	< 280	280	< 280	280
Di-n-butylphthalate				< 270	270	< 270	270	< 280	280	< 280	280	< 280	280
Di-n-octylphthalate				< 270	270	< 270	270	< 280	280	< 280	280	< 280	280
Fluoranthene	100,000	100,000	500,000	< 270	270	< 270	270	**590**	280	< 280	280	< 280	280
Fluorene	30,000	100,000	500,000	< 270	270	< 270	270	< 280	280	< 280	280	< 280	280
Hexachlorobenzene	330	1,200	6,000	< 150	150	< 160	160	< 160	160	< 160	160	< 160	160
Hexachlorobutadiene				< 270	270	< 270	270	< 280	280	< 280	280	< 280	280
Hexachlorocyclopentadiene				< 270	270	< 270	270	< 280	280	< 280	280	< 280	280
Hexachloroethane				< 150	150	< 160	160	< 160	160	< 160	160	< 160	160
Indeno(1,2,3-cd)pyrene	500	500	5,600	< 270	270	< 270	270	**140**	280	< 280	280	< 280	280
Isophorone				< 150	150	< 160	160	< 160	160	< 160	160	< 160	160
Naphthalene	12,000	100,000	500,000	< 270	270	< 270	270	< 280	280	< 280	280	< 280	280
Nitrobenzene				< 150	150	< 160	160	< 160	160	< 160	160	< 160	160
N-Nitrosodimethylamine				< 270	270	< 270	270	< 280	280	< 280	280	< 280	280
N-Nitrosodi-n-propylamine				< 150	150	< 160	160	< 160	160	< 160	160	< 160	160
N-Nitrosodiphenylamine				< 150	150	< 160	160	< 160	160	< 160	160	< 160	160
Pentachlorophenol	800	6,700	6,700	< 270	270	< 270	270	< 280	280	< 280	280	< 280	280
Phenanthrene	100,000	100,000	500,000	< 150	150	< 160	160	**520**	160	< 160	160	< 160	160
Phenol	330	100,000	500,000	< 270	270	< 270	270	< 280	280	< 280	280	< 280	280
Pyrene	100,000	100,000	500,000	< 270	270	< 270	270	**730**	280	< 280	280	< 280	280

Notes:

* - 6 NYCRR Part 375-6 Remedial Program Soil Cleanup Objectives

RL - Reporting Limit

Bold/highlighted- Indicated exceedance of the NYSDEC UUSCO Guidance Value

Bold/highlighted- Indicated exceedance of the NYSDEC RRSCO Guidance Value

Bold/highlighted- Indicated exceedance of the NYSDEC RCSCO Guidance Value

Table 22
Former Pfizer Site A - C224284
243-271 Wallabout Street,
Brooklyn, New York
Track 1 Area - Endpoint Soil Analytical Results
Semi-Volatile Organic Compounds

COMPOUND	NYSDEC Part 375.6 Unrestricted Use Soil Cleanup Objectives*	NYDEC Part 375.6 Restricted Residential Soil Cleanup Objectives*	NYDEC Part 375.6 Restricted Commerical Soil Cleanup Objectives*	EBC Endpoint Samples									
				EP63		EP67		EP68		EP69		EP70	
				16'		16'		16'		16'		16'	
				11/20/2020		11/23/2021		11/20/2020		10/15/2020		8/10/2020	
				µg/Kg		µg/Kg		µg/Kg		µg/Kg		µg/Kg	
				Result	RL	Result	RL	Result	RL	Result	RL	Result	RL
1,1-Biphenyl				< 280	280	< 280	280	< 270	270	< 290	290	< 280	280
1,2,4,5-Tetrachlorobenzene				< 280	280	< 280	280	< 270	270	< 290	290	< 280	280
2,3,4,6-tetrachlorophenol				< 280	280	< 280	280	< 270	270	< 290	290	< 280	280
2,4,5-Trichlorophenol				< 280	280	< 280	280	< 270	270	< 290	290	< 280	280
2,4,6-Trichlorophenol				< 160	160	< 160	160	< 150	150	< 170	170	< 160	160
2,4-Dichlorophenol				< 160	160	< 160	160	< 150	150	< 170	170	< 160	160
2,4-Dimethylphenol				< 280	280	< 280	280	< 270	270	< 290	290	< 280	280
2,4-Dinitrophenol				< 280	280	< 280	280	< 270	270	< 290	290	< 280	280
2,4-Dinitrotoluene				< 160	160	< 160	160	< 150	150	< 170	170	< 160	160
2,6-Dinitrotoluene				< 160	160	< 160	160	< 150	150	< 170	170	< 160	160
2-Chloronaphthalene				< 280	280	< 280	280	< 270	270	< 290	290	< 280	280
2-Chlorophenol				< 280	280	< 280	280	< 270	270	< 290	290	< 280	280
2-Methylnaphthalene				< 280	280	< 280	280	< 270	270	< 290	290	< 280	280
2-Methylphenol (o-cresol)	330	100,000	500,000	< 280	280	< 280	280	< 270	270	< 290	290	< 280	280
2-Nitroaniline				< 280	280	< 280	280	< 270	270	< 290	290	< 280	280
2-Nitrophenol				< 280	280	< 280	280	< 270	270	< 290	290	< 280	280
3&4-Methylphenol (m&p-cresol)				< 280	280	< 280	280	< 270	270	< 290	290	< 280	280
3,3'-Dichlorobenzidine				< 160	160	< 160	160	< 150	150	< 170	170	< 160	160
3-Nitroaniline				< 800	800	< 790	790	< 770	770	< 830	830	< 790	790
4,6-Dinitro-2-methylphenol				< 280	280	< 280	280	< 270	270	< 290	290	< 280	280
4-Bromophenyl phenyl ether				< 280	280	< 280	280	< 270	270	< 290	290	< 280	280
4-Chloro-3-methylphenol				< 280	280	< 280	280	< 270	270	< 290	290	< 280	280
4-Chloroaniline				< 800	800	< 790	790	< 770	770	< 830	830	< 790	790
4-Chlorophenyl phenyl ether				< 280	280	< 280	280	< 270	270	< 290	290	< 280	280
4-Nitroaniline				< 2000	2,000	< 2000	2,000	< 1900	1,900	< 2100	2,100	< 2000	2,000
4-Nitrophenol				< 280	280	< 280	280	< 270	270	< 290	290	< 280	280
Acenaphthene	20,000	100,000	500,000	< 280	280	< 280	280	< 270	270	< 290	290	< 280	280
Acenaphthylene	100,000	100,000	500,000	< 160	160	< 160	160	< 150	150	< 170	170	< 160	160
Acetophenone				< 280	280	< 280	280	< 270	270	< 290	290	< 280	280
Anthracene	100,000	100,000	500,000	< 280	280	< 280	280	< 270	270	< 290	290	< 280	280
Atrazine				< 280	280	< 280	280	< 270	270	< 290	290	< 280	280
Benz(a)anthracene	1,000	1,000	5,600	< 280	280	< 280	280	< 270	270	< 290	290	< 280	280
Benzaldehyde				< 280	280	< 280	280	< 270	270	< 290	290	< 280	280
Benzo(a)pyrene	1,000	1,000	1,000	< 160	160	< 160	160	< 150	150	< 170	170	< 160	160
Benzo(b)fluoranthene	1,000	1,000	5,600	< 280	280	< 280	280	< 270	270	< 290	290	< 280	280
Benzo(ghi)perylene	100,000	100,000	500,000	< 280	280	< 280	280	< 270	270	< 290	290	< 280	280
Benzo(k)fluoranthene	800	3,900	56,000	< 280	280	< 280	280	< 270	270	< 290	290	< 280	280
Benzyl butyl phthalate				< 280	280	< 280	280	< 270	270	< 290	290	< 280	280
Bis(2-chloroethoxy)methane				< 280	280	< 280	280	< 270	270	< 290	290	< 280	280
Bis(2-chloroethyl)ether				< 160	160	< 160	160	< 150	150	< 170	170	< 160	160
Bis(2-chloroisopropyl)ether				< 280	280	< 280	280	< 270	270	< 290	290	< 280	280
Bis(2-ethylhexyl)phthalate				< 280	280	< 280	280	< 270	270	< 290	290	< 280	280
Caprolactam				< 280	280	< 280	280	< 270	270	< 290	290	< 280	280
Carbazole				< 280	280	< 280	280	< 270	270	< 290	290	< 280	280
Chrysene	1,000	3,900	56,000	< 280	280	< 280	280	< 270	270	< 290	290	< 280	280
Dibenz(a,h)anthracene	330	330	560	< 160	160	< 160	160	< 150	150	< 170	170	< 160	160
Dibenzofuran	7,000	59,000	350,000	< 280	280	< 280	280	< 270	270	< 290	290	< 280	280
Diethyl phthalate				< 280	280	< 280	280	< 270	270	< 290	290	< 280	280
Dimethylphthalate				< 280	280	< 280	280	< 270	270	< 290	290	< 280	280
Di-n-butylphthalate				< 280	280	< 280	280	< 270	270	< 290	290	< 280	280
Di-n-octylphthalate				< 280	280	< 280	280	< 270	270	< 290	290	< 280	280
Fluoranthene	100,000	100,000	500,000	< 280	280	< 280	280	< 270	270	< 290	290	< 280	280
Fluorene	30,000	100,000	500,000	< 280	280	< 280	280	< 270	270	< 290	290	< 280	280
Hexachlorobenzene	330	1,200	6,000	< 160	160	< 160	160	< 150	150	< 170	170	< 160	160
Hexachlorobutadiene				< 280	280	< 280	280	< 270	270	< 290	290	< 280	280
Hexachlorocyclopentadiene				< 280	280	< 280	280	< 270	270	< 290	290	< 280	280
Hexachloroethane				< 160	160	< 160	160	< 150	150	< 170	170	< 160	160
Indeno(1,2,3-cd)pyrene	500	500	5,600	< 280	280	< 280	280	< 270	270	< 290	290	< 280	280
Isophorone				< 160	160	< 160	160	< 150	150	< 170	170	< 160	160
Naphthalene	12,000	100,000	500,000	< 280	280	< 280	280	< 270	270	< 290	290	< 280	280
Nitrobenzene				< 160	160	< 160	160	< 150	150	< 170	170	< 160	160
N-Nitrosodimethylamine				< 280	280	< 280	280	< 270	270	< 290	290	< 280	280
N-Nitrosodi-n-propylamine				< 160	160	< 160	160	< 150	150	< 170	170	< 160	160
N-Nitrosodiphenylamine				< 160	160	< 160	160	< 150	150	< 170	170	< 160	160
Pentachlorophenol	800	6,700	6,700	< 280	280	< 280	280	< 270	270	< 290	290	< 280	280
Phenanthrene	100,000	100,000	500,000	< 160	160	< 160	160	< 150	150	< 170	170	< 160	160
Phenol	330	100,000	500,000	< 280	280	< 280	280	< 270	270	< 290	290	< 280	280
Pyrene	100,000	100,000	500,000	< 280	280	< 280	280	< 270	270	< 290	290	< 280	280

Notes:

* - 6 NYCRR Part 375-6 Remedial Program Soil Cleanup Objectives

RL - Reporting Limit

Bold/highlighted- Indicated exceedance of the NYSDEC UUSCO Guidance Value

Bold/highlighted- Indicated exceedance of the NYSDEC RRSCO Guidance Value

Bold/highlighted- Indicated exceedance of the NYSDEC RCSCO Guidance Value

Table 22
Former Pfizer Site A - C224284
243-271 Wallabout Street,
Brooklyn, New York
Track 1 Area - Endpoint Soil Analytical Results
Semi-Volatile Organic Compounds

COMPOUND	NYSDEC Part 375.6 Unrestricted Use Soil Cleanup Objectives*	NYDEC Part 375.6 Restricted Residential Soil Cleanup Objectives*	NYDEC Part 375.6 Restricted Commerical Soil Cleanup Objectives*	EBC Endpoint Samples									
				EP71		EP72		EP73		EP74		EP75	
				16'		16'		16'		16'		16'	
				8/10/2020		8/10/2020		8/10/2020		8/5/2020		8/5/2020	
				µg/Kg		µg/Kg		µg/Kg		µg/Kg		µg/Kg	
				Result	RL	Result	RL	Result	RL	Result	RL	Result	RL
1,1-Biphenyl				< 270	270	< 280	280	< 280	280	< 320	320	< 300	300
1,2,4,5-Tetrachlorobenzene				< 270	270	< 280	280	< 280	280	< 320	320	< 300	300
2,3,4,6-tetrachlorophenol				< 270	270	< 280	280	< 280	280	< 320	320	< 300	300
2,4,5-Trichlorophenol				< 270	270	< 280	280	< 280	280	< 320	320	< 300	300
2,4,6-Trichlorophenol				< 160	160	< 160	160	< 160	160	< 180	180	< 170	170
2,4-Dichlorophenol				< 160	160	< 160	160	< 160	160	< 180	180	< 170	170
2,4-Dimethylphenol				< 270	270	< 280	280	< 280	280	< 320	320	< 300	300
2,4-Dinitrophenol				< 270	270	< 280	280	< 280	280	< 320	320	< 300	300
2,4-Dinitrotoluene				< 160	160	< 160	160	< 160	160	< 180	180	< 170	170
2,6-Dinitrotoluene				< 160	160	< 160	160	< 160	160	< 180	180	< 170	170
2-Chloronaphthalene				< 270	270	< 280	280	< 280	280	< 320	320	< 300	300
2-Chlorophenol				< 270	270	< 280	280	< 280	280	< 320	320	< 300	300
2-Methylnaphthalene				< 270	270	< 280	280	< 280	280	< 320	320	< 300	300
2-Methylphenol (o-cresol)	330	100,000	500,000	< 270	270	< 280	280	< 280	280	< 320	320	< 300	300
2-Nitroaniline				< 270	270	< 280	280	< 280	280	< 320	320	< 300	300
2-Nitrophenol				< 270	270	< 280	280	< 280	280	< 320	320	< 300	300
3&4-Methylphenol (m&p-cresol)				< 270	270	< 280	280	< 280	280	< 320	320	< 300	300
3,3'-Dichlorobenzidine				< 160	160	< 160	160	< 160	160	< 180	180	< 170	170
3-Nitroaniline				< 780	780	< 800	800	< 800	800	< 910	910	< 850	850
4,6-Dinitro-2-methylphenol				< 270	270	< 280	280	< 280	280	< 320	320	< 300	300
4-Bromophenyl phenyl ether				< 270	270	< 280	280	< 280	280	< 320	320	< 300	300
4-Chloro-3-methylphenol				< 270	270	< 280	280	< 280	280	< 320	320	< 300	300
4-Chloroaniline				< 780	780	< 800	800	< 800	800	< 910	910	< 850	850
4-Chlorophenyl phenyl ether				< 270	270	< 280	280	< 280	280	< 320	320	< 300	300
4-Nitroaniline				< 1900	1,900	< 2000	2,000	< 2000	2,000	< 2300	2,300	< 2100	2,100
4-Nitrophenol				< 270	270	< 280	280	< 280	280	< 320	320	< 300	300
Acenaphthene	20,000	100,000	500,000	< 270	270	< 280	280	< 280	280	< 320	320	< 300	300
Acenaphthylene	100,000	100,000	500,000	< 160	160	< 160	160	< 160	160	< 180	180	< 170	170
Acetophenone				< 270	270	< 280	280	< 280	280	< 320	320	< 300	300
Anthracene	100,000	100,000	500,000	< 270	270	< 280	280	< 280	280	< 320	320	< 300	300
Atrazine				< 270	270	< 280	280	< 280	280	< 320	320	< 300	300
Benz(a)anthracene	1,000	1,000	5,600	< 270	270	< 280	280	< 280	280	< 320	320	< 300	300
Benzaldehyde				< 270	270	< 280	280	< 280	280	< 320	320	< 300	300
Benzo(a)pyrene	1,000	1,000	1,000	< 160	160	< 160	160	< 160	160	< 180	180	< 170	170
Benzo(b)fluoranthene	1,000	1,000	5,600	< 270	270	< 280	280	< 280	280	< 320	320	< 300	300
Benzo(ghi)perylene	100,000	100,000	500,000	< 270	270	< 280	280	< 280	280	< 320	320	< 300	300
Benzo(k)fluoranthene	800	3,900	56,000	< 270	270	< 280	280	< 280	280	< 320	320	< 300	300
Benzyl butyl phthalate				< 270	270	< 280	280	< 280	280	< 320	320	< 300	300
Bis(2-chloroethoxy)methane				< 270	270	< 280	280	< 280	280	< 320	320	< 300	300
Bis(2-chloroethyl)ether				< 160	160	< 160	160	< 160	160	< 180	180	< 170	170
Bis(2-chloroisopropyl)ether				< 270	270	< 280	280	< 280	280	< 320	320	< 300	300
Bis(2-ethylhexyl)phthalate				< 270	270	< 280	280	< 280	280	< 320	320	< 300	300
Caprolactam				< 270	270	< 280	280	< 280	280	< 320	320	< 300	300
Carbazole				< 270	270	< 280	280	< 280	280	< 320	320	< 300	300
Chrysene	1,000	3,900	56,000	< 270	270	< 280	280	< 280	280	< 320	320	< 300	300
Dibenz(a,h)anthracene	330	330	560	< 160	160	< 160	160	< 160	160	< 180	180	< 170	170
Dibenzofuran	7,000	59,000	350,000	< 270	270	< 280	280	< 280	280	< 320	320	< 300	300
Diethyl phthalate				< 270	270	< 280	280	< 280	280	< 320	320	< 300	300
Dimethylphthalate				< 270	270	< 280	280	< 280	280	< 320	320	< 300	300
Di-n-butylphthalate				< 270	270	< 280	280	< 280	280	< 320	320	< 300	300
Di-n-octylphthalate				< 270	270	< 280	280	< 280	280	< 320	320	< 300	300
Fluoranthene	100,000	100,000	500,000	< 270	270	< 280	280	< 280	280	< 320	320	< 300	300
Fluorene	30,000	100,000	500,000	< 270	270	< 280	280	< 280	280	< 320	320	< 300	300
Hexachlorobenzene	330	1,200	6,000	< 160	160	< 160	160	< 160	160	< 180	180	< 170	170
Hexachlorobutadiene				< 270	270	< 280	280	< 280	280	< 320	320	< 300	300
Hexachlorocyclopentadiene				< 270	270	< 280	280	< 280	280	< 320	320	< 300	300
Hexachloroethane				< 160	160	< 160	160	< 160	160	< 180	180	< 170	170
Indeno(1,2,3-cd)pyrene	500	500	5,600	< 270	270	< 280	280	< 280	280	< 320	320	< 300	300
Isophorone				< 160	160	< 160	160	< 160	160	< 180	180	< 170	170
Naphthalene	12,000	100,000	500,000	< 270	270	< 280	280	< 280	280	< 320	320	< 300	300
Nitrobenzene				< 160	160	< 160	160	< 160	160	< 180	180	< 170	170
N-Nitrosodimethylamine				< 270	270	< 280	280	< 280	280	< 320	320	< 300	300
N-Nitrosodi-n-propylamine				< 160	160	< 160	160	< 160	160	< 180	180	< 170	170
N-Nitrosodiphenylamine				< 160	160	< 160	160	< 160	160	< 180	180	< 170	170
Pentachlorophenol	800	6,700	6,700	< 270	270	< 280	280	< 280	280	< 320	320	< 300	300
Phenanthrene	100,000	100,000	500,000	< 160	160	< 160	160	< 160	160	< 180	180	< 170	170
Phenol	330	100,000	500,000	< 270	270	< 280	280	< 280	280	< 320	320	< 300	300
Pyrene	100,000	100,000	500,000	< 270	270	< 280	280	< 280	280	< 320	320	< 300	300

Notes:

* - 6 NYCRR Part 375-6 Remedial Program Soil Cleanup Objectives

RL - Reporting Limit

Bold/highlighted- Indicated exceedance of the NYSDEC UUSCO Guidance Value

Bold/highlighted- Indicated exceedance of the NYSDEC RRSCO Guidance Value

Bold/highlighted- Indicated exceedance of the NYSDEC RCSCO Guidance Value

Table 22
Former Pfizer Site A - C224284
243-271 Wallabout Street,
Brooklyn, New York
Track 1 Area - Endpoint Soil Analytical Results
Semi-Volatile Organic Compounds

COMPOUND	NYSDEC Part 375.6 Unrestricted Use Soil Cleanup Objectives*	NYDEC Part 375.6 Restricted Residential Soil Cleanup Objectives*	NYDEC Part 375.6 Restricted Commerical Soil Cleanup Objectives*	EBC Endpoint Samples							
				EP76		EP77		EP78		EP79	
				16'		16'		16'		16'	
				8/5/2020		8/10/2020		10/15/2020		11/23/2020	
				µg/Kg		µg/Kg		µg/Kg		µg/Kg	
				Result	RL	Result	RL	Result	RL	Result	RL
1,1-Biphenyl				< 280	280	< 280	280	< 280	280	< 280	280
1,2,4,5-Tetrachlorobenzene				< 280	280	< 280	280	< 280	280	< 280	280
2,3,4,6-tetrachlorophenol				< 280	280	< 280	280	< 280	280	< 280	280
2,4,5-Trichlorophenol				< 280	280	< 280	280	< 280	280	< 280	280
2,4,6-Trichlorophenol				< 160	160	< 160	160	< 160	160	< 160	160
2,4-Dichlorophenol				< 160	160	< 160	160	< 160	160	< 160	160
2,4-Dimethylphenol				< 280	280	< 280	280	< 280	280	< 280	280
2,4-Dinitrophenol				< 280	280	< 280	280	< 280	280	< 280	280
2,4-Dinitrotoluene				< 160	160	< 160	160	< 160	160	< 160	160
2,6-Dinitrotoluene				< 160	160	< 160	160	< 160	160	< 160	160
2-Chloronaphthalene				< 280	280	< 280	280	< 280	280	< 280	280
2-Chlorophenol				< 280	280	< 280	280	< 280	280	< 280	280
2-Methylnaphthalene				< 280	280	< 280	280	< 280	280	< 280	280
2-Methylphenol (o-cresol)	330	100,000	500,000	< 280	280	< 280	280	< 280	280	< 280	280
2-Nitroaniline				< 280	280	< 280	280	< 280	280	< 280	280
2-Nitrophenol				< 280	280	< 280	280	< 280	280	< 280	280
3&4-Methylphenol (m&p-cresol)				< 280	280	< 280	280	< 280	280	< 280	280
3,3'-Dichlorobenzidine				< 160	160	< 160	160	< 160	160	< 160	160
3-Nitroaniline				< 810	810	< 790	790	< 810	810	< 790	790
4,6-Dinitro-2-methylphenol				< 280	280	< 280	280	< 280	280	< 280	280
4-Bromophenyl phenyl ether				< 280	280	< 280	280	< 280	280	< 280	280
4-Chloro-3-methylphenol				< 280	280	< 280	280	< 280	280	< 280	280
4-Chloroaniline				< 810	810	< 790	790	< 810	810	< 790	790
4-Chlorophenyl phenyl ether				< 280	280	< 280	280	< 280	280	< 280	280
4-Nitroaniline				< 2000	2,000	< 2000	2,000	< 2000	2,000	< 2000	2,000
4-Nitrophenol				< 280	280	< 280	280	< 280	280	< 280	280
Acenaphthene	20,000	100,000	500,000	< 280	280	< 280	280	< 280	280	< 280	280
Acenaphthylene	100,000	100,000	500,000	< 160	160	< 160	160	< 160	160	< 160	160
Acetophenone				< 280	280	< 280	280	< 280	280	< 280	280
Anthracene	100,000	100,000	500,000	< 280	280	< 280	280	< 280	280	< 280	280
Atrazine				< 280	280	< 280	280	< 280	280	< 280	280
Benz(a)anthracene	1,000	1,000	5,600	< 280	280	< 280	280	< 280	280	< 280	280
Benzaldehyde				< 280	280	< 280	280	< 280	280	< 280	280
Benzo(a)pyrene	1,000	1,000	1,000	< 160	160	< 160	160	< 160	160	< 160	160
Benzo(b)fluoranthene	1,000	1,000	5,600	< 280	280	< 280	280	< 280	280	< 280	280
Benzo(ghi)perylene	100,000	100,000	500,000	< 280	280	< 280	280	< 280	280	< 280	280
Benzo(k)fluoranthene	800	3,900	56,000	< 280	280	< 280	280	< 280	280	< 280	280
Benzyl butyl phthalate				< 280	280	< 280	280	< 280	280	< 280	280
Bis(2-chloroethoxy)methane				< 280	280	< 280	280	< 280	280	< 280	280
Bis(2-chloroethyl)ether				< 160	160	< 160	160	< 160	160	< 160	160
Bis(2-chloroisopropyl)ether				< 280	280	< 280	280	< 280	280	< 280	280
Bis(2-ethylhexyl)phthalate				< 280	280	< 280	280	< 280	280	< 280	280
Caprolactam				< 280	280	< 280	280	< 280	280	< 280	280
Carbazole				< 280	280	< 280	280	< 280	280	< 280	280
Chrysene	1,000	3,900	56,000	< 280	280	< 280	280	< 280	280	< 280	280
Dibenz(a,h)anthracene	330	330	560	< 160	160	< 160	160	< 160	160	< 160	160
Dibenzofuran	7,000	59,000	350,000	< 280	280	< 280	280	< 280	280	< 280	280
Diethyl phthalate				< 280	280	< 280	280	< 280	280	< 280	280
Dimethylphthalate				< 280	280	< 280	280	< 280	280	< 280	280
Di-n-butylphthalate				< 280	280	< 280	280	< 280	280	< 280	280
Di-n-octylphthalate				< 280	280	< 280	280	< 280	280	< 280	280
Fluoranthene	100,000	100,000	500,000	< 280	280	< 280	280	< 280	280	< 280	280
Fluorene	30,000	100,000	500,000	< 280	280	< 280	280	< 280	280	< 280	280
Hexachlorobenzene	330	1,200	6,000	< 160	160	< 160	160	< 160	160	< 160	160
Hexachlorobutadiene				< 280	280	< 280	280	< 280	280	< 280	280
Hexachlorocyclopentadiene				< 280	280	< 280	280	< 280	280	< 280	280
Hexachloroethane				< 160	160	< 160	160	< 160	160	< 160	160
Indeno(1,2,3-cd)pyrene	500	500	5,600	< 280	280	< 280	280	< 280	280	< 280	280
Isophorone				< 160	160	< 160	160	< 160	160	< 160	160
Naphthalene	12,000	100,000	500,000	< 280	280	< 280	280	< 280	280	< 280	280
Nitrobenzene				< 160	160	< 160	160	< 160	160	< 160	160
N-Nitrosodimethylamine				< 280	280	< 280	280	< 280	280	< 280	280
N-Nitrosodi-n-propylamine				< 160	160	< 160	160	< 160	160	< 160	160
N-Nitrosodiphenylamine				< 160	160	< 160	160	< 160	160	< 160	160
Pentachlorophenol	800	6,700	6,700	< 280	280	< 280	280	< 280	280	< 280	280
Phenanthrene	100,000	100,000	500,000	< 160	160	< 160	160	< 160	160	< 160	160
Phenol	330	100,000	500,000	< 280	280	< 280	280	< 280	280	< 280	280
Pyrene	100,000	100,000	500,000	< 280	280	< 280	280	< 280	280	< 280	280

Notes:

* - 6 NYCRR Part 375-6 Remedial Program Soil Cleanup Objectives

RL - Reporting Limit

Bold/highlighted- Indicated exceedance of the NYSDEC UUSCO Guidance Value

Bold/highlighted- Indicated exceedance of the NYSDEC RRSCO Guidance Value

Bold/highlighted- Indicated exceedance of the NYSDEC RCSCO Guidance Value

Table 22
Former Pfizer Site A - C224284
243-271 Wallabout Street,
Brooklyn, New York
Track 1 Area - Endpoint Soil Analytical Results
Semi-Volatile Organic Compounds

COMPOUND	NYSDEC Part 375.6 Unrestricted Use Soil Cleanup Objectives*	NYDEC Part 375.6 Restricted Residential Soil Cleanup Objectives*	NYDEC Part 375.6 Restricted Commerical Soil Cleanup Objectives*	EBC Endpoint Samples							
				EP Duplicate 1		Soil Duplicate		Soil Duplicate 3		Soil Duplicate	
				EP2		EP52		EP49		EP7	
				7/9/2020		8/5/2020		8/10/2020		10/15/2020	
				µg/Kg		µg/Kg		µg/Kg		µg/Kg	
				Result	RL	Result	RL	Result	RL	Result	RL
1,1-Biphenyl				< 280	280	< 250	250	< 270	270	< 290	290
1,2,4,5-Tetrachlorobenzene				< 280	280	< 250	250	< 270	270	< 290	290
2,3,4,6-tetrachlorophenol				< 280	280	< 250	250	< 270	270	< 290	290
2,4,5-Trichlorophenol				< 280	280	< 250	250	< 270	270	< 290	290
2,4,6-Trichlorophenol				< 160	160	< 140	140	< 150	150	< 170	170
2,4-Dichlorophenol				< 160	160	< 140	140	< 150	150	< 170	170
2,4-Dimethylphenol				< 280	280	< 250	250	< 270	270	< 290	290
2,4-Dinitrophenol				< 280	280	< 250	250	< 270	270	< 290	290
2,4-Dinitrotoluene				< 160	160	< 140	140	< 150	150	< 170	170
2,6-Dinitrotoluene				< 160	160	< 140	140	< 150	150	< 170	170
2-Chloronaphthalene				< 280	280	< 250	250	< 270	270	< 290	290
2-Chlorophenol				< 280	280	< 250	250	< 270	270	< 290	290
2-Methylnaphthalene				< 280	280	< 250	250	< 270	270	< 290	290
2-Methylphenol (o-cresol)	330	100,000	500,000	< 280	280	< 250	250	< 270	270	< 290	290
2-Nitroaniline				< 280	280	< 250	250	< 270	270	< 290	290
2-Nitrophenol				< 280	280	< 250	250	< 270	270	< 290	290
3&4-Methylphenol (m&p-cresol)				< 280	280	< 250	250	< 270	270	< 290	290
3,3'-Dichlorobenzidine				< 160	160	< 140	140	< 150	150	< 170	170
3-Nitroaniline				< 800	800	< 720	720	< 770	770	< 840	840
4,6-Dinitro-2-methylphenol				< 280	280	< 250	250	< 270	270	< 290	290
4-Bromophenyl phenyl ether				< 280	280	< 250	250	< 270	270	< 290	290
4-Chloro-3-methylphenol				< 280	280	< 250	250	< 270	270	< 290	290
4-Chloroaniline				< 800	800	< 720	720	< 770	770	< 840	840
4-Chlorophenyl phenyl ether				< 280	280	< 250	250	< 270	270	< 290	290
4-Nitroaniline				< 2000	2,000	< 1800	1,800	< 1900	1,900	< 2100	2,100
4-Nitrophenol				< 280	280	< 250	250	< 270	270	< 290	290
Acenaphthene	20,000	100,000	500,000	< 280	280	< 250	250	< 270	270	< 290	290
Acenaphthylene	100,000	100,000	500,000	< 160	160	< 140	140	< 150	150	< 170	170
Acetophenone				< 280	280	< 250	250	< 270	270	< 290	290
Anthracene	100,000	100,000	500,000	< 280	280	< 250	250	< 270	270	< 290	290
Atrazine				< 280	280	< 250	250	< 270	270	< 290	290
Benz(a)anthracene	1,000	1,000	5,600	< 280	280	< 250	250	< 270	270	< 290	290
Benzaldehyde				< 280	280	< 250	250	< 270	270	< 290	290
Benzo(a)pyrene	1,000	1,000	1,000	< 160	160	< 140	140	< 150	150	< 170	170
Benzo(b)fluoranthene	1,000	1,000	5,600	< 280	280	< 250	250	< 270	270	< 290	290
Benzo(ghi)perylene	100,000	100,000	500,000	< 280	280	< 250	250	< 270	270	< 290	290
Benzo(k)fluoranthene	800	3,900	56,000	< 280	280	< 250	250	< 270	270	< 290	290
Benzyl butyl phthalate				< 280	280	< 250	250	< 270	270	< 290	290
Bis(2-chloroethoxy)methane				< 280	280	< 250	250	< 270	270	< 290	290
Bis(2-chloroethyl)ether				< 160	160	< 140	140	< 150	150	< 170	170
Bis(2-chloroisopropyl)ether				< 280	280	< 250	250	< 270	270	< 290	290
Bis(2-ethylhexyl)phthalate				< 280	280	< 250	250	< 270	270	< 290	290
Caprolactam				< 280	280	< 250	250	< 270	270	< 290	290
Carbazole				< 280	280	< 250	250	< 270	270	< 290	290
Chrysene	1,000	3,900	56,000	< 280	280	< 250	250	< 270	270	< 290	290
Dibenz(a,h)anthracene	330	330	560	< 160	160	< 140	140	< 150	150	< 170	170
Dibenzofuran	7,000	59,000	350,000	< 280	280	< 250	250	< 270	270	< 290	290
Diethyl phthalate				< 280	280	< 250	250	< 270	270	< 290	290
Dimethylphthalate				< 280	280	< 250	250	< 270	270	< 290	290
Di-n-butylphthalate				< 280	280	< 250	250	< 270	270	< 290	290
Di-n-octylphthalate				< 280	280	< 250	250	< 270	270	< 290	290
Fluoranthene	100,000	100,000	500,000	< 280	280	< 250	250	< 270	270	< 290	290
Fluorene	30,000	100,000	500,000	< 280	280	< 250	250	< 270	270	< 290	290
Hexachlorobenzene	330	1,200	6,000	< 160	160	< 140	140	< 150	150	< 170	170
Hexachlorobutadiene				< 280	280	< 250	250	< 270	270	< 290	290
Hexachlorocyclopentadiene				< 280	280	< 250	250	< 270	270	< 290	290
Hexachloroethane				< 160	160	< 140	140	< 150	150	< 170	170
Indeno(1,2,3-cd)pyrene	500	500	5,600	< 280	280	< 250	250	< 270	270	< 290	290
Isophorone				< 160	160	< 140	140	< 150	150	< 170	170
Naphthalene	12,000	100,000	500,000	< 280	280	< 250	250	< 270	270	< 290	290
Nitrobenzene				< 160	160	< 140	140	< 150	150	< 170	170
N-Nitrosodimethylamine				< 280	280	< 250	250	< 270	270	< 290	290
N-Nitrosodi-n-propylamine				< 160	160	< 140	140	< 150	150	< 170	170
N-Nitrosodiphenylamine				< 160	160	< 140	140	< 150	150	< 170	170
Pentachlorophenol	800	6,700	6,700	< 280	280	< 250	250	< 270	270	< 290	290
Phenanthrene	100,000	100,000	500,000	< 160	160	< 140	140	< 150	150	< 170	170
Phenol	330	100,000	500,000	< 280	280	< 250	250	< 270	270	< 290	290
Pyrene	100,000	100,000	500,000	< 280	280	< 250	250	< 270	270	< 290	290

Notes:

* - 6 NYCRR Part 375-6 Remedial Program Soil Cleanup Objectives

RL - Reporting Limit

Bold/highlighted- Indicated exceedance of the NYSDEC UUSCO Guidance Value

Bold/highlighted- Indicated exceedance of the NYSDEC RRSCO Guidance Value

Bold/highlighted- Indicated exceedance of the NYSDEC RCSCO Guidance Value

Table 22
Former Pfizer Site A - C224284
243-271 Wallabout Street,
Brooklyn, New York
Track 1 Area - Endpoint Soil Analytical Results
Semi-Volatile Organic Compounds

COMPOUND	NYSDEC Part 375.6 Unrestricted Use Soil Cleanup Objectives*	NYDEC Part 375.6 Restricted Residential Soil Cleanup Objectives*	NYDEC Part 375.6 Restricted Commerical Soil Cleanup Objectives*	EBC Endpoint Samples					
				Soil Duplicate		Soil Duplicate		Soil Duplicate	
				11/20/2020		11/23/2020		12/4/2020	
				µg/Kg		µg/Kg		µg/Kg	
				Result	RL	Result	RL	Result	RL
1,1-Biphenyl				< 280	280	< 270	270	< 280	280
1,2,4,5-Tetrachlorobenzene				< 280	280	< 270	270	< 280	280
2,3,4,6-tetrachlorophenol				< 280	280	< 270	270	< 280	280
2,4,5-Trichlorophenol				< 280	280	< 270	270	< 280	280
2,4,6-Trichlorophenol				< 160	160	< 160	160	< 160	160
2,4-Dichlorophenol				< 160	160	< 160	160	< 160	160
2,4-Dimethylphenol				< 280	280	< 270	270	< 280	280
2,4-Dinitrophenol				< 280	280	< 270	270	< 280	280
2,4-Dinitrotoluene				< 160	160	< 160	160	< 160	160
2,6-Dinitrotoluene				< 160	160	< 160	160	< 160	160
2-Chloronaphthalene				< 280	280	< 270	270	< 280	280
2-Chlorophenol				< 280	280	< 270	270	< 280	280
2-Methylnaphthalene				< 280	280	< 270	270	< 280	280
2-Methylphenol (o-cresol)	330	100,000	500,000	< 280	280	< 270	270	< 280	280
2-Nitroaniline				< 280	280	< 270	270	< 280	280
2-Nitrophenol				< 280	280	< 270	270	< 280	280
3&4-Methylphenol (m&p-cresol)				< 280	280	< 270	270	< 280	280
3,3'-Dichlorobenzidine				< 160	160	< 160	160	< 160	160
3-Nitroaniline				< 800	800	< 780	780	< 800	800
4,6-Dinitro-2-methylphenol				< 280	280	< 270	270	< 280	280
4-Bromophenyl phenyl ether				< 280	280	< 270	270	< 280	280
4-Chloro-3-methylphenol				< 280	280	< 270	270	< 280	280
4-Chloroaniline				< 800	800	< 780	780	< 800	800
4-Chlorophenyl phenyl ether				< 280	280	< 270	270	< 280	280
4-Nitroaniline				< 2000	2,000	< 2000	2,000	< 2000	2,000
4-Nitrophenol				< 280	280	< 270	270	< 280	280
Acenaphthene	20,000	100,000	500,000	< 280	280	< 270	270	< 280	280
Acenaphthylene	100,000	100,000	500,000	< 160	160	< 160	160	< 160	160
Acetophenone				< 280	280	< 270	270	< 280	280
Anthracene	100,000	100,000	500,000	< 280	280	< 270	270	< 280	280
Atrazine				< 280	280	< 270	270	< 280	280
Benz(a)anthracene	1,000	1,000	5,600	< 280	280	< 270	270	< 280	280
Benzaldehyde				< 280	280	< 270	270	< 280	280
Benzo(a)pyrene	1,000	1,000	1,000	< 160	160	< 160	160	< 160	160
Benzo(b)fluoranthene	1,000	1,000	5,600	< 280	280	< 270	270	< 280	280
Benzo(ghi)perylene	100,000	100,000	500,000	< 280	280	< 270	270	< 280	280
Benzo(k)fluoranthene	800	3,900	56,000	< 280	280	< 270	270	< 280	280
Benzyl butyl phthalate				< 280	280	< 270	270	< 280	280
Bis(2-chloroethoxy)methane				< 280	280	< 270	270	< 280	280
Bis(2-chloroethyl)ether				< 160	160	< 160	160	< 160	160
Bis(2-chloroisopropyl)ether				< 280	280	< 270	270	< 280	280
Bis(2-ethylhexyl)phthalate				< 280	280	< 270	270	< 280	280
Caprolactam				< 280	280	< 270	270	< 280	280
Carbazole				< 280	280	< 270	270	< 280	280
Chrysene	1,000	3,900	56,000	< 280	280	< 270	270	< 280	280
Dibenz(a,h)anthracene	330	330	560	< 160	160	< 160	160	< 160	160
Dibenzofuran	7,000	59,000	350,000	< 280	280	< 270	270	< 280	280
Diethyl phthalate				< 280	280	< 270	270	< 280	280
Dimethylphthalate				< 280	280	< 270	270	< 280	280
Di-n-butylphthalate				< 280	280	< 270	270	< 280	280
Di-n-octylphthalate				< 280	280	< 270	270	< 280	280
Fluoranthene	100,000	100,000	500,000	< 280	280	< 270	270	< 280	280
Fluorene	30,000	100,000	500,000	< 280	280	< 270	270	< 280	280
Hexachlorobenzene	330	1,200	6,000	< 160	160	< 160	160	< 160	160
Hexachlorobutadiene				< 280	280	< 270	270	< 280	280
Hexachlorocyclopentadiene				< 280	280	< 270	270	< 280	280
Hexachloroethane				< 160	160	< 160	160	< 160	160
Indeno(1,2,3-cd)pyrene	500	500	5,600	< 280	280	< 270	270	< 280	280
Isophorone				< 160	160	< 160	160	< 160	160
Naphthalene	12,000	100,000	500,000	< 280	280	< 270	270	< 280	280
Nitrobenzene				< 160	160	< 160	160	< 160	160
N-Nitrosodimethylamine				< 280	280	< 270	270	< 280	280
N-Nitrosodi-n-propylamine				< 160	160	< 160	160	< 160	160
N-Nitrosodiphenylamine				< 160	160	< 160	160	< 160	160
Pentachlorophenol	800	6,700	6,700	< 280	280	< 270	270	< 280	280
Phenanthrene	100,000	100,000	500,000	< 160	160	< 160	160	< 160	160
Phenol	330	100,000	500,000	< 280	280	< 270	270	< 280	280
Pyrene	100,000	100,000	500,000	< 280	280	< 270	270	< 280	280

Notes:

* - 6 NYCRR Part 375-6 Remedial Program Soil Cleanup Objectives

RL - Reporting Limit

Bold/highlighted- Indicated exceedance of the NYSDEC UUSCO Guidance Value

Bold/highlighted- Indicated exceedance of the NYSDEC RRSCO Guidance Value

Bold/highlighted- Indicated exceedance of the NYSDEC RCSCO Guidance Value

Table 23
Former Pfizer Site A - C224284
243-271 Wallabout Street,
Brooklyn, New York
Track 1 Area - Endpoint Soil Analytical Results
Pesticides PCBs

	COMPOUND	NYSDEC Part 375.6 Unrestricted Use Soil Cleanup Objectives*	NYDEC Part 375.6 Restricted Residential Soil Cleanup Objectives*	NYDEC Part 375.6 Restricted Commercial Soil Cleanup Objectives*	Endpoint Samples																			
					EP1		EP2		EP3		EP4		EP5		EP6		EP7		EP8		EP9		EP21	
					16'		16'		16'		16'		16'		16'		16'		16'		16'		16'	
					7/9/2020		7/9/2020		7/9/2020		7/9/2020		7/9/2020		7/9/2020		10/15/2020		12/4/2020		12/4/2020		12/4/2020	
					µg/Kg		µg/Kg		µg/Kg		µg/Kg		µg/Kg		µg/Kg		µg/Kg		µg/Kg		µg/Kg		µg/Kg	
					Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL
Pesticides	4,4' -DDD	3.3	13,000	92,000	< 2.3	2.3	< 2.4	2.4	< 2.4	2.4	< 2.3	2.3	< 2.4	2.4	< 2.4	2.4	< 2.5	2.5	< 2.5	2.5	< 2.5	2.5	< 2.6	2.6
	4,4' -DDE	3.3	8,900	62,000	< 2.3	2.3	< 2.4	2.4	< 2.4	2.4	< 2.3	2.3	< 2.4	2.4	< 2.4	2.4	< 2.5	2.5	< 2.5	2.5	< 2.5	2.5	< 2.6	2.6
	4,4' -DDT	3.3	7,900	47,000	< 2.3	2.3	< 2.4	2.4	< 2.4	2.4	< 2.3	2.3	< 2.4	2.4	< 2.4	2.4	< 2.5	2.5	< 2.5	2.5	< 2.5	2.5	< 2.6	2.6
	a-BHC	20	480	3,400	< 7.7	7.7	< 7.9	7.9	< 8.0	8.0	< 7.7	7.7	< 8.0	8.0	< 8.0	8.0	< 8.3	8.3	< 8.4	8.4	< 8.5	8.5	< 8.7	8.7
	a-Chlordane	94	4,200	24,000	< 3.9	3.9	< 3.9	3.9	< 4.0	4.0	< 3.8	3.8	< 4.0	4.0	< 4.0	4.0	< 4.1	4.1	< 4.2	4.2	< 4.2	4.2	< 4.4	4.4
	Aldrin	5	97	680	< 3.9	3.9	< 3.9	3.9	< 4.0	4.0	< 3.8	3.8	< 4.0	4.0	< 4.0	4.0	< 4.1	4.1	< 4.2	4.2	< 4.2	4.2	< 4.4	4.4
	b-BHC	36	360	3,000	< 7.7	7.7	< 7.9	7.9	< 8.0	8.0	< 7.7	7.7	< 8.0	8.0	< 8.0	8.0	< 8.3	8.3	< 8.4	8.4	< 8.5	8.5	< 8.7	8.7
	Chlordane				< 39	39	< 39	39	< 40	40	< 38	38	< 40	40	< 40	40	< 41	41	< 42	42	< 42	42	< 44	44
	d-BHC	40	100,000	500,000	< 7.7	7.7	< 7.9	7.9	< 8.0	8.0	< 7.7	7.7	< 8.0	8.0	< 8.0	8.0	< 8.3	8.3	< 8.4	8.4	< 8.5	8.5	< 8.7	8.7
	Dieldrin	5	200	1,400	< 3.9	3.9	< 3.9	3.9	< 4.0	4.0	< 3.8	3.8	< 4.0	4.0	< 4.0	4.0	< 4.1	4.1	< 4.2	4.2	< 4.2	4.2	< 4.4	4.4
	Endosulfan I	2,400	24,000	200,000	< 7.7	7.7	< 7.9	7.9	< 8.0	8.0	< 7.7	7.7	< 8.0	8.0	< 8.0	8.0	< 8.3	8.3	< 8.4	8.4	< 8.5	8.5	< 8.7	8.7
	Endosulfan II	2,400	24,000	200,000	< 7.7	7.7	< 7.9	7.9	< 8.0	8.0	< 7.7	7.7	< 8.0	8.0	< 8.0	8.0	< 8.3	8.3	< 8.4	8.4	< 8.5	8.5	< 8.7	8.7
	Endosulfan sulfate	2,400	24,000	200,000	< 7.7	7.7	< 7.9	7.9	< 8.0	8.0	< 7.7	7.7	< 8.0	8.0	< 8.0	8.0	< 8.3	8.3	< 8.4	8.4	< 8.5	8.5	< 8.7	8.7
	Endrin	14	11,000	89,000	< 7.7	7.7	< 7.9	7.9	< 8.0	8.0	< 7.7	7.7	< 8.0	8.0	< 8.0	8.0	< 8.3	8.3	< 8.4	8.4	< 8.5	8.5	< 8.7	8.7
	Endrin aldehyde				< 7.7	7.7	< 7.9	7.9	< 8.0	8.0	< 7.7	7.7	< 8.0	8.0	< 8.0	8.0	< 8.3	8.3	< 8.4	8.4	< 8.5	8.5	< 8.7	8.7
	Endrin ketone				< 7.7	7.7	< 7.9	7.9	< 8.0	8.0	< 7.7	7.7	< 8.0	8.0	< 8.0	8.0	< 8.3	8.3	< 8.4	8.4	< 8.5	8.5	< 8.7	8.7
	g-BHC				< 1.5	1.5	< 1.6	1.6	< 1.6	1.6	< 1.5	1.5	< 1.6	1.6	< 1.6	1.6	< 1.7	1.7	< 1.7	1.7	< 1.7	1.7	< 1.7	1.7
	g-Chlordane				< 3.9	3.9	< 3.9	3.9	< 4.0	4.0	< 3.8	3.8	< 4.0	4.0	< 4.0	4.0	< 4.1	4.1	< 4.2	4.2	< 4.2	4.2	< 4.4	4.4
	Heptachlor	42	2,100	15,000	< 7.7	7.7	< 7.9	7.9	< 8.0	8.0	< 7.7	7.7	< 8.0	8.0	< 8.0	8.0	< 8.3	8.3	< 8.4	8.4	< 8.5	8.5	< 8.7	8.7
	Heptachlor epoxide				< 7.7	7.7	< 7.9	7.9	< 8.0	8.0	< 7.7	7.7	< 8.0	8.0	< 8.0	8.0	< 8.3	8.3	< 8.4	8.4	< 8.5	8.5	< 8.7	8.7
	Methoxychlor				< 39	39	< 39	39	< 40	40	< 38	38	< 40	40	< 40	40	< 41	41	< 42	42	< 42	42	< 44	44
	Toxaphene				< 150	150	< 160	160	< 160	160	< 150	150	< 160	160	< 160	160	< 170	170	< 170	170	< 170	170	< 170	170
PCBs	PCB-1016	100	1,000		< 77	77	< 79	79	< 80	80	< 77	77	< 80	80	< 80	80	< 83	83	< 84	84	< 85	85	< 87	87
	PCB-1221	100	1,000		< 77	77	< 79	79	< 80	80	< 77	77	< 80	80	< 80	80	< 83	83	< 84	84	< 85	85	< 87	87
	PCB-1232	100	1,000		< 77	77	< 79	79	< 80	80	< 77	77	< 80	80	< 80	80	< 83	83	< 84	84	< 85	85	< 87	87
	PCB-1242	100	1,000		< 77	77	< 79	79	< 80	80	< 77	77	< 80	80	< 80	80	< 83	83	< 84	84	< 85	85	< 87	87
	PCB-1248	100	1,000		< 77	77	< 79	79	< 80	80	< 77	77	< 80	80	< 80	80	< 83	83	< 84	84	< 85	85	< 87	87
	PCB-1254	100	1,000		< 77	77	< 79	79	< 80	80	< 77	77	< 80	80	< 80	80	< 83	83	< 84	84	< 85	85	< 87	87
	PCB-1260	100	1,000		< 77	77	< 79	79	< 80	80	< 77	77	< 80	80	< 80	80	< 83	83	< 84	84	< 85	85	< 87	87
	PCB-1262	101			< 77	77	< 79	79	< 80	80	< 77	77	< 80	80	< 80	80	< 83	83	< 84	84	< 85	85	< 87	87
	PCB-1268	102			< 77	77	< 79	79	< 80	80	< 77	77	< 80	80	< 80	80	< 83	83	< 84	84	< 85	85	< 87	87

Notes:

* - 6 NYCRR Part 375-6 Remedial Program Soil Cleanup Objectives

RL - Reporting Limit

Bold/highlighted- Indicated exceedance of the NYSDEC UUSCO Guidance Value

Bold/highlighted- Indicated exceedance of the NYSDEC RRSCO Guidance Value

Bold/highlighted- Indicated exceedance of the NYSDEC RCSCO Guidance Value

Table 23
Former Pfizer Site A - C224284
243-271 Wallabout Street,
Brooklyn, New York
Track 1 Area - Endpoint Soil Analytical Results
Pesticides PCBs

	COMPOUND	NYSDEC Part 375.6 Unrestricted Use Soil Cleanup Objectives*	NYDEC Part 375.6 Restricted Residential Soil Cleanup Objectives*	NYDEC Part 375.6 Restricted Commercial Soil Cleanup Objectives*	Endpoint Samples																	
					EP22		EP23		EP24		EP25		EP26		EP27		EP28		EP29		EP30		EP31	
					16'		16'		16'		16'		16'		16'		16'		16'		16'		16'	
					12/4/2020		10/15/2020		8/5/2020		8/5/2020		8/5/2020		7/9/2020		7/9/2020		7/9/2020		7/9/2020		7/9/2020	
					µg/Kg		µg/Kg		µg/Kg		µg/Kg		µg/Kg		µg/Kg		µg/Kg		µg/Kg		µg/Kg		µg/Kg	
					Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL
Pesticides	4,4' -DDD	3.3	13,000	92,000	< 2.5	2.5	< 2.4	2.4	< 2.2	2.2	< 2.4	2.4	< 2.3	2.3	< 2.3	2.3	< 2.4	2.4	< 2.6	2.6	< 2.5	2.5	< 2.2	2.2
	4,4' -DDE	3.3	8,900	62,000	< 2.5	2.5	< 2.4	2.4	< 2.2	2.2	< 2.4	2.4	< 2.3	2.3	< 2.3	2.3	< 2.4	2.4	< 2.6	2.6	< 2.5	2.5	< 2.2	2.2
	4,4' -DDT	3.3	7,900	47,000	< 2.5	2.5	< 2.4	2.4	< 2.2	2.2	< 2.4	2.4	< 2.3	2.3	< 2.3	2.3	< 2.4	2.4	< 2.6	2.6	< 2.5	2.5	< 2.2	2.2
	a-BHC	20	480	3,400	< 8.4	8.4	< 8.1	8.1	< 7.4	7.4	< 7.9	7.9	< 7.6	7.6	< 7.8	7.8	< 8.1	8.1	< 8.7	8.7	< 8.4	8.4	< 7.5	7.5
	a-Chlordane	94	4,200	24,000	< 4.2	4.2	< 4.0	4.0	< 4.0	4.0	< 4.0	4.0	< 3.8	3.8	< 3.9	3.9	< 4.1	4.1	< 4.3	4.3	< 4.2	4.2	< 3.7	3.7
	Aldrin	5	97	680	< 4.2	4.2	< 4.0	4.0	< 3.7	3.7	< 4.0	4.0	< 3.8	3.8	< 3.9	3.9	< 4.1	4.1	< 4.3	4.3	< 4.2	4.2	< 3.7	3.7
	b-BHC	36	360	3,000	< 8.4	8.4	< 8.1	8.1	< 7.4	7.4	< 7.9	7.9	< 7.6	7.6	< 7.8	7.8	< 8.1	8.1	< 8.7	8.7	< 8.4	8.4	< 7.5	7.5
	Chlordane				< 42	42	< 40	40	< 37	37	< 40	40	< 38	38	< 39	39	< 41	41	< 43	43	< 42	42	< 37	37
	d-BHC	40	100,000	500,000	< 8.4	8.4	< 8.1	8.1	< 7.4	7.4	< 7.9	7.9	< 7.6	7.6	< 7.8	7.8	< 8.1	8.1	< 8.7	8.7	< 8.4	8.4	< 7.5	7.5
	Dieldrin	5	200	1,400	< 4.2	4.2	< 4.0	4.0	< 3.7	3.7	< 4.0	4.0	< 3.8	3.8	< 3.9	3.9	< 4.1	4.1	< 4.3	4.3	< 4.2	4.2	< 3.7	3.7
	Endosulfan I	2,400	24,000	200,000	< 8.4	8.4	< 8.1	8.1	< 7.4	7.4	< 7.9	7.9	< 7.6	7.6	< 7.8	7.8	< 8.1	8.1	< 8.7	8.7	< 8.4	8.4	< 7.5	7.5
	Endosulfan II	2,400	24,000	200,000	< 8.4	8.4	< 8.1	8.1	< 7.4	7.4	< 7.9	7.9	< 7.6	7.6	< 7.8	7.8	< 8.1	8.1	< 8.7	8.7	< 8.4	8.4	< 7.5	7.5
	Endosulfan sulfate	2,400	24,000	200,000	< 8.4	8.4	< 8.1	8.1	< 7.4	7.4	< 7.9	7.9	< 7.6	7.6	< 7.8	7.8	< 8.1	8.1	< 8.7	8.7	< 8.4	8.4	< 7.5	7.5
	Endrin	14	11,000	89,000	< 8.4	8.4	< 8.1	8.1	< 7.4	7.4	< 7.9	7.9	< 7.6	7.6	< 7.8	7.8	< 8.1	8.1	< 8.7	8.7	< 8.4	8.4	< 7.5	7.5
	Endrin aldehyde				< 8.4	8.4	< 8.1	8.1	< 7.4	7.4	< 7.9	7.9	< 7.6	7.6	< 7.8	7.8	< 8.1	8.1	< 8.7	8.7	< 8.4	8.4	< 7.5	7.5
	Endrin ketone				< 8.4	8.4	< 8.1	8.1	< 7.4	7.4	< 7.9	7.9	< 7.6	7.6	< 7.8	7.8	< 8.1	8.1	< 8.7	8.7	< 8.4	8.4	< 7.5	7.5
	g-BHC				< 1.7	1.7	< 1.6	1.6	< 1.5	1.5	< 1.6	1.6	< 1.5	1.5	< 1.6	1.6	< 1.6	1.6	< 1.7	1.7	< 1.7	1.7	< 1.5	1.5
	g-Chlordane				< 4.2	4.2	< 4.0	4.0	< 3.7	3.7	< 4.0	4.0	< 3.8	3.8	< 3.9	3.9	< 4.1	4.1	< 4.3	4.3	< 4.2	4.2	< 3.7	3.7
	Heptachlor	42	2,100	15,000	< 8.4	8.4	< 8.1	8.1	< 7.4	7.4	< 7.9	7.9	< 7.6	7.6	< 7.8	7.8	< 8.1	8.1	< 8.7	8.7	< 8.4	8.4	< 7.5	7.5
	Heptachlor epoxide				< 8.4	8.4	< 8.1	8.1	< 7.4	7.4	< 7.9	7.9	< 7.6	7.6	< 7.8	7.8	< 8.1	8.1	< 8.7	8.7	< 8.4	8.4	< 7.5	7.5
	Methoxychlor				< 42	42	< 40	40	< 37	37	< 40	40	< 38	38	< 39	39	< 41	41	< 43	43	< 42	42	< 37	37
	Toxaphene				< 170	170	< 160	160	< 150	150	< 160	160	< 150	150	< 160	160	< 160	160	< 170	170	< 170	170	< 150	150
PCBs	PCB-1016	100	1,000		< 84	84	< 81	81	< 74	74	< 79	79	< 76	76	< 78	78	< 81	81	< 87	87	< 84	84	< 75	75
	PCB-1221	100	1,000		< 84	84	< 81	81	< 74	74	< 79	79	< 76	76	< 78	78	< 81	81	< 87	87	< 84	84	< 75	75
	PCB-1232	100	1,000		< 84	84	< 81	81	< 74	74	< 79	79	< 76	76	< 78	78	< 81	81	< 87	87	< 84	84	< 75	75
	PCB-1242	100	1,000		< 84	84	< 81	81	< 74	74	< 79	79	< 76	76	< 78	78	< 81	81	< 87	87	< 84	84	< 75	75
	PCB-1248	100	1,000		< 84	84	< 81	81	< 74	74	< 79	79	< 76	76	< 78	78	< 81	81	< 87	87	< 84	84	< 75	75
	PCB-1254	100	1,000		< 84	84	< 81	81	< 74	74	< 79	79	< 76	76	< 78	78	< 81	81	< 87	87	< 84	84	< 75	75
	PCB-1260	100	1,000		< 84	84	< 81	81	< 74	74	< 79	79	< 76	76	< 78	78	< 81	81	< 87	87	< 84	84	< 75	75
	PCB-1262	101			< 84	84	< 81	81	< 74	74	< 79	79	< 76	76	< 78	78	< 81	81	< 87	87	< 84	84	< 75	75
	PCB-1268	102			< 84	84	< 81	81	< 74	74	< 79	79	< 76	76	< 78	78	< 81	81	< 87	87	< 84	84	< 75	75

Notes:

* - 6 NYCRR Part 375-6 Remedial Program Soil Cleanup Objectives

RL - Reporting Limit

Bold/highlighted- Indicated exceedance of the NYSDEC UUSCO Guidance Value

Bold/highlighted- Indicated exceedance of the NYSDEC RRSCO Guidance Value

Bold/highlighted- Indicated exceedance of the NYSDEC RCSCO Guidance Value

Table 23
Former Pfizer Site A - C224284
243-271 Wallabout Street,
Brooklyn, New York
Track 1 Area - Endpoint Soil Analytical Results
Pesticides PCBs

	COMPOUND	NYSDEC Part 375.6 Unrestricted Use Soil Cleanup Objectives*	NYDEC Part 375.6 Restricted Residential Soil Cleanup Objectives*	NYDEC Part 375.6 Restricted Commercial Soil Cleanup Objectives*	Endpoint Samples																	
					EP32		EP33		EP34		EP35		EP36		EP37		EP38		EP46		EP47		EP48	
					16'		16'		16'		16'		16'		16'		16'		16'		16'		16'	
					7/9/2020		8/5/2020		8/5/2020		8/5/2020		10/15/2020		12/4/2020		12/4/2020		11/20/2020		11/20/2020		10/15/2020	
					µg/Kg		µg/Kg		µg/Kg		µg/Kg		µg/Kg		µg/Kg		µg/Kg		µg/Kg		µg/Kg		µg/Kg	
					Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL
Pesticides	4,4' -DDD	3.3	13,000	92,000	< 2.6	2.6	< 2.3	2.3	< 2.4	2.4	< 2.4	2.4	< 2.2	2.2	< 2.3	2.3	< 2.4	2.4	< 2.4	2.4	< 2.4	2.4	< 2.4	2.4
	4,4' -DDE	3.3	8,900	62,000	< 2.6	2.6	< 2.3	2.3	< 2.4	2.4	< 2.4	2.4	< 2.2	2.2	< 2.3	2.3	< 2.4	2.4	< 2.4	2.4	< 2.4	2.4	< 2.4	2.4
	4,4' -DDT	3.3	7,900	47,000	< 2.6	2.6	< 2.3	2.3	< 2.4	2.4	< 2.4	2.4	< 2.2	2.2	< 2.3	2.3	< 2.4	2.4	< 2.4	2.4	< 2.4	2.4	< 2.4	2.4
	a-BHC	20	480	3,400	< 8.8	8.8	< 7.6	7.6	< 8.1	8.1	< 8.2	8.2	< 7.3	7.3	< 7.7	7.7	< 8.0	8.0	< 8.0	8.0	< 7.9	7.9	< 8.0	8.0
	a-Chlordane	94	4,200	24,000	< 4.4	4.4	< 3.8	3.8	< 4.1	4.1	< 4.1	4.1	< 6.0	6.0	< 3.8	3.8	< 4.0	4.0	< 4.0	4.0	< 3.9	3.9	< 4.0	4.0
	Aldrin	5	97	680	< 4.4	4.4	< 3.8	3.8	< 4.1	4.1	< 4.1	4.1	< 3.6	3.6	< 3.8	3.8	< 4.0	4.0	< 4.0	4.0	< 3.9	3.9	< 4.0	4.0
	b-BHC	36	360	3,000	< 8.8	8.8	< 7.6	7.6	< 8.1	8.1	< 8.2	8.2	< 7.3	7.3	< 7.7	7.7	< 8.0	8.0	< 8.0	8.0	< 7.9	7.9	< 8.0	8.0
	Chlordane				< 44	44	< 38	38	< 41	41	< 41	41	< 36	36	< 38	38	< 40	40	< 40	40	< 39	39	< 40	40
	d-BHC	40	100,000	500,000	< 8.8	8.8	< 7.6	7.6	< 8.1	8.1	< 8.2	8.2	< 7.3	7.3	< 7.7	7.7	< 8.0	8.0	< 8.0	8.0	< 7.9	7.9	< 8.0	8.0
	Dieldrin	5	200	1,400	< 4.4	4.4	< 3.8	3.8	< 4.1	4.1	< 4.1	4.1	< 3.6	3.6	< 3.8	3.8	< 4.0	4.0	< 4.0	4.0	< 3.9	3.9	< 4.0	4.0
	Endosulfan I	2,400	24,000	200,000	< 8.8	8.8	< 7.6	7.6	< 8.1	8.1	< 8.2	8.2	< 7.3	7.3	< 7.7	7.7	< 8.0	8.0	< 8.0	8.0	< 7.9	7.9	< 8.0	8.0
	Endosulfan II	2,400	24,000	200,000	< 8.8	8.8	< 7.6	7.6	< 8.1	8.1	< 8.2	8.2	< 7.3	7.3	< 7.7	7.7	< 8.0	8.0	< 8.0	8.0	< 7.9	7.9	< 8.0	8.0
	Endosulfan sulfate	2,400	24,000	200,000	< 8.8	8.8	< 7.6	7.6	< 8.1	8.1	< 8.2	8.2	< 7.3	7.3	< 7.7	7.7	< 8.0	8.0	< 8.0	8.0	< 7.9	7.9	< 8.0	8.0
	Endrin	14	11,000	89,000	< 8.8	8.8	< 7.6	7.6	< 8.1	8.1	< 8.2	8.2	< 7.3	7.3	< 7.7	7.7	< 8.0	8.0	< 8.0	8.0	< 7.9	7.9	< 8.0	8.0
	Endrin aldehyde				< 8.8	8.8	< 7.6	7.6	< 8.1	8.1	< 8.2	8.2	< 7.3	7.3	< 7.7	7.7	< 8.0	8.0	< 8.0	8.0	< 7.9	7.9	< 8.0	8.0
	Endrin ketone				< 8.8	8.8	< 7.6	7.6	< 8.1	8.1	< 8.2	8.2	< 7.3	7.3	< 7.7	7.7	< 8.0	8.0	< 8.0	8.0	< 7.9	7.9	< 8.0	8.0
	g-BHC				< 1.8	1.8	< 1.5	1.5	< 1.6	1.6	< 1.6	1.6	< 1.5	1.5	< 1.5	1.5	< 1.6	1.6	< 1.6	1.6	< 1.6	1.6	< 1.6	1.6
	g-Chlordane				< 4.4	4.4	< 3.8	3.8	< 4.1	4.1	< 4.1	4.1	< 3.6	3.6	< 3.8	3.8	< 4.0	4.0	< 4.0	4.0	< 3.9	3.9	< 4.0	4.0
	Heptachlor	42	2,100	15,000	< 8.8	8.8	< 7.6	7.6	< 8.1	8.1	< 8.2	8.2	< 7.3	7.3	< 7.7	7.7	< 8.0	8.0	< 8.0	8.0	< 7.9	7.9	< 8.0	8.0
	Heptachlor epoxide				< 8.8	8.8	< 7.6	7.6	< 8.1	8.1	< 8.2	8.2	< 7.3	7.3	< 7.7	7.7	< 8.0	8.0	< 8.0	8.0	< 7.9	7.9	< 8.0	8.0
	Methoxychlor				< 44	44	< 38	38	< 41	41	< 41	41	< 36	36	< 38	38	< 40	40	< 40	40	< 39	39	< 40	40
	Toxaphene				< 180	180	< 150	150	< 160	160	< 160	160	< 150	150	< 150	150	< 160	160	< 160	160	< 160	160	< 160	160
PCBs	PCB-1016	100	1,000		< 88	88	< 76	76	< 81	81	< 82	82	< 73	73	< 77	77	< 80	80	< 80	80	< 79	79	< 80	80
	PCB-1221	100	1,000		< 88	88	< 76	76	< 81	81	< 82	82	< 73	73	< 77	77	< 80	80	< 80	80	< 79	79	< 80	80
	PCB-1232	100	1,000		< 88	88	< 76	76	< 81	81	< 82	82	< 73	73	< 77	77	< 80	80	< 80	80	< 79	79	< 80	80
	PCB-1242	100	1,000		< 88	88	< 76	76	< 81	81	< 82	82	< 73	73	< 77	77	< 80	80	< 80	80	< 79	79	< 80	80
	PCB-1248	100	1,000		< 88	88	< 76	76	< 81	81	< 82	82	< 73	73	< 77	77	< 80	80	< 80	80	< 79	79	< 80	80
	PCB-1254	100	1,000		< 88	88	< 76	76	< 81	81	< 82	82	< 73	73	< 77	77	< 80	80	< 80	80	< 79	79	< 80	80
	PCB-1260	100	1,000		< 88	88	< 76	76	< 81	81	< 82	82	< 73	73	< 77	77	< 80	80	< 80	80	< 79	79	< 80	80
	PCB-1262	101			< 88	88	< 76	76	< 81	81	< 82	82	< 73	73	< 77	77	< 80	80	< 80	80	< 79	79	< 80	80
	PCB-1268	102			< 88	88	< 76	76	< 81	81	< 82	82	< 73	73	< 77	77	< 80	80	< 80	80	< 79	79	< 80	80

Notes:

* - 6 NYCRR Part 375-6 Remedial Program Soil Cleanup Objectives

RL - Reporting Limit

Bold/highlighted- Indicated exceedance of the NYSDEC UUSCO Guidance Value

Bold/highlighted- Indicated exceedance of the NYSDEC RRSCO Guidance Value

Bold/highlighted- Indicated exceedance of the NYSDEC RCSCO Guidance Value

Table 23
Former Pfizer Site A - C224284
243-271 Wallabout Street,
Brooklyn, New York
Track 1 Area - Endpoint Soil Analytical Results
Pesticides PCBs

	COMPOUND	NYSDEC Part 375.6 Unrestricted Use Soil Cleanup Objectives*	NYDEC Part 375.6 Restricted Residential Soil Cleanup Objectives*	NYDEC Part 375.6 Restricted Commercial Soil Cleanup Objectives*	Endpoint Samples																			
					EP49		EP50		EP51		EP52		EP53		EP54		EP55		EP56		EP57		EP58	
					16'		16'		16'		16'		16'		16'		16'		16'		16'		16'	
					8/10/2020		8/10/2020		8/10/2020		8/5/2020		8/5/2020		8/5/2020		8/5/2020		8/5/2020		8/10/2020		8/10/2020	
					µg/Kg		µg/Kg		µg/Kg		µg/Kg		µg/Kg		µg/Kg		µg/Kg		µg/Kg		µg/Kg		µg/Kg	
					Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL
Pesticides	4,4' -DDD	3.3	13,000	92,000	< 2.3	2.3	< 2.3	2.3	< 2.3	2.3	< 2.3	2.3	< 2.3	2.3	< 2.1	2.1	< 2.4	2.4	< 2.4	2.4	< 2.4	2.4	< 2.3	2.3
	4,4' -DDE	3.3	8,900	62,000	< 2.3	2.3	< 2.3	2.3	< 2.3	2.3	< 2.3	2.3	< 2.3	2.3	< 2.1	2.1	< 2.4	2.4	< 2.4	2.4	< 2.4	2.4	< 2.3	2.3
	4,4' -DDT	3.3	7,900	47,000	< 2.3	2.3	< 2.3	2.3	< 2.3	2.3	< 2.3	2.3	< 2.3	2.3	< 2.1	2.1	< 2.4	2.4	< 2.4	2.4	< 2.4	2.4	< 2.3	2.3
	a-BHC	20	480	3,400	< 7.7	7.7	< 7.6	7.6	< 7.7	7.7	< 7.6	7.6	< 7.6	7.6	< 6.9	6.9	< 8.1	8.1	< 8.0	8.0	< 7.9	7.9	< 7.8	7.8
	a-Chlordane	94	4,200	24,000	< 3.9	3.9	< 3.8	3.8	< 3.9	3.9	< 3.8	3.8	< 3.8	3.8	< 3.5	3.5	< 4.1	4.1	< 4.0	4.0	< 4.0	4.0	< 3.9	3.9
	Aldrin	5	97	680	< 3.9	3.9	< 3.8	3.8	< 3.9	3.9	< 3.8	3.8	< 3.8	3.8	< 3.5	3.5	< 4.1	4.1	< 4.0	4.0	< 4.0	4.0	< 3.9	3.9
	b-BHC	36	360	3,000	< 7.7	7.7	< 7.6	7.6	< 7.7	7.7	< 7.6	7.6	< 7.6	7.6	< 6.9	6.9	< 8.1	8.1	< 8.0	8.0	< 7.9	7.9	< 7.8	7.8
	Chlordane				< 39	39	< 38	38	< 39	39	< 38	38	< 38	38	< 35	35	< 41	41	< 40	40	< 40	40	< 39	39
	d-BHC	40	100,000	500,000	< 7.7	7.7	< 7.6	7.6	< 7.7	7.7	< 7.6	7.6	< 7.6	7.6	< 6.9	6.9	< 8.1	8.1	< 8.0	8.0	< 7.9	7.9	< 7.8	7.8
	Dieldrin	5	200	1,400	< 3.9	3.9	< 3.8	3.8	< 3.9	3.9	< 3.8	3.8	< 3.8	3.8	< 3.5	3.5	< 4.1	4.1	< 4.0	4.0	< 4.0	4.0	< 3.9	3.9
	Endosulfan I	2,400	24,000	200,000	< 7.7	7.7	< 7.6	7.6	< 7.7	7.7	< 7.6	7.6	< 7.6	7.6	< 6.9	6.9	< 8.1	8.1	< 8.0	8.0	< 7.9	7.9	< 7.8	7.8
	Endosulfan II	2,400	24,000	200,000	< 7.7	7.7	< 7.6	7.6	< 7.7	7.7	< 7.6	7.6	< 7.6	7.6	< 6.9	6.9	< 8.1	8.1	< 8.0	8.0	< 7.9	7.9	< 7.8	7.8
	Endosulfan sulfate	2,400	24,000	200,000	< 7.7	7.7	< 7.6	7.6	< 7.7	7.7	< 7.6	7.6	< 7.6	7.6	< 6.9	6.9	< 8.1	8.1	< 8.0	8.0	< 7.9	7.9	< 7.8	7.8
	Endrin	14	11,000	89,000	< 7.7	7.7	< 7.6	7.6	< 7.7	7.7	< 7.6	7.6	< 7.6	7.6	< 6.9	6.9	< 8.1	8.1	< 8.0	8.0	< 7.9	7.9	< 7.8	7.8
	Endrin aldehyde				< 7.7	7.7	< 7.6	7.6	< 7.7	7.7	< 7.6	7.6	< 7.6	7.6	< 6.9	6.9	< 8.1	8.1	< 8.0	8.0	< 7.9	7.9	< 7.8	7.8
	Endrin ketone				< 7.7	7.7	< 7.6	7.6	< 7.7	7.7	< 7.6	7.6	< 7.6	7.6	< 6.9	6.9	< 8.1	8.1	< 8.0	8.0	< 7.9	7.9	< 7.8	7.8
	g-BHC				< 1.5	1.5	< 1.5	1.5	< 1.5	1.5	< 1.5	1.5	< 1.5	1.5	< 1.4	1.4	< 1.6	1.6	< 1.6	1.6	< 1.6	1.6	< 1.6	1.6
	g-Chlordane				< 3.9	3.9	< 3.8	3.8	< 3.9	3.9	< 3.8	3.8	< 3.8	3.8	< 3.5	3.5	< 4.1	4.1	< 4.0	4.0	< 4.0	4.0	< 3.9	3.9
	Heptachlor	42	2,100	15,000	< 7.7	7.7	< 7.6	7.6	< 7.7	7.7	< 7.6	7.6	< 7.6	7.6	< 6.9	6.9	< 8.1	8.1	< 8.0	8.0	< 7.9	7.9	< 7.8	7.8
	Heptachlor epoxide				< 7.7	7.7	< 7.6	7.6	< 7.7	7.7	< 7.6	7.6	< 7.6	7.6	< 6.9	6.9	< 8.1	8.1	< 8.0	8.0	< 7.9	7.9	< 7.8	7.8
	Methoxychlor				< 39	39	< 38	38	< 39	39	< 38	38	< 38	38	< 35	35	< 41	41	< 40	40	< 40	40	< 39	39
	Toxaphene				< 150	150	< 150	150	< 150	150	< 150	150	< 150	150	< 140	140	< 160	160	< 160	160	< 160	160	< 160	160
PCBs	PCB-1016	100	1,000		< 77	77	< 76	76	< 77	77	< 76	76	< 76	76	< 69	69	< 81	81	< 80	80	< 79	79	< 78	78
	PCB-1221	100	1,000		< 77	77	< 76	76	< 77	77	< 76	76	< 76	76	< 69	69	< 81	81	< 80	80	< 79	79	< 78	78
	PCB-1232	100	1,000		< 77	77	< 76	76	< 77	77	< 76	76	< 76	76	< 69	69	< 81	81	< 80	80	< 79	79	< 78	78
	PCB-1242	100	1,000		< 77	77	< 76	76	< 77	77	< 76	76	< 76	76	< 69	69	< 81	81	< 80	80	< 79	79	< 78	78
	PCB-1248	100	1,000		< 77	77	< 76	76	< 77	77	< 76	76	< 76	76	< 69	69	< 81	81	< 80	80	< 79	79	< 78	78
	PCB-1254	100	1,000		< 77	77	< 76	76	< 77	77	< 76	76	< 76	76	< 69	69	< 81	81	< 80	80	< 79	79	< 78	78
	PCB-1260	100	1,000		< 77	77	< 76	76	< 77	77	< 76	76	< 76	76	< 69	69	< 81	81	< 80	80	< 79	79	< 78	78
	PCB-1262	101			< 77	77	< 76	76	< 77	77	< 76	76	< 76	76	< 69	69	< 81	81	< 80	80	< 79	79	< 78	78
	PCB-1268	102			< 77	77	< 76	76	< 77	77	< 76	76	< 76	76	< 69	69	< 81	81	< 80	80	< 79	79	< 78	78

Notes:

* - 6 NYCRR Part 375-6 Remedial Program Soil Cleanup Objectives

RL - Reporting Limit

Bold/highlighted- Indicated exceedance of the NYSDEC UUSCO Guidance Value

Bold/highlighted- Indicated exceedance of the NYSDEC RRSCO Guidance Value

Bold/highlighted- Indicated exceedance of the NYSDEC RCSCO Guidance Value

Table 23
Former Pfizer Site A - C224284
243-271 Wallabout Street,
Brooklyn, New York
Track 1 Area - Endpoint Soil Analytical Results
Pesticides PCBs

	COMPOUND	NYSDEC Part 375.6 Unrestricted Use Soil Cleanup Objectives*	NYDEC Part 375.6 Restricted Residential Soil Cleanup Objectives*	NYDEC Part 375.6 Restricted Commercial Soil Cleanup Objectives*	Endpoint Samples																	
					EP59		EP60		EP61		EP62		EP63		EP67		EP68		EP69		EP70		EP71	
					16'		16'		16'		16'		16'		16'		16'		16'		16'		16'	
					8/10/2020		8/10/2020		10/15/2020		11/20/2020		11/20/2020		8/10/2020		11/20/2020		10/15/2020		8/10/2020		8/10/2020	
					µg/Kg		µg/Kg		µg/Kg		µg/Kg		µg/Kg		µg/Kg		µg/Kg		µg/Kg		µg/Kg		µg/Kg	
					Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL
Pesticides	4,4' -DDD	3.3	13,000	92,000	< 2.3	2.3	< 2.3	2.3	< 2.5	2.5	< 2.5	2.5	< 2.4	2.4	< 2.3	2.3	< 2.3	2.3	< 2.5	2.5	< 2.4	2.4	< 2.3	2.3
	4,4' -DDE	3.3	8,900	62,000	< 2.3	2.3	< 2.3	2.3	< 2.5	2.5	< 2.5	2.5	< 2.4	2.4	< 2.3	2.3	< 2.3	2.3	< 2.5	2.5	< 2.4	2.4	< 2.3	2.3
	4,4' -DDT	3.3	7,900	47,000	< 2.3	2.3	< 2.3	2.3	< 2.5	2.5	< 2.5	2.5	< 2.4	2.4	< 2.3	2.3	< 2.3	2.3	< 2.5	2.5	< 2.4	2.4	< 2.3	2.3
	a-BHC	20	480	3,400	< 7.7	7.7	< 7.7	7.7	< 8.2	8.2	< 8.2	8.2	< 8.0	8.0	< 7.8	7.8	< 7.7	7.7	< 8.2	8.2	< 7.9	7.9	< 7.6	7.6
	a-Chlordane	94	4,200	24,000	< 3.9	3.9	< 3.9	3.9	< 4.1	4.1	< 4.1	4.1	< 4.0	4.0	< 3.9	3.9	< 3.9	3.9	< 4.1	4.1	< 4.0	4.0	< 3.8	3.8
	Aldrin	5	97	680	< 3.9	3.9	< 3.9	3.9	< 4.1	4.1	< 4.1	4.1	< 4.0	4.0	< 3.9	3.9	< 3.9	3.9	< 4.1	4.1	< 4.0	4.0	< 3.8	3.8
	b-BHC	36	360	3,000	< 7.7	7.7	< 7.7	7.7	< 8.2	8.2	< 8.2	8.2	< 8.0	8.0	< 7.8	7.8	< 7.7	7.7	< 8.2	8.2	< 7.9	7.9	< 7.6	7.6
	Chlordane				< 39	39	< 39	39	< 41	41	< 41	41	< 40	40	< 39	39	< 39	39	< 41	41	< 40	40	< 38	38
	d-BHC	40	100,000	500,000	< 7.7	7.7	< 7.7	7.7	< 8.2	8.2	< 8.2	8.2	< 8.0	8.0	< 7.8	7.8	< 7.7	7.7	< 8.2	8.2	< 7.9	7.9	< 7.6	7.6
	Dieldrin	5	200	1,400	< 3.9	3.9	< 3.9	3.9	< 4.1	4.1	< 4.1	4.1	< 4.0	4.0	< 3.9	3.9	< 3.9	3.9	< 4.1	4.1	< 4.0	4.0	< 3.8	3.8
	Endosulfan I	2,400	24,000	200,000	< 7.7	7.7	< 7.7	7.7	< 8.2	8.2	< 8.2	8.2	< 8.0	8.0	< 7.8	7.8	< 7.7	7.7	< 8.2	8.2	< 7.9	7.9	< 7.6	7.6
	Endosulfan II	2,400	24,000	200,000	< 7.7	7.7	< 7.7	7.7	< 8.2	8.2	< 8.2	8.2	< 8.0	8.0	< 7.8	7.8	< 7.7	7.7	< 8.2	8.2	< 7.9	7.9	< 7.6	7.6
	Endosulfan sulfate	2,400	24,000	200,000	< 7.7	7.7	< 7.7	7.7	< 8.2	8.2	< 8.2	8.2	< 8.0	8.0	< 7.8	7.8	< 7.7	7.7	< 8.2	8.2	< 7.9	7.9	< 7.6	7.6
	Endrin	14	11,000	89,000	< 7.7	7.7	< 7.7	7.7	< 8.2	8.2	< 8.2	8.2	< 8.0	8.0	< 7.8	7.8	< 7.7	7.7	< 8.2	8.2	< 7.9	7.9	< 7.6	7.6
	Endrin aldehyde				< 7.7	7.7	< 7.7	7.7	< 8.2	8.2	< 8.2	8.2	< 8.0	8.0	< 7.8	7.8	< 7.7	7.7	< 8.2	8.2	< 7.9	7.9	< 7.6	7.6
	Endrin ketone				< 7.7	7.7	< 7.7	7.7	< 8.2	8.2	< 8.2	8.2	< 8.0	8.0	< 7.8	7.8	< 7.7	7.7	< 8.2	8.2	< 7.9	7.9	< 7.6	7.6
	g-BHC				< 1.5	1.5	< 1.5	1.5	< 1.6	1.6	< 1.6	1.6	< 1.6	1.6	< 1.6	1.6	< 1.5	1.5	< 1.6	1.6	< 1.6	1.6	< 1.5	1.5
	g-Chlordane				< 3.9	3.9	< 3.9	3.9	< 4.1	4.1	< 4.1	4.1	< 4.0	4.0	< 3.9	3.9	< 3.9	3.9	< 4.1	4.1	< 4.0	4.0	< 3.8	3.8
	Heptachlor	42	2,100	15,000	< 7.7	7.7	< 7.7	7.7	< 8.2	8.2	< 8.2	8.2	< 8.0	8.0	< 7.8	7.8	< 7.7	7.7	< 8.2	8.2	< 7.9	7.9	< 7.6	7.6
	Heptachlor epoxide				< 7.7	7.7	< 7.7	7.7	< 8.2	8.2	< 8.2	8.2	< 8.0	8.0	< 7.8	7.8	< 7.7	7.7	< 8.2	8.2	< 7.9	7.9	< 7.6	7.6
	Methoxychlor				< 39	39	< 39	39	< 41	41	< 41	41	< 40	40	< 39	39	< 39	39	< 41	41	< 40	40	< 38	38
	Toxaphene				< 150	150	< 150	150	< 160	160	< 160	160	< 160	160	< 160	160	< 150	150	< 160	160	< 160	160	< 150	150
PCBs	PCB-1016	100	1,000		< 77	77	< 77	77	< 82	82	< 82	82	< 80	80	< 78	78	< 77	77	< 82	82	< 79	79	< 76	76
	PCB-1221	100	1,000		< 77	77	< 77	77	< 82	82	< 82	82	< 80	80	< 78	78	< 77	77	< 82	82	< 79	79	< 76	76
	PCB-1232	100	1,000		< 77	77	< 77	77	< 82	82	< 82	82	< 80	80	< 78	78	< 77	77	< 82	82	< 79	79	< 76	76
	PCB-1242	100	1,000		< 77	77	< 77	77	< 82	82	< 82	82	< 80	80	< 78	78	< 77	77	< 82	82	< 79	79	< 76	76
	PCB-1248	100	1,000		< 77	77	< 77	77	< 82	82	< 82	82	< 80	80	< 78	78	< 77	77	< 82	82	< 79	79	< 76	76
	PCB-1254	100	1,000		< 77	77	< 77	77	< 82	82	< 82	82	< 80	80	< 78	78	< 77	77	< 82	82	< 79	79	< 76	76
	PCB-1260	100	1,000		< 77	77	< 77	77	< 82	82	< 82	82	< 80	80	< 78	78	< 77	77	< 82	82	< 79	79	< 76	76
	PCB-1262	101			< 77	77	< 77	77	< 82	82	< 82	82	< 80	80	< 78	78	< 77	77	< 82	82	< 79	79	< 76	76
	PCB-1268	102			< 77	77	< 77	77	< 82	82	< 82	82	< 80	80	< 78	78	< 77	77	< 82	82	< 79	79	< 76	76

Notes:

* - 6 NYCRR Part 375-6 Remedial Program Soil Cleanup Objectives

RL - Reporting Limit

Bold/highlighted- Indicated exceedance of the NYSDEC UUSCO Guidance Value

Bold/highlighted- Indicated exceedance of the NYSDEC RRSCO Guidance Value

Bold/highlighted- Indicated exceedance of the NYSDEC RCSCO Guidance Value

Table 23
Former Pfizer Site A - C224284
243-271 Wallabout Street,
Brooklyn, New York
Track 1 Area - Endpoint Soil Analytical Results
Pesticides PCBs

	COMPOUND	NYSDEC Part 375.6 Unrestricted Use Soil Cleanup Objectives*	NYDEC Part 375.6 Restricted Residential Soil Cleanup Objectives*	NYDEC Part 375.6 Restricted Commercial Soil Cleanup Objectives*	Endpoint Samples																			
					EP72		EP73		EP74		EP75		EP76		EP77		EP78		EP79		EP Duplicate 1		Soil Duplicate	
					16'		16'		16'		16'		16'		16'		16'		16'		EP2		EP52	
					8/10/2020		8/10/2020		8/5/2020		8/5/2020		8/5/2020		8/10/2020		10/15/2020		11/232020		7/9/2020		8/5/2020	
					µg/Kg		µg/Kg		µg/Kg		µg/Kg		µg/Kg		µg/Kg		µg/Kg		µg/Kg		µg/Kg		µg/Kg	
					Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL
Pesticides	4,4' -DDD	3.3	13,000	92,000	< 2.4	2.4	< 2.4	2.4	< 2.7	2.7	< 2.5	2.5	< 2.5	2.5	< 2.4	2.4	< 2.5	2.5	< 2.4	2.4	< 2.4	2.4	< 2.2	2.2
	4,4' -DDE	3.3	8,900	62,000	< 2.4	2.4	< 2.4	2.4	< 2.7	2.7	< 2.5	2.5	< 2.5	2.5	< 2.4	2.4	< 2.5	2.5	< 2.4	2.4	< 2.4	2.4	< 2.2	2.2
	4,4' -DDT	3.3	7,900	47,000	< 2.4	2.4	< 2.4	2.4	< 2.7	2.7	< 2.5	2.5	< 2.5	2.5	< 2.4	2.4	< 2.5	2.5	< 2.4	2.4	< 2.4	2.4	< 2.2	2.2
	a-BHC	20	480	3,400	< 7.9	7.9	< 7.9	7.9	< 9.0	9.0	< 8.4	8.4	< 8.2	8.2	< 8.1	8.1	< 8.2	8.2	< 8.0	8.0	< 7.9	7.9	< 7.3	7.3
	a-Chlordane	94	4,200	24,000	< 4.0	4.0	< 3.9	3.9	< 4.5	4.5	< 4.2	4.2	< 4.1	4.1	< 4.0	4.0	< 4.1	4.1	< 4.0	4.0	< 4.0	4.0	< 3.6	3.6
	Aldrin	5	97	680	< 4.0	4.0	< 3.9	3.9	< 4.5	4.5	< 4.2	4.2	< 4.1	4.1	< 4.0	4.0	< 4.1	4.1	< 4.0	4.0	< 4.0	4.0	< 3.6	3.6
	b-BHC	36	360	3,000	< 7.9	7.9	< 7.9	7.9	< 9.0	9.0	< 8.4	8.4	< 8.2	8.2	< 8.1	8.1	< 8.2	8.2	< 8.0	8.0	< 7.9	7.9	< 7.3	7.3
	Chlordane				< 40	40	< 39	39	< 45	45	< 42	42	< 41	41	< 40	40	< 41	41	< 40	40	< 40	40	< 36	36
	d-BHC	40	100,000	500,000	< 7.9	7.9	< 7.9	7.9	< 9.0	9.0	< 8.4	8.4	< 8.2	8.2	< 8.1	8.1	< 8.2	8.2	< 8.0	8.0	< 7.9	7.9	< 7.3	7.3
	Dieldrin	5	200	1,400	< 4.0	4.0	< 3.9	3.9	< 4.5	4.5	< 4.2	4.2	< 4.1	4.1	< 4.0	4.0	< 4.1	4.1	< 4.0	4.0	< 4.0	4.0	< 3.6	3.6
	Endosulfan I	2,400	24,000	200,000	< 7.9	7.9	< 7.9	7.9	< 9.0	9.0	< 8.4	8.4	< 8.2	8.2	< 8.1	8.1	< 8.2	8.2	< 8.0	8.0	< 7.9	7.9	< 7.3	7.3
	Endosulfan II	2,400	24,000	200,000	< 7.9	7.9	< 7.9	7.9	< 9.0	9.0	< 8.4	8.4	< 8.2	8.2	< 8.1	8.1	< 8.2	8.2	< 8.0	8.0	< 7.9	7.9	< 7.3	7.3
	Endosulfan sulfate	2,400	24,000	200,000	< 7.9	7.9	< 7.9	7.9	< 9.0	9.0	< 8.4	8.4	< 8.2	8.2	< 8.1	8.1	< 8.2	8.2	< 8.0	8.0	< 7.9	7.9	< 7.3	7.3
	Endrin	14	11,000	89,000	< 7.9	7.9	< 7.9	7.9	< 9.0	9.0	< 8.4	8.4	< 8.2	8.2	< 8.1	8.1	< 8.2	8.2	< 8.0	8.0	< 7.9	7.9	< 7.3	7.3
	Endrin aldehyde				< 7.9	7.9	< 7.9	7.9	< 9.0	9.0	< 8.4	8.4	< 8.2	8.2	< 8.1	8.1	< 8.2	8.2	< 8.0	8.0	< 7.9	7.9	< 7.3	7.3
	Endrin ketone				< 7.9	7.9	< 7.9	7.9	< 9.0	9.0	< 8.4	8.4	< 8.2	8.2	< 8.1	8.1	< 8.2	8.2	< 8.0	8.0	< 7.9	7.9	< 7.3	7.3
	g-BHC				< 1.6	1.6	< 1.6	1.6	< 1.8	1.8	< 1.7	1.7	< 1.6	1.6	< 1.6	1.6	< 1.6	1.6	< 1.6	1.6	< 1.6	1.6	< 1.5	1.5
	g-Chlordane				< 4.0	4.0	< 3.9	3.9	< 4.5	4.5	< 4.2	4.2	< 4.1	4.1	< 4.0	4.0	< 4.1	4.1	< 4.0	4.0	< 4.0	4.0	< 3.6	3.6
	Heptachlor	42	2,100	15,000	< 7.9	7.9	< 7.9	7.9	< 9.0	9.0	< 8.4	8.4	< 8.2	8.2	< 8.1	8.1	< 8.2	8.2	< 8.0	8.0	< 7.9	7.9	< 7.3	7.3
	Heptachlor epoxide				< 7.9	7.9	< 7.9	7.9	< 9.0	9.0	< 8.4	8.4	< 8.2	8.2	< 8.1	8.1	< 8.2	8.2	< 8.0	8.0	< 7.9	7.9	< 7.3	7.3
	Methoxychlor				< 40	40	< 39	39	< 45	45	< 42	42	< 41	41	< 40	40	< 41	41	< 40	40	< 40	40	< 36	36
	Toxaphene				< 160	160	< 160	160	< 180	180	< 170	170	< 160	160	< 160	160	< 160	160	< 160	160	< 160	160	< 150	150
PCBs	PCB-1016	100	1,000		< 79	79	< 79	79	< 90	90	< 84	84	< 82	82	< 81	81	< 82	82	< 80	80	< 79	79	< 73	73
	PCB-1221	100	1,000		< 79	79	< 79	79	< 90	90	< 84	84	< 82	82	< 81	81	< 82	82	< 80	80	< 79	79	< 73	73
	PCB-1232	100	1,000		< 79	79	< 79	79	< 90	90	< 84	84	< 82	82	< 81	81	< 82	82	< 80	80	< 79	79	< 73	73
	PCB-1242	100	1,000		< 79	79	< 79	79	< 90	90	< 84	84	< 82	82	< 81	81	< 82	82	< 80	80	< 79	79	< 73	73
	PCB-1248	100	1,000		< 79	79	< 79	79	< 90	90	< 84	84	< 82	82	< 81	81	< 82	82	< 80	80	< 79	79	< 73	73
	PCB-1254	100	1,000		< 79	79	< 79	79	< 90	90	< 84	84	< 82	82	< 81	81	< 82	82	< 80	80	< 79	79	< 73	73
	PCB-1260	100	1,000		< 79	79	< 79	79	< 90	90	< 84	84	< 82	82	< 81	81	< 82	82	< 80	80	< 79	79	< 73	73
	PCB-1262	101			< 79	79	< 79	79	< 90	90	< 84	84	< 82	82	< 81	81	< 82	82	< 80	80	< 79	79	< 73	73
	PCB-1268	102			< 79	79	< 79	79	< 90	90	< 84	84	< 82	82	< 81	81	< 82	82	< 80	80	< 79	79	< 73	73

Notes:

* - 6 NYCRR Part 375-6 Remedial Program Soil Cleanup Objectives

RL - Reporting Limit

Bold/highlighted- Indicated exceedance of the NYSDEC UUSCO Guidance Value

Bold/highlighted- Indicated exceedance of the NYSDEC RRSCO Guidance Value

Bold/highlighted- Indicated exceedance of the NYSDEC RCSCO Guidance Value

Table 23
Former Pfizer Site A - C224284
243-271 Wallabout Street,
Brooklyn, New York
Track 1 Area - Endpoint Soil Analytical Results
Pesticides PCBs

	COMPOUND	NYSDEC Part 375.6 Unrestricted Use Soil Cleanup Objectives*	NYDEC Part 375.6 Restricted Residential Soil Cleanup Objectives*	NYDEC Part 375.6 Restricted Commercial Soil Cleanup Objectives*	Endpoint Samples									
					Soil Duplicate 3		Soil Duplicate		Soil Duplicate		Soil Duplicate		Soil Duplicate	
					EP49		EP7							
					8/10/2020		10/15/2020		11/20/2020		11/23/2020		12/4/2020	
					µg/Kg		µg/Kg		µg/Kg		µg/Kg		µg/Kg	
					Result	RL	Result	RL	Result	RL	Result	RL	Result	RL
Pesticides	4,4' -DDD	3.3	13,000	92,000	< 2.3	2.3	< 2.5	2.5	< 2.4	2.4	< 2.3	2.3	< 2.4	2.4
	4,4' -DDE	3.3	8,900	62,000	< 2.3	2.3	< 2.5	2.5	< 2.4	2.4	< 2.3	2.3	< 2.4	2.4
	4,4' -DDT	3.3	7,900	47,000	< 2.3	2.3	< 2.5	2.5	< 2.4	2.4	< 2.3	2.3	< 2.4	2.4
	a-BHC	20	480	3,400	< 7.7	7.7	< 8.3	8.3	< 7.9	7.9	< 7.8	7.8	< 8.0	8.0
	a-Chlordane	94	4,200	24,000	< 3.8	3.8	< 4.2	4.2	< 3.9	3.9	< 3.9	3.9	< 4.0	4.0
	Aldrin	5	97	680	< 3.8	3.8	< 4.2	4.2	< 3.9	3.9	< 3.9	3.9	< 4.0	4.0
	b-BHC	36	360	3,000	< 7.7	7.7	< 8.3	8.3	< 7.9	7.9	< 7.8	7.8	< 8.0	8.0
	Chlordane				< 38	38	< 42	42	< 39	39	< 39	39	< 40	40
	d-BHC	40	100,000	500,000	< 7.7	7.7	< 8.3	8.3	< 7.9	7.9	< 7.8	7.8	< 8.0	8.0
	Dieldrin	5	200	1,400	< 3.8	3.8	< 4.2	4.2	< 3.9	3.9	< 3.9	3.9	< 4.0	4.0
	Endosulfan I	2,400	24,000	200,000	< 7.7	7.7	< 8.3	8.3	< 7.9	7.9	< 7.8	7.8	< 8.0	8.0
	Endosulfan II	2,400	24,000	200,000	< 7.7	7.7	< 8.3	8.3	< 7.9	7.9	< 7.8	7.8	< 8.0	8.0
	Endosulfan sulfate	2,400	24,000	200,000	< 7.7	7.7	< 8.3	8.3	< 7.9	7.9	< 7.8	7.8	< 8.0	8.0
	Endrin	14	11,000	89,000	< 7.7	7.7	< 8.3	8.3	< 7.9	7.9	< 7.8	7.8	< 8.0	8.0
	Endrin aldehyde				< 7.7	7.7	< 8.3	8.3	< 7.9	7.9	< 7.8	7.8	< 8.0	8.0
	Endrin ketone				< 7.7	7.7	< 8.3	8.3	< 7.9	7.9	< 7.8	7.8	< 8.0	8.0
	g-BHC				< 1.5	1.5	< 1.7	1.7	< 1.6	1.6	< 1.6	1.6	< 1.6	1.6
	g-Chlordane				< 3.8	3.8	< 4.2	4.2	< 3.9	3.9	< 3.9	3.9	< 4.0	4.0
	Heptachlor	42	2,100	15,000	< 7.7	7.7	< 8.3	8.3	< 7.9	7.9	< 7.8	7.8	< 8.0	8.0
	Heptachlor epoxide				< 7.7	7.7	< 8.3	8.3	< 7.9	7.9	< 7.8	7.8	< 8.0	8.0
	Methoxychlor				< 38	38	< 42	42	< 39	39	< 39	39	< 40	40
	Toxaphene				< 150	150	< 170	170	< 160	160	< 160	160	< 160	160
PCBs	PCB-1016	100	1,000		< 77	77	< 83	83	< 79	79	< 78	78	< 80	80
	PCB-1221	100	1,000		< 77	77	< 83	83	< 79	79	< 78	78	< 80	80
	PCB-1232	100	1,000		< 77	77	< 83	83	< 79	79	< 78	78	< 80	80
	PCB-1242	100	1,000		< 77	77	< 83	83	< 79	79	< 78	78	< 80	80
	PCB-1248	100	1,000		< 77	77	< 83	83	< 79	79	< 78	78	< 80	80
	PCB-1254	100	1,000		< 77	77	< 83	83	< 79	79	< 78	78	< 80	80
	PCB-1260	100	1,000		< 77	77	< 83	83	< 79	79	< 78	78	< 80	80
	PCB-1262	101			< 77	77	< 83	83	< 79	79	< 78	78	< 80	80
	PCB-1268	102			< 77	77	< 83	83	< 79	79	< 78	78	< 80	80

Notes:

* - 6 NYCRR Part 375-6 Remedial Program Soil Cleanup Objectives

RL - Reporting Limit

Bold/highlighted- Indicated exceedance of the NYSDEC UUSCO Guidance Value

Bold/highlighted- Indicated exceedance of the NYSDEC RRSCO Guidance Value

Bold/highlighted- Indicated exceedance of the NYSDEC RCSCO Guidance Value

Table 24
Former Pfizer Site A - C224284
243-271 Wallabout Street,
Brooklyn, New York
Track 1 Area - Endpoint Soil Analytical Results
Metals

COMPOUND	NYSDEC Part 375.6 Unrestricted Use Soil Cleanup Objectives*	NYDEC Part 375.6 Restricted Residential Soil Cleanup Objectives*	NYDEC Part 375.6 Restricted Commercial Soil Cleanup Objectives*	Endpoint Samples																			
				EP1		EP2		EP3		EP4		EP5		EP6				EP7		EP8		EP9	
				16'		16'		16'		16'		16'		16'		17'		16'		16'		16'	
				7/9/2020		7/9/2020		7/9/2020		7/9/2020		7/9/2020		7/9/2020		8/10/2020		10/15/2020		12/4/2020		12/4/2020	
				mg/Kg		mg/Kg		mg/Kg		mg/Kg		mg/Kg		mg/Kg		mg/Kg		mg/Kg		mg/Kg		mg/Kg	
				Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL
Aluminum				**4,040**	38	**3,070**	38	**2,720**	42	**2,520**	37	**3,100**	39	**5,490**	38	-	-	**2,740**	39	**6,040**	40	**2,320**	41
Antimony				< 3.8	3.8	< 3.8	3.8	< 4.2	4.2	< 3.7	3.7	< 3.9	3.9	< 3.8	3.8	-	-	< 3.9	3.9	< 4.0	4.0	< 4.1	4.1
Arsenic	13	16	16	**1.37**	0.75	**1.5**	0.76	< 0.85	0.85	**0.81**	0.74	**2.59**	0.77	**1.46**	0.75	-	-	< 0.78	0.78	**2.88**	0.80	**0.87**	0.81
Barium	350	400	400	**32.7**	0.8	**27**	0.8	**18.3**	0.8	**18.3**	0.7	**21.9**	0.8	**37**	0.8	-	-	**10.3**	0.8	**32.4**	0.8	**6**	0.8
Beryllium	7.2	72	590	**0.2**	0.30	**0.18**	0.31	< 0.34	0.34	< 0.29	0.29	**0.16**	0.31	**0.24**	0.30	-	-	**0.17**	0.31	**0.35**	0.32	< 0.32	0.32
Cadmium	2.5	4.3	9.3	**0.49**	0.38	**0.41**	0.38	< 0.42	0.42	< 0.37	0.37	**0.45**	0.39	**0.51**	0.38	-	-	< 0.39	0.39	**0.51**	0.40	< 0.41	0.41
Calcium				**2,520**	3.8	**1,070**	3.8	**1,070**	4.2	**965**	3.7	**1,440**	3.9	**1,480**	3.8	-	-	**1,150**	3.9	**1,410**	4.0	**564**	4.1
Chromium	30	180	1,500	**10.5**	0.38	**8.59**	0.38	**8.73**	0.42	**7.73**	0.37	**9.53**	0.39	**15.1**	0.38	-	-	**8.35**	0.39	**16.8**	0.40	**5.41**	0.41
Chromium, Hex.	1	110	400	-	-	-	-	-	-	-	-	-	-	-	-	-	-	< 0.60	0.60	< 0.47	0.47	< 0.47	0.47
Cobalt				**6.15**	0.38	**3.25**	0.38	**3.11**	0.42	**2.67**	0.37	**5.17**	0.39	**5.64**	0.38	-	-	**2.94**	0.39	**9.09**	0.40	**2.14**	0.41
Copper	50	270	270	**10.5**	0.8	**6.9**	0.8	**6.4**	0.8	**4.7**	0.7	**7.7**	0.8	**9.9**	0.8	-	-	**5.6**	0.8	**11.7**	0.8	**4.5**	0.8
Iron				**9,070**	3.8	**7,690**	3.8	**5,130**	4.2	**5,370**	3.7	**9,360**	3.9	**9,610**	38	-	-	**5,290**	3.9	**11,200**	40	**5,130**	4.1
Lead	63	400	1,000	**13.5**	0.8	**3.4**	0.8	**4**	0.8	**3.2**	0.7	**6.2**	0.8	**8.4**	0.8	-	-	**2.5**	0.8	**4.9**	0.8	**2.1**	0.8
Magnesium				**1,660**	3.8	**1,380**	3.8	**957**	4.2	**1,060**	3.7	**1,470**	3.9	**1,750**	3.8	-	-	**1,160**	3.9	**3,040**	4.0	**1,070**	4.1
Manganese	1,600	2,000	10,000	**87**	0.38	**55**	0.38	**39.4**	0.42	**46.3**	0.37	**92**	0.39	**78.8**	0.38	-	-	**37.9**	0.39	**101**	0.40	**50.3**	0.41
Mercury	0.18	0.81	2.8	< 0.03	0.03	< 0.03	0.03	**0.04**	0.03	< 0.03	0.03	**0.15**	0.03	**0.58**	0.03	**0.16**	0.03	< 0.03	0.03	< 0.03	0.03	< 0.03	0.03
Nickel	30	310	310	**15.5**	0.38	**7.67**	0.38	**9.76**	0.42	**6.67**	0.37	**11.3**	0.39	**11.7**	0.38	-	-	**8.51**	0.39	**15.2**	0.40	**5.32**	0.41
Potassium				**746**	8	**625**	8	**510**	8	**455**	7	**610**	8	**728**	8	-	-	**654**	8	**1,510**	8	**512**	8
Selenium	3.9	180	1,500	< 1.5	1.5	< 1.5	1.5	< 1.7	1.7	< 1.5	1.5	< 1.5	1.5	< 1.5	1.5	-	-	< 1.6	1.6	< 1.6	1.6	< 1.6	1.6
Silver	2	180	1,500	< 0.38	0.38	< 0.38	0.38	< 0.42	0.42	< 0.37	0.37	< 0.39	0.39	< 0.38	0.38	-	-	< 0.39	0.39	< 0.40	0.40	< 0.41	0.41
Sodium				**270**	8	**162**	8	**107**	8	**109**	7	**183**	8	**153**	8	-	-	**122**	8	**142**	8	**69**	8
Thallium				< 1.5	1.5	< 1.5	1.5	< 1.7	1.7	< 1.5	1.5	< 1.5	1.5	< 1.5	1.5	-	-	< 1.6	1.6	< 1.6	1.6	< 1.6	1.6
Vanadium				**17.1**	0.38	**15.7**	0.38	**10.9**	0.42	**10**	0.37	**14.6**	0.39	**18**	0.38	-	-	**10.9**	0.39	**24.2**	0.40	**7.01**	0.41
Zinc	109	10,000	10,000	**27.4**	0.8	**16.6**	0.8	**15.6**	0.8	**12.8**	0.7	**20.5**	0.8	**29**	0.8	-	-	**15.1**	0.8	**34.9**	0.8	**10.5**	0.8

Notes:

* - 6 NYCRR Part 375-6 Remedial Program Soil Cleanup Objectives

RL - Reporting Limit

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Bold/highlighted- Indicated exceedance of the NYSDEC RRSCO Guidance Value

Bold/highlighted- Indicated exceedance of the NYSDEC RCSCO Guidance Value

Table 24
Former Pfizer Site A - C224284
243-271 Wallabout Street,
Brooklyn, New York
Track 1 Area - Endpoint Soil Analytical Results
Metals

COMPOUND	NYSDEC Part 375.6 Unrestricted Use Soil Cleanup Objectives*	NYDEC Part 375.6 Restricted Residential Soil Cleanup Objectives*	NYDEC Part 375.6 Restricted Commercial Soil Cleanup Objectives*	Endpoint Samples																			
				EP21		EP22		EP23		EP24		EP25		EP26		EP27				EP28		EP29	
				16'		16'		16'		16'		16'		16'		16'		17'		16'		16'	
				12/4/2020		12/4/2020		10/15/2020		8/5/2020		8/5/2020		8/5/2020		7/9/2020		8/10/2020		7/9/2020		7/9/2020	
				mg/Kg		mg/Kg		mg/Kg		mg/Kg		mg/Kg		mg/Kg		mg/Kg		mg/Kg		mg/Kg		mg/Kg	
				Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL
Aluminum				7,260	47	3,030	45	4,780	37	4,500	36	2,780	40	2,830	38	3,610	37	-	-	2,700	39	2,330	4.3
Antimony				< 4.7	4.7	< 4.5	4.5	< 3.7	3.7	< 3.6	3.6	< 4.0	4.0	< 3.8	3.8	< 3.7	3.7	-	-	< 3.9	3.9	< 4.3	4.3
Arsenic	13	16	16	3.91	0.94	0.93	0.89	1.56	0.74	1.84	0.72	< 0.79	0.79	2.07	0.76	5.36	0.73	-	-	< 0.78	0.78	< 0.87	0.87
Barium	350	400	400	53.8	0.9	12.7	0.9	33.7	0.7	26.1	0.7	27.4	0.8	11.7	0.8	14.9	0.7	-	-	12.9	0.8	9.2	0.9
Beryllium	7.2	72	590	0.36	0.38	< 0.36	0.36	0.26	0.30	0.22	0.29	0.17	0.32	< 0.30	0.30	0.18	0.29	-	-	< 0.31	0.31	< 0.35	0.35
Cadmium	2.5	4.3	9.3	0.66	0.47	< 0.45	0.45	0.5	0.37	0.41	0.36	< 0.40	0.40	< 0.38	0.38	0.4	0.37	-	-	< 0.39	0.39	< 0.43	0.43
Calcium				1,880	4.7	756	4.5	1,950	3.7	1,100	3.6	613	4.0	712	3.8	955	3.7	-	-	574	3.9	531	4.3
Chromium	30	180	1,500	15	0.47	7.57	0.45	14.4	0.37	10.5	0.36	8.15	0.40	7.69	0.38	11.8	0.37	-	-	7.43	0.39	7.21	0.43
Chromium, Hex.	1	110	400	< 0.52	0.52	< 0.50	0.50	< 0.47	0.47	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Cobalt				6.22	0.47	5.83	0.45	6.03	0.37	3.76	0.36	2.41	0.40	2.99	0.38	9.94	0.37	-	-	2.78	0.39	2.1	0.43
Copper	50	270	270	14.5	0.9	4.4	0.9	10	0.7	7.7	0.7	5.1	0.8	6.5	0.8	8.2	0.7	-	-	5.8	0.8	4.2	0.9
Iron				12,500	4.7	5,570	4.5	11,100	37	10,600	36	5,350	4.0	5,470	3.8	6,360	3.7	-	-	4,360	3.9	4,300	4.3
Lead	63	400	1,000	5.8	0.9	2.8	0.9	6	0.7	13.8	0.7	2.3	0.8	3.1	0.8	4.5	0.7	-	-	2.7	0.8	2.5	0.9
Magnesium				3,350	4.7	1,280	4.5	2,440	3.7	1,290	3.6	1,070	4.0	1,180	3.8	1,240	3.7	-	-	986	3.9	843	4.3
Manganese	1,600	2,000	10,000	113	0.47	36.4	0.45	108	0.37	68.1	0.36	33.6	0.40	38.1	0.38	48.1	0.37	-	-	33.1	0.39	28	0.43
Mercury	0.18	0.81	2.8	< 0.03	0.03	< 0.03	0.03	< 0.03	0.03	0.1	0.03	< 0.03	0.03	< 0.03	0.03	< 0.03	0.03	-	-	< 0.03	0.03	< 0.03	0.03
Nickel	30	310	310	16.3	0.47	12.2	0.45	13	0.37	8.23	0.36	6.7	0.40	6.58	0.38	30.7	0.37	8.15	0.39	9.55	0.39	6.23	0.43
Potassium				1,040	9	681	9	1,230	7	695	7	671	8	628	8	669	7	-	-	486	8	492	9
Selenium	3.9	180	1,500	< 1.9	1.9	< 1.8	1.8	< 1.5	1.5	< 1.4	1.4	< 1.6	1.6	< 1.5	1.5	< 1.5	1.5	-	-	< 1.6	1.6	< 1.7	1.7
Silver	2	180	1,500	< 0.47	0.47	< 0.45	0.45	< 0.37	0.37	< 0.36	0.36	< 0.40	0.40	< 0.38	0.38	< 0.37	0.37	-	-	< 0.39	0.39	< 0.43	0.43
Sodium				134	9	101	9	170	7	81	7	72	8	60	8	83	7	-	-	86	8	84	9
Thallium				< 1.9	1.9	< 1.8	1.8	< 1.5	1.5	< 1.4	1.4	< 1.6	1.6	< 1.5	1.5	< 1.5	1.5	-	-	< 1.6	1.6	< 1.7	1.7
Vanadium				20.5	0.47	9.62	0.45	19.2	0.37	15.5	0.36	9.84	0.40	10.5	0.38	17.8	0.37	-	-	10.3	0.39	8.58	0.43
Zinc	109	10,000	10,000	46.6	0.9	17.8	0.9	29.2	0.7	21.8	0.7	13.8	0.8	14.3	0.8	37.6	0.7	-	-	14.8	0.8	13.8	0.9

Notes:

* - 6 NYCRR Part 375-6 Remedial Program Soil Cleanup Objectives

RL - Reporting Limit

Bold/highlighted- Indicated exceedance of the NYSDEC UUSCO Guidance Value

Bold/highlighted- Indicated exceedance of the NYSDEC RRSCO Guidance Value

Bold/highlighted- Indicated exceedance of the NYSDEC RCSCO Guidance Value

Table 24
Former Pfizer Site A - C224284
243-271 Wallabout Street,
Brooklyn, New York
Track 1 Area - Endpoint Soil Analytical Results
Metals

COMPOUND	NYSDEC Part 375.6 Unrestricted Use Soil Cleanup Objectives*	NYDEC Part 375.6 Restricted Residential Soil Cleanup Objectives*	NYDEC Part 375.6 Restricted Commercial Soil Cleanup Objectives*	Endpoint Samples																			
				EP30		EP31		EP32		EP33		EP34		EP35		EP36		EP37		EP38		EP46	
				16'		16'		16'		16'		16'		16'		16'		16'		16'		16'	
				7/9/2020		7/9/2020		7/9/2020		8/5/2020		8/5/2020		8/5/2020		10/15/2020		12/4/2020		12/4/2020		11/20/2020	
				mg/Kg		mg/Kg		mg/Kg		mg/Kg		mg/Kg		mg/Kg		mg/Kg		mg/Kg		mg/Kg		mg/Kg	
				Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL
Aluminum				**3,120**	44	**4,810**	37	**2,780**	46	**4,290**	37	**4,610**	38	**10,900**	39	**4,310**	39	**3,790**	38	**2,650**	42	**2,690**	62
Antimony				< 4.4	4.4	< 3.7	3.7	< 4.6	4.6	< 3.7	3.7	< 3.8	3.8	< 3.9	3.9	< 3.9	3.9	< 3.8	3.8	< 4.2	4.2	< 4.1	4.1
Arsenic	13	16	16	**2.04**	0.88	**1.59**	0.75	**7.87**	0.93	< 0.74	0.74	**0.81**	0.75	**1.69**	0.77	**3.31**	0.77	< 0.76	0.76	**3.96**	0.83	< 0.82	0.82
Barium	350	400	400	**16.1**	0.9	**40.4**	0.7	**15.5**	0.9	**32.1**	0.7	**23.9**	0.8	**81.4**	0.8	**35.3**	0.8	**32.8**	0.8	**13.6**	0.8	**12.2**	0.41
Beryllium	7.2	72	590	< 0.35	0.35	< 0.30	0.30	< 0.37	0.37	**0.22**	0.29	**0.18**	0.30	**0.47**	0.31	**0.26**	0.31	< 0.30	0.30	< 0.33	0.33	< 0.33	0.33
Cadmium	2.5	4.3	9.3	< 0.44	0.44	**0.37**	0.37	< 0.46	0.46	**0.38**	0.37	**0.4**	0.38	**0.95**	0.39	**0.51**	0.39	< 0.38	0.38	< 0.42	0.42	< 0.41	0.41
Calcium				**964**	4.4	**1,410**	3.7	**845**	4.6	**1,180**	3.7	**1,030**	3.8	**7,320**	3.9	**1,480**	3.9	**940**	3.8	**1,200**	4.2	**918**	6.2
Chromium	30	180	1,500	**8.72**	0.44	**12**	0.37	**6.42**	0.46	**12.7**	0.37	**10.9**	0.38	**27**	0.39	**12.8**	0.39	**10.9**	0.38	**8.51**	0.42	**9.55**	0.41
Chromium, Hex.	1	110	400	-	-	-	-	-	-	-	-	-	-	-	-	< 0.42	0.42	< 0.44	0.44	< 0.47	0.47	< 0.44	0.44
Cobalt				**4.24**	0.44	**4.98**	0.37	**3.42**	0.46	**5.61**	0.37	**5.28**	0.38	**9.96**	0.39	**4.98**	0.39	**2.94**	0.38	**7.25**	0.42	**2.58**	0.41
Copper	50	270	270	**6.2**	0.9	**15.6**	0.7	**6.1**	0.9	**8.6**	0.7	**7.5**	0.8	**21.9**	0.8	**10.5**	0.8	**8.3**	0.8	**5**	0.8	**5.1**	0.8
Iron				**6,640**	4.4	**5,650**	3.7	**7,250**	4.6	**8,260**	3.7	**8,980**	3.8	**22,800**	39	**11,500**	39	**5,210**	3.8	**3,850**	4.2	**4,460**	6.2
Lead	63	400	1,000	**5.4**	0.9	**7.3**	0.7	**2.6**	0.9	**5.2**	0.7	**5**	0.8	**7.7**	0.8	**19.7**	0.8	**2.5**	0.8	**1.6**	0.8	**1.9**	0.41
Magnesium				**1,320**	4.4	**1,220**	3.7	**1,140**	4.6	**1,620**	3.7	**1,830**	3.8	**7,510**	39	**1,370**	3.9	**985**	3.8	**1,290**	4.2	**849**	6.2
Manganese	1,600	2,000	10,000	**56.7**	0.44	**42.8**	0.37	**43.6**	0.46	**60.7**	0.37	**62.5**	0.38	**574**	3.9	**81.7**	0.39	**34**	0.38	**44.2**	0.42	**35.6**	0.41
Mercury	0.18	0.81	2.8	< 0.03	0.03	< 0.03	0.03	< 0.04	0.04	< 0.03	0.03	< 0.03	0.03	< 0.03	0.03	**0.18**	0.03	< 0.03	0.03	< 0.03	0.03	< 0.03	0.03
Nickel	30	310	310	**10.4**	0.44	**7.66**	0.37	**8.4**	0.46	**12.6**	0.37	**12**	0.38	**20.5**	0.39	**9.95**	0.39	**8.05**	0.38	**17.9**	0.42	**5.21**	0.41
Potassium				**582**	9	**514**	7	**587**	9	**876**	7	**865**	8	**2,800**	8	**666**	8	**433**	8	**601**	8	**405**	6.2
Selenium	3.9	180	1,500	< 1.8	1.8	< 1.5	1.5	< 1.9	1.9	< 1.5	1.5	< 1.5	1.5	< 1.5	1.5	< 1.5	1.5	< 1.5	1.5	< 1.7	1.7	< 1.6	1.6
Silver	2	180	1,500	< 0.44	0.44	< 0.37	0.37	< 0.46	0.46	< 0.37	0.37	< 0.38	0.38	< 0.39	0.39	< 0.39	0.39	< 0.38	0.38	< 0.42	0.42	< 0.41	0.41
Sodium				**136**	9	**303**	7	**92**	9	**87**	7	**114**	8	**298**	8	**90**	8	**112**	8	**108**	8	**74.6**	6.2
Thallium				< 1.8	1.8	< 1.5	1.5	< 1.9	1.9	< 1.5	1.5	< 1.5	1.5	< 1.5	1.5	< 1.5	1.5	< 1.5	1.5	< 1.7	1.7	< 3.7	3.7
Vanadium				**12.1**	0.44	**26.6**	0.37	**8.12**	0.46	**20**	0.37	**14.6**	0.38	**36**	0.39	**17.8**	0.39	**13.4**	0.38	**10.3**	0.42	**13.7**	0.41
Zinc	109	10,000	10,000	**20**	0.9	**27**	0.7	**17.2**	0.9	**24.7**	0.7	**25.4**	0.8	**53.8**	0.8	**34.6**	0.8	**37.2**	7.6	**14.9**	0.8	**11.3**	0.8

Notes:

* - 6 NYCRR Part 375-6 Remedial Program Soil Cleanup Objectives

RL - Reporting Limit

Bold/highlighted- Indicated exceedance of the NYSDEC UUSCO Guidance Value

Bold/highlighted- Indicated exceedance of the NYSDEC RRSCO Guidance Value

Bold/highlighted- Indicated exceedance of the NYSDEC RCSCO Guidance Value

Table 24
Former Pfizer Site A - C224284
243-271 Wallabout Street,
Brooklyn, New York
Track 1 Area - Endpoint Soil Analytical Results
Metals

COMPOUND	NYSDEC Part 375.6 Unrestricted Use Soil Cleanup Objectives*	NYDEC Part 375.6 Restricted Residential Soil Cleanup Objectives*	NYDEC Part 375.6 Restricted Commercial Soil Cleanup Objectives*	Endpoint Samples																			
				EP47		EP48		EP49		EP50		EP51		EP52		EP53		EP54		EP55		EP56	
				16'		16'		16'		16'		16'		16'		16'		16'		16'		16'	
				11/20/2020		10/15/2020		8/10/2020		8/10/2020		8/10/2020		8/5/2020		8/5/2020		8/5/2020		8/5/2020		8/5/2020	
				mg/Kg		mg/Kg		mg/Kg		mg/Kg		mg/Kg		mg/Kg		mg/Kg		mg/Kg		mg/Kg		mg/Kg	
				Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL
Aluminum				**3,820**	55	**4,800**	41	**4,640**	37	**4,510**	37	**4,020**	39	**4,320**	34	**4,110**	36	**2,370**	31	**4,110**	40	**4,110**	38
Antimony				< 3.7	3.7	< 4.1	4.1	< 3.7	3.7	< 3.7	3.7	< 3.9	3.9	< 3.4	3.4	< 3.6	3.6	< 3.1	3.1	< 4.0	4.0	< 3.8	3.8
Arsenic	13	16	16	**1.48**	0.73	**2.04**	0.81	**2.13**	0.74	**1.79**	0.74	**1.78**	0.78	**0.79**	0.68	< 0.73	0.73	< 0.63	0.63	**0.86**	0.79	< 0.76	0.76
Barium	350	400	400	**15.7**	0.37	**34.1**	0.8	**32.7**	0.7	**31.7**	0.7	**25.9**	0.8	**23.2**	0.7	**19.4**	0.7	**28.3**	0.6	**25.8**	0.8	**23.4**	0.8
Beryllium	7.2	72	590	< 0.29	0.29	**0.25**	0.33	**0.25**	0.29	**0.25**	0.29	**0.24**	0.31	**0.22**	0.27	**0.16**	0.29	**0.14**	0.25	< 0.32	0.32	**0.19**	0.31
Cadmium	2.5	4.3	9.3	< 0.37	0.37	**0.5**	0.41	**0.51**	0.37	< 0.37	0.37	< 0.39	0.39	**0.44**	0.34	< 0.36	0.36	< 0.31	0.31	< 0.40	0.40	< 0.38	0.38
Calcium				**1,050**	5.5	**1,810**	4.1	**1,460**	3.7	**1,220**	3.7	**1,080**	3.9	**861**	3.4	**686**	3.6	**564**	3.1	**1,080**	4.0	**827**	3.8
Chromium	30	180	1,500	**11.2**	0.37	**14.4**	0.41	**12.1**	0.37	**13.1**	0.37	**10.2**	0.39	**12.4**	0.34	**11.9**	0.36	**7.87**	0.31	**12**	0.40	**10.5**	0.38
Chromium, Hex.	1	110	400	< 0.44	0.44	< 0.46	0.46	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Cobalt				**3.3**	0.37	**5.81**	0.41	**4.33**	0.37	**4.28**	0.37	**3.91**	0.39	**4.07**	0.34	**3.89**	0.36	**2.02**	0.31	**4.08**	0.40	**3.26**	0.38
Copper	50	270	270	**7.4**	0.7	**10.1**	0.8	**8.8**	0.7	**8.2**	0.7	**7.3**	0.8	**8.1**	0.7	**12.3**	0.7	**5.8**	0.6	**6.8**	0.8	**6.3**	0.8
Iron				**4,670**	5.5	**10,100**	4.1	**8,530**	3.7	**7,720**	3.7	**7,470**	3.9	**11,600**	34	**6,040**	3.6	**3,880**	3.1	**7,750**	4.0	**7,450**	3.8
Lead	63	400	1,000	**2.45**	0.37	**5.1**	0.8	**10.1**	0.7	**9.7**	0.7	**6.1**	0.8	**3.6**	0.7	**3.2**	0.7	**2.2**	0.6	**3.9**	0.8	**3.5**	0.8
Magnesium				**937**	5.5	**2,410**	4.1	**1,810**	3.7	**1,640**	3.7	**1,510**	3.9	**1,310**	3.4	**1,390**	3.6	**856**	3.1	**1,500**	4.0	**1,290**	3.8
Manganese	1,600	2,000	10,000	**36**	0.37	**97.3**	0.41	**86.1**	0.37	**68.7**	0.37	**68.6**	0.39	**52.3**	0.34	**45.6**	0.36	**31**	0.31	**68.3**	0.40	**54.5**	0.38
Mercury	0.18	0.81	2.8	< 0.03	0.03	< 0.03	0.03	< 0.03	0.03	< 0.03	0.03	< 0.03	0.03	< 0.03	0.03	< 0.03	0.03	< 0.03	0.03	< 0.03	0.03	< 0.03	0.03
Nickel	30	310	310	**9.1**	0.37	**13.3**	0.41	**10.6**	0.37	**11.1**	0.37	**9.28**	0.39	**12.8**	0.34	**9.08**	0.36	**4.76**	0.31	**10.4**	0.40	**8**	0.38
Potassium				**471**	5.5	**1,130**	8	**746**	7	**747**	7	**679**	8	**696**	7	**747**	7	**578**	6	**773**	8	**709**	8
Selenium	3.9	180	1,500	< 1.5	1.5	< 1.6	1.6	< 1.5	1.5	< 1.5	1.5	< 1.6	1.6	< 1.4	1.4	< 1.5	1.5	< 1.3	1.3	< 1.6	1.6	< 1.5	1.5
Silver	2	180	1,500	< 0.37	0.37	< 0.41	0.41	< 0.37	0.37	< 0.37	0.37	< 0.39	0.39	< 0.34	0.34	< 0.36	0.36	< 0.31	0.31	< 0.40	0.40	< 0.38	0.38
Sodium				**103**	5.5	**131**	8	**114**	7	**109**	7	**81**	8	**67**	7	**56**	7	**68**	6	**92**	8	**64**	8
Thallium				< 3.3	3.3	< 1.6	1.6	< 1.5	1.5	< 1.5	1.5	< 1.6	1.6	< 1.4	1.4	< 1.5	1.5	< 1.3	1.3	< 1.6	1.6	< 1.5	1.5
Vanadium				**12.2**	0.37	**18.7**	0.41	**15.2**	0.37	**14.5**	0.37	**13.2**	0.39	**22.6**	0.34	**13**	0.38	**7.15**	0.31	**14.7**	0.40	**13.7**	0.38
Zinc	109	10,000	10,000	**18.7**	0.7	**28.3**	0.8	**37.2**	0.7	**26.6**	0.7	**21.5**	0.8	**19.6**	0.7	**20.3**	0.7	**11.5**	0.6	**20**	0.8	**18.1**	0.8

Notes:

* - 6 NYCRR Part 375-6 Remedial Program Soil Cleanup Objectives

RL - Reporting Limit

Bold/highlighted- Indicated exceedance of the NYSDEC UUSCO Guidance Value

Bold/highlighted- Indicated exceedance of the NYSDEC RRSCO Guidance Value

Bold/highlighted- Indicated exceedance of the NYSDEC RCSCO Guidance Value

Table 24
Former Pfizer Site A - C224284
243-271 Wallabout Street,
Brooklyn, New York
Track 1 Area - Endpoint Soil Analytical Results
Metals

COMPOUND	NYSDEC Part 375.6 Unrestricted Use Soil Cleanup Objectives*	NYDEC Part 375.6 Restricted Residential Soil Cleanup Objectives*	NYDEC Part 375.6 Restricted Commercial Soil Cleanup Objectives*	Endpoint Samples																			
				EP57		EP58		EP59		EP60		EP61		EP62		EP63		EP67		EP68		EP69	
				16'		16'		16'		16'		16'		16'		16'		16'		16'		16'	
				8/10/2020		8/10/2020		8/10/2020		8/10/2020		10/15/2020		11/20/2020		11/20/2020		8/10/2020		11/20/2020		10/15/2020	
				mg/Kg		mg/Kg		mg/Kg		mg/Kg		mg/Kg		mg/Kg		mg/Kg		mg/Kg		mg/Kg		mg/Kg	
				Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL
Aluminum				**3,740**	40	**6,360**	36	**4,910**	40	**6,240**	35	**4,810**	45	**5,700**	59	**7,060**	58	**6,120**	37	**6,550**	62	**4,490**	38
Antimony				< 4.0	4.0	< 3.6	3.6	< 4.0	4.0	< 3.5	3.5	< 4.5	4.5	< 3.9	3.9	< 3.9	3.9	< 3.7	3.7	< 4.1	4.1	< 3.8	3.8
Arsenic	13	16	16	**1.94**	0.79	**2.51**	0.72	**1.97**	0.81	**2.46**	0.70	**1.61**	0.89	**2.01**	0.78	**2.13**	0.77	**1.33**	0.73	**2.43**	0.83	**1.49**	0.76
Barium	350	400	400	**18.3**	0.8	**31.7**	0.7	**34.9**	0.8	**37.8**	0.7	**34.2**	0.9	**47**	0.39	**46**	0.39	**34.3**	0.7	**34.3**	0.41	**36.6**	0.8
Beryllium	7.2	72	590	**0.18**	0.32	**0.4**	0.29	**0.29**	0.32	**0.34**	0.28	**0.2**	0.36	**0.23**	0.31	**0.36**	0.31	**0.28**	0.29	**0.35**	0.33	**0.2**	0.31
Cadmium	2.5	4.3	9.3	**0.82**	0.40	**0.87**	0.36	**1.01**	0.40	**0.37**	0.35	**0.56**	0.45	**0.56**	0.39	**0.71**	0.39	**0.59**	0.37	**0.62**	0.41	**0.49**	0.38
Calcium				**909**	4.0	**1,690**	3.6	**1,370**	4.0	**1,500**	3.5	**5,140**	4.5	**1,880**	5.9	**2,930**	5.8	**1,320**	3.7	**1,500**	6.2	**3,860**	3.8
Chromium	30	180	1,500	**11.3**	0.40	**16.2**	0.36	**12.3**	0.40	**14.5**	0.35	**12.6**	0.45	**11.8**	0.38	**18.4**	0.39	**14.9**	0.37	**22.2**	0.41	**11.3**	0.38
Chromium, Hex.	1	110	400	-	-	-	-	-	-	-	-	< 0.49	0.49	< 0.46	0.46	< 0.48	0.48	< 0.47	0.47	< 0.45	0.45	< 0.49	0.49
Cobalt				**3.25**	0.40	**6.44**	0.36	**4.56**	0.40	**5.82**	0.35	**5.45**	0.45	**6.06**	0.39	**7.78**	0.39	**5.54**	0.37	**6.99**	0.41	**5.1**	0.38
Copper	50	270	270	**5.5**	0.8	**11.2**	0.7	**9.7**	0.8	**11.3**	0.7	**8.9**	0.9	**37**	0.8	**13.4**	0.8	**10.5**	0.7	**12.7**	0.8	**8.3**	0.8
Iron				**8,600**	4.0	**11,000**	36	**7,960**	4.0	**9,790**	35	**13,300**	45	**11,200**	59	**15,300**	58	**11,800**	37	**10,900**	6.2	**10,700**	38
Lead	63	400	1,000	**2.7**	0.8	**5**	0.7	**10.9**	0.8	**10.1**	0.7	**4.5**	0.9	**33.8**	0.39	**6.54**	0.39	**9.4**	0.7	**5.99**	0.41	**3.8**	0.8
Magnesium				**1,610**	4.0	**3,130**	3.6	**1,650**	4.0	**1,970**	3.5	**3,960**	4.5	**2,440**	5.9	**3,720**	5.8	**1,930**	3.7	**2,310**	6.2	**3,400**	3.8
Manganese	1,600	2,000	10,000	**60**	0.40	**90.7**	0.36	**68.4**	0.40	**83.8**	0.35	**403**	4.5	**124**	0.39	**462**	3.9	**243**	3.7	**83.3**	0.41	**271**	3.8
Mercury	0.18	0.81	2.8	< 0.03	0.03	< 0.03	0.03	< 0.03	0.03	**0.02**	0.03	< 0.03	0.03	< 0.03	0.03	< 0.03	0.03	**0.04**	0.03	< 0.03	0.03	< 0.03	0.03
Nickel	30	310	310	**8.31**	0.40	**14.6**	0.36	**11.2**	0.40	**13**	0.35	**12.7**	0.45	**12.9**	0.39	**16.1**	0.39	**12.1**	0.37	**16.6**	0.41	**11.9**	0.38
Potassium				**820**	8	**1,140**	7	**777**	8	**887**	7	**1,100**	9	**924**	5.9	**1,690**	5.8	**1,130**	7	**1,450**	6.2	**1,020**	8
Selenium	3.9	180	1,500	< 1.6	1.6	< 1.4	1.4	< 1.6	1.6	< 1.4	1.4	< 1.8	1.8	< 1.6	1.6	< 1.5	1.5	< 1.5	1.5	< 1.7	1.7	< 1.5	1.5
Silver	2	180	1,500	< 0.40	0.40	< 0.36	0.36	< 0.40	0.40	< 0.35	0.35	< 0.45	0.45	< 0.39	0.39	< 0.39	0.39	< 0.37	0.37	< 0.41	0.41	< 0.38	0.38
Sodium				**69**	8	**99**	7	**139**	8	**164**	7	**149**	9	**512**	5.9	**281**	5.8	**274**	7	**598**	6.2	**359**	8
Thallium				< 1.6	1.6	< 1.4	1.4	< 1.6	1.6	< 1.4	1.4	< 1.8	1.8	< 3.5	3.5	< 3.5	3.5	< 1.5	1.5	< 3.7	3.7	< 1.5	1.5
Vanadium				**10.6**	0.40	**21.2**	0.36	**16.3**	0.40	**18.5**	0.35	**17.2**	0.45	**16.3**	0.38	**24.3**	0.38	**20.7**	0.37	**26.6**	0.41	**15.4**	0.38
Zinc	109	10,000	10,000	**47.5**	0.8	**56.6**	0.7	**63.7**	0.8	**32.6**	0.7	**25.2**	0.9	**37.4**	0.8	**37.4**	0.8	**28.8**	0.7	**33**	0.8	**25**	0.8

Notes:

* - 6 NYCRR Part 375-6 Remedial Program Soil Cleanup Objectives

RL - Reporting Limit

Bold/highlighted- Indicated exceedance of the NYSDEC UUSCO Guidance Value

Bold/highlighted- Indicated exceedance of the NYSDEC RRSCO Guidance Value

Bold/highlighted- Indicated exceedance of the NYSDEC RCSCO Guidance Value

Table 24
Former Pfizer Site A - C224284
243-271 Wallabout Street,
Brooklyn, New York
Track 1 Area - Endpoint Soil Analytical Results
Metals

COMPOUND	NYSDEC Part 375.6 Unrestricted Use Soil Cleanup Objectives*	NYDEC Part 375.6 Restricted Residential Soil Cleanup Objectives*	NYDEC Part 375.6 Restricted Commercial Soil Cleanup Objectives*	Endpoint Samples																			
				EP70		EP71		EP72		EP73		EP74				EP75		EP76		EP77		EP78	
				16'		16'		16'		16'		16'		17'		16'		16'		16'		16'	
				8/10/2020		8/10/2020		8/10/2020		8/10/2020		8/5/2020		8/5/2020		8/5/2020		8/5/2020		8/10/2020		10/15/2020	
				mg/Kg		mg/Kg		mg/Kg		mg/Kg		mg/Kg		mg/Kg		mg/Kg		mg/Kg		mg/Kg		mg/Kg	
				Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL
Aluminum				**8,390**	39	**7,100**	37	**10,700**	44	**7,040**	38	**8,370**	48	-	-	**2,960**	42	**7,810**	42	**7,660**	36	**7,590**	40
Antimony				< 3.9	3.9	< 3.7	3.7	< 4.4	4.4	< 3.8	3.8	< 4.8	4.8	-	-	< 4.2	4.2	< 4.2	4.2	< 3.6	3.6	< 4.0	4.0
Arsenic	13	16	16	**2.14**	0.77	**2.62**	0.74	**2.61**	0.87	**2.33**	0.76	**4.16**	0.96	-	-	< 0.83	0.83	**2.52**	0.84	**2.68**	0.73	**3.15**	0.79
Barium	350	400	400	**49.2**	0.8	**63.8**	0.7	**64.8**	0.9	**51.7**	0.8	**43.3**	1.0	-	-	**16.3**	0.8	**48.7**	0.8	**52**	0.7	**44.8**	0.8
Beryllium	7.2	72	590	**0.46**	0.31	**0.38**	0.30	**0.6**	0.35	**0.39**	0.30	**0.5**	0.39	-	-	< 0.33	0.33	**0.39**	0.34	**0.41**	0.29	**0.43**	0.32
Cadmium	2.5	4.3	9.3	**0.47**	0.39	**0.44**	0.37	**0.64**	0.44	**0.45**	0.38	**0.67**	0.48	-	-	< 0.42	0.42	**0.77**	0.42	**0.48**	0.36	**0.76**	0.40
Calcium				**5,540**	3.9	**2,110**	3.7	**2,350**	4.4	**1,770**	3.8	**1,920**	4.8	-	-	**1,020**	4.2	**6,550**	4.2	**2,560**	3.6	**1,920**	4.0
Chromium	30	180	1,500	**19.5**	0.39	**17.9**	0.37	**25.7**	0.44	**20.5**	0.38	**23**	0.48	-	-	**8.8**	0.42	**19**	0.42	**18.7**	0.36	**20**	0.40
Chromium, Hex.	1	110	400	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	< 0.49	0.49
Cobalt				**8.36**	0.39	**6.44**	0.37	**10.7**	0.44	**7.96**	0.38	**12.1**	0.48	-	-	**3.47**	0.42	**8.57**	0.42	**7.93**	0.36	**8.23**	0.40
Copper	50	270	270	**16**	0.8	**13.4**	0.7	**19.8**	0.9	**13.1**	0.8	**16.4**	1.0	-	-	**5.2**	0.8	**14.8**	0.8	**13.4**	0.7	**14.9**	0.8
Iron				**16,800**	39	**13,700**	37	**21,700**	44	**16,200**	38	**13,400**	48	-	-	**5,730**	4.2	**19,800**	42	**15,900**	36	**14,900**	40
Lead	63	400	1,000	**6**	0.8	**31.5**	0.7	**8.3**	0.9	**5.9**	0.8	**8.6**	1.0	-	-	**2.4**	0.8	**5.8**	0.8	**11.4**	0.7	**6.9**	0.8
Magnesium				**5,970**	39	**2,380**	3.7	**4,960**	4.4	**3,200**	3.8	**3,370**	4.8	-	-	**1,300**	4.2	**6,150**	4.2	**3,430**	3.6	**3,520**	4.0
Manganese	1,600	2,000	10,000	**307**	3.9	**131**	0.37	**236**	4.4	**279**	3.8	**123**	0.48	-	-	**64.8**	0.42	**308**	4.2	**274**	3.6	**146**	0.40
Mercury	0.18	0.81	2.8	< 0.03	0.03	< 0.03	0.03	< 0.03	0.03	< 0.03	0.03	< 0.03	0.03	-	-	< 0.03	0.03	< 0.03	0.03	< 0.03	0.03	< 0.03	0.03
Nickel	30	310	310	**18.1**	0.39	**14.1**	0.37	**22.7**	0.44	**18.6**	0.38	**30.2**	0.48	**15.4**	0.36	**8.21**	0.42	**18.1**	0.42	**15.9**	0.36	**16.8**	0.40
Potassium				**1,890**	8	**1,050**	7	**2,000**	9	**1,480**	8	**1,890**	10	-	-	**606**	8	**1,900**	8	**1,360**	7	**1,460**	8
Selenium	3.9	180	1,500	< 1.5	1.5	< 1.5	1.5	< 1.7	1.7	< 1.5	1.5	< 1.9	1.9	-	-	< 1.7	1.7	< 1.7	1.7	< 1.5	1.5	< 1.6	1.6
Silver	2	180	1,500	< 0.39	0.39	< 0.37	0.37	< 0.44	0.44	< 0.38	0.38	< 0.48	0.48	-	-	< 0.42	0.42	< 0.42	0.42	< 0.36	0.36	< 0.40	0.40
Sodium				**226**	8	**262**	7	**155**	9	**122**	8	**141**	10	-	-	**92**	8	**178**	8	**116**	7	**1,950**	8
Thallium				< 1.5	1.5	< 1.5	1.5	< 1.7	1.7	< 1.5	1.5	< 1.9	1.9	-	-	< 1.7	1.7	< 1.7	1.7	< 1.5	1.5	< 1.6	1.6
Vanadium				**25.2**	0.39	**22**	0.37	**33.5**	0.44	**23.4**	0.38	**32.8**	0.48	-	-	**9.58**	0.42	**26.3**	0.42	**23.6**	0.36	**27.2**	0.40
Zinc	109	10,000	10,000	**40.9**	0.8	**43.6**	0.7	**52.4**	0.9	**35**	0.8	**44.2**	1.0	-	-	**15.2**	0.8	**36.9**	0.8	**40.6**	0.7	**43.5**	0.8

Notes:

* - 6 NYCRR Part 375-6 Remedial Program Soil Cleanup Objectives

RL - Reporting Limit

Bold/highlighted- Indicated exceedance of the NYSDEC UUSCO Guidance Value

Bold/highlighted- Indicated exceedance of the NYSDEC RRSCO Guidance Value

Bold/highlighted- Indicated exceedance of the NYSDEC RCSCO Guidance Value

Table 24
Former Pfizer Site A - C224284
243-271 Wallabout Street,
Brooklyn, New York
Track 1 Area - Endpoint Soil Analytical Results
Metals

COMPOUND	NYSDEC Part 375.6 Unrestricted Use Soil Cleanup Objectives*	NYDEC Part 375.6 Restricted Residential Soil Cleanup Objectives*	NYDEC Part 375.6 Restricted Commercial Soil Cleanup Objectives*	Endpoint Samples															
				EP79		EP Duplicate 1		Soil Duplicate		Soil Duplicate 3		Soil Duplicate		Soil Duplicate		Soil Duplicate		Soil Duplicate	
				16'		EP2		EP52		EP49		EP7							
				11/232020		7/9/2020		8/5/2020		8/10/2020		10/15/2020		11/20/2020		11/23/2020		12/4/2020	
				mg/Kg		mg/Kg		mg/Kg		mg/Kg		mg/Kg		mg/Kg		mg/Kg		mg/Kg	
				Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL
Aluminum				**5,660**	38	**3,480**	39	**3,760**	39	**4,440**	35	**2,130**	4.0	**3,840**	62	**6,260**	40	**2,720**	37
Antimony				< 3.8	3.8	< 3.9	3.9	< 3.9	3.9	< 3.5	3.5	< 4.0	4.0	< 4.1	4.1	< 4.0	4.0	< 3.7	3.7
Arsenic	13	16	16	**1.06**	0.75	**1.58**	0.78	< 0.78	0.78	**1.99**	0.70	< 0.79	0.79	**1.44**	0.83	**1.44**	0.80	**1.21**	0.73
Barium	350	400	400	**25.2**	0.8	**34.4**	0.8	**20.5**	0.8	**29.8**	0.7	**7.9**	0.8	**18.3**	0.41	**33.8**	0.8	**11.1**	0.7
Beryllium	7.2	72	590	**0.21**	0.30	**0.17**	0.31	**0.2**	0.31	**0.24**	0.28	< 0.32	0.32	< 0.33	0.33	**0.27**	0.32	< 0.29	0.29
Cadmium	2.5	4.3	9.3	**0.46**	0.38	**0.44**	0.39	< 0.39	0.39	< 0.35	0.35	< 0.40	0.40	< 0.41	0.41	**0.57**	0.40	< 0.37	0.37
Calcium				**844**	3.8	**1,590**	3.9	**795**	3.9	**1,260**	3.5	**450**	4.0	**1,110**	6.2	**1,380**	4.0	**801**	3.7
Chromium	30	180	1,500	**12.8**	0.38	**11.1**	0.39	**11.2**	0.39	**11.4**	0.35	**6.62**	0.40	**12.5**	0.41	**14.9**	0.40	**6.6**	0.37
Chromium, Hex.	1	110	400	< 0.48	0.48	-	-	-	-	-	-	< 0.48	0.48	< 0.45	0.45	< 0.47	0.47	< 0.46	0.46
Cobalt				**4.61**	0.38	**3.41**	0.39	**3.76**	0.39	**3.65**	0.35	**2.64**	0.40	**4.02**	0.41	**5.43**	0.40	**2.41**	0.37
Copper	50	270	270	**6.9**	0.8	**8.1**	0.8	**7.6**	0.8	**7.7**	0.7	**5**	0.8	**8.1**	0.8	**9.2**	0.8	**5**	0.7
Iron				**8,100**	3.8	**8,230**	3.9	**10,100**	39	**7,480**	3.5	**4,490**	4.0	**5,010**	6.2	**11,400**	40	**6,210**	3.7
Lead	63	400	1,000	**3.3**	0.8	**19**	0.8	**3.6**	0.8	**10.3**	0.7	**2**	0.8	**2.88**	0.41	**6.3**	0.8	**2.9**	0.7
Magnesium				**1,400**	3.8	**1,270**	3.9	**1,180**	3.9	**1,470**	3.5	**938**	4.0	**1,050**	6.2	**2,020**	4.0	**1,290**	3.7
Manganese	1,600	2,000	10,000	**95.2**	0.38	**63.5**	0.39	**49.7**	0.39	**63**	0.35	**28.2**	0.40	**40**	0.41	**218**	4.0	**86.2**	0.37
Mercury	0.18	0.81	2.8	< 0.03	0.03	< 0.03	0.03	< 0.03	0.03	**0.1**	0.03	< 0.03	0.03	< 0.03	0.03	< 0.03	0.03	< 0.03	0.03
Nickel	30	310	310	**8.86**	0.38	**7.97**	0.39	**9.77**	0.39	**9.06**	0.35	**6.99**	0.40	**11.5**	0.41	**12.6**	0.40	**5.48**	0.37
Potassium				**818**	8	**604**	8	**639**	8	**577**	7	**539**	8	**532**	6.2	**1,080**	8	**576**	7
Selenium	3.9	180	1,500	< 1.5	1.5	< 1.6	1.6	< 1.6	1.6	< 1.4	1.4	< 1.6	1.6	< 1.7	1.7	< 1.6	1.6	< 1.5	1.5
Silver	2	180	1,500	< 0.38	0.38	< 0.39	0.39	< 0.39	0.39	< 0.35	0.35	< 0.40	0.40	< 0.41	0.41	< 0.40	0.40	< 0.37	0.37
Sodium				**141**	8	**257**	8	**59**	8	**98**	7	**110**	8	**97.2**	6.2	**222**	8	**70**	7
Thallium				< 1.5	1.5	< 1.6	1.6	< 1.6	1.6	< 1.4	1.4	< 1.6	1.6	< 3.7	3.7	< 1.6	1.6	< 1.5	1.5
Vanadium				**15.3**	0.38	**15.9**	0.39	**22.3**	0.39	**14**	0.35	**8.79**	0.40	**13.5**	0.41	**19.6**	0.40	**9.89**	0.37
Zinc	109	10,000	10,000	**18.6**	0.8	**25.2**	0.8	**18.4**	0.8	**27.5**	0.7	**13**	0.8	**21**	0.8	**28**	0.8	**13.5**	0.7

Notes:

* - 6 NYCRR Part 375-6 Remedial Program Soil Cleanup Objectives

RL - Reporting Limit

Bold/highlighted- Indicated exceedance of the NYSDEC UUSCO Guidance Value

Bold/highlighted- Indicated exceedance of the NYSDEC RRSCO Guidance Value

Bold/highlighted- Indicated exceedance of the NYSDEC RCSCO Guidance Value

Table 25
Former Pfizer Site A - C224284
243-271 Wallabout Street,
Brooklyn, New York
Track 1 Area - Endpoint Soil Analytical Results
Emerging Contaminants

Compound	Endpoint Samples																			
	EP1		EP2		EP3		EP4		EP5		EP6		EP7		EP8		EP9		EP21	
	10'		10'		10'		10'		10'		10'		10'		10'		10'		10'	
	7/9/2020		7/9/2020		7/9/2020		7/9/2020		7/9/2020		7/9/2020		10/15/2020		12/4/2020		12/4/2020		12/4/2020	
	µg/Kg		µg/Kg		µg/Kg		µg/Kg		µg/Kg		µg/Kg		µg/Kg		µg/Kg		µg/Kg		µg/Kg	
	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL
Perfluorobutanoic Acid (PFBA)	ND	0.594	ND	0.523	ND	0.57	ND	0.555	ND	0.541	ND	0.578	ND	0.574	ND	0.608	**0.029J**	0.611	**0.030J**	0.639
Perfluoropentanoic Acid (PFPeA)	ND	0.594	**0.059J**	0.523	ND	0.57	ND	0.555	ND	0.541	**0.070J**	0.578	ND	0.574	**0.077J**	0.608	**0.079J**	0.611	**0.078J**	0.639
Perfluorobutanesulfonic Acid (PFBS)	ND	0.594	ND	0.523	ND	0.57	ND	0.555	ND	0.541	ND	0.578	ND	0.574	ND	0.608	ND	0.611	ND	0.639
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Perfluorohexanoic Acid (PFHxA)	ND	0.594	**0.089J**	0.523	ND	0.57	**0.061J**	0.555	**0.063J**	0.541	**0.090J**	0.578	ND	0.574	**0.072J**	0.608	ND	0.611	**0.083J**	0.639
Perfluoropentanesulfonic Acid (PFPeS)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Perfluoroheptanoic Acid (PFHpA)	ND	0.594	**0.063J**	0.523	ND	0.57	ND	0.555	ND	0.541	**0.079J**	0.578	ND	0.574	**0.096J**	0.608	**0.098J**	0.611	**0.132J**	0.639
Perfluorohexanesulfonic Acid (PFHxS)	ND	0.594	ND	0.523	ND	0.57	ND	0.555	ND	0.541	ND	0.578	ND	0.574	ND	0.608	ND	0.611	ND	0.639
Perfluorooctanoic Acid (PFOA)	**0.058J**	0.594	**0.157J**	0.523	ND	0.57	**0.068J**	0.555	**0.111J**	0.541	**0.089J**	0.578	ND	0.574	**0.068JF**	0.608	**0.053J**	0.611	**0.119JF**	0.639
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND	0.594	ND	0.523	ND	0.57	ND	0.555	ND	0.541	ND	0.578	ND	0.574	ND	0.608	ND	0.611	ND	0.639
Perfluoroheptanesulfonic Acid (PFHpS)	ND	0.594	ND	0.523	ND	0.57	ND	0.555	ND	0.541	ND	0.578	ND	0.574	ND	0.608	ND	0.611	ND	0.639
Perfluorononanoic Acid (PFNA)	ND	0.594	ND	0.523	ND	0.57	ND	0.555	ND	0.541	ND	0.578	ND	0.574	ND	0.608	ND	0.611	ND	0.639
Perfluorooctanesulfonic Acid (PFOS)	ND	0.594	ND	0.523	ND	0.57	ND	0.555	ND	0.541	ND	0.578	ND	0.574	ND	0.608	ND	0.611	ND	0.639
Perfluorodecanoic Acid (PFDA)	ND	0.594	ND	0.523	ND	0.57	ND	0.555	ND	0.541	ND	0.578	ND	0.574	ND	0.608	ND	0.611	ND	0.639
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND	0.594	ND	0.523	ND	0.57	ND	0.555	ND	0.541	ND	0.578	ND	0.574	ND	0.608	ND	0.611	ND	0.639
Perfluorononanesulfonic Acid (PFNS)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND	0.594	ND	0.523	ND	0.57	ND	0.555	ND	0.541	ND	0.578	ND	0.574	ND	0.608	ND	0.611	ND	0.639
Perfluoroundecanoic Acid (PFUnA)	ND	0.594	ND	0.523	ND	0.57	ND	0.555	ND	0.541	ND	0.578	ND	0.574	ND	0.608	ND	0.611	ND	0.639
Perfluorodecanesulfonic Acid (PFDS)	ND	0.594	ND	0.523	ND	0.57	ND	0.555	ND	0.541	ND	0.578	ND	0.574	ND	0.608	ND	0.611	ND	0.639
Perfluorooctanesulfonamide (FOSA)	ND	0.594	ND	0.523	ND	0.57	ND	0.555	ND	0.541	ND	0.578	ND	0.574	ND	0.608	ND	0.611	ND	0.639
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND	0.594	ND	0.523	ND	0.57	ND	0.555	ND	0.541	ND	0.578	ND	0.574	ND	0.608	ND	0.611	ND	0.639
Perfluorododecanoic Acid (PFDoA)	ND	0.594	ND	0.523	ND	0.57	ND	0.555	ND	0.541	ND	0.578	ND	0.574	ND	0.608	ND	0.611	ND	0.639
Perfluorotridecanoic Acid (PFTrDA)	ND	0.594	ND	0.523	ND	0.57	ND	0.555	ND	0.541	ND	0.578	ND	0.574	ND	0.608	ND	0.611	ND	0.639
Perfluorotetradecanoic Acid (PFTA)	ND	0.594	ND	0.523	ND	0.57	ND	0.555	ND	0.541	ND	0.578	ND	0.574	ND	0.608	ND	0.611	ND	0.639
Combined PFOA and PFOS	**0.058J**		**0.157J**		**ND**		**0.068J**		**0.111J**		**0.089J**		**ND**		**0.068JF**		**0.053J**		**0.119JF**	
Combined Total Detections	**0.058J**		**0.368J**		**ND**		**0.129J**		**0.174J**		**0.328J**		**ND**		**0.313JF**		**0.259J**		**0.442JF**	

Compound	EP1		EP2		EP3		EP4		EP5		EP6		EP7		EP8		EP9		EP21	
	10'		10'		10'		10'		10'		10'		10'		10'		10'		10'	
	7/9/2020		7/9/2020		7/9/2020		7/9/2020		7/9/2020		7/9/2020		10/15/2020		12/4/2020		12/4/2020		12/4/2020	
	µg/Kg		µg/Kg		µg/Kg		µg/Kg		µg/Kg		µg/Kg		µg/Kg		µg/Kg		µg/Kg		µg/Kg	
	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL
1,4-dioxane	< 78	78	< 78	78	< 80	80	< 77	77	< 80	80	< 81	81	< 82	82	< 82	82	< 84	84	< 85	85

Notes:

DL- Detection Limit

J- The value is estimated.

ND- Not Detected

The USEPA Health Advisory Level for drinking water is 70 ng/L (ppt) for combined detections of PFOA and PFOs

Table 25
Former Pfizer Site A - C224284
243-271 Wallabout Street,
Brooklyn, New York
Track 1 Area - Endpoint Soil Analytical Results
Emerging Contaminants

Compound	Endpoint Samples																			
	EP22		EP23		EP24		EP25		EP26		EP27		EP28		EP29		EP30		EP31	
	10'		10'		10'		10		10'		10'		10'		10'		10'		10'	
	12/4/2020		10/15/2020		8/5/2020		8/5/2020		8/5/2020		7/9/2020		7/9/2020		7/9/2020		7/9/2020		7/9/2020	
	µg/Kg		µg/Kg		µg/Kg		µg/Kg		µg/Kg		µg/Kg		µg/Kg		µg/Kg		µg/Kg		µg/Kg	
	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL
Perfluorobutanoic Acid (PFBA)	ND	0.616	ND	0.583	**0.030J**	0.56	ND	0.538	ND	0.475	**0.043J**	0.578	ND	0.539	ND	0.571	ND	0.54	ND	0.474
Perfluoropentanoic Acid (PFPeA)	**0.070J**	0.616	ND	0.583	**0.093J**	0.56	ND	0.538	ND	0.475	ND	0.578	ND	0.539	ND	0.571	ND	0.54	ND	0.474
Perfluorobutanesulfonic Acid (PFBS)	ND	0.616	ND	0.583	ND	0.56	ND	0.538	ND	0.475	ND	0.578	ND	0.539	ND	0.571	ND	0.54	ND	0.474
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Perfluorohexanoic Acid (PFHxA)	ND	0.616	**0.069J**	0.583	**0.083J**	0.56	ND	0.538	ND	0.475	ND	0.578	ND	0.539	**0.064JF**	0.571	ND	0.54	ND	0.474
Perfluoropentanesulfonic Acid (PFPeS)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Perfluoroheptanoic Acid (PFHpA)	**0.058J**	0.616	ND	0.583	**0.059J**	0.56	ND	0.538	ND	0.475	ND	0.578	ND	0.539	ND	0.571	ND	0.54	ND	0.474
Perfluorohexanesulfonic Acid (PFHxS)	ND	0.616	ND	0.583	ND	0.56	ND	0.538	ND	0.475	ND	0.578	ND	0.539	ND	0.571	ND	0.54	ND	0.474
Perfluorooctanoic Acid (PFOA)	**0.063J**	0.616	ND	0.583	**0.081J**	0.56	ND	0.538	ND	0.475	**0.049J**	0.578	**0.073J**	0.539	**0.060J**	0.571	**0.072J**	0.54	**0.057J**	0.474
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND	0.616	ND	0.583	ND	0.56	ND	0.538	ND	0.475	ND	0.578	ND	0.539	ND	0.571	ND	0.54	ND	0.474
Perfluoroheptanesulfonic Acid (PFHpS)	ND	0.616	ND	0.583	ND	0.56	ND	0.538	ND	0.475	ND	0.578	ND	0.539	ND	0.571	ND	0.54	ND	0.474
Perfluorononanoic Acid (PFNA)	ND	0.616	ND	0.583	ND	0.56	ND	0.538	ND	0.475	ND	0.578	ND	0.539	ND	0.571	ND	0.54	ND	0.474
Perfluorooctanesulfonic Acid (PFOS)	ND	0.616	ND	0.583	ND	0.56	ND	0.538	ND	0.475	ND	0.578	ND	0.539	ND	0.571	ND	0.54	ND	0.474
Perfluorodecanoic Acid (PFDA)	ND	0.616	ND	0.583	ND	0.56	ND	0.538	ND	0.475	ND	0.578	ND	0.539	ND	0.571	ND	0.54	ND	0.474
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND	0.616	ND	0.583	ND	0.56	ND	0.538	ND	0.475	ND	0.578	ND	0.539	ND	0.571	ND	0.54	ND	0.474
Perfluorononanesulfonic Acid (PFNS)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND	0.616	ND	0.583	ND	0.56	ND	0.538	ND	0.475	ND	0.578	ND	0.539	ND	0.571	ND	0.54	ND	0.474
Perfluoroundecanoic Acid (PFUnA)	ND	0.616	ND	0.583	ND	0.56	ND	0.538	ND	0.475	ND	0.578	ND	0.539	ND	0.571	ND	0.54	ND	0.474
Perfluorodecanesulfonic Acid (PFDS)	ND	0.616	ND	0.583	ND	0.56	ND	0.538	ND	0.475	ND	0.578	ND	0.539	ND	0.571	ND	0.54	ND	0.474
Perfluorooctanesulfonamide (FOSA)	ND	0.616	ND	0.583	ND	0.56	ND	0.538	ND	0.475	ND	0.578	ND	0.539	ND	0.571	ND	0.54	ND	0.474
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND	0.616	ND	0.583	ND	0.56	ND	0.538	ND	0.475	ND	0.578	ND	0.539	ND	0.571	ND	0.54	ND	0.474
Perfluorododecanoic Acid (PFDoA)	ND	0.616	ND	0.583	ND	0.56	ND	0.538	ND	0.475	ND	0.578	ND	0.539	ND	0.571	ND	0.54	ND	0.474
Perfluorotridecanoic Acid (PFTrDA)	ND	0.616	ND	0.583	ND	0.56	ND	0.538	ND	0.475	ND	0.578	ND	0.539	ND	0.571	ND	0.54	ND	0.474
Perfluorotetradecanoic Acid (PFTA)	ND	0.616	ND	0.583	ND	0.56	ND	0.538	ND	0.475	ND	0.578	ND	0.539	ND	0.571	ND	0.54	ND	0.474
Combined PFOA and PFOS	**0.063J**		**ND**		**0.081J**		**ND**		**ND**		**0.049J**		**0.073J**		**0.060J**		**0.072J**		**0.057J**	
Combined Total Detections	**0.191J**		**0.069J**		**0.346J**		**ND**		**ND**		**0.092J**		**0.073J**		**0.124JF**		**0.072J**		**0.057J**	

Compound	EP22		EP23		EP24		EP25		EP26		EP27		EP28		EP29		EP30		EP31	
	10'		10'		10'		10		10'		10'		10'		10'		10'		10'	
	12/4/2020		10/15/2020		8/5/2020		8/5/2020		8/5/2020		7/9/2020		7/9/2020		7/9/2020		7/9/2020		7/9/2020	
	µg/Kg		µg/Kg		µg/Kg		µg/Kg		µg/Kg		µg/Kg		µg/Kg		µg/Kg		µg/Kg		µg/Kg	
	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL
1,4-dioxane	< 85	85	< 80	80	< 75	75	< 78	78	< 76	76	< 79	79	< 82	82	< 86	86	< 86	86	< 74	74

Notes:

DL- Detection Limit

J- The value is estimated.

ND- Not Detected

The USEPA Health Advisory Level for drinking water is 70 ng/L (ppt) for combined detections of PFOA and PFOs

Table 25
Former Pfizer Site A - C224284
243-271 Wallabout Street,
Brooklyn, New York
Track 1 Area - Endpoint Soil Analytical Results
Emerging Contaminants

Compound	Endpoint Samples																			
	EP32		EP33		EP34		EP35		EP36		EP37		EP38		EP46		EP47		EP48	
	10'		10'		10'		10'		10'		10'		10'		10'		10'		10'	
	7/9/2020		8/5/2020		8/5/2020		8/5/2020		10/15/2020		12/4/2020		12/4/2020		11/20/2020		11/20/2020		10/15/2020	
	µg/Kg		µg/Kg		µg/Kg		µg/Kg		µg/Kg		µg/Kg		µg/Kg		µg/Kg		µg/Kg		µg/Kg	
	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL
Perfluorobutanoic Acid (PFBA)	ND	0.609	ND	0.546	ND	0.584	ND	0.546	ND	0.533	ND	0.537	ND	0.621	ND	1.1	ND	1.18	ND	0.541
Perfluoropentanoic Acid (PFPeA)	ND	0.609	ND	0.546	ND	0.584	ND	0.546	ND	0.533	ND	0.537	**0.066J**	0.621	**0.052J**	1.1	ND	1.18	ND	0.541
Perfluorobutanesulfonic Acid (PFBS)	ND	0.609	ND	0.546	ND	0.584	ND	0.546	ND	0.533	ND	0.537	ND	0.621	ND	1.1	ND	1.18	ND	0.541
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	ND	1.1	ND	1.18	-	-
Perfluorohexanoic Acid (PFHxA)	ND	0.609	ND	0.546	ND	0.584	ND	0.546	ND	0.533	ND	0.537	ND	0.621	**0.081JF**	1.1	ND	1.18	**0.063JF**	0.541
Perfluoropentanesulfonic Acid (PFPeS)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	ND	1.1	ND	1.18	-	-
Perfluoroheptanoic Acid (PFHpA)	ND	0.609	ND	0.546	ND	0.584	ND	0.546	ND	0.533	ND	0.537	ND	0.621	ND	1.1	ND	1.18	ND	0.541
Perfluorohexanesulfonic Acid (PFHxS)	ND	0.609	ND	0.546	ND	0.584	ND	0.546	ND	0.533	ND	0.537	ND	0.621	ND	1.1	ND	1.18	ND	0.541
Perfluorooctanoic Acid (PFOA)	**0.085J**	0.609	**0.057J**	0.546	**0.071J**	0.584	ND	0.546	**0.053J**	0.533	**0.056JF**	0.537	ND	0.621	**0.056JF**	1.1	ND	1.18	ND	0.541
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND	0.609	ND	0.546	ND	0.584	ND	0.546	ND	0.533	ND	0.537	ND	0.621	ND	1.1	ND	1.18	ND	0.541
Perfluoroheptanesulfonic Acid (PFHpS)	ND	0.609	ND	0.546	ND	0.584	ND	0.546	ND	0.533	ND	0.537	ND	0.621	ND	1.1	ND	1.18	ND	0.541
Perfluorononanoic Acid (PFNA)	ND	0.609	ND	0.546	ND	0.584	ND	0.546	ND	0.533	ND	0.537	ND	0.621	ND	1.1	ND	1.18	ND	0.541
Perfluorooctanesulfonic Acid (PFOS)	ND	0.609	ND	0.546	ND	0.584	ND	0.546	ND	0.533	ND	0.537	ND	0.621	ND	1.1	ND	1.18	ND	0.541
Perfluorodecanoic Acid (PFDA)	ND	0.609	ND	0.546	ND	0.584	ND	0.546	ND	0.533	ND	0.537	ND	0.621	ND	1.1	ND	1.18	ND	0.541
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND	0.609	ND	0.546	ND	0.584	ND	0.546	ND	0.533	ND	0.537	ND	0.621	ND	1.1	ND	1.18	ND	0.541
Perfluorononanesulfonic Acid (PFNS)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	ND	1.1	ND	1.18	-	-
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND	0.609	ND	0.546	ND	0.584	ND	0.546	ND	0.533	ND	0.537	ND	0.621	ND	1.1	ND	1.18	ND	0.541
Perfluoroundecanoic Acid (PFUnA)	ND	0.609	ND	0.546	ND	0.584	ND	0.546	ND	0.533	ND	0.537	ND	0.621	ND	1.1	ND	1.18	ND	0.541
Perfluorodecanesulfonic Acid (PFDS)	ND	0.609	ND	0.546	ND	0.584	ND	0.546	ND	0.533	ND	0.537	ND	0.621	ND	1.1	ND	1.18	ND	0.541
Perfluorooctanesulfonamide (FOSA)	ND	0.609	ND	0.546	ND	0.584	ND	0.546	ND	0.533	ND	0.537	ND	0.621	ND	1.1	ND	1.18	ND	0.541
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND	0.609	ND	0.546	ND	0.584	ND	0.546	ND	0.533	ND	0.537	ND	0.621	ND	1.1	ND	1.18	ND	0.541
Perfluorododecanoic Acid (PFDoA)	ND	0.609	ND	0.546	ND	0.584	ND	0.546	ND	0.533	ND	0.537	ND	0.621	ND	1.1	ND	1.18	ND	0.541
Perfluorotridecanoic Acid (PFTrDA)	ND	0.609	ND	0.546	ND	0.584	ND	0.546	ND	0.533	ND	0.537	ND	0.621	ND	1.1	ND	1.18	ND	0.541
Perfluorotetradecanoic Acid (PFTA)	ND	0.609	ND	0.546	ND	0.584	ND	0.546	ND	0.533	ND	0.537	ND	0.621	ND	1.1	ND	1.18	ND	0.541
Combined PFOA and PFOS	**0.085J**		**0.057J**		**0.071J**		**ND**		**0.053J**		**0.056JF**		**ND**		**0.056JF**		**ND**		**ND**	
Combined Total Detections	**0.085J**		**0.057J**		**0.071J**		**ND**		**0.053J**		**0.056JF**		**0.066J**		**0.189JF**		**ND**		**0.063JF**	

Compound	EP32		EP33		EP34		EP35		EP36		EP37		EP38		EP46		EP47		EP48	
	10'		10'		10'		10'		10'		10'		10'		10'		10'		10'	
	7/9/2020		8/5/2020		8/5/2020		8/5/2020		10/15/2020		12/4/2020		12/4/2020		11/20/2020		11/20/2020		10/15/2020	
	µg/Kg		µg/Kg		µg/Kg		µg/Kg		µg/Kg		µg/Kg		µg/Kg		µg/Kg		µg/Kg		µg/Kg	
	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL
1,4-dioxane	< 88	88	< 78	78	< 80	80	< 80	80	< 72	72	< 75	75	< 80	80	< 79	79	< 79	79	< 79	79

Notes:

DL- Detection Limit

J- The value is estimated.

ND- Not Detected

The USEPA Health Advisory Level for drinking water is 70 ng/L (ppt) for combined detections of PFOA and PFOs

Table 25
Former Pfizer Site A - C224284
243-271 Wallabout Street,
Brooklyn, New York
Track 1 Area - Endpoint Soil Analytical Results
Emerging Contaminants

Compound	Endpoint Samples																			
	EP49		EP50		EP51		EP52		EP53		EP54		EP55		EP56		EP57		EP58	
	10'		10'		10'		10'		10'		10'		10'		10'		10'		10'	
	8/10/2020		8/10/2020		8/10/2020		8/5/2020		8/5/2020		8/5/2020		8/5/2020		8/5/2020		8/10/2020		8/10/2020	
	µg/Kg		µg/Kg		µg/Kg		µg/Kg		µg/Kg		µg/Kg		µg/Kg		µg/Kg		µg/Kg		µg/Kg	
	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL
Perfluorobutanoic Acid (PFBA)	ND	0.555	ND	0.54	ND	0.552	ND	0.484	ND	0.539	ND	0.476	ND	0.59	ND	0.524	ND	0.574	ND	0.537
Perfluoropentanoic Acid (PFPeA)	ND	0.555	ND	0.54	ND	0.552	ND	0.484	ND	0.539	ND	0.476	ND	0.59	ND	0.524	ND	0.574	ND	0.537
Perfluorobutanesulfonic Acid (PFBS)	ND	0.555	ND	0.54	ND	0.552	ND	0.484	ND	0.539	ND	0.476	ND	0.59	ND	0.524	ND	0.574	ND	0.537
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Perfluorohexanoic Acid (PFHxA)	ND	0.555	ND	0.54	ND	0.552	ND	0.484	ND	0.539	ND	0.476	ND	0.59	ND	0.524	ND	0.574	ND	0.537
Perfluoropentanesulfonic Acid (PFPeS)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Perfluoroheptanoic Acid (PFHpA)	ND	0.555	ND	0.54	ND	0.552	ND	0.484	ND	0.539	ND	0.476	ND	0.59	ND	0.524	ND	0.574	ND	0.537
Perfluorohexanesulfonic Acid (PFHxS)	ND	0.555	ND	0.54	ND	0.552	ND	0.484	ND	0.539	ND	0.476	ND	0.59	ND	0.524	ND	0.574	ND	0.537
Perfluorooctanoic Acid (PFOA)	**0.068J**	0.555	**0.059J**	0.54	**0.057J**	0.552	ND	0.484	ND	0.539	ND	0.476	ND	0.59	ND	0.524	ND	0.574	**0.060J**	0.537
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND	0.555	ND	0.54	ND	0.552	ND	0.484	ND	0.539	ND	0.476	ND	0.59	ND	0.524	ND	0.574	ND	0.537
Perfluoroheptanesulfonic Acid (PFHpS)	ND	0.555	ND	0.54	ND	0.552	ND	0.484	ND	0.539	ND	0.476	ND	0.59	ND	0.524	ND	0.574	ND	0.537
Perfluorononanoic Acid (PFNA)	ND	0.555	ND	0.54	ND	0.552	ND	0.484	ND	0.539	ND	0.476	ND	0.59	ND	0.524	ND	0.574	ND	0.537
Perfluorooctanesulfonic Acid (PFOS)	ND	0.555	ND	0.54	ND	0.552	ND	0.484	ND	0.539	ND	0.476	ND	0.59	ND	0.524	ND	0.574	ND	0.537
Perfluorodecanoic Acid (PFDA)	ND	0.555	ND	0.54	ND	0.552	ND	0.484	ND	0.539	ND	0.476	ND	0.59	ND	0.524	ND	0.574	ND	0.537
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND	0.555	ND	0.54	ND	0.552	ND	0.484	ND	0.539	ND	0.476	ND	0.59	ND	0.524	ND	0.574	ND	0.537
Perfluorononanesulfonic Acid (PFNS)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND	0.555	ND	0.54	ND	0.552	ND	0.484	ND	0.539	ND	0.476	ND	0.59	ND	0.524	ND	0.574	ND	0.537
Perfluoroundecanoic Acid (PFUnA)	ND	0.555	ND	0.54	ND	0.552	ND	0.484	ND	0.539	ND	0.476	ND	0.59	ND	0.524	ND	0.574	ND	0.537
Perfluorodecanesulfonic Acid (PFDS)	ND	0.555	ND	0.54	ND	0.552	ND	0.484	ND	0.539	ND	0.476	ND	0.59	ND	0.524	ND	0.574	ND	0.537
Perfluorooctanesulfonamide (FOSA)	ND	0.555	ND	0.54	ND	0.552	ND	0.484	ND	0.539	ND	0.476	ND	0.59	ND	0.524	ND	0.574	ND	0.537
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND	0.555	ND	0.54	ND	0.552	ND	0.484	ND	0.539	ND	0.476	ND	0.59	ND	0.524	ND	0.574	ND	0.537
Perfluorododecanoic Acid (PFDoA)	ND	0.555	ND	0.54	ND	0.552	ND	0.484	ND	0.539	ND	0.476	ND	0.59	ND	0.524	ND	0.574	ND	0.537
Perfluorotridecanoic Acid (PFTrDA)	ND	0.555	ND	0.54	ND	0.552	ND	0.484	ND	0.539	ND	0.476	ND	0.59	ND	0.524	ND	0.574	ND	0.537
Perfluorotetradecanoic Acid (PFTA)	ND	0.555	ND	0.54	ND	0.552	ND	0.484	ND	0.539	ND	0.476	ND	0.59	ND	0.524	ND	0.574	ND	0.537
Combined PFOA and PFOS	**0.068J**		**0.059J**		**0.057J**		**ND**		**ND**		**ND**		**ND**		**ND**		**ND**		**0.060J**	
Combined Total Detections	**0.068J**		**0.059J**		**0.057J**		**ND**		**ND**		**ND**		**ND**		**ND**		**ND**		**0.060J**	

Compound	EP49		EP50		EP51		EP52		EP53		EP54		EP55		EP56		EP57		EP58	
	10'		10'		10'		10'		10'		10'		10'		10'		10'		10'	
	8/10/2020		8/10/2020		8/10/2020		8/5/2020		8/5/2020		8/5/2020		8/5/2020		8/5/2020		8/10/2020		8/10/2020	
	µg/Kg		µg/Kg		µg/Kg		µg/Kg		µg/Kg		µg/Kg		µg/Kg		µg/Kg		µg/Kg		µg/Kg	
	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL
1,4-dioxane	< 77	77	< 77	77	< 79	79	< 75	75	< 77	77	< 68	68	< 83	83	< 78	78	< 80	80	< 78	78

Notes:

DL- Detection Limit

J- The value is estimated.

ND- Not Detected

The USEPA Health Advisory Level for drinking water is 70 ng/L (ppt) for combined detections of PFOA and PFOs

Table 25
Former Pfizer Site A - C224284
243-271 Wallabout Street,
Brooklyn, New York
Track 1 Area - Endpoint Soil Analytical Results
Emerging Contaminants

Compound	Endpoint Samples																			
	EP59		EP60		EP61		EP62		EP63		EP67		EP68		EP69		EP70		EP71	
	10'		10'		10'		10'		10'		10'		10'		10'		10'		10'	
	8/10/2020		8/10/2020		10/15/2020		11/20/2020		11/20/2020		8/10/2020		11/20/2020		10/15/2020		8/10/2020		8/10/2020	
	µg/Kg		µg/Kg		µg/Kg		µg/Kg		µg/Kg		µg/Kg		µg/Kg		µg/Kg		µg/Kg		µg/Kg	
	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL
Perfluorobutanoic Acid (PFBA)	ND	0.509	ND	0.549	ND	0.556	ND	1.2	ND	1.1	ND	1.13	ND	1.16	ND	0.564	ND	0.526	ND	0.552
Perfluoropentanoic Acid (PFPeA)	ND	0.509	ND	0.549	ND	0.556	ND	1.2	ND	1.1	ND	1.13	ND	1.16	ND	0.564	ND	0.526	ND	0.552
Perfluorobutanesulfonic Acid (PFBS)	ND	0.509	ND	0.549	ND	0.556	ND	1.2	ND	1.1	ND	1.13	ND	1.16	ND	0.564	ND	0.526	ND	0.552
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	-	-	-	-	-	-	ND	1.2	ND	1.1	ND	1.13	ND	1.16	-	-	-	-	-	-
Perfluorohexanoic Acid (PFHxA)	ND	0.509	ND	0.549	ND	0.556	**0.068JF**	1.2	**0.068JF**	1.1	ND	1.13	ND	1.16	ND	0.564	ND	0.526	ND	0.552
Perfluoropentanesulfonic Acid (PFPeS)	-	-	-	-	-	-	ND	1.2	ND	1.1	ND	1.13	ND	1.16	-	-	-	-	-	-
Perfluoroheptanoic Acid (PFHpA)	ND	0.509	ND	0.549	ND	0.556	ND	1.2	ND	1.1	ND	1.13	ND	1.16	ND	0.564	ND	0.526	ND	0.552
Perfluorohexanesulfonic Acid (PFHxS)	ND	0.509	ND	0.549	ND	0.556	ND	1.2	ND	1.1	ND	1.13	ND	1.16	ND	0.564	ND	0.526	ND	0.552
Perfluorooctanoic Acid (PFOA)	**0.051J**	0.509	**0.057J**	0.549	ND	0.556	**0.054JF**	1.2	**0.050JF**	1.1	ND	1.13	ND	1.16	ND	0.564	**0.067J**	0.526	**0.051J**	0.552
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND	0.509	ND	0.549	ND	0.556	ND	1.2	ND	1.1	ND	1.13	ND	1.16	ND	0.564	ND	0.526	ND	0.552
Perfluoroheptanesulfonic Acid (PFHpS)	ND	0.509	ND	0.549	ND	0.556	ND	1.2	ND	1.1	ND	1.13	ND	1.16	ND	0.564	ND	0.526	ND	0.552
Perfluorononanoic Acid (PFNA)	ND	0.509	ND	0.549	ND	0.556	ND	1.2	ND	1.1	ND	1.13	ND	1.16	ND	0.564	ND	0.526	ND	0.552
Perfluorooctanesulfonic Acid (PFOS)	ND	0.509	ND	0.549	ND	0.556	ND	1.2	ND	1.1	ND	1.13	ND	1.16	ND	0.564	ND	0.526	ND	0.552
Perfluorodecanoic Acid (PFDA)	ND	0.509	ND	0.549	ND	0.556	ND	1.2	ND	1.1	ND	1.13	ND	1.16	ND	0.564	ND	0.526	ND	0.552
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND	0.509	ND	0.549	ND	0.556	ND	1.2	ND	1.1	ND	1.13	ND	1.16	ND	0.564	ND	0.526	ND	0.552
Perfluorononanesulfonic Acid (PFNS)	-	-	-	-	-	-	ND	1.2	ND	1.1	ND	1.13	ND	1.16	-	-	-	-	-	-
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND	0.509	ND	0.549	ND	0.556	ND	1.2	ND	1.1	ND	1.13	ND	1.16	ND	0.564	ND	0.526	ND	0.552
Perfluoroundecanoic Acid (PFUnA)	ND	0.509	ND	0.549	ND	0.556	ND	1.2	ND	1.1	ND	1.13	ND	1.16	ND	0.564	ND	0.526	ND	0.552
Perfluorodecanesulfonic Acid (PFDS)	ND	0.509	ND	0.549	ND	0.556	ND	1.2	ND	1.1	ND	1.13	ND	1.16	ND	0.564	ND	0.526	ND	0.552
Perfluorooctanesulfonamide (FOSA)	ND	0.509	ND	0.549	ND	0.556	ND	1.2	ND	1.1	ND	1.13	ND	1.16	ND	0.564	ND	0.526	ND	0.552
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND	0.509	ND	0.549	ND	0.556	ND	1.2	ND	1.1	ND	1.13	ND	1.16	ND	0.564	ND	0.526	ND	0.552
Perfluorododecanoic Acid (PFDoA)	ND	0.509	ND	0.549	ND	0.556	ND	1.2	ND	1.1	ND	1.13	ND	1.16	ND	0.564	ND	0.526	ND	0.552
Perfluorotridecanoic Acid (PFTrDA)	ND	0.509	ND	0.549	ND	0.556	ND	1.2	ND	1.1	ND	1.13	ND	1.16	ND	0.564	ND	0.526	ND	0.552
Perfluorotetradecanoic Acid (PFTA)	ND	0.509	ND	0.549	ND	0.556	ND	1.2	ND	1.1	ND	1.13	ND	1.16	ND	0.564	ND	0.526	ND	0.552
Combined PFOA and PFOS	**0.051J**		**0.057J**		**ND**		**0.054JF**		**0.050JF**		**ND**		**ND**		**ND**		**0.067J**		**0.051J**	
Combined Total Detections	**0.051J**		**0.057J**		**ND**		**0.122JF**		**0.118JF**		**ND**		**ND**		**ND**		**0.067J**		**0.051J**	

Compound	EP59		EP60		EP61		EP62		EP63		EP67		EP68		EP69		EP70		EP71	
	10'		10'		10'		10'		10'		10'		10'		10'		10'		10'	
	8/10/2020		8/10/2020		10/15/2020		11/20/2020		11/20/2020		8/10/2020		11/20/2020		10/15/2020		8/10/2020		8/10/2020	
	µg/Kg		µg/Kg		µg/Kg		µg/Kg		µg/Kg		µg/Kg		µg/Kg		µg/Kg		µg/Kg		µg/Kg	
	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL
1,4-dioxane	< 76	76	< 77	77	< 82	82	< 81	81	< 79	79	< 79	79	< 77	77	< 83	83	< 81	81	< 77	77

Notes:

DL- Detection Limit

J- The value is estimated.

ND- Not Detected

The USEPA Health Advisory Level for drinking water is 70 ng/L (ppt) for combined detections of PFOA and PFOs

Table 25
Former Pfizer Site A - C224284
243-271 Wallabout Street,
Brooklyn, New York
Track 1 Area - Endpoint Soil Analytical Results
Emerging Contaminants

Compound	Endpoint Samples																			
	EP72		EP73		EP74		EP75		EP76		EP77		EP78		EP79		EP Duplicate 1		Soil Duplicate	
	10'		10'		10'		10'		10'		10'		10'		10'		EP2		EP52	
	8/10/2020		8/10/2020		8/5/2020		8/5/2020		8/5/2020		8/10/2020		10/15/2020		11/232020		7/9/2020		8/5/2020	
	µg/Kg		µg/Kg		µg/Kg		µg/Kg		µg/Kg		µg/Kg		µg/Kg		µg/Kg		µg/Kg		µg/Kg	
	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL
Perfluorobutanoic Acid (PFBA)	ND	0.664	ND	0.537	ND	0.61	ND	0.592	ND	0.55	ND	0.601	ND	0.578	ND	1.21	ND	0.537	ND	0.494
Perfluoropentanoic Acid (PFPeA)	ND	0.664	ND	0.537	ND	0.61	ND	0.592	ND	0.55	ND	0.601	ND	0.578	ND	1.21	**0.054J**	0.537	ND	0.494
Perfluorobutanesulfonic Acid (PFBS)	ND	0.664	ND	0.537	ND	0.61	ND	0.592	ND	0.55	ND	0.601	ND	0.578	ND	1.21	ND	0.537	ND	0.494
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	ND	1.21	-	-	-	-
Perfluorohexanoic Acid (PFHxA)	ND	0.664	ND	0.537	ND	0.61	ND	0.592	ND	0.55	ND	0.601	ND	0.578	ND	1.21	**0.083J**	0.537	ND	0.494
Perfluoropentanesulfonic Acid (PFPeS)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	ND	1.21	-	-	-	-
Perfluoroheptanoic Acid (PFHpA)	ND	0.664	ND	0.537	ND	0.61	ND	0.592	ND	0.55	ND	0.601	ND	0.578	ND	1.21	**0.061J**	0.537	ND	0.494
Perfluorohexanesulfonic Acid (PFHxS)	ND	0.664	ND	0.537	ND	0.61	ND	0.592	ND	0.55	ND	0.601	ND	0.578	ND	1.21	ND	0.537	ND	0.494
Perfluorooctanoic Acid (PFOA)	ND	0.664	**0.049J**	0.537	ND	0.61	ND	0.592	**0.057J**	0.55	**0.052J**	0.601	ND	0.578	ND	1.21	**0.164J**	0.537	ND	0.494
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND	0.664	ND	0.537	ND	0.61	ND	0.592	ND	0.55	ND	0.601	ND	0.578	ND	1.21	ND	0.537	ND	0.494
Perfluoroheptanesulfonic Acid (PFHpS)	ND	0.664	ND	0.537	ND	0.61	ND	0.592	ND	0.55	ND	0.601	ND	0.578	ND	1.21	ND	0.537	ND	0.494
Perfluorononanoic Acid (PFNA)	ND	0.664	ND	0.537	ND	0.61	ND	0.592	ND	0.55	ND	0.601	ND	0.578	ND	1.21	ND	0.537	ND	0.494
Perfluorooctanesulfonic Acid (PFOS)	ND	0.664	ND	0.537	**0.293J**	0.61	ND	0.592	ND	0.55	ND	0.601	ND	0.578	ND	1.21	ND	0.537	ND	0.494
Perfluorodecanoic Acid (PFDA)	ND	0.664	ND	0.537	ND	0.61	ND	0.592	ND	0.55	ND	0.601	ND	0.578	ND	1.21	ND	0.537	ND	0.494
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND	0.664	ND	0.537	ND	0.61	ND	0.592	ND	0.55	ND	0.601	ND	0.578	ND	1.21	ND	0.537	ND	0.494
Perfluorononanesulfonic Acid (PFNS)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	ND	1.21	-	-	-	-
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND	0.664	ND	0.537	ND	0.61	ND	0.592	ND	0.55	ND	0.601	ND	0.578	ND	1.21	ND	0.537	ND	0.494
Perfluoroundecanoic Acid (PFUnA)	ND	0.664	ND	0.537	ND	0.61	ND	0.592	ND	0.55	ND	0.601	ND	0.578	ND	1.21	ND	0.537	ND	0.494
Perfluorodecanesulfonic Acid (PFDS)	ND	0.664	ND	0.537	ND	0.61	ND	0.592	ND	0.55	ND	0.601	ND	0.578	ND	1.21	ND	0.537	ND	0.494
Perfluorooctanesulfonamide (FOSA)	ND	0.664	ND	0.537	ND	0.61	ND	0.592	ND	0.55	ND	0.601	ND	0.578	ND	1.21	ND	0.537	ND	0.494
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND	0.664	ND	0.537	ND	0.61	ND	0.592	ND	0.55	ND	0.601	ND	0.578	ND	1.21	ND	0.537	ND	0.494
Perfluorododecanoic Acid (PFDoA)	ND	0.664	ND	0.537	ND	0.61	ND	0.592	ND	0.55	ND	0.601	ND	0.578	ND	1.21	ND	0.537	ND	0.494
Perfluorotridecanoic Acid (PFTrDA)	ND	0.664	ND	0.537	ND	0.61	ND	0.592	ND	0.55	ND	0.601	ND	0.578	ND	1.21	ND	0.537	ND	0.494
Perfluorotetradecanoic Acid (PFTA)	ND	0.664	ND	0.537	ND	0.61	ND	0.592	ND	0.55	ND	0.601	ND	0.578	ND	1.21	ND	0.537	ND	0.494
Combined PFOA and PFOS	**ND**		**0.049J**		**0.293J**		**ND**		**0.057J**		**0.052J**		**ND**		**ND**		**0.164J**		**ND**	
Combined Total Detections	**ND**		**0.049J**		**0.293J**		**ND**		**0.057J**		**0.052J**		**ND**		**ND**		**0.362J**		**ND**	

Compound	EP72		EP73		EP74		EP75		EP76		EP77		EP78		EP79		EP Duplicate 1		Soil Duplicate	
	10'		10'		10'		10'		10'		10'		10'		10'		EP2		EP52	
	8/10/2020		8/10/2020		8/5/2020		8/5/2020		8/5/2020		8/10/2020		10/15/2020		11/232020		7/9/2020		8/5/2020	
	µg/Kg		µg/Kg		µg/Kg		µg/Kg		µg/Kg		µg/Kg		µg/Kg		µg/Kg		µg/Kg		µg/Kg	
	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL
1,4-dioxane	< 81	81	< 80	80	< 89	89	< 86	86	< 81	81	< 79	79	< 82	82	< 79	79	< 80	80	< 72	72

Notes:

DL- Detection Limit

J- The value is estimated.

ND- Not Detected

The USEPA Health Advisory Level for drinking water is 70 ng/L (ppt) for combined detections of PFOA and PFOs

Table 25
Former Pfizer Site A - C224284
243-271 Wallabout Street,
Brooklyn, New York
Track 1 Area - Endpoint Soil Analytical Results
Emerging Contaminants

Compound	EBC Endpoint Samples									
	Soil Duplicate 3		Soil Duplicate		Soil Duplicate		Soil Duplicate		Soil Duplicate	
	EP49		EP7							
	8/10/2020		10/15/2020		11/20/2020		11/23/2020		12/4/2020	
	µg/Kg		µg/Kg		µg/Kg		µg/Kg		µg/Kg	
	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL
Perfluorobutanoic Acid (PFBA)	ND	0.535	ND	0.567	ND	1.17	ND	1.07	ND	0.581
Perfluoropentanoic Acid (PFPeA)	ND	0.535	ND	0.567	ND	1.17	ND	1.07	**0.066J**	0.581
Perfluorobutanesulfonic Acid (PFBS)	ND	0.535	ND	0.567	ND	1.17	ND	1.07	ND	0.581
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	-	-	-	-	ND	1.17	ND	1.07	-	-
Perfluorohexanoic Acid (PFHxA)	ND	0.535	**0.060J**	0.567	ND	1.17	ND	1.07	ND	0.581
Perfluoropentanesulfonic Acid (PFPeS)	-	-	-	-	ND	1.17	ND	1.07	-	-
Perfluoroheptanoic Acid (PFHpA)	ND	0.535	ND	0.567	ND	1.17	ND	1.07	**0.082J**	0.581
Perfluorohexanesulfonic Acid (PFHxS)	ND	0.535	ND	0.567	ND	1.17	ND	1.07	ND	0.581
Perfluorooctanoic Acid (PFOA)	**0.055J**	0.535	ND	0.567	ND	1.17	ND	1.07	**0.052JF**	0.581
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND	0.535	ND	0.567	ND	1.17	ND	1.07	ND	0.581
Perfluoroheptanesulfonic Acid (PFHpS)	ND	0.535	ND	0.567	ND	1.17	ND	1.07	ND	0.581
Perfluorononanoic Acid (PFNA)	ND	0.535	ND	0.567	ND	1.17	ND	1.07	ND	0.581
Perfluorooctanesulfonic Acid (PFOS)	ND	0.535	ND	0.567	ND	1.17	ND	1.07	ND	0.581
Perfluorodecanoic Acid (PFDA)	ND	0.535	ND	0.567	ND	1.17	ND	1.07	ND	0.581
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND	0.535	ND	0.567	ND	1.17	ND	1.07	ND	0.581
Perfluorononanesulfonic Acid (PFNS)	-	-	-	-	ND	1.17	ND	1.07	-	-
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND	0.535	ND	0.567	ND	1.17	ND	1.07	ND	0.581
Perfluoroundecanoic Acid (PFUnA)	ND	0.535	ND	0.567	ND	1.17	ND	1.07	ND	0.581
Perfluorodecanesulfonic Acid (PFDS)	ND	0.535	ND	0.567	ND	1.17	ND	1.07	ND	0.581
Perfluorooctanesulfonamide (FOSA)	ND	0.535	ND	0.567	ND	1.17	ND	1.07	ND	0.581
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND	0.535	ND	0.567	ND	1.17	ND	1.07	ND	0.581
Perfluorododecanoic Acid (PFDoA)	ND	0.535	ND	0.567	ND	1.17	ND	1.07	ND	0.581
Perfluorotridecanoic Acid (PFTrDA)	ND	0.535	ND	0.567	ND	1.17	ND	1.07	ND	0.581
Perfluorotetradecanoic Acid (PFTA)	ND	0.535	ND	0.567	ND	1.17	ND	1.07	ND	0.581
Combined PFOA and PFOS	**0.055J**		**ND**		**ND**		**ND**		**0.052JF**	
Combined Total Detections	**0.055J**		**0.060J**		**ND**		**ND**		**0.2JF**	

Compound	Soil Duplicate 3		Soil Duplicate		Soil Duplicate		Soil Duplicate		Soil Duplicate	
	EP49		EP7							
	8/10/2020		10/15/2020		11/20/2020		11/23/2020		12/4/2020	
	µg/Kg		µg/Kg		µg/Kg		µg/Kg		µg/Kg	
	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL
1,4-dioxane	< 78	78	< 82	82	< 79	79	< 79	79	< 81	81

Notes:

DL- Detection Limit

J- The value is estimated.

ND- Not Detected

The USEPA Health Advisory Level for drinking water is 70 ng/L (ppt) for combined detections of PFOA and PFOs

Table 26
Former Pfizer Site A - C224284
243-271 Wallabout Street,
Brooklyn, New York
Track 4 Area - Endpoint Soil Analytical Results
Volatile Organic Compounds

COMPOUND	NYSDEC Part 375.6 Unrestricted Use Soil Cleanup Objectives*	NYDEC Part 375.6 Restricted Residential Soil Cleanup Objectives*	NYDEC Part 375.6 Restricted Commercial Soil Cleanup Objectives*	Endpoint Samples									
				EP10		EP11				EP12		EP13	
				4'		4'		4.5'		4'		4	
				5/5/2021		5/6/2021		5/14/2021		5/11/2021		5/6/2021	
				µg/Kg		µg/Kg		µg/Kg		µg/Kg		µg/Kg	
				Result	RL	Result	RL	Result	RL	Result	RL	Result	RL
1,1,1,2-Tetrachlorothane				< 16	16	< 17	17	< 19	19	< 21	21	< 13	13
1,1,1-Trichloroethane	680	100,000	500,000	< 4.0	4.0	< 4.4	4.4	< 4.8	4.8	< 5.3	5.3	< 3.4	3.4
1,1,2,2-Tetrachloroethane				< 4.0	4.0	< 4.4	4.4	< 4.8	4.8	< 5.3	5.3	< 3.4	3.4
1,1,2-Trichloroethane				< 4.0	4.0	< 4.4	4.4	< 4.8	4.8	< 5.3	5.3	< 3.4	3.4
1,1-Dichloroethane	270	26,000	240,000	< 4.0	4.0	< 4.4	4.4	< 4.8	4.8	< 5.3	5.3	< 3.4	3.4
1,1-Dichloroethene	330	100,000	500,000	< 4.0	4.0	< 4.4	4.4	< 4.8	4.8	< 5.3	5.3	< 3.4	3.4
1,2,3-Trichlorobenzene				< 4.0	4.0	< 4.4	4.4	< 4.8	4.8	< 5.3	5.3	< 3.4	3.4
1,2,4-Trichlorobenzene				< 4.0	4.0	< 4.4	4.4	< 4.8	4.8	< 5.3	5.3	< 3.4	3.4
1,2-Dibromo-3-chloropropane				< 4.0	4.0	< 4.4	4.4	< 4.8	4.8	< 5.3	5.3	< 3.4	3.4
1,2-Dibromomethane				< 4.0	4.0	< 4.4	4.4	< 4.8	4.8	< 5.3	5.3	< 3.4	3.4
1,2-Dichlorobenzene	1,100	100,000	500,000	< 4.0	4.0	< 4.4	4.4	< 4.8	4.8	< 5.3	5.3	< 3.4	3.4
1,2-Dichloroethane	20	3,100	30,000	< 4.0	4.0	< 4.4	4.4	< 4.8	4.8	< 5.3	5.3	< 3.4	3.4
1,2-Dichloropropane				< 4.0	4.0	< 4.4	4.4	< 4.8	4.8	< 5.3	5.3	< 3.4	3.4
1,3-Dichlorobenzene	2,400	4,900	280,000	< 4.0	4.0	< 4.4	4.4	< 4.8	4.8	< 5.3	5.3	< 3.4	3.4
1,4-Dichlorobenzene	1,800	13,000	130,000	< 4.0	4.0	< 4.4	4.4	< 4.8	4.8	< 5.3	5.3	< 3.4	3.4
1,4- dioxane	100	13,000	130,000	< 61	61	< 66	66	< 72	72	< 80	80	< 51	51
2-Hexanone (Methyl Butyl Ketone)				< 20	20	< 22	22	< 24	24	< 27	27	< 17	17
4-Methyl-2-Pentanone				< 20	20	< 22	22	< 24	24	< 27	27	< 17	17
Acetone	50	100,000	500,000	< 20	20	< 22	22	**5.2**	24	**30**	27	**41**	17
Acrolein				< 4.0	4.0	< 4.4	4.4	< 4.8	4.8	< 5.3	5.3	< 3.4	3.4
Acrylonitrile				< 16	16	< 17	17	< 19	19	< 21	21	< 13	13
Benzene	60	4,800	44,000	< 4.0	4.0	< 4.4	4.4	< 4.8	4.8	< 5.3	5.3	< 3.4	3.4
Bromochloromethane				< 4.0	4.0	< 4.4	4.4	< 4.8	4.8	< 5.3	5.3	< 3.4	3.4
Bromodichloromethane				< 4.0	4.0	< 4.4	4.4	< 4.8	4.8	< 5.3	5.3	< 3.4	3.4
Bromoform				< 4.0	4.0	< 4.4	4.4	< 4.8	4.8	< 5.3	5.3	< 3.4	3.4
Bromomethane				< 4.0	4.0	< 4.4	4.4	< 4.8	4.8	< 5.3	5.3	< 3.4	3.4
Carbon Disulfide				< 4.0	4.0	< 4.4	4.4	< 4.8	4.8	< 5.3	5.3	**4.6**	3.4
Carbon tetrachloride	760	2,400	22,000	< 4.0	4.0	< 4.4	4.4	< 4.8	4.8	< 5.3	5.3	< 3.4	3.4
Chlorobenzene	1,100	100,000	500,000	< 4.0	4.0	< 4.4	4.4	< 4.8	4.8	< 5.3	5.3	< 3.4	3.4
Chloroethane				< 4.0	4.0	< 4.4	4.4	< 4.8	4.8	< 5.3	5.3	< 3.4	3.4
Chloroform	370	49,000	350,000	< 4.0	4.0	< 4.4	4.4	< 4.8	4.8	< 5.3	5.3	**1.1**	3.4
Chloromethane				< 4.0	4.0	< 4.4	4.4	< 4.8	4.8	< 5.3	5.3	< 3.4	3.4
cis-1,2-Dichloroethene	250	100,000	500,000	< 4.0	4.0	< 4.4	4.4	< 4.8	4.8	< 5.3	5.3	< 3.4	3.4
cis-1,3-Dichloropropene				< 4.0	4.0	< 4.4	4.4	< 4.8	4.8	< 5.3	5.3	< 3.4	3.4
Cyclohexane				< 4.0	4.0	< 4.4	4.4	< 4.8	4.8	< 5.3	5.3	< 3.4	3.4
Dibromochloromethane				< 4.0	4.0	< 4.4	4.4	< 4.8	4.8	< 5.3	5.3	< 3.4	3.4
Dichlorodifluoromethane				< 4.0	4.0	< 4.4	4.4	< 4.8	4.8	< 5.3	5.3	< 3.4	3.4
Ethylbenzene	1,000	41,000	390,000	< 4.0	4.0	< 4.4	4.4	< 4.8	4.8	< 5.3	5.3	< 3.4	3.4
Isopropylbenzene				< 4.0	4.0	< 4.4	4.4	< 4.8	4.8	< 5.3	5.3	< 3.4	3.4
m&p-Xylenes	260	100,000		< 4.0	4.0	< 4.4	4.4	< 4.8	4.8	< 5.3	5.3	< 3.4	3.4
Methyl Ethyl Ketone (2-Butanone)	120	100,000	500,000	< 24	24	< 26	26	< 29	29	**7.4**	32	**6.7**	20
Methyl t-butyl ether (MTBE)	930	100,000	500,000	< 8.1	8.1	< 8.7	8.7	< 9.6	9.6	< 11	11	< 6.7	6.7
Methylacetate				< 4.0	4.0	< 4.4	4.4	< 4.8	4.8	< 5.3	5.3	< 3.4	3.4
Methylcyclohexane				< 4.0	4.0	< 4.4	4.4	< 4.8	4.8	< 5.3	5.3	< 3.4	3.4
Methylene chloride	50	100,000	500,000	< 4.0	4.0	< 4.4	4.4	< 4.8	4.8	< 5.3	5.3	< 3.4	3.4
o-Xylene	260	100,000		< 4.0	4.0	< 4.4	4.4	< 4.8	4.8	< 5.3	5.3	< 3.4	3.4
Styrene				< 4.0	4.0	< 4.4	4.4	< 4.8	4.8	< 5.3	5.3	< 3.4	3.4
Tert-butyl alcohol				< 81	81	< 87	87	< 96	96	< 110	110	< 67	67
Tetrachloroethene	1,300	19,000	150,000	< 4.0	4.0	< 4.4	4.4	< 4.8	4.8	< 5.3	5.3	< 3.4	3.4
Toluene	700	100,000	500,000	< 4.0	4.0	< 4.4	4.4	< 4.8	4.8	< 5.3	5.3	< 3.4	3.4
Total Xylenes				< 4.0	4.0	< 4.4	4.4	< 4.8	4.8	< 5.3	5.3	< 3.4	3.4
trans-1,2-Dichloroethene	190	100,000	500,000	< 4.0	4.0	< 4.4	4.4	< 4.8	4.8	< 5.3	5.3	< 3.4	3.4
trans-1,3-Dichloropropene				< 4.0	4.0	< 4.4	4.4	< 4.8	4.8	< 5.3	5.3	< 3.4	3.4
Trichloroethene	470	21,000	200,000	< 4.0	4.0	< 4.4	4.4	< 4.8	4.8	< 5.3	5.3	**0.72**	3.4
Trichlorofluoromethane				< 4.0	4.0	< 4.4	4.4	< 4.8	4.8	< 5.3	5.3	< 3.4	3.4
Trichlorotrifluoroethane				< 4.0	4.0	< 4.4	4.4	< 4.8	4.8	< 5.3	5.3	< 3.4	3.4
Vinyl Chloride	20	900	13,000	< 4.0	4.0	< 4.4	4.4	< 4.8	4.8	< 5.3	5.3	< 3.4	3.4
Total BTEX Concentration				**0**		**0**		**0**		**0**		**0**	
Total VOCs Concentration				**0**		**0**		**5.2**		**37.4**		**54.12**	

Notes:

* - 6 NYCRR Part 375-6 Remedial Program Soil Cleanup Objectives

RL - Reporting Limit

Bold/highlighted- Indicated exceedance of the NYSDEC UUSCO Guidance Value

Bold/highlighted- Indicated exceedance of the NYSDEC RRSCO Guidance Value

Bold/highlighted- Indicated exceedance of the NYSDEC RCSCO Guidance Value

Table 26
Former Pfizer Site A - C224284
243-271 Wallabout Street,
Brooklyn, New York
Track 4 Area - Endpoint Soil Analytical Results
Volatile Organic Compounds

COMPOUND	NYSDEC Part 375.6 Unrestricted Use Soil Cleanup Objectives*	NYDEC Part 375.6 Restricted Residential Soil Cleanup Objectives*	NYDEC Part 375.6 Restricted Commercial Soil Cleanup Objectives*	Endpoint Samples									
				EP14		EP15		EP16		EP17			
				4'		4'		4'		4'		9'	
				5/6/2021		511/2021		5/5/2021		5/6/2021		5/13/2021	
				µg/Kg		µg/Kg		µg/Kg		µg/Kg		µg/Kg	
				Result	RL	Result	RL	Result	RL	Result	RL	Result	RL
1,1,1,2-Tetrachlorothane				< 18	18	< 24	24	< 13	13	< 14	14	< 19	19
1,1,1-Trichloroethane	680	100,000	500,000	< 4.4	4.4	< 6.0	6.0	< 3.2	3.2	< 3.6	3.6	< 4.7	4.7
1,1,2,2-Tetrachloroethane				< 4.4	4.4	< 6.0	6.0	< 3.2	3.2	< 3.6	3.6	< 4.7	4.7
1,1,2-Trichloroethane				< 4.4	4.4	< 6.0	6.0	< 3.2	3.2	< 3.6	3.6	< 4.7	4.7
1,1-Dichloroethane	270	26,000	240,000	< 4.4	4.4	< 6.0	6.0	< 3.2	3.2	< 3.6	3.6	< 4.7	4.7
1,1-Dichloroethene	330	100,000	500,000	< 4.4	4.4	< 6.0	6.0	< 3.2	3.2	< 3.6	3.6	< 4.7	4.7
1,2,3-Trichlorobenzene				< 4.4	4.4	< 6.0	6.0	< 3.2	3.2	< 3.6	3.6	< 4.7	4.7
1,2,4-Trichlorobenzene				< 4.4	4.4	< 6.0	6.0	< 3.2	3.2	< 3.6	3.6	< 4.7	4.7
1,2-Dibromo-3-chloropropane				< 4.4	4.4	< 6.0	6.0	< 3.2	3.2	< 3.6	3.6	< 4.7	4.7
1,2-Dibromomethane				< 4.4	4.4	< 6.0	6.0	< 3.2	3.2	< 3.6	3.6	< 4.7	4.7
1,2-Dichlorobenzene	1,100	100,000	500,000	< 4.4	4.4	< 6.0	6.0	< 3.2	3.2	< 3.6	3.6	< 4.7	4.7
1,2-Dichloroethane	20	3,100	30,000	< 4.4	4.4	< 6.0	6.0	< 3.2	3.2	< 3.6	3.6	< 4.7	4.7
1,2-Dichloropropane				< 4.4	4.4	< 6.0	6.0	< 3.2	3.2	< 3.6	3.6	< 4.7	4.7
1,3-Dichlorobenzene	2,400	4,900	280,000	< 4.4	4.4	< 6.0	6.0	< 3.2	3.2	< 3.6	3.6	< 4.7	4.7
1,4-Dichlorobenzene	1,800	13,000	130,000	< 4.4	4.4	< 6.0	6.0	< 3.2	3.2	< 3.6	3.6	< 4.7	4.7
1,4- dioxane	100	13,000	130,000	< 66	66	< 91	91	< 48	48	< 53	53	< 70	70
2-Hexanone (Methyl Butyl Ketone)				< 22	22	< 30	30	< 16	16	< 18	18	< 23	23
4-Methyl-2-Pentanone				< 22	22	< 30	30	< 16	16	< 18	18	< 23	23
Acetone	50	100,000	500,000	< 22	22	< 30	30	< 16	16	< 18	18	< 23	23
Acrolein				< 4.4	4.4	< 6.0	6.0	< 3.2	3.2	< 3.6	3.6	< 4.7	4.7
Acrylonitrile				< 18	18	< 24	24	< 13	13	< 14	14	< 19	19
Benzene	60	4,800	44,000	< 4.4	4.4	< 6.0	6.0	< 3.2	3.2	< 3.6	3.6	< 4.7	4.7
Bromochloromethane				< 4.4	4.4	< 6.0	6.0	< 3.2	3.2	< 3.6	3.6	< 4.7	4.7
Bromodichloromethane				< 4.4	4.4	< 6.0	6.0	< 3.2	3.2	< 3.6	3.6	< 4.7	4.7
Bromoform				< 4.4	4.4	< 6.0	6.0	< 3.2	3.2	< 3.6	3.6	< 4.7	4.7
Bromomethane				< 4.4	4.4	< 6.0	6.0	< 3.2	3.2	< 3.6	3.6	< 4.7	4.7
Carbon Disulfide				< 4.4	4.4	< 6.0	6.0	< 3.2	3.2	< 3.6	3.6	< 4.7	4.7
Carbon tetrachloride	760	2,400	22,000	< 4.4	4.4	< 6.0	6.0	< 3.2	3.2	< 3.6	3.6	< 4.7	4.7
Chlorobenzene	1,100	100,000	500,000	< 4.4	4.4	< 6.0	6.0	< 3.2	3.2	< 3.6	3.6	< 4.7	4.7
Chloroethane				< 4.4	4.4	< 6.0	6.0	< 3.2	3.2	< 3.6	3.6	< 4.7	4.7
Chloroform	370	49,000	350,000	**0.45**	4.4	**1.8**	6.0	< 3.2	3.2	**6.5**	3.6	< 4.7	4.7
Chloromethane				< 4.4	4.4	< 6.0	6.0	< 3.2	3.2	< 3.6	3.6	< 4.7	4.7
cis-1,2-Dichloroethene	250	100,000	500,000	< 4.4	4.4	< 6.0	6.0	< 3.2	3.2	< 3.6	3.6	< 4.7	4.7
cis-1,3-Dichloropropene				< 4.4	4.4	< 6.0	6.0	< 3.2	3.2	< 3.6	3.6	< 4.7	4.7
Cyclohexane				< 4.4	4.4	< 6.0	6.0	< 3.2	3.2	< 3.6	3.6	< 4.7	4.7
Dibromochloromethane				< 4.4	4.4	< 6.0	6.0	< 3.2	3.2	< 3.6	3.6	< 4.7	4.7
Dichlorodifluoromethane				< 4.4	4.4	< 6.0	6.0	< 3.2	3.2	< 3.6	3.6	< 4.7	4.7
Ethylbenzene	1,000	41,000	390,000	< 4.4	4.4	< 6.0	6.0	< 3.2	3.2	< 3.6	3.6	< 4.7	4.7
Isopropylbenzene				< 4.4	4.4	< 6.0	6.0	< 3.2	3.2	< 3.6	3.6	< 4.7	4.7
m&p-Xylenes	260	100,000		< 4.4	4.4	< 6.0	6.0	< 3.2	3.2	< 3.6	3.6	< 4.7	4.7
Methyl Ethyl Ketone (2-Butanone)	120	100,000	500,000	< 26	26	< 36	36	< 19	19	< 21	21	< 28	28
Methyl t-butyl ether (MTBE)	930	100,000	500,000	< 8.8	8.8	< 12	12	< 6.3	6.3	< 7.1	7.1	< 9.4	9.4
Methylacetate				< 4.4	4.4	< 6.0	6.0	< 3.2	3.2	< 3.6	3.6	< 4.7	4.7
Methylcyclohexane				< 4.4	4.4	< 6.0	6.0	< 3.2	3.2	< 3.6	3.6	< 4.7	4.7
Methylene chloride	50	100,000	500,000	< 4.4	4.4	< 6.0	6.0	< 3.2	3.2	< 3.6	3.6	< 4.7	4.7
o-Xylene	260	100,000		< 4.4	4.4	< 6.0	6.0	< 3.2	3.2	< 3.6	3.6	< 4.7	4.7
Styrene				< 4.4	4.4	< 6.0	6.0	< 3.2	3.2	< 3.6	3.6	< 4.7	4.7
Tert-butyl alcohol				< 88	88	< 120	120	< 63	63	< 71	71	< 94	94
Tetrachloroethene	1,300	19,000	150,000	< 4.4	4.4	< 6.0	6.0	< 3.2	3.2	< 3.6	3.6	< 4.7	4.7
Toluene	700	100,000	500,000	< 4.4	4.4	< 6.0	6.0	< 3.2	3.2	< 3.6	3.6	< 4.7	4.7
Total Xylenes				< 4.4	4.4	< 6.0	6.0	< 3.2	3.2	< 3.6	3.6	< 4.7	4.7
trans-1,2-Dichloroethene	190	100,000	500,000	< 4.4	4.4	< 6.0	6.0	< 3.2	3.2	< 3.6	3.6	< 4.7	4.7
trans-1,3-Dichloropropene				< 4.4	4.4	< 6.0	6.0	< 3.2	3.2	< 3.6	3.6	< 4.7	4.7
Trichloroethene	470	21,000	200,000	**52**	290	**1.9**	6.0	< 3.2	3.2	**40**	210	< 4.7	4.7
Trichlorofluoromethane				< 4.4	4.4	< 6.0	6.0	< 3.2	3.2	< 3.6	3.6	< 4.7	4.7
Trichlorotrifluoroethane				< 4.4	4.4	< 6.0	6.0	< 3.2	3.2	< 3.6	3.6	< 4.7	4.7
Vinyl Chloride	20	900	13,000	< 4.4	4.4	< 6.0	6.0	< 3.2	3.2	< 3.6	3.6	< 4.7	4.7
Total BTEX Concentration				**0**		**0**		**0**		**0**		**0**	
Total VOCs Concentration				**52.45**		**3.7**		**0**		**46.5**		**0**	

Notes:

* - 6 NYCRR Part 375-6 Remedial Program Soil Cleanup Objectives

RL - Reporting Limit

Bold/highlighted- Indicated exceedance of the NYSDEC UUSCO Guidance Value

Bold/highlighted- Indicated exceedance of the NYSDEC RRSCO Guidance Value

Bold/highlighted- Indicated exceedance of the NYSDEC RCSCO Guidance Value

Table 26
Former Pfizer Site A - C224284
243-271 Wallabout Street,
Brooklyn, New York
Track 4 Area - Endpoint Soil Analytical Results
Volatile Organic Compounds

COMPOUND	NYSDEC Part 375.6 Unrestricted Use Soil Cleanup Objectives*	NYDEC Part 375.6 Restricted Residential Soil Cleanup Objectives*	NYDEC Part 375.6 Restricted Commercial Soil Cleanup Objectives*	Endpoint Samples									
				EP18				EP19				EP20	
				4'		9'		4'		4.5'		4'	
				5/10/2021		5/13/2021		5/10/2021		5/14/2021		5/10/2021	
				µg/Kg		µg/Kg		µg/Kg		µg/Kg		µg/Kg	
				Result	RL	Result	RL	Result	RL	Result	RL	Result	RL
1,1,1,2-Tetrachlorothane				< 10	10	< 17	17	< 14	14	< 10	10	< 14	14
1,1,1-Trichloroethane	680	100,000	500,000	< 2.5	2.5	< 4.2	4.2	< 3.5	3.5	< 2.6	2.6	< 3.6	3.6
1,1,2,2-Tetrachloroethane				< 2.5	2.5	< 4.2	4.2	< 3.5	3.5	< 2.6	2.6	< 3.6	3.6
1,1,2-Trichloroethane				< 2.5	2.5	< 4.2	4.2	< 3.5	3.5	< 2.6	2.6	< 3.6	3.6
1,1-Dichloroethane	270	26,000	240,000	< 2.5	2.5	< 4.2	4.2	< 3.5	3.5	< 2.6	2.6	< 3.6	3.6
1,1-Dichloroethene	330	100,000	500,000	< 2.5	2.5	< 4.2	4.2	< 3.5	3.5	< 2.6	2.6	< 3.6	3.6
1,2,3-Trichlorobenzene				< 2.5	2.5	< 4.2	4.2	< 3.5	3.5	< 2.6	2.6	< 3.6	3.6
1,2,4-Trichlorobenzene				< 2.5	2.5	< 4.2	4.2	< 3.5	3.5	< 2.6	2.6	< 3.6	3.6
1,2-Dibromo-3-chloropropane				< 2.5	2.5	< 4.2	4.2	< 3.5	3.5	< 2.6	2.6	< 3.6	3.6
1,2-Dibromomethane				< 2.5	2.5	< 4.2	4.2	< 3.5	3.5	< 2.6	2.6	< 3.6	3.6
1,2-Dichlorobenzene	1,100	100,000	500,000	< 2.5	2.5	< 4.2	4.2	< 3.5	3.5	< 2.6	2.6	< 3.6	3.6
1,2-Dichloroethane	20	3,100	30,000	< 2.5	2.5	< 4.2	4.2	< 3.5	3.5	< 2.6	2.6	< 3.6	3.6
1,2-Dichloropropane				< 2.5	2.5	< 4.2	4.2	< 3.5	3.5	< 2.6	2.6	< 3.6	3.6
1,3-Dichlorobenzene	2,400	4,900	280,000	< 2.5	2.5	< 4.2	4.2	< 3.5	3.5	< 2.6	2.6	< 3.6	3.6
1,4-Dichlorobenzene	1,800	13,000	130,000	< 2.5	2.5	< 4.2	4.2	< 3.5	3.5	< 2.6	2.6	< 3.6	3.6
1,4- dioxane	100	13,000	130,000	< 38	38	< 63	63	< 52	52	< 38	38	< 54	54
2-Hexanone (Methyl Butyl Ketone)				< 13	13	< 21	21	< 17	17	< 13	13	< 18	18
4-Methyl-2-Pentanone				< 13	13	< 21	21	< 17	17	< 13	13	< 18	18
Acetone	50	100,000	500,000	< 13	13	**9.1**	21	**9.9**	17	**9**	13	< 18	18
Acrolein				< 2.5	2.5	< 4.2	4.2	< 3.5	3.5	< 2.6	2.6	< 3.6	3.6
Acrylonitrile				< 10	10	< 17	17	< 14	14	< 10	10	< 14	14
Benzene	60	4,800	44,000	< 2.5	2.5	< 4.2	4.2	< 3.5	3.5	< 2.6	2.6	< 3.6	3.6
Bromochloromethane				< 2.5	2.5	< 4.2	4.2	< 3.5	3.5	< 2.6	2.6	< 3.6	3.6
Bromodichloromethane				< 2.5	2.5	< 4.2	4.2	< 3.5	3.5	< 2.6	2.6	< 3.6	3.6
Bromoform				< 2.5	2.5	< 4.2	4.2	< 3.5	3.5	< 2.6	2.6	< 3.6	3.6
Bromomethane				< 2.5	2.5	< 4.2	4.2	< 3.5	3.5	< 2.6	2.6	< 3.6	3.6
Carbon Disulfide				< 2.5	2.5	< 4.2	4.2	< 3.5	3.5	**0.69**	2.6	< 3.6	3.6
Carbon tetrachloride	760	2,400	22,000	< 2.5	2.5	< 4.2	4.2	< 3.5	3.5	< 2.6	2.6	< 3.6	3.6
Chlorobenzene	1,100	100,000	500,000	< 2.5	2.5	< 4.2	4.2	< 3.5	3.5	< 2.6	2.6	< 3.6	3.6
Chloroethane				< 2.5	2.5	< 4.2	4.2	< 3.5	3.5	< 2.6	2.6	< 3.6	3.6
Chloroform	370	49,000	350,000	< 2.5	2.5	< 4.2	4.2	< 3.5	3.5	< 2.6	2.6	**2.6**	3.6
Chloromethane				< 2.5	2.5	< 4.2	4.2	< 3.5	3.5	< 2.6	2.6	< 3.6	3.6
cis-1,2-Dichloroethene	250	100,000	500,000	< 2.5	2.5	< 4.2	4.2	< 3.5	3.5	< 2.6	2.6	< 3.6	3.6
cis-1,3-Dichloropropene				< 2.5	2.5	< 4.2	4.2	< 3.5	3.5	< 2.6	2.6	< 3.6	3.6
Cyclohexane				< 2.5	2.5	< 4.2	4.2	< 3.5	3.5	< 2.6	2.6	< 3.6	3.6
Dibromochloromethane				< 2.5	2.5	< 4.2	4.2	< 3.5	3.5	< 2.6	2.6	< 3.6	3.6
Dichlorodifluoromethane				< 2.5	2.5	< 4.2	4.2	< 3.5	3.5	< 2.6	2.6	< 3.6	3.6
Ethylbenzene	1,000	41,000	390,000	< 2.5	2.5	< 4.2	4.2	< 3.5	3.5	< 2.6	2.6	< 3.6	3.6
Isopropylbenzene				< 2.5	2.5	< 4.2	4.2	< 3.5	3.5	< 2.6	2.6	< 3.6	3.6
m&p-Xylenes	260	100,000		< 2.5	2.5	< 4.2	4.2	< 3.5	3.5	< 2.6	2.6	< 3.6	3.6
Methyl Ethyl Ketone (2-Butanone)	120	100,000	500,000	< 15	15	< 25	25	< 21	21	< 15	15	< 22	22
Methyl t-butyl ether (MTBE)	930	100,000	500,000	< 5.0	5.0	< 8.4	8.4	< 7.0	7.0	< 5.1	5.1	< 7.2	7.2
Methylacetate				< 2.5	2.5	< 4.2	4.2	< 3.5	3.5	< 2.6	2.6	< 3.6	3.6
Methylcyclohexane				< 2.5	2.5	< 4.2	4.2	< 3.5	3.5	< 2.6	2.6	< 3.6	3.6
Methylene chloride	50	100,000	500,000	< 2.5	2.5	< 4.2	4.2	< 3.5	3.5	< 2.6	2.6	< 3.6	3.6
o-Xylene	260	100,000		< 2.5	2.5	< 4.2	4.2	< 3.5	3.5	< 2.6	2.6	< 3.6	3.6
Styrene				< 2.5	2.5	< 4.2	4.2	< 3.5	3.5	< 2.6	2.6	< 3.6	3.6
Tert-butyl alcohol				< 50	50	< 84	84	< 70	70	< 51	51	< 72	72
Tetrachloroethene	1,300	19,000	150,000	< 2.5	2.5	< 4.2	4.2	< 3.5	3.5	< 2.6	2.6	< 3.6	3.6
Toluene	700	100,000	500,000	< 2.5	2.5	< 4.2	4.2	< 3.5	3.5	< 2.6	2.6	< 3.6	3.6
Total Xylenes				< 2.5	2.5	< 4.2	4.2	< 3.5	3.5	< 2.6	2.6	< 3.6	3.6
trans-1,2-Dichloroethene	190	100,000	500,000	< 2.5	2.5	< 4.2	4.2	< 3.5	3.5	< 2.6	2.6	< 3.6	3.6
trans-1,3-Dichloropropene				< 2.5	2.5	< 4.2	4.2	< 3.5	3.5	< 2.6	2.6	< 3.6	3.6
Trichloroethene	470	21,000	200,000	< 2.5	2.5	< 4.2	4.2	< 3.5	3.5	< 2.6	2.6	< 3.6	3.6
Trichlorofluoromethane				< 2.5	2.5	< 4.2	4.2	< 3.5	3.5	< 2.6	2.6	< 3.6	3.6
Trichlorotrifluoroethane				< 2.5	2.5	< 4.2	4.2	< 3.5	3.5	< 2.6	2.6	< 3.6	3.6
Vinyl Chloride	20	900	13,000	< 2.5	2.5	< 4.2	4.2	< 3.5	3.5	< 2.6	2.6	< 3.6	3.6
Total BTEX Concentration				**0**		**0**		**0**		**0**		**0**	
Total VOCs Concentration				**0**		**9.1**		**9.9**		**9.69**		**2.6**	

Notes:

* - 6 NYCRR Part 375-6 Remedial Program Soil Cleanup Objectives

RL - Reporting Limit

Bold/highlighted- Indicated exceedance of the NYSDEC UUSCO Guidance Value

Bold/highlighted- Indicated exceedance of the NYSDEC RRSCO Guidance Value

Bold/highlighted- Indicated exceedance of the NYSDEC RCSCO Guidance Value

Table 26
Former Pfizer Site A - C224284
243-271 Wallabout Street,
Brooklyn, New York
Track 4 Area - Endpoint Soil Analytical Results
Volatile Organic Compounds

COMPOUND	NYSDEC Part 375.6 Unrestricted Use Soil Cleanup Objectives*	NYDEC Part 375.6 Restricted Residential Soil Cleanup Objectives*	NYDEC Part 375.6 Restricted Commercial Soil Cleanup Objectives*	Endpoint Samples									
				EP39		EP40		EP41		EP42		EP43	
				5'		5'		4'		4'		5'	
				6/4/2021		6/4/2021		5/6/2021		5/6/2021		6/4/2021	
				µg/Kg		µg/Kg		µg/Kg		µg/Kg		µg/Kg	
				Result	RL	Result	RL	Result	RL	Result	RL	Result	RL
1,1,1,2-Tetrachlorothane				< 39	39	< 13	13	< 15	15	< 21	21	< 30	30
1,1,1-Trichloroethane	680	100,000	500,000	< 9.7	9.7	< 3.2	3.2	< 3.8	3.8	< 5.3	5.3	< 7.4	7.4
1,1,2,2-Tetrachloroethane				< 9.7	9.7	< 3.2	3.2	< 3.8	3.8	< 5.3	5.3	< 7.4	7.4
1,1,2-Trichloroethane				< 9.7	9.7	< 3.2	3.2	< 3.8	3.8	< 5.3	5.3	< 7.4	7.4
1,1-Dichloroethane	270	26,000	240,000	< 9.7	9.7	< 3.2	3.2	< 3.8	3.8	< 5.3	5.3	< 7.4	7.4
1,1-Dichloroethene	330	100,000	500,000	< 9.7	9.7	< 3.2	3.2	< 3.8	3.8	< 5.3	5.3	< 7.4	7.4
1,2,3-Trichlorobenzene				< 9.7	9.7	< 3.2	3.2	< 3.8	3.8	< 5.3	5.3	< 7.4	7.4
1,2,4-Trichlorobenzene				< 9.7	9.7	< 3.2	3.2	< 3.8	3.8	< 5.3	5.3	< 7.4	7.4
1,2-Dibromo-3-chloropropane				< 9.7	9.7	< 3.2	3.2	< 3.8	3.8	< 5.3	5.3	< 7.4	7.4
1,2-Dibromomethane				< 9.7	9.7	< 3.2	3.2	< 3.8	3.8	< 5.3	5.3	< 7.4	7.4
1,2-Dichlorobenzene	1,100	100,000	500,000	< 9.7	9.7	< 3.2	3.2	< 3.8	3.8	< 5.3	5.3	< 7.4	7.4
1,2-Dichloroethane	20	3,100	30,000	< 9.7	9.7	< 3.2	3.2	< 3.8	3.8	< 5.3	5.3	< 7.4	7.4
1,2-Dichloropropane				< 9.7	9.7	< 3.2	3.2	< 3.8	3.8	< 5.3	5.3	< 7.4	7.4
1,3-Dichlorobenzene	2,400	4,900	280,000	< 9.7	9.7	< 3.2	3.2	< 3.8	3.8	< 5.3	5.3	< 7.4	7.4
1,4-Dichlorobenzene	1,800	13,000	130,000	< 9.7	9.7	< 3.2	3.2	< 3.8	3.8	< 5.3	5.3	< 7.4	7.4
1,4- dioxane	100	13,000	130,000	< 100	100	< 48	48	< 56	56	< 79	79	< 100	100
2-Hexanone (Methyl Butyl Ketone)				< 48	48	< 16	16	< 19	19	< 26	26	< 37	37
4-Methyl-2-Pentanone				< 48	48	< 16	16	< 19	19	< 26	26	< 37	37
Acetone	50	100,000	500,000	< 48	48	**24**	16	< 19	19	< 26	26	< 37	37
Acrolein				< 9.7	9.7	< 3.2	3.2	< 3.8	3.8	< 5.3	5.3	< 7.4	7.4
Acrylonitrile				< 39	39	< 13	13	< 15	15	< 21	21	< 30	30
Benzene	60	4,800	44,000	< 9.7	9.7	< 3.2	3.2	< 3.8	3.8	< 5.3	5.3	< 7.4	7.4
Bromochloromethane				< 9.7	9.7	< 3.2	3.2	< 3.8	3.8	< 5.3	5.3	< 7.4	7.4
Bromodichloromethane				< 9.7	9.7	< 3.2	3.2	< 3.8	3.8	< 5.3	5.3	< 7.4	7.4
Bromoform				< 9.7	9.7	< 3.2	3.2	< 3.8	3.8	< 5.3	5.3	< 7.4	7.4
Bromomethane				< 9.7	9.7	< 3.2	3.2	< 3.8	3.8	< 5.3	5.3	< 7.4	7.4
Carbon Disulfide				< 9.7	9.7	< 3.2	3.2	< 3.8	3.8	< 5.3	5.3	< 7.4	7.4
Carbon tetrachloride	760	2,400	22,000	< 9.7	9.7	< 3.2	3.2	< 3.8	3.8	< 5.3	5.3	< 7.4	7.4
Chlorobenzene	1,100	100,000	500,000	< 9.7	9.7	< 3.2	3.2	< 3.8	3.8	< 5.3	5.3	< 7.4	7.4
Chloroethane				< 9.7	9.7	< 3.2	3.2	< 3.8	3.8	< 5.3	5.3	< 7.4	7.4
Chloroform	370	49,000	350,000	**2.1**	9.7	**0.53**	3.2	**5.4**	3.8	< 5.3	5.3	< 7.4	7.4
Chloromethane				< 9.7	9.7	< 3.2	3.2	< 3.8	3.8	< 5.3	5.3	< 7.4	7.4
cis-1,2-Dichloroethene	250	100,000	500,000	< 9.7	9.7	< 3.2	3.2	< 3.8	3.8	< 5.3	5.3	< 7.4	7.4
cis-1,3-Dichloropropene				< 9.7	9.7	< 3.2	3.2	< 3.8	3.8	< 5.3	5.3	< 7.4	7.4
Cyclohexane				< 9.7	9.7	< 3.2	3.2	< 3.8	3.8	< 5.3	5.3	< 7.4	7.4
Dibromochloromethane				< 9.7	9.7	< 3.2	3.2	< 3.8	3.8	< 5.3	5.3	< 7.4	7.4
Dichlorodifluoromethane				< 9.7	9.7	< 3.2	3.2	< 3.8	3.8	< 5.3	5.3	< 7.4	7.4
Ethylbenzene	1,000	41,000	390,000	< 9.7	9.7	< 3.2	3.2	< 3.8	3.8	< 5.3	5.3	< 7.4	7.4
Isopropylbenzene				< 9.7	9.7	< 3.2	3.2	< 3.8	3.8	< 5.3	5.3	< 7.4	7.4
m&p-Xylenes	260	100,000		< 9.7	9.7	< 3.2	3.2	< 3.8	3.8	< 5.3	5.3	< 7.4	7.4
Methyl Ethyl Ketone (2-Butanone)	120	100,000	500,000	< 58	58	< 19	19	< 23	23	< 32	32	< 44	44
Methyl t-butyl ether (MTBE)	930	100,000	500,000	< 19	19	< 6.5	6.5	< 7.5	7.5	< 11	11	< 15	15
Methylacetate				< 9.7	9.7	< 3.2	3.2	< 3.8	3.8	< 5.3	5.3	< 7.4	7.4
Methylcyclohexane				< 9.7	9.7	< 3.2	3.2	< 3.8	3.8	< 5.3	5.3	< 7.4	7.4
Methylene chloride	50	100,000	500,000	< 9.7	9.7	< 3.2	3.2	< 3.8	3.8	< 5.3	5.3	< 7.4	7.4
o-Xylene	260	100,000		< 9.7	9.7	< 3.2	3.2	< 3.8	3.8	< 5.3	5.3	< 7.4	7.4
Styrene				< 9.7	9.7	< 3.2	3.2	< 3.8	3.8	< 5.3	5.3	< 7.4	7.4
Tert-butyl alcohol				< 190	190	< 65	65	< 75	75	< 110	110	< 150	150
Tetrachloroethene	1,300	19,000	150,000	< 9.7	9.7	< 3.2	3.2	< 3.8	3.8	< 5.3	5.3	< 7.4	7.4
Toluene	700	100,000	500,000	< 9.7	9.7	< 3.2	3.2	< 3.8	3.8	< 5.3	5.3	< 7.4	7.4
Total Xylenes				< 9.7	9.7	< 3.2	3.2	< 3.8	3.8	< 5.3	5.3	< 7.4	7.4
trans-1,2-Dichloroethene	190	100,000	500,000	< 9.7	9.7	< 3.2	3.2	< 3.8	3.8	< 5.3	5.3	< 7.4	7.4
trans-1,3-Dichloropropene				< 9.7	9.7	< 3.2	3.2	< 3.8	3.8	< 5.3	5.3	< 7.4	7.4
Trichloroethene	470	21,000	200,000	< 9.7	9.7	< 3.2	3.2	< 3.8	3.8	< 5.3	5.3	< 7.4	7.4
Trichlorofluoromethane				< 9.7	9.7	< 3.2	3.2	< 3.8	3.8	< 5.3	5.3	< 7.4	7.4
Trichlorotrifluoroethane				< 9.7	9.7	< 3.2	3.2	< 3.8	3.8	< 5.3	5.3	< 7.4	7.4
Vinyl Chloride	20	900	13,000	< 9.7	9.7	< 3.2	3.2	< 3.8	3.8	< 5.3	5.3	< 7.4	7.4
Total BTEX Concentration				**0**		**0**		**0**		**0**		**0**	
Total VOCs Concentration				**2.1**		**24.53**		**5.4**		**0**		**0**	

Notes:

* - 6 NYCRR Part 375-6 Remedial Program Soil Cleanup Objectives

RL - Reporting Limit

Bold/highlighted- Indicated exceedance of the NYSDEC UUSCO Guidance Value

Bold/highlighted- Indicated exceedance of the NYSDEC RRSCO Guidance Value

Bold/highlighted- Indicated exceedance of the NYSDEC RCSCO Guidance Value

Table 26
Former Pfizer Site A - C224284
243-271 Wallabout Street,
Brooklyn, New York
Track 4 Area - Endpoint Soil Analytical Results
Volatile Organic Compounds

COMPOUND	NYSDEC Part 375.6 Unrestricted Use Soil Cleanup Objectives*	NYDEC Part 375.6 Restricted Residential Soil Cleanup Objectives*	NYDEC Part 375.6 Restricted Commercial Soil Cleanup Objectives*	Endpoint Samples									
				EP44		EP45		EP64		EP65		EP66	
				5'		5'		5'		5.5'		5.5'	
				6/9/2021		6/9/2021		6/9/2021		6/22/2021		6/28/2021	
				µg/Kg		µg/Kg		µg/Kg		µg/Kg		µg/Kg	
				Result	RL	Result	RL	Result	RL	Result	RL	Result	RL
1,1,1,2-Tetrachlorothane				< 22	22	< 22	22	< 19	19	< 22	22	< 26	26
1,1,1-Trichloroethane	680	100,000	500,000	< 5.5	5.5	< 5.5	5.5	< 4.7	4.7	< 5.4	5.4	< 6.5	6.5
1,1,2,2-Tetrachloroethane				< 5.5	5.5	< 5.5	5.5	< 4.7	4.7	< 5.4	5.4	< 6.5	6.5
1,1,2-Trichloroethane				< 5.5	5.5	< 5.5	5.5	< 4.7	4.7	< 5.4	5.4	< 6.5	6.5
1,1-Dichloroethane	270	26,000	240,000	< 5.5	5.5	< 5.5	5.5	< 4.7	4.7	< 5.4	5.4	< 6.5	6.5
1,1-Dichloroethene	330	100,000	500,000	< 5.5	5.5	< 5.5	5.5	< 4.7	4.7	< 5.4	5.4	< 6.5	6.5
1,2,3-Trichlorobenzene				< 5.5	5.5	< 5.5	5.5	< 4.7	4.7	< 5.4	5.4	< 6.5	6.5
1,2,4-Trichlorobenzene				< 5.5	5.5	< 5.5	5.5	< 4.7	4.7	< 5.4	5.4	< 6.5	6.5
1,2-Dibromo-3-chloropropane				< 5.5	5.5	< 5.5	5.5	< 4.7	4.7	< 5.4	5.4	< 6.5	6.5
1,2-Dibromomethane				< 5.5	5.5	< 5.5	5.5	< 4.7	4.7	< 5.4	5.4	< 6.5	6.5
1,2-Dichlorobenzene	1,100	100,000	500,000	< 5.5	5.5	< 5.5	5.5	< 4.7	4.7	< 5.4	5.4	< 6.5	6.5
1,2-Dichloroethane	20	3,100	30,000	< 5.5	5.5	< 5.5	5.5	< 4.7	4.7	< 5.4	5.4	< 6.5	6.5
1,2-Dichloropropane				< 5.5	5.5	< 5.5	5.5	< 4.7	4.7	< 5.4	5.4	< 6.5	6.5
1,3-Dichlorobenzene	2,400	4,900	280,000	< 5.5	5.5	< 5.5	5.5	< 4.7	4.7	< 5.4	5.4	< 6.5	6.5
1,4-Dichlorobenzene	1,800	13,000	130,000	< 5.5	5.5	< 5.5	5.5	< 4.7	4.7	< 5.4	5.4	< 6.5	6.5
1,4- dioxane	100	13,000	130,000	< 82	82	< 83	83	< 71	71	< 82	82	< 98	98
2-Hexanone (Methyl Butyl Ketone)				< 27	27	< 28	28	< 24	24	< 27	27	< 33	33
4-Methyl-2-Pentanone				< 27	27	< 28	28	< 24	24	< 27	27	< 33	33
Acetone	50	100,000	500,000	< 27	27	< 28	28	< 24	24	< 27	27	< 33	33
Acrolein				< 5.5	5.5	< 5.5	5.5	< 4.7	4.7	< 5.4	5.4	< 6.5	6.5
Acrylonitrile				< 22	22	< 22	22	< 19	19	< 22	22	< 26	26
Benzene	60	4,800	44,000	< 5.5	5.5	< 5.5	5.5	< 4.7	4.7	< 5.4	5.4	< 6.5	6.5
Bromochloromethane				< 5.5	5.5	< 5.5	5.5	< 4.7	4.7	< 5.4	5.4	< 6.5	6.5
Bromodichloromethane				< 5.5	5.5	< 5.5	5.5	< 4.7	4.7	< 5.4	5.4	< 6.5	6.5
Bromoform				< 5.5	5.5	< 5.5	5.5	< 4.7	4.7	< 5.4	5.4	< 6.5	6.5
Bromomethane				< 5.5	5.5	< 5.5	5.5	< 4.7	4.7	< 5.4	5.4	< 6.5	6.5
Carbon Disulfide				< 5.5	5.5	< 5.5	5.5	< 4.7	4.7	< 5.4	5.4	< 6.5	6.5
Carbon tetrachloride	760	2,400	22,000	< 5.5	5.5	< 5.5	5.5	< 4.7	4.7	< 5.4	5.4	< 6.5	6.5
Chlorobenzene	1,100	100,000	500,000	< 5.5	5.5	< 5.5	5.5	< 4.7	4.7	< 5.4	5.4	< 6.5	6.5
Chloroethane				< 5.5	5.5	< 5.5	5.5	< 4.7	4.7	< 5.4	5.4	< 6.5	6.5
Chloroform	370	49,000	350,000	< 5.5	5.5	< 5.5	5.5	< 4.7	4.7	< 5.4	5.4	< 6.5	6.5
Chloromethane				< 5.5	5.5	< 5.5	5.5	< 4.7	4.7	< 5.4	5.4	< 6.5	6.5
cis-1,2-Dichloroethene	250	100,000	500,000	< 5.5	5.5	< 5.5	5.5	< 4.7	4.7	< 5.4	5.4	< 6.5	6.5
cis-1,3-Dichloropropene				< 5.5	5.5	< 5.5	5.5	< 4.7	4.7	< 5.4	5.4	< 6.5	6.5
Cyclohexane				< 5.5	5.5	< 5.5	5.5	< 4.7	4.7	< 5.4	5.4	< 6.5	6.5
Dibromochloromethane				< 5.5	5.5	< 5.5	5.5	< 4.7	4.7	< 5.4	5.4	< 6.5	6.5
Dichlorodifluoromethane				< 5.5	5.5	< 5.5	5.5	< 4.7	4.7	< 5.4	5.4	< 6.5	6.5
Ethylbenzene	1,000	41,000	390,000	< 5.5	5.5	< 5.5	5.5	< 4.7	4.7	< 5.4	5.4	< 6.5	6.5
Isopropylbenzene				< 5.5	5.5	< 5.5	5.5	< 4.7	4.7	< 5.4	5.4	< 6.5	6.5
m&p-Xylenes	260	100,000		< 5.5	5.5	< 5.5	5.5	< 4.7	4.7	< 5.4	5.4	< 6.5	6.5
Methyl Ethyl Ketone (2-Butanone)	120	100,000	500,000	< 33	33	< 33	33	< 28	28	< 33	33	< 39	39
Methyl t-butyl ether (MTBE)	930	100,000	500,000	< 11	11	< 11	11	< 9.4	9.4	< 11	11	< 13	13
Methylacetate				< 5.5	5.5	< 5.5	5.5	< 4.7	4.7	< 5.4	5.4	< 6.5	6.5
Methylcyclohexane				< 5.5	5.5	< 5.5	5.5	< 4.7	4.7	< 5.4	5.4	< 6.5	6.5
Methylene chloride	50	100,000	500,000	< 5.5	5.5	< 5.5	5.5	< 4.7	4.7	< 5.4	5.4	< 6.5	6.5
o-Xylene	260	100,000		< 5.5	5.5	< 5.5	5.5	< 4.7	4.7	< 5.4	5.4	< 6.5	6.5
Styrene				< 5.5	5.5	< 5.5	5.5	< 4.7	4.7	< 5.4	5.4	< 6.5	6.5
Tert-butyl alcohol				< 110	110	< 110	110	< 94	94	< 110	110	< 130	130
Tetrachloroethene	1,300	19,000	150,000	< 5.5	5.5	< 5.5	5.5	< 4.7	4.7	< 5.4	5.4	< 6.5	6.5
Toluene	700	100,000	500,000	< 5.5	5.5	< 5.5	5.5	< 4.7	4.7	< 5.4	5.4	< 6.5	6.5
Total Xylenes				< 5.5	5.5	< 5.5	5.5	< 4.7	4.7	< 5.4	5.4	< 6.5	6.5
trans-1,2-Dichloroethene	190	100,000	500,000	< 5.5	5.5	< 5.5	5.5	< 4.7	4.7	< 5.4	5.4	< 6.5	6.5
trans-1,3-Dichloropropene				< 5.5	5.5	< 5.5	5.5	< 4.7	4.7	< 5.4	5.4	< 6.5	6.5
Trichloroethene	470	21,000	200,000	< 5.5	5.5	< 5.5	5.5	< 4.7	4.7	< 5.4	5.4	< 6.5	6.5
Trichlorofluoromethane				< 5.5	5.5	< 5.5	5.5	< 4.7	4.7	< 5.4	5.4	< 6.5	6.5
Trichlorotrifluoroethane				< 5.5	5.5	< 5.5	5.5	< 4.7	4.7	< 5.4	5.4	< 6.5	6.5
Vinyl Chloride	20	900	13,000	< 5.5	5.5	< 5.5	5.5	< 4.7	4.7	< 5.4	5.4	< 6.5	6.5
Total BTEX Concentration				**0**		**0**		**0**		**0**		**0**	
Total VOCs Concentration				**0**		**0**		**0**		**0**		**0**	

Notes:

* - 6 NYCRR Part 375-6 Remedial Program Soil Cleanup Objectives

RL - Reporting Limit

Bold/highlighted- Indicated exceedance of the NYSDEC UUSCO Guidance Value

Bold/highlighted- Indicated exceedance of the NYSDEC RRSCO Guidance Value

Bold/highlighted- Indicated exceedance of the NYSDEC RCSCO Guidance Value

Table 26
Former Pfizer Site A - C224284
243-271 Wallabout Street,
Brooklyn, New York
Track 4 Area - Endpoint Soil Analytical Results
Volatile Organic Compounds

COMPOUND	NYSDEC Part 375.6 Unrestricted Use Soil Cleanup Objectives*	NYDEC Part 375.6 Restricted Residential Soil Cleanup Objectives*	NYDEC Part 375.6 Restricted Commercial Soil Cleanup Objectives*	Endpoint Samples									
				Soil Duplicate		Soil Duplicate		Soil Duplicate		Soil Duplicate		Soil Duplicate	
				EP10		EP11		EP18		EP15		EP18	
				5/5/2021		5/6/2021		5/10/2021		5/11/2021		5/13/2021	
				µg/Kg		µg/Kg		µg/Kg		µg/Kg		µg/Kg	
				Result	RL	Result	RL	Result	RL	Result	RL	Result	RL
1,1,1,2-Tetrachlorothane				< 14	14	< 22	22	< 18	18	< 7.0	7.0	< 15	15
1,1,1-Trichloroethane	680	100,000	500,000	< 3.5	3.5	< 5.4	5.4	< 4.5	4.5	< 1.8	1.8	< 3.7	3.7
1,1,2,2-Tetrachloroethane				< 3.5	3.5	< 5.4	5.4	< 4.5	4.5	< 1.8	1.8	< 3.7	3.7
1,1,2-Trichloroethane				< 3.5	3.5	< 5.4	5.4	< 4.5	4.5	< 1.8	1.8	< 3.7	3.7
1,1-Dichloroethane	270	26,000	240,000	< 3.5	3.5	< 5.4	5.4	< 4.5	4.5	< 1.8	1.8	< 3.7	3.7
1,1-Dichloroethene	330	100,000	500,000	< 3.5	3.5	< 5.4	5.4	< 4.5	4.5	< 1.8	1.8	< 3.7	3.7
1,2,3-Trichlorobenzene				< 3.5	3.5	< 5.4	5.4	< 4.5	4.5	< 1.8	1.8	< 3.7	3.7
1,2,4-Trichlorobenzene				< 3.5	3.5	< 5.4	5.4	< 4.5	4.5	< 1.8	1.8	< 3.7	3.7
1,2-Dibromo-3-chloropropane				< 3.5	3.5	< 5.4	5.4	< 4.5	4.5	< 1.8	1.8	< 3.7	3.7
1,2-Dibromomethane				< 3.5	3.5	< 5.4	5.4	< 4.5	4.5	< 1.8	1.8	< 3.7	3.7
1,2-Dichlorobenzene	1,100	100,000	500,000	< 3.5	3.5	< 5.4	5.4	< 4.5	4.5	< 1.8	1.8	< 3.7	3.7
1,2-Dichloroethane	20	3,100	30,000	< 3.5	3.5	< 5.4	5.4	< 4.5	4.5	< 1.8	1.8	< 3.7	3.7
1,2-Dichloropropane				< 3.5	3.5	< 5.4	5.4	< 4.5	4.5	< 1.8	1.8	< 3.7	3.7
1,3-Dichlorobenzene	2,400	4,900	280,000	< 3.5	3.5	< 5.4	5.4	< 4.5	4.5	< 1.8	1.8	< 3.7	3.7
1,4-Dichlorobenzene	1,800	13,000	130,000	< 3.5	3.5	< 5.4	5.4	< 4.5	4.5	< 1.8	1.8	< 3.7	3.7
1,4- dioxane	100	13,000	130,000	< 52	52	< 81	81	< 68	68	< 26	26	< 55	55
2-Hexanone (Methyl Butyl Ketone)				< 17	17	< 27	27	< 23	23	< 8.8	8.8	< 18	18
4-Methyl-2-Pentanone				< 17	17	< 27	27	< 23	23	< 8.8	8.8	< 18	18
Acetone	50	100,000	500,000	< 17	17	< 27	27	< 23	23	< 8.8	8.8	**7.3**	18
Acrolein				< 3.5	3.5	< 5.4	5.4	< 4.5	4.5	< 1.8	1.8	< 3.7	3.7
Acrylonitrile				< 14	14	< 22	22	< 18	18	< 7.0	7.0	< 15	15
Benzene	60	4,800	44,000	< 3.5	3.5	< 5.4	5.4	< 4.5	4.5	< 1.8	1.8	< 3.7	3.7
Bromochloromethane				< 3.5	3.5	< 5.4	5.4	< 4.5	4.5	< 1.8	1.8	< 3.7	3.7
Bromodichloromethane				< 3.5	3.5	< 5.4	5.4	< 4.5	4.5	< 1.8	1.8	< 3.7	3.7
Bromoform				< 3.5	3.5	< 5.4	5.4	< 4.5	4.5	< 1.8	1.8	< 3.7	3.7
Bromomethane				< 3.5	3.5	< 5.4	5.4	< 4.5	4.5	< 1.8	1.8	< 3.7	3.7
Carbon Disulfide				< 3.5	3.5	< 5.4	5.4	< 4.5	4.5	< 1.8	1.8	< 3.7	3.7
Carbon tetrachloride	760	2,400	22,000	< 3.5	3.5	< 5.4	5.4	< 4.5	4.5	< 1.8	1.8	< 3.7	3.7
Chlorobenzene	1,100	100,000	500,000	< 3.5	3.5	< 5.4	5.4	< 4.5	4.5	< 1.8	1.8	< 3.7	3.7
Chloroethane				< 3.5	3.5	< 5.4	5.4	< 4.5	4.5	< 1.8	1.8	< 3.7	3.7
Chloroform	370	49,000	350,000	< 3.5	3.5	< 5.4	5.4	< 4.5	4.5	**0.91**	1.8	< 3.7	3.7
Chloromethane				< 3.5	3.5	< 5.4	5.4	< 4.5	4.5	< 1.8	1.8	< 3.7	3.7
cis-1,2-Dichloroethene	250	100,000	500,000	< 3.5	3.5	< 5.4	5.4	< 4.5	4.5	< 1.8	1.8	< 3.7	3.7
cis-1,3-Dichloropropene				< 3.5	3.5	< 5.4	5.4	< 4.5	4.5	< 1.8	1.8	< 3.7	3.7
Cyclohexane				< 3.5	3.5	< 5.4	5.4	< 4.5	4.5	< 1.8	1.8	< 3.7	3.7
Dibromochloromethane				< 3.5	3.5	< 5.4	5.4	< 4.5	4.5	< 1.8	1.8	< 3.7	3.7
Dichlorodifluoromethane				< 3.5	3.5	< 5.4	5.4	< 4.5	4.5	< 1.8	1.8	< 3.7	3.7
Ethylbenzene	1,000	41,000	390,000	< 3.5	3.5	< 5.4	5.4	< 4.5	4.5	< 1.8	1.8	< 3.7	3.7
Isopropylbenzene				< 3.5	3.5	< 5.4	5.4	< 4.5	4.5	< 1.8	1.8	< 3.7	3.7
m&p-Xylenes	260	100,000		< 3.5	3.5	< 5.4	5.4	< 4.5	4.5	< 1.8	1.8	< 3.7	3.7
Methyl Ethyl Ketone (2-Butanone)	120	100,000	500,000	< 21	21	< 33	33	< 27	27	< 11	11	< 22	22
Methyl t-butyl ether (MTBE)	930	100,000	500,000	< 6.9	6.9	< 11	11	< 9.0	9.0	< 3.5	3.5	< 7.3	7.3
Methylacetate				< 3.5	3.5	< 5.4	5.4	< 4.5	4.5	< 1.8	1.8	< 3.7	3.7
Methylcyclohexane				< 3.5	3.5	< 5.4	5.4	< 4.5	4.5	< 1.8	1.8	< 3.7	3.7
Methylene chloride	50	100,000	500,000	< 3.5	3.5	< 5.4	5.4	< 4.5	4.5	< 1.8	1.8	< 3.7	3.7
o-Xylene	260	100,000		< 3.5	3.5	< 5.4	5.4	< 4.5	4.5	< 1.8	1.8	< 3.7	3.7
Styrene				< 3.5	3.5	< 5.4	5.4	< 4.5	4.5	< 1.8	1.8	< 3.7	3.7
Tert-butyl alcohol				< 69	69	< 110	110	< 90	90	< 35	35	< 73	73
Tetrachloroethene	1,300	19,000	150,000	< 3.5	3.5	< 5.4	5.4	< 4.5	4.5	< 1.8	1.8	< 3.7	3.7
Toluene	700	100,000	500,000	< 3.5	3.5	< 5.4	5.4	< 4.5	4.5	< 1.8	1.8	< 3.7	3.7
Total Xylenes				< 3.5	3.5	< 5.4	5.4	< 4.5	4.5	< 1.8	1.8	< 3.7	3.7
trans-1,2-Dichloroethene	190	100,000	500,000	< 3.5	3.5	< 5.4	5.4	< 4.5	4.5	< 1.8	1.8	< 3.7	3.7
trans-1,3-Dichloropropene				< 3.5	3.5	< 5.4	5.4	< 4.5	4.5	< 1.8	1.8	< 3.7	3.7
Trichloroethene	470	21,000	200,000	< 3.5	3.5	< 5.4	5.4	< 4.5	4.5	**0.76**	1.8	< 3.7	3.7
Trichlorofluoromethane				< 3.5	3.5	< 5.4	5.4	< 4.5	4.5	< 1.8	1.8	< 3.7	3.7
Trichlorotrifluoroethane				< 3.5	3.5	< 5.4	5.4	< 4.5	4.5	< 1.8	1.8	< 3.7	3.7
Vinyl Chloride	20	900	13,000	< 3.5	3.5	< 5.4	5.4	< 4.5	4.5	< 1.8	1.8	< 3.7	3.7
Total BTEX Concentration				**0**		**0**		**0**		**0**		**0**	
Total VOCs Concentration				**0**		**0**		**0**		**1.67**		**7.3**	

Notes:

* - 6 NYCRR Part 375-6 Remedial Program Soil Cleanup Objectives

RL - Reporting Limit

Bold/highlighted- Indicated exceedance of the NYSDEC UUSCO Guidance Value

Bold/highlighted- Indicated exceedance of the NYSDEC RRSCO Guidance Value

Bold/highlighted- Indicated exceedance of the NYSDEC RCSCO Guidance Value

Table 26
Former Pfizer Site A - C224284
243-271 Wallabout Street,
Brooklyn, New York
Track 4 Area - Endpoint Soil Analytical Results
Volatile Organic Compounds

COMPOUND	NYSDEC Part 375.6 Unrestricted Use Soil Cleanup Objectives*	NYDEC Part 375.6 Restricted Residential Soil Cleanup Objectives*	NYDEC Part 375.6 Restricted Commercial Soil Cleanup Objectives*	Endpoint Sample Results									
				Soil Duplicate		Soil Duplicate		Soil Duplicate		Soil Duplicate		Soil Duplicate	
				EP11		EP44		EP45		EP65		EP66	
				5/14/2021		6/9/2021		6/9/2021		6/22/2021		6/28/2021	
				µg/Kg		µg/Kg		µg/Kg		µg/Kg		µg/Kg	
				Result	RL	Result	RL	Result	RL	Result	RL	Result	RL
1,1,1,2-Tetrachlorothane				< 12	12	< 19	19	< 21	21	< 21	21	< 26	26
1,1,1-Trichloroethane	680	100,000	500,000	< 3.1	3.1	< 4.8	4.8	< 5.2	5.2	< 5.3	5.3	< 6.5	6.5
1,1,2,2-Tetrachloroethane				< 3.1	3.1	< 4.8	4.8	< 5.2	5.2	< 5.3	5.3	< 6.5	6.5
1,1,2-Trichloroethane				< 3.1	3.1	< 4.8	4.8	< 5.2	5.2	< 5.3	5.3	< 6.5	6.5
1,1-Dichloroethane	270	26,000	240,000	< 3.1	3.1	< 4.8	4.8	< 5.2	5.2	< 5.3	5.3	< 6.5	6.5
1,1-Dichloroethene	330	100,000	500,000	< 3.1	3.1	< 4.8	4.8	< 5.2	5.2	< 5.3	5.3	< 6.5	6.5
1,2,3-Trichlorobenzene				< 3.1	3.1	< 4.8	4.8	< 5.2	5.2	< 5.3	5.3	< 6.5	6.5
1,2,4-Trichlorobenzene				< 3.1	3.1	< 4.8	4.8	< 5.2	5.2	< 5.3	5.3	< 6.5	6.5
1,2-Dibromo-3-chloropropane				< 3.1	3.1	< 4.8	4.8	< 5.2	5.2	< 5.3	5.3	< 6.5	6.5
1,2-Dibromomethane				< 3.1	3.1	< 4.8	4.8	< 5.2	5.2	< 5.3	5.3	< 6.5	6.5
1,2-Dichlorobenzene	1,100	100,000	500,000	< 3.1	3.1	< 4.8	4.9	< 5.2	5.2	< 5.3	5.3	< 6.5	6.5
1,2-Dichloroethane	20	3,100	30,000	< 3.1	3.1	< 4.8	4.10	< 5.2	5.2	< 5.3	5.3	< 6.5	6.5
1,2-Dichloropropane				< 3.1	3.1	< 4.8	4.11	< 5.2	5.2	< 5.3	5.3	< 6.5	6.5
1,3-Dichlorobenzene	2,400	4,900	280,000	< 3.1	3.1	< 4.8	4.12	< 5.2	5.2	< 5.3	5.3	< 6.5	6.5
1,4-Dichlorobenzene	1,800	13,000	130,000	< 3.1	3.1	< 4.8	4.13	< 5.2	5.2	< 5.3	5.3	< 6.5	6.5
1,4- dioxane	100	13,000	130,000	< 46	46	< 72	4.14	< 78	78	< 79	79	< 98	98
2-Hexanone (Methyl Butyl Ketone)				< 15	15	< 24	4.15	< 26	26	< 26	26	< 33	33
4-Methyl-2-Pentanone				< 15	15	< 24	4.16	< 26	26	< 26	26	< 33	33
Acetone	50	100,000	500,000	**15**	15	< 24	4.17	< 26	26	< 26	26	< 33	33
Acrolein				< 3.1	3.1	< 4.8	4.18	< 5.2	5.2	< 5.3	5.3	< 6.5	6.5
Acrylonitrile				< 12	12	< 19	4.19	< 21	21	< 21	21	< 26	26
Benzene	60	4,800	44,000	< 3.1	3.1	< 4.8	4.20	< 5.2	5.2	< 5.3	5.3	< 6.5	6.5
Bromochloromethane				< 3.1	3.1	< 4.8	4.21	< 5.2	5.2	< 5.3	5.3	< 6.5	6.5
Bromodichloromethane				< 3.1	3.1	< 4.8	4.22	< 5.2	5.2	< 5.3	5.3	< 6.5	6.5
Bromoform				< 3.1	3.1	< 4.8	4.23	< 5.2	5.2	< 5.3	5.3	< 6.5	6.5
Bromomethane				< 3.1	3.1	< 4.8	4.24	< 5.2	5.2	< 5.3	5.3	< 6.5	6.5
Carbon Disulfide				< 3.1	3.1	< 4.8	4.25	< 5.2	5.2	< 5.3	5.3	< 6.5	6.5
Carbon tetrachloride	760	2,400	22,000	< 3.1	3.1	< 4.8	4.26	< 5.2	5.2	< 5.3	5.3	< 6.5	6.5
Chlorobenzene	1,100	100,000	500,000	< 3.1	3.1	< 4.8	4.27	< 5.2	5.2	< 5.3	5.3	< 6.5	6.5
Chloroethane				< 3.1	3.1	< 4.8	4.28	< 5.2	5.2	< 5.3	5.3	< 6.5	6.5
Chloroform	370	49,000	350,000	< 3.1	3.1	< 4.8	4.29	< 5.2	5.2	< 5.3	5.3	< 6.5	6.5
Chloromethane				< 3.1	3.1	< 4.8	4.30	< 5.2	5.2	< 5.3	5.3	< 6.5	6.5
cis-1,2-Dichloroethene	250	100,000	500,000	< 3.1	3.1	< 4.8	4.31	< 5.2	5.2	< 5.3	5.3	< 6.5	6.5
cis-1,3-Dichloropropene				< 3.1	3.1	< 4.8	4.32	< 5.2	5.2	< 5.3	5.3	< 6.5	6.5
Cyclohexane				< 3.1	3.1	< 4.8	4.33	< 5.2	5.2	< 5.3	5.3	< 6.5	6.5
Dibromochloromethane				< 3.1	3.1	< 4.8	4.34	< 5.2	5.2	< 5.3	5.3	< 6.5	6.5
Dichlorodifluoromethane				< 3.1	3.1	< 4.8	4.35	< 5.2	5.2	< 5.3	5.3	< 6.5	6.5
Ethylbenzene	1,000	41,000	390,000	< 3.1	3.1	< 4.8	4.36	< 5.2	5.2	< 5.3	5.3	< 6.5	6.5
Isopropylbenzene				< 3.1	3.1	< 4.8	4.37	< 5.2	5.2	< 5.3	5.3	< 6.5	6.5
m&p-Xylenes	260	100,000		< 3.1	3.1	< 4.8	4.38	< 5.2	5.2	< 5.3	5.3	< 6.5	6.5
Methyl Ethyl Ketone (2-Butanone)	120	100,000	500,000	**3.9**	18	< 29	4.39	< 31	31	< 32	32	< 39	39
Methyl t-butyl ether (MTBE)	930	100,000	500,000	< 6.1	6.1	< 9.6	4.40	< 10	10	< 11	11	< 13	13
Methylacetate				< 3.1	3.1	< 4.8	4.41	< 5.2	5.2	< 5.3	5.3	< 6.5	6.5
Methylcyclohexane				< 3.1	3.1	< 4.8	4.42	< 5.2	5.2	< 5.3	5.3	< 6.5	6.5
Methylene chloride	50	100,000	500,000	< 3.1	3.1	< 4.8	4.43	< 5.2	5.2	< 5.3	5.3	< 6.5	6.5
o-Xylene	260	100,000		< 3.1	3.1	< 4.8	4.44	< 5.2	5.2	< 5.3	5.3	< 6.5	6.5
Styrene				< 3.1	3.1	< 4.8	4.45	< 5.2	5.2	< 5.3	5.3	< 6.5	6.5
Tert-butyl alcohol				< 61	61	< 96	4.46	< 100	100	< 110	110	< 130	130
Tetrachloroethene	1,300	19,000	150,000	< 3.1	3.1	< 4.8	4.47	< 5.2	5.2	< 5.3	5.3	< 6.5	6.5
Toluene	700	100,000	500,000	< 3.1	3.1	< 4.8	4.48	< 5.2	5.2	< 5.3	5.3	< 6.5	6.5
Total Xylenes				< 3.1	3.1	< 4.8	4.49	< 5.2	5.2	< 5.3	5.3	< 6.5	6.5
trans-1,2-Dichloroethene	190	100,000	500,000	< 3.1	3.1	< 4.8	4.50	< 5.2	5.2	< 5.3	5.3	< 6.5	6.5
trans-1,3-Dichloropropene				< 3.1	3.1	< 4.8	4.51	< 5.2	5.2	< 5.3	5.3	< 6.5	6.5
Trichloroethene	470	21,000	200,000	< 3.1	3.1	< 4.8	4.52	< 5.2	5.2	< 5.3	5.3	< 6.5	6.5
Trichlorofluoromethane				< 3.1	3.1	< 4.8	4.53	< 5.2	5.2	< 5.3	5.3	< 6.5	6.5
Trichlorotrifluoroethane				< 3.1	3.1	< 4.8	4.54	< 5.2	5.2	< 5.3	5.3	< 6.5	6.5
Vinyl Chloride	20	900	13,000	< 3.1	3.1	< 4.8	4.55	< 5.2	5.2	< 5.3	5.3	< 6.5	6.5
Total BTEX Concentration				**0**		**0**		**0**		**0**		**0**	
Total VOCs Concentration				**18.9**		**0**		**0**		**0**		**0**	

Notes:

* - 6 NYCRR Part 375-6 Remedial Program Soil Cleanup Objectives

RL - Reporting Limit

Bold/highlighted- Indicated exceedance of the NYSDEC UUSCO Guidance Value

Bold/highlighted- Indicated exceedance of the NYSDEC RRSCO Guidance Value

Bold/highlighted- Indicated exceedance of the NYSDEC RCSCO Guidance Value

Table 27
Former Pfizer Site A - C224284
243-271 Wallabout Street,
Brooklyn, New York
Track 4 Area - Endpoint Soil Analytical Results
Semi-Volatile Organic Compounds

COMPOUND	NYSDEC Part 375.6 Unrestricted Use Soil Cleanup Objectives*	NYDEC Part 375.6 Restricted Residential Soil Cleanup Objectives*	NYDEC Part 375.6 Restricted Commerical Soil Cleanup Objectives*	Endpoint Samples									
				EP10		EP11				EP12		EP13	
				4'		4'		4.5'		4'		4'	
				5/5/2021		5/6/2021		5/14/2021		5/11/2021		5/6/2021	
				µg/Kg		µg/Kg		µg/Kg		µg/Kg		µg/Kg	
				Result	RL	Result	RL	Result	RL	Result	RL	Result	RL
1,1-Biphenyl				< 270	270	**150**	290	< 260	260	< 280	280	**120**	270
1,2,4,5-Tetrachlorobenzene				< 270	270	< 290	290	< 260	260	< 280	280	< 270	270
2,3,4,6-tetrachlorophenol				< 270	270	< 290	290	< 260	260	< 280	280	< 270	270
2,4,5-Trichlorophenol				< 270	270	< 290	290	< 260	260	< 280	280	< 270	270
2,4,6-Trichlorophenol				< 150	150	< 170	170	< 150	150	< 160	160	< 150	150
2,4-Dichlorophenol				< 150	150	< 170	170	< 150	150	< 160	160	< 150	150
2,4-Dimethylphenol				< 270	270	< 290	290	< 260	260	< 280	280	< 270	270
2,4-Dinitrophenol				< 270	270	< 290	290	< 260	260	< 280	280	< 270	270
2,4-Dinitrotoluene				< 150	150	< 170	170	< 150	150	< 160	160	< 150	150
2,6-Dinitrotoluene				< 150	150	< 170	170	< 150	150	< 160	160	< 150	150
2-Chloronaphthalene				< 270	270	< 290	290	< 260	260	< 280	280	< 270	270
2-Chlorophenol				< 270	270	< 290	290	< 260	260	< 280	280	< 270	270
2-Methylnaphthalene				< 270	270	**420**	290	< 260	260	< 280	280	**530**	270
2-Methylphenol (o-cresol)	330	100,000	500,000	< 270	270	< 290	290	< 260	260	< 280	280	< 270	270
2-Nitroaniline				< 270	270	< 290	290	< 260	260	< 280	280	< 270	270
2-Nitrophenol				< 270	270	< 290	290	< 260	260	< 280	280	< 270	270
3&4-Methylphenol (m&p-cresol)				< 270	270	< 290	290	< 260	260	< 280	280	< 270	270
3,3'-Dichlorobenzidine				< 150	150	< 170	170	< 150	150	< 160	160	< 150	150
3-Nitroaniline				< 770	770	< 830	830	< 740	740	< 810	810	< 760	760
4,6-Dinitro-2-methylphenol				< 270	270	< 290	290	< 260	260	< 280	280	< 270	270
4-Bromophenyl phenyl ether				< 270	270	< 290	290	< 260	260	< 280	280	< 270	270
4-Chloro-3-methylphenol				< 270	270	< 290	290	< 260	260	< 280	280	< 270	270
4-Chloroaniline				< 770	770	< 830	830	< 740	740	< 810	810	< 760	760
4-Chlorophenyl phenyl ether				< 270	270	< 290	290	< 260	260	< 280	280	< 270	270
4-Nitroaniline				< 1900	1,900	< 2100	2,100	< 1800	1,800	< 2000	2,000	< 1900	1,900
4-Nitrophenol				< 270	270	< 290	290	< 260	260	< 280	280	< 270	270
Acenaphthene	20,000	100,000	500,000	**120**	270	**2,200**	290	< 260	260	< 280	280	**930**	270
Acenaphthylene	100,000	100,000	500,000	< 150	150	**540**	170	< 150	150	< 160	160	**160**	150
Acetophenone				< 270	270	< 290	290	< 260	260	< 280	280	< 270	270
Anthracene	100,000	100,000	500,000	**390**	270	**3,800**	290	< 260	260	< 280	280	**1,600**	270
Atrazine				< 270	270	< 290	290	< 260	260	< 280	280	< 270	270
Benz(a)anthracene	1,000	1,000	5,600	**1,300**	270	**11,000**	2,900	< 260	260	< 280	280	**3,300**	270
Benzaldehyde				**150**	270	< 290	290	< 260	260	< 280	280	< 270	270
Benzo(a)pyrene	1,000	1,000	1,000	**1,300**	150	**10,000**	1,700	< 150	150	< 160	160	**2,900**	150
Benzo(b)fluoranthene	1,000	1,000	5,600	**1,200**	270	**9,400**	2,900	< 260	260	< 280	280	**2,700**	270
Benzo(ghi)perylene	100,000	100,000	500,000	**820**	270	**5,700**	290	< 260	260	< 280	280	**1,800**	270
Benzo(k)fluoranthene	800	3,900	56,000	**1,100**	270	**5,100**	290	< 260	260	< 280	280	**2,300**	270
Benzyl butyl phthalate				< 270	270	< 290	290	< 260	260	< 280	280	< 270	270
Bis(2-chloroethoxy)methane				< 270	270	< 290	290	< 260	260	< 280	280	< 270	270
Bis(2-chloroethyl)ether				< 150	150	< 170	170	< 150	150	< 160	160	< 150	150
Bis(2-chloroisopropyl)ether				< 270	270	< 290	290	< 260	260	< 280	280	< 270	270
Bis(2-ethylhexyl)phthalate				< 270	270	< 290	290	< 260	260	< 280	280	**340**	270
Caprolactam				< 270	270	< 290	290	< 260	260	< 280	280	< 270	270
Carbazole				**200**	270	**2,600**	290	< 260	260	< 280	280	**750**	270
Chrysene	1,000	3,900	56,000	**1,300**	270	**12,000**	2,900	< 260	260	< 280	280	**3,200**	270
Dibenz(a,h)anthracene	330	330	560	**190**	150	**1,500**	170	< 150	150	< 160	160	**490**	150
Dibenzofuran	7,000	59,000	350,000	< 270	270	**1,400**	290	< 260	260	< 280	280	**630**	270
Diethyl phthalate				< 270	270	< 290	290	< 260	260	< 280	280	< 270	270
Dimethylphthalate				< 270	270	< 290	290	< 260	260	< 280	280	< 270	270
Di-n-butylphthalate				< 270	270	< 290	290	< 260	260	< 280	280	**160**	270
Di-n-octylphthalate				< 270	270	< 290	290	< 260	260	< 280	280	< 270	270
Fluoranthene	100,000	100,000	500,000	**2,600**	270	**31,000**	2,900	< 260	260	**140**	280	**6,800**	270
Fluorene	30,000	100,000	500,000	**160**	270	**2,200**	290	< 260	260	< 280	280	**950**	270
Hexachlorobenzene	330	1,200	6,000	< 150	150	< 170	170	< 150	150	< 160	160	< 150	150
Hexachlorobutadiene				< 270	270	< 290	290	< 260	260	< 280	280	< 270	270
Hexachlorocyclopentadiene				< 270	270	< 290	290	< 260	260	< 280	280	< 270	270
Hexachloroethane				< 150	150	< 170	170	< 150	150	< 160	160	< 150	150
Indeno(1,2,3-cd)pyrene	500	500	5,600	**940**	270	**7,200**	290	< 260	260	< 280	280	**2,000**	270
Isophorone				< 150	150	< 170	170	< 150	150	< 160	160	< 150	150
Naphthalene	12,000	100,000	500,000	< 270	270	**870**	290	< 260	260	< 280	280	**930**	270
Nitrobenzene				< 150	150	< 170	170	< 150	150	< 160	160	< 150	150
N-Nitrosodimethylamine				< 270	270	< 290	290	< 260	260	< 280	280	< 270	270
N-Nitrosodi-n-propylamine				< 150	150	< 170	170	< 150	150	< 160	160	< 150	150
N-Nitrosodiphenylamine				< 150	150	< 170	170	< 150	150	< 160	160	< 150	150
Pentachlorophenol	800	6,700	6,700	< 270	270	< 290	290	< 260	260	< 280	280	< 270	270
Phenanthrene	100,000	100,000	500,000	**1,600**	150	**28,000**	1,700	< 150	150	< 160	160	**6,900**	150
Phenol	330	100,000	500,000	< 270	270	< 290	290	< 260	260	< 280	280	< 270	270
Pyrene	100,000	100,000	500,000	**2,400**	270	**27,000**	2,900	< 260	260	< 280	280	**6,400**	270

Notes:

* - 6 NYCRR Part 375-6 Remedial Program Soil Cleanup Objectives

RL - Reporting Limit

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Bold/highlighted- Indicated exceedance of the NYSDEC RRSCO Guidance Value

Bold/highlighted- Indicated exceedance of the NYSDEC RCSCO Guidance Value

Table 27
Former Pfizer Site A - C224284
243-271 Wallabout Street,
Brooklyn, New York
Track 4 Area - Endpoint Soil Analytical Results
Semi-Volatile Organic Compounds

COMPOUND	NYSDEC Part 375.6 Unrestricted Use Soil Cleanup Objectives*	NYDEC Part 375.6 Restricted Residential Soil Cleanup Objectives*	NYDEC Part 375.6 Restricted Commerical Soil Cleanup Objectives*	Endpoint Samples									
				EP14		EP15		EP16		EP17			
				4'		10'		4'		4'		9'	
				5/5/2021		5/11/2021		5/5/2021		5/6/2021		5/13/2021	
				µg/Kg		µg/Kg		µg/Kg		µg/Kg		µg/Kg	
				Result	RL	Result	RL	Result	RL	Result	RL	Result	RL
1,1-Biphenyl				< 260	260	< 270	270	< 250	250	< 260	260	< 270	270
1,2,4,5-Tetrachlorobenzene				< 260	260	< 270	270	< 250	250	< 260	260	< 270	270
2,3,4,6-tetrachlorophenol				< 260	260	< 270	270	< 250	250	< 260	260	< 270	270
2,4,5-Trichlorophenol				< 260	260	< 270	270	< 250	250	< 260	260	< 270	270
2,4,6-Trichlorophenol				< 150	150	< 150	150	< 140	140	< 150	150	< 160	160
2,4-Dichlorophenol				< 150	150	< 150	150	< 140	140	< 150	150	< 160	160
2,4-Dimethylphenol				< 260	260	< 270	270	< 250	250	< 260	260	< 270	270
2,4-Dinitrophenol				< 260	260	< 270	270	< 250	250	< 260	260	< 270	270
2,4-Dinitrotoluene				< 150	150	< 150	150	< 140	140	< 150	150	< 160	160
2,6-Dinitrotoluene				< 150	150	< 150	150	< 140	140	< 150	150	< 160	160
2-Chloronaphthalene				< 260	260	< 270	270	< 250	250	< 260	260	< 270	270
2-Chlorophenol				< 260	260	< 270	270	< 250	250	< 260	260	< 270	270
2-Methylnaphthalene				< 260	260	< 270	270	< 250	250	< 260	260	< 270	270
2-Methylphenol (o-cresol)	330	100,000	500,000	< 260	260	< 270	270	< 250	250	< 260	260	< 270	270
2-Nitroaniline				< 260	260	< 270	270	< 250	250	< 260	260	< 270	270
2-Nitrophenol				< 260	260	< 270	270	< 250	250	< 260	260	< 270	270
3&4-Methylphenol (m&p-cresol)				< 260	260	< 270	270	< 250	250	< 260	260	< 270	270
3,3'-Dichlorobenzidine				< 150	150	< 150	150	< 140	140	< 150	150	< 160	160
3-Nitroaniline				< 740	740	< 760	760	< 710	710	< 730	730	< 780	780
4,6-Dinitro-2-methylphenol				< 260	260	< 270	270	< 250	250	< 260	260	< 270	270
4-Bromophenyl phenyl ether				< 260	260	< 270	270	< 250	250	< 260	260	< 270	270
4-Chloro-3-methylphenol				< 260	260	< 270	270	< 250	250	< 260	260	< 270	270
4-Chloroaniline				< 740	740	< 760	760	< 710	710	< 730	730	< 780	780
4-Chlorophenyl phenyl ether				< 260	260	< 270	270	< 250	250	< 260	260	< 270	270
4-Nitroaniline				< 1800	1,800	< 1900	1,900	< 1800	1,800	< 1800	1,800	< 2000	2,000
4-Nitrophenol				< 260	260	< 270	270	< 250	250	< 260	260	< 270	270
Acenaphthene	20,000	100,000	500,000	< 260	260	< 270	270	< 250	250	< 260	260	< 270	270
Acenaphthylene	100,000	100,000	500,000	< 150	150	< 150	150	< 140	140	< 150	150	< 160	160
Acetophenone				< 260	260	< 270	270	< 250	250	< 260	260	< 270	270
Anthracene	100,000	100,000	500,000	< 260	260	< 270	270	< 250	250	< 260	260	< 270	270
Atrazine				< 260	260	< 270	270	< 250	250	< 260	260	< 270	270
Benz(a)anthracene	1,000	1,000	5,600	< 260	260	< 270	270	< 250	250	**330**	260	< 270	270
Benzaldehyde				< 260	260	< 270	270	< 250	250	< 260	260	< 270	270
Benzo(a)pyrene	1,000	1,000	1,000	< 150	150	< 150	150	< 140	140	**340**	150	< 160	160
Benzo(b)fluoranthene	1,000	1,000	5,600	< 260	260	< 270	270	< 250	250	**250**	260	< 270	270
Benzo(ghi)perylene	100,000	100,000	500,000	< 260	260	< 270	270	< 250	250	**320**	260	< 270	270
Benzo(k)fluoranthene	800	3,900	56,000	< 260	260	< 270	270	< 250	250	**240**	260	< 270	270
Benzyl butyl phthalate				< 260	260	< 270	270	< 250	250	< 260	260	< 270	270
Bis(2-chloroethoxy)methane				< 260	260	< 270	270	< 250	250	< 260	260	< 270	270
Bis(2-chloroethyl)ether				< 150	150	< 150	150	< 140	140	< 150	150	< 160	160
Bis(2-chloroisopropyl)ether				< 260	260	< 270	270	< 250	250	< 260	260	< 270	270
Bis(2-ethylhexyl)phthalate				< 260	260	< 270	270	< 250	250	< 260	260	< 270	270
Caprolactam				< 260	260	< 270	270	< 250	250	< 260	260	< 270	270
Carbazole				< 260	260	< 270	270	< 250	250	< 260	260	< 270	270
Chrysene	1,000	3,900	56,000	< 260	260	< 270	270	< 250	250	**330**	260	< 270	270
Dibenz(a,h)anthracene	330	330	560	< 150	150	< 150	150	< 140	140	< 150	150	< 160	160
Dibenzofuran	7,000	59,000	350,000	< 260	260	< 270	270	< 250	250	< 260	260	< 270	270
Diethyl phthalate				< 260	260	< 270	270	< 250	250	< 260	260	< 270	270
Dimethylphthalate				< 260	260	< 270	270	< 250	250	< 260	260	< 270	270
Di-n-butylphthalate				< 260	260	< 270	270	< 250	250	< 260	260	< 270	270
Di-n-octylphthalate				< 260	260	< 270	270	< 250	250	< 260	260	< 270	270
Fluoranthene	100,000	100,000	500,000	< 260	260	< 270	270	< 250	250	**370**	260	< 270	270
Fluorene	30,000	100,000	500,000	< 260	260	< 270	270	< 250	250	< 260	260	< 270	270
Hexachlorobenzene	330	1,200	6,000	< 150	150	< 150	150	< 140	140	< 150	150	< 160	160
Hexachlorobutadiene				< 260	260	< 270	270	< 250	250	< 260	260	< 270	270
Hexachlorocyclopentadiene				< 260	260	< 270	270	< 250	250	< 260	260	< 270	270
Hexachloroethane				< 150	150	< 150	150	< 140	140	< 150	150	< 160	160
Indeno(1,2,3-cd)pyrene	500	500	5,600	< 260	260	< 270	270	< 250	250	**260**	260	< 270	270
Isophorone				< 150	150	< 150	150	< 140	140	< 150	150	< 160	160
Naphthalene	12,000	100,000	500,000	< 260	260	< 270	270	< 250	250	< 260	260	< 270	270
Nitrobenzene				< 150	150	< 150	150	< 140	140	< 150	150	< 160	160
N-Nitrosodimethylamine				< 260	260	< 270	270	< 250	250	< 260	260	< 270	270
N-Nitrosodi-n-propylamine				< 150	150	< 150	150	< 140	140	< 150	150	< 160	160
N-Nitrosodiphenylamine				< 150	150	< 150	150	< 140	140	< 150	150	< 160	160
Pentachlorophenol	800	6,700	6,700	< 260	260	< 270	270	< 250	250	< 260	260	< 270	270
Phenanthrene	100,000	100,000	500,000	< 150	150	< 150	150	< 140	140	**160**	150	< 160	160
Phenol	330	100,000	500,000	< 260	260	< 270	270	< 250	250	< 260	260	< 270	270
Pyrene	100,000	100,000	500,000	< 260	260	< 270	270	< 250	250	**500**	260	< 270	270

Notes:

* - 6 NYCRR Part 375-6 Remedial Program Soil Cleanup Objectives

RL - Reporting Limit

Bold/highlighted- Indicated exceedance of the NYSDEC UUSCO Guidance Value

Bold/highlighted- Indicated exceedance of the NYSDEC RRSCO Guidance Value

Bold/highlighted- Indicated exceedance of the NYSDEC RCSCO Guidance Value

Table 27
Former Pfizer Site A - C224284
243-271 Wallabout Street,
Brooklyn, New York
Track 4 Area - Endpoint Soil Analytical Results
Semi-Volatile Organic Compounds

COMPOUND	NYSDEC Part 375.6 Unrestricted Use Soil Cleanup Objectives*	NYDEC Part 375.6 Restricted Residential Soil Cleanup Objectives*	NYDEC Part 375.6 Restricted Commerical Soil Cleanup Objectives*	Endpoint Samples									
				EP18				EP19				EP20	
				4'		9'		4'		4.5'		4'	
				5/10/2021		5/13/2021		5/10/2021		5/14/2021		5/10/2021	
				µg/Kg		µg/Kg		µg/Kg		µg/Kg		µg/Kg	
				Result	RL	Result	RL	Result	RL	Result	RL	Result	RL
1,1-Biphenyl				< 280	280	< 270	270	**800**	280	< 270	270	< 280	280
1,2,4,5-Tetrachlorobenzene				< 280	280	< 270	270	< 280	280	< 270	270	< 280	280
2,3,4,6-tetrachlorophenol				< 280	280	< 270	270	< 280	280	< 270	270	< 280	280
2,4,5-Trichlorophenol				< 280	280	< 270	270	< 280	280	< 270	270	< 280	280
2,4,6-Trichlorophenol				< 160	160	< 150	150	< 160	160	< 150	150	< 160	160
2,4-Dichlorophenol				< 160	160	< 150	150	< 160	160	< 150	150	< 160	160
2,4-Dimethylphenol				< 280	280	< 270	270	**100**	280	< 270	270	< 280	280
2,4-Dinitrophenol				< 280	280	< 270	270	< 280	280	< 270	270	< 280	280
2,4-Dinitrotoluene				< 160	160	< 150	150	< 160	160	< 150	150	< 160	160
2,6-Dinitrotoluene				< 160	160	< 150	150	< 160	160	< 150	150	< 160	160
2-Chloronaphthalene				< 280	280	< 270	270	< 280	280	< 270	270	< 280	280
2-Chlorophenol				< 280	280	< 270	270	< 280	280	< 270	270	< 280	280
2-Methylnaphthalene				**130**	280	< 270	270	**2,700**	280	< 270	270	**120**	280
2-Methylphenol (o-cresol)	330	100,000	500,000	< 280	280	< 270	270	< 280	280	< 270	270	< 280	280
2-Nitroaniline				< 280	280	< 270	270	< 280	280	< 270	270	< 280	280
2-Nitrophenol				< 280	280	< 270	270	< 280	280	< 270	270	< 280	280
3&4-Methylphenol (m&p-cresol)				< 280	280	< 270	270	**250**	280	< 270	270	< 280	280
3,3'-Dichlorobenzidine				< 160	160	< 150	150	< 160	160	< 150	150	< 160	160
3-Nitroaniline				< 790	790	< 770	770	< 800	800	< 770	770	< 810	810
4,6-Dinitro-2-methylphenol				< 280	280	< 270	270	< 280	280	< 270	270	< 280	280
4-Bromophenyl phenyl ether				< 280	280	< 270	270	< 280	280	< 270	270	< 280	280
4-Chloro-3-methylphenol				< 280	280	< 270	270	< 280	280	< 270	270	< 280	280
4-Chloroaniline				< 790	790	< 770	770	< 800	800	< 770	770	< 810	810
4-Chlorophenyl phenyl ether				< 280	280	< 270	270	< 280	280	< 270	270	< 280	280
4-Nitroaniline				< 2000	2,000	< 1900	1,900	< 2000	2,000	< 1900	1,900	< 2000	2,000
4-Nitrophenol				< 280	280	< 270	270	< 280	280	< 270	270	< 280	280
Acenaphthene	20,000	100,000	500,000	**150**	280	< 270	270	**6,800**	280	< 270	270	**420**	280
Acenaphthylene	100,000	100,000	500,000	**560**	160	< 150	150	**3,400**	160	< 150	150	**140**	160
Acetophenone				< 280	280	< 270	270	< 280	280	< 270	270	< 280	280
Anthracene	100,000	100,000	500,000	**560**	280	< 270	270	**18,000**	2,800	**140**	270	**940**	280
Atrazine				< 280	280	< 270	270	< 280	280	< 270	270	< 280	280
Benz(a)anthracene	1,000	1,000	5,600	**1,900**	280	< 270	270	**37,000**	2,800	**260**	270	**1,700**	280
Benzaldehyde				< 280	280	< 270	270	< 280	280	< 270	270	< 280	280
Benzo(a)pyrene	1,000	1,000	1,000	**1,700**	160	< 150	150	**36,000**	1,600	**250**	150	**1,400**	160
Benzo(b)fluoranthene	1,000	1,000	5,600	**1,700**	280	< 270	270	**35,000**	2,800	**220**	270	**1,100**	280
Benzo(ghi)perylene	100,000	100,000	500,000	**1,100**	280	< 270	270	**16,000**	2,800	**190**	270	**890**	280
Benzo(k)fluoranthene	800	3,900	56,000	**1,600**	280	< 270	270	**7,300**	280	**240**	270	**1,200**	280
Benzyl butyl phthalate				< 280	280	< 270	270	< 280	280	< 270	270	< 280	280
Bis(2-chloroethoxy)methane				< 280	280	< 270	270	< 280	280	< 270	270	< 280	280
Bis(2-chloroethyl)ether				< 160	160	< 150	150	< 160	160	< 150	150	< 160	160
Bis(2-chloroisopropyl)ether				< 280	280	< 270	270	< 280	280	< 270	270	< 280	280
Bis(2-ethylhexyl)phthalate				< 280	280	< 270	270	< 280	280	< 270	270	< 280	280
Caprolactam				< 280	280	< 270	270	< 280	280	< 270	270	< 280	280
Carbazole				**430**	280	< 270	270	**11,000**	2,800	< 270	270	**450**	280
Chrysene	1,000	3,900	56,000	**2,000**	280	< 270	270	**40,000**	2,800	**300**	270	**1,600**	280
Dibenz(a,h)anthracene	330	330	560	**330**	160	< 150	150	**5,400**	160	< 150	150	**280**	160
Dibenzofuran	7,000	59,000	350,000	**240**	280	< 270	270	**6,100**	280	< 270	270	**300**	280
Diethyl phthalate				< 280	280	< 270	270	< 280	280	< 270	270	< 280	280
Dimethylphthalate				< 280	280	< 270	270	< 280	280	< 270	270	< 280	280
Di-n-butylphthalate				< 280	280	< 270	270	< 280	280	< 270	270	< 280	280
Di-n-octylphthalate				< 280	280	< 270	270	< 280	280	< 270	270	< 280	280
Fluoranthene	100,000	100,000	500,000	**4,200**	280	< 270	270	**120,000**	28,000	**800**	270	**3,400**	280
Fluorene	30,000	100,000	500,000	**420**	280	< 270	270	**14,000**	2,800	< 270	270	**450**	280
Hexachlorobenzene	330	1,200	6,000	< 160	160	< 150	150	< 160	160	< 150	150	< 160	160
Hexachlorobutadiene				< 280	280	< 270	270	< 280	280	< 270	270	< 280	280
Hexachlorocyclopentadiene				< 280	280	< 270	270	< 280	280	< 270	270	< 280	280
Hexachloroethane				< 160	160	< 150	150	< 160	160	< 150	150	< 160	160
Indeno(1,2,3-cd)pyrene	500	500	5,600	**1,300**	280	< 270	270	**19,000**	2,800	**210**	270	**980**	280
Isophorone				< 160	160	< 150	150	< 160	160	< 150	150	< 160	160
Naphthalene	12,000	100,000	500,000	**210**	280	< 270	270	**6,700**	280	**120**	270	**120**	280
Nitrobenzene				< 160	160	< 150	150	< 160	160	< 150	150	< 160	160
N-Nitrosodimethylamine				< 280	280	< 270	270	< 280	280	< 270	270	< 280	280
N-Nitrosodi-n-propylamine				< 160	160	< 150	150	< 160	160	< 150	150	< 160	160
N-Nitrosodiphenylamine				< 160	160	< 150	150	< 160	160	< 150	150	< 160	160
Pentachlorophenol	800	6,700	6,700	< 280	280	< 270	270	< 280	280	< 270	270	< 280	280
Phenanthrene	100,000	100,000	500,000	**3,500**	160	< 150	150	**120,000**	16,000	**750**	150	**3,200**	160
Phenol	330	100,000	500,000	< 280	280	< 270	270	< 280	280	< 270	270	< 280	280
Pyrene	100,000	100,000	500,000	**3,300**	280	< 270	270	**74,000**	2,800	**680**	270	**3,000**	280

Notes:

* - 6 NYCRR Part 375-6 Remedial Program Soil Cleanup Objectives

RL - Reporting Limit

Bold/highlighted- Indicated exceedance of the NYSDEC UUSCO Guidance Value

Bold/highlighted- Indicated exceedance of the NYSDEC RRSCO Guidance Value

Bold/highlighted- Indicated exceedance of the NYSDEC RCSCO Guidance Value

Table 27
Former Pfizer Site A - C224284
243-271 Wallabout Street,
Brooklyn, New York
Track 4 Area - Endpoint Soil Analytical Results
Semi-Volatile Organic Compounds

COMPOUND	NYSDEC Part 375.6 Unrestricted Use Soil Cleanup Objectives*	NYDEC Part 375.6 Restricted Residential Soil Cleanup Objectives*	NYDEC Part 375.6 Restricted Commerical Soil Cleanup Objectives*	Endpoint Samples									
				EP39		EP40		EP41		EP42		EP43	
				5'		5'		4'		4'		5'	
				6/4/2021		6/4/2021		5/6/2021		5/6/2021		6/4/2021	
				µg/Kg		µg/Kg		µg/Kg		µg/Kg		µg/Kg	
				Result	RL	Result	RL	Result	RL	Result	RL	Result	RL
1,1-Biphenyl				< 280	280	< 280	280	< 270	270	< 240	240	< 260	260
1,2,4,5-Tetrachlorobenzene				< 280	280	< 280	280	< 270	270	< 240	240	< 260	260
2,3,4,6-tetrachlorophenol				< 280	280	< 280	280	< 270	270	< 240	240	< 260	260
2,4,5-Trichlorophenol				< 280	280	< 280	280	< 270	270	< 240	240	< 260	260
2,4,6-Trichlorophenol				< 160	160	< 160	160	< 150	150	< 140	140	< 150	150
2,4-Dichlorophenol				< 160	160	< 160	160	< 150	150	< 140	140	< 150	150
2,4-Dimethylphenol				< 280	280	< 280	280	< 270	270	< 240	240	< 260	260
2,4-Dinitrophenol				< 280	280	< 280	280	< 270	270	< 240	240	< 260	260
2,4-Dinitrotoluene				< 160	160	< 160	160	< 150	150	< 140	140	< 150	150
2,6-Dinitrotoluene				< 160	160	< 160	160	< 150	150	< 140	140	< 150	150
2-Chloronaphthalene				< 280	280	< 280	280	< 270	270	< 240	240	< 260	260
2-Chlorophenol				< 280	280	< 280	280	< 270	270	< 240	240	< 260	260
2-Methylnaphthalene				< 280	280	< 280	280	< 270	270	< 240	240	< 260	260
2-Methylphenol (o-cresol)	330	100,000	500,000	< 280	280	< 280	280	< 270	270	< 240	240	< 260	260
2-Nitroaniline				< 280	280	< 280	280	< 270	270	< 240	240	< 260	260
2-Nitrophenol				< 280	280	< 280	280	< 270	270	< 240	240	< 260	260
3&4-Methylphenol (m&p-cresol)				< 280	280	< 280	280	< 270	270	< 240	240	< 260	260
3,3'-Dichlorobenzidine				< 160	160	< 160	160	< 150	150	< 140	140	< 150	150
3-Nitroaniline				< 810	810	< 790	790	< 770	770	< 690	690	< 730	730
4,6-Dinitro-2-methylphenol				< 280	280	< 280	280	< 270	270	< 240	240	< 260	260
4-Bromophenyl phenyl ether				< 280	280	< 280	280	< 270	270	< 240	240	< 260	260
4-Chloro-3-methylphenol				< 280	280	< 280	280	< 270	270	< 240	240	< 260	260
4-Chloroaniline				< 810	810	< 790	790	< 770	770	< 690	690	< 730	730
4-Chlorophenyl phenyl ether				< 280	280	< 280	280	< 270	270	< 240	240	< 260	260
4-Nitroaniline				< 2000	2,000	< 2000	2,000	< 1900	1,900	< 1700	1,700	< 1800	1,800
4-Nitrophenol				< 280	280	< 280	280	< 270	270	< 240	240	< 260	260
Acenaphthene	20,000	100,000	500,000	< 280	280	**190**	280	**130**	270	< 240	240	< 260	260
Acenaphthylene	100,000	100,000	500,000	< 160	160	< 160	160	**540**	150	< 140	140	< 150	150
Acetophenone				< 280	280	< 280	280	< 270	270	< 240	240	< 260	260
Anthracene	100,000	100,000	500,000	**300**	280	**440**	280	**600**	270	< 240	240	< 260	260
Atrazine				< 280	280	< 280	280	< 270	270	< 240	240	< 260	260
Benz(a)anthracene	1,000	1,000	5,600	**900**	280	**1,200**	280	**2,400**	270	< 240	240	< 260	260
Benzaldehyde				< 280	280	< 280	280	< 270	270	< 240	240	< 260	260
Benzo(a)pyrene	1,000	1,000	1,000	**830**	160	**1,000**	160	**2,400**	150	< 140	140	< 150	150
Benzo(b)fluoranthene	1,000	1,000	5,600	**680**	280	**910**	280	**2,200**	270	< 240	240	< 260	260
Benzo(ghi)perylene	100,000	100,000	500,000	**520**	280	**660**	280	**1,400**	270	< 240	240	< 260	260
Benzo(k)fluoranthene	800	3,900	56,000	**700**	280	**970**	280	**2,100**	270	< 240	240	< 260	260
Benzyl butyl phthalate				< 280	280	< 280	280	< 270	270	< 240	240	< 260	260
Bis(2-chloroethoxy)methane				< 280	280	< 280	280	< 270	270	< 240	240	< 260	260
Bis(2-chloroethyl)ether				< 160	160	< 160	160	< 150	150	< 140	140	< 150	150
Bis(2-chloroisopropyl)ether				< 280	280	< 280	280	< 270	270	< 240	240	< 260	260
Bis(2-ethylhexyl)phthalate				< 280	280	< 280	280	< 270	270	< 240	240	< 260	260
Caprolactam				< 280	280	< 280	280	< 270	270	< 240	240	< 260	260
Carbazole				< 280	280	< 280	280	**350**	270	< 240	240	< 260	260
Chrysene	1,000	3,900	56,000	**940**	280	**1,200**	280	**2,400**	270	< 240	240	< 260	260
Dibenz(a,h)anthracene	330	330	560	**140**	160	**200**	160	**430**	150	< 140	140	< 150	150
Dibenzofuran	7,000	59,000	350,000	< 280	280	**130**	280	**150**	270	< 240	240	< 260	260
Diethyl phthalate				< 280	280	< 280	280	< 270	270	< 240	240	< 260	260
Dimethylphthalate				< 280	280	< 280	280	< 270	270	< 240	240	< 260	260
Di-n-butylphthalate				< 280	280	< 280	280	< 270	270	< 240	240	< 260	260
Di-n-octylphthalate				< 280	280	< 280	280	< 270	270	< 240	240	< 260	260
Fluoranthene	100,000	100,000	500,000	**1,800**	280	**2,200**	280	**4,700**	270	< 240	240	< 260	260
Fluorene	30,000	100,000	500,000	< 280	280	**160**	280	**220**	270	< 240	240	< 260	260
Hexachlorobenzene	330	1,200	6,000	< 160	160	< 160	160	< 150	150	< 140	140	< 150	150
Hexachlorobutadiene				< 280	280	< 280	280	< 270	270	< 240	240	< 260	260
Hexachlorocyclopentadiene				< 280	280	< 280	280	< 270	270	< 240	240	< 260	260
Hexachloroethane				< 160	160	< 160	160	< 150	150	< 140	140	< 150	150
Indeno(1,2,3-cd)pyrene	500	500	5,600	**550**	280	**690**	280	**1,800**	270	< 240	240	< 260	260
Isophorone				< 160	160	< 160	160	< 150	150	< 140	140	< 150	150
Naphthalene	12,000	100,000	500,000	< 280	280	< 280	280	**140**	270	< 240	240	< 260	260
Nitrobenzene				< 160	160	< 160	160	< 150	150	< 140	140	< 150	150
N-Nitrosodimethylamine				< 280	280	< 280	280	< 270	270	< 240	240	< 260	260
N-Nitrosodi-n-propylamine				< 160	160	< 160	160	< 150	150	< 140	140	< 150	150
N-Nitrosodiphenylamine				< 160	160	< 160	160	< 150	150	< 140	140	< 150	150
Pentachlorophenol	800	6,700	6,700	< 280	280	< 280	280	< 270	270	< 240	240	< 260	260
Phenanthrene	100,000	100,000	500,000	**1,500**	160	**1,900**	160	**3,100**	150	< 140	140	< 150	150
Phenol	330	100,000	500,000	< 280	280	< 280	280	< 270	270	< 240	240	< 260	260
Pyrene	100,000	100,000	500,000	**1,600**	280	**1,800**	280	**4,100**	270	< 240	240	< 260	260

Notes:

* - 6 NYCRR Part 375-6 Remedial Program Soil Cleanup Objectives

RL - Reporting Limit

Bold/highlighted- Indicated exceedance of the NYSDEC UUSCO Guidance Value

Bold/highlighted- Indicated exceedance of the NYSDEC RRSCO Guidance Value

Bold/highlighted- Indicated exceedance of the NYSDEC RCSCO Guidance Value

Table 27
Former Pfizer Site A - C224284
243-271 Wallabout Street,
Brooklyn, New York
Track 4 Area - Endpoint Soil Analytical Results
Semi-Volatile Organic Compounds

COMPOUND	NYSDEC Part 375.6 Unrestricted Use Soil Cleanup Objectives*	NYDEC Part 375.6 Restricted Residential Soil Cleanup Objectives*	NYDEC Part 375.6 Restricted Commerical Soil Cleanup Objectives*	Endpoint Samples									
				EP44		EP45		EP64		EP65		EP66	
				5'		5'		5'		5.5'		5.5'	
				6/9/2021		6/9/2021		6/9/2021		6/22/2021		6/28/2021	
				µg/Kg		µg/Kg		µg/Kg		µg/Kg		µg/Kg	
				Result	RL	Result	RL	Result	RL	Result	RL	Result	RL
1,1-Biphenyl				**190**	420	< 420	420	< 270	270	< 250	250	< 260	260
1,2,4,5-Tetrachlorobenzene				< 420	420	< 420	420	< 270	270	< 250	250	< 260	260
2,3,4,6-tetrachlorophenol				< 420	420	< 420	420	< 270	270	< 250	250	< 260	260
2,4,5-Trichlorophenol				< 420	420	< 420	420	< 270	270	< 250	250	< 260	260
2,4,6-Trichlorophenol				< 240	240	< 240	240	< 160	160	< 140	140	< 150	150
2,4-Dichlorophenol				< 240	240	< 240	240	< 160	160	< 140	140	< 150	150
2,4-Dimethylphenol				< 420	420	< 420	420	< 270	270	< 250	250	< 260	260
2,4-Dinitrophenol				< 420	420	< 420	420	< 270	270	< 250	250	< 260	260
2,4-Dinitrotoluene				< 240	240	< 240	240	< 160	160	< 140	140	< 150	150
2,6-Dinitrotoluene				< 240	240	< 240	240	< 160	160	< 140	140	< 150	150
2-Chloronaphthalene				< 420	420	< 420	420	< 270	270	< 250	250	< 260	260
2-Chlorophenol				< 420	420	< 420	420	< 270	270	< 250	250	< 260	260
2-Methylnaphthalene				**680**	420	**560**	420	< 270	270	< 250	250	**380**	260
2-Methylphenol (o-cresol)	330	100,000	500,000	< 330	330	< 330	330	< 270	270	< 250	250	< 260	260
2-Nitroaniline				< 420	420	< 420	420	< 270	270	< 250	250	< 260	260
2-Nitrophenol				< 420	420	< 420	420	< 270	270	< 250	250	< 260	260
3&4-Methylphenol (m&p-cresol)				< 420	420	< 420	420	< 270	270	< 250	250	< 260	260
3,3'-Dichlorobenzidine				< 240	240	< 240	240	< 160	160	< 140	140	< 150	150
3-Nitroaniline				< 1200	1,200	< 1200	1,200	< 780	780	< 720	720	< 750	750
4,6-Dinitro-2-methylphenol				< 420	420	< 420	420	< 270	270	< 250	250	< 260	260
4-Bromophenyl phenyl ether				< 420	420	< 420	420	< 270	270	< 250	250	< 260	260
4-Chloro-3-methylphenol				< 420	420	< 420	420	< 270	270	< 250	250	< 260	260
4-Chloroaniline				< 1200	1,200	< 1200	1,200	< 780	780	< 720	720	< 750	750
4-Chlorophenyl phenyl ether				< 420	420	< 420	420	< 270	270	< 250	250	< 260	260
4-Nitroaniline				< 3000	3,000	< 3000	3,000	< 2000	2,000	< 1800	1,800	< 1900	1,900
4-Nitrophenol				< 420	420	< 420	420	< 270	270	< 250	250	< 260	260
Acenaphthene	20,000	100,000	500,000	**1,400**	420	**1,100**	420	**260**	270	< 250	250	**800**	260
Acenaphthylene	100,000	100,000	500,000	**310**	240	**920**	240	**230**	160	< 140	140	**740**	150
Acetophenone				< 420	420	< 420	420	< 270	270	< 250	250	< 260	260
Anthracene	100,000	100,000	500,000	**2,700**	420	**3,000**	420	**730**	270	< 250	250	**2,200**	260
Atrazine				< 420	420	< 420	420	< 270	270	< 250	250	< 260	260
Benz(a)anthracene	1,000	1,000	5,600	**5,900**	420	**6,800**	420	**2,300**	270	< 250	250	**6,200**	260
Benzaldehyde				< 420	420	< 420	420	< 270	270	< 250	250	< 260	260
Benzo(a)pyrene	1,000	1,000	1,000	**5,400**	240	**6,200**	240	**2,200**	160	< 140	140	**5,600**	150
Benzo(b)fluoranthene	1,000	1,000	5,600	**4,300**	420	**4,700**	420	**1,700**	270	< 250	250	**5,700**	260
Benzo(ghi)perylene	100,000	100,000	500,000	**3,000**	420	**3,100**	420	**1,200**	270	< 250	250	**2,600**	260
Benzo(k)fluoranthene	800	3,900	56,000	**4,300**	420	**4,600**	420	**1,700**	270	< 250	250	**4,100**	260
Benzyl butyl phthalate				< 420	420	< 420	420	< 270	270	< 250	250	< 260	260
Bis(2-chloroethoxy)methane				< 420	420	< 420	420	< 270	270	< 250	250	< 260	260
Bis(2-chloroethyl)ether				< 240	240	< 240	240	< 160	160	< 140	140	< 150	150
Bis(2-chloroisopropyl)ether				< 420	420	< 420	420	< 270	270	< 250	250	< 260	260
Bis(2-ethylhexyl)phthalate				< 420	420	< 420	420	**160**	270	< 250	250	< 260	260
Caprolactam				< 420	420	< 420	420	< 270	270	< 250	250	< 260	260
Carbazole				**1,600**	420	**1,300**	420	**310**	270	< 250	250	**950**	260
Chrysene	1,000	3,900	56,000	**5,300**	420	**6,000**	420	**2,100**	270	< 250	250	**5,800**	260
Dibenz(a,h)anthracene	330	330	560	**760**	240	**910**	240	**340**	160	< 140	140	**810**	150
Dibenzofuran	7,000	59,000	350,000	**1,300**	420	**1,200**	420	**190**	270	< 250	250	**740**	260
Diethyl phthalate				< 420	420	< 420	420	< 270	270	< 250	250	< 260	260
Dimethylphthalate				< 420	420	< 420	420	< 270	270	< 250	250	< 260	260
Di-n-butylphthalate				< 420	420	< 420	420	< 270	270	< 250	250	< 260	260
Di-n-octylphthalate				< 420	420	< 420	420	< 270	270	< 250	250	< 260	260
Fluoranthene	100,000	100,000	500,000	**12,000**	420	**12,000**	420	**4,300**	270	< 250	250	**15,000**	2,600
Fluorene	30,000	100,000	500,000	**1,400**	420	**1,500**	420	**290**	270	< 250	250	**960**	260
Hexachlorobenzene	330	1,200	6,000	< 240	240	< 240	240	< 160	160	< 140	140	< 150	150
Hexachlorobutadiene				< 420	420	< 420	420	< 270	270	< 250	250	< 260	260
Hexachlorocyclopentadiene				< 420	420	< 420	420	< 270	270	< 250	250	< 260	260
Hexachloroethane				< 240	240	< 240	240	< 160	160	< 140	140	< 150	150
Indeno(1,2,3-cd)pyrene	500	500	5,600	**3,900**	420	**4,000**	420	**1,500**	270	< 250	250	**3,200**	260
Isophorone				< 240	240	< 240	240	< 160	160	< 140	140	< 150	150
Naphthalene	12,000	100,000	500,000	**1,700**	420	**890**	420	**170**	270	< 250	250	**700**	260
Nitrobenzene				< 240	240	< 240	240	< 160	160	< 140	140	< 150	150
N-Nitrosodimethylamine				< 420	420	< 420	420	< 270	270	< 250	250	< 260	260
N-Nitrosodi-n-propylamine				< 240	240	< 240	240	< 160	160	< 140	140	< 150	150
N-Nitrosodiphenylamine				< 240	240	< 240	240	< 160	160	< 140	140	< 150	150
Pentachlorophenol	800	6,700	6,700	< 420	420	< 420	420	< 270	270	< 250	250	< 260	260
Phenanthrene	100,000	100,000	500,000	**11,000**	240	**11,000**	240	**2,900**	160	< 140	140	**11,000**	1,500
Phenol	330	100,000	500,000	< 330	330	< 330	330	< 270	270	< 250	250	< 260	260
Pyrene	100,000	100,000	500,000	**10,000**	420	**11,000**	420	**3,900**	270	< 250	250	**13,000**	2,600

Notes:

* - 6 NYCRR Part 375-6 Remedial Program Soil Cleanup Objectives

RL - Reporting Limit

Bold/highlighted- Indicated exceedance of the NYSDEC UUSCO Guidance Value

Bold/highlighted- Indicated exceedance of the NYSDEC RRSCO Guidance Value

Bold/highlighted- Indicated exceedance of the NYSDEC RCSCO Guidance Value

Table 27
Former Pfizer Site A - C224284
243-271 Wallabout Street,
Brooklyn, New York
Track 4 Area - Endpoint Soil Analytical Results
Semi-Volatile Organic Compounds

COMPOUND	NYSDEC Part 375.6 Unrestricted Use Soil Cleanup Objectives*	NYDEC Part 375.6 Restricted Residential Soil Cleanup Objectives*	NYDEC Part 375.6 Restricted Commerical Soil Cleanup Objectives*	Endpoint Samples									
				Soil Duplicate		Soil Duplicate		Soil Duplicate		Soil Duplicate		Soil Duplicate	
				EP10		EP11		EP18		EP15		EP18	
				5/5/2021		5/6/2021		5/10/2021		5/11/2021		5/13/2021	
				µg/Kg		µg/Kg		µg/Kg		µg/Kg		µg/Kg	
				Result	RL	Result	RL	Result	RL	Result	RL	Result	RL
1,1-Biphenyl				< 280	280	**180**	290	< 280	280	< 260	260	< 270	270
1,2,4,5-Tetrachlorobenzene				< 280	280	< 290	290	< 280	280	< 260	260	< 270	270
2,3,4,6-tetrachlorophenol				< 280	280	< 290	290	< 280	280	< 260	260	< 270	270
2,4,5-Trichlorophenol				< 280	280	< 290	290	< 280	280	< 260	260	< 270	270
2,4,6-Trichlorophenol				< 160	160	< 160	160	< 160	160	< 150	150	< 150	150
2,4-Dichlorophenol				< 160	160	< 160	160	< 160	160	< 150	150	< 150	150
2,4-Dimethylphenol				< 280	280	< 290	290	< 280	280	< 260	260	< 270	270
2,4-Dinitrophenol				< 280	280	< 290	290	< 280	280	< 260	260	< 270	270
2,4-Dinitrotoluene				< 160	160	< 160	160	< 160	160	< 150	150	< 150	150
2,6-Dinitrotoluene				< 160	160	< 160	160	< 160	160	< 150	150	< 150	150
2-Chloronaphthalene				< 280	280	< 290	290	< 280	280	< 260	260	< 270	270
2-Chlorophenol				< 280	280	< 290	290	< 280	280	< 260	260	< 270	270
2-Methylnaphthalene				< 280	280	**480**	290	**350**	280	< 260	260	< 270	270
2-Methylphenol (o-cresol)	330	100,000	500,000	< 280	280	< 290	290	< 280	280	< 260	260	< 270	270
2-Nitroaniline				< 280	280	< 290	290	< 280	280	< 260	260	< 270	270
2-Nitrophenol				< 280	280	< 290	290	< 280	280	< 260	260	< 270	270
3&4-Methylphenol (m&p-cresol)				< 280	280	< 290	290	< 280	280	< 260	260	< 270	270
3,3'-Dichlorobenzidine				< 160	160	< 160	160	< 160	160	< 150	150	< 150	150
3-Nitroaniline				< 790	790	< 810	810	< 790	790	< 750	750	< 770	770
4,6-Dinitro-2-methylphenol				< 280	280	< 290	290	< 280	280	< 260	260	< 270	270
4-Bromophenyl phenyl ether				< 280	280	< 290	290	< 280	280	< 260	260	< 270	270
4-Chloro-3-methylphenol				< 280	280	< 290	290	< 280	280	< 260	260	< 270	270
4-Chloroaniline				< 790	790	< 810	810	< 790	790	< 750	750	< 770	770
4-Chlorophenyl phenyl ether				< 280	280	< 290	290	< 280	280	< 260	260	< 270	270
4-Nitroaniline				< 2000	2,000	< 2000	2,000	< 2000	2,000	< 1900	1,900	< 1900	1,900
4-Nitrophenol				< 280	280	< 290	290	< 280	280	< 260	260	< 270	270
Acenaphthene	20,000	100,000	500,000	**130**	280	**3,500**	290	**400**	280	< 260	260	< 270	270
Acenaphthylene	100,000	100,000	500,000	< 160	160	**1,100**	160	**3,000**	160	< 150	150	< 150	150
Acetophenone				< 280	280	< 290	290	< 280	280	< 260	260	< 270	270
Anthracene	100,000	100,000	500,000	**470**	280	**6,300**	290	**2,400**	280	< 260	260	< 270	270
Atrazine				< 280	280	< 290	290	< 280	280	< 260	260	< 270	270
Benz(a)anthracene	1,000	1,000	5,600	**1,400**	280	**20,000**	2,900	**13,000**	2,800	< 260	260	< 270	270
Benzaldehyde				**180**	280	< 290	290	< 280	280	< 260	260	< 270	270
Benzo(a)pyrene	1,000	1,000	1,000	**1,300**	160	**20,000**	1,600	**14,000**	1,600	< 150	150	< 150	150
Benzo(b)fluoranthene	1,000	1,000	5,600	**1,200**	280	**17,000**	2,900	**13,000**	2,800	< 260	260	< 270	270
Benzo(ghi)perylene	100,000	100,000	500,000	**780**	280	**15,000**	2,900	**5,700**	280	< 260	260	< 270	270
Benzo(k)fluoranthene	800	3,900	56,000	**1,100**	280	**16,000**	2,900	**6,700**	280	< 260	260	< 270	270
Benzyl butyl phthalate				< 280	280	< 290	290	< 280	280	< 260	260	< 270	270
Bis(2-chloroethoxy)methane				< 280	280	< 290	290	< 280	280	< 260	260	< 270	270
Bis(2-chloroethyl)ether				< 160	160	< 160	160	< 160	160	< 150	150	< 150	150
Bis(2-chloroisopropyl)ether				< 280	280	< 290	290	< 280	280	< 260	260	< 270	270
Bis(2-ethylhexyl)phthalate				< 280	280	< 290	290	< 280	280	< 260	260	< 270	270
Caprolactam				< 280	280	< 290	290	< 280	280	< 260	260	< 270	270
Carbazole				**230**	280	**4,300**	290	**1,800**	280	< 260	260	< 270	270
Chrysene	1,000	3,900	56,000	**1,300**	280	**21,000**	2,900	**14,000**	2,800	< 260	260	< 270	270
Dibenz(a,h)anthracene	330	330	560	**190**	160	**4,000**	160	**2,500**	160	< 150	150	< 150	150
Dibenzofuran	7,000	59,000	350,000	**120**	280	**2,100**	290	**770**	280	< 260	260	< 270	270
Diethyl phthalate				< 280	280	< 290	290	< 280	280	< 260	260	< 270	270
Dimethylphthalate				< 280	280	< 290	290	< 280	280	< 260	260	< 270	270
Di-n-butylphthalate				< 280	280	< 290	290	< 280	280	< 260	260	< 270	270
Di-n-octylphthalate				< 280	280	< 290	290	< 280	280	< 260	260	< 270	270
Fluoranthene	100,000	100,000	500,000	**2,800**	280	**54,000**	2,900	**30,000**	2,800	< 260	260	< 270	270
Fluorene	30,000	100,000	500,000	**150**	280	**3,300**	290	**1,300**	280	< 260	260	< 270	270
Hexachlorobenzene	330	1,200	6,000	< 160	160	< 160	160	< 160	160	< 150	150	< 150	150
Hexachlorobutadiene				< 280	280	< 290	290	< 280	280	< 260	260	< 270	270
Hexachlorocyclopentadiene				< 280	280	< 290	290	< 280	280	< 260	260	< 270	270
Hexachloroethane				< 160	160	< 160	160	< 160	160	< 150	150	< 150	150
Indeno(1,2,3-cd)pyrene	500	500	5,600	**910**	280	**17,000**	2,900	**7,800**	280	< 260	260	< 270	270
Isophorone				< 160	160	< 160	160	< 160	160	< 150	150	< 150	150
Naphthalene	12,000	100,000	500,000	**130**	280	**890**	290	**940**	280	< 260	260	< 270	270
Nitrobenzene				< 160	160	< 160	160	< 160	160	< 150	150	< 150	150
N-Nitrosodimethylamine				< 280	280	< 290	290	< 280	280	< 260	260	< 270	270
N-Nitrosodi-n-propylamine				< 160	160	< 160	160	< 160	160	< 150	150	< 150	150
N-Nitrosodiphenylamine				< 160	160	< 160	160	< 160	160	< 150	150	< 150	150
Pentachlorophenol	800	6,700	6,700	< 280	280	< 290	290	< 280	280	< 260	260	< 270	270
Phenanthrene	100,000	100,000	500,000	**1,900**	160	**44,000**	1,600	**17,000**	1,600	< 150	150	< 150	150
Phenol	330	100,000	500,000	< 280	280	< 290	290	< 280	280	< 260	260	< 270	270
Pyrene	100,000	100,000	500,000	**2,600**	280	**46,000**	2,900	**22,000**	2,800	< 260	260	< 270	270

Notes:

* - 6 NYCRR Part 375-6 Remedial Program Soil Cleanup Objectives

RL - Reporting Limit

Bold/highlighted- Indicated exceedance of the NYSDEC UUSCO Guidance Value

Bold/highlighted- Indicated exceedance of the NYSDEC RRSCO Guidance Value

Bold/highlighted- Indicated exceedance of the NYSDEC RCSCO Guidance Value

Table 27
Former Pfizer Site A - C224284
243-271 Wallabout Street,
Brooklyn, New York
Track 4 Area - Endpoint Soil Analytical Results
Semi-Volatile Organic Compounds

COMPOUND	NYSDEC Part 375.6 Unrestricted Use Soil Cleanup Objectives*	NYDEC Part 375.6 Restricted Residential Soil Cleanup Objectives*	NYDEC Part 375.6 Restricted Commerical Soil Cleanup Objectives*	EBC Endpoint Samples									
				Soil Duplicate		Soil Duplicate		Soil Duplicate		Soil Duplicate		Soil Duplicate	
				EP11		EP44		EP45		EP65		EP66	
				5/14/2021		6/9/2021		6/9/2021		6/22/2021		6/28/2021	
				µg/Kg		µg/Kg		µg/Kg		µg/Kg		µg/Kg	
				Result	RL	Result	RL	Result	RL	Result	RL	Result	RL
1,1-Biphenyl				< 250	250	< 450	450	< 430	430	< 250	250	< 260	260
1,2,4,5-Tetrachlorobenzene				< 250	250	< 450	450	< 430	430	< 250	250	< 260	260
2,3,4,6-tetrachlorophenol				< 250	250	< 450	450	< 430	430	< 250	250	< 260	260
2,4,5-Trichlorophenol				< 250	250	< 450	450	< 430	430	< 250	250	< 260	260
2,4,6-Trichlorophenol				< 150	150	< 260	260	< 250	250	< 140	140	< 150	150
2,4-Dichlorophenol				< 150	150	< 260	260	< 250	250	< 140	140	< 150	150
2,4-Dimethylphenol				< 250	250	< 450	450	< 430	430	< 250	250	< 260	260
2,4-Dinitrophenol				< 250	250	< 450	450	< 430	430	< 250	250	< 260	260
2,4-Dinitrotoluene				< 150	150	< 260	260	< 250	250	< 140	140	< 150	150
2,6-Dinitrotoluene				< 150	150	< 260	260	< 250	250	< 140	140	< 150	150
2-Chloronaphthalene				< 250	250	< 450	450	< 430	430	< 250	250	< 260	260
2-Chlorophenol				< 250	250	< 450	450	< 430	430	< 250	250	< 260	260
2-Methylnaphthalene				< 250	250	< 450	450	**490**	430	< 250	250	**210**	260
2-Methylphenol (o-cresol)	330	100,000	500,000	< 250	250	< 330	330	< 330	330	< 250	250	< 260	260
2-Nitroaniline				< 250	250	< 450	450	< 430	430	< 250	250	< 260	260
2-Nitrophenol				< 250	250	< 450	450	< 430	430	< 250	250	< 260	260
3&4-Methylphenol (m&p-cresol)				< 250	250	< 450	450	< 430	430	< 250	250	< 260	260
3,3'-Dichlorobenzidine				< 150	150	< 260	260	< 250	250	< 140	140	< 150	150
3-Nitroaniline				< 730	730	< 1300	1,300	< 1200	1,200	< 700	700	< 750	750
4,6-Dinitro-2-methylphenol				< 250	250	< 450	450	< 430	430	< 250	250	< 260	260
4-Bromophenyl phenyl ether				< 250	250	< 450	450	< 430	430	< 250	250	< 260	260
4-Chloro-3-methylphenol				< 250	250	< 450	450	< 430	430	< 250	250	< 260	260
4-Chloroaniline				< 730	730	< 1300	1,300	< 1200	1,200	< 700	700	< 750	750
4-Chlorophenyl phenyl ether				< 250	250	< 450	450	< 430	430	< 250	250	< 260	260
4-Nitroaniline				< 1800	1,800	< 3200	3,200	< 3100	3,100	< 1800	1,800	< 1900	1,900
4-Nitrophenol				< 250	250	< 450	450	< 430	430	< 250	250	< 260	260
Acenaphthene	20,000	100,000	500,000	< 250	250	**290**	450	**1,000**	430	< 250	250	**500**	260
Acenaphthylene	100,000	100,000	500,000	< 150	150	**320**	260	**960**	250	< 140	140	**550**	150
Acetophenone				< 250	250	< 450	450	< 430	430	< 250	250	< 260	260
Anthracene	100,000	100,000	500,000	< 250	250	**860**	450	**3,700**	430	< 250	250	**1,300**	260
Atrazine				< 250	250	< 450	450	< 430	430	< 250	250	< 260	260
Benz(a)anthracene	1,000	1,000	5,600	< 250	250	**3,600**	450	**6,700**	430	< 250	250	**4,000**	260
Benzaldehyde				< 250	250	< 450	450	< 430	430	< 250	250	< 260	260
Benzo(a)pyrene	1,000	1,000	1,000	< 150	150	**3,700**	260	**5,700**	250	< 140	140	**3,700**	150
Benzo(b)fluoranthene	1,000	1,000	5,600	< 250	250	**2,800**	450	**4,600**	430	< 250	250	**3,400**	260
Benzo(ghi)perylene	100,000	100,000	500,000	< 250	250	**1,900**	450	**2,600**	430	< 250	250	**1,700**	260
Benzo(k)fluoranthene	800	3,900	56,000	< 250	250	**3,000**	450	**4,600**	430	< 250	250	**3,000**	260
Benzyl butyl phthalate				< 250	250	< 450	450	< 430	430	< 250	250	< 260	260
Bis(2-chloroethoxy)methane				< 250	250	< 450	450	< 430	430	< 250	250	< 260	260
Bis(2-chloroethyl)ether				< 150	150	< 260	260	< 250	250	< 140	140	< 150	150
Bis(2-chloroisopropyl)ether				< 250	250	< 450	450	< 430	430	< 250	250	< 260	260
Bis(2-ethylhexyl)phthalate				< 250	250	**230**	450	< 430	430	< 250	250	< 260	260
Caprolactam				< 250	250	< 450	450	< 430	430	< 250	250	< 260	260
Carbazole				< 250	250	**360**	450	**1,200**	430	< 250	250	**520**	260
Chrysene	1,000	3,900	56,000	< 250	250	**3,100**	450	**5,600**	430	< 250	250	**3,600**	260
Dibenz(a,h)anthracene	330	330	560	< 150	150	**580**	260	**930**	250	< 140	140	**500**	150
Dibenzofuran	7,000	59,000	350,000	< 250	250	**220**	450	**1,400**	430	< 250	250	**400**	260
Diethyl phthalate				< 250	250	< 450	450	< 430	430	< 250	250	< 260	260
Dimethylphthalate				< 250	250	< 450	450	< 430	430	< 250	250	< 260	260
Di-n-butylphthalate				< 250	250	< 450	450	< 430	430	< 250	250	< 260	260
Di-n-octylphthalate				< 250	250	< 450	450	< 430	430	< 250	250	< 260	260
Fluoranthene	100,000	100,000	500,000	< 250	250	**5,600**	450	**12,000**	430	< 250	250	**7,000**	260
Fluorene	30,000	100,000	500,000	< 250	250	**320**	450	**2,100**	430	< 250	250	**610**	260
Hexachlorobenzene	330	1,200	6,000	< 150	150	< 260	260	< 250	250	< 140	140	< 150	150
Hexachlorobutadiene				< 250	250	< 450	450	< 430	430	< 250	250	< 260	260
Hexachlorocyclopentadiene				< 250	250	< 450	450	< 430	430	< 250	250	< 260	260
Hexachloroethane				< 150	150	< 260	260	< 250	250	< 140	140	< 150	150
Indeno(1,2,3-cd)pyrene	500	500	5,600	< 250	250	**2,500**	450	**3,700**	430	< 250	250	**2,100**	260
Isophorone				< 150	150	< 260	260	< 250	250	< 140	140	< 150	150
Naphthalene	12,000	100,000	500,000	< 250	250	**210**	450	**930**	430	< 250	250	**390**	260
Nitrobenzene				< 150	150	< 260	260	< 250	250	< 140	140	< 150	150
N-Nitrosodimethylamine				< 250	250	< 450	450	< 430	430	< 250	250	< 260	260
N-Nitrosodi-n-propylamine				< 150	150	< 260	260	< 250	250	< 140	140	< 150	150
N-Nitrosodiphenylamine				< 150	150	< 260	260	< 250	250	< 140	140	< 150	150
Pentachlorophenol	800	6,700	6,700	< 250	250	< 450	450	< 430	430	< 250	250	< 260	260
Phenanthrene	100,000	100,000	500,000	< 150	150	**3,300**	260	**11,000**	250	< 140	140	**4,700**	150
Phenol	330	100,000	500,000	< 250	250	< 330	330	< 330	330	< 250	250	< 260	260
Pyrene	100,000	100,000	500,000	< 250	250	**5,200**	450	**10,000**	430	< 250	250	**6,600**	260

Notes:

* - 6 NYCRR Part 375-6 Remedial Program Soil Cleanup Objectives

RL - Reporting Limit

Bold/highlighted- Indicated exceedance of the NYSDEC UUSCO Guidance Value

Bold/highlighted- Indicated exceedance of the NYSDEC RRSCO Guidance Value

Bold/highlighted- Indicated exceedance of the NYSDEC RCSCO Guidance Value

Table 28
Former Pfizer Site A - C224284
243-271 Wallabout Street,
Brooklyn, New York
Track 4 Area - Endpoint Soil Analytical Results
Pesticides PCBs

	COMPOUND	NYSDEC Part 375.6 Unrestricted Use Soil Cleanup Objectives*	NYDEC Part 375.6 Restricted Residential Soil Cleanup Objectives*	NYDEC Part 375.6 Restricted Commercial Soil Cleanup Objectives*	Endpoint Samples																			
					EP10		EP11				EP12		EP13		EP14		EP15		EP16		EP17			
					4'		4'		4.5'		4'		4'		4'		4'		4'		4'		9'	
					5/5/2021		5/6/2021		5/14/2021		5/11/2021		5/6/2021		5/5/2021		511/2021		5/5/2021		5/6/2021		5/13/2021	
					µg/Kg		µg/Kg		µg/Kg		µg/Kg		µg/Kg		µg/Kg		µg/Kg		µg/Kg		µg/Kg		µg/Kg	
					Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL
Pesticides	4,4' -DDD	3.3	13,000	92,000	**13**	2.3	< 2.5	2.5	< 2.2	2.2	< 2.4	2.4	< 2.3	2.3	< 2.2	2.2	< 2.3	2.3	< 2.1	2.1	< 2.2	2.2	< 2.4	2.4
	4,4' -DDE	3.3	8,900	62,000	**6.8**	2.3	< 2.5	2.5	< 2.2	2.2	< 2.4	2.4	**13**	2.3	< 2.2	2.2	< 2.3	2.3	< 2.1	2.1	< 2.2	2.2	< 2.4	2.4
	4,4' -DDT	3.3	7,900	47,000	**23**	2.3	< 2.5	2.5	< 2.2	2.2	< 2.4	2.4	**10**	2.3	< 2.2	2.2	< 2.3	2.3	< 2.1	2.1	< 2.2	2.2	< 2.4	2.4
	a-BHC	20	480	3,400	< 7.7	7.7	< 8.2	8.2	< 7.3	7.3	< 8.0	8.0	< 7.6	7.6	< 7.3	7.3	< 7.7	7.7	< 7.1	7.1	< 7.3	7.3	< 8.0	8.0
	a-Chlordane	94	4,200	24,000	**56**	3.9	< 4.1	4.1	< 3.6	3.6	< 4.0	4.0	< 3.8	3.8	< 3.7	3.7	< 3.9	3.9	< 3.5	3.5	< 3.6	3.6	< 4.0	4.0
	Aldrin	5	97	680	< 3.9	3.9	< 4.1	4.1	< 3.6	3.6	< 4.0	4.0	< 3.8	3.8	< 3.7	3.7	< 3.9	3.9	< 3.5	3.5	< 3.6	3.6	< 4.0	4.0
	b-BHC	36	360	3,000	< 7.7	7.7	< 8.2	8.2	< 7.3	7.3	< 8.0	8.0	< 7.6	7.6	< 7.3	7.3	< 7.7	7.7	< 7.1	7.1	< 7.3	7.3	< 8.0	8.0
	Chlordane				**260**	39	< 41	41	< 36	36	< 40	40	< 38	38	< 37	37	< 39	39	< 35	35	< 36	36	< 40	40
	d-BHC	40	100,000	500,000	< 7.7	7.7	< 8.2	8.2	< 7.3	7.3	< 8.0	8.0	< 7.6	7.6	< 7.3	7.3	< 7.7	7.7	< 7.1	7.1	< 7.3	7.3	< 8.0	8.0
	Dieldrin	5	200	1,400	< 3.9	3.9	< 4.1	4.1	< 3.6	3.6	< 4.0	4.0	< 3.8	3.8	< 3.7	3.7	< 3.9	3.9	< 3.5	3.5	< 3.6	3.6	< 4.0	4.0
	Endosulfan I	2,400	24,000	200,000	< 7.7	7.7	< 8.2	8.2	< 7.3	7.3	< 8.0	8.0	< 7.6	7.6	< 7.3	7.3	< 7.7	7.7	< 7.1	7.1	< 7.3	7.3	< 8.0	8.0
	Endosulfan II	2,400	24,000	200,000	< 7.7	7.7	< 8.2	8.2	< 7.3	7.3	< 8.0	8.0	< 7.6	7.6	< 7.3	7.3	< 7.7	7.7	< 7.1	7.1	< 7.3	7.3	< 8.0	8.0
	Endosulfan sulfate	2,400	24,000	200,000	< 7.7	7.7	< 8.2	8.2	< 7.3	7.3	< 8.0	8.0	< 7.6	7.6	< 7.3	7.3	< 7.7	7.7	< 7.1	7.1	< 7.3	7.3	< 8.0	8.0
	Endrin	14	11,000	89,000	< 7.7	7.7	< 8.2	8.2	< 7.3	7.3	< 8.0	8.0	< 7.6	7.6	< 7.3	7.3	< 7.7	7.7	< 7.1	7.1	< 7.3	7.3	< 8.0	8.0
	Endrin aldehyde				< 7.7	7.7	< 8.2	8.2	< 7.3	7.3	< 8.0	8.0	< 7.6	7.6	< 7.3	7.3	< 7.7	7.7	< 7.1	7.1	< 7.3	7.3	< 8.0	8.0
	Endrin ketone				< 7.7	7.7	< 8.2	8.2	< 7.3	7.3	< 8.0	8.0	< 7.6	7.6	< 7.3	7.3	< 7.7	7.7	< 7.1	7.1	< 7.3	7.3	< 8.0	8.0
	g-BHC				< 1.5	1.5	< 1.6	1.6	< 1.5	1.5	< 1.6	1.6	< 1.5	1.5	< 1.5	1.5	< 1.5	1.5	< 1.4	1.4	< 1.5	1.5	< 1.6	1.6
	g-Chlordane				**39**	3.9	< 4.1	4.1	< 3.6	3.6	< 4.0	4.0	< 3.8	3.8	< 3.7	3.7	< 3.9	3.9	< 3.5	3.5	< 3.6	3.6	< 4.0	4.0
	Heptachlor	42	2,100	15,000	< 7.7	7.7	< 8.2	8.2	< 7.3	7.3	< 8.0	8.0	< 7.6	7.6	< 7.3	7.3	< 7.7	7.7	< 7.1	7.1	< 7.3	7.3	< 8.0	8.0
	Heptachlor epoxide				< 7.7	7.7	< 8.2	8.2	< 7.3	7.3	< 8.0	8.0	< 7.6	7.6	< 7.3	7.3	< 7.7	7.7	< 7.1	7.1	< 7.3	7.3	< 8.0	8.0
	Methoxychlor				< 39	39	< 41	41	< 36	36	< 40	40	< 38	38	< 37	37	< 39	39	< 35	35	< 36	36	< 40	40
	Toxaphene				< 150	150	< 160	160	< 150	150	< 160	160	< 150	150	< 150	150	< 150	150	< 140	140	< 150	150	< 160	160
PCBs	PCB-1016	100	1,000		< 77	77	< 82	82	< 73	73	< 80	80	< 76	76	< 73	73	< 77	77	< 71	71	< 73	73	< 80	80
	PCB-1221	100	1,000		< 77	77	< 82	82	< 73	73	< 80	80	< 76	76	< 73	73	< 77	77	< 71	71	< 73	73	< 80	80
	PCB-1232	100	1,000		< 77	77	< 82	82	< 73	73	< 80	80	< 76	76	< 73	73	< 77	77	< 71	71	< 73	73	< 80	80
	PCB-1242	100	1,000		< 77	77	< 82	82	< 73	73	< 80	80	< 76	76	< 73	73	< 77	77	< 71	71	< 73	73	< 80	80
	PCB-1248	100	1,000		< 77	77	< 82	82	< 73	73	< 80	80	< 76	76	< 73	73	< 77	77	< 71	71	< 73	73	< 80	80
	PCB-1254	100	1,000		< 77	77	< 82	82	< 73	73	< 80	80	< 76	76	< 73	73	< 77	77	< 71	71	< 73	73	< 80	80
	PCB-1260	100	1,000		< 77	77	< 82	82	< 73	73	< 80	80	< 76	76	< 73	73	< 77	77	< 71	71	< 73	73	< 80	80
	PCB-1262	101			< 77	77	< 82	82	< 73	73	< 80	80	< 76	76	< 73	73	< 77	77	< 71	71	< 73	73	< 80	80
	PCB-1268	102			< 77	77	< 82	82	< 73	73	< 80	80	< 76	76	< 73	73	< 77	77	< 71	71	< 73	73	< 80	80

Notes:

* - 6 NYCRR Part 375-6 Remedial Program Soil Cleanup Objectives

RL - Reporting Limit

Bold/highlighted- Indicated exceedance of the NYSDEC UUSCO Guidance Value

Bold/highlighted- Indicated exceedance of the NYSDEC RRSCO Guidance Value

Bold/highlighted- Indicated exceedance of the NYSDEC RCSCO Guidance Value

Table 28
Former Pfizer Site A - C224284
243-271 Wallabout Street,
Brooklyn, New York
Track 4 Area - Endpoint Soil Analytical Results
Pesticides PCBs

	COMPOUND	NYSDEC Part 375.6 Unrestricted Use Soil Cleanup Objectives*	NYDEC Part 375.6 Restricted Residential Soil Cleanup Objectives*	NYDEC Part 375.6 Restricted Commercial Soil Cleanup Objectives*	Endpoint Samples																			
					EP18				EP19				EP20		EP39		EP40		EP41		EP42		EP43	
					4'		9'		4'		4.5'		4'		5'		5'		4'		4'		5'	
					5/10/2021		5/13/2021		5/10/2021		5/14/2021		5/10/2021		6/4/2021		6/4/2021		5/6/2021		5/6/2021		6/4/2021	
					µg/Kg		µg/Kg		µg/Kg		µg/Kg		µg/Kg		µg/Kg		µg/Kg		µg/Kg		µg/Kg		µg/Kg	
					Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL
Pesticides	4,4' -DDD	3.3	13,000	92,000	< 2.4	2.4	< 2.3	2.3	< 2.7	2.7	< 2.3	2.3	< 2.4	2.4	< 2.5	2.5	< 2.4	2.4	< 2.3	2.3	< 2.1	2.1	< 2.2	2.2
	4,4' -DDE	3.3	8,900	62,000	< 2.4	2.4	< 2.3	2.3	< 2.4	2.4	< 2.3	2.3	< 2.4	2.4	< 2.5	2.5	< 2.4	2.4	< 2.3	2.3	< 2.1	2.1	< 2.2	2.2
	4,4' -DDT	3.3	7,900	47,000	< 2.4	2.4	< 2.3	2.3	< 2.4	2.4	< 2.3	2.3	< 2.4	2.4	< 2.5	2.5	< 2.4	2.4	< 2.3	2.3	< 2.1	2.1	< 2.2	2.2
	a-BHC	20	480	3,400	< 8.1	8.1	< 7.7	7.7	< 8.0	8.0	< 7.8	7.8	< 8.0	8.0	< 8.2	8.2	< 8.0	8.0	< 7.7	7.7	< 7.0	7.0	< 7.3	7.3
	a-Chlordane	94	4,200	24,000	< 4.0	4.0	< 3.8	3.8	< 4.0	4.0	< 3.9	3.9	< 4.0	4.0	< 4.1	4.1	< 4.0	4.0	< 3.8	3.8	< 3.5	3.5	< 3.6	3.6
	Aldrin	5	97	680	< 4.0	4.0	< 3.8	3.8	< 4.0	4.0	< 3.9	3.9	< 4.0	4.0	< 4.1	4.1	< 4.0	4.0	< 3.8	3.8	< 3.5	3.5	< 3.6	3.6
	b-BHC	36	360	3,000	< 8.1	8.1	< 7.7	7.7	< 8.0	8.0	< 7.8	7.8	< 8.0	8.0	< 8.2	8.2	< 8.0	8.0	< 7.7	7.7	< 7.0	7.0	< 7.3	7.3
	Chlordane				< 40	40	< 38	38	< 40	40	< 39	39	< 40	40	< 41	41	< 40	40	< 38	38	< 35	35	< 36	36
	d-BHC	40	100,000	500,000	< 8.1	8.1	< 7.7	7.7	< 8.0	8.0	< 7.8	7.8	< 8.0	8.0	< 8.2	8.2	< 8.0	8.0	< 7.7	7.7	< 7.0	7.0	< 7.3	7.3
	Dieldrin	5	200	1,400	< 4.0	4.0	< 3.8	3.8	< 4.0	4.0	< 3.9	3.9	< 4.0	4.0	< 4.1	4.1	< 4.0	4.0	< 3.8	3.8	< 3.5	3.5	< 3.6	3.6
	Endosulfan I	2,400	24,000	200,000	< 8.1	8.1	< 7.7	7.7	< 8.0	8.0	< 7.8	7.8	< 8.0	8.0	< 8.2	8.2	< 8.0	8.0	< 7.7	7.7	< 7.0	7.0	< 7.3	7.3
	Endosulfan II	2,400	24,000	200,000	< 8.1	8.1	< 7.7	7.7	< 8.0	8.0	< 7.8	7.8	< 8.0	8.0	< 8.2	8.2	< 8.0	8.0	< 7.7	7.7	< 7.0	7.0	< 7.3	7.3
	Endosulfan sulfate	2,400	24,000	200,000	< 8.1	8.1	< 7.7	7.7	< 8.0	8.0	< 7.8	7.8	< 8.0	8.0	< 8.2	8.2	< 8.0	8.0	< 7.7	7.7	< 7.0	7.0	< 7.3	7.3
	Endrin	14	11,000	89,000	< 8.1	8.1	< 7.7	7.7	< 8.0	8.0	< 7.8	7.8	< 8.0	8.0	< 8.2	8.2	< 8.0	8.0	< 7.7	7.7	< 7.0	7.0	< 7.3	7.3
	Endrin aldehyde				< 8.1	8.1	< 7.7	7.7	< 8.0	8.0	< 7.8	7.8	< 8.0	8.0	< 8.2	8.2	< 8.0	8.0	< 7.7	7.7	< 7.0	7.0	< 7.3	7.3
	Endrin ketone				< 8.1	8.1	< 7.7	7.7	< 8.0	8.0	< 7.8	7.8	< 8.0	8.0	< 8.2	8.2	< 8.0	8.0	< 7.7	7.7	< 7.0	7.0	< 7.3	7.3
	g-BHC				< 1.6	1.6	< 1.5	1.5	< 1.6	1.6	< 1.6	1.6	< 1.6	1.6	< 1.6	1.6	< 1.6	1.6	< 1.5	1.5	< 1.4	1.4	< 1.5	1.5
	g-Chlordane				< 4.0	4.0	< 3.8	3.8	< 4.0	4.0	< 3.9	3.9	< 4.0	4.0	< 4.1	4.1	< 4.0	4.0	< 3.8	3.8	< 3.5	3.5	< 3.6	3.6
	Heptachlor	42	2,100	15,000	< 8.1	8.1	< 7.7	7.7	< 8.0	8.0	< 7.8	7.8	< 8.0	8.0	< 8.2	8.2	< 8.0	8.0	< 7.7	7.7	< 7.0	7.0	< 7.3	7.3
	Heptachlor epoxide				< 8.1	8.1	< 7.7	7.7	< 8.0	8.0	< 7.8	7.8	< 8.0	8.0	< 8.2	8.2	< 8.0	8.0	< 7.7	7.7	< 7.0	7.0	< 7.3	7.3
	Methoxychlor				< 40	40	< 38	38	< 40	40	< 39	39	< 40	40	< 41	41	< 40	40	< 38	38	< 35	35	< 36	36
	Toxaphene				< 160	160	< 150	150	< 160	160	< 160	160	< 160	160	< 160	160	< 160	160	< 150	150	< 140	140	< 150	150
PCBs	PCB-1016	100	1,000		< 81	81	< 77	77	< 80	80	< 78	78	< 80	80	< 82	82	< 80	80	< 77	77	< 70	70	< 73	73
	PCB-1221	100	1,000		< 81	81	< 77	77	< 80	80	< 78	78	< 80	80	< 82	82	< 80	80	< 77	77	< 70	70	< 73	73
	PCB-1232	100	1,000		< 81	81	< 77	77	< 80	80	< 78	78	< 80	80	< 82	82	< 80	80	< 77	77	< 70	70	< 73	73
	PCB-1242	100	1,000		< 81	81	< 77	77	< 80	80	< 78	78	< 80	80	< 82	82	< 80	80	< 77	77	< 70	70	< 73	73
	PCB-1248	100	1,000		< 81	81	< 77	77	< 80	80	< 78	78	< 80	80	< 82	82	< 80	80	< 77	77	< 70	70	< 73	73
	PCB-1254	100	1,000		< 81	81	< 77	77	< 80	80	< 78	78	< 80	80	< 82	82	< 80	80	< 77	77	< 70	70	< 73	73
	PCB-1260	100	1,000		< 81	81	< 77	77	< 80	80	< 78	78	< 80	80	< 82	82	< 80	80	< 77	77	< 70	70	< 73	73
	PCB-1262	101			< 81	81	< 77	77	< 80	80	< 78	78	< 80	80	< 82	82	< 80	80	< 77	77	< 70	70	< 73	73
	PCB-1268	102			< 81	81	< 77	77	< 80	80	< 78	78	< 80	80	< 82	82	< 80	80	< 77	77	< 70	70	< 73	73

Notes:

* - 6 NYCRR Part 375-6 Remedial Program Soil Cleanup Objectives

RL - Reporting Limit

Bold/highlighted- Indicated exceedance of the NYSDEC UUSCO Guidance Value

Bold/highlighted- Indicated exceedance of the NYSDEC RRSCO Guidance Value

Bold/highlighted- Indicated exceedance of the NYSDEC RCSCO Guidance Value

Table 28
Former Pfizer Site A - C224284
243-271 Wallabout Street,
Brooklyn, New York
Track 4 Area - Endpoint Soil Analytical Results
Pesticides PCBs

	COMPOUND	NYSDEC Part 375.6 Unrestricted Use Soil Cleanup Objectives*	NYDEC Part 375.6 Restricted Residential Soil Cleanup Objectives*	NYDEC Part 375.6 Restricted Commercial Soil Cleanup Objectives*	Endpoint Samples																	
					EP44		EP45		EP64		EP65		EP66		Soil Duplicate		Soil Duplicate		Soil Duplicate		Soil Duplicate		Soil Duplicate	
					5'		5'		5'		5.5'		5.5'		EP10		EP11		EP18		EP15		EP18	
					6/9/2021		6/9/2021		6/9/2021		6/22/2021		6/22/2021		5/5/2021		5/6/2021		5/10/2021		5/11/2021		5/13/2021	
					µg/Kg		µg/Kg		µg/Kg		µg/Kg		µg/Kg		µg/Kg		µg/Kg		µg/Kg		µg/Kg		µg/Kg	
					Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL
Pesticides	4,4' -DDD	3.3	13,000	92,000	< 2.3	2.3	< 2.4	2.4	< 2.3	2.3	< 2.1	2.1	< 2.2	2.2	**16**	2.4	< 2.4	2.4	< 2.4	2.4	< 2.2	2.2	< 2.3	2.3
	4,4' -DDE	3.3	8,900	62,000	< 2.6	2.6	< 2.4	2.4	< 2.3	2.3	< 2.1	2.1	< 3.0	3.0	**6.9**	2.4	< 2.4	2.4	< 3.0	3.0	< 2.2	2.2	< 2.3	2.3
	4,4' -DDT	3.3	7,900	47,000	**4.9**	2.3	**7.8**	2.4	**8**	2.3	< 2.1	2.1	< 3.0	3.0	**18**	2.4	< 2.4	2.4	< 2.4	2.4	< 2.2	2.2	< 2.3	2.3
	a-BHC	20	480	3,400	< 7.8	7.8	< 7.9	7.9	< 7.7	7.7	< 7.1	7.1	< 7.4	7.4	< 7.8	7.8	< 8.0	8.0	< 7.9	7.9	< 7.4	7.4	< 7.5	7.5
	a-Chlordane	94	4,200	24,000	**23**	3.9	**16**	3.9	**8.1**	3.9	< 3.6	3.6	< 3.7	3.7	**69**	3.9	< 4.0	4.0	< 4.0	4.0	< 3.7	3.7	< 3.8	3.8
	Aldrin	5	97	680	< 3.9	3.9	< 3.9	3.9	< 3.9	3.9	< 3.6	3.6	< 3.7	3.7	< 3.9	3.9	< 4.0	4.0	< 4.0	4.0	< 3.7	3.7	< 3.8	3.8
	b-BHC	36	360	3,000	< 7.8	7.8	< 7.9	7.9	< 7.7	7.7	< 7.1	7.1	< 7.4	7.4	< 7.8	7.8	< 8.0	8.0	< 7.9	7.9	< 7.4	7.4	< 7.5	7.5
	Chlordane				**110**	39	**77**	39	**36**	15	< 36	36	< 37	37	**330**	39	< 40	40	< 40	40	< 37	37	< 38	38
	d-BHC	40	100,000	500,000	< 7.8	7.8	< 7.9	7.9	< 7.7	7.7	< 7.1	7.1	< 7.4	7.4	< 7.8	7.8	< 8.0	8.0	< 7.9	7.9	< 7.4	7.4	< 7.5	7.5
	Dieldrin	5	200	1,400	< 3.9	3.9	< 3.9	3.9	< 3.9	3.9	< 3.6	3.6	< 3.7	3.7	< 4.4	4.4	< 4.0	4.0	< 4.0	4.0	< 3.7	3.7	< 3.8	3.8
	Endosulfan I	2,400	24,000	200,000	< 7.8	7.8	< 7.9	7.9	< 7.7	7.7	< 7.1	7.1	< 7.4	7.4	< 7.8	7.8	< 8.0	8.0	< 7.9	7.9	< 7.4	7.4	< 7.5	7.5
	Endosulfan II	2,400	24,000	200,000	< 7.8	7.8	< 7.9	7.9	< 7.7	7.7	< 7.1	7.1	< 7.4	7.4	< 7.8	7.8	< 8.0	8.0	< 7.9	7.9	< 7.4	7.4	< 7.5	7.5
	Endosulfan sulfate	2,400	24,000	200,000	< 7.8	7.8	< 7.9	7.9	< 7.7	7.7	< 7.1	7.1	< 7.4	7.4	< 7.8	7.8	< 8.0	8.0	< 7.9	7.9	< 7.4	7.4	< 7.5	7.5
	Endrin	14	11,000	89,000	< 7.8	7.8	< 7.9	7.9	< 7.7	7.7	< 7.1	7.1	< 7.4	7.4	< 7.8	7.8	< 8.0	8.0	< 7.9	7.9	< 7.4	7.4	< 7.5	7.5
	Endrin aldehyde				< 7.8	7.8	< 7.9	7.9	< 7.7	7.7	< 7.1	7.1	< 7.4	7.4	< 7.8	7.8	< 8.0	8.0	< 7.9	7.9	< 7.4	7.4	< 7.5	7.5
	Endrin ketone				< 7.8	7.8	< 7.9	7.9	< 7.7	7.7	< 7.1	7.1	< 7.4	7.4	< 7.8	7.8	< 8.0	8.0	< 7.9	7.9	< 7.4	7.4	< 7.5	7.5
	g-BHC				< 1.6	1.6	< 1.6	1.6	< 1.5	1.5	< 1.4	1.4	< 1.5	1.5	< 1.6	1.6	< 1.6	1.6	< 1.6	1.6	< 1.5	1.5	< 1.5	1.5
	g-Chlordane				**16**	3.9	**10**	3.9	**4.9**	3.9	< 3.6	3.6	< 3.7	3.7	**48**	3.9	< 4.0	4.0	< 4.0	4.0	< 3.7	3.7	< 3.8	3.8
	Heptachlor	42	2,100	15,000	< 7.8	7.8	< 7.9	7.9	< 7.7	7.7	< 7.1	7.1	< 7.4	7.4	< 7.8	7.8	< 8.0	8.0	< 7.9	7.9	< 7.4	7.4	< 7.5	7.5
	Heptachlor epoxide				< 7.8	7.8	< 7.9	7.9	< 7.7	7.7	< 7.1	7.1	< 7.4	7.4	< 7.8	7.8	< 8.0	8.0	< 7.9	7.9	< 7.4	7.4	< 7.5	7.5
	Methoxychlor				< 39	39	< 39	39	< 39	39	< 36	36	< 37	37	< 39	39	< 40	40	< 40	40	< 37	37	< 38	38
	Toxaphene				< 160	160	< 160	160	< 150	150	< 140	140	< 150	150	< 160	160	< 160	160	< 160	160	< 150	150	< 150	150
PCBs	PCB-1016	100	1,000		< 78	78	< 79	79	< 77	77	< 71	71	< 74	74	< 78	78	< 80	80	< 79	79	< 74	74	< 75	75
	PCB-1221	100	1,000		< 78	78	< 79	79	< 77	77	< 71	71	< 74	74	< 78	78	< 80	80	< 79	79	< 74	74	< 75	75
	PCB-1232	100	1,000		< 78	78	< 79	79	< 77	77	< 71	71	< 74	74	< 78	78	< 80	80	< 79	79	< 74	74	< 75	75
	PCB-1242	100	1,000		< 78	78	< 79	79	< 77	77	< 71	71	< 74	74	< 78	78	< 80	80	< 79	79	< 74	74	< 75	75
	PCB-1248	100	1,000		< 78	78	< 79	79	< 77	77	< 71	71	< 74	74	< 78	78	< 80	80	< 79	79	< 74	74	< 75	75
	PCB-1254	100	1,000		< 78	78	< 79	79	< 77	77	< 71	71	< 74	74	< 78	78	< 80	80	< 79	79	< 74	74	< 75	75
	PCB-1260	100	1,000		< 78	78	< 79	79	< 77	77	< 71	71	< 74	74	< 78	78	< 80	80	< 79	79	< 74	74	< 75	75
	PCB-1262	101			< 78	78	< 79	79	< 77	77	< 71	71	< 74	74	< 78	78	< 80	80	< 79	79	< 74	74	< 75	75
	PCB-1268	102			< 78	78	< 79	79	< 77	77	< 71	71	< 74	74	< 78	78	< 80	80	< 79	79	< 74	74	< 75	75

Notes:

* - 6 NYCRR Part 375-6 Remedial Program Soil Cleanup Objectives

RL - Reporting Limit

Bold/highlighted- Indicated exceedance of the NYSDEC UUSCO Guidance Value

Bold/highlighted- Indicated exceedance of the NYSDEC RRSCO Guidance Value

Bold/highlighted- Indicated exceedance of the NYSDEC RCSCO Guidance Value

Table 28
Former Pfizer Site A - C224284
243-271 Wallabout Street,
Brooklyn, New York
Track 4 Area - Endpoint Soil Analytical Results
Pesticides PCBs

	COMPOUND	NYSDEC Part 375.6 Unrestricted Use Soil Cleanup Objectives*	NYDEC Part 375.6 Restricted Residential Soil Cleanup Objectives*	NYDEC Part 375.6 Restricted Commercial Soil Cleanup Objectives*	Endpoint Samples									
					Soil Duplicate		Soil Duplicate		Soil Duplicate		Soil Duplicate		Soil Duplicate	
					EP11		EP44		EP45		EP65		EP66	
					5/14/2021		6/9/2021		6/9/2021		6/22/2021		6/28/2021	
					µg/Kg		µg/Kg		µg/Kg		µg/Kg		µg/Kg	
					Result	RL	Result	RL	Result	RL	Result	RL	Result	RL
Pesticides	4,4' -DDD	3.3	13,000	92,000	< 2.2	2.2	< 3.2	3.2	< 2.3	2.3	< 2.2	2.2	< 2.2	2.2
	4,4' -DDE	3.3	8,900	62,000	< 2.2	2.2	< 2.4	2.4	< 2.3	2.3	< 2.2	2.2	< 2.2	2.2
	4,4' -DDT	3.3	7,900	47,000	< 2.2	2.2	< 3.3	3.3	**4.1**	2.3	< 2.2	2.2	< 2.8	2.8
	a-BHC	20	480	3,400	< 7.2	7.2	< 7.9	7.9	< 7.7	7.7	< 7.2	7.2	< 7.5	7.5
	a-Chlordane	94	4,200	24,000	< 3.6	3.6	**23**	4.0	**13**	3.8	< 3.6	3.6	< 3.7	3.7
	Aldrin	5	97	680	< 3.6	3.6	< 4.0	4.0	< 3.8	3.8	< 3.6	3.6	< 3.7	3.7
	b-BHC	36	360	3,000	< 7.2	7.2	< 7.9	7.9	< 7.7	7.7	< 7.2	7.2	< 7.5	7.5
	Chlordane				< 36	36	**110**	40	**61**	38	< 36	36	< 37	37
	d-BHC	40	100,000	500,000	< 7.2	7.2	< 7.9	7.9	< 7.7	7.7	< 7.2	7.2	< 7.5	7.5
	Dieldrin	5	200	1,400	< 3.6	3.6	< 4.0	4.0	< 3.8	3.8	< 3.6	3.6	< 3.7	3.7
	Endosulfan I	2,400	24,000	200,000	< 7.2	7.2	< 7.9	7.9	< 7.7	7.7	< 7.2	7.2	< 7.5	7.5
	Endosulfan II	2,400	24,000	200,000	< 7.2	7.2	< 7.9	7.9	< 7.7	7.7	< 7.2	7.2	< 7.5	7.5
	Endosulfan sulfate	2,400	24,000	200,000	< 7.2	7.2	< 7.9	7.9	< 7.7	7.7	< 7.2	7.2	< 7.5	7.5
	Endrin	14	11,000	89,000	< 7.2	7.2	< 7.9	7.9	< 7.7	7.7	< 7.2	7.2	< 7.5	7.5
	Endrin aldehyde				< 7.2	7.2	< 7.9	7.9	< 7.7	7.7	< 7.2	7.2	< 7.5	7.5
	Endrin ketone				< 7.2	7.2	< 7.9	7.9	< 7.7	7.7	< 7.2	7.2	< 7.5	7.5
	g-BHC				< 1.4	1.4	< 1.6	1.6	< 1.5	1.5	< 1.4	1.4	< 1.5	1.5
	g-Chlordane				< 3.6	3.6	**15**	4.0	**8.5**	3.8	< 3.6	3.6	< 3.7	3.7
	Heptachlor	42	2,100	15,000	< 7.2	7.2	< 7.9	7.9	< 7.7	7.7	< 7.2	7.2	< 7.5	7.5
	Heptachlor epoxide				< 7.2	7.2	< 7.9	7.9	< 7.7	7.7	< 7.2	7.2	< 7.5	7.5
	Methoxychlor				< 36	36	< 40	40	< 38	38	< 36	36	< 37	37
	Toxaphene				< 140	140	< 160	160	< 150	150	< 140	140	< 150	150
PCBs	PCB-1016	100	1,000		< 72	72	< 79	79	**83**	77	< 72	72	< 75	75
	PCB-1221	100	1,000		< 72	72	< 79	79	< 77	77	< 72	72	< 75	75
	PCB-1232	100	1,000		< 72	72	< 79	79	< 77	77	< 72	72	< 75	75
	PCB-1242	100	1,000		< 72	72	< 79	79	< 77	77	< 72	72	< 75	75
	PCB-1248	100	1,000		< 72	72	< 79	79	< 77	77	< 72	72	< 75	75
	PCB-1254	100	1,000		< 72	72	< 79	79	< 77	77	< 72	72	< 75	75
	PCB-1260	100	1,000		< 72	72	< 79	79	< 77	77	< 72	72	< 75	75
	PCB-1262	101			< 72	72	< 79	79	< 77	77	< 72	72	< 75	75
	PCB-1268	102			< 72	72	< 79	79	< 77	77	< 72	72	< 75	75

Notes:

* - 6 NYCRR Part 375-6 Remedial Program Soil Cleanup Objectives

RL - Reporting Limit

Bold/highlighted- Indicated exceedance of the NYSDEC UUSCO Guidance Value

Bold/highlighted- Indicated exceedance of the NYSDEC RRSCO Guidance Value

Bold/highlighted- Indicated exceedance of the NYSDEC RCSCO Guidance Value

Table 29
Former Pfizer Site A - C224284
243-271 Wallabout Street,
Brooklyn, New York
Track 4 Area - Endpoint Soil Analytical Results
Metals

COMPOUND	NYSDEC Part 375.6 Unrestricted Use Soil Cleanup Objectives*	NYDEC Part 375.6 Restricted Residential Soil Cleanup Objectives*	NYDEC Part 375.6 Restricted Commercial Soil Cleanup Objectives*	Endpoint Samples																			
				EP10		EP11				EP12		EP13		EP14		EP15		EP16		EP17			
				4'		4		4.5		4'		4'		4'		4'		4'		4'		9'	
				5/5/2021		5/6/2021		5/14/2021		5/11/2021		5/6/2021		5/5/2021		511/2021		5/5/2021		5/6/2021		5/13/2021	
				mg/Kg		mg/Kg		mg/Kg		mg/Kg		mg/Kg		mg/Kg		mg/Kg		mg/Kg		mg/Kg		mg/Kg	
				Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL
Aluminum				7,680	41	5,670	42	6,410	37	8,340	37	7,700	36	6,240	36	8,800	40	6,770	34	4,050	34	2,190	4.0
Antimony				< 4.1	4.1	< 4.2	4.2	< 3.7	3.7	< 3.7	3.7	< 3.6	3.6	< 3.6	3.6	< 4.0	4.0	< 3.4	3.4	< 3.4	3.4	< 4.0	4.0
Arsenic	13	16	16	17.6	0.83	7.43	0.83	4.27	0.74	3.79	0.73	13	0.73	1.97	0.71	1.99	0.81	5.08	0.67	4.25	0.68	< 0.80	0.80
Barium	350	400	400	1,010	0.8	4,740	8.3	39.9	0.7	139	0.7	264	0.7	34	0.7	46.6	0.8	62.7	0.7	3,850	6.8	12.5	0.8
Beryllium	7.2	72	590	0.4	0.33	< 0.33	0.33	0.43	0.30	0.41	0.29	0.37	0.29	0.3	0.28	0.37	0.32	0.45	0.27	0.27	0.27	< 0.32	0.32
Cadmium	2.5	4.3	9.3	1.48	0.41	2.38	0.42	0.93	0.37	0.68	0.37	1.32	0.36	0.6	0.36	0.77	0.40	0.76	0.34	2.04	0.34	< 0.40	0.40
Calcium				46,300	41	68,000	42	1,580	3.7	3,600	3.7	17,400	36	971	3.6	1,700	4.0	2,840	3.4	16,100	34	314	4.0
Chromium	30	180	1,500	24.4	0.41	30.5	0.42	19	0.37	17.4	0.37	23.6	0.36	18	0.36	18.2	0.40	19.8	0.34	27.7	0.34	5.03	0.40
Chromium, Hex.	1	110	400	< 0.45	0.45	< 0.49	0.49	< 0.42	0.42	< 0.49	0.49	< 0.46	0.46	0.52	0.44	< 0.43	0.43	0.58	0.41	< 0.43	0.43	< 0.46	0.46
Cobalt				6.73	0.41	3.87	0.42	6.24	0.37	5.38	0.37	6.51	0.36	6.62	0.36	7.1	0.40	9.61	0.34	5.79	0.34	1.43	0.40
Copper	50	270	270	64	0.8	38.4	0.8	15.3	0.7	51.4	0.7	66.7	0.7	14.5	0.7	15.8	0.8	26.8	0.7	30	0.7	2.6	0.8
Iron				17,800	41	10,200	4.2	22,600	37	9,980	37	29,700	36	15,800	36	16,700	40	14,300	34	15,700	34	4,310	4.0
Lead	63	400	1,000	820	0.8	3,110	8.3	10.9	0.7	137	0.7	287	0.7	12.9	0.7	13.9	0.8	30.1	0.7	5,610	6.8	1.8	0.8
Magnesium				5,110	4.1	2,220	4.2	1,660	3.7	1,290	3.7	3,090	3.6	1,990	3.6	2,550	4.0	3,600	3.4	1,970	3.4	627	4.0
Manganese	1,600	2,000	10,000	425	4.1	258	4.2	547	3.7	88.9	0.37	445	3.6	343	3.6	313	4.0	491	3.4	572	3.4	27.8	0.40
Mercury	0.18	0.81	2.8	1.58	0.14	5.01	0.16	0.39	0.03	2.49	0.15	22.2	0.67	< 0.03	0.03	0.02	0.03	0.03	0.03	0.34	0.03	< 0.03	0.03
Nickel	30	310	310	15.8	0.41	8.1	0.42	12.4	0.37	12.9	0.37	18.7	0.36	11.8	0.36	17.4	0.40	36.9	0.34	17.4	0.34	5.11	0.40
Potassium				1,350	8	911	8	744	7	780	7	1,340	7	1,430	7	1,380	8	1,900	7	816	7	324	8
Selenium	3.9	180	1,500	< 1.7	1.7	< 1.7	1.7	< 1.5	1.5	2.2	1.5	< 1.5	1.5	< 1.4	1.4	< 1.6	1.6	< 1.3	1.3	< 1.4	1.4	< 1.6	1.6
Silver	2	180	1,500	< 0.41	0.41	< 0.42	0.42	< 0.37	0.37	< 0.37	0.37	< 0.36	0.36	< 0.36	0.36	< 0.40	0.40	< 0.34	0.34	< 0.34	0.34	< 0.40	0.40
Sodium				310	8	296	8	207	7	257	70	330	7	112	7	99	70	200	7	144	7	30	8
Thallium				< 1.7	1.7	< 1.7	1.7	< 1.5	1.5	< 1.5	1.5	< 1.5	1.5	< 1.4	1.4	< 1.6	1.6	< 1.3	1.3	< 1.4	1.4	< 1.6	1.6
Vanadium				29.9	0.41	17.8	0.42	27.9	0.37	21.3	0.37	26.8	0.36	26.9	0.36	24.9	0.40	29.4	0.34	19.4	0.34	6.81	0.40
Zinc	109	10,000	10,000	442	0.8	2,070	8.3	32.9	0.7	108	0.7	283	0.7	34.3	0.7	39.5	0.8	50.9	0.7	2,040	6.8	13.5	0.8

Notes:

* - 6 NYCRR Part 375-6 Remedial Program Soil Cleanup Objectives

RL - Reporting Limit

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Bold/highlighted- Indicated exceedance of the NYSDEC RRSCO Guidance Value

Bold/highlighted- Indicated exceedance of the NYSDEC RCSCO Guidance Value

Table 29
Former Pfizer Site A - C224284
243-271 Wallabout Street,
Brooklyn, New York
Track 4 Area - Endpoint Soil Analytical Results
Metals

COMPOUND	NYSDEC Part 375.6 Unrestricted Use Soil Cleanup Objectives*	NYDEC Part 375.6 Restricted Residential Soil Cleanup Objectives*	NYDEC Part 375.6 Restricted Commercial Soil Cleanup Objectives*	Endpoint Samples																	
				EP18				EP19				EP20		EP39		EP40		EP41		EP42		EP43	
				4'		9'		4'		4.5'		4'		5'		5'		4'		4'		5'	
				5/10/2021		5/13/2021		5/10/2021		5/14/2021		5/10/2021		6/4/2021		6/4/2021		5/6/2021		5/6/2021		6/4/2021	
				mg/Kg		mg/Kg		mg/Kg		mg/Kg		mg/Kg		mg/Kg		mg/Kg		mg/Kg		mg/Kg		mg/Kg	
				Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL
Aluminum				5,890	42	8,790	41	6,670	37	11,100	43	6,890	41	8,340	39	8,940	39	5,450	35	5,320	35	8,680	35
Antimony				< 4.2	4.2	< 4.1	4.1	3.7	3.7	< 4.3	4.3	< 4.1	4.1	< 3.9	3.9	< 3.9	3.9	< 3.5	3.5	< 3.5	3.5	< 3.5	3.5
Arsenic	13	16	16	12.4	0.84	1.28	0.82	14.1	0.73	9.15	0.85	8.72	0.82	9.27	0.77	7.1	0.78	7	0.71	2.44	0.69	2.56	0.69
Barium	350	400	400	984	0.8	46.4	0.8	2,200	7.3	118	0.9	194	0.8	197	0.8	198	0.8	183	0.7	39.8	0.7	56.7	0.7
Beryllium	7.2	72	590	0.28	0.33	0.43	0.33	0.28	0.29	0.54	0.34	0.39	0.33	0.53	0.31	0.55	0.31	0.3	0.28	0.29	0.28	0.53	0.28
Cadmium	2.5	4.3	9.3	1.65	0.42	0.6	0.41	2.35	0.37	1.32	0.43	1	0.41	1.42	0.39	1.47	0.39	1.11	0.35	0.46	0.35	1.1	0.35
Calcium				53,700	42	974	4.1	43,400	37	2,180	4.3	5,050	4.1	11,600	39	19,400	39	7,980	3.5	2,370	3.5	1,950	3.5
Chromium	30	180	1,500	17.4	0.42	23.2	0.41	19.2	0.37	19.4	0.43	22.6	0.41	29.2	0.39	27	0.39	21	0.35	14.5	0.35	17.6	0.35
Chromium, Hex.	1	110	400	< 0.49	0.49	< 0.47	0.47	< 0.46	0.46	< 0.45	0.45	< 0.48	0.48	< 0.45	0.45	< 0.48	0.48	< 0.47	0.47	< 0.40	0.40	< 0.44	0.44
Cobalt				4.34	0.42	5.4	0.41	4.59	0.37	9.01	0.43	8.27	0.41	8.37	0.39	8.87	0.39	7.27	0.35	7.17	0.35	7.31	0.35
Copper	50	270	270	35.9	0.8	11.7	0.8	36.4	0.7	22.9	0.9	207	8.2	77.6	0.8	59.1	0.8	79.5	0.7	26.4	0.7	19.9	0.7
Iron				21,400	42	10,400	4.1	28,800	37	31,200	43	17,200	41	17,200	39	20,600	39	22,100	35	13,200	35	18,000	35
Lead	63	400	1,000	1,330	8.4	10.1	0.8	1,210	7.3	93.6	0.9	438	0.8	389	0.8	193	0.8	324	0.7	19.4	0.7	12.7	0.7
Magnesium				6,800	42	1,890	4.1	2,170	3.7	2,170	4.3	1,510	4.1	1,580	3.9	4,570	3.9	1,590	3.5	2,820	3.5	2,280	3.5
Manganese	1,600	2,000	10,000	252	4.2	53.4	0.41	269	3.7	323	4.3	308	4.1	249	3.9	895	3.9	347	3.5	293	3.5	321	3.5
Mercury	0.18	0.81	2.8	4.45	0.15	0.02	0.03	4.61	0.15	1.2	0.03	14.9	0.73	5.71	0.29	3.74	0.30	5.7	0.15	0.07	0.03	0.05	0.03
Nickel	30	310	310	11.6	0.42	12.7	0.41	12.8	0.37	17.2	0.43	16.6	0.41	15.4	0.39	25.6	0.39	13.8	0.35	30.7	0.35	17.4	0.35
Potassium				1,290	8	667	8	1,620	7	921	9	919	8	1,000	8	1,870	8	940	7	1,210	7	1,020	7
Selenium	3.9	180	1,500	< 1.7	1.7	< 1.6	1.6	< 1.5	1.5	< 1.7	1.7	< 1.6	1.6	< 1.5	1.5	< 1.6	1.6	< 1.4	1.4	< 1.4	1.4	< 1.4	1.4
Silver	2	180	1,500	< 0.42	0.42	< 0.41	0.41	< 0.37	0.37	< 0.43	0.43	< 0.41	0.41	< 0.39	0.39	< 0.39	0.39	< 0.35	0.35	< 0.35	0.35	< 0.35	0.35
Sodium				1,180	70	73	8	485	70	122	9	269	70	230	8	746	8	199	7	180	7	200	7
Thallium				< 1.7	1.7	< 1.6	1.6	< 1.5	1.5	< 1.7	1.7	< 1.6	1.6	< 1.5	1.5	< 1.6	1.6	< 1.4	1.4	< 1.4	1.4	< 1.4	1.4
Vanadium				31.4	0.42	20.1	0.41	22.7	0.37	31	0.43	35.4	0.41	25.6	0.39	31.7	0.39	30.6	0.35	21.3	0.35	22	0.35
Zinc	109	10,000	10,000	307	0.8	30.8	0.8	911	7.3	60.3	0.9	251	0.8	171	0.8	167	0.8	260	0.7	41.5	0.7	40.8	0.7

Notes:

* - 6 NYCRR Part 375-6 Remedial Program Soil Cleanup Objectives

RL - Reporting Limit

Bold/highlighted- Indicated exceedance of the NYSDEC UUSCO Guidance Value

Bold/highlighted- Indicated exceedance of the NYSDEC RRSCO Guidance Value

Bold/highlighted- Indicated exceedance of the NYSDEC RCSCO Guidance Value

Table 29
Former Pfizer Site A - C224284
243-271 Wallabout Street,
Brooklyn, New York
Track 4 Area - Endpoint Soil Analytical Results
Metals

COMPOUND	NYSDEC Part 375.6 Unrestricted Use Soil Cleanup Objectives*	NYDEC Part 375.6 Restricted Residential Soil Cleanup Objectives*	NYDEC Part 375.6 Restricted Commercial Soil Cleanup Objectives*	Endpoint Samples																	
				EP44		EP45		EP64		EP65		EP66		Soil Duplicate		Soil Duplicate		Soil Duplicate		Soil Duplicate	
				5'		5'		5'		5.5'		5.5'		EP10		EP11		EP18		EP15		EP18	
				6/9/2021		6/9/2021		6/9/2021		6/22/2021		6/282021		5/5/2021		5/6/2021		5/10/2021		5/11/2021		5/13/2021	
				mg/Kg		mg/Kg		mg/Kg		mg/Kg		mg/Kg		mg/Kg		µg/Kg		µg/Kg		µg/Kg		µg/Kg	
				Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL
Aluminum				**8,480**	40	**7,150**	37	**7,040**	38	**8,420**	37	**6,040**	37	**6,600**	41	**4,830**	39	**7,090**	41	**9,610**	39	**8,390**	39
Antimony				< 4.0	4.0	< 3.7	3.7	< 3.8	3.8	< 3.7	3.7	< 3.7	3.7	< 4.1	4.1	< 3.9	3.9	< 4.1	4.1	< 3.9	3.9	< 3.9	3.9
Arsenic	13	16	16	**17.8**	0.79	**15.1**	0.73	**16.4**	0.75	**3.7**	0.74	**7.77**	0.74	**17.1**	0.82	**8.28**	0.77	**10.9**	0.83	**2.14**	0.79	**1.23**	0.78
Barium	350	400	400	**307**	0.8	**471**	0.7	**494**	0.8	**47.3**	0.7	**824**	0.7	**947**	0.8	**6,080**	7.7	**563**	0.8	**49.8**	0.8	**41.6**	0.8
Beryllium	7.2	72	590	**0.51**	0.32	**0.43**	0.29	**0.43**	0.30	**0.52**	0.30	**0.41**	0.30	**0.33**	0.33	< 0.31	0.31	**0.3**	0.33	**0.36**	0.32	**0.35**	0.31
Cadmium	2.5	4.3	9.3	**1.2**	0.40	**1.97**	0.37	**1.5**	0.38	**0.94**	0.37	**1.6**	0.37	**1.47**	0.41	**2.54**	0.39	**1.25**	0.41	**0.85**	0.39	**0.53**	0.39
Calcium				**18,900**	40	**13,800**	37	**16,100**	38	**1,370**	3.7	**19,300**	37	**36,500**	41	**94,200**	39	**59,300**	41	**1,530**	3.9	**2,890**	3.9
Chromium	30	180	1,500	**22.2**	0.40	**22.3**	0.37	**20.9**	0.38	**20.6**	0.37	**19.4**	0.37	**23.8**	0.41	**33.3**	0.39	**16.9**	0.41	**18.9**	0.39	**14.1**	0.39
Chromium, Hex.	1	110	400	< 0.46	0.46	< 0.46	0.46	< 0.46	0.46	< 0.42	0.42	< 0.43	0.43	**0.57**	0.47	**3.87**	0.45	< 0.48	0.48	< 0.45	0.45	< 0.43	0.43
Cobalt				**6.88**	0.40	**7.32**	0.37	**8.07**	0.38	**9.3**	0.37	**6.36**	0.37	**5.95**	0.41	**3.52**	0.39	**4.83**	0.41	**6.93**	0.39	**4.57**	0.39
Copper	50	270	270	**89.6**	0.8	**91.6**	0.7	**80.3**	0.8	**24.4**	0.7	**72.6**	0.7	**64.5**	0.8	**30.2**	0.8	**32.7**	0.8	**15.4**	0.8	**11.1**	0.8
Iron				**18,700**	40	**19,300**	37	**22,200**	38	**19,700**	37	**16,400**	37	**13,600**	41	**10,300**	3.9	**14,300**	41	**20,400**	39	**8,650**	3.9
Lead	63	400	1,000	**307**	0.8	**508**	0.7	**371**	0.8	**33.5**	0.7	**588**	0.7	**833**	0.8	**4,180**	7.7	**1,110**	8.3	**10.4**	0.8	**13.7**	0.8
Magnesium				**5,480**	4.0	**2,730**	3.7	**3,210**	3.8	**2,740**	3.7	**2,970**	3.7	**3,690**	4.1	**2,080**	3.9	**3,360**	4.1	**2,220**	3.9	**1,810**	3.9
Manganese	1,600	2,000	10,000	**381**	4.0	**430**	3.7	**443**	3.8	**476**	3.7	**345**	3.7	**478**	4.1	**229**	3.9	**238**	4.1	**376**	3.9	**57.2**	0.39
Mercury	0.18	0.81	2.8	**4.87**	0.14	**2.65**	0.16	**4.18**	0.15	**0.07**	0.03	**0.77**	0.03	**2.13**	0.15	**4.34**	0.16	**4.07**	0.15	< 0.03	0.03	< 0.03	0.03
Nickel	30	310	310	**17.5**	0.40	**20.4**	0.37	**17.9**	0.38	**30.1**	0.37	**19.6**	0.37	**16.8**	0.41	**7.45**	0.39	**13.2**	0.41	**13.5**	0.39	**11.1**	0.39
Potassium				**1,520**	8	**1,230**	7	**1,280**	8	**1,120**	7	**1,040**	7	**1,400**	8	**556**	8	**1,070**	8	**1,170**	8	**648**	8
Selenium	3.9	180	1,500	< 1.6	1.6	< 1.5	1.5	< 1.5	1.5	< 1.5	1.5	< 1.5	1.5	< 1.6	1.6	< 1.5	1.5	< 1.7	1.7	< 1.6	1.6	< 1.6	1.6
Silver	2	180	1,500	< 0.40	0.40	< 0.37	0.37	< 0.38	0.38	< 0.37	0.37	**0.44**	0.37	< 0.41	0.41	< 0.39	0.39	< 0.41	0.41	< 0.39	0.39	< 0.39	0.39
Sodium				**313**	8	**300**	7	**250**	8	**123**	7	**325**	7	**375**	8	**243**	8	**1,430**	70	**95**	70	**78**	8
Thallium				< 1.6	1.6	< 1.5	1.5	< 1.5	1.5	< 1.5	1.5	< 1.5	1.5	< 1.6	1.6	< 1.5	1.5	< 1.7	1.7	< 1.6	1.6	< 1.6	1.6
Vanadium				**27.5**	0.40	**27.6**	0.37	**27.9**	0.38	**28.6**	0.37	**28.7**	0.37	**34.7**	0.41	**16.6**	0.39	**30.8**	0.41	**28.1**	0.39	**16.8**	0.39
Zinc	109	10,000	10,000	**234**	0.8	**372**	0.7	**352**	0.8	**51.7**	0.7	**370**	0.7	**432**	8.2	**2,240**	7.7	**273**	0.8	**37.1**	0.8	**32.2**	0.8

Notes:

* - 6 NYCRR Part 375-6 Remedial Program Soil Cleanup Objectives

RL - Reporting Limit

Bold/highlighted- Indicated exceedance of the NYSDEC UUSCO Guidance Value

Bold/highlighted- Indicated exceedance of the NYSDEC RRSCO Guidance Value

Bold/highlighted- Indicated exceedance of the NYSDEC RCSCO Guidance Value

Table 29
Former Pfizer Site A - C224284
243-271 Wallabout Street,
Brooklyn, New York
Track 4 Area - Endpoint Soil Analytical Results
Metals

COMPOUND	NYSDEC Part 375.6 Unrestricted Use Soil Cleanup Objectives*	NYDEC Part 375.6 Restricted Residential Soil Cleanup Objectives*	NYDEC Part 375.6 Restricted Commercial Soil Cleanup Objectives*	Endpoint Samples									
				Soil Duplicate		Soil Duplicate		Soil Duplicate		Soil Duplicate		Soil Duplicate	
				EP11		EP44		EP45		EP65		EP66	
				5/14/2021		6/9/2021		6/9/2021		6/22/2021		6/28/2021	
				µg/Kg		µg/Kg		µg/Kg		µg/Kg		µg/Kg	
				Result	RL	Result	RL	Result	RL	Result	RL	Result	RL
Aluminum				**5,360**	38	**7,380**	39	**7,000**	35	**6,680**	37	**8,030**	37
Antimony				< 3.8	3.8	< 3.9	3.9	< 3.5	3.5	< 3.7	3.7	< 3.7	3.7
Arsenic	13	16	16	**3.08**	0.75	**21.5**	0.78	**10.1**	0.71	**3.16**	0.73	**12.4**	0.74
Barium	350	400	400	**37.6**	0.8	**260**	0.8	**619**	0.7	**51**	0.7	**747**	0.7
Beryllium	7.2	72	590	**0.32**	0.30	**0.42**	0.31	**0.47**	0.28	**0.49**	0.29	**0.49**	0.30
Cadmium	2.5	4.3	9.3	**0.69**	0.38	**1.17**	0.39	**1.64**	0.35	**0.77**	0.37	**2.02**	0.37
Calcium				**948**	3.8	**13,800**	39	**12,200**	35	**1,400**	3.7	**20,600**	37
Chromium	30	180	1,500	**11.6**	0.38	**22**	0.39	**21.2**	0.35	**21.2**	0.37	**20.1**	0.37
Chromium, Hex.	1	110	400	< 0.41	0.41	< 0.45	0.45	< 0.44	0.44	< 0.43	0.43	< 0.45	0.45
Cobalt				**6.08**	0.38	**7.38**	0.39	**7.01**	0.35	**8.68**	0.37	**7.03**	0.37
Copper	50	270	270	**12.3**	0.8	**77.4**	0.8	**91.5**	0.7	**20.7**	0.7	**70.2**	0.7
Iron				**16,200**	38	**18,600**	39	**17,700**	35	**15,600**	37	**23,400**	37
Lead	63	400	1,000	**9.9**	0.8	**384**	0.8	**587**	0.7	**23.5**	0.7	**570**	0.7
Magnesium				**1,440**	3.8	**2,880**	3.9	**2,550**	3.5	**2,340**	3.7	**3,910**	3.7
Manganese	1,600	2,000	10,000	**314**	3.8	**403**	3.9	**347**	3.5	**347**	3.7	**372**	3.7
Mercury	0.18	0.81	2.8	**0.57**	0.03	**5.61**	0.31	**2.83**	0.15	**0.14**	0.03	**1.25**	0.03
Nickel	30	310	310	**11.1**	0.38	**17.8**	0.39	**17.2**	0.35	**27.6**	0.37	**23.9**	0.37
Potassium				**706**	8	**1,400**	8	**1,910**	7	**1,030**	7	**1,620**	7
Selenium	3.9	180	1,500	< 1.5	1.5	< 1.6	1.6	< 1.4	1.4	< 1.5	1.5	< 1.5	1.5
Silver	2	180	1,500	**0.43**	0.38	< 0.39	0.39	< 0.35	0.35	< 0.37	0.37	< 0.37	0.37
Sodium				**72**	8	**623**	8	**651**	7	**126**	7	**479**	7
Thallium				< 1.5	1.5	< 1.6	1.6	< 1.4	1.4	< 1.5	1.5	< 1.5	1.5
Vanadium				**21.4**	0.38	**25.8**	0.39	**25.3**	0.35	**30.9**	0.37	**32**	0.37
Zinc	109	10,000	10,000	**27.5**	0.8	**247**	0.8	**339**	0.7	**44.2**	0.7	**456**	7.4

Notes:

* - 6 NYCRR Part 375-6 Remedial Program Soil Cleanup Objectives

RL - Reporting Limit

Bold/highlighted- Indicated exceedance of the NYSDEC UUSCO Guidance Value

Bold/highlighted- Indicated exceedance of the NYSDEC RRSCO Guidance Value

Bold/highlighted- Indicated exceedance of the NYSDEC RCSCO Guidance Value

Table 30
Former Pfizer Site A - C224284
243-271 Wallabout Street,
Brooklyn, New York
Track 4 Area - Endpoint Soil Analytical Results
TCLP Lead

COMPOUND	TCLP Regulatory Limit*	EP10		EP11		EP12		EP13		EP14		EP15		EP16	
		5/5/2021		5/14/2021		5/11/2021		5/6/2021		5/5/2021		5/11/2021		5/5/2021	
		mg/Kg		mg/Kg		mg/Kg		mg/Kg		mg/Kg		mg/Kg		mg/Kg	
	(mg/L)	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL
TCLP Lead	5	**3.14**	0.10	< 0.10	0.10	**0.07**	0.10	**1.59**	0.10	< 0.10	0.10	< 0.10	0.10	**0.04**	0.10

COMPOUND	TCLP Regulatory Limit*	EP17		EP18		EP19		EP20		Soil Duplicate		Soil Duplicate	
		5/13/2021		5/13/2021		5/14/2021		5/10/2021		5/13/2021		5/14/2021	
		mg/Kg		mg/Kg		mg/Kg		mg/Kg		mg/Kg		mg/Kg	
	(mg/L)	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL
TCLP Lead	5	< 0.10	0.10	**0.02**	0.10	**0.09**	0.10	**0.02**	0.10	**0.03**	0.10	< 0.10	0.10

Notes:

* - 6 NYCRR Part 375-6 Remedial Program Soil Cleanup Objectives

Bold/highlighted- Indicated exceedance of the TCLP Regulatory Limit

Table 31
Former Pfizer Site A - C224284
243-271 Wallabout Street,
Brooklyn, New York
Track 4 Area - Endpoint Soil Analytical Results
Emerging Contaminants

Compound	Endpoint Samples																			
	EP10		EP11				EP12		EP13		EP14		EP15		EP16		EP17			
	10'		4'		4.5'		4'		4'		4'		4'		4'		4'		9'	
	5/5/2021		5/6/2021		5/14/2021		5/11/2021		5/6/2021		5/5/2021		511/2021		5/5/2021		5/6/2021		5/13/2021	
	µg/Kg		µg/Kg		mg/Kg		µg/Kg		µg/Kg		µg/Kg		µg/Kg		µg/Kg		µg/Kg		µg/Kg	
	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL
Perfluorobutanoic Acid (PFBA)	**0.026J**	0.536	ND	0.545	ND	0.521	ND	0.649	**0.051J**	0.562	ND	0.54	ND	0.538	ND	0.5	ND	0.524	-	-
Perfluoropentanoic Acid (PFPeA)	**0.102J**	0.536	**0.114J**	0.545	**0.065J**	0.521	**0.086J**	0.649	**0.094J**	0.562	ND	0.54	ND	0.538	ND	0.5	ND	0.524	-	-
Perfluorobutanesulfonic Acid (PFBS)	ND	0.268	ND	0.273	ND	0.261	ND	0.324	ND	0.281	ND	0.27	ND	0.269	ND	0.25	ND	0.262	-	-
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Perfluorohexanoic Acid (PFHxA)	**0.131J**	0.536	**0.117J**	0.545	**0.090J**	0.521	**0.201J**	0.649	**0.168J**	0.562	**0.061J**	0.54	**0.074J**	0.538	**0.070J**	0.5	**0.056J**	0.524	-	-
Perfluoropentanesulfonic Acid (PFPeS)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Perfluoroheptanoic Acid (PFHpA)	**0.162J**	0.268	**0.080J**	0.273	ND	0.261	**0.075J**	0.324	**0.231J**	0.281	**0.121J**	0.27	**0.051J**	0.269	ND	0.25	ND	0.262	-	-
Perfluorohexanesulfonic Acid (PFHxS)	**0.142J**	0.268	ND	0.273	**0.144J**	0.261	**2.59**	0.324	**0.293**	0.281	ND	0.27	ND	0.269	ND	0.25	ND	0.262	-	-
Perfluorooctanoic Acid (PFOA)	**0.314**	0.268	**0.322**	0.273	**0.082J**	0.261	**0.274J**	0.324	**0.344**	0.281	**0.56**	0.27	**0.119J**	0.269	**0.060J**	0.25	**0.098J**	0.262	-	-
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND	0.536	ND	0.545	ND	0.521	ND	0.649	ND	0.562	ND	0.54	ND	0.538	ND	0.5	ND	0.524	-	-
Perfluoroheptanesulfonic Acid (PFHpS)	ND	0.536	ND	0.545	ND	0.521	**0.219J**	0.649	ND	0.562	ND	0.54	ND	0.538	ND	0.5	ND	0.524	-	-
Perfluorononanoic Acid (PFNA)	**0.782**	0.268	**0.458**	0.273	**0.102J**	0.261	**0.261J**	0.324	**0.421**	0.281	**0.164J**	0.27	**0.206J**	0.269	**0.166J**	0.25	**0.213J**	0.262	-	-
Perfluorooctanesulfonic Acid (PFOS)	**1.82**	0.268	**1.47**	0.273	**12.4**	0.261	**101**	0.324	**5.71**	0.281	ND	0.27	ND	0.269	**0.143J**	0.25	**0.230J**	0.262	-	-
Perfluorodecanoic Acid (PFDA)	**0.157J**	0.268	ND	0.273	ND	0.261	ND	0.324	**0.122J**	0.281	ND	0.27	ND	0.269	ND	0.25	ND	0.262	-	-
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND	0.536	ND	0.545	ND	0.521	ND	0.649	**2.97**	0.562	ND	0.54	ND	0.538	ND	0.5	ND	0.524	-	-
Perfluorononanesulfonic Acid (PFNS)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND	0.536	ND	0.545	ND	0.521	ND	0.649	ND	0.562	ND	0.54	ND	0.538	ND	0.5	ND	0.524	-	-
Perfluoroundecanoic Acid (PFUnA)	**0.104J**	0.536	ND	0.545	ND	0.521	ND	0.649	ND	0.562	ND	0.54	ND	0.538	ND	0.5	ND	0.524	-	-
Perfluorodecanesulfonic Acid (PFDS)	ND	0.536	ND	0.545	ND	0.521	ND	0.649	ND	0.562	ND	0.54	ND	0.538	ND	0.5	ND	0.524	-	-
Perfluorooctanesulfonamide (FOSA)	ND	0.536	ND	0.545	ND	0.521	ND	0.649	ND	0.562	ND	0.54	ND	0.538	ND	0.5	ND	0.524	-	-
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND	0.536	ND	0.545	ND	0.521	ND	0.649	ND	0.562	ND	0.54	ND	0.538	ND	0.5	ND	0.524	-	-
Perfluorododecanoic Acid (PFDoA)	ND	0.536	ND	0.545	ND	0.521	ND	0.649	ND	0.562	ND	0.54	ND	0.538	ND	0.5	ND	0.524	-	-
Perfluorotridecanoic Acid (PFTrDA)	ND	0.536	ND	0.545	ND	0.521	ND	0.649	ND	0.562	ND	0.54	ND	0.538	ND	0.5	ND	0.524	-	-
Perfluorotetradecanoic Acid (PFTA)	ND	0.536	ND	0.545	ND	0.521	ND	0.649	ND	0.562	ND	0.54	ND	0.538	ND	0.5	ND	0.524	-	-
Combined PFOA and PFOS	**2.134**		**1.792**		**12.482J**		**101.274J**		**6.054**		**0.56**		**0.119J**		**0.203J**		**0.328J**		**-**	
Combined Total Detections	**3.74J**		**2.561J**		**12.883J**		**104.706J**		**10.404J**		**0.906J**		**0.45J**		**0.439J**		**0.597J**		**-**	

Compound	EP10		EP11				EP12		EP13		EP14		EP15		EP16		EP17			
	10'		4'		4.5'		4'		4'		4'		4'		4'		4'		9'	
	5/5/2021		5/6/2021		5/14/2021		5/11/2021		5/6/2021		5/5/2021		511/2021		5/5/2021		5/6/2021		5/13/2021	
	µg/Kg		µg/Kg		mg/Kg		µg/Kg		µg/Kg		µg/Kg		µg/Kg		µg/Kg		µg/Kg		µg/Kg	
	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL
1,4-dioxane	< 78	78	< 83	83	< 73	73	< 79	79	< 76	76	< 72	72	< 76	76	< 71	71	< 73	73	< 78	78

Notes:

DL- Detection Limit

J- The value is estimated.

ND- Not Detected

The USEPA Health Advisory Level for drinking water is 70 ng/L (ppt) for combined detections of PFOA and PFOs

Table 31
Former Pfizer Site A - C224284
243-271 Wallabout Street,
Brooklyn, New York
Track 4 Area - Endpoint Soil Analytical Results
Emerging Contaminants

Compound	Endpoint Samples																	
	EP18				EP19				EP20		EP39		EP40		EP41		EP42		EP43	
	4'		9'		4'		4.5'		4'		5'		5'		4'		4'		5'	
	5/10/2021		5/13/2021		5/10/2021		5/14/2021		5/10/2021		6/4/2021		6/4/2021		5/6/2021		5/6/2021		6/4/2021	
	µg/Kg		mg/Kg		µg/Kg		µg/Kg		µg/Kg		µg/Kg		µg/Kg		µg/Kg		µg/Kg		µg/Kg	
	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL
Perfluorobutanoic Acid (PFBA)	ND	0.6	-	-	ND	0.596	ND	0.529	ND	0.589	ND	0.553	ND	0.62	ND	0.546	ND	0.465	ND	0.55
Perfluoropentanoic Acid (PFPeA)	**0.080J**	0.6	-	-	**0.075J**	0.596	ND	0.529	**0.055J**	0.589	ND	0.553	ND	0.62	ND	0.546	ND	0.465	ND	0.55
Perfluorobutanesulfonic Acid (PFBS)	ND	0.3	-	-	ND	0.298	ND	0.265	ND	0.295	ND	0.276	ND	0.31	ND	0.273	ND	0.232	ND	0.275
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Perfluorohexanoic Acid (PFHxA)	**0.154J**	0.6	-	-	**0.127J**	0.596	**0.065J**	0.529	**0.128J**	0.589	**0.072J**	0.553	**0.072J**	0.62	ND	0.546	ND	0.465	**0.066J**	0.55
Perfluoropentanesulfonic Acid (PFPeS)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Perfluoroheptanoic Acid (PFHpA)	**0.099J**	0.3	-	-	**0.116J**	0.298	ND	0.265	**0.134J**	0.295	ND	0.276	ND	0.31	ND	0.273	ND	0.232	ND	0.275
Perfluorohexanesulfonic Acid (PFHxS)	ND	0.3	-	-	ND	0.298	ND	0.265	ND	0.295	ND	0.276	ND	0.31	ND	0.273	ND	0.232	ND	0.275
Perfluorooctanoic Acid (PFOA)	**0.316**	0.3	-	-	**0.454**	0.298	**0.131J**	0.265	**0.645**	0.295	**0.214J**	0.276	**0.144J**	0.31	**0.070J**	0.273	ND	0.232	ND	0.275
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND	0.6	-	-	ND	0.596	ND	0.529	ND	0.589	ND	0.553	ND	0.62	ND	0.546	ND	0.465	ND	0.55
Perfluoroheptanesulfonic Acid (PFHpS)	ND	0.6	-	-	ND	0.596	ND	0.529	ND	0.589	ND	0.553	ND	0.62	ND	0.546	ND	0.465	ND	0.55
Perfluorononanoic Acid (PFNA)	ND	0.3	-	-	**0.352**	0.298	**0.163J**	0.265	ND	0.295	ND	0.276	ND	0.31	ND	0.273	ND	0.232	ND	0.275
Perfluorooctanesulfonic Acid (PFOS)	**0.427**	0.3	-	-	**3.04**	0.298	**0.43**	0.265	ND	0.295	ND	0.276	ND	0.31	**0.180J**	0.273	ND	0.232	ND	0.275
Perfluorodecanoic Acid (PFDA)	ND	0.3	-	-	ND	0.298	ND	0.265	ND	0.295	ND	0.276	ND	0.31	ND	0.273	ND	0.232	ND	0.275
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND	0.6	-	-	ND	0.596	ND	0.529	ND	0.589	ND	0.553	ND	0.62	ND	0.546	ND	0.465	ND	0.55
Perfluorononanesulfonic Acid (PFNS)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND	0.6	-	-	ND	0.596	ND	0.529	ND	0.589	ND	0.553	ND	0.62	ND	0.546	ND	0.465	ND	0.55
Perfluoroundecanoic Acid (PFUnA)	ND	0.6	-	-	ND	0.596	ND	0.529	ND	0.589	ND	0.553	ND	0.62	ND	0.546	ND	0.465	ND	0.55
Perfluorodecanesulfonic Acid (PFDS)	ND	0.6	-	-	ND	0.596	ND	0.529	ND	0.589	ND	0.553	ND	0.62	ND	0.546	ND	0.465	ND	0.55
Perfluorooctanesulfonamide (FOSA)	ND	0.6	-	-	ND	0.596	ND	0.529	ND	0.589	**0.220J**	0.553	ND	0.62	ND	0.546	ND	0.465	ND	0.55
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND	0.6	-	-	ND	0.596	ND	0.529	ND	0.589	ND	0.553	ND	0.62	ND	0.546	ND	0.465	ND	0.55
Perfluorododecanoic Acid (PFDoA)	ND	0.6	-	-	ND	0.596	ND	0.529	ND	0.589	ND	0.553	ND	0.62	ND	0.546	ND	0.465	ND	0.55
Perfluorotridecanoic Acid (PFTrDA)	ND	0.6	-	-	ND	0.596	ND	0.529	ND	0.589	ND	0.553	ND	0.62	ND	0.546	ND	0.465	ND	0.55
Perfluorotetradecanoic Acid (PFTA)	ND	0.6	-	-	ND	0.596	ND	0.529	ND	0.589	ND	0.553	ND	0.62	ND	0.546	ND	0.465	ND	0.55
Combined PFOA and PFOS	**0.743**		**-**		**3.494**		**0.561J**		**0.645**		**0.214J**		**0.144J**		**0.250J**		**ND**		**ND**	
Combined Total Detections	**1.076J**		**-**		**4.164J**		**0.789**		**0.962**		**0.506J**		**0.216J**		**0.25J**		**ND**		**0.066J**	

Compound	EP18				EP19				EP20		EP39		EP40		EP41		EP42		EP43	
	4'		9'		4'		4.5'		4'		5'		5'		4'		4'		5'	
	5/10/2021		5/13/2021		5/10/2021		5/14/2021		5/10/2021		6/4/2021		6/4/2021		5/6/2021		5/6/2021		6/4/2021	
	µg/Kg		mg/Kg		µg/Kg		µg/Kg		µg/Kg		µg/Kg		µg/Kg		µg/Kg		µg/Kg		µg/Kg	
	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL
1,4-dioxane	< 81	81	< 78	78	< 80	80	< 78	78	< 81	81	< 80	80	< 79	79	< 76	76	< 69	69	< 72	72

Notes:

DL- Detection Limit

J- The value is estimated.

ND- Not Detected

The USEPA Health Advisory Level for drinking water is 70 ng/L (ppt) for combined detections of PFOA and PFOs

Table 31
Former Pfizer Site A - C224284
243-271 Wallabout Street,
Brooklyn, New York
Track 4 Area - Endpoint Soil Analytical Results
Emerging Contaminants

Compound	Endpoint Samples																			
	EP44		EP45		EP64		EP65		EP66		Soil Duplicate		Soil Duplicate		Soil Duplicate		Soil Duplicate		Soil Duplicate	
	5'		5'		5'		5.5'		5.5'		EP10		EP11		EP18		EP15		EP18	
	6/9/2021		6/9/2021		6/9/2021		6/22/2021		6/28/2021		5/5/2021		5/6/2021		5/10/2021		5/11/2021		5/13/2021	
	µg/Kg		µg/Kg		µg/Kg		µg/Kg		µg/Kg		µg/Kg		µg/Kg		µg/Kg		µg/Kg		µg/Kg	
	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL
Perfluorobutanoic Acid (PFBA)	ND	0.57	ND	0.564	ND	0.552	**0.036J**	0.518	ND	0.526	ND	0.542	ND	0.629	ND	0.574	ND	0.569	-	-
Perfluoropentanoic Acid (PFPeA)	ND	0.57	ND	0.564	ND	0.552	ND	0.518	**0.060J**	0.526	**0.072J**	0.542	**0.107J**	0.629	**0.101J**	0.574	ND	0.569	-	-
Perfluorobutanesulfonic Acid (PFBS)	ND	0.285	ND	0.282	ND	0.276	ND	0.259	ND	0.263	ND	0.271	ND	0.315	ND	0.287	ND	0.284	-	-
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Perfluorohexanoic Acid (PFHxA)	**0.063JF**	0.57	**0.072J**	0.564	**0.075J**	0.552	**0.072J**	0.518	**0.125J**	0.526	**0.102J**	0.542	**0.131J**	0.629	**0.182J**	0.574	**0.077J**	0.569	-	-
Perfluoropentanesulfonic Acid (PFPeS)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Perfluoroheptanoic Acid (PFHpA)	ND	0.285	ND	0.282	ND	0.276	ND	0.259	ND	0.263	**0.117J**	0.271	**0.093J**	0.315	**0.107J**	0.287	**0.069J**	0.284	-	-
Perfluorohexanesulfonic Acid (PFHxS)	ND	0.285	ND	0.282	ND	0.276	ND	0.259	ND	0.263	**0.113J**	0.271	ND	0.315	ND	0.287	ND	0.284	-	-
Perfluorooctanoic Acid (PFOA)	**0.134J**	0.285	**0.120J**	0.282	**0.176J**	0.276	**0.262**	0.259	**0.225J**	0.263	**0.256J**	0.271	**0.82**	0.315	**0.359**	0.287	**0.152J**	0.284	-	-
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND	0.57	ND	0.564	ND	0.552	ND	0.518	ND	0.526	ND	0.542	ND	0.629	ND	0.574	ND	0.569	-	-
Perfluoroheptanesulfonic Acid (PFHpS)	ND	0.57	ND	0.564	ND	0.552	ND	0.518	ND	0.526	ND	0.542	ND	0.629	ND	0.574	ND	0.569	-	-
Perfluorononanoic Acid (PFNA)	ND	0.285	ND	0.282	ND	0.276	ND	0.259	ND	0.263	**0.698**	0.271	**0.356**	0.315	ND	0.287	**0.121J**	0.284	-	-
Perfluorooctanesulfonic Acid (PFOS)	ND	0.285	**0.182J**	0.282	**0.393**	0.276	ND	0.259	**0.208J**	0.263	**1.94**	0.271	**1.52**	0.315	**0.464**	0.287	**0.207J**	0.284	-	-
Perfluorodecanoic Acid (PFDA)	ND	0.285	ND	0.282	ND	0.276	ND	0.259	ND	0.263	**0.138J**	0.271	ND	0.315	ND	0.287	ND	0.284	-	-
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND	0.57	ND	0.564	ND	0.552	ND	0.518	ND	0.526	ND	0.542	ND	0.629	ND	0.574	ND	0.569	-	-
Perfluorononanesulfonic Acid (PFNS)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	**0.597**	0.57	**0.293J**	0.564	ND	0.552	ND	0.518	ND	0.526	ND	0.542	ND	0.629	ND	0.574	ND	0.569	-	-
Perfluoroundecanoic Acid (PFUnA)	**0.075J**	0.57	ND	0.564	ND	0.552	ND	0.518	ND	0.526	**0.095J**	0.542	ND	0.629	ND	0.574	ND	0.569	-	-
Perfluorodecanesulfonic Acid (PFDS)	ND	0.57	ND	0.564	ND	0.552	ND	0.518	ND	0.526	ND	0.542	ND	0.629	ND	0.574	ND	0.569	-	-
Perfluorooctanesulfonamide (FOSA)	ND	0.57	ND	0.564	ND	0.552	ND	0.518	ND	0.526	ND	0.542	ND	0.629	ND	0.574	ND	0.569	-	-
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	**0.588**	0.57	**0.381J**	0.564	**0.145J**	0.552	ND	0.518	ND	0.526	ND	0.542	ND	0.629	ND	0.574	ND	0.569	-	-
Perfluorododecanoic Acid (PFDoA)	**0.082J**	0.57	ND	0.564	ND	0.552	ND	0.518	ND	0.526	ND	0.542	ND	0.629	ND	0.574	ND	0.569	-	-
Perfluorotridecanoic Acid (PFTrDA)	ND	0.57	ND	0.564	ND	0.552	ND	0.518	ND	0.526	ND	0.542	ND	0.629	ND	0.574	ND	0.569	-	-
Perfluorotetradecanoic Acid (PFTA)	**0.112J**	0.57	ND	0.564	ND	0.552	ND	0.518	ND	0.526	ND	0.542	ND	0.629	ND	0.574	ND	0.569	-	-
Combined PFOA and PFOS	**0.134J**		**0.302J**		**0.569J**		**0.262**		**0.433J**		**2.20J**		**2.34**		**0.823**		**0.359J**		**-**	
Combined Total Detections	**1.651JF**		**1.048J**		**0.789J**		**0.37**		**0.618J**		**3.531J**		**3.027J**		**1.213J**		**0.626**		**-**	

Compound	EP44		EP45		EP64		EP65		EP66		Soil Duplicate		Soil Duplicate		Soil Duplicate		Soil Duplicate		Soil Duplicate	
	5'		5'		5'		5.5'		5.5'		EP10		EP11		EP18		EP15		EP18	
	6/9/2021		6/9/2021		6/9/2021		6/22/2021		6/28/2021		5/5/2021		5/6/2021		5/10/2021		5/11/2021		5/13/2021	
	µg/Kg		µg/Kg		µg/Kg		µg/Kg		µg/Kg		µg/Kg		µg/Kg		µg/Kg		µg/Kg		µg/Kg	
	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL
1,4-dioxane	< 80	80	< 80	80	< 79	79	< 71	71	< 74	74	< 79	79	< 81	81	< 79	79	< 75	75	< 77	77

Notes:

DL- Detection Limit

J- The value is estimated.

ND- Not Detected

The USEPA Health Advisory Level for drinking water is 70 ng/L (ppt) for combined detections of PFOA and PFOs

Table 31
Former Pfizer Site A - C224284
243-271 Wallabout Street,
Brooklyn, New York
Track 4 Area - Endpoint Soil Analytical Results
Emerging Contaminants

Compound	EBC Endpoint Samples									
	Soil Duplicate		Soil Duplicate		Soil Duplicate		Soil Duplicate		Soil Duplicate	
	EP11		EP44		EP45		EP65		EP66	
	5/14/2021		6/9/2021		6/9/2021		6/22/2021		6/28/2021	
	µg/Kg		µg/Kg		µg/Kg		µg/Kg		µg/Kg	
	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL
Perfluorobutanoic Acid (PFBA)	ND	0.54	-	-	-	-	**0.036J**	0.509	-	-
Perfluoropentanoic Acid (PFPeA)	**0.052J**	0.54	-	-	-	-	ND	0.509	-	-
Perfluorobutanesulfonic Acid (PFBS)	ND	0.27	-	-	-	-	ND	0.255	-	-
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	-	-	-	-	-	-	-	-	-	-
Perfluorohexanoic Acid (PFHxA)	**0.095J**	0.54	-	-	-	-	**0.067J**	0.509	-	-
Perfluoropentanesulfonic Acid (PFPeS)	-	-	-	-	-	-	-	-	-	-
Perfluoroheptanoic Acid (PFHpA)	ND	0.27	-	-	-	-	ND	0.255	-	-
Perfluorohexanesulfonic Acid (PFHxS)	**0.195J**	0.27	-	-	-	-	ND	0.255	-	-
Perfluorooctanoic Acid (PFOA)	**0.085J**	0.27	-	-	-	-	**0.248J**	0.255	-	-
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND	0.54	-	-	-	-	ND	0.509	-	-
Perfluoroheptanesulfonic Acid (PFHpS)	ND	0.54	-	-	-	-	ND	0.509	-	-
Perfluorononanoic Acid (PFNA)	**0.087J**	0.27	-	-	-	-	ND	0.255	-	-
Perfluorooctanesulfonic Acid (PFOS)	**12.6**	0.27	-	-	-	-	ND	0.255	-	-
Perfluorodecanoic Acid (PFDA)	ND	0.27	-	-	-	-	ND	0.255	-	-
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND	0.54	-	-	-	-	ND	0.509	-	-
Perfluorononanesulfonic Acid (PFNS)	-	-	-	-	-	-	-	-	-	-
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND	0.54	-	-	-	-	ND	0.509	-	-
Perfluoroundecanoic Acid (PFUnA)	ND	0.54	-	-	-	-	ND	0.509	-	-
Perfluorodecanesulfonic Acid (PFDS)	ND	0.54	-	-	-	-	ND	0.509	-	-
Perfluorooctanesulfonamide (FOSA)	ND	0.54	-	-	-	-	ND	0.509	-	-
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND	0.54	-	-	-	-	ND	0.509	-	-
Perfluorododecanoic Acid (PFDoA)	ND	0.54	-	-	-	-	ND	0.509	-	-
Perfluorotridecanoic Acid (PFTrDA)	ND	0.54	-	-	-	-	ND	0.509	-	-
Perfluorotetradecanoic Acid (PFTA)	ND	0.54	-	-	-	-	ND	0.509	-	-
Combined PFOA and PFOS	**12.685J**		**-**		**-**		**0.248J**		**-**	
Combined Total Detections	**13.114J**		**-**		**-**		**0.351**		**-**	

Compound	Soil Duplicate		Soil Duplicate		Soil Duplicate		Soil Duplicate		Soil Duplicate	
	EP11		EP44		EP45		EP65		EP66	
	5/14/2021		6/9/2021		6/9/2021		6/22/2021		6/28/2021	
	µg/Kg		µg/Kg		µg/Kg		µg/Kg		µg/Kg	
	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL
1,4-dioxane	< 73	73	< 79	79	< 78	78	< 72	72	< 75	75

Notes:

DL- Detection Limit

J- The value is estimated.

ND- Not Detected

The USEPA Health Advisory Level for drinking water is 70 ng/L (ppt) for combined detections of PFOA and PFOs

Table 32
Former Pfizer Site A - C224284
243-271 Wallabout Street,
Brooklyn, New York
Lead Hotspot Endpoint Soil Analytical Results
Lead TCLP Lead

COMPOUND	NYSDEC Part 375.6 Unrestricted Use Soil Cleanup Objectives*	NYDEC Part 375.6 Restricted Residential Soil Cleanup Objectives*	NYDEC Part 375.6 Restricted Commercial Soil Cleanup Objectives*	HSA1		HSB1		HSC1		HSD1		HSD2		HSD3		HSD4	
				10'		7'		10'		8'		8'		8'		8'	
				4/30/2021		5/3/2021		11/23/2020		5/27/2020		5/27/2020		5/27/2020		5/27/2020	
				mg/Kg		mg/Kg		mg/Kg		mg/Kg		mg/Kg		mg/Kg		mg/Kg	
				Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL
Lead	63	400	1,000	**4**	0.7	**4.8**	0.8	**3.1**	0.9	**13.5**	0.8	**69.8**	0.8	**464**	0.8	**84.8**	0.8

COMPOUND	NYSDEC Part 375.6 Unrestricted Use Soil Cleanup Objectives*	NYDEC Part 375.6 Restricted Residential Soil Cleanup Objectives*	NYDEC Part 375.6 Restricted Commercial Soil Cleanup Objectives*	HSD5		HSD6		HSD7		HSD8		HSD9		HSD10		HSD11	
				8'		8'		8'		8'		8'		8'		8'	
				5/27/2020		5/27/2020		5/27/2020		5/27/2020		5/27/2020		5/27/2020		5/27/2020	
				mg/Kg		mg/Kg		mg/Kg		mg/Kg		mg/Kg		mg/Kg		mg/Kg	
				Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL
Lead	63	400	1,000	**69.3**	0.8	**67.4**	0.9	**240**	0.6	**85.5**	0.8	**52.8**	0.7	**120**	0.9	**91.6**	0.7

COMPOUND	TCLP Regulatory Limit*	HSA1		HSB1		HSC1		HSD1		HSD2		HSD3		HSD4	
								8'		8'		8'		8'	
		4/30/2021		5/3/2021		11/23/2020		5/27/2020		5/27/2020		5/27/2020		5/27/2020	
		mg/Kg		mg/Kg		mg/Kg		mg/Kg		mg/Kg		mg/Kg		mg/Kg	
	(mg/L)	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL
TCLP Lead	5	**< 0.10**	0.10	**< 0.10**	0.10	< 0.10	0.10	< 0.10	0.10	**0.2**	0.10	**0.45**	0.10	**0.34**	0.10

COMPOUND	TCLP Regulatory Limit*	HSD5		HSD6		HSD7		HSD8		HSD9		HSD10		HSD11	
		8'		8'		8'		8'		8'		8'		8'	
		5/27/2020		5/27/2020		5/27/2020		5/27/2020		5/27/2020		5/27/2020		5/27/2020	
		mg/Kg		mg/Kg		mg/Kg		mg/Kg		mg/Kg		mg/Kg		mg/Kg	
	(mg/L)	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL
TCLP Lead	5	**0.22**	0.10	**0.12**	0.10	**0.08**	0.10	**0.14**	0.10	**0.12**	0.10	**0.26**	0.10	**0.24**	0.10

Notes:

* - 6 NYCRR Part 375-6 Remedial Program Soil Cleanup Objectives

RL - Reporting Limit

Bold/highlighted- Indicated exceedance of the TCLP Regulatory Limit

Bold/highlighted- Indicated exceedance of the NYSDEC UUSCO Guidance Value

Bold/highlighted- Indicated exceedance of the NYSDEC RRSCO Guidance Value

Bold/highlighted- Indicated exceedance of the NYSDEC RCSCO Guidance Value

Table 32
Former Pfizer Site A - C224284
243-271 Wallabout Street,
Brooklyn, New York
Lead Hotspot Endpoint Soil Analytical Results
Lead TCLP Lead

COMPOUND	NYSDEC Part 375.6 Unrestricted Use Soil Cleanup Objectives*	NYDEC Part 375.6 Restricted Residential Soil Cleanup Objectives*	NYDEC Part 375.6 Restricted Commercial Soil Cleanup Objectives*	HSD12		HSD13		HSD14		HSD15		HSD16		HSD17		HSE1	
				8'		8'		8'		8'		8'		8'		5'	
				5/27/2020		5/27/2020		5/27/2020		5/27/2020		5/27/2020		5/27/2020		5/27/2020	
				mg/Kg		mg/Kg		mg/Kg		mg/Kg		mg/Kg		mg/Kg		mg/Kg	
				Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL
Lead	63	400	1,000	**102**	0.7	**22.4**	0.8	**182**	0.8	**134**	0.7	**362**	0.9	**310**	0.9	**1,290**	7.4

COMPOUND	NYSDEC Part 375.6 Unrestricted Use Soil Cleanup Objectives*	NYDEC Part 375.6 Restricted Residential Soil Cleanup Objectives*	NYDEC Part 375.6 Restricted Commercial Soil Cleanup Objectives*	HSE2		HSE3		HSE4		HSE5		HSE6		HSE7		HSE8	
				5'		5'		5'		5'		5'		5'		5'	
				5/27/2020		5/27/2020		5/27/2020		5/27/2020		5/27/2020		5/27/2020		5/27/2020	
				mg/Kg		mg/Kg		mg/Kg		mg/Kg		mg/Kg		mg/Kg		mg/Kg	
				Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL
Lead	63	400	1,000	**961**	7.5	**125**	0.7	**1,110**	8.3	**2,520**	8.6	**115**	0.9	**399**	0.8	**4,690**	7.5

COMPOUND	TCLP Regulatory Limit*	HSD12		HSD13		HSD14		HSD15		HSD16		HSD17		HSE1	
		8'		8'		8'		8'		8'		8'		5'	
		5/27/2020		5/27/2020		5/27/2020		5/27/2020		5/27/2020		5/27/2020		5/27/2020	
		mg/Kg		mg/Kg		mg/Kg		mg/Kg		mg/Kg		mg/Kg		mg/Kg	
	(mg/L)	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL
TCLP Lead	5	**1.01**	0.10	**0.12**	0.10	**0.36**	0.10	**0.68**	0.10	**0.6**	0.10	**0.55**	0.10	**1.84**	0.10

COMPOUND	TCLP Regulatory Limit*	HSE2		HSE3		HSE4		HSE5		HSE6		HSE7		HSE8	
		5'		5'		5'		5'		5'		5'		5'	
		5/27/2020		5/27/2020		5/27/2020		5/27/2020		5/27/2020		5/27/2020		5/27/2020	
		mg/Kg		mg/Kg		mg/Kg		mg/Kg		mg/Kg		mg/Kg		mg/Kg	
	(mg/L)	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL
TCLP Lead	5	**1.51**	0.10	**0.18**	0.10	**1.98**	0.10	**2.66**	0.10	**0.23**	0.10	**1.72**	0.10	**9.89**	0.10

Notes:

* - 6 NYCRR Part 375-6 Remedial Program Soil Cleanup Objectives

RL - Reporting Limit

Bold/highlighted- Indicated exceedance of the TCLP Regulatory Limit

Bold/highlighted- Indicated exceedance of the NYSDEC UUSCO Guidance Value

Bold/highlighted- Indicated exceedance of the NYSDEC RRSCO Guidance Value

Bold/highlighted- Indicated exceedance of the NYSDEC RCSCO Guidance Value

Table 32
Former Pfizer Site A - C224284
243-271 Wallabout Street,
Brooklyn, New York
Lead Hotspot Endpoint Soil Analytical Results
Lead TCLP Lead

COMPOUND	NYSDEC Part 375.6 Unrestricted Use Soil Cleanup Objectives*	NYDEC Part 375.6 Restricted Residential Soil Cleanup Objectives*	NYDEC Part 375.6 Restricted Commercial Soil Cleanup Objectives*	HSE8B		HSE9		HSE9B		HSE10		HSE11	
				10'		5'		10'		5'		5'	
				6/24/2020		5/27/2020		6/24/2020		5/27/2020		5/27/2020	
				mg/Kg		mg/Kg		mg/Kg		mg/Kg		mg/Kg	
				Result	RL	Result	RL	Result	RL	Result	RL	Result	RL
Lead	63	400	1,000	**2.3**	0.8	**2,500**	7.4	**3**	0.8	**191**	0.7	**674**	0.7

COMPOUND	NYSDEC Part 375.6 Unrestricted Use Soil Cleanup Objectives*	NYDEC Part 375.6 Restricted Residential Soil Cleanup Objectives*	NYDEC Part 375.6 Restricted Commercial Soil Cleanup Objectives*	HSE12		HSE13		Duplicate		HSD Duplicate		HSE Duplicate	
				5'		5'		HSC1		HSD2		HSE1	
				5/27/2020		5/27/2020		11/23/2020		5/27/2020		5/27/2020	
				mg/Kg		mg/Kg		mg/Kg		mg/Kg		mg/Kg	
				Result	RL	Result	RL	Result	RL	Result	RL	Result	RL
Lead	63	400	1,000	**272**	0.8	**386**	0.8	**2.8**	0.7	**64.7**	0.7	**1,440**	7.8

COMPOUND	TCLP Regulatory Limit*	HSE8B		HSE9		HSE9B		HSE10		HSE11	
		10'		5'		10'		5'		5'	
		6/24/2020		5/27/2020		6/24/2020		5/27/2020		5/27/2020	
		mg/Kg		mg/Kg		mg/Kg		mg/Kg		mg/Kg	
	(mg/L)	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL
TCLP Lead	5	< 0.10	0.10	**29.1**	0.10	< 0.10	0.10	**0.41**	0.10	**0.34**	0.10

COMPOUND	TCLP Regulatory Limit*	HSE12		HSE13		Duplicate		HSD Duplicate		HSE Duplicate	
		5'		5'		HSC1		HSD2		HSE1	
		5/27/2020		5/27/2020		11/23/2020		5/27/2020		5/27/2020	
		mg/Kg		mg/Kg		mg/Kg		mg/Kg		mg/Kg	
	(mg/L)	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL
TCLP Lead	5	**1.2**	0.10	**0.46**	0.10	< 0.10	0.10	**0.38**	0.10	**1.22**	0.10

Notes:

* - 6 NYCRR Part 375-6 Remedial Program Soil Cleanup Objectives

RL - Reporting Limit

Bold/highlighted- Indicated exceedance of the TCLP Regulatory Limit

Bold/highlighted- Indicated exceedance of the NYSDEC UUSCO Guidance Value

Bold/highlighted- Indicated exceedance of the NYSDEC RRSCO Guidance Value

Bold/highlighted- Indicated exceedance of the NYSDEC RCSCO Guidance Value

FIGURES

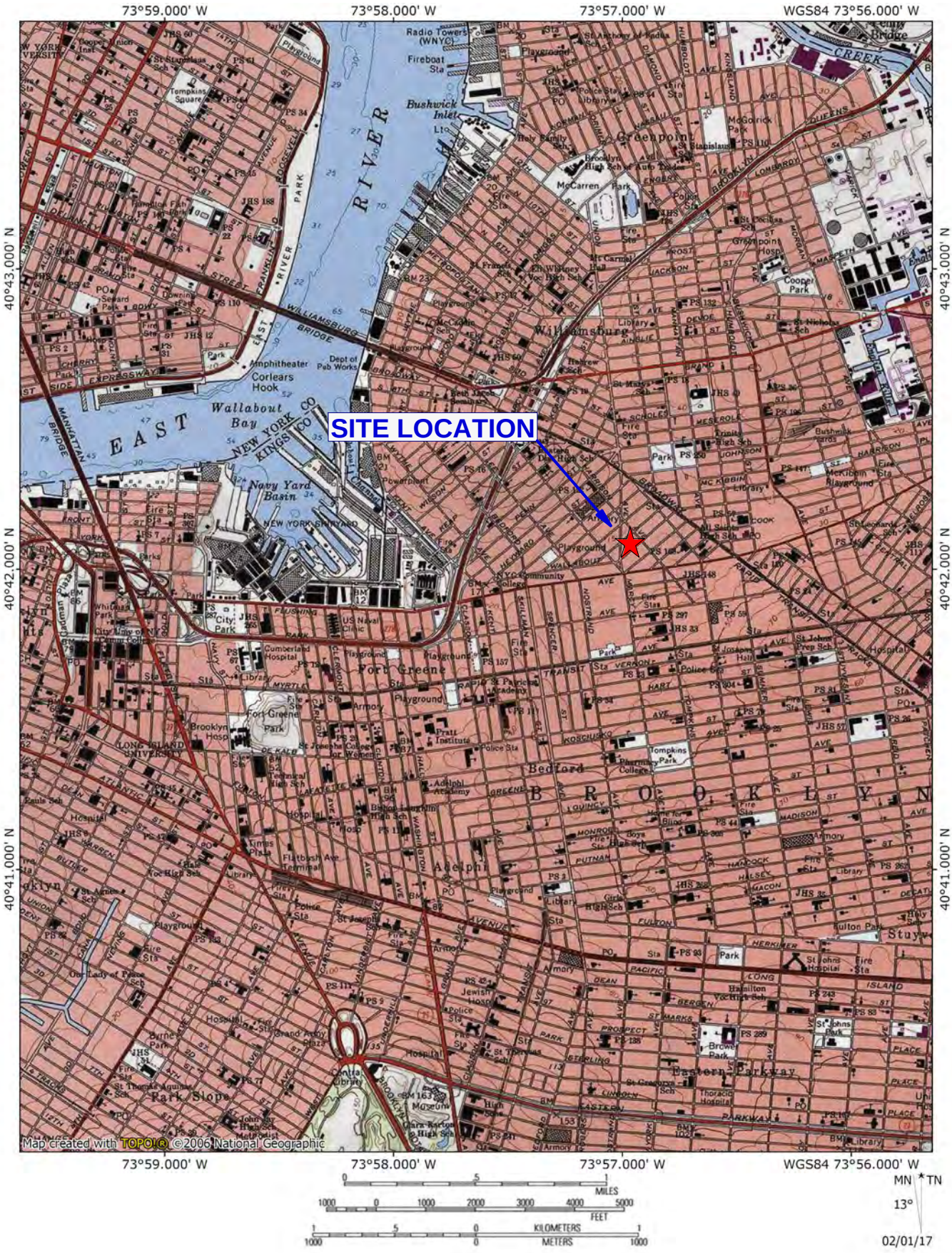

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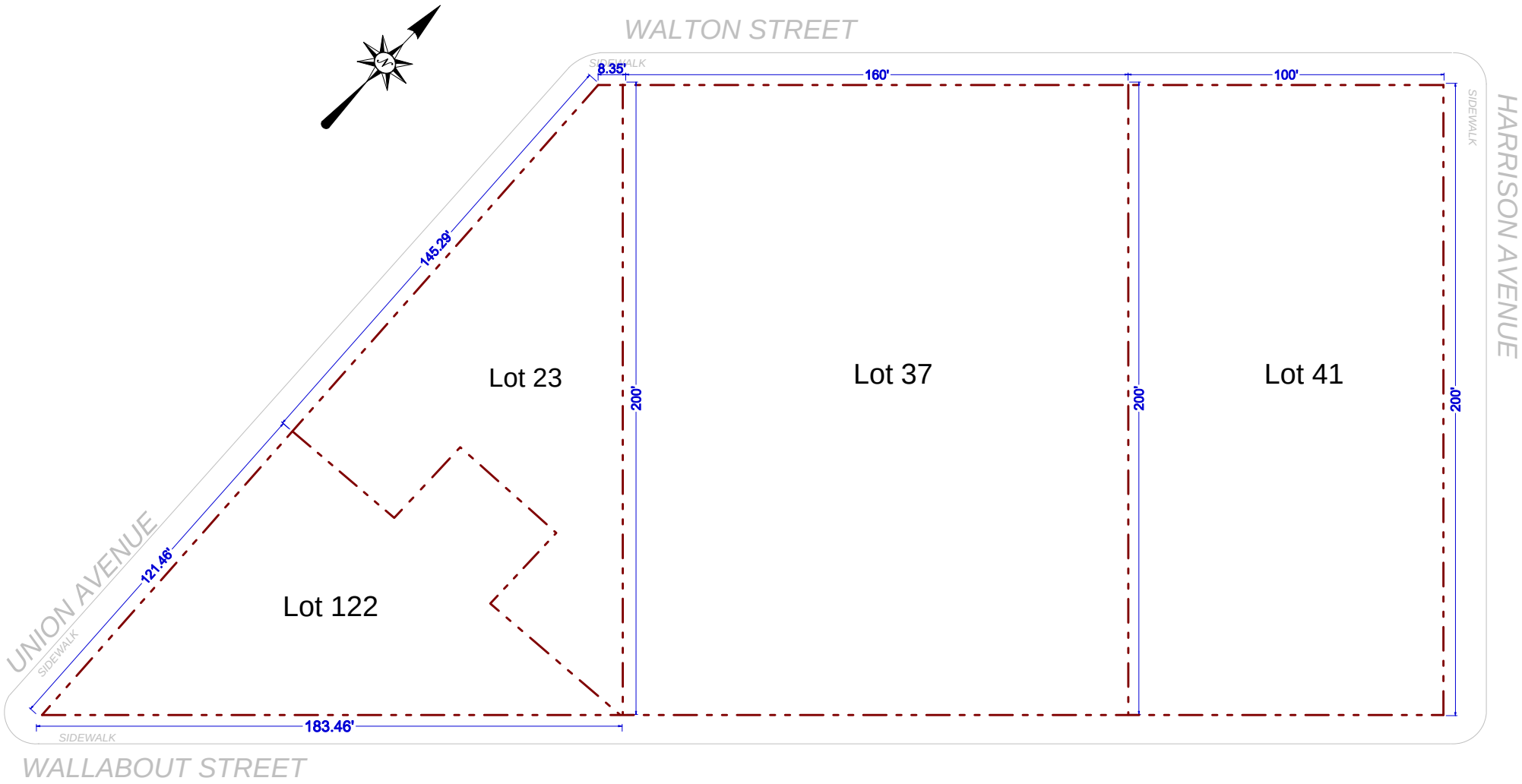
Figure No.
1

Site Name:	Former Pfizer Site A
Site Address:	243-271 Wallabout Street, Brooklyn, NY
Drawing Title:	Site Location Map



KEY:

Site Boundary

SCALE:

0 25 50

Scale: 1 inch = 50 feet

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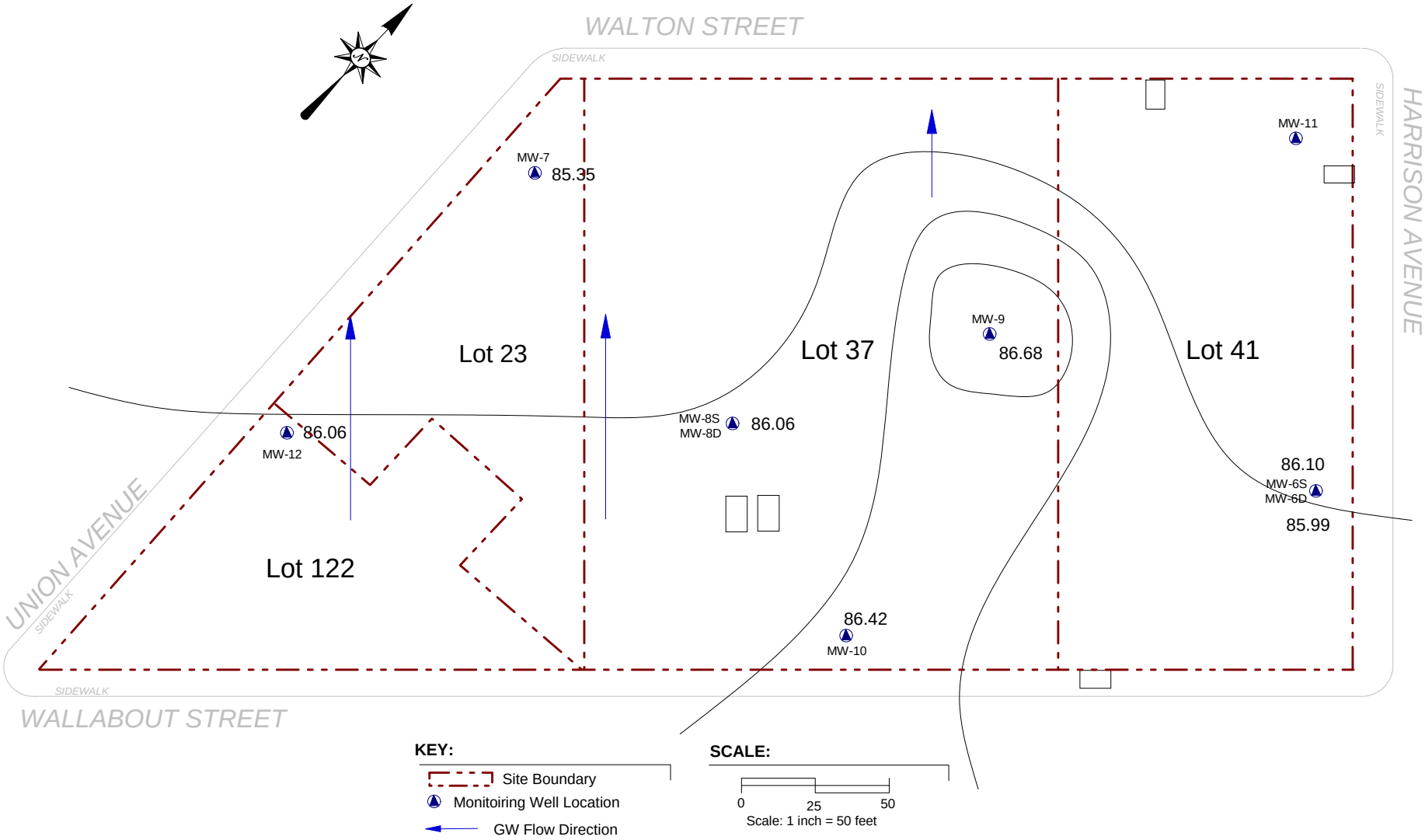
Astoria, NY 11105

Figure No. **2**

Site Name: FORMER PFIZER SITE A

Site Address: 243-271 WALLABOUT STREET, BROOKLYN, NY

Drawing Title: SITE BOUNDARY MAP



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Fax 631.924.2870

Figure 3

Site Name: Former Pfizer Site A
Site Address: 243-271 Wallabout Street, Brooklyn, NY
Drawing Title: Groundwater Contour Map

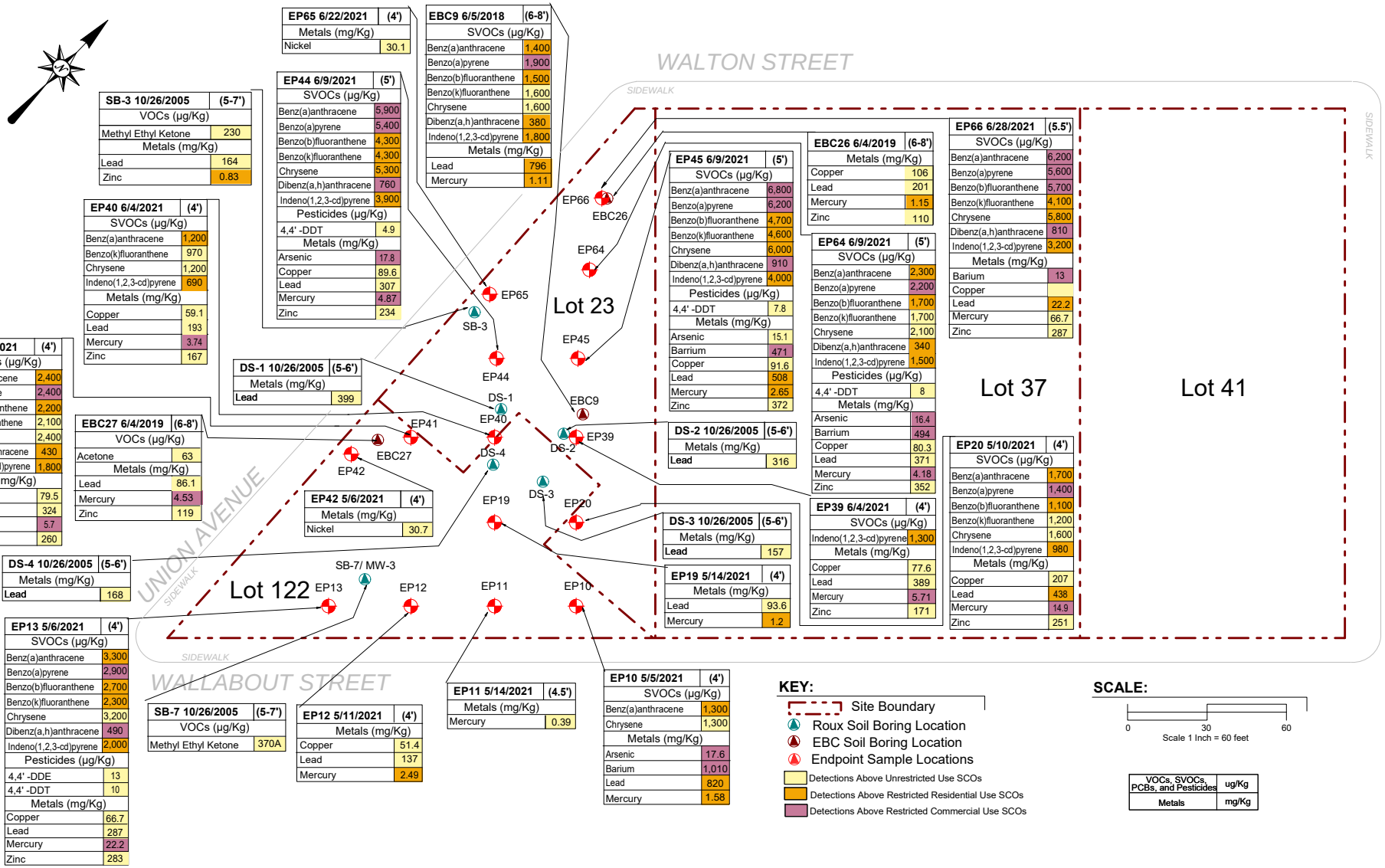

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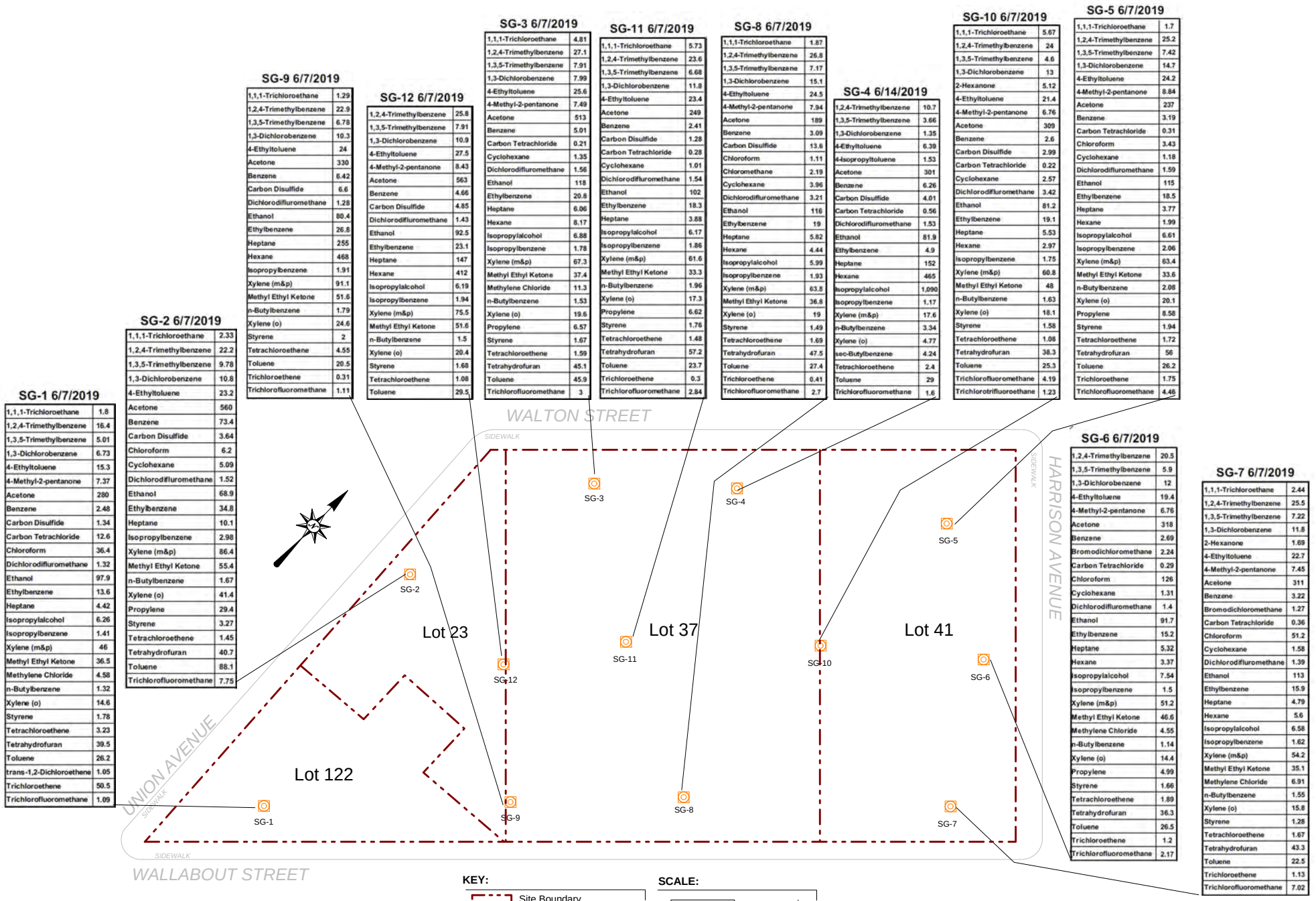
Figure No. **4**

Site Name: FORMER PFIZER SITE A

Site Address: 243-271 WALLABOUT STREET, BROOKLYN, NY

Drawing Title: REMAINING SOIL EXCEEDANCES ABOVE UUSCOS



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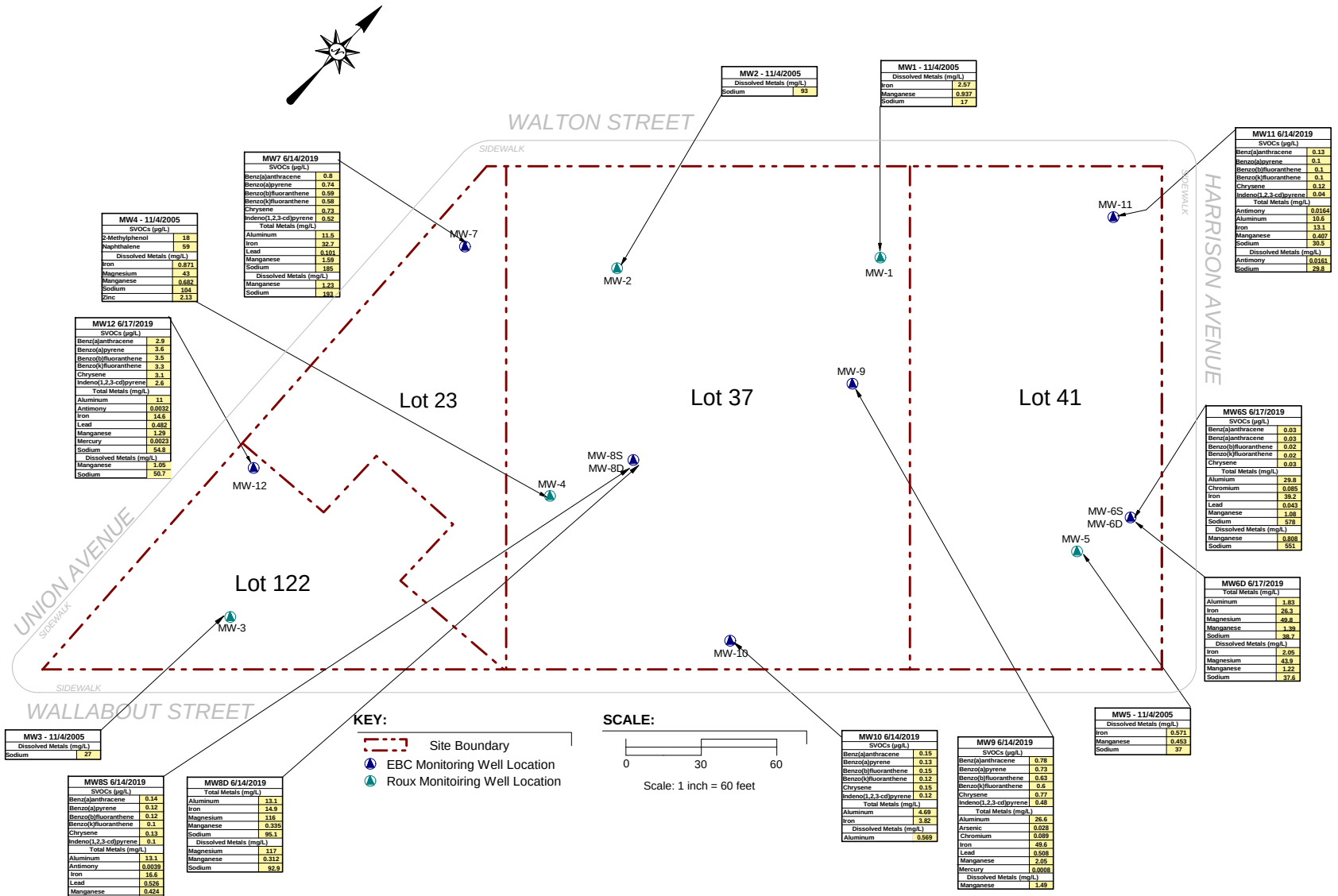
Fax 631.924.2870

Figure 5

Site Name: Former Pfizer Site A
Site Address: 243-271 Wallabout Street, Brooklyn, NY
Drawing Title: RI Soil Vapor Results



MW2 - 11/4/2005	
Dissolved Metals (mg/L)	
Sodium	93

MW1 - 11/4/2005	
Dissolved Metals (mg/L)	
Iron	2.57
Manganese	0.937
Sodium	17

MW7 6/14/2019	
SVOCs (µg/L)	
Benz(a)anthracene	0.8
Benzo(a)pyrene	0.74
Benzo(b)fluoranthene	0.59
Benzo(k)fluoranthene	0.58
Chrysene	0.73
Indeno(1,2,3-cd)pyrene	0.52
Total Metals (mg/L)	
Aluminum	11.5
Iron	32.7
Lead	0.101
Manganese	1.59
Sodium	185
Dissolved Metals (mg/L)	
Manganese	1.23
Sodium	193

MW4 - 11/4/2005	
SVOCs (µg/L)	
2-Methylphenol	18
Naphthalene	59
Dissolved Metals (mg/L)	
Iron	0.871
Magnesium	43
Manganese	0.682
Sodium	104
Zinc	2.13

MW12 6/17/2019	
SVOCs (µg/L)	
Benz(a)anthracene	2.9
Benzo(a)pyrene	3.6
Benzo(b)fluoranthene	3.5
Benzo(k)fluoranthene	3.3
Chrysene	3.1
Indeno(1,2,3-cd)pyrene	2.6
Total Metals (mg/L)	
Aluminum	11
Antimony	0.0032
Iron	14.6
Lead	0.482
Manganese	1.29
Mercury	0.0023
Sodium	54.8
Dissolved Metals (mg/L)	
Manganese	1.05
Sodium	50.7

MW11 6/14/2019	
SVOCs (µg/L)	
Benz(a)anthracene	0.13
Benzo(a)pyrene	0.1
Benzo(b)fluoranthene	0.1
Benzo(k)fluoranthene	0.1
Chrysene	0.12
Indeno(1,2,3-cd)pyrene	0.04
Total Metals (mg/L)	
Antimony	0.0164
Aluminum	10.6
Iron	13.1
Manganese	0.407
Sodium	30.5
Dissolved Metals (mg/L)	
Antimony	0.0161
Sodium	29.8

MW6S 6/17/2019	
SVOCs (µg/L)	
Benz(a)anthracene	0.03
Benz(a)anthracene	0.03
Benzo(b)fluoranthene	0.02
Benzo(k)fluoranthene	0.02
Chrysene	0.03
Total Metals (mg/L)	
Aluminum	29.8
Chromium	0.085
Iron	39.2
Lead	0.043
Manganese	1.08
Sodium	578
Dissolved Metals (mg/L)	
Manganese	0.808
Sodium	551

MW6D 6/17/2019	
Total Metals (mg/L)	
Aluminum	1.83
Iron	26.3
Magnesium	49.8
Manganese	1.39
Sodium	38.7
Dissolved Metals (mg/L)	
Iron	2.05
Magnesium	43.9
Manganese	1.22
Sodium	37.6

MW5 - 11/4/2005	
Dissolved Metals (mg/L)	
Iron	0.571
Manganese	0.453
Sodium	37

MW3 - 11/4/2005	
Dissolved Metals (mg/L)	
Sodium	27

MW8S 6/14/2019	
SVOCs (µg/L)	
Benz(a)anthracene	0.14
Benzo(a)pyrene	0.12
Benzo(b)fluoranthene	0.12
Benzo(k)fluoranthene	0.1
Chrysene	0.13
Indeno(1,2,3-cd)pyrene	0.1
Total Metals (mg/L)	
Aluminum	13.1
Antimony	0.0039
Iron	16.6
Lead	0.526
Manganese	0.424
Mercury	0.0014
Sodium	38.2
Dissolved Metals (mg/L)	
Antimony	0.0039
Sodium	37

MW8D 6/14/2019	
Total Metals (mg/L)	
Aluminum	13.1
Iron	14.9
Magnesium	116
Manganese	0.335
Sodium	95.1
Dissolved Metals (mg/L)	
Magnesium	117
Manganese	0.312
Sodium	92.9

MW10 6/14/2019	
SVOCs (µg/L)	
Benz(a)anthracene	0.15
Benzo(a)pyrene	0.13
Benzo(b)fluoranthene	0.15
Benzo(k)fluoranthene	0.12
Chrysene	0.15
Indeno(1,2,3-cd)pyrene	0.12
Total Metals (mg/L)	
Aluminum	4.69
Iron	3.82
Dissolved Metals (mg/L)	
Aluminum	0.569

MW9 6/14/2019	
SVOCs (µg/L)	
Benz(a)anthracene	0.78
Benzo(a)pyrene	0.73
Benzo(b)fluoranthene	0.63
Benzo(k)fluoranthene	0.6
Chrysene	0.77
Indeno(1,2,3-cd)pyrene	0.48
Total Metals (mg/L)	
Aluminum	26.6
Arsenic	0.028
Chromium	0.089
Iron	49.6
Lead	0.508
Manganese	2.05
Mercury	0.0008
Dissolved Metals (mg/L)	
Manganese	1.49

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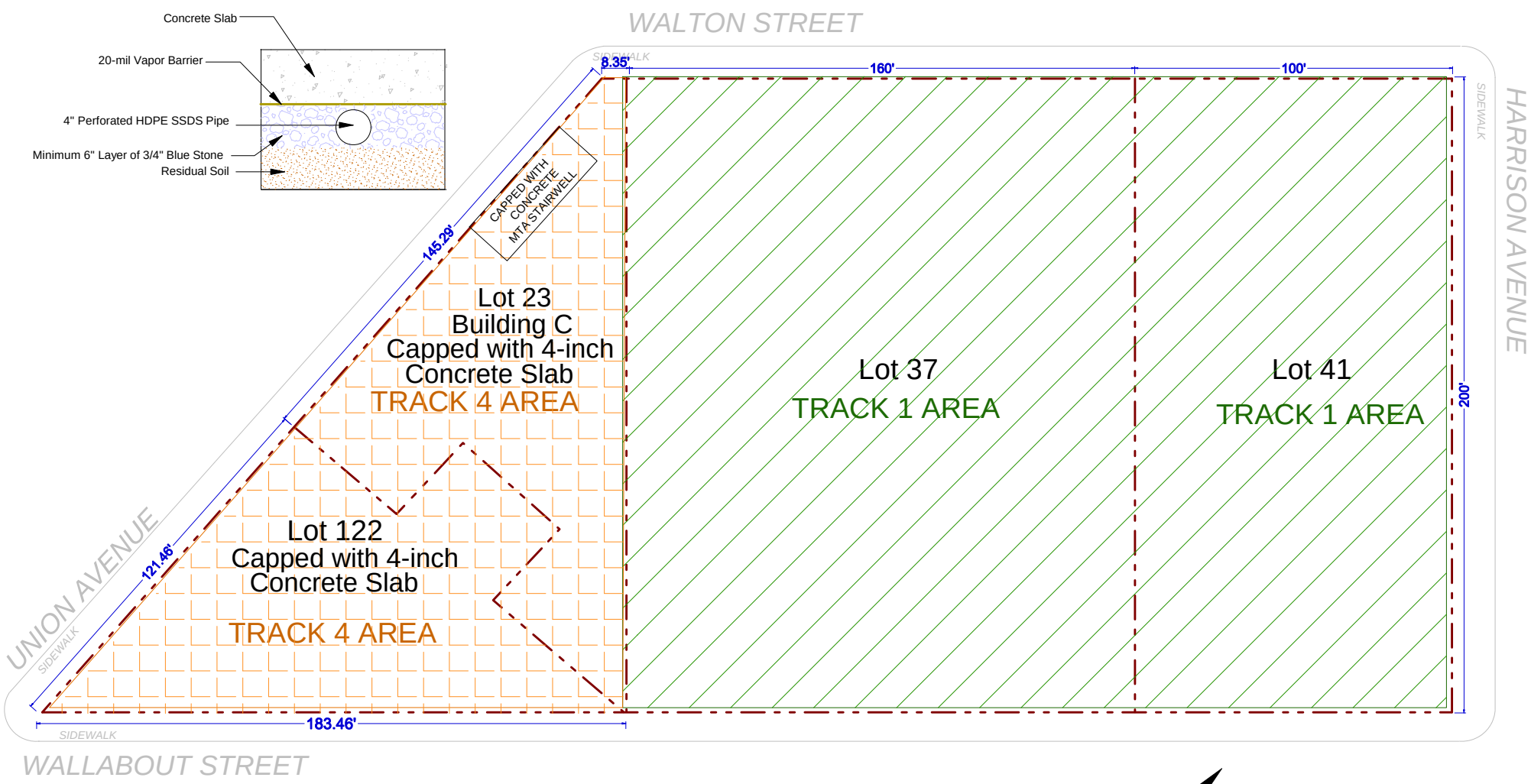
Phone 631.504.6000
Fax 631. 924 .2870

Figure 6

Site Name: FORMER PFIZER SITE A
Site Address: 243-271 WALLABOUT STREET, BROOKLYN, NY
Drawing Title: RI GROUNDWATER RESULTS ABOVE AWQS



KEY:

Site Boundary

SCALE:

0 25 50

Scale: 1 inch = 50 feet

9/22/2021

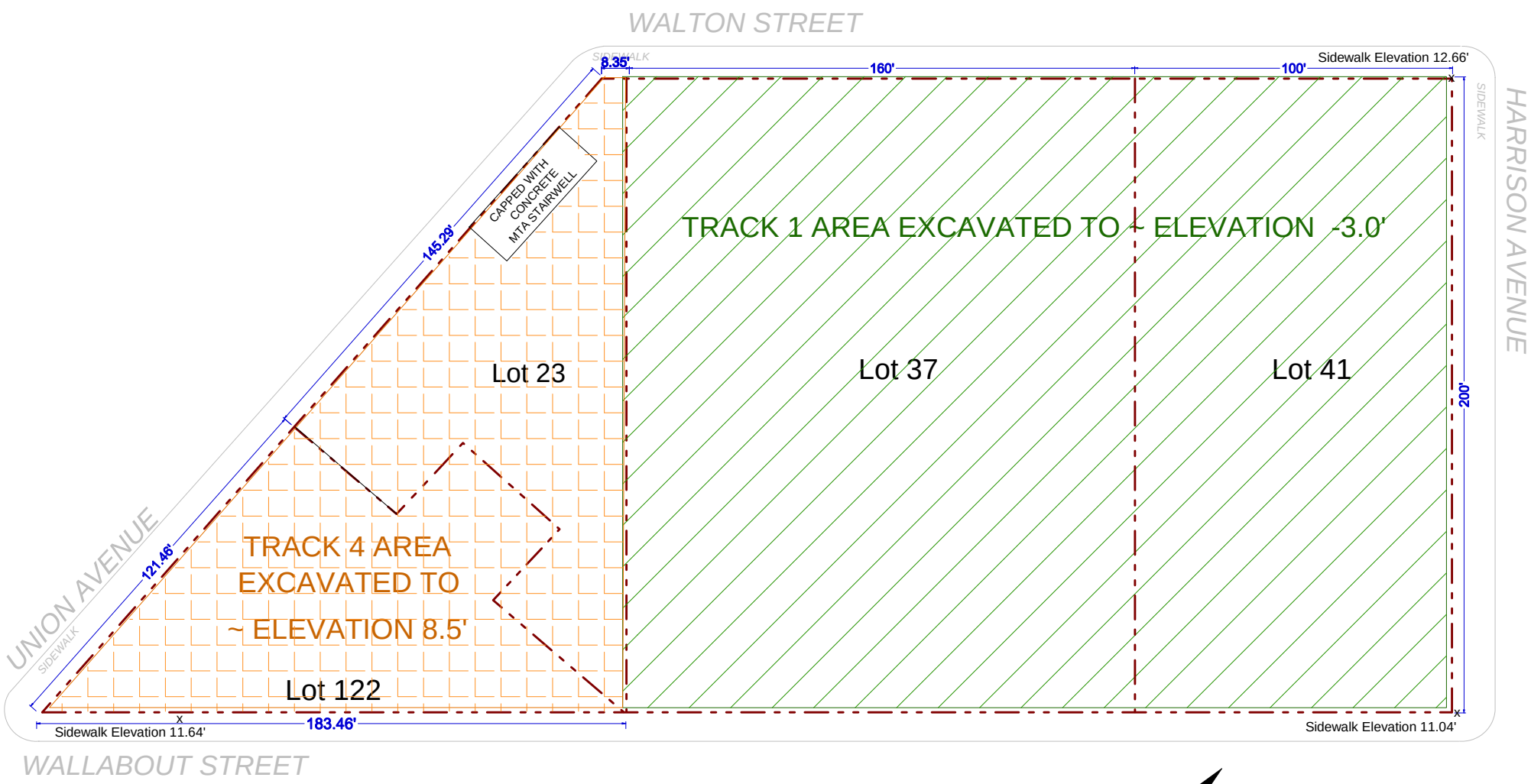
AMC Engineering
1836 42nd Street
Astoria, NY 11105

Figure No. **7**

Site Name: FORMER PFIZER SITE A

Site Address: 243-271 WALLABOUT STREET, BROOKLYN, NY

Drawing Title: TRACK 4 AS-BUILT COVER SYSTEM



KEY:

Site Boundary

SCALE:

0 25 50

Scale: 1 inch = 50 feet

10/19/2021

AMC Engineering
1836 42nd Street
Astoria, NY 11105

Figure No.
8

Site Name: FORMER PFIZER SITE A

Site Address: 243-271 WALLABOUT STREET, BROOKLYN, NY

Drawing Title: REMEDIAL EXCAVATION EXTENT

APPENDIX A
Environmental Easement

NYC DEPARTMENT OF FINANCE
OFFICE OF THE CITY REGISTER

This page is part of the instrument. The City Register will rely on the information provided by you on this page for purposes of indexing this instrument.The information on this page will control for indexing purposes in the event of any conflict with the rest of the document.

2021092000775001001E1A2B

RECORDING AND ENDORSEMENT COVER PAGE **PAGE 1 OF 11**

Document ID: 2021092000775001 Document Date: 08-31-2021 Preparation Date: 09-20-2021
Document Type: EASEMENT
Document Page Count: 9

PRESENTER:
RELIABLE ABSTRACT CO. LLC.
266 BROADWAY, SUITE 304
ACCOM
BROOKLYN, NY 11211
718-438-0786
DEVORA@RELIABLEABSTRACT.NET

RETURN TO:
LINDA R. SHAW
KNAUF SHAW LLP
1400 CROSSROADS BUILDING, 2 STATE STREET
ROCHESTER, NY 14614

PROPERTY DATA

Borough	Block	Lot		Unit	Address
BROOKLYN	2249	23	Entire Lot		N/A UNION AVENUE

Property Type: OTHER

Borough	Block	Lot		Unit	Address
BROOKLYN	2249	122	Entire Lot		N/A UNION AVENUE

Property Type: OTHER

☒ Additional Properties on Continuation Page

CROSS REFERENCE DATA

CRFN_____ *or* DocumentID_____ *or* _____ Year_____ Reel____ Page_____ *or* File Number_____

PARTIES

GRANTOR/SELLER:
HARRISON REALTY II LLC
505 FLUSHING AVE STE 1D
BROOKLYN, NY 11205-1689

GRANTEE/BUYER:
NYS DEPARTMENT OF ENVIRONMENTAL CONSERVATION
625 BROADWAY, FLOOR 14
ALBANY, NY 12233-1500

FEES AND TAXES

Mortgage :		
Mortgage Amount:	$	0.00
Taxable Mortgage Amount:	$	0.00
Exemption:		
TAXES: County (Basic):	$	0.00
City (Additional):	$	0.00
Spec (Additional):	$	0.00
TASF:	$	0.00
MTA:	$	0.00
NYCTA:	$	0.00
Additional MRT:	$	0.00
TOTAL:	$	0.00
Recording Fee:	$	91.00
Affidavit Fee:	$	0.00

Filing Fee: $ 0.00

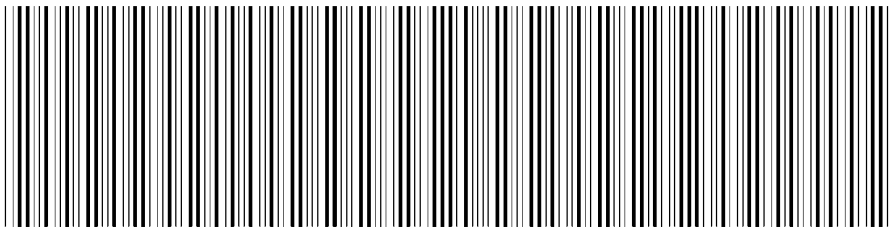
NYC Real Property Transfer Tax: $ 0.00

NYS Real Estate Transfer Tax: $ 0.00

RECORDED OR FILED IN THE OFFICE OF THE CITY REGISTER OF THE CITY OF NEW YORK
Recorded/Filed 09-23-2021 12:03
City Register File No.(CRFN): **2021000376637**

City Register Official Signature

NYC DEPARTMENT OF FINANCE
OFFICE OF THE CITY REGISTER



2021092000775001001C18AB

Document ID: 2021092000775001 Document Date: 08-31-2021 Preparation Date: 09-20-2021
Document Type: EASEMENT

PROPERTY DATA

Borough	Block	Lot		Unit	Address
BROOKLYN	2249	37	Entire Lot		N/A WALTON STREET

Property Type: OTHER

Borough	Block	Lot		Unit	Address
BROOKLYN	2249	41	Entire Lot		N/A WALLABOUT STREET

Property Type: OTHER

ENVIRONMENTAL EASEMENT GRANTED PURSUANT TO ARTICLE 71, TITLE 36 OF THE NEW YORK STATE ENVIRONMENTAL CONSERVATION LAW

as of

THIS INDENTURE made this 31st day of March, 2021, between Owner, Harrison Realty II LLC, having an office at 505 Flushing Avenue, Unit 1D, Brooklyn, New York 11205 (the "Grantor"), and The People of the State of New York (the "Grantee."), acting through their Commissioner of the Department of Environmental Conservation (the "Commissioner", or "NYSDEC" or "Department" as the context requires) with its headquarters located at 625 Broadway, Albany, New York 12233,

WHEREAS, the Legislature of the State of New York has declared that it is in the public interest to encourage the remediation of abandoned and likely contaminated properties ("sites") that threaten the health and vitality of the communities they burden while at the same time ensuring the protection of public health and the environment; and

WHEREAS, the Legislature of the State of New York has declared that it is in the public interest to establish within the Department a statutory environmental remediation program that includes the use of Environmental Easements as an enforceable means of ensuring the performance of operation, maintenance, and/or monitoring requirements and the restriction of future uses of the land, when an environmental remediation project leaves residual contamination at levels that have been determined to be safe for a specific use, but not all uses, or which includes engineered structures that must be maintained or protected against damage to perform properly and be effective, or which requires groundwater use or soil management restrictions; and

WHEREAS, the Legislature of the State of New York has declared that Environmental Easement shall mean an interest in real property, created under and subject to the provisions of Article 71, Title 36 of the New York State Environmental Conservation Law ("ECL") which contains a use restriction and/or a prohibition on the use of land in a manner inconsistent with engineering controls which are intended to ensure the long term effectiveness of a site remedial program or eliminate potential exposure pathways to hazardous waste or petroleum; and

WHEREAS, Grantor, is the owner of real property located at the address of 243-271 Wallabout Street in the City of New York, County of Kings and State of New York, known and designated on the tax map of the New York City Department of Finance as tax map parcel number: Block 2249 Lots 23 and 122, being a portion of the property conveyed to Grantor by deed dated March 2, 2021 and recorded in the City Register of the City of New York as CRFN # 2021000086297. The property subject to this Environmental Easement (the "Controlled Property") comprises approximately 0.41 +/- acres, and is hereinafter more fully described in the Land Title Survey dated February 22, 2021 prepared by Vincent M. Teutonico, L.L.S. of AAA Group R.E. Servicing Corp., which will be attached to the Site Management Plan. The Controlled Property description is set forth in and attached hereto as Schedule A; and

WHEREAS, the Department accepts this Environmental Easement in order to ensure the protection of public health and the environment and to achieve the requirements for remediation established for the Controlled Property until such time as this Environmental Easement is extinguished pursuant to ECL Article 71, Title 36; and

NOW THEREFORE, in consideration of the mutual covenants contained herein and the terms and conditions of Brownfield Cleanup Agreement Index Number: C224284-11-18, Grantor conveys to Grantee a permanent Environmental Easement pursuant to ECL Article 71, Title 36 in, on, over, under, and upon the Controlled Property as more fully described herein ("Environmental Easement").

1. Purposes. Grantor and Grantee acknowledge that the Purposes of this Environmental Easement are: to convey to Grantee real property rights and interests that will run with the land in perpetuity in order to provide an effective and enforceable means of encouraging the reuse and redevelopment of this Controlled Property at a level that has been determined to be safe for a specific use while ensuring the performance of operation, maintenance, and/or monitoring requirements; and to ensure the restriction of future uses of the land that are inconsistent with the above-stated purpose.

2. Institutional and Engineering Controls. The controls and requirements listed in the Department approved Site Management Plan ("SMP") including any and all Department approved amendments to the SMP are incorporated into and made part of this Environmental Easement. These controls and requirements apply to the use of the Controlled Property, run with the land, are binding on the Grantor and the Grantor's successors and assigns, and are enforceable in law or equity against any owner of the Controlled Property, any lessees and any person using the Controlled Property.

A. (1) The Controlled Property may be used for:

Restricted Residential as described in 6 NYCRR Part 375-1.8(g)(2)(ii), Commercial as described in 6 NYCRR Part 375-1.8(g)(2)(iii) and Industrial as described in 6 NYCRR Part 375-1.8(g)(2)(iv)

(2) All Engineering Controls must be operated and maintained as specified in the Site Management Plan (SMP);

(3) All Engineering Controls must be inspected at a frequency and in a manner defined in the SMP;

(4) The use of groundwater underlying the property is prohibited without necessary water quality treatment as determined by the NYSDOH or the New York City Department of Health and Mental Hygiene to render it safe for use as drinking water or for industrial purposes, and the user must first notify and obtain written approval to do so from the Department;

(5) Groundwater and other environmental or public health monitoring must be performed as defined in the SMP;

(6) Data and information pertinent to Site Management of the Controlled Property must be reported at the frequency and in a manner defined in the SMP;

(7) All future activities on the property that will disturb remaining contaminated material must be conducted in accordance with the SMP;

(8) Monitoring to assess the performance and effectiveness of the remedy must be performed as defined in the SMP;

(9) Operation, maintenance, monitoring, inspection, and reporting of any mechanical or physical components of the remedy shall be performed as defined in the SMP;

(10) Access to the site must be provided to agents, employees or other representatives of the State of New York with reasonable prior notice to the property owner to assure compliance with the restrictions identified by this Environmental Easement.

B. The Controlled Property shall not be used for Residential purposes as defined in 6NYCRR 375-1.8(g)(2)(i), and the above-stated engineering controls may not be discontinued without an amendment or extinguishment of this Environmental Easement.

C. The SMP describes obligations that the Grantor assumes on behalf of Grantor, its successors and assigns. The Grantor's assumption of the obligations contained in the SMP which may include sampling, monitoring, and/or operating a treatment system, and providing certified reports to the NYSDEC, is and remains a fundamental element of the Department's determination that the Controlled Property is safe for a specific use, but not all uses. The SMP may be modified in accordance with the Department's statutory and regulatory authority. The Grantor and all successors and assigns, assume the burden of complying with the SMP and obtaining an up-to-date version of the SMP from:

Site Control Section
Division of Environmental Remediation
NYSDEC
625 Broadway
Albany, New York 12233
Phone: (518) 402-9553

D. Grantor must provide all persons who acquire any interest in the Controlled Property a true and complete copy of the SMP that the Department approves for the Controlled Property and all Department-approved amendments to that SMP.

E. Grantor covenants and agrees that until such time as the Environmental Easement is extinguished in accordance with the requirements of ECL Article 71, Title 36 of the ECL, the property deed and all subsequent instruments of conveyance relating to the Controlled Property shall state in at least fifteen-point bold-faced type:

This property is subject to an Environmental Easement held by the New York State Department of Environmental Conservation pursuant to Title 36 of Article 71 of the Environmental Conservation Law.

F. Grantor covenants and agrees that this Environmental Easement shall be incorporated in full or by reference in any leases, licenses, or other instruments granting a right to

SCHEDULE "A" PROPERTY DESCRIPTION

Description of Track 4 Area
Section 8, Block 2249, Lots 122 and part of lot 23
Controlled Property Subject to Environmental Easement in Favor of the New York State Department of Environmental Conservation

ALL that certain plot, piece or parcel of land, with the buildings and improvements thereon erected, situate, lying and being in the Borough of Brooklyn, County of Kings, City and State of New York, bounded and described as follows:

BEGINNING at a point on the intersection of the northerly side of Wallabout Street with the easterly side of Union Avenue,

RUNNING THENCE easterly along said northerly side of Wallabout Street, 169 feet 10 ½ inches;

THENCE northerly, parallel with Harrison Avenue, 100 feet;

THENCE easterly, parallel with Wallabout Street, 15 feet;

THENCE northerly, parallel with Harrison Avenue, 100 feet to the southerly side of Walton Street;

THENCE westerly, along said southerly side of Walton Street, 8 feet 4 ¼ inches to the easterly side of Union Avenue;

THENCE southerly, along said easterly side of Union Street, 266 feet 9 inches to the corner, the point or place of BEGINNING.

Containing approximately 0.41 acres more or less.

use the Controlled Property.

G. Grantor covenants and agrees that it shall, at such time as NYSDEC may require, submit to NYSDEC a written statement by an expert the NYSDEC may find acceptable certifying under penalty of perjury, in such form and manner as the Department may require, that:

(1) the inspection of the site to confirm the effectiveness of the institutional and engineering controls required by the remedial program was performed under the direction of the individual set forth at 6 NYCRR Part 375-1.8(h)(3).

(2) the institutional controls and/or engineering controls employed at such site:

(i) are in-place;

(ii) are unchanged from the previous certification, or that any identified changes to the controls employed were approved by the NYSDEC and that all controls are in the Department-approved format; and

(iii) that nothing has occurred that would impair the ability of such control to protect the public health and environment;

(3) the owner will continue to allow access to such real property to evaluate the continued maintenance of such controls;

(4) nothing has occurred that would constitute a violation or failure to comply with any site management plan for such controls;

(5) the report and all attachments were prepared under the direction of, and reviewed by, the party making the certification;

(6) to the best of his/her knowledge and belief, the work and conclusions described in this certification are in accordance with the requirements of the site remedial program, and generally accepted engineering practices; and

(7) the information presented is accurate and complete.

3. Right to Enter and Inspect. Grantee, its agents, employees, or other representatives of the State may enter and inspect the Controlled Property in a reasonable manner and at reasonable times to assure compliance with the above-stated restrictions.

4. Reserved Grantor's Rights. Grantor reserves for itself, its assigns, representatives, and successors in interest with respect to the Property, all rights as fee owner of the Property, including:

A. Use of the Controlled Property for all purposes not inconsistent with, or limited by the terms of this Environmental Easement;

B. The right to give, sell, assign, or otherwise transfer part or all of the underlying fee interest to the Controlled Property, subject and subordinate to this Environmental Easement;

5. Enforcement

A. This Environmental Easement is enforceable in law or equity in perpetuity by Grantor, Grantee, or any affected local government, as defined in ECL Section 71-3603, against the owner of the Property, any lessees, and any person using the land. Enforcement shall not be defeated because of any subsequent adverse possession, laches, estoppel, or waiver. It is not a defense in any action to enforce this Environmental Easement that: it is not appurtenant to an interest in real property; it is not of a character that has been recognized traditionally at common law; it imposes a negative burden; it imposes affirmative obligations upon the owner of any interest

in the burdened property; the benefit does not touch or concern real property; there is no privity of estate or of contract; or it imposes an unreasonable restraint on alienation.

B. If any person violates this Environmental Easement, the Grantee may revoke the Certificate of Completion with respect to the Controlled Property.

C. Grantee shall notify Grantor of a breach or suspected breach of any of the terms of this Environmental Easement. Such notice shall set forth how Grantor can cure such breach or suspected breach and give Grantor a reasonable amount of time from the date of receipt of notice in which to cure. At the expiration of such period of time to cure, or any extensions granted by Grantee, the Grantee shall notify Grantor of any failure to adequately cure the breach or suspected breach, and Grantee may take any other appropriate action reasonably necessary to remedy any breach of this Environmental Easement, including the commencement of any proceedings in accordance with applicable law.

D. The failure of Grantee to enforce any of the terms contained herein shall not be deemed a waiver of any such term nor bar any enforcement rights.

6. Notice. Whenever notice to the Grantee (other than the annual certification) or approval from the Grantee is required, the Party providing such notice or seeking such approval shall identify the Controlled Property by referencing the following information:

County, NYSDEC Site Number, NYSDEC Brownfield Cleanup Agreement, State Assistance Contract or Order Number, and the County tax map number or the Liber and Page or computerized system identification number.

Parties shall address correspondence to:

Site Number: C224284
Office of General Counsel
NYSDEC
625 Broadway
Albany New York 12233-5500

With a copy to:

Site Control Section
Division of Environmental Remediation
NYSDEC
625 Broadway
Albany, NY 12233

All notices and correspondence shall be delivered by hand, by registered mail or by Certified mail and return receipt requested. The Parties may provide for other means of receiving and communicating notices and responses to requests for approval.

7. Recordation. Grantor shall record this instrument, within thirty (30) days of execution of this instrument by the Commissioner or her/his authorized representative in the office of the recording officer for the county or counties where the Property is situated in the manner prescribed by Article 9 of the Real Property Law.

8. Amendment. Any amendment to this Environmental Easement may only be executed by the Commissioner of the New York State Department of Environmental Conservation or the

Commissioner's Designee, and filed with the office of the recording officer for the county or counties where the Property is situated in the manner prescribed by Article 9 of the Real Property Law.

9. Extinguishment. This Environmental Easement may be extinguished only by a release by the Commissioner of the New York State Department of Environmental Conservation, or the Commissioner's Designee, and filed with the office of the recording officer for the county or counties where the Property is situated in the manner prescribed by Article 9 of the Real Property Law.

10. Joint Obligation. If there are two or more parties identified as Grantor herein, the obligations imposed by this instrument upon them shall be joint and several.

11. Consistency with the SMP. To the extent there is any conflict or inconsistency between the terms of this Environmental Easement and the SMP, regarding matters specifically addressed by the SMP, the terms of the SMP will control.

Remainder of Page Intentionally Left Blank

IN WITNESS WHEREOF, Grantor has caused this instrument to be signed in its name.

Harrison Realty II LLC:

By: _____

Print Name: Simon Dushinsky

Title: member Date: 8-11-21

Grantor's Acknowledgment

STATE OF NEW YORK)
) ss:
COUNTY OF Kings)

On the 11 day of August, in the year 2021, before me, the undersigned, personally appeared Simon Dushinsky, personally known to me or proved to me on the basis of satisfactory evidence to be the individual(s) whose name is (are) subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their capacity(ies), and that by his/her/their signature(s) on the instrument, the individual(s), or the person upon behalf of which the individual(s) acted, executed the instrument.

_____
Notary Public - State of New York

CHAIM ORGEL
NOTARY PUBLIC, State of New York
No. 01-OR6342334
Qualified in Kings County
Commission Expires 05/23/2024

THIS ENVIRONMENTAL EASEMENT IS HEREBY ACCEPTED BY THE PEOPLE OF THE STATE OF NEW YORK, Acting By and Through the Department of Environmental Conservation as Designee of the Commissioner,

By: _____
Michael J. Ryan, Director
Division of Environmental Remediation

Grantee's Acknowledgment

STATE OF NEW YORK)
) ss:
COUNTY OF ALBANY)

On the 31ST day of August, in the year 2021, before me, the undersigned, personally appeared Michael J. Ryan, personally known to me or proved to me on the basis of satisfactory evidence to be the individual(s) whose name is (are) subscribed to the within instrument and acknowledged to me that he/she/ executed the same in his/her/ capacity as Designee of the Commissioner of the State of New York Department of Environmental Conservation, and that by his/her/ signature on the instrument, the individual, or the person upon behalf of which the individual acted, executed the instrument.

_____
Notary Public - State of New York

Dale L. Thiel
Notary Public, State of New York
Qualified in Columbia County
No 01TH6414394
Commission Expires February 2/22/2025

LEGEND (NOT FOR TITLE PURPOSES)

HARRISON AVENUE (70' WIDE) (40'± WIDE ASPHALT ROADWAY)

WALTON STREET (70' WIDE) (34'± WIDE ASPHALT ROADWAY)

WALLABOUT STREET (70' WIDE) (34'± WIDE ASPHALT ROADWAY)

UNION AVENUE (80' WIDE) (47'± WIDE ASPHALT ROADWAY)

P.O.B (TRACK 1) (PARCEL "A")

P.O.B (TRACK 4)

TAX LOT 41

TAX LOT 37

TAX LOT 23

TAX LOT 122

TRACK 1 AREA

TRACK 4 AREA SUBJECT TO ENVIRONMENTAL EASEMENT

200'

100'-0"

268'-4½"

260'-0"

275'-0"

444'-10½"

169'-10½"

183'-5½"

266'-9"

131°25'55"

48°34'05"

15'

100'

50'-0"

CONC. SIDEWALK

Legal Description for (Track 1)
Section 8, Block 2249, Lots 41, 37 and part of lots 23 and 122,

ALL that certain plot, piece or parcel of land, with the buildings and improvements thereon erected, situate, lying and being in the Borough of Brooklyn, County of Kings, City and State of New York, bounded and described as follows:

BEGINNING at a point on the intersection of the southerly side of Walton Street with the westerly side of Harrison Avenue,

RUNNING THENCE westerly along the southerly side of Walton Street, 200 feet ;

THENCE southerly, parallel with Harrison Avenue, 100 feet;

THENCE westerly, parallel with Wallabout Street, 15 feet;

THENCE southerly, parallel with Harrison Avenue, 100 feet to the northerly side of Wallabout Street;

THENCE easterly, along said northerly side of Wallabout Street, 275 feet to the westerly side of Harrison Avenue;

THENCE northerly, along said westerly side of Harrison Avenue 200 feet to the corner, the point or place of BEGINNING

AREA OF TRACK 1 = 53,500 SQ. Ft. = 1.23 ACRE

Former Pfizer Site A
Brownfield Cleanup Program
Title No. C224284
Tax ID Nos. Section 8, Block 2249, Lots 23,37,41 and 122
Area is 1.64 Acres
Deed Perimeter Parcel "A"

ALL that certain plot, piece or parcel of land, with the buildings and improvements thereon erected, situate, lying and being in the Borough of Brooklyn, County of Kings, City and State of New York, bounded and described as follows:

BEGINNING at a point on the intersection of the southerly side of Walton Street with the westerly side of Harrison Avenue,

RUNNING THENCE westerly along the southerly side of Walton Street, 268 feet 4 1/4" inches to the easterly side of Union Avenue;

THENCE southerly, along said westerly side of Union Avenue, 266 feet 9 inches to the northerly side of

Wallabout Street;

THENCE easterly along said northerly side of Wallabout Street, 444 feet 10 1/2 inches to the westerly side of Harrison Avenue;

THENCE northerly along said westerly side of Harrison Avenue 200 feet to the corner, the point or place of BEGINNING.

AREA OF TRACK 1 = 71,323.8 SQ. Ft. = 1.64 ACRE

Legal Description for (track 4) Section 8 Block 2249, Lots 122 and part of lot 23,
Controlled Property Subject to Environmental Easement
In Favor of New York State Department of Environmental Conservation

ALL that certain plot, piece or parcel of land, with the buildings and improvements thereon erected, situate, lying and being in the Borough of Brooklyn, County of Kings, City and State of New York, bounded and described as follows:

BEGINNING at a point on the intersection of the northerly side of Wallabout Street with the easterly side of Union Avenue,

RUNNING THENCE easterly along the northerly side of Wallabout Street, 169 feet 10 1/2 inches;

THENCE northerly, parallel with Harrison Avenue, 100 feet;

THENCE easterly, parallel with Wallabout Street, 15 feet;

THENCE northerly, parallel with Harrison Avenue, 100 feet to the southerly side of Walton Street ;

THENCE westerly, along said southerly side of Walton Street, 8 feet 4 1/4 inches to the easterly side of Union Avenue;

THENCE southerly ,along said easterly side of Union Avenue, 266 feet 9 inches to the corner, the point or place of BEGINNING

AREA OF TRACK 4 = 17,823.8 SQ. Ft. = 0.41 ACRE

"This property is subject to an environmental easement held by the New York State Department of Environmental Conservation pursuant to Title 36 of Article 71 of the New York Environmental Conservation Law. The engineering and institutional controls for this Easement are set forth in the Site Management Plan (SMP). A copy of the SMP must be obtained by any party with an interest in the property. The SMP can be obtained from NYS Department of Environmental Conservation, Division of Environmental Remediation, Site Control Section, 625 Broadway, Albany, NY 12233 or at derweb@dec.ny.gov

UNAUTHORIZED ALTERATIONS OR ADDITIONS TO THIS SURVEY IS A VIOLATION OF SECTION 7209 OF THE NEW YORK STATE EDUCATION LAW. COPIES OF THIS SURVEY MAP NOT BEARING THE LAND SURVEYOR'S INKED SEAL OR EMBOSSED SEAL SHALL NOT BE CONSIDERED TO BE A VALID TRUE COPY. GUARANTEES OR CERTIFICATIONS INDICATED HEREON SHALL RUN ONLY TO THE PERSON FOR WHOM THE SURVEY IS PREPARED, AND ON HIS BEHALF TO THE TITLE COMPANY, GOVERNMENTAL AGENCY AND LENDING INSTITUTION LISTED HEREON, AND TO THE ASSIGNEES OF THE LENDING INSTITUTION. GUARANTEES OR CERTIFICATION ARE NOT TRANSFERABLE TO ADDITIONAL INSTITUTIONS OR SUBSEQUENT OWNERS.

SURVEYED :	FEBRUARY 22, 2021
SCALE:	1"=16'
BLOCK:	2249
LOT(s):	23,37,41,122
SECTION:	8
COUNTY:	KINGS
DWG BY:	AAA-AK

AAA GROUP
139 LORIMER STREET
BROOKLYN, N.Y. 11206
TEL. (718) 387-9600 , FAX 384-9850

This is to certify that I am a Licensed Land Surveyor and that this plan was completed on February 22, 2021 from notes of an instrument survey performed on October 13, 2020

Registration No. 050307 within the State of NEW YORK

VINCENT MATTEUCCI LS Pres.
Tel. 718 387 9800

BCP SITE No. C224284
243,249 Wallabout Street,
174 Harrison Avenue, Walton Street

Certified Only To: The People of the State of New York acting through its Commissioner of the Department of Environmental Conservation, Harrison Realty LLC, Knauf Shaw LLp

APPENDIX B

List of Site Contacts

APPENDIX B – LIST OF SITE CONTACTS

LIST OF SITE CONTACTS

Name	Phone/Email Address
Site Owner and Remedial Party Harrison Realty LLC Charles Krieger	 (718) 246-4762 CH@Rabskygroup.com
Remedial Engineer AMC Engineering Ariel Czemerinski	(718) 545-0474 ariel@amc-engineering.com
NYSDEC DER Project Manager Mandy Yau	 (718) 482-4897 mandy.yau@dec.ny.gov
NYSDEC DER Section Chief Jane O'Connell	 718-482-4599 Jane.Oconnell@dec.ny.gov
NYSDEC DER Site Control Kelly Lewandowski	 518-402-9581 Kelly.Lewandowski@dec.ny.gov
NYSDEC DOH Project Manager Stephanie Selmer	 518-402-7864 Stephanie.Selmer@health.ny.gov
Remedial Party Attorney Knauf Shaw Linda Shaw	 585-546-8430 LShaw@nyenvlaw.com
General Emergencies	911
NYC Police	911
NYC Fire Department	911
NYC Department of Health	212-676-2400
Woodhull Medical Center (Hospital)	718-963-8000
Poison Control	800-222-1222
National Response Center	800-424-8802
NYSDEC Spills Hotline	800-457-7362

APPENDIX C
Excavation Work Plan

APPENDIX C – EXCAVATION WORK PLAN (EWP)

E-1 NOTIFICATION

At least 15 days prior to the start of any activity that is anticipated to encounter remaining contamination, the site owner or their representative will notify the NYSDEC. Table 1 includes contact information for the above notification. The information on this table will be updated as necessary to provide accurate contact information. A full listing of site-related contact information is provided in Attachment A.

Table 1: Notifications*

Mandy Yau	718-482-4897, mandy.yau@dec.ny.gov
Jane O'Connell	718-482-4599, Jane.Oconnell@dec.ny.gov
Kelly Lewandowski	518-402-9581, Kelly.Lewandowski@dec.ny.gov

* Note: Notifications are subject to change and will be updated as necessary.

This notification will include:

- A detailed description of the work to be performed, including the location and areal extent of excavation, plans/drawings for site re-grading, intrusive elements or utilities to be installed below the soil cover, estimated volumes of contaminated soil to be excavated and any work that may impact an engineering control;
- A summary of environmental conditions anticipated to be encountered in the work areas, including the nature and concentration levels of contaminants of concern, potential presence of grossly contaminated media, and plans for any pre-construction sampling;
- A schedule for the work, detailing the start and completion of all intrusive work;
- A summary of the applicable components of this EWP;
- A statement that the work will be performed in compliance with this EWP and 29 CFR 1910.120;
- A copy of the contractor's health and safety plan (HASP), in electronic format, if it differs from the HASP provided in Appendix F of this SMP;
- Identification of disposal facilities for potential waste streams; and
- Identification of sources of any anticipated backfill, along with all required chemical testing results.

E-2 SOIL SCREENING METHODS

Visual, olfactory and instrument-based (e.g. photoionization detector) soil screening will be performed by a qualified environmental professional during all excavations into known or potentially contaminated material (remaining contamination). Soil screening will be performed when invasive work is done and will include all excavation and invasive work performed during development, such as excavations for foundations and utility work, after issuance of the COC.

Soils will be segregated based on previous environmental data and screening results into material that requires off-site disposal and material that requires testing to determine if the material can be reused on-site as soil beneath a cover or if the material can be used as cover soil.

Further discussion of off-site disposal of materials and on-site reuse is provided in Section E-5 of this Appendix.

E-3 SOIL STAGING METHODS

Soil stockpiles will be continuously encircled with a berm and/or silt fence. Hay bales will be used as needed near catch basins, surface waters and other discharge points.

Stockpiles will be kept covered at all times with appropriately anchored tarps. Stockpiles will be routinely inspected and damaged tarp covers will be promptly replaced.

Stockpiles will be inspected at a minimum once each week and after every storm event. Results of inspections will be recorded in a logbook and maintained at the site and available for inspection by the NYSDEC.

E-4 MATERIALS EXCAVATION AND LOAD-OUT

A qualified environmental professional or person under their supervision will oversee all invasive work and the excavation and load-out of all excavated material.

The owner of the property and remedial party (if applicable) and its contractors are responsible for safe execution of all invasive and other work performed under this Plan.

The presence of utilities and easements on the site will be investigated by the qualified environmental professional. It will be determined whether a risk or impediment to the planned work under this SMP is posed by utilities or easements on the site.

Loaded vehicles leaving the site will be appropriately lined, tarped, securely covered, manifested, and placarded in accordance with appropriate Federal, State, local, and NYSDOT requirements (and all other applicable transportation requirements).

A truck wash will be operated on-site, as appropriate. The qualified environmental professional will be responsible for ensuring that all outbound trucks will be washed at the truck wash before leaving the site until the activities performed under this section are complete Truck wash waters will be collected and disposed of off-site in an appropriate manner.

Locations where vehicles enter or exit the site shall be inspected daily for evidence of off-site soil tracking.

The qualified environmental professional will be responsible for ensuring that all egress points for truck and equipment transport from the site are clean of dirt and other materials derived from the site during intrusive excavation activities. Cleaning of the adjacent streets will be performed as needed to maintain a clean condition with respect to site-derived materials.

E-5 MATERIALS TRANSPORT OFF-SITE

All transport of materials will be performed by licensed haulers in accordance with appropriate local, State, and Federal regulations, including 6 NYCRR Part 364. Haulers will be appropriately licensed and trucks properly placarded.

Material transported by trucks exiting the site will be secured with tight-fitting covers. Loose-fitting canvas-type truck covers will be prohibited. If loads contain wet material capable of producing free liquid, truck liners will be used.

Truck transport routes are as follows (see **Figure 1C**):

- ENTERING SITE - from the Brooklyn-Queens Expressway heading east; take the Exit 30 and turn right onto Flushing Avenue, heading east. Turn left on Union Avenue, and the Site entrance will be on the left between Wallabout Street and Walton Street.
- EXITING SITE – Turn left (south) onto Union Avenue heading toward Flushing Avenue. Turn right (west) onto Flushing Avenue. Cross under the Brooklyn-Queens Expressway, and turn onto Williamsburg Street West and continue on to the on-ramp (bearing left) to the Brooklyn-Queens Expressway.

All trucks loaded with site materials will exit the vicinity of the site using only these approved truck routes. This is the most appropriate route and takes into account: (a) limiting transport through residential areas and past sensitive sites; (b) use of city mapped truck routes; (c) prohibiting off-site queuing of trucks entering the facility; (d) limiting total distance to major highways; (e) promoting safety in access to highways; and (f) overall safety in transport.

Trucks will be prohibited from stopping and idling in the neighborhood outside the project site.

Egress points for truck and equipment transport from the site will be kept clean of dirt and other materials during site remediation and development.

Queuing of trucks will be performed on-site in order to minimize off-site disturbance. Off-site queuing will be prohibited.

E-6 MATERIALS DISPOSAL OFF-SITE

All material excavated and removed from the site will be treated as contaminated and regulated material and will be transported and disposed in accordance with all local, State (including 6NYCRR Part 360) and Federal regulations. If disposal of material from this site is proposed for unregulated off-site disposal (i.e. clean soil removed for development purposes), a formal request with an associated plan will be made to the NYSDEC. Unregulated off-site management of materials from this site will not occur without formal NYSDEC approval.

Off-site disposal locations for excavated soils will be identified in the pre-excavation notification. This will include estimated quantities and a breakdown by class of disposal facility if appropriate, i.e. hazardous waste disposal facility, solid waste landfill, petroleum treatment facility, C/D recycling facility, etc. Actual disposal quantities and associated documentation will be reported to the NYSDEC in the Periodic Review Report. This documentation will include: waste profiles, test results, facility acceptance letters, manifests, bills of lading and facility receipts.

Non-hazardous historic fill and contaminated soils taken off-site will be handled, at minimum, as a Municipal Solid Waste per 6NYCRR Part 360-1.2. Material that does not meet Unrestricted SCOs is prohibited from being taken to a New York State recycling facility (6NYCRR Part 360-16 Registration Facility).

E-7 MATERIALS REUSE ON-SITE

Chemical criteria for on-site reuse of material have been approved by NYSDEC and are listed in **Table 1C**. The qualified environmental professional will ensure that procedures defined for materials reuse in this SMP are followed and that unacceptable material does not remain on-site. Contaminated on-site material, including historic fill and contaminated soil, that is acceptable for reuse on-site will be placed below the demarcation layer or impervious surface, and will not be reused within a cover soil layer, within landscaping berms, or as backfill for subsurface utility lines. This soil will undergo a testing program to confirm that it meets Restricted Residential and Protection of Groundwater SCOs prior to unregulated disposal or reuse on-site. Confirmation testing of clean soils will be in accordance with DER-10 as follows:

Contaminant	VOCs	SVOCs, Inorganics & PCBs/Pesticides	
Soil Quantity (cubic yards)	**Discrete Samples**	**Composite**	**Discrete Samples/Composite**
0-50	1	1	Each composite sample for analysis is created from 3-5 discrete samples from representative locations in the fill.
50-100	2	1	
100-200	3	1	
200-300	4	1	
300-400	4	2	
400-500	5	2	
500-800	6	2	
800-1000	7	2	
1000	Add an additional 2 VOC and 1 composite for each additional 1000 Cubic yards or consult with DER		

Any demolition material proposed for reuse on-site will be sampled for asbestos and the results will be reported to the NYSDEC for acceptance. Concrete crushing or processing on-site will not be performed without prior NYSDEC approval. Organic matter (wood, roots, stumps, etc.) or other solid waste derived from clearing and grubbing of the site will not be reused on-site.

E-8 FLUIDS MANAGEMENT

All liquids to be removed from the site, including but not limited to, excavation dewatering, decontamination waters and groundwater monitoring well purge and development waters, will be handled, transported and disposed in accordance with applicable local, State, and Federal regulations. Dewatering, purge and development fluids will not be recharged back to the land surface or subsurface of the site, and will be managed off-site, unless prior approval is obtained from NYSDEC.

Discharge of water generated during large-scale construction activities to surface waters (i.e. a local pond, stream or river) will be performed under a SPDES permit.

E-9 COVER SYSTEM RESTORATION

After the completion of soil removal and any other invasive activities the cover system will be restored in a manner that complies with the decision document. The cover system is comprised of:

- Easement - Concrete stairs for MTA stairs to subway along Union Avenue;

- Building C - 4 inch thick concrete slab; and
- Building D - 4 inch thick concrete slab.

If the type of cover system changes from that which exists prior to the excavation, this will constitute a modification of the cover element of the remedy and the upper surface of the remaining contamination. A PE signed/stamped As-Built composite cover drawing depicting the modified surface will be included in the subsequent Periodic Review Report and in an updated SMP.

E-10 BACKFILL FROM OFF-SITE SOURCES

All materials proposed for import onto the site will be approved by the qualified environmental professional and will be in compliance with provisions in this SMP prior to receipt at the site. A Request to Import/Reuse Fill or Soil form, which can be found at http://www.dec.ny.gov/regulations/67386.html, will be prepared and submitted to the NYSDEC project manager allowing a minimum of 5 business days for review.

Material from industrial sites, spill sites, or other environmental remediation sites or potentially contaminated sites will not be imported to the site.

All imported soils will meet the backfill and cover soil quality standards established in 6NYCRR 375-6.7(d). Based on an evaluation of the land use, protection of groundwater and protection of ecological resources criteria, the resulting soil quality standards are Restricted Residential SCOs and Protection of Groundwater SCOs as listed in Table 1C. Soils that meet 'exempt' fill requirements under 6 NYCRR Part 360, but do not meet backfill or cover soil objectives for this site, will not be imported onto the site without prior approval by NYSDEC. Solid waste will not be imported onto the site.

Trucks entering the site with imported soils will be securely covered with tight fitting covers. Imported soils will be stockpiled separately from excavated materials and covered to prevent dust releases.

E-11 STORMWATER POLLUTION PREVENTION

Barriers such as silt fencing or hay bales will be installed around the entire perimeter of the remedial construction area to prevent the surface runoff of sediments off-site. All on-site drainage structures such as surface drains, catch basins etc. connected to the municipal sewer system will be similarly protected with barriers to prevent sediments from entering the structure. Results of inspections will be recorded in a logbook and maintained at the site and available for inspection by the NYSDEC. All necessary repairs shall be made immediately. Accumulated sediments will be removed as required to keep the barrier and hay bale check functional. All undercutting or erosion of the silt fence toe anchor shall be repaired immediately with appropriate backfill materials. Manufacturer's recommendations will be followed for replacing silt fencing damaged due to weathering.

Erosion and sediment control measures identified in the SMP shall be observed to ensure that they are operating correctly. Where discharge locations or points are accessible, they shall be inspected to ascertain whether erosion control measures are effective in preventing significant impacts to receiving waters. Silt fencing or hay bales will be installed around the entire perimeter of the construction area.

E-12 EXCAVATION CONTINGENCY PLAN

If underground tanks or other previously unidentified contaminant sources are found during post-remedial subsurface excavations or development related construction, excavation activities will be suspended until sufficient equipment is mobilized to address the condition.

Sampling will be performed on product, sediment and surrounding soils, etc. as necessary to determine the nature of the material and proper disposal method. Chemical analysis will be performed for a full list of analytes (TAL metals; TCL volatiles and semi-volatiles, TCL pesticides and PCBs) and emerging contaminants, unless the site history and previous sampling results provide a sufficient justification to limit the list of analytes. In this case, a reduced list of analytes will be proposed to the NYSDEC for approval prior to sampling.

Identification of unknown or unexpected contaminated media identified by screening during invasive site work will be promptly communicated by phone to NYSDEC's Project Manager. Reportable quantities of petroleum product will also be reported to the NYSDEC spills hotline. These findings will be also included in the Periodic Review Report.

E-13 COMMUNITY AIR MONITORING PLAN

The CAMP provides measures for protection for the downwind community (i.e., off-site receptors including residences, businesses, and on-site workers not directly involved in the remedial work) from potential airborne contaminant releases resulting from remedial activities at construction sites.

The action levels specified herein require increased monitoring, corrective actions to abate emissions, and/or work shutdown. Additionally, the CAMP helps to confirm that the remedial work did not spread contamination off-site through the air. The primary concerns for this site are nuisance odors and dust particulates.

A figure showing the location of air sampling stations based on generally prevailing wind conditions will be provided prior to implementing any activities under this SMP. These locations will be adjusted on a daily or more frequent basis based on actual wind directions to provide an upwind and at least two downwind monitoring stations.

Exceedances of action levels listed in the CAMP will be reported to NYSDEC and NYSDOH Project Managers.

E-14 ODOR CONTROL PLAN

This odor control plan is capable of controlling emissions of nuisance odors off-site and on-site. Odor control methods that may be used on a routine basis may include limiting the excavation size, backfilling the excavation, spraying water onto the excavation faces and equipment, covering soil stockpiles with 6-mil plastic sheeting, hauling waste materials in properly tarped containers; and/or applying vapor suppressant foam (BioSolve, Pinkwater or similar). If nuisance odors are identified at the site boundary, or if odor complaints are received, work will be halted and the source of odors will be identified and corrected. Work will not resume until all nuisance odors have been abated. NYSDEC and NYSDOH will

be notified of all odor events and of any other complaints about the project. Implementation of all odor controls, including the halt of work, is the responsibility of the remedial party's Remediation Engineer, and any measures that are implemented will be discussed in the Periodic Review Report.

All necessary means will be employed to prevent on- and off-site nuisances. At a minimum, these measures will include: (a) limiting the area of open excavations and size of soil stockpiles; (b) shrouding open excavations with tarps and other covers; and (c) using foams to cover exposed odorous soils; If odors develop and cannot be otherwise controlled, additional means to eliminate odor nuisances will include: (d) direct load-out of soils to trucks for off-site disposal; (e) use of chemical odorants in spray or misting systems; and, (f) use of staff to monitor odors in surrounding neighborhoods.

If nuisance odors develop during intrusive work that cannot be corrected, or where the control of nuisance odors cannot otherwise be achieved due to on-site conditions or close proximity to sensitive receptors, odor control will be achieved by sheltering the excavation and handling areas in a temporary containment structure equipped with appropriate air venting/filtering systems.

E-15 DUST CONTROL PLAN

A dust suppression plan that addresses dust management during invasive on-site work will include, at a minimum, the items listed below:

- Dust suppression will be achieved though the use of a dedicated on-site water truck for road wetting. The truck will be equipped with a water cannon capable of spraying water directly onto off-road areas including excavations and stockpiles.
- Clearing and grubbing of larger sites will be done in stages to limit the area of exposed, unvegetated soils vulnerable to dust production.
- Gravel will be used on roadways to provide a clean and dust-free road surface.
- On-site roads will be limited in total area to minimize the area required for water truck sprinkling.

E-16 OTHER NUISANCES

A plan for rodent control will be developed and utilized by the contractor prior to and during site clearing and site grubbing, and during all remedial work. A plan will be developed and utilized by the contractor for all remedial work to ensure compliance with local noise control ordinances.

RESPONSIBILITIES of
OWNER and REMEDIAL PARTY

Responsibilities

The responsibilities for implementing the Site Management Plan ("SMP") for the Former Pfizer Site A site (the "Site"), number C224284, are divided between the site owner(s) and a Remedial Party, as defined below. The owner(s) is/are currently listed as:

Harrison Realty LLC
505 Flushing Avenue, Unit 1D
Brooklyn, NY 11205

Solely for the purposes of this document and based upon the facts related to a particular site and the remedial program being carried out, the term Remedial Party ("RP") refers to any of the following: certificate of completion holder, Participant applicant, responsible party, and, in the event the New York State Department of Environmental Conservation ("NYSDEC") is carrying out remediation or site management, the NYSDEC and/or an agent acting on its behalf. The RP is:

Harrison Realty LLC
505 Flushing Avenue, Unit 1D
Brooklyn, NY 11205

Harrison Realty II LLC
505 Flushing Avenue, Unit 1D
Brooklyn, NY 11205

Nothing on this page shall supersede the provisions of an Environmental Easement, Consent Order, Consent Decree, Brownfield Cleanup Agreement and subsequent amendments, or other legally binding document that affects rights and obligations relating to the site.

Site Owner's Responsibilities:

1) The owner shall follow the provisions of the SMP as they relate to future construction and excavation at the site.
2) In accordance with a periodic time frame determined by the NYSDEC, the owner shall periodically certify, in writing, that all Institutional Controls set forth in the Environmental Easement remain in place and continue to be complied with. The owner

shall provide a written certification to the RP, upon the RP's request, in order to allow the RP to include the certification in the site's Periodic Review Report (PRR) certification to the NYSDEC.

3) The owner remains bound by the Environmental Easement and shall submit, upon request by the NYSDEC, a written certification that the Environmental Easement is still in place and has been complied with.
4) The owner shall grant access to the site to the RP and the NYSDEC and its agents for the purposes of performing activities required under the SMP and assuring compliance with the SMP.
5) The owner is responsible for assuring the security of the remedial components located on its property to the best of its ability. In the event that damage to the remedial components or vandalism is evident, the owner shall notify the site's RP and the NYSDEC in accordance with the timeframes indicated in Section 1.3-Notifications.
6) In the event some action or inaction by the owner adversely impacts the site, the owner must notify the site's RP and the NYSDEC in accordance with the time frame indicated in Section 1.3 - Notifications and (ii) coordinate the performance of necessary corrective actions with the RP.
7) The owner must notify the RP and the NYSDEC of any change in ownership of the site property (identifying the tax map numbers in any correspondence) and provide contact information for the new owner of the site property/ies. 6 NYCRR Part contains notification requirements applicable to any construction or activity changes and changes in ownership. Among the notification requirements is the following: Sixty days prior written notification must be made to the NYSDEC. Notification is to be submitted to the NYSDEC Division of Environmental Remediation's Site Control Section. Notification requirements for a change in use are detailed in Section 1.3 of the SMP. A 60-Day Advance Notification Form and Instructions are found at http://www.dec.ny.gov/chemical/76250.html.
8) In accordance with the tenant notification law, within 15 days of receipt, the owner must supply a copy of any vapor intrusion data, that is produced with respect to structures and that exceeds NYSDOH or OSHA guidelines on the site, whether produced by the NYSDEC, RP, or owner, to the tenants on the property. The owner

must otherwise comply with the tenant and occupant notification provisions of Environmental Conservation Law Article 27, Title 24.

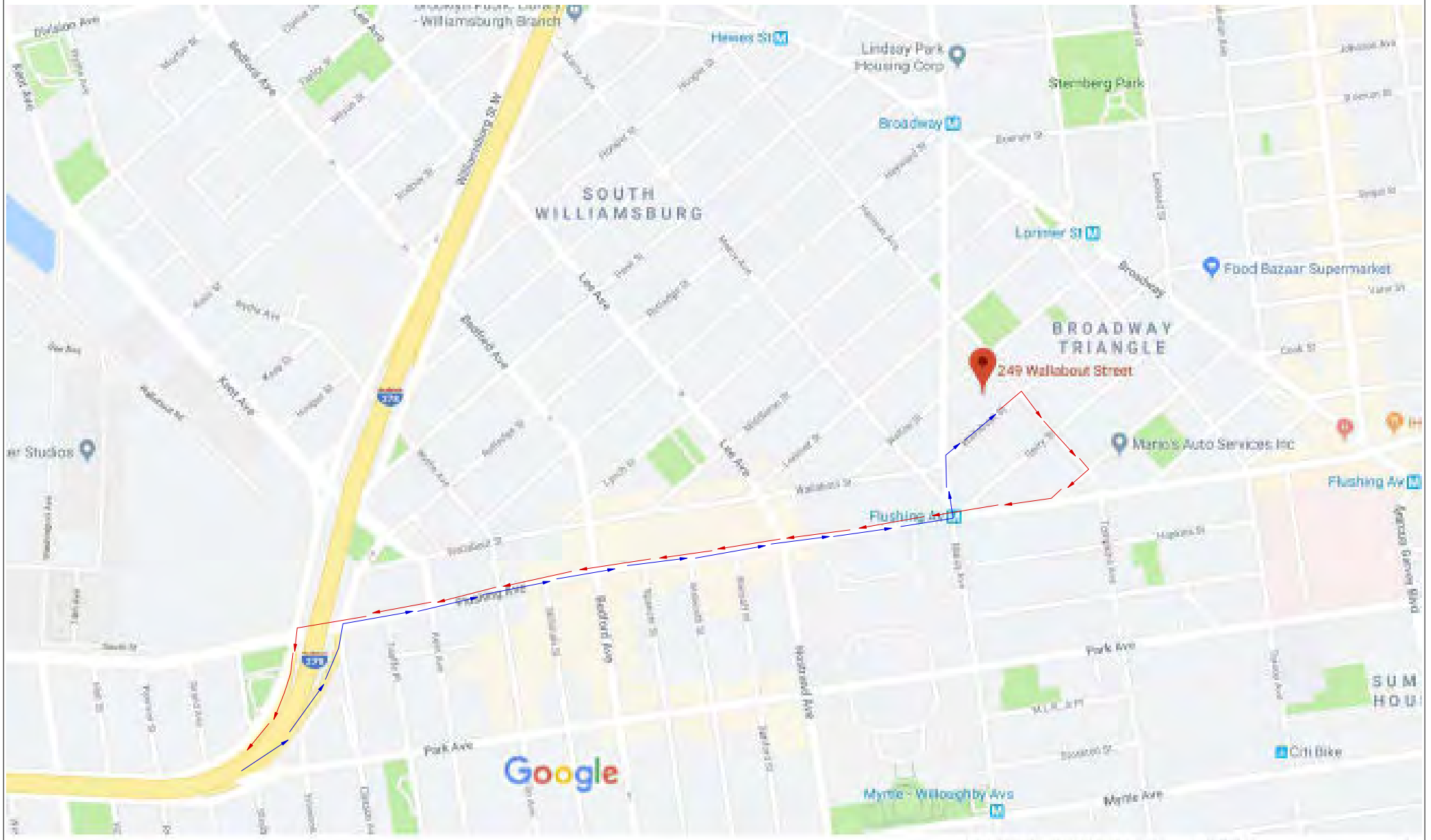
Remedial Party Responsibilities

1) The RP must follow the SMP provisions regarding any construction and/or excavation it undertakes at the site.
2) The RP shall report to the NYSDEC all activities required for remediation, operation, maintenance, monitoring, and reporting. Such reporting includes, but is not limited to, periodic review reports and certifications, electronic data deliverables, corrective action work plans and reports, and updated SMPs.
3) Before accessing the site property to undertake a specific activity, the RP shall provide the owner advance notification that shall include an explanation of the work expected to be completed. The RP shall provide to (i) the owner, upon the owner's request, (ii) the NYSDEC, and (iii) other entities, if required by the SMP, a copy of any data generated during the site visit and/or any final report produced.
4) If the NYSDEC determines that an update of the SMP is necessary, the RP shall update the SMP and obtain final approval from the NYSDEC. Within 5 business days after NYSDEC approval, the RP shall submit a copy of the approved SMP to the owner(s).
5) The RP shall notify the NYSDEC and the owner of any changes in RP ownership and/or control and of any changes in the party/entity responsible for the operation, maintenance, and monitoring of and reporting with respect to any remedial system (Engineering Controls). The RP shall provide contact information for the new party/entity. Such activity constitutes a Change of Use pursuant to 375-1.11(d) and requires 60-days prior notice to the NYSDEC. A 60-Day Advance Notification Form and Instructions are found at http://www.dec.ny.gov/chemical/76250.html .
6) The RP shall notify the NYSDEC of any damage to or modification of the systems as required under Section 1.3 - Notifications of the SMP.
7) Prior to a change in use that impacts the remedial system or requirements and/or responsibilities for implementing the SMP, the RP shall submit to the NYSDEC for approval an amended SMP.

8) Any change in use, change in ownership, change in site classification (*e.g.*, delisting), reduction or expansion of remediation, and other significant changes related to the site may result in a change in responsibilities and, therefore, necessitate an update to the SMP and/or updated legal documents. The RP shall contact the Department to discuss the need to update such documents.

Change in RP ownership and/or control and/or site ownership does not affect the RP's obligations with respect to the site unless a legally binding document executed by the NYSDEC releases the RP of its obligations.

Future site owners and RPs and their successors and assigns are required to carry out the activities set forth above.



Key:

Inbound Truck Route

Outbound Truck Route

AMC Engineering
1836 42nd Street
Astoria, NY 11105

Figure No.
1C

Site Name: FORMER PFIZER SITE A

Site Address: 243-271 WALLABOUT STREET, BROOKLYN, NY

Drawing Title: TRUCK ROUTE MAP - EXCAVATION WORK PLAN

APPENDIX D

Site Management Forms

SITE INSPECTION CHECKLIST

Site Inspection Checklist - Cover System
BUILDING C - 58 Union Avenue, Brooklyn, NY - Lot 37
BUILDING D - 34 Union Avenue, Brooklyn, NY - Lot 122

Date: _____ Time: _____

Inspector Name/Organization: _____

Visual Inspection of BUILDING C

Inspect concrete/pavement for cracks, perforations and patching

Describe General Condition of Concrete _____

_____

Describe any Cracks or New Penetrations _____

_____

Describe any Patching _____

_____

_____

Visual Inspection of Area of BUILDING D

Inspect concrete/pavement for cracks, perforations and patching

Describe General Condition of Concrete _____

_____

Describe any Cracks or New Penetrations _____

_____

Describe any Patching _____

_____

Repairs Needed and / or Maintenance at this time?

_____

_____

_____

_____

Signature: _____ Date: _____

APPENDIX E

Community Air Monitoring Plan

COMMUNITY AIR MONITORING PLAN

FORMER PFIZER SITE A

34-58 UNION AVENUE
BROOKLYN NEW YORK

JULY 2021

FORMER PFIZER SITE A

COMMUNITY AIR MONITORING PLAN
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APPENDICES

Appendix A Action Limit Report

1.0 INTRODUCTION

This Community Air Monitoring Plan (CAMP) has been prepared for use during activities that disturb the engineered composite cover installed across the Site and during all excavation and other soil disturbing activities. The CAMP provides measures for protection for the on-site workers and building occupants and downwind community (i.e., off-site receptors including residences, businesses, and on-site workers not directly involved in the investigation activities) from potential airborne contaminant releases resulting from investigative activities at the site.

Compliance with this CAMP is required during all activities associated with drilling and sampling activities that have the potential to generate airborne particulate matter and volatile organic compounds (VOCs). These activities include drilling and soil and groundwater sampling. This CAMP has been prepared to ensure that investigation activities do not adversely affect passersby, residents, or workers in the area immediately surrounding the Site and to preclude or minimize airborne migration of investigation-related contaminants to off-site areas.

1.1 Regulatory Requirements

This CAMP was established in accordance with the following requirements:

- New York State Department of Health's (NYSDOH) Generic Community Air Monitoring Plan as presented in DER-10 Technical Guidance for Site Investigation and Remediation (NYSDEC May 3, 2010). This guidance specifies that a community air-monitoring program shall be implemented to protect the surrounding community and to confirm that the work does not spread contamination off-site through the air;

- New York State Department of Environmental Conservation (NYSDEC) Technical and Guidance Memorandum (TAGM) #4031 - Fugitive Dust Suppression and Particulate Monitoring Program at Inactive Hazardous Waste Sites: This guidance provides a basis for developing and implementing a fugitive dust suppression and particulate monitoring program as an element of a hazardous waste site's health and safety program.

2.0 AIR MONITORING

Volatile organic compounds (VOCs) are the constituents of concern at the Site. The appropriate method to monitor air for these constituents during remediation activities is through real-time VOC and air particulate (dust) monitoring.

2.1 Meteorological Data

At a minimum, wind direction will be evaluated at the start of each workday, noon of each workday, and the end of each workday. These readings will be utilized to position the monitoring equipment in appropriate upwind and downwind locations.

2.2 Community Air Monitoring Requirements

To establish ambient air background concentrations, air will be monitored at several locations around the site perimeter before activities begin. These points will be monitored periodically in series during the site work. When the drilling area is within 20 feet of potentially exposed populations or occupied structures, the perimeter monitoring points will be located to represent the nearest potentially exposed individuals at the downwind location.

Fugitive respirable dust will be monitored using a MiniRam Model PDM-3 aerosol monitor (or equivalent). Air will be monitored for VOCs with a portable Ionscience 3000 photoionization detector (PID), or equivalent. All air monitoring data will be documented in a site log book by the designated site safety officer. The site safety officer or delegate must ensure that air monitoring instruments are calibrated and maintained in accordance with manufacturer's specifications. All instruments will be zeroed daily and checked for accuracy. A daily log will be kept. If additional monitoring is required, the protocols will be developed and appended to this plan

3.0 VOC MONITORING, RESPONSE LEVELS, AND ACTIONS

Volatile organic compounds (VOCs) will be monitored within the work area and at the downwind perimeter of the immediate work area (i.e., the exclusion zone) on a continuous basis or as otherwise specified. Upwind concentrations should be measured at the start of each workday and periodically thereafter to establish background conditions. The monitoring work should be performed using equipment appropriate to measure the types of contaminants known or suspected to be present.

The equipment should be calibrated at least daily for the contaminant(s) of concern or for an appropriate surrogate. The equipment should be capable of calculating 15-minute running average concentrations, which will be compared to the levels specified below.

- If the ambient air concentration of total organic vapors at the downwind perimeter of the work area or exclusion zone exceeds 5 parts per million (ppm) above background for the 15-minute average, work activities must be temporarily halted and monitoring continued. If the total organic vapor level readily decreases (per instantaneous readings) below 5 ppm over background, work activities can resume with continued monitoring.

- If total organic vapor levels at the downwind perimeter of the work area or exclusion zone persist at levels in excess of 5 ppm over background but less than 25 ppm, work activities must be halted, the source of vapors identified, corrective actions taken to abate emissions, and monitoring continued. After these steps, work activities can resume provided that the total organic vapor level 200 feet downwind of the exclusion zone or half the distance to the nearest potential receptor or residential/commercial structure, whichever is less - but in no case less than 20 feet, is below 5 ppm over background for the 15-minute average.

- If the organic vapor level is above 25 ppm at the perimeter of the work area, activities must be shutdown. All 15-minute readings must be recorded and be available for State (DEC and DOH) personnel to review. Instantaneous readings, if any, used for decision purposes should also be recorded.

All readings will be recorded and made available for NYSDEC and NYSDOH personnel to review. If an exceedance of the Action Limits occurs, an Action Limit Report, as shown in Appendix A, will be completed.

3.1 Potential Corrective Measures and VOC Suppression Techniques

If the 15-minute integrated VOC level at the downwind location persists at a concentration that exceeds the upwind level by more than 5 ppm but less than 25 ppm during remediation activities, then vapor suppression techniques will be employed. The following techniques, or others, may be employed to mitigate the generation and migration of fugitive organic vapors:

- Collection of purge water in covered containers;
- storage of excess sample and drill cuttings in drums or covering with plastic

4.0 PARTICULATE MONITORING

Air monitoring for particulates (i.e., dust) will be performed continuously during drilling activities using both air monitoring equipment and visual observation at upwind and downwind locations. Monitoring equipment capable of measuring particulate matter smaller than 10 microns (PM_{10}) and capable of integrating (averaging) over periods of 15 minutes or less will be set up at upwind (i.e., background) and downwind locations, at heights approximately four to five feet above land surface (i.e., the breathing zone). Monitoring equipment will be MIE Data Ram monitors, or equivalent. The audible alarm on the particulate monitoring device will be set at 90 micrograms per cubic meter ($\mu g/m_3$). This setting will allow proactive evaluation of worksite conditions prior to reaching the action level of 100 $\mu g/m^3$ above background. The monitors will be calibrated at least once per day prior to work activities and recalibrated as needed thereafter. In addition, fugitive dust migration will be visually assessed during all intrusive work activities.

The following summarizes particulate action levels and the appropriate responses:

- If the downwind PM-10 particulate level is 100 $\mu g/m^3$ greater than background (upwind perimeter) for the 15-minute period, or if airborne dust is observed leaving the work area, then dust suppression techniques must be employed. Work may continue with dust suppression techniques provided that downwind PM-10 particulate levels do not exceed 150 $\mu g/m^3$ above the upwind level and provided that no visible dust is migrating from the work area.

- If, after implementation of dust suppression techniques, downwind PM-10 particulate levels are greater than 150 $\mu g/m^3$ above the upwind level, work must be stopped and an evaluation of activities initiated. Work can resume provided that dust suppression measures (as described in Section 2.3.1 below) and other controls are successful in reducing the downwind PM-10 particulate concentration to within 150 $\mu g/m^3$ of the upwind level and in preventing visible dust migration.

All readings will be recorded and be available for NYSDEC and NYSDOH personnel to review. If an exceedance of the Action Limits occurs, an Action Limit Report as shown in **Appendix A** will be completed.

4.1 Potential Particulate Suppression Techniques

If the integrated particulate level at the downwind location exceeds the upwind level by more than 100 $\mu g/m^3$ at any time during drilling activities, then dust suppression techniques will be employed. The following techniques, or others, may be employed to mitigate the generation and migration of fugitive dusts:

- Placement of drill cuttings in drums or covering stockpiles with plastic;
- Misting of the drilling area with a fine water spray from a hand-held spray bottle

Work may continue with dust suppression techniques provided that downwind PM_{10} levels are not more than 150 $\mu g/m^3$ greater than the upwind levels.

There may also be situations where the dust is generated by drilling activities and migrates to downwind locations, but is not detected by the monitoring equipment at or above the action level. Therefore, if dust is observed leaving the working area, dust suppression techniques such as those listed above will be employed.

If dust suppression techniques do not lower particulates to below 150 $\mu g/m^3$, or visible dust persists, work will be suspended until appropriate corrective measures are identified and implemented to remedy the situation.

All air monitoring readings will be recorded in the field logbook and will be available for the NYSDEC and NYSDOH personnel to review.

5.0 DATA QUALITY ASSURANCE

5.1 Calibration

Instrument calibration shall be documented on instrument calibration and maintenance sheets or in the designated field logbook. All instruments shall be calibrated as required by the manufacturer. Calibration checks may be used during the day to confirm instrument accuracy. Duplicate readings may be taken to confirm individual instrument response.

5.2 Operations

All instruments shall be operated in accordance with the manufacturer's specifications. Manufacturers' literature, including an operations manual for each piece of monitoring equipment will be maintained on-site by the SSO for reference.

5.3 Data Review

The SSO will interpret all monitoring data based the established criteria and his/her professional judgment. The SSO shall review the data with the PM to evaluate the potential for worker exposure, upgrades/downgrades in level of protection, comparison to direct reading instrumentation and changes in the integrated monitoring strategy.

Monitoring and sampling data, along with all sample documentation will be periodically reviewed by the PM.

6.0 RECORDS AND REPORTING

All air readings must be recorded on daily air monitoring log sheets and made available for review by personnel from NYSDEC and NYSDOH.

1808 MIDDLE COUNTRY ROAD
RIDGE, NY 11961
PHONE 631.504.6000
FAX 631.924.2870

Daily Air Monitoring Log

Project Name: Former Pfizer Site A Date: _____

Project Location: 34-58 Union Avenue, Brooklyn, NY BCP Site No. C2242284

Temperature:_____ Wind Speed:_____ Wind Direction:_____

Background Data: Upwind - PID _____ppm Dust Meter 1 - _____mg/m^3

Downwind - PID _____ppm Dust Meter 2 - _____mg/m^3

Time	Work Zone		Upwind		Downwind	
	PID - ppm	Dust - mg/m^3	PID - ppm	Dust - mg/m^3	PID - ppm	Dust - mg/m^3

Activities Performed:

APPENDIX F
Health and Safety Plan

FORMER PFIZER SITE A

243-271 WALLABOUT STREET
BROOKLYN, NEW YORK
Block 2249, Lots 23, 37, 41, and 122

CONSTRUCTION HEALTH AND SAFETY PLAN

JULY 2021

Prepared By:

EBC

ENVIRONMENTAL BUSINESS CONSULTANTS

1808 Middle Country Road
Ridge, NY 11961

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STATEMENT OF COMMITMENT

This Construction Health and Safety Plan (CHASP) has been prepared to ensure that workers are not exposed to risks from hazardous materials during the Remedial Actions at the Site.

This CHASP, which applies to persons present at the site actually or potentially exposed to hazardous materials, describes emergency response procedures for actual and potential chemical hazards. This CHASP is also intended to inform and guide personnel entering the work area or exclusion zone. Persons are to acknowledge that they understand the potential hazards and the contents of this Health and Safety policy by signing off on receipt of their individual copy of the document. Contractors and suppliers are retained as independent contractors and are responsible for ensuring the health and safety of their own employees.

1.0 INTRODUCTION AND SITE ENTRY REQUIREMENTS

This document describes the health and safety guidelines developed by Environmental Business Consultants (EBC) for the planned Remedial Action at the Site to protect on-site personnel, visitors, and the public from physical harm and exposure to hazardous materials or wastes during remedial activities. In accordance with the Occupational Safety and Health Administration (OSHA) 29 CFR Part 1910.120 Hazardous Waste Operations and Emergency Response Final rule, this CHASP, including the attachments, addresses safety and health hazards related to excavation, loading and other soil disturbance activities and is based on the best information available. The CHASP may be revised by EBC at the request of the owner and/or a regulatory agency upon receipt of new information regarding site conditions. Changes will be documented by written amendments signed by EBC's project manager, site safety officer and/or the EBC health and safety consultant.

Work performed under the remedial action will not involve confined space entry since the excavations will be large and sloped back in accordance with NYCDOB shoring requirements and will not have a limited or restricted means for entry or exit.

1.1 Training Requirements

Personnel entering the exclusion zone or decontamination zone are required to be certified in health and safety practices for hazardous waste site operations as specified in the Federal OSHA Regulations CFR 1910.120e (revised 3/6/90).

Paragraph (e - 3) of the above referenced regulations requires that all on-site management personnel directly responsible for or who supervise employees engaged in hazardous waste operations, must initially receive 8 hours of supervisor training related to managing hazardous waste work.

Paragraph (e - 8) of the above referenced regulations requires that workers and supervisors receive 8 hours of refresher training annually on the items specified in Paragraph (e-1) and/or (e-3).

Additionally, all on-site personnel must receive adequate site-specific training in the form of an on-site Health and Safety briefing prior to participating in field work with emphasis on the following:

- Protection of the adjacent community from hazardous vapors and / or dust which may be released during intrusive activities.
- Identification of chemicals known or suspected to be present on-site and the health effects and hazards of those substances.
- The need for vigilance in personnel protection, and the importance of attention to proper use, fit and care of personnel protective equipment.
- Decontamination procedures.
- Site control including work zones, access and security.
- Hazards and protection against heat or cold.
- The proper observance of daily health and safety practices, such as entry and exit of work zones and site. Proper hygiene during lunch, break, etc.

EBC
Environmental Business Consultants
1808 Middle Country Road
Ridge, NY 11961
Phone 631.504.6000
Fax 631.924.2870

- Emergency procedures to be followed in case of fire, explosion and sudden release of hazardous gases.

Health and Safety meetings will be conducted on a daily basis and will cover protective clothing and other equipment to be used that day, potential and chemical and physical hazards, emergency procedures, and conditions and activities from the previous day.

1.2 Medical Monitoring Requirements

Field personnel and visitors entering the exclusion zone or decontamination zone must have completed appropriate medical monitoring required under OSHA 29 CFR 1910.120(f) if respirators or other breathing related PPE is needed. Medical monitoring enables a physician to monitor each employee's health, physical condition, and his fitness to wear respiratory protective equipment and carry out on-site tasks.

1.3 Site Safety Plan Acceptance, Acknowledgment and Amendments

The project superintendent and the site safety officer are responsible for informing personnel (EBC employees and/or owner or owners representatives) entering the work area of the contents of this plan and ensuring that each person signs the safety plan acknowledging the on-site hazards and procedures required to minimize exposure to adverse effects of these hazards. A copy of the Acknowledgement Form is included in **Appendix A**.

Site conditions may warrant an amendment to the CHASP. Amendments to the CHASP are acknowledged by completing forms included in **Appendix B**.

1.4 Key Personnel - Roles and Responsibilities

Personnel responsible for implementing this Health and Safety Plan are:

Name	Title	Address	Contact Numbers
Kevin Brussee	Project Manager	1808 Middle Country Rd Ridge, NY 11961	(631) 504-6000
Ms. Chawinie Reilly	Health & Safety Manager	1808 Middle Country Rd Ridge, NY 11961	(631) 504-6000
Mr. Thomas Gallo	Site Safety Officer	1808 Middle Country Rd Ridge, NY 11961	(631) 504-6000

The project manager is responsible for overall project administration and, with guidance from the site safety officer, for supervising the implementation of this CHASP. The site safety officer will conduct daily (tail gate or tool box) safety meetings at the project site and oversee daily safety issues. Each subcontractor and supplier (defined as an OSHA employer) is also responsible for the health and safety of its employees. If there is any dispute about health and safety or project activities, on-site personnel will attempt to resolve the issue. If the issue cannot be resolved at the site, then the project manager will be consulted.

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1808 Middle Country Road
Ridge, NY 11961
Phone 631.504.6000
Fax 631.924.2870

The site safety officer is also responsible for coordinating health and safety activities related to hazardous material exposure on-site. The site safety officer is responsible for the following:

1. Educating personnel about information in this CHASP and other safety requirements to be observed during site operations, including, but not limited to, decontamination procedures, designation of work zones and levels of protection, air monitoring, fit testing, and emergency procedures dealing with fire and first aid.

2. Coordinating site safety decisions with the project manager.

3. Designating exclusion, decontamination and support zones on a daily basis.

4. Monitoring the condition and status of known on-site hazards and maintaining and implementing the air quality monitoring program specified in this CHASP.

5. Maintaining the work zone entry/exit log and site entry/exit log.

6. Maintaining records of safety problems, corrective measures and documentation of chemical exposures or physical injuries (the site safety officer will document these conditions in a bound notebook and maintain a copy of the notebook on-site).

The person who observes safety concerns and potential hazards that have not been addressed in the daily safety meetings should immediately report their observations/concerns to the site safety officer or appropriate key personnel.

EBC
Environmental Business Consultants
1808 Middle Country Road
Ridge, NY 11961
Phone 631.504.6000
Fax 631.924.2870

2.0 SITE BACKGROUND AND SCOPE OF WORK

The street address for the Site is 243-271 Wallabout Street in Brooklyn, New York. The Site is located in the City of New York in the Broadway Triangle neighborhood of the Borough of Brooklyn. The Site is known as the Former Pfizer Site A property, and is comprised of four adjacent tax parcels identified as Block 2249, Lots 23, 37, 41 and 122, totaling 71,305 sq. ft (1.63 acres). The irregular shaped Site occupies a full block with has approximately 450 ft of frontage along Wallabout Street, 200 feet of frontage on Harrison Avenue, 260 feet of frontage on Union Avenue and 275 feet of frontage on Walton Street. There are no structures presently on the Site. All of the lots are currently used for the storage of trucks and construction equipment.

A review of Sanborn maps indicates the Site was developed prior to 1887 with numerous 25ft wide lots, each developed with a 2 or 3-story row house. Several of the buildings also contained stores. Several of the buildings were used as a robe factory, for tailoring, as a church, and as a bakery. By 1918, the robe factory was replaced with a laundry facility and two of the row houses at the addresses 58 and 60 Walton Street had been replaced with a 5-story manufacturing building. The 1935 Sanborn map indicates most of the buildings on the western portion of the Site had been demolished, and the 1947 Sanborn map shows the western portion of the Site redeveloped for use as a lumber yard and a small auto repair facility. A 1-story parking garage building is shown at 248 Wallabout Street, and two underground gasoline storage tanks are drawn in the front of the building. One 2,000-gallon fuel oil tank is drawn within the Walton Street sidewalk immediately in front of the 5-story manufacturing building located at 58 and 60 Walton Street. The 1947 Sanborn map also depicts a 1-story building at 255 Wallabout Street being used for adhesives manufacturing. The 1965 Sanborn map indicates the western portion of the Site as being utilized by the Chas. Pfizer & Co. Inc. Buildings associated with the Chas Pfizer & Co. Inc. appear to include the former lumber yard, the 1-story parking garage building located at 245 Wallabout Street, the 1-story manufacturing building located at 255 Wallabout Street, and the 5-story manufacturing building located at 58 and 50 Wallabout Street. The 1965 Sanborn map also indicates that the majority of the former residential buildings along Harrison Avenue as being previously demolished, and now used as parking. The 1977 Sanborn map indicates more buildings were demolished, as the only remaining structures on the Site include the 1-story parking garage building located at 245 Wallabout Street, the 1-story manufacturing building located at 255 Wallabout Street, a small store on the corner of Wallabout Street and Harrison Avenue, and a small office building on the corner of Union Avenue and Wallabout Street. Roux Associates, Inc. identified the buildings located at 245 Wallabout Street and 255 Wallabout Street as taxi garages. The remainder of the Site is identified as parking for the Chas. Pfizer & Co., Inc. According to the Sanborn maps, the remaining buildings were demolished by 1992.

2.1 Previous Investigations

Summary of Previous Investigations

Environmental investigations performed at the Site include the following:

- UST Investigation (Roux Associates, Inc. - 1988)
- Evaluation of Soil Quality Conditions at the Solid Waste Management Units (SWMUs) Located at Site A - (Roux Associates, Inc. - August 14, 1989)
- Supplemental Soils Investigation for Site A (Roux Associates, Inc. - 1989)

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- Analysis of Paint Chips and Plaster from Test Pit 12 at Site A (Roux Associates, Inc. – 1990)
- Risk Evaluation for Site A (Roux Associates, Inc. – 1990)
- Evaluation of Site A Hydrogeology (Roux Associates, Inc. – 1990)
- Site Inspection of Site A Unknown USTs (Roux Associates, Inc. – 1990)
- Geophysical Survey of Site A (Roux Associates, Inc. – 1990)
- Addendum to the Risk Evaluation for Site A Off-Site Exposure (Roux Associates, Inc. - 1990)
- Underground Storage Tank Removal Activities at Site A (Roux Associates, Inc. – 1990)
- Evaluation of the Potential Impact of Lead in Site A Soils on Underlying Groundwater (Roux Associates, Inc. – 1991)

Each of the reports listed above are included as an Attachment to the RIR.

UST Investigation (Roux Associates, Inc. – 1988)
One 1,080-gallon former No. 2 fuel oil aboveground storage tank and one 550-gallon No. 2 fuel oil underground storage tank were removed by Roux Associates, Inc. in 1988 from former Lot 42. The tank removal activities are documented within the letter prepared by Pfizer for the New York City Public Development Corporation (NYC PDC) dated April 25, 1990.

Evaluation of Soil Quality Conditions at the Solid Waste Management Units Located at Site A (Roux Associates, Inc. – August 14, 1989)
Roux Associates, Inc. performed a soil quality investigation to determine the need for RCRA corrective action for two solid waste management units that underwent RCRA Closure in 1987 (mycelium area and former drum storage area) and to investigate a 550-gallon fuel oil UST located on the north end of the Site.

The former drum storage area was investigated by excavating four test pits around the concrete pad to depths ranging between 8 and 12 feet below grade. From the four test pits, Roux collected four soil samples for laboratory analysis. All four soil samples were submitted for laboratory analysis of VOCs, and one of the four was also analyzed for SVOCs, pesticides, PCBs, EPTOX, cyanide, and total petroleum hydrocarbons. No VOCs were detected with the exception of chloroform (maximum of 167 ppb). Several SVOCs were detected above Restricted Residential SCOs and the total petroleum hydrocarbon concentration was 480 ppm. However, Roux indicated the total petroleum hydrocarbons and SVOC concentrations were indicative of historic fill material and not attributable to a release from the drum storage pad. Based on the laboratory results of the soil samples, Roux determined corrective action was not required.

The mycelium disposal area was investigated by excavating two elongated test pits. No mycelium material was encountered in either test pit, which according to Roux, was expected because the material would have biodegraded after burial. However, an ash-like material was encountered from 3 to 7 feet below grade. Roux suspects the ask-like material is related to material imported to the Site for use as backfill with a former building basement. The basement was found to be approximately 85 feet by 30 feet, and a slab was encountered below the ash-like material. Roux collected six soil samples for laboratory analysis. All six soil samples were submitted for laboratory analysis of cyanide, one of the six soil samples was also analyzed for SVOCs, pesticides, PCBs, and total petroleum hydrocarbons, and four of the samples were also

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Ridge, NY 11961
Phone 631.504.6000
Fax 631.924.2870

analyzed for EPTOX.

Only background levels of cyanide were detected. Therefore, Roux concluded the mycelium had biodegraded and had not impacted soils at the Site. Roux indicated the elevated total petroleum hydrocarbons concentration and SVOC concentrations were indicative of historic fill material. The leachable lead concentrations detected within two of the soil samples (maximum of 20 ppm) exceeded the USEPA maximum allowable leachate concentration of 5 ppm. Roux noted soil at the two sampling locations would be classified as a RCRA hazardous waste in accordance with 40 CFR 261.11(a)(1). Roux recommended additional test pitting around the edges of the buried basement o better define the extend of the basement and ash-like material and the collection of additional soil samples for total and leachable lead.

One test pit was excavated around the fuel fill pipe to uncover a 550-gallon underground storage tank. The tank was found in good condition with approximately 275 gallons of fuel oil still in the tank. No staining or odor indicative of petroleum contamination was encountered in soil around the tank. The laboratory results of a soil sample collected from approximately 2 feet below the bottom of the tank verified no leakage around or beneath the tank had occurred.

Supplemental Soils Investigation for Site A (Roux Associates, Inc. – November 30, 1989)
As previously noted, Roux recommended additional test pitting around the edges of the buried basement to better define the extend of the basement and ash-like material and the collection of additional soil samples for total and leachable lead. The additional sampling was performed by Roux on November 2, 1989, and consisted of the excavation of nine test pits. Samples were collected from each of the test pits representing the intervals 1 to 3 ft, 3 to 5 ft, and 5 to 7 ft. The 27 soil samples were submitted for laboratory analysis of total lead, leachable lead, total sulfate, and total carbonate. Seven of the 27 soil samples contained a leachable lead concentration above the USEPA maximum allowable leachate concentration of 5 ppm. Two of the samples with a leachable lead concentration greater than 5 ppm were collected from test pits where the ash-like material was not encountered.

Roux noted the ash-like material appears to be demolition debris (plaster walls, brick, etc) buried in the basements of former buildings on the northern corner of the Site. A former concrete basement slab was encountered at the bottom of each of the test pits that contained soil samples with a leachable lead concentration greater than 5 ppm.

Paint Chip and Plaster Analytical Results (Roux Associates, Inc. – January 5, 1990)
Roux collected samples of paint chips and plaster from a test pit excavated on November 29, 1989 for laboratory analysis of total lead. The laboratory results indicated the total lead concentration of the paint chips was as high as 10,000,000 ppb, and the plaster was as high as 710,000 ppb. Roux concluded the source of the elevated lead concentrations detected in soils in the northern corner of the Site may be the paint and plaster.

Risk Evaluation for Site A (Roux Associates, Inc. – January 8, 1990)
Roux prepared a risk evaluation to explore the potential risks associated with exposure to lead that might occur during the development of the Site. The evaluation determined that "occupational exposure to soils from the Site are not likely to result in any significant exposure to lead and consequently no negative health impacts are anticipated".
Subsurface Conditions at Site A (Roux Associates, Inc. – April 16, 1990)

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Roux prepared a summary report to document subsurface conditions at the Site based on information obtained during the excavation of 16 test pits in March and November of 1989. Roux noted the presence of historic fill material to depths of approximately 7 to 9 feet below grade. The fill material was typically comprised of black to brown coarse sand and gravel that contain varying amounts of bricks, cinders and scrap metal. Concrete basement floors were encountered within several of the test pits. Roux stated this indicates fill material was used to fill in the former basements of the residential buildings. Immediately below the fill materials is a gray clay that is at least 2 ft thick. Roux suspects the clay reflects the former marsh environment that surrounded Wallabout Creek, which formerly flowed through the area. Groundwater was encountered in the gray clay at depths between 7 and 9 feet below grade.

Geophysical Survey of Site A (Roux Associates, Inc. – May 22, 1990)
Roux performed a geophysical survey across the eastern half of the Site to locate any previously unidentified tanks. The geophysical survey identified 16 significant subsurface anomalies. A backhoe was used to investigate each of the anomalies, and one 550-gallon fuel oil tank was uncovered.

Addendum to the Risk Evaluation for Site A – Offsite Exposure (Roux Associates, Inc. – September 11, 1990)
Roux re-evaluated the potential risks associated with exposure to lead of both casual visitors to the area and persons working or residing in the neighborhood during the time that the Site is undergoing redevelopment. The assessment concluded that the Site does not pose an unacceptable hazard to persons living or working in the immediate vicinity of the Site.

Summary of Underground Storage Tank removal Activities at Site A (Roux Associates, Inc. – September 26, 1990)
Roux prepared a summary of activities related to the excavation and removal of four underground storage tanks. Tanks discussed in the report include one 1,000-gallon UST in the northeast corner of the Site, one 550-gallon heating oil UST associated with the former synagogue, and two 550-gallon gasoline USTs associated with the former taxi garage.
The 1,000-gallon UST was pitted, but Roux did not identify any holes in the Tank. No evidence of a spill was noted following removal of the tank, and one confirmatory endpoint soil sample was collected at the bottom of the UST excavation. No TPH compounds were detected within the sample.

The 550-gallon heating oil UST associated with the former synagogue was removed from the sidewalk in front of the former building. Stained soil was observed around the UST, and the NYSDEC was contacted. A total of approximately 50 cubic yards of petroleum contaminated soil was excavated from a 9 ft by 21 ft area. Additional excavation toward the street was not performed to avoid undermining the street. A slight sheen was observed on the groundwater within the open excavation, but no free produce was observed. Three post excavation endpoint soil samples were collected from three of the sidewalls, and no TPH compounds were detected. No endpoint soil sample was collected from the street side of the excavation.

One 500-gallon gasoline UST was found below the concrete floor of the taxi garage building. The tank was deeply pitted, but no holes were observed. No visual or olfactory evidence of a spill was observed, and Roux collected one post-excavation endpoint soil sample at the bottom of the excavation. BTEX was detected at elevated concentrations within the endpoint soil

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1808 Middle Country Road
Ridge, NY 11961
Phone 631.504.6000
Fax 631.924.2870

sample. The excavation was re-opened to investigate the elevated BTEX concentrations, and an additional 550-gallon gasoline UST was found. No evidence of contamination was found beneath the concrete saddle below the tank, and five additional post-excavation endpoint soil samples were collected. The results of the samples were not included or summarized in the report. However, they are summarized in the *Transmittal of Final Post-Excavation Sampling Results Site –A Taxi Garage USTs* (Roux, October 24, 1990) – see below.

Transmittal of Final Post-Excavation Sampling Results Site-A Taxi Garage USTs (Roux Associates, Inc. – October 24, 1990)
As previously noted, Roux collected five additional post-excavation endpoint soil samples from below the two 550-gallon gasoline USTs removed from the former taxi garage building. The laboratory results are included and summarized in the October 24, 1990, transmittal from Roux to Pfizer. No BTEX compounds were detected within the five endpoint soil samples collected from below the concrete saddles of the two 550-gallon gasoline USTs.
Potential Impact of Lead in Site A Soils on Underlying Ground Water (Roux Associaties, Inc. – April 11, 1991)
Roux prepared a report do document the potential impact of lead in soils in the northeastern corner of the site on groundwater. Roux concluded that a continuous layer of clay underlies Site A and serves as a low-permeability barrier to the aquifers beneath the Site; and the potential for contamination of the underlying aquifers with lead from the Site is low, based on calculations.

Phase II Report (Roux Associates, Inc. – October 2007)
Roux performed a Site-wide supplemental investigation of soil and perched water in October to November of 2005 (additional sampling in December 2006) to characterize the Site with respect to potential reuse. The supplemental investigation consisted of a geophysical investigation, installation of 5 monitoring wells to collect 5 groundwater samples, and the installation of 45 soil borings to collect 77 soil samples.

Geophysical Investigation
Roux performed a geophysical investigation, and identified several anomalies that were investigated by excavating test pits. No underground tanks were encountered within any of the anomalies.

Groundwater Sampling
Roux installed five 2-inch diameter monitoring wells (MW-1 through MW-5) using the hollow-stem auger drilling method. Each monitoring well was constructed of 10 feet of 0.02-inch screen, set at a depth of 7 feet below the water table. A groundwater sample was collected from each of the five monitoring wells for laboratory analysis of VOCs, SVOCs, pesticides, PCBs, and metals. No VOCs, pesticides, or PCBs were detected above GQS. Several SVOCs were detected above GQS within one of the five groundwater samples, including 2-methylnaphthlene (18 µg/L), naphthalene (59 µg/L), and phenol (5 µg/L). The metals iron, magnesium, manganese, sodium, and zinc were also detected above GQS.

A description of each of the soil investigation areas is provided below:

Ash-Like fill Material Area

EBC
Environmental Business Consultants
1808 Middle Country Road
Ridge, NY 11961
Phone 631.504.6000
Fax 631.924.2870

Nine soil borings (AF-1 through AF-9) were performed to approximately 7 feet below grade in the ash-like fill material area and lead exceedance area. Soil samples were collected for laboratory analysis of lead and TCLP lead from each soil boring representing the intervals 1 to 3 feet, 3 to 5 feet, and 5 to 7 feet. The 3 soil samples collected from one of the nine soil borings was also submitted for laboratory analysis of VOCs, SVOCs, pesticides, PCBs and metals.

Lead was detected above Restricted Residential SCOs within 12 of the 27 soil samples, and 9 of the 27 soil samples had a TCLP lead concentration greater than the EPA Regulatory Limit of 5.0 mg/L. The D008 Hazardous Lead soil/fill was detected within each of the three depth intervals. SVOCs were also detected above Restricted Residential SCOs within the one sample submitted for SVOC analysis.

Former Drum Storage Area

Four soil borings (DS-1 through DS-4) were performed to approximately 7 feet below grade in the former drum storage area. A soil sample was collected for laboratory analysis of lead and TCLP lead from each soil boring representing the interval 5 to 7 feet. Lead was detected at a concentration below Restricted Residential SCOs within each of the samples collected from the former drum storage area, and the TCLP lead concentration of each of the soil samples was below the EPA Regulatory Limit.

Former UST Areas

Five soil borings (UST-1 through UST-5) were performed to investigate the five former USTs previously removed. One soil sample was collected from each soil boring representing the interval located immediately above the water table for laboratory analysis of VOCs, SVOCs, and RCRA metals. No VOCs were detected above Restricted Residential SCOs, however, several SVOCs were detected above Restricted Residential SCOs. Roux associated the elevated SVOC concentrations with common historic fill material. The metals lead, barium and mercury were detected above Restricted Residential SCOs.

Additional Site Characterization

Ten soil borings (SB1 through SB10) were performed to investigate areas of the Site that had not been previously investigated. One soil sample was collected from five of the soil borings representing the interval 0 to 2 feet below grade, and an additional soil sample was collected from each soil boring representing the most impacted interval, as determined from field observations, or the interval located immediately above the water table. Each of the soil samples was submitted for laboratory analysis of VOCs, SVOCs, pesticides, PCBs and metals. No VOCs, pesticides or PCBs were detected above Restricted Residential SCOs. Several SVOCs, and the metals arsenic, barium, copper, lead, and mercury were detected above Restricted Residential SCOs within each of the samples.

TCLP Lead Delineation

Roux performed an additional 17 delineation soil borings at the Site in December 2006, following review of the lead and TCLP lead sample analysis of the samples they had collected in 2005. Each of the delineation soil samples were submitted for laboratory analysis of TCLP Lead. A TCLP lead concentration greater that the EPA Regulatory Limit was reported within 10 of the 25 delineation soil samples.

EBC
Environmental Business Consultants
1808 Middle Country Road
Ridge, NY 11961
Phone 631.504.6000
Fax 631.924.2870

June 2018 - Phase II Subsurface Investigation Summary (EBC)
On June 5, 2018, a total of 18 soil borings (EBC1 through EBC17 and SB7) were advanced. The soil borings were performed during the RI to identify source areas and to obtain general soil quality information present at the Site (**Figure 4A**). From each soil boring location, soil samples were collected continuously in 5-foot intervals to a depth of 10 feet below grade using a track-mounted Geoprobe™ model 66DT sampling system. The Geoprobe™ uses a direct push hydraulic percussion system to drive and retrieve core samplers. Soil samples were retrieved using a 2-inch diameter, 5-foot long macro-core sampler with disposable acetate liners. Each soil sample recovered from the soil borings was characterized by an experienced geologist and field screened for the presence of VOCs using a PID. The geologist's field observations and PID readings were recorded for each boring in a soil boring log.

From each of the 18 soil borings, EBC retained one soil sample representing the interval 0 to 2 feet below grade, and one additional soil sample from a 2 ft deeper interval from the fill material. Each of the soil samples were collected directly into pre-cleaned laboratory supplied glassware, stored in a cooler with ice and submitted to Phoenix Environmental Laboratories, Inc. for laboratory analysis of TAL metals, SVOCs and TCLP lead.

Several metals and SVOCs were detected above Restricted Residential and/or Commercial SCOs.

The following SVOCs were detected above Commercial SCOs;
- benz(a)anthrance (maximum of 32,000 µg/kg)
- benzo(a)pyrene (maximum of 25,000 µg/kg)
- benzo(b)fluoranthene (maximum of 20,000 µg/kg)
- dibenz(a,h)anthracene (maximum of 5,900 µg/kg)
- indeno(1,2,3-cd)pyrene (maximum of 13,000 µg/kg)

Additional SVOCs detected above Restricted Residential SCOs include the following;
- benzo(k)fluoranthene (maximum of 23,000 µg/kg)
- chrysene (maximum of 30,000 µg/kg)

The following metals were detected above Commercial SCOs;
- arsenic (maximum of 81.1 mg/kg)
- barium (maximum of 3,480 mg/kg)
- lead (maximum of 4,060 mg/kg)
- mercury (maximum of 21.2 mg/kg)

The metal cadmium (maximum of 4.61 mg/kg) was also detected above Restricted Residential SCOs.

Four of the 36 soil samples contained a TCLP lead concentration greater than the EPA Regulatory Limit of 5 mg/L. The exceedances were reported within three of the deeper soil samples and one of the shallower soil samples, and were reported evenly across the Site.

Based on the soil borings, a 3 to 7 foot layer of historic fill material (black/brown silty sand with

EBC
Environmental Business Consultants
1808 Middle Country Road
Ridge, NY 11961
Phone 631.504.6000
Fax 631.924.2870

brick, concrete and wood) is present across the Site, underlain by a grey clay. Groundwater was consistently encountered at a depth of approximately 6 feet.

Summary of the Remedial Investigation

A Remedial Investigation was completed at the Site from June 3, 2019, through June 18, 2019, and documented in a Remedial Investigation Report dated July 2019. The goals of the Remedial Investigation were to define the nature and extent of contamination in soil, groundwater and any other impacted media; to identify the source(s) of the contamination; to assess the impact of the contamination on public health and/or the environment; and to provide information to support the development of a Remedial Work Plan to address the contamination.

Activities completed under the RI:

- The installation of eight soil borings (EBC20 through EBC27) to collect twenty-four soil samples for laboratory analysis of volatile organic compounds (VOCs), semi-volatile organic compounds (SVOCs), pesticides, PCBs, 21 PFAS compounds by EPA method 537 modified, and metals;
- The installation of two soil borings (EBC28 and EBC29) down gradient west/southwest of former monitoring wells MW4 and MW5 to collect eight soil samples for laboratory analysis of VOCs;
- The installation of sixty-one soil borings to vertically and horizontally delineate five D008 Hazardous Lead soil/fill hotspots, and the submission of 69 soil samples for laboratory analysis of lead and TCLP lead;
- The installation of nine groundwater monitoring wells (MW6S, MW6D, MW7, MW8S, MW8D, MW9, MW10, MW11 and MW12) and the collection of nine groundwater samples for laboratory analysis of VOCs, SVOCs, pesticides, PCBs, 21 PFAS compounds by EPA method 537 modified, and total and dissolved metals;
- The collection of eleven soil gas samples for laboratory analysis of VOCs from eleven soil gas sampling locations.

The results of sampling performed during this RI identified historic fill material across the Site to to a depth 5 to 6 feet below grade, extending as deep as 10 feet several of the borings. Depending on location, the historic fill material contains one or more metals including arsenic, barium, cadmium, chromium, copper, lead, mercury, nickel and zinc, pesticides and polycyclic aromatic hydrocarbons (PAHs) above Unrestricted Use and / or Restricted Residential SCOs.

Five lead hot-spots (Hot-Spot A, Hot-Spot B, Hot-Spot C, Hot-Spot D, and Hot-Spot E) consisting of D008 Hazardous Lead soil/fill have been identified at the Site.

HSA – Lead was detected at a concentration of 2,040 mg/kg in soil sample EBC6(8-10) and TCLP lead was reported at a concentration of 19.7 mg/L. Therefore, the area around soil sample EBC6(8-10) requires handling and disposal as D008 Hazardous Lead soil/fill and has been identified as Hot-Spot A (HSA). Based on the horizontal delineation soil sampling performed by EBC in June 2019, HSA is limited to the Union Avenue and Wallabout Street property lines to the south and west/north, and by soil borings HSA1A and HSA2A to the east. Vertical delineation soil sampling has limited the area of HSA to the depth of 8 to 10 feet below grade.

HSB – Lead was detected at a concentration of 4,060 mg/L in soil sample EBC3(5-7) and TCLP lead was reported at a concentration of 19.7 mg/L. Therefore, the area around soil sample

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Environmental Business Consultants
1808 Middle Country Road
Ridge, NY 11961
Phone 631.504.6000
Fax 631.924.2870

EBC3(5-7) requires handling and disposal as D008 Hazardous Lead soil/fill and has been identified as Hot-Spot B (HSB). Based on the horizontal delineation soil sampling performed by EBC in June 2019, HSB is limited by soil borings HSB1A to the north, HSB2B to the east, HSB3A to the south, and HSB4B to the west. Vertical delineation soil sampling has limited the area of HSA to the depth of 5 to 7 feet below grade.

HSC – Lead was detected at a concentration of 617 mg/kg in soil sample EBC10(5-7) and TCLP lead was reported at a concentration of 5.63 mg/L. Therefore, the area around soil sample EB10(5-7) requires handling and disposal as D008 Hazardous Lead soil/fill and has been identified as Hot-Spot C (HSC). Based on the horizontal delineation soil sampling performed by EBC in June 2019, HSC is limited by soil boring HSC1A to the south, HSC2A to the east, HSC3A to the north, and HSC4A to the west. Vertical delineation soil sampling has limited the area of HSA to the depth of 8 to 10 feet below grade.

HSD – TCLP lead was detected above the EPA Regulatory Threshold of 5.0 mg/L in soil samples AF-3(3-5'), AF-3(5-7'), AF-4(5-7'), AF-5(3-5'), AF-7(1-3'), AF-7(3-5'), AF-8(1-3'), AF-9(1-3'), and AF-9(3-5') collected in 2005. TCLP lead was also detected above the EPA Regulatory Threshold of 5.0 m/L within in several delineation soil borings performed in December 2006, including SB-6B(0-2'), AF-8N(1-3'), AF-5-9S(1-3'), and AF-5-9E(3-5'). Therefore, the area around soil samples AF-3(3-5'), AF-3(5-7'), AF-4(5-7'), AF-5(3-5'), AF-7(1-3'), AF-7(3-5'), AF-8(1-3'), AF-9(1-3'), AF-9(3-5'), SB-6B(0-2'), AF-8N(1-3'), AF-5-9S(1-3'), and AF-5-9E(3-5') requires handling and disposal as D008 Hazardous Lead soil/fill and has been identified as Hot-Spot D (HSD). Based on the horizontal delineation soil sampling performed by EBC in June 2019, HSD is limited to the Walton Street and Harrison Avenue property lines to the north and east, and by soil borings HSD1B, HSD2A, and HSD3A to the south, HSD4A, HSD5A, and HSD6C to the southwest, and HSD7A and HSD8A to the west. Vertical delineation soil sampling has limited the area of HSD to the depth of 6 feet below grade, and 7 feet below grade for the AF-3(5-7') and AF-4(5-7') zone along Walton Street.

HSE – Lead was detected ins soil sample SB-10(0-2') in 2005, and TCLP lead was detected above the EPA Regulatory Threshold in follow-up soil samples SB-10B(0-2) (47 mg/L) and SB-10B(2-4') (5.4 mg/L) performed in the same location in December 2016. TCLP Lead was also detected above the EPA Regulatory Threshold in several delineation soil borings performed in December 2006 around the original SB-10 location, including SB-10S(2-4') (7.1 mg/L), and SB-10N(2-4') (5.6 mg/L).Therefore, the area around soil samples SB-10(0-2'), SB-10S(2-4'), and SB-10N(2-4') requires handling and disposal as D008 Hazardous Lead soil/fill and has been identified as Hot-Spot E (HSE). Based on the horizontal delineation soil sampling performed by EBC in June 2019, HSE is limited to the Harrison Avenue and Wallabout Street property lines to the east and south, and by soil borings HSE1B and HSE2B to the west, and HSE3A and HSE4A to the north. Vertical delineation soil sampling has limited the area of HSE to the depth of 4 feet below grade for the northern half of the hot-spot, and 5 feet below grade for the southern half of the hot-spot.

2.2 Description of Remedial Action

Site activities included within the Remedial Action that are included within the scope of this CHASP include the following:

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Environmental Business Consultants
1808 Middle Country Road
Ridge, NY 11961
Phone 631.504.6000
Fax 631.924.2870

A Remedial Action Work Plan (RAWP) prepared by AMC in January 2020, was approved by the NYSDEC on January 13, 2020. The remedy recommended for the Site within the RAWP was a Track 1 remedy (Alternative 1) which was to consist of the removal of all on-Site soil in exceedance of Track 1 Unrestricted Use Soil Cleanup Objectives (SCOs). It was expected that the Track 1 alternative would require excavation across the Site to a depth of 5 to 8 feet below grade with additional excavation to up to 10 feet below grade in some hotspot areas (HSA and HSC). All D008 Hazardous Lead soil/fill and all non-hazardous fill material with parameters above Unrestricted Use SCOs would be removed from the Site and properly disposed of at off-site facilities.

However, due to presence of a subway tunnel along Union Avenue, the Volunteer determined the complexity and permitting requirements of installing shoring along Union Avenue above/adjacent to the subway tunnel to be too prohibitive to include a cellar below the new buildings along Union Avenue (Building C and Building D). Therefore, a Remedial Action Work Plan Amendment (AMC, April 2021) was prepared which detailed limited excavation to 4 to 5ft for the pile caps, grade beams, and footings for slab-on grade Building C (58 Union Avenue - Lot 23) and Building D (34 Union Avenue - Lot 122). The Department approved this remedy in its Remedial Work Plan Addendum letter dated June 4, 2021.

Implementation of the remedy for the Track 4 portion of the Site included the following:

1. Excavation of all D008 Hazardous Lead soil/fill within hotspot areas HSA, HSB and HSC;
2. Collection and analysis of endpoint samples from each of the three hotspot areas to evaluate the performance of the remedy with respect to removal of D008 Hazardous Lead soil/fill;
3. Excavation of non-hazardous historic fill material to a depth of 4 to 5 ft;
4. Collection and analysis of endpoint soil samples from across the Track 4 area to evaluate the performance of the remedy;
5. Screening for indications of contamination (by visual means, odor, and monitoring with PID) of all excavated soil during any intrusive Site work;
6. Appropriate off-Site disposal of all material removed from the Track 4 portion of the Site in accordance with all Federal, State and local rules and regulations for handling, transport, and disposal;
7. Import of ¾" virgin mined stone for use as backfill below the Building C and Building D concrete slabs in compliance with: (1) chemical limitations and other specifications listed in the RAWP, and (2) all Federal, State, and local rules and regulations for handling and transport of material;
8. Installation of a passive sub-slab depressurization system below the vapor barrier and building slab of both Building C and Building D. The passive sub-slab depressurization system has the capability of being converted into an active sub-slab depressurization system;
9. Installation of a vapor barrier below the building slab of Building C and Building D;
10. A post-construction soil vapor intrusion evaluation will be performed within new Building C and new Building D consisting of the collection and laboratory analysis of sub-slab soil gas samples and indoor air samples. The post-construction evaluation will include a provision for implementing actions recommended to address exposures related to soil vapor intrusion within new Building C and new Building D;
11. Construction of a site cover system consisting of:

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Ridge, NY 11961
Phone 631.504.6000
Fax 631.924.2870

a. Building C Concrete Slab - A 4 inch thick concrete slab underlain with a 20-mil vapor barrier and a 6 inch layer of ¾" virgin mined bluestone; and
b. Building D Concrete Slab - A 4 inch thick concrete slab underlain with a 20-mil vapor barrier and a 6 inch layer of ¾" virgin mined bluestone.

12. Development and implementation of a Site Management Plan for long term management of remaining contamination at the Site which includes plans for: (1) Institutional Controls, (2) inspections and (3) reporting; and
13. An Environmental Easement recorded against the Site will ensure implementation of the SMP.

EBC
Environmental Business Consultants
1808 Middle Country Road
Ridge, NY 11961
Phone 631.504.6000
Fax 631.924.2870

3.0 HAZARD ASSESSMENT

This section identifies the hazards associated with the proposed scope of work, general physical hazards that can be expected at most sites; and presents a summary of documented or potential chemical hazards at the site. Every effort must be made to reduce or eliminate these hazards. Those that cannot be eliminated must be guarded against using engineering controls and/or personal protective equipment.

3.1 Physical Hazards

3.1.1 Tripping Hazards

An area of risk associated with on-site activities are presented by uneven ground, concrete, curbstones or equipment which may be present at the site thereby creating a potential tripping hazard. During intrusive work, care should be taken to mark or remove any obstacles within the exclusion zone.

3.1.2 Climbing Hazards

During site activities, workers may have to work on excavating equipment by climbing. The excavating contractor will conform with any applicable NIOSH and OSHA requirements or climbing activities.

3.1.3 Cuts and Lacerations

Field activities that involve excavating activities usually involve contact with various types of machinery. A first aid kit approved by the American Red Cross will be available during all intrusive activities.

3.1.4 Lifting Hazards

Improper lifting by workers is one of the leading causes of industrial injuries. Field workers in the excavation program may be required to lift heavy objects. Therefore, all members of the field crew should be trained in the proper methods of lifting heavy objects. All workers should be cautioned against lifting objects too heavy for one person.

3.1.5 Utility Hazards

Before conducting any excavation, the excavation contractor will be responsible for locating and verifying all existing utilities at each excavation.

3.1.6 Traffic Hazards

All traffic, vehicular and pedestrian, shall be maintained and protected at all times consistent with local, state and federal agency regulations regarding such traffic and in accordance with NYCDOT guidelines. The excavation contractor shall carry on his operations without undue interference or delays to traffic. The excavation contractor shall furnish all labor, materials, guards, barricades, signs, lights, and anything else necessary to maintain traffic and to protect his work and the public, during operations.

3.2 Work in Extreme Temperatures

Work under extremely hot or cold weather conditions requires special protocols to minimize the chance that employees will be affected by heat or cold stress.

EBC
Environmental Business Consultants
1808 Middle Country Road
Ridge, NY 11961
Phone 631.504.6000
Fax 631.924.2870

3.2.1 Heat Stress

The combination of high ambient temperature, high humidity, physical exertion, and personal protective apparel, which limits the dissipation of body heat and moisture, can cause heat stress.

The following prevention, recognition and treatment strategies will be implemented to protect personnel from heat stress. Personnel will be trained to recognize the symptoms of heat stress and to apply the appropriate treatment.

1. Prevention
    a. Provide plenty of fluids. Available in the support zone will be a 50% solution of fruit punch and water or plain water.
    b. Work in Pairs. Individuals should avoid undertaking any activity alone.
    c. Provide cooling devices. A spray hose and a source of water will be provided to reduce body temperature, cool protective clothing and/or act as a quick-drench shower in case of an exposure incident.
    d. Adjustment of the work schedule. As is practical, the most labor-intensive tasks should be carried out during the coolest part of the day.

2. Recognition and Treatment
    a Heat Rash (or prickly heat):
        Cause: Continuous exposure to hot and humid air, aggravated by chafing clothing.
        Symptoms: Eruption of red pimples around sweat ducts accompanied by intense itching and tingling.
        Treatment: Remove source or irritation and cool skin with water or wet cloths.

    b. Heat Cramps (or heat prostration)
        Cause: Profuse perspiration accompanied by inadequate replenishment of body water and electrolytes.
        Symptoms: Muscular weakness, staggering gait, nausea, dizziness, shallow breathing, pale and clammy skin, approximately normal body temperature.
        Treatment: Perform the following while making arrangement for transport to a medical facility. Remove the worker to a contamination reduction zone. Remove protective clothing. Lie worker down on back in a cool place and raise feet 6 to 12 inches. Keep warm, but loosen all clothing. If conscious, provide sips of salt-water solution, using one teaspoon of salt in 12 ounces of water. Transport to a medical facility.
    c. Heat Stroke
        Cause: Same as heat exhaustion. This is also an extremely serious condition.
        Symptoms: Dry hot skin, dry mouth, dizziness, nausea, headache, rapid pulse.
        Treatment: Cool worker immediately by immersing or spraying with cool water or sponge bare skin after removing protective clothing. Transport to hospital.

EBC
Environmental Business Consultants
1808 Middle Country Road
Ridge, NY 11961
Phone 631.504.6000
Fax 631.924.2870

3.2.2 Cold Exposure

Exposure to cold weather, wet conditions and extreme wind-chill factors may result in excessive loss of body heat (hypothermia) and /or frostbite. To guard against cold exposure and to prevent cold injuries, appropriate warm clothing should be worn, warm shelter must be readily available, rest periods should be adjusted as needed, and the physical conditions of on-site field personnel should be closely monitored. Personnel and supervisors working on-site will be made aware of the signs and symptoms of frost bite and hypothermia such as:

- Shivering;
- reduced blood pressure;
- reduced coordination;
- drowsiness;
- impaired judgment;
- fatigue;
- pupils dilated but reactive to light; and,
- numbing of the toes and fingers.

3.3 Chemical Hazards

"Urban fill" materials, present throughout the New York City area typically contain elevated levels of semi-volatile organic compounds and metals. These "contaminants" are not related to a chemical release occurring on the site, but are inherent in the reworked fill material in the area which contains ash and bits of tar and asphalt. Considering the previous sampling results and the past and present use of the site, the following compounds are considered for the site as potential contaminants: volatile organic compounds (VOCs), semi-volatile organic compounds (SVOCs), pesticides, polychlorinated biphenyl's (PCBs), and heavy metals such as arsenic, barium, cadmium, chromium, lead, mercury and zinc.

Based on the findings of the Remedial Investigation and the inherent properties of urban fill, the following compounds are considered for the site as potential contaminants: semi-volatile organic compounds (SVOCs) and heavy metals.

Semi-Volatile organic compounds reported to be present in soil and / or fill materials include the following:

Anthracene	Benz(a)anthracene	Benzo(a)pyrene	Benzo(b)fluoranthene
Benzo(k)anthracene	Chrysene	Dibenz(a,h)anthracene	Fluoranthene
Indeno(1,2,3-cd)pyrene	Phenanthrene	Pyrene	Naphthalene

Metals reported to be present in fill materials include the following:

Arsenic	Barium	Cadmium	Copper	Lead	Mercury	Nickel	Zinc

No Pesticides or PCBs were reported to be present in soil and / or fill materials.
The primary routes of exposure to these contaminants are inhalation, ingestion and absorption.
Appendix C includes information sheets for suspected chemicals that may be encountered at the site.

EBC
Environmental Business Consultants
1808 Middle Country Road
Ridge, NY 11961
Phone 631.504.6000
Fax 631.924.2870

3.3.1 Respirable Dust

Dust may be generated from vehicular traffic and/or excavation activities. If visible observation detects elevated levels of dust, a program of wetting will be employed by the site safety officer. If elevated dust levels persist, the site safety office will employ dust monitoring using a particulate monitor (Miniram or equivalent). If monitoring detects concentrations greater than 150 µg/m3 over daily background, the site safety officer will take corrective actions as defined herein, including the use of water for dust suppression and if this is not effective, requiring workers to wear APRs with efficiency particulate air (HEPA) cartridges.

Absorption pathways for dust and direct contact with soils or groundwater will be mitigated with the implementation of latex gloves, hand washing and decontamination exercises when necessary.

3.3.2 Dust Control and Monitoring During Earthwork

Dust generated during excavation activities or other earthwork may contain contaminants identified in soils at the site. Dust will be controlled by wetting the working surface with water. Calcium chloride may be used if the problem cannot be controlled with water. Air monitoring and dust control techniques are specified in a site specific Dust Control Plan (if applicable). Site workers will not be required to wear APR's unless dust concentrations are consistently over 150 $\mu g/m^3$ over site-specific background in the breathing zone as measured by a dust monitor unless the site safety officer directs workers to wear APRs. The site safety officer will use visible dust as an indicator to implement the dust control plan.

3.3.3 Organic Vapors

Elevated levels of pet VOCs were detected in soil and groundwater samples collected during previous investigations at the site. Therefore, excavation activities may cause the release of organic vapors to the atmosphere. The site safety officer will periodically monitor organic vapors with a Photoionization Detector (PID) during excavation activities to determine whether organic vapor concentrations exceed action levels shown in Section 5 and/or the Community Air Monitoring Plan.

EBC
Environmental Business Consultants
1808 Middle Country Road
Ridge, NY 11961
Phone 631.504.6000
Fax 631.924.2870

4.0 PERSONAL PROTECTIVE EQUIPMENT

Personal protective equipment (PPE) shall be selected in accordance with the site air monitoring program, OSHA 29 CFR 1910.120(c), (g), and 1910.132. Protective equipment shall be NIOSH approved and respiratory protection shall conform to OSHA 29 CFR Part 1910.133 and 1910.134 specifications; head protection shall conform to 1910.135; eye and face protection shall conform to 1910.133; and foot protection shall conform to 1910.136. The only true difference among the levels of protection from D thru B is the addition of the type of respiratory protection. **It is anticipated that work will be performed in Level D PPE.**

4.1 Level D

Level D PPE shall be donned when the atmosphere contains no known hazards and work functions preclude splashes, immersion, or the potential for inhalation of, or contact with, hazardous concentrations of harmful chemicals. Level D PPE consists of:

- standard work uniform, coveralls, or tyvek, as needed;
- steel toe and steel shank work boots;
- hard hat;
- gloves, as needed;
- safety glasses;
- hearing protection;
- equipment replacements are available as needed.

4.2 Level C

Level C PPE shall be donned when the concentrations of measured total organic vapors in the breathing zone exceed background concentrations (using a portable OVA, or equivalent), but are less than 5 ppm. The specifications on the APR filters used must be appropriate for contaminants identified or expected to be encountered. Level C PPE shall be donned when the identified contaminants have adequate warning properties and criteria for using APR have been met. Level C PPE consists of:

- chemical resistant or coated tyvek coveralls;
- steel-toe and steel-shank workboots;
- chemical resistant overboots or disposable boot covers;
- disposable inner gloves (surgical gloves);
- disposable outer gloves;
- full face APR fitted with organic vapor/dust and mist filters or filters appropriate for the identified or expected contaminants;
- hard hat;
- splash shield, as needed; and,
- ankles/wrists taped with duct tape.

The site safety officer will verify if Level C is appropriate by checking organic vapor concentrations using compound and/or class-specific detector tubes.

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Environmental Business Consultants
1808 Middle Country Road
Ridge, NY 11961
Phone 631.504.6000
Fax 631.924.2870

- chemical resistant coveralls;
- steel-toe and steel-shank workboots;
- chemical resistant overboots or disposable boot covers;
- disposable inner gloves;
- disposable outer gloves;
- hard hat; and,
- ankles/wrists taped.

The exact PPE ensemble is decided on a site-by-site basis by the Site Safety Officer with the intent to provide the most protective and efficient worker PPE.

4.3 Activity-Specific Levels of Personal Protection

The required level of PPE is activity-specific and is based on air monitoring results (Section 4.0) and properties of identified or expected contaminants. **It is expected that site work will be performed in Level D.** If air monitoring results indicate the necessity to upgrade the level of protection engineering controls (i.e. Facing equipment away from the wind and placing site personnel upwind of drilling locations, active venting, etc.) will be implemented before requiring the use of respiratory protection.

EBC
Environmental Business Consultants
1808 Middle Country Road
Ridge, NY 11961
Phone 631.504.6000
Fax 631.924.2870

5.0 AIR MONITORING AND ACTION LEVELS

29 CFR 1910.120(h) specifies that monitoring shall be performed where there may be a question of employee exposure to hazardous concentrations of hazardous substances in order to assure proper selection of engineering controls, work practices and personal protective equipment so that employees are not exposed to levels which exceed permissible exposure limits, or published exposure levels if there are no permissible exposure limits, for hazardous substances.

5.1 Air Monitoring Requirements

If excavation work is performed, air will be monitored for VOCs with a portable ION Science 3000EX photoionization detector, or the equivalent. If necessary, Lower Explosive Limit (LEL) and oxygen will be monitored with a Combustible Gas Indicator (CGI). If appropriate, fugitive dust will be monitored using a MiniRam Model PDM-3 aerosol monitor. Air will be monitored when any of the following conditions apply:

- initial site entry;
- during any work where a potential IDLH condition or flammable atmosphere could develop;
- excavation work begins on another portion of the site;
- contaminants, other than those previously identified, have been discovered;
- each time a different task or activity is initiated;
- during trenching and/or excavation work.

The designated site safety officer will record air monitoring data and ensure that air monitoring instruments are calibrated and maintained in accordance with manufacturer's specifications. Instruments will be zeroed daily and checked for accuracy. Monitoring results will be recorded in a field notebook and will be transferred to instrument reading logs.

5.2 Work Stoppage Responses

The following responses will be initiated whenever one or more of the action levels necessitating a work stoppage are exceeded:

1 The SSO will be consulted immediately
2 All personnel (except as necessary for continued monitoring and contaminant migration, if applicable) will be cleared from the work area (eg from the exclusion zone).
3 Monitoring will be continued until intrusive work resumes.

5.3 Action Levels During Excavation Activities

Instrument readings will be taken in the breathing zone above the excavation pit unless otherwise noted. Each action level is independent of all other action levels in determining responses.

EBC
Environmental Business Consultants
1808 Middle Country Road
Ridge, NY 11961
Phone 631.504.6000
Fax 631.924.2870

Organic Vapors (PID)	LEL %	Responses
0-1 ppm above background	0%	• Continue excavating • Level D protection • Continue monitoring every 10 minutes
1-5 ppm Above Background, Sustained Reading	1-10%	• Continue excavating • Go to Level C protection or employ engineering controls • Continue monitoring every 10 minutes
5-25 ppm Above Background, Sustained Reading	10-20%	• Discontinue excavating, unless PID is only action level exceeded. • Level C protection or employ engineering controls • Continue monitoring for organic vapors 200 ft downwind • Continuous monitoring for LEL at excavation pit
>25 ppm Above Background, Sustained Reading	>20%	• Discontinue excavating • Withdraw from area, shut off all engine ignition sources. • Allow pit to vent • Continuous monitoring for organic vapors 200 ft downwind.

Notes: Air monitoring will occur in the breathing zone 30 inches above the excavation pit. Readings may also be taken in the excavation pit but will not be used for action levels.

If action levels for any one of the monitoring parameters are exceeded, the appropriate responses listed in the right hand column should be taken. If instrument readings do not return to acceptable levels after the excavation pit has been vented for a period of greater than one-half hour, a decision will then be made whether or not to seal the pit with suppressant foam.

If, during excavation activities, downwind monitoring PID readings are greater than 5 ppm above background for more than one-half hour, excavation will stop until sustained levels are less then 5 ppm (see Community Air Monitoring Plan).

EBC
Environmental Business Consultants
1808 Middle Country Road
Ridge, NY 11961
Phone 631.504.6000
Fax 631.924.2870

6.0 SITE CONTROL

6.1 Work Zones

The primary purpose of site controls is to establish the perimeter of a hazardous area, to reduce the migration of contaminants into clean areas, and to prevent access or exposure to hazardous materials by unauthorized persons. When operations are to take place involving hazardous materials, the site safety officer will establish an exclusion zone, a decontamination zone, and a support zone. These zones "float" (move around the site) depending on the tasks being performed on any given day. The site safety officer will outline these locations before work begins and when zones change. The site safety officer records this information in the site log book. **It is expected that the entire fenced in area of the Site will be the exclusion zone, with the decontamination zone the Site entrance.** The support zone will be the office trailer.

Tasks requiring OSHA 40-hour Hazardous Waste Operations and Emergency Response Operations training are carried out in the exclusion zone. The exclusion zone is defined by the site safety officer but will typically be a 50-foot area around work activities. Gross decontamination (as determined by the site Health and Safety Officer) is conducted in the exclusion zone; all other decontamination is performed in the decontamination zone or trailer.

Protective equipment is removed in the decontamination zone. Disposable protective equipment is stored in receptacles staged in the decontamination zone, and non-disposable equipment is decontaminated. All personnel and equipment exit the exclusion zone through the decontamination zone. If a decontamination trailer is provided the first aid equipment, an eye wash unit, and drinking water are kept in the decontamination trailer.

The support zone is used for vehicle parking, daily safety meetings, and supply storage. Eating, drinking, and smoking are permitted only in the support zone. When a decontamination trailer is not provided, the eye wash unit, first aid equipment, and drinking water are kept at a central location designated by the site safety officer.

6.2 General Site Work

An excavation contractor with appropriate experience, personnel and training (40 hr OSHA Hazardous Waste Operations and Emergency Response Operations - HAZWOPER) is required to perform the removal of the lead hazardous soil. After this material is removed the contractor will remove historic fill and uncontaminated soil. The excavation contractor’s on-site personnel engaged in historic fill and native soil removal will have a minimum of 24 hour HAZWOPER training.

EBC
Environmental Business Consultants
1808 Middle Country Road
Ridge, NY 11961
Phone 631.504.6000
Fax 631.924.2870

7.0 CONTINGENCY PLAN/EMERGENCY RESPONSE PLAN

Site personnel must be prepared in the event of an emergency. Emergencies can take many forms: illnesses, injuries, chemical exposure, fires, explosions, spills, leaks, releases of harmful contaminants, or sudden changes in the weather.

Emergency telephone numbers and a map to the hospital will be posted in the command post. Site personnel should be familiar with the emergency procedures, and the locations of site safety, first aid, and communication equipment.

7.1 Emergency Equipment On-site

Private telephones:	Site personnel.
Two-way radios:	Site personnel where necessary.
Emergency Alarms:	On-site vehicle horns*.
First aid kits:	On-site, in vehicles or office.
Fire extinguisher:	On-site, in office or on equipment.

* Horns: Air horns will be supplied to personnel at the discretion of the project superintendent or site safety officer.

7.2 Emergency Telephone Numbers

General Emergencies	911
New York City Police	911
Woodhull Medical Center	**1-718-963-8000**
Brooklyn Hospital Center	1-718-250-8000
NYSDEC Spills Division	1-800-457-7362
NYSDEC Division of Env. Remediation	1-518-402-9625
NYCDEP	1-718-699-9811
NYC Department of Health	1-212-788-4711
NYC Fire Department	911
National Response Center	1-800-424-8802
Poison Control	1-212-340-4494
Site Safety Officer	1-631-504-6000
Alternate Site Safety Officer	1-631-504-6000

7.3 Personnel Responsibilities During an Emergency

The project manager is primarily responsible for responding to and correcting any emergency situations. However, in the absence of the project manager, the site safety officer shall act as the project manager's on-site designee and perform the following tasks:

- Take appropriate measures to protect personnel including: withdrawal from the exclusion zone, evacuate and secure the site, or upgrade/downgrade the level of protective clothing and respiratory protection;

- Ensure that appropriate federal, state, and local agencies are informed and emergency

response plans are coordinated. In the event of fire or explosion, the local fire department should be summoned immediately. If toxic materials are released to the air, the local authorities should be informed in order to assess the need for evacuation;

- Ensure appropriate decontamination, treatment, or testing for exposed or injured personnel;
- Determine the cause of incidents and make recommendations to prevent recurrence; and,
- Ensure that all required reports have been prepared.

The following key personnel are planned for this project:

- Project Manager — Kevin Brussee (631) 504-6000
- Construction Superintendent — Abraham Guttman (929) 441-0051
- Site Safety Officer — Tom Gallo (631) 504-6000

7.4 Medical Emergencies

A person who becomes ill or injured in the exclusion zone will be decontaminated to the maximum extent possible. If the injury or illness is minor, full decontamination will be completed and first aid administered prior to transport. First aid will be administered while waiting for an ambulance or paramedics. A Field Accident Report (**Appendix D**) must be filled out for any injury.

A person transporting an injured/exposed person to a clinic or hospital for treatment will take the directions to the hospital (**Appendix D**).and information on the chemical(s) to which they may have been exposed (**Appendix C**).

7.5 Fire or Explosion

In the event of a fire or explosion, the local fire department will be summoned immediately. The site safety officer or his designated alternate will advise the fire commander of the location, nature and identification of the hazardous materials on-site. If it is safe to do so, site personnel may:

- use fire fighting equipment available on site; or,
- remove or isolate flammable or other hazardous materials that may contribute to the fire.

7.6 Evacuation Routes

Evacuation routes established by work area locations for each site will be reviewed prior to commencing site operations. As the work areas change, the evacuation routes will be altered accordingly, and the new route will be reviewed.

Under extreme emergency conditions, evacuation is to be immediate without regard for equipment. The evacuation signal will be a continuous blast of a vehicle horn, if possible, and/or by verbal/radio communication. When evacuating the site, personnel will follow these

instructions:

- Keep upwind of smoke, vapors, or spill location.
- Exit through the decontamination corridor if possible.
- If evacuation through the decontamination corridor is not possible, personnel should remove contaminated clothing once they are in a safe location and leave it near the exclusion zone or in a safe place.
- The site safety officer will conduct a head count to ensure that all personnel have been evacuated safely. The head count will be correlated to the site and/or exclusion zone entry/exit log.
- If emergency site evacuation is necessary, all personnel are to escape the emergency situation and decontaminate to the maximum extent practical.

7.7 Spill Control Procedures

Spills associated with site activities may be attributed to project equipment and include gasoline, diesel and hydraulic oil. In the event of a leak or a release, site personnel will inform their supervisor immediately, locate the source of spillage and stop the flow if it can be done safely. A spill containment kit including absorbent pads, booms and/or granulated speedy dry absorbent material will be available to site personnel to facilitate the immediate recovery of the spilled material. Daily inspections of site equipment components including hydraulic lines, fuel tanks, etc. will be performed by their respective operators as a preventative measure for equipment leaks and to ensure equipment soundness. In the event of a spill, site personnel will immediately notify the NYSDEC (1-800-457-7362), and a spill number will be generated.

7.8 Vapor Release Plan

If work zone organic vapor (excluding methane) exceeds 5 ppm, then a downwind reading will be made either 200 feet from the work zone or at the property line, whichever is closer. If readings at this location exceed 5 ppm over background, the work will be stopped.

If 5 ppm of VOCs are recorded over background on a PID at the property line, then an off-site reading will be taken within 20 feet of the nearest residential or commercial property, whichever is closer. If efforts to mitigate the emission source are unsuccessful for 30 minutes, then the designated site safety officer will:

- contact the local police;
- continue to monitor air every 30 minutes, 20 feet from the closest off-site property. If two successive readings are below 5 ppm (non-methane), off-site air monitoring will be halted.
- All property line and off site air monitoring locations and results associated with vapor releases will be recorded in the site safety log book.

APPENDIX A

SITE SAFETY ACKNOWLEDGEMENT FORM

DAILY BREIFING SIGN-IN SHEET

Date:_____ Person Conducting Briefing:_____

Project Name and Location:_____

1. AWARENESS (topics discussed, special safety concerns, recent incidents, etc…):

_____

_____

_____

_____

2. OTHER ISSUES (HASP changes, attendee comments, etc…):

_____

_____

_____

3. ATTENDEES (Print Name):

1.	11.
2.	12.
3.	13.
4.	14.
5.	15.
6.	16.
7.	17.
8.	18.
9.	19.
10.	20.

APPENDIX B

SITE SAFETY PLAN AMENDMENTS

SITE SAFETY PLAN AMENDMENT FORM

Site Safety Plan Amendment #:_____

Site Name: _____

Reason for Amendment:_____

_____

_____

_____

Alternative Procedures:_____

_____

_____

_____

Required Changes in PPE:_____

_____

_____

_____

_____ _____

Project Superintendent (signature) **Date**

_____ _____

Health and Safety Consultant (signature) **Date**

_____ _____

Site Safety Officer (signature) **Date**

APPENDIX C

CHEMICAL HAZARDS

CHEMICAL HAZARDS

The attached International Chemical Safety Cards are provided for contaminants of concern that have been identified in soils and/or groundwater at the site.

International Chemical Safety Cards

ALUMINIUM OXIDE

ICSC: 0351

alpha-Aluminum oxide
Alumina
Aluminum trioxide
Al_2O_3
Molecular mass: 101.9

ICSC # 0351
CAS # 1344-28-1
RTECS # BD1200000
February 10, 2000 Validated

TYPES OF HAZARD/ EXPOSURE	ACUTE HAZARDS/ SYMPTOMS	PREVENTION	FIRST AID/ FIRE FIGHTING
FIRE	Not combustible.		In case of fire in the surroundings: all extinguishing agents allowed.
EXPLOSION			
EXPOSURE		PREVENT DISPERSION OF DUST!	
•INHALATION	Cough.	Local exhaust or breathing protection.	Fresh air, rest.
•SKIN		Protective gloves.	Rinse and then wash skin with water and soap.
•EYES	Redness.	Safety goggles, or eye protection in combination with breathing protection.	First rinse with plenty of water for several minutes (remove contact lenses if easily possible), then take to a doctor.
•INGESTION		Do not eat, drink, or smoke during work.	Rinse mouth.

SPILLAGE DISPOSAL	STORAGE	PACKAGING & LABELLING
Sweep spilled substance into containers; if appropriate, moisten first to prevent dusting. Wash away remainder with plenty of water. (Extra personal protection: P1 filter respirator for inert particles).		

SEE IMPORTANT INFORMATION ON BACK

ICSC: 0351

Prepared in the context of cooperation between the International Programme on Chemical Safety & the Commission of the European Communities (C) IPCS CEC 1994. No modifications to the International version have been made except to add the OSHA PELs, NIOSH RELs and NIOSH IDLH values.

International Chemical Safety Cards

ALUMINIUM OXIDE

ICSC: 0351

I **M**	**PHYSICAL STATE; APPEARANCE:** WHITE POWDER. **PHYSICAL DANGERS:**	**ROUTES OF EXPOSURE:** The substance can be absorbed into the body by inhalation of its aerosol.

P O R T A N T D A T A	**CHEMICAL DANGERS:** **OCCUPATIONAL EXPOSURE LIMITS:** TLV: 10 mg/m³ (as TWA) A4, for particulate matter containing no asbestos and < 1% crystalline silica (ACGIH 2000). MAK: 1.5 mg/m³ (Respirable fraction) 4 mg/m³ (Inhalable fraction) Pregnancy risk group: D (DFG 2006). OSHA PEL†: TWA 15 mg/m^3 (total) TWA 5 mg/m^3 (resp) NIOSH REL: See Appendix D NIOSH IDLH: N.D. See: IDLH INDEX	**INHALATION RISK:** Evaporation at 20°C is negligible; a harmful concentration of airborne particles can, however, be reached quickly. **EFFECTS OF SHORT-TERM EXPOSURE:** Inhalation of high concentrations of dusts of this substance may cause eyes and upper respiratory tract irritation. **EFFECTS OF LONG-TERM OR REPEATED EXPOSURE:** The substance may have effects on the central nervous system .
PHYSICAL PROPERTIES	Boiling point: 3000°C Melting point: 2054°C Density: 3.97 g/cm³	Solubility in water: none
ENVIRONMENTAL DATA		

N O T E S

There is a different and hard crystalline form of aluminium oxide which occurs abundantly in nature under the name corundum (CAS 1302-74-5). Other melting points: 2015°C (approx.) (corundum). Occurs also as the minerals: bauxite, bayerite, boehmite, diaspore, gibbsite. Card has been partly updated in October 2006. See section Occupational Exposure Limits.

ADDITIONAL INFORMATION

ICSC: 0351 **ALUMINIUM OXIDE**

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International Chemical Safety Cards

ANTIMONY

ICSC: 0775

Antimony black
Antimony regulus
Stibium
Sb
Atomic mass: 121.8

ICSC # 0775
CAS # 7440-36-0
RTECS # CC4025000
UN # 2871
October 12, 2006 Validated

TYPES OF HAZARD/ EXPOSURE	ACUTE HAZARDS/ SYMPTOMS	PREVENTION	FIRST AID/ FIRE FIGHTING
FIRE	Combustible under specific conditions. Gives off irritating or toxic fumes (or gases) in a fire.	NO open flames. NO contact with oxidants, halogens, acid(s).	water spray, foam, powder, carbon dioxide
EXPLOSION	Finely dispersed particles form explosive mixtures in air. Risk of fire and explosion on contact with .	Prevent deposition of dust; closed system, dust explosion-proof electrical equipment and lighting.	
EXPOSURE		PREVENT DISPERSION OF DUST!	
•INHALATION	Cough. (See Ingestion).	Local exhaust or breathing protection.	Fresh air, rest.
•SKIN		Protective gloves.	Remove contaminated clothes. Rinse and then wash skin with water and soap.
•EYES	Redness. Pain.	Safety goggles, or eye protection in combination with breathing protection if powder.	First rinse with plenty of water for several minutes (remove contact lenses if easily possible), then take to a doctor.
•INGESTION	Abdominal pain. Vomiting. Diarrhoea.	Do not eat, drink, or smoke during work.	Rinse mouth. Refer for medical attention if you feel unwell.

SPILLAGE DISPOSAL	STORAGE	PACKAGING & LABELLING
Personal protection: P2 filter respirator for harmful particles. Sweep spilled substance into sealable containers; if appropriate, moisten first to prevent dusting.	Separated from oxidants , acids, halogens , food and feedstuffs.	Do not transport with food and feedstuffs. UN Hazard Class: 6.1 UN Packing Group: III

SEE IMPORTANT INFORMATION ON BACK

ICSC: 0775

Prepared in the context of cooperation between the International Programme on Chemical Safety & the Commission of the European Communities (C) IPCS CEC 1994. No modifications to the International version have been made except to add the OSHA PELs, NIOSH RELs and NIOSH IDLH values.

International Chemical Safety Cards

ANTIMONY

ICSC: 0775

IMPORTANT DATA

PHYSICAL STATE; APPEARANCE:
SILVER-WHITE, LUSTROUS, HARD, BRITTLE LUMPS OR DARK GRAY POWDER

PHYSICAL DANGERS:
Dust explosion possible if in powder or granular form, mixed with air.

CHEMICAL DANGERS:
On combustion, forms toxic fumes (antimony oxides; see ICSC 0012). Reacts violently with oxidants, , causing fire and explosion hazard. On contact with acids may emit toxic gas (stibine; see ICSC 0776).

OCCUPATIONAL EXPOSURE LIMITS:
TLV: 0.5 mg/m³ as TWA (ACGIH 2006).
MAK:
Carcinogen category: 2; Germ cell mutagen group: 3B (DFG 2006).
OSHA PEL*: TWA 0.5 mg/m^3 *Note: The PEL also applies to other antimony compounds (as Sb).
NIOSH REL*: TWA 0.5 mg/m^3 *Note: The REL also applies to other antimony compounds (as Sb).
NIOSH IDLH: 50 mg/m^3 (as Sb) See: 7440360

ROUTES OF EXPOSURE:
The substance can be absorbed into the body by inhalation of its aerosol.

INHALATION RISK:
A harmful concentration of airborne particles can be reached quickly when dispersed.

EFFECTS OF SHORT-TERM EXPOSURE:
May cause mechanical irritation to the eyes.

EFFECTS OF LONG-TERM OR REPEATED EXPOSURE:
Repeated or prolonged contact with skin may cause dermatitis, especially when exposed to fumes. The substance may have effects on the lungs , resulting in pneumoconiosis.

PHYSICAL PROPERTIES

Boiling point: 1635 °C
Melting point: 630 °C
Density: 6.7
g/cm³

Solubility in water: none

ENVIRONMENTAL DATA

N O T E S

Other boiling points: 1325°C, 1440°C, 1587 °C, 1750°C. The recommendations on this card apply only to metallic antimony. See ICSC 0012 antimony trioxide, ICSC 1224 antimony trichloride, ICSC 0220 antimony pentafluoride and ICSC 0776 antimony trihydride.

Transport Emergency Card: TEC (R)-61GT5-III

ADDITIONAL INFORMATION

ICSC: 0775 **ANTIMONY**

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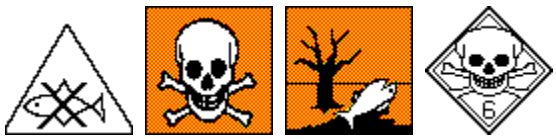
International Chemical Safety Cards

ARSENIC

ICSC: 0013

Grey arsenic
As
Atomic mass: 74.9

ICSC # 0013
CAS # 7440-38-2
RTECS # CG0525000
UN # 1558
EC # 033-001-00-X
October 18, 1999 Peer reviewed



TYPES OF HAZARD/ EXPOSURE	ACUTE HAZARDS/ SYMPTOMS	PREVENTION	FIRST AID/ FIRE FIGHTING
FIRE	Combustible. Gives off irritating or toxic fumes (or gases) in a fire.	NO open flames. NO contact with strong oxidizers. NO contact with hot surfaces.	Powder, water spray, foam, carbon dioxide.
EXPLOSION	Risk of fire and explosion is slight when exposed to hot surfaces or flames in the form of fine powder or dust.	Prevent deposition of dust; closed system, dust explosion-proof electrical equipment and lighting.	
EXPOSURE		PREVENT DISPERSION OF DUST! AVOID ALL CONTACT! AVOID EXPOSURE OF (PREGNANT) WOMEN!	IN ALL CASES CONSULT A DOCTOR!
•INHALATION	Cough. Sore throat. Shortness of breath. Weakness. See Ingestion.	Closed system and ventilation.	Fresh air, rest. Artificial respiration may be needed. Refer for medical attention.
•SKIN	Redness.	Protective gloves. Protective clothing.	Remove contaminated clothes. Rinse skin with plenty of water or shower.
•EYES	Redness.	Face shield or eye protection in combination with breathing protection if powder.	First rinse with plenty of water for several minutes (remove contact lenses if easily possible), then take to a doctor.
•INGESTION	Abdominal pain. Diarrhoea. Nausea. Vomiting. Burning sensation in the throat and chest. Shock or collapse. Unconsciousness.	Do not eat, drink, or smoke during work. Wash hands before eating.	Rinse mouth. Induce vomiting (ONLY IN CONSCIOUS PERSONS!). Refer for medical attention.

SPILLAGE DISPOSAL	STORAGE	PACKAGING & LABELLING
Evacuate danger area! Sweep spilled substance into sealable containers. Carefully collect remainder, then remove to safe place. Chemical protection suit including self-contained breathing apparatus. Do NOT let this chemical enter the environment.	Separated from strong oxidants, acids, halogens, food and feedstuffs. Well closed.	Do not transport with food and feedstuffs. Marine pollutant. T symbol N symbol R: 23/25-50/53 S: 1/2-20/21-28-45-60-61 UN Hazard Class: 6.1 UN Packing Group: II

SEE IMPORTANT INFORMATION ON BACK

Prepared in the context of cooperation between the International Programme on Chemical Safety & the Commission of the European Communities (C) IPCS CEC 1994. No modifications to the International version have been made except to add the OSHA PELs, NIOSH RELs and NIOSH IDLH values.

International Chemical Safety Cards

ARSENIC

ICSC: 0013

IMPORTANT DATA	**PHYSICAL STATE; APPEARANCE:** ODOURLESS, BRITTLE, GREY, METALLIC-LOOKING CRYSTALS. **PHYSICAL DANGERS:** **CHEMICAL DANGERS:** Upon heating, toxic fumes are formed. Reacts violently with strong oxidants and halogens, causing fire and explosion hazard. Reacts with acids to produce **OCCUPATIONAL EXPOSURE LIMITS:** TLV: 0.01 mg/m³ as TWA A1 (confirmed human carcinogen); BEI issued (ACGIH 2004). MAK: Carcinogen category: 1; Germ cell mutagen group: 3A; (DFG 2004). OSHA PEL: 1910.1018 TWA 0.010 mg/m^3 NIOSH REL: Ca C 0.002 mg/m^3 15-minute See Appendix A NIOSH IDLH: Ca 5 mg/m^3 (as As) See: 7440382 **ROUTES OF EXPOSURE:** The substance can be absorbed into the body by inhalation of its aerosol and by ingestion. **INHALATION RISK:** Evaporation at 20°C is negligible; a harmful concentration of airborne particles can, however, be reached quickly, when dispersed. **EFFECTS OF SHORT-TERM EXPOSURE:** The substance is irritating to the eyes the skin and the respiratory tract. The substance may cause effects on the gastrointestinal tract cardiovascular system central nervous system kidneys , resulting in severe gastroenteritis, loss of fluid, and electrolytes, cardiac disorders shock convulsions and kidney impairment Exposure above the OEL may result in death. The effects may be delayed. Medical observation is indicated. **EFFECTS OF LONG-TERM OR REPEATED EXPOSURE:** Repeated or prolonged contact with skin may cause dermatitis. The substance may have effects on the mucous membranes, skin, peripheral nervous system liver bone marrow , resulting in pigmentation disorders, hyperkeratosis, perforation of nasal septum, neuropathy, liver impairment anaemia This substance is carcinogenic to humans. Animal tests show that this substance possibly causes toxicity to human reproduction or development.
PHYSICAL PROPERTIES	Sublimation point: 613°C Density: 5.7 g/cm³ Solubility in water: none
ENVIRONMENTAL DATA	The substance is toxic to aquatic organisms. It is strongly advised that this substance does not enter the environment.

N O T E S

The substance is combustible but no flash point is available in literature. Depending on the degree of exposure, periodic medical examination is suggested. Do NOT take working clothes home. Refer also to cards for specific arsenic compounds, e.g., Arsenic pentoxide (ICSC 0377), Arsenic trichloride (ICSC 0221), Arsenic trioxide (ICSC 0378), Arsine (ICSC 0222).

Transport Emergency Card: TEC (R)-61GT5-II

ADDITIONAL INFORMATION

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International Chemical Safety Cards

BARIUM SULFATE

ICSC: 0827

Barium sulphate
Blanc fixe
Artificial barite
$BaSO_4$
Molecular mass: 233.43

ICSC # 0827
CAS # 7727-43-7
RTECS # CR0600000
October 20, 1999 Peer reviewed

TYPES OF HAZARD/ EXPOSURE	ACUTE HAZARDS/ SYMPTOMS	PREVENTION	FIRST AID/ FIRE FIGHTING
FIRE	Not combustible. Gives off irritating or toxic fumes (or gases) in a fire.		In case of fire in the surroundings: use appropriate extinguishing media.
EXPLOSION			
EXPOSURE		PREVENT DISPERSION OF DUST!	
•INHALATION		Local exhaust or breathing protection.	Fresh air, rest.
•SKIN		Protective gloves.	Remove contaminated clothes. Rinse skin with plenty of water or shower.
•EYES		Safety spectacles.	First rinse with plenty of water for several minutes (remove contact lenses if easily possible), then take to a doctor.
•INGESTION		Do not eat, drink, or smoke during work.	Rinse mouth.

SPILLAGE DISPOSAL	STORAGE	PACKAGING & LABELLING
Sweep spilled substance into containers; if appropriate, moisten first to prevent dusting. Personal protection: P1 filter respirator for inert particles.		R: S:

SEE IMPORTANT INFORMATION ON BACK

ICSC: 0827

Prepared in the context of cooperation between the International Programme on Chemical Safety & the Commission of the European Communities (C) IPCS CEC 1994. No modifications to the International version have been made except to add the OSHA PELs, NIOSH RELs and NIOSH IDLH values.

International Chemical Safety Cards

BARIUM SULFATE

ICSC: 0827

IMPORTANT DATA	**PHYSICAL STATE; APPEARANCE:** ODOURLESS TASTELESS, WHITE OR YELLOWISH CRYSTALS OR POWDER. **PHYSICAL DANGERS:** **CHEMICAL DANGERS:** Reacts violently with aluminium powder. **OCCUPATIONAL EXPOSURE LIMITS:** TLV: 10 mg/m³ as TWA; (ACGIH 2004). MAK: (Inhalable fraction) 4 mg/m³; (Respirable fraction) 1.5 mg/m³; (DFG 2004). OSHA PEL†: TWA 15 mg/m^3 (total) TWA 5 mg/m^3 (resp) NIOSH REL: TWA 10 mg/m^3 (total) TWA 5 mg/m^3 (resp) NIOSH IDLH: N.D. See: IDLH INDEX **ROUTES OF EXPOSURE:** The substance can be absorbed into the body by inhalation of its aerosol. **INHALATION RISK:** Evaporation at 20°C is negligible; a nuisance-causing concentration of airborne particles can, however, be reached quickly. **EFFECTS OF SHORT-TERM EXPOSURE:** **EFFECTS OF LONG-TERM OR REPEATED EXPOSURE:** Lungs may be affected by repeated or prolonged exposure to dust particles , resulting in baritosis (a form of benign pneumoconiosis).
PHYSICAL PROPERTIES	Melting point (decomposes): 1600°C Density: 4.5 g/cm³ Solubility in water: none
ENVIRONMENTAL DATA	

N O T E S

Occurs in nature as the mineral barite; also as barytes, heavy spar. Card has been partly updated in October 2005. See section Occupational Exposure Limits.

ADDITIONAL INFORMATION

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International Chemical Safety Cards

BERYLLIUM

ICSC: 0226

Glucinium
Be
Atomic mass: 9.0

ICSC # 0226
CAS # 7440-41-7
RTECS # DS1750000
UN # 1567
EC # 004-001-00-7
October 20, 1999 Validated

TYPES OF HAZARD/ EXPOSURE	ACUTE HAZARDS/ SYMPTOMS	PREVENTION	FIRST AID/ FIRE FIGHTING
FIRE	Combustible.	NO open flames.	Special powder, dry sand, NO other agents.
EXPLOSION	Finely dispersed particles form explosive mixtures in air.	Prevent deposition of dust; closed system, dust explosion-proof electrical equipment and lighting.	
EXPOSURE		PREVENT DISPERSION OF DUST! AVOID ALL CONTACT!	IN ALL CASES CONSULT A DOCTOR!
•INHALATION	Cough. Shortness of breath. Sore throat. Weakness. Symptoms may be delayed (see Notes).	Local exhaust. Breathing protection.	Fresh air, rest. Refer for medical attention.
•SKIN	Redness.	Protective gloves. Protective clothing.	Remove contaminated clothes. Rinse skin with plenty of water or shower.
•EYES	Redness. Pain.	Face shield or eye protection in combination with breathing protection if powder.	First rinse with plenty of water for several minutes (remove contact lenses if easily possible), then take to a doctor.
•INGESTION		Do not eat, drink, or smoke during work. Wash hands before eating.	Rinse mouth. Do NOT induce vomiting. Refer for medical attention.

SPILLAGE DISPOSAL	STORAGE	PACKAGING & LABELLING
Evacuate danger area! Consult an expert! Carefully collect the spilled substance into containers; if appropriate moisten first, then remove to safe place. Chemical protection suit including self-contained breathing apparatus. Do NOT let this chemical enter the environment.	Separated from strong acids, bases food and feedstuffs	Unbreakable packaging; put breakable packaging into closed unbreakable container. Do not transport with food and feedstuffs. Note: E T+ symbol R: 49-25-26-36/37/38-43-48/23 S: 53-45 UN Hazard Class: 6.1 UN Subsidiary Risks: 4.1 UN Packing Group: II

SEE IMPORTANT INFORMATION ON BACK

Prepared in the context of cooperation between the International Programme on Chemical Safety & the Commission of the European Communities (C) IPCS CEC 1994. No modifications to the International version have been made except to add the OSHA PELs, NIOSH RELs and NIOSH IDLH values.

International Chemical Safety Cards

BERYLLIUM

ICSC: 0226

I M P O R T A N T D A T A

PHYSICAL STATE; APPEARANCE:
GREY TO WHITE POWDER.

PHYSICAL DANGERS:
Dust explosion possible if in powder or granular form, mixed with air.

CHEMICAL DANGERS:
Reacts with strong acids and strong bases forming flammable/explosive gas (hydrogen - see ICSC0001) Forms shock sensitive mixtures with some chlorinated solvents, such as carbon tetrachloride and trichloroethylene.

OCCUPATIONAL EXPOSURE LIMITS:
TLV: 0.002 mg/m³ as TWA 0.01 mg/m³ as STEL A1 (confirmed human carcinogen); (ACGIH 2004).
Intended change 0.00002 mg/m³
Skin, Inhal.
SEN (ACGIH 2005).
MAK: sensitization of respiratory tract and skin (Sah);
Carcinogen category: 1;
(DFG 2004).
OSHA PEL: TWA 0.002 mg/m^3 C 0.005 mg/m^3 0.025 mg/m^3 30-minute maximum peak
NIOSH REL: Ca Not to exceed 0.0005 mg/m^3 See Appendix A
NIOSH IDLH: Ca 4 mg/m^3 (as Be) See: IDLH INDEX

ROUTES OF EXPOSURE:
The substance can be absorbed into the body by inhalation of its aerosol and by ingestion.

INHALATION RISK:
Evaporation at 20°C is negligible; a harmful concentration of airborne particles can, however, be reached quickly when dispersed.

EFFECTS OF SHORT-TERM EXPOSURE:
The aerosol of this substance is irritating to the respiratory tract Inhalation of dust or fumes may cause chemical pneumonitis. Exposure may result in death. The effects may be delayed. Medical observation is indicated.

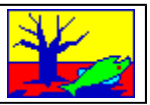
EFFECTS OF LONG-TERM OR REPEATED EXPOSURE:
Repeated or prolonged contact may cause skin sensitization. Lungs may be affected by repeated or prolonged exposure to dust particles , resulting in chronic beryllium disease (cough, weight loss, weakness). This substance is carcinogenic to humans.

PHYSICAL PROPERTIES

Boiling point: above 2500°C
Melting point: 1287°C
Density: 1.9 g/cm³
Solubility in water: none

ENVIRONMENTAL DATA

The substance is very toxic to aquatic organisms.



N O T E S

Depending on the degree of exposure, periodic medical examination is suggested. Do NOT take working clothes home.

Transport Emergency Card: TEC (R)-61GTF3-II
NFPA Code: H3; F1; R0

ADDITIONAL INFORMATION

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International Chemical Safety Cards

CADMIUM

ICSC: 0020

Cd
Atomic mass: 112.4

ICSC # 0020
CAS # 7440-43-9
RTECS # EU9800000
UN # 2570
EC # 048-002-00-0
April 22, 2005 Peer reviewed

TYPES OF HAZARD/ EXPOSURE	ACUTE HAZARDS/ SYMPTOMS	PREVENTION	FIRST AID/ FIRE FIGHTING
FIRE	Flammable in powder form and spontaneously combustible in pyrophoric form. Gives off irritating or toxic fumes (or gases) in a fire.	NO open flames, NO sparks, and NO smoking. NO contact with heat or acid(s).	Dry sand. Special powder. NO other agents.
EXPLOSION	Finely dispersed particles form explosive mixtures in air.	Prevent deposition of dust; closed system, dust explosion-proof electrical equipment and lighting.	
EXPOSURE		PREVENT DISPERSION OF DUST! AVOID ALL CONTACT!	IN ALL CASES CONSULT A DOCTOR!
•INHALATION	Cough. Sore throat.	Local exhaust or breathing protection.	Fresh air, rest. Refer for medical attention.
•SKIN		Protective gloves.	Remove contaminated clothes. Rinse and then wash skin with water and soap.
•EYES	Redness. Pain.	Safety goggles or eye protection in combination with breathing protection.	First rinse with plenty of water for several minutes (remove contact lenses if easily possible), then take to a doctor.
•INGESTION	Abdominal pain. Diarrhoea. Headache. Nausea. Vomiting.	Do not eat, drink, or smoke during work.	Rest. Refer for medical attention.

SPILLAGE DISPOSAL	STORAGE	PACKAGING & LABELLING
Evacuate danger area! Personal protection: chemical protection suit including self-contained breathing apparatus. Remove all ignition sources. Sweep spilled substance into containers. Carefully collect remainder, then remove to safe place.	Fireproof. Dry. Keep under inert gas. Separated from igntion sources, oxidants acids, food and feedstuffs	Airtight. Unbreakable packaging; put breakable packaging into closed unbreakable container. Do not transport with food and feedstuffs. Note: E T+ symbol N symbol R: 45-26-48/23/25-62-63-68-50/53 S: 53-45-60-61 UN Hazard Class: 6.1

SEE IMPORTANT INFORMATION ON BACK

ICSC: 0020

Prepared in the context of cooperation between the International Programme on Chemical Safety & the Commission of the European Communities (C) IPCS CEC 1994. No modifications to the International version have been made except to add the OSHA PELs, NIOSH RELs and NIOSH IDLH values.

International Chemical Safety Cards

CADMIUM

ICSC: 0020

I M P O R T A N T D A T A

PHYSICAL STATE; APPEARANCE:
SOFT BLUE-WHITE METAL LUMPS OR GREY POWDER. MALLEABLE. TURNS BRITTLE ON EXPOSURE TO 80°C AND TARNISHES ON EXPOSURE TO MOIST AIR.

PHYSICAL DANGERS:
Dust explosion possible if in powder or granular form, mixed with air.

CHEMICAL DANGERS:
Reacts with acids forming flammable/explosive gas (hydrogen - see ICSC0001.) Dust reacts with oxidants, hydrogen azide, zinc, selenium or tellurium , causing fire and explosion hazard.

OCCUPATIONAL EXPOSURE LIMITS:
TLV: (Total dust) 0.01 mg/m³
(Respirable fraction)
0.002 mg/m³ as TWA A2 (suspected human carcinogen); BEI issued (ACGIH 2005).
MAK: skin absorption (H);
Carcinogen category: 1; Germ cell mutagen group: 3A; (DFG 2004).
OSHA PEL*: 1910.1027 TWA 0.005 mg/m^3 *Note: The PEL applies to all Cadmium compounds (as Cd).
NIOSH REL*: Ca See Appendix A *Note: The REL applies to all Cadmium compounds (as Cd).
NIOSH IDLH: Ca 9 mg/m^3 (as Cd) See: IDLH INDEX

ROUTES OF EXPOSURE:
The substance can be absorbed into the body by inhalation of its aerosol and by ingestion.

INHALATION RISK:
A harmful concentration of airborne particles can be reached quickly when dispersed, especially if powdered.

EFFECTS OF SHORT-TERM EXPOSURE:
The fume is irritating to the respiratory tract Inhalation of fume may cause lung oedema (see Notes). Inhalation of fumes may cause metal fume fever. The effects may be delayed. Medical observation is indicated.

EFFECTS OF LONG-TERM OR REPEATED EXPOSURE:
Lungs may be affected by repeated or prolonged exposure to dust particles. The substance may have effects on the kidneys , resulting in kidney impairment This substance is carcinogenic to humans.

PHYSICAL PROPERTIES

Boiling point: 765°C
Melting point: 321°C
Density: 8.6
g/cm3

Solubility in water: none
Auto-ignition temperature: (cadmium metal dust) 250°C

ENVIRONMENTAL DATA

N O T E S

Reacts violently with fire extinguishing agents such as water,foam,carbon dioxideand halons. Depending on the degree of exposure, periodic medical examination is indicated. The symptoms of lung oedema often do not become manifest until a few hours have passed and they are aggravated by physical effort. Rest and medical observation are therefore essential. Do NOT take working clothes home. Cadmium also exists in a pyrophoric form (EC No. 048-011-00-X), which bears the additional EU labelling symbol F, R phrase 17, and S phrases 7/8 and 43. UN numbers and packing group will vary according to the physical form of the substance.

ADDITIONAL INFORMATION

(C) IPCS, CEC, 1994

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International Chemical Safety Cards

CALCIUM

ICSC: 1192

Elemental Calcium
Ca

ICSC # 1192
CAS # 7440-70-2
RTECS # EV8040000
UN # 1401; 1855 (calcium pyrophoric)
EC # 020-001-00-X
October 24, 1994 Validated

TYPES OF HAZARD/ EXPOSURE	ACUTE HAZARDS/ SYMPTOMS	PREVENTION	FIRST AID/ FIRE FIGHTING
FIRE	Not combustible but forms flammable gas on contact with water or damp air. Highly flammable when finely divided. Forms flammable gas on contact with water or damp air. Many reactions may cause fire or explosion.	NO open flames, NO sparks, and NO smoking. NO contact with water and incompatible substances (see Chemical Dangers).	Special powder, dry sand, NO other agents. NO water.
EXPLOSION	Risk of fire and explosion on contact with water and incompatible substances (see Chemical Dangers).		In case of fire: cool drums, etc., by spraying with water but avoid contact of the substance with water.
EXPOSURE		PREVENT DISPERSION OF DUST!	
•INHALATION		Avoid inhalation of fine dust and mist.	Fresh air, rest. Refer for medical attention.
•SKIN		Protective gloves.	Remove contaminated clothes. Rinse skin with plenty of water or shower. Refer for medical attention.
•EYES	Redness. Pain.	Safety goggles.	First rinse with plenty of water for several minutes (remove contact lenses if easily possible), then take to a doctor.
•INGESTION		Do not eat, drink, or smoke during work.	Refer for medical attention.

SPILLAGE DISPOSAL	STORAGE	PACKAGING & LABELLING
Remove all ignition sources. Sweep spilled substance into containers. Do NOT wash away into sewer. Carefully collect remainder, then remove to safe place. Do NOT absorb in saw-dust or other combustible absorbents. (Extra personal protection: complete protective clothing including self-contained breathing apparatus).	Fireproof. Separated from incompatible substances (see Chemical Dangers). Dry. Keep under inert gas. Keep under petroleum oil.	Airtight. Unbreakable packaging; put breakable packaging into closed unbreakable container. F symbol R: 15 S: 2-8-24/25-43 UN Hazard Class: 4.3; 4.2 (calcium pyrophoric) UN Packing Group: II; I (calcium pyrophoric)

SEE IMPORTANT INFORMATION ON BACK

ICSC: 1192

Prepared in the context of cooperation between the International Programme on Chemical Safety & the Commission of the European Communities (C) IPCS CEC 1994. No modifications to the International version have been made except to add the OSHA PELs, NIOSH RELs and NIOSH IDLH values.

International Chemical Safety Cards

CALCIUM

ICSC: 1192

IMPORTANT DATA		
	PHYSICAL STATE; APPEARANCE: LUSTROUS SILVER WHITE METAL (WHEN FRESHLY CUT); TURNS BLUISH GREY ON EXPOSURE TO MOIST AIR. **PHYSICAL DANGERS:** Ignites in air when finely divided. **CHEMICAL DANGERS:** Reacts with water, alcohol diluted acids with evolution of highly flammable hydrogen gas. Reacts with halogens. Burns in air. Contact with alkali hydroxides or carbonates may cause detonation. **OCCUPATIONAL EXPOSURE LIMITS:** TLV not established.	**ROUTES OF EXPOSURE:** **INHALATION RISK:** **EFFECTS OF SHORT-TERM EXPOSURE:** The substance irritates the eyes. **EFFECTS OF LONG-TERM OR REPEATED EXPOSURE:**
PHYSICAL PROPERTIES	Boiling point: 1440°C Melting point: 850°C	Relative density (water = 1): 1.54 Solubility in water: reaction
ENVIRONMENTAL DATA		

N O T E S

Reacts violently with fire extinguishing agents such as water, foam, halons and carbon dioxide. Do NOT take working clothes home.

Transport Emergency Card: TEC (R)-43G12; 42G13 (pyrophoric)

NFPA Code: H1; F1; R2; W

ADDITIONAL INFORMATION

ICSC: 1192 **CALCIUM**

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International Chemical Safety Cards

CHROMIUM

ICSC: 0029

Chrome
Cr
Atomic mass: 52.0
(powder)

ICSC # 0029
CAS # 7440-47-3
RTECS # GB4200000
October 27, 2004 Peer reviewed

TYPES OF HAZARD/ EXPOSURE	ACUTE HAZARDS/ SYMPTOMS	PREVENTION	FIRST AID/ FIRE FIGHTING
FIRE	Combustible under specific conditions.	No open flames if in powder form.	In case of fire in the surroundings: use appropriate extinguishing media.
EXPLOSION		Prevent deposition of dust; closed system, dust explosion-proof electrical equipment and lighting.	
EXPOSURE		PREVENT DISPERSION OF DUST!	
•INHALATION	Cough.	Local exhaust or breathing protection.	Fresh air, rest.
•SKIN		Protective gloves.	Remove contaminated clothes. Rinse skin with plenty of water or shower.
•EYES	Redness.	Safety goggles.	First rinse with plenty of water for several minutes (remove contact lenses if easily possible), then take to a doctor.
•INGESTION		Do not eat, drink, or smoke during work.	Rinse mouth.

SPILLAGE DISPOSAL	STORAGE	PACKAGING & LABELLING
Sweep spilled substance into containers; if appropriate, moisten first to prevent dusting. Personal protection: P2 filter respirator for harmful particles.		R: S:

SEE IMPORTANT INFORMATION ON BACK

ICSC: 0029

Prepared in the context of cooperation between the International Programme on Chemical Safety & the Commission of the European Communities (C) IPCS CEC 1994. No modifications to the International version have been made except to add the OSHA PELs, NIOSH RELs and NIOSH IDLH values.

International Chemical Safety Cards

CHROMIUM

ICSC: 0029

I **M** **P**	**PHYSICAL STATE; APPEARANCE:** GREY POWDER **PHYSICAL DANGERS:** Dust explosion possible if in powder or granular form, mixed with air.	**ROUTES OF EXPOSURE:** **INHALATION RISK:** A harmful concentration of airborne particles can be reached quickly when dispersed.

O R T A N T D A T A	**CHEMICAL DANGERS:** Chromium is a catalytic substance and may cause reaction in contact with many organic and inorganic substances , causing fire and explosion hazard. **OCCUPATIONAL EXPOSURE LIMITS:** TLV: (as Cr metal, Cr(III) compounds) 0.5 mg/m³ as TWA A4 (ACGIH 2004). MAK not established. OSHA PEL*: TWA 1 mg/m^3 See Appendix C *Note: The PEL also applies to insoluble chromium salts. NIOSH REL: TWA 0.5 mg/m^3 See Appendix C NIOSH IDLH: 250 mg/m^3 (as Cr) See: 7440473 **EFFECTS OF SHORT-TERM EXPOSURE:** May cause mechanical irritation tothe eyesandthe respiratory tract. **EFFECTS OF LONG-TERM OR REPEATED EXPOSURE:**
PHYSICAL PROPERTIES	Boiling point: 2642°C Melting point: 1900°C Density: 7.15 g/cm³ Solubility in water: none
ENVIRONMENTAL DATA	

N O T E S

The surface of the chromium particles is oxidized to chromium(III)oxide in air. See ICSC 1531 Chromium(III) oxide.

ADDITIONAL INFORMATION

ICSC: 0029 **CHROMIUM**

(C) IPCS, CEC, 1994

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International Chemical Safety Cards

COBALT

ICSC: 0782

Co
Atomic mass: 58.9
(powder)

ICSC # 0782
CAS # 7440-48-4
RTECS # GF8750000
EC # 027-001-00-9
April 21, 2004 Validated

TYPES OF HAZARD/ EXPOSURE	ACUTE HAZARDS/ SYMPTOMS	PREVENTION	FIRST AID/ FIRE FIGHTING
FIRE	Dust may ignite on contact with air or oxygen.	NO contact with oxidants.	Special powder, dry sand, NO other agents.
EXPLOSION	Finely dispersed particles form explosive mixtures in air. Risk of fire and explosion on contact with oxidants or acetylene.	Prevent deposition of dust; closed system, dust explosion-proof electrical equipment and lighting.	
EXPOSURE		PREVENT DISPERSION OF DUST! AVOID ALL CONTACT!	
•INHALATION	Cough. Shortness of breath. Sore throat. Wheezing.	Local exhaust or breathing protection.	Fresh air, rest. Refer for medical attention.
•SKIN		Protective gloves. Protective clothing.	Remove contaminated clothes. Rinse and then wash skin with water and soap.
•EYES	Redness.	Safety goggles, or eye protection in combination with breathing protection.	First rinse with plenty of water for several minutes (remove contact lenses if easily possible), then take to a doctor.
•INGESTION	Abdominal pain. Vomiting.	Do not eat, drink, or smoke during work.	Rinse mouth. Give one or two glasses of water to drink.

SPILLAGE DISPOSAL	STORAGE	PACKAGING & LABELLING
Personal protection: particulate filter respirator adapted to the airborne concentration of the substance. Sweep spilled substance into containers; if appropriate, moisten first to prevent dusting. Carefully collect remainder, then remove to safe place. Do NOT let this chemical enter the environment.	Separated from strong oxidants. Store in an area without drain or sewer access.	Xn symbol R: 42/43-53 S: 2-22-24-37-61

SEE IMPORTANT INFORMATION ON BACK

ICSC: 0782

Prepared in the context of cooperation between the International Programme on Chemical Safety & the Commission of the European Communities (C) IPCS CEC 1994. No modifications to the International version have been made except to add the OSHA PELs, NIOSH RELs and NIOSH IDLH values.

International Chemical Safety Cards

COBALT

ICSC: 0782

IMPORTANT DATA

PHYSICAL STATE; APPEARANCE:
SILVER-GREY POWDER .

PHYSICAL DANGERS:
Dust explosion possible if in powder or granular form, mixed with air .

CHEMICAL DANGERS:
The substance may spontaneously ignite on contact with air or acetylene, when finely divided. Reacts with strong oxidants , causing fire and explosion hazard.

OCCUPATIONAL EXPOSURE LIMITS:
TLV: 0.02 mg/m³ as TWA; A3 (confirmed animal carcinogen with unknown relevance to humans); BEI issued; (ACGIH 2004).
MAK: (Inhalable fraction) skin absorption (H); sensitization of respiratory tract and skin (Sah); Carcinogen category: 2; Germ cell mutagen group: 3A
OSHA PEL†: TWA 0.1 mg/m^3
NIOSH REL: TWA 0.05 mg/m^3
NIOSH IDLH: 20 mg/m^3 (as Co) See: 7440484

ROUTES OF EXPOSURE:
The substance can be absorbed into the body by inhalation.

INHALATION RISK:
A harmful concentration of airborne particles can be reached quickly when dispersed.

EFFECTS OF SHORT-TERM EXPOSURE:
The substance (as fume or dust) is mildly irritating to the respiratory tract .

EFFECTS OF LONG-TERM OR REPEATED EXPOSURE:
Repeated or prolonged contact may cause skin sensitization. Repeated or prolonged inhalation exposure may cause asthma. Lungs may be affected by repeated or prolonged exposure. This substance is possibly carcinogenic to humans.

PHYSICAL PROPERTIES

Boiling point: 2870°C
Melting point: 1493°C
Density: 8.9
g/cm³

Solubility in water:
none

ENVIRONMENTAL DATA

The substance is toxic to aquatic organisms. Bioaccumulation of this chemical may occur in fish and in molluscs.

NOTES

Depending on the degree of exposure, periodic medical examination is suggested. The symptoms of asthma often do not become manifest until a few hours have passed and they are aggravated by physical effort. Rest and medical observation are therefore essential. Anyone who has shown symptoms of asthma due to this substance should avoid all further contact with this substance. Do NOT take working clothes home.

Card has been partially updated in April 2010: see Occupational Exposure Limits, Ingestion First Aid, Spillage Disposal, Storage.

ADDITIONAL INFORMATION

ICSC: 0782 **COBALT**

(C) IPCS, CEC, 1994

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International Chemical Safety Cards

COPPER

ICSC: 0240

Cu
(powder)

ICSC # 0240
CAS # 7440-50-8
RTECS # GL5325000
September 24, 1993 Validated

TYPES OF HAZARD/ EXPOSURE	ACUTE HAZARDS/ SYMPTOMS	PREVENTION	FIRST AID/ FIRE FIGHTING
FIRE	Combustible.	NO open flames.	Special powder, dry sand, NO other agents.
EXPLOSION			
EXPOSURE		PREVENT DISPERSION OF DUST!	
•INHALATION	Cough. Headache. Shortness of breath. Sore throat.	Local exhaust or breathing protection.	Fresh air, rest. Refer for medical attention.
•SKIN	Redness.	Protective gloves.	Remove contaminated clothes. Rinse and then wash skin with water and soap.
•EYES	Redness. Pain.	Safety goggles.	First rinse with plenty of water for several minutes (remove contact lenses if easily possible), then take to a doctor.
•INGESTION	Abdominal pain. Nausea. Vomiting.	Do not eat, drink, or smoke during work.	Rinse mouth. Refer for medical attention.

SPILLAGE DISPOSAL	STORAGE	PACKAGING & LABELLING
Sweep spilled substance into containers. Carefully collect remainder. Then remove to safe place. (Extra personal protection: P2 filter respirator for harmful particles).	Separated from - See Chemical Dangers.	R: S:

SEE IMPORTANT INFORMATION ON BACK

ICSC: 0240

Prepared in the context of cooperation between the International Programme on Chemical Safety & the Commission of the European Communities (C) IPCS CEC 1994. No modifications to the International version have been made except to add the OSHA PELs, NIOSH RELs and NIOSH IDLH values.

International Chemical Safety Cards

COPPER

ICSC: 0240

I

M

P

PHYSICAL STATE; APPEARANCE:
RED POWDER, TURNS GREEN ON EXPOSURE TO MOIST AIR.

PHYSICAL DANGERS:

CHEMICAL DANGERS:

ROUTES OF EXPOSURE:
The substance can be absorbed into the body by inhalation and by ingestion.

INHALATION RISK:
Evaporation at 20°C is negligible; a harmful concentration of airborne particles can, however, be reached quickly when dispersed.

O **R** **T** **A** **N** **T** **D** **A** **T** **A**	Shock-sensitive compounds are formed with acetylenic compounds, ethylene oxides and azides. Reacts with strong oxidants like chlorates, bromates and iodates, causing explosion hazard. **OCCUPATIONAL EXPOSURE LIMITS:** TLV: 0.2 mg/m³ fume (ACGIH 1992-1993). TLV (as Cu, dusts & mists): 1 mg/m³ (ACGIH 1992-1993). Intended change 0.1 mg/m³ Inhal., A4 (not classifiable as a human carcinogen); MAK: 0.1 mg/m³ (Inhalable fraction) Peak limitation category: II(2) Pregnancy risk group: D (DFG 2005). OSHA PEL*: TWA 1 mg/m^3 *Note: The PEL also applies to other copper compounds (as Cu) except copper fume. NIOSH REL*: TWA 1 mg/m^3 *Note: The REL also applies to other copper compounds (as Cu) except Copper fume. NIOSH IDLH: 100 mg/m^3 (as Cu) See: 7440508	**EFFECTS OF SHORT-TERM EXPOSURE:** Inhalation of fumes may cause metal fume fever. See Notes. **EFFECTS OF LONG-TERM OR REPEATED EXPOSURE:** Repeated or prolonged contact may cause skin sensitization.

PHYSICAL PROPERTIES	Boiling point: 2595°C Melting point: 1083°C Relative density (water = 1): 8.9	Solubility in water: none
ENVIRONMENTAL DATA		

N O T E S

The symptoms of metal fume fever do not become manifest until several hours.

ADDITIONAL INFORMATION

ICSC: 0240 **COPPER**

(C) IPCS, CEC, 1994

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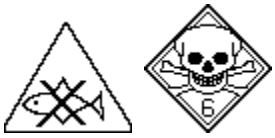
International Chemical Safety Cards

IRON (III)-o-ARSENITE, PENTAHYDRATE

ICSC: 1241

Ferric arsenite
$As_2Fe_2O_6 \cdot Fe_2O_3 \cdot 5H_2O$
Molecular mass: 607.3

ICSC # 1241
CAS # 63989-69-5
RTECS # NO4600000
UN # 1607
EC # 033-002-00-5
October 27, 1994 Validated



TYPES OF HAZARD/ EXPOSURE	ACUTE HAZARDS/ SYMPTOMS	PREVENTION	FIRST AID/ FIRE FIGHTING
FIRE	Not combustible. Gives off irritating or toxic fumes (or gases) in a fire.		In case of fire in the surroundings: use appropriate extinguishing media.
EXPLOSION			
EXPOSURE		AVOID ALL CONTACT!	IN ALL CASES CONSULT A DOCTOR!
•INHALATION	Cough. Shortness of breath. Sore throat. Weakness. See Ingestion.	Avoid inhalation of fine dust and mist. Closed system and ventilation.	Fresh air, rest. Artificial respiration may be needed. Refer for medical attention.
•SKIN	Redness. Burning sensation.	Protective gloves. Protective clothing.	Remove contaminated clothes. Rinse and then wash skin with water and soap.
•EYES	Redness. Pain.	Safety goggles or eye protection in combination with breathing protection if powder.	First rinse with plenty of water for several minutes (remove contact lenses if easily possible), then take to a doctor.
•INGESTION	Abdominal pain. Burning sensation. Diarrhoea. Nausea. Vomiting.	Do not eat, drink, or smoke during work. Wash hands before eating.	Rinse mouth. Induce vomiting (ONLY IN CONSCIOUS PERSONS!). Refer for medical attention.

SPILLAGE DISPOSAL	STORAGE	PACKAGING & LABELLING
Vacuum spilled material. Carefully collect remainder, then remove to safe place. Do NOT let this chemical enter the environment. Personal protection: P3 filter respirator for toxic particles.	Separated from food and feedstuffs .	Unbreakable packaging; put breakable packaging into closed unbreakable container. Do not transport with food and feedstuffs. Marine pollutant. Note: A, 1 T symbol N symbol R: 23/25-50/53 S: 1/2-20/21-28-45-60-61 UN Hazard Class: 6.1 UN Packing Group: II

SEE IMPORTANT INFORMATION ON BACK

ICSC: 1241

Prepared in the context of cooperation between the International Programme on Chemical Safety & the Commission of the European Communities (C) IPCS CEC 1994. No modifications to the International version have been made except to add the OSHA PELs, NIOSH RELs and NIOSH IDLH values.

International Chemical Safety Cards

IRON (III)-o-ARSENITE, PENTAHYDRATE

ICSC: 1241

I M P O R T A N T D A T A	**PHYSICAL STATE; APPEARANCE:** BROWN POWDER. **PHYSICAL DANGERS:** **CHEMICAL DANGERS:** The substance decomposes on heating or on burning producing toxic fumes of arsenic and iron. **OCCUPATIONAL EXPOSURE LIMITS:** TLV: (as As) 0.01 mg/m³ as TWA; A1 (confirmed human carcinogen); BEI issued; (ACGIH 2004). MAK: Carcinogen category: 1; Germ cell mutagen group: 3A; (DFG 2004).	**ROUTES OF EXPOSURE:** The substance can be absorbed into the body by inhalation of its aerosol and by ingestion. **INHALATION RISK:** Evaporation at 20°C is negligible; a harmful concentration of airborne particles can, however, be reached quickly when dispersed, especially if powdered. **EFFECTS OF SHORT-TERM EXPOSURE:** The substance is irritating to the eyes , the skin and the respiratory tract . The substance may cause effects on the nervous system, liver, skin, kidneys and gastrointestinal tract , resulting in kidney impairment, neuropathy, severe gastroenteritis, degenerative liver damage and dermatitis. Exposure may result in death. The effects may be delayed. Medical observation is indicated. **EFFECTS OF LONG-TERM OR REPEATED EXPOSURE:** Repeated or prolonged contact with skin may cause dermatitis, grey skin and hyperkeratosis. The substance may have effects on the nervous system,liver,cardiovascular system and respiratory tract , resulting in neuropathy, gangrene, degenerative liver damage and perforation of nasal septum. This substance is carcinogenic to humans.
PHYSICAL PROPERTIES	Solubility in water: none	
ENVIRONMENTAL DATA	This substance may be hazardous to the environment; special attention should be given to plants, air quality and water quality. It is strongly advised that this substance does not enter the environment.	

N O T E S

Do NOT take working clothes home. See also ICSC0013 Arsenic. Card has been partly updated in April and October 2005. See sections Occupational Exposure Limits, EU classification, Emergency Response.

Transport Emergency Card: TEC (R)-61GT5-II

ADDITIONAL INFORMATION

ICSC: 1241 **IRON (III)-o-ARSENITE, PENTAHYDRATE**

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International Chemical Safety Cards

LEAD

ICSC: 0052

Lead metal
Plumbum
Pb
Atomic mass: 207.2
(powder)

ICSC # 0052
CAS # 7439-92-1
RTECS # OF7525000
October 08, 2002 Peer reviewed

TYPES OF HAZARD/ EXPOSURE	ACUTE HAZARDS/ SYMPTOMS	PREVENTION	FIRST AID/ FIRE FIGHTING
FIRE	Not combustible. Gives off irritating or toxic fumes (or gases) in a fire.		In case of fire in the surroundings: use appropriate extinguishing media.
EXPLOSION	Finely dispersed particles form explosive mixtures in air.	Prevent deposition of dust; closed system, dust explosion-proof electrical equipment and lighting.	
EXPOSURE	See EFFECTS OF LONG-TERM OR REPEATED EXPOSURE.	PREVENT DISPERSION OF DUST! AVOID EXPOSURE OF (PREGNANT) WOMEN!	
•INHALATION		Local exhaust or breathing protection.	Fresh air, rest.
•SKIN		Protective gloves.	Remove contaminated clothes. Rinse and then wash skin with water and soap.
•EYES		Safety spectacles.	First rinse with plenty of water for several minutes (remove contact lenses if easily possible), then take to a doctor.
•INGESTION	Abdominal pain. Nausea. Vomiting.	Do not eat, drink, or smoke during work. Wash hands before eating.	Rinse mouth. Give plenty of water to drink. Refer for medical attention.

SPILLAGE DISPOSAL	STORAGE	PACKAGING & LABELLING
Sweep spilled substance into containers; if appropriate, moisten first to prevent dusting. Carefully collect remainder, then remove to safe place. Do NOT let this chemical enter the environment. Personal protection: P3 filter respirator for toxic particles.	Separated from food and feedstuffs incompatible materials See Chemical Dangers.	R: S:

SEE IMPORTANT INFORMATION ON BACK

ICSC: 0052

Prepared in the context of cooperation between the International Programme on Chemical Safety & the Commission of the European Communities (C) IPCS CEC 1994. No modifications to the International version have been made except to add the OSHA PELs, NIOSH RELs and NIOSH IDLH values.

International Chemical Safety Cards

LEAD

ICSC: 0052

I M P O R T A N T D A T A

PHYSICAL STATE; APPEARANCE:
BLUISH-WHITE OR SILVERY-GREY SOLID IN VARIOUS FORMS. TURNS TARNISHED ON EXPOSURE TO AIR.

PHYSICAL DANGERS:
Dust explosion possible if in powder or granular form, mixed with air.

CHEMICAL DANGERS:
On heating, toxic fumes are formed. Reacts with oxidants. Reacts with hot concentrated nitric acid, boiling concentrated hydrochloric acid and sulfuric acid. Attacked by pure water and by weak organic acids in the presence of oxygen.

OCCUPATIONAL EXPOSURE LIMITS:
TLV: 0.05 mg/m³ A3 (confirmed animal carcinogen with unknown relevance to humans); BEI issued (ACGIH 2004).
MAK:
Carcinogen category: 3B; Germ cell mutagen group: 3A; (DFG 2004).
EU OEL: as TWA 0.15 mg/m³ (EU 2002).
OSHA PEL*: 1910.1025 TWA 0.050 mg/m^3 See Appendix C *Note: The PEL also applies to other lead compounds (as Pb) -- see Appendix C.
NIOSH REL*: TWA 0.050 mg/m^3 See Appendix C *Note: The REL also applies to other lead compounds (as Pb) -- see Appendix C.
NIOSH IDLH: 100 mg/m^3 (as Pb) See: 7439921

ROUTES OF EXPOSURE:
The substance can be absorbed into the body by inhalation and by ingestion.

INHALATION RISK:
A harmful concentration of airborne particles can be reached quickly when dispersed, especially if powdered.

EFFECTS OF SHORT-TERM EXPOSURE:

EFFECTS OF LONG-TERM OR REPEATED EXPOSURE:
The substance may have effects on the blood bone marrow central nervous system peripheral nervous system kidneys , resulting in anaemia, encephalopathy (e.g., convulsions), peripheral nerve disease, abdominal cramps and kidney impairment. Causes toxicity to human reproduction or development.

PHYSICAL PROPERTIES	Boiling point: 1740°C Melting point: 327.5°C	Density: 11.34 g/cm3 Solubility in water: none
ENVIRONMENTAL DATA	Bioaccumulation of this chemical may occur in plants and in mammals. It is strongly advised that this substance does not enter the environment.	

N O T E S

Depending on the degree of exposure, periodic medical examination is suggested. Do NOT take working clothes home.

Transport Emergency Card: TEC (R)-51S1872

ADDITIONAL INFORMATION

ICSC: 0052 **LEAD**

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International Chemical Safety Cards

MAGNESIUM (POWDER)

ICSC: 0289

Mg
Atomic mass: 24.30

ICSC # 0289
CAS # 7439-95-4
RTECS # OM2100000
UN # 1418
EC # 012-001-00-3 (pyrophoric)
April 12, 2000 Peer reviewed

TYPES OF HAZARD/ EXPOSURE	ACUTE HAZARDS/ SYMPTOMS	PREVENTION	FIRST AID/ FIRE FIGHTING
FIRE	Highly flammable. Gives off irritating or toxic fumes (or gases) in a fire.	NO open flames, NO sparks, and NO smoking. NO contact with moisture, acids, halogens and many other substances.	Special powder, dry sand, NO other agents. NO water.
EXPLOSION	Finely dispersed particles form explosive mixtures in air.	Do NOT expose to friction or shock. Prevent build-up of electrostatic charges (e.g., by grounding).	
EXPOSURE		PREVENT DISPERSION OF DUST!	
•INHALATION	Cough. Laboured breathing. Headache. Dullness. Weakness. Fever or elevated body temperature.		
•SKIN			
•EYES	Redness. Pain.	Safety goggles.	
•INGESTION	Abdominal pain. Diarrhoea.	Do not eat, drink, or smoke during work.	Rinse mouth. Refer for medical attention.

SPILLAGE DISPOSAL	STORAGE	PACKAGING & LABELLING
Do NOT wash away into sewer. Sweep spilled substance into containers. Carefully collect remainder, then remove to safe place. Personal protection: P2 filter respirator for harmful particles.	Fireproof. Separated from strong oxidants, acids. Dry.	Airtight. F symbol R: 15-17 S: 2-7/8-43 UN Hazard Class: 4.3 UN Subsidiary Risks: 4.2 UN Packing Group: ll

SEE IMPORTANT INFORMATION ON BACK

ICSC: 0289

Prepared in the context of cooperation between the International Programme on Chemical Safety & the Commission of the European Communities (C) IPCS CEC 1994. No modifications to the International version have been made except to add the OSHA PELs, NIOSH RELs and NIOSH IDLH values.

International Chemical Safety Cards

MAGNESIUM (POWDER)

ICSC: 0289

I **M**	**PHYSICAL STATE; APPEARANCE:** GREY POWDER	**ROUTES OF EXPOSURE:** The substance can be absorbed into the body by inhalation.

P O R T A N T D A T A	**PHYSICAL DANGERS:** Dust explosion possible if in powder or granular form, mixed with air. If dry, it can be charged electrostatically by swirling, pneumatic transport, pouring, etc. **CHEMICAL DANGERS:** The substance may spontaneously ignite on contact with air or moisture producing irritating or toxic fumes Reacts violently with strong oxidants. Reacts violently with many substances causing fire and explosion hazard. Reacts with acids and water forming flammable/explosive gas (hydrogen - see ICSC0001) causing fire and explosion hazard. **OCCUPATIONAL EXPOSURE LIMITS:** TLV not established. MAK not established. **INHALATION RISK:** Evaporation at 20°C is negligible; a harmful concentration of airborne particles can, however, be reached quickly. **EFFECTS OF SHORT-TERM EXPOSURE:** Inhalation of fumes may cause metal fume fever. **EFFECTS OF LONG-TERM OR REPEATED EXPOSURE:**
PHYSICAL PROPERTIES	Boiling point: 1100°C Melting point: 651°C Density: 1.7 g/cm³ Solubility in water: none Auto-ignition temperature: 473°C Explosive limits, vol% in air: see Notes
ENVIRONMENTAL DATA	

N O T E S

Burns with an intense flame. In order to prevent eye injury do not look directly at magnesium fires. Reacts violently with fire extinguishing agents such as water, carbon dioxide and powder. Explosive limits, vol% in air: (LEL) 0.03 kg/m^3.

Transport Emergency Card: TEC (R)-43GWS-II+III
NFPA Code: H0; F1; R2;

ADDITIONAL INFORMATION

ICSC: 0289 **MAGNESIUM (POWDER)**

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International Chemical Safety Cards

MANGANESE

ICSC: 0174

Mn
Atomic mass: 54.9
(powder)

ICSC # 0174
CAS # 7439-96-5
RTECS # OO9275000
November 27, 2003 Validated

TYPES OF HAZARD/ EXPOSURE	ACUTE HAZARDS/ SYMPTOMS	PREVENTION	FIRST AID/ FIRE FIGHTING
FIRE	Combustible.	NO open flames.	Dry sand, special powder.
EXPLOSION	Finely dispersed particles form explosive mixtures in air.	Prevent deposition of dust; closed system, dust explosion-proof electrical equipment and lighting.	
EXPOSURE		PREVENT DISPERSION OF DUST! AVOID EXPOSURE OF (PREGNANT) WOMEN!	
•INHALATION	Cough.	Local exhaust or breathing protection.	Fresh air, rest. Refer for medical attention.
•SKIN		Protective gloves.	Rinse and then wash skin with water and soap.
•EYES		Safety goggles, or eye protection in combination with breathing protection if powder.	First rinse with plenty of water for several minutes (remove contact lenses if easily possible), then take to a doctor.
•INGESTION	Abdominal pain. Nausea.	Do not eat, drink, or smoke during work.	Rinse mouth. Refer for medical attention.

SPILLAGE DISPOSAL	STORAGE	PACKAGING & LABELLING
Sweep spilled substance into containers. Carefully collect remainder, then remove to safe place. (Extra personal protection: P2 filter respirator for harmful particles.)	Separated from acids. Dry.	

SEE IMPORTANT INFORMATION ON BACK

ICSC: 0174

Prepared in the context of cooperation between the International Programme on Chemical Safety & the Commission of the European Communities (C) IPCS CEC 1994. No modifications to the International version have been made except to add the OSHA PELs, NIOSH RELs and NIOSH IDLH values.

International Chemical Safety Cards

MANGANESE

ICSC: 0174

I	**PHYSICAL STATE; APPEARANCE:** GREY - WHITE POWDER **PHYSICAL DANGERS:**	**ROUTES OF EXPOSURE:** The substance can be absorbed into the body by inhalation of its aerosol and by ingestion.

IMPORTANT DATA	Dust explosion possible if in powder or granular form, mixed with air. **CHEMICAL DANGERS:** Reacts slowly with water more rapidly with steam and acids forming flammable/explosive gas (hydrogen - see ICSC0001) causing fire and explosion hazard. **OCCUPATIONAL EXPOSURE LIMITS:** TLV: 0.2 mg/m³ (as TWA); (ACGIH 2003). MAK: (Inhalable fraction) 0.5 mg/m³; Pregnancy risk group: C; (DFG 2007). OSHA PEL*: C 5 mg/m^3 *Note: Also see specific listings for Manganese cyclopentadienyl tricarbonyl and Methyl cyclopentadienyl manganese tricarbonyl. NIOSH REL*: TWA 1 mg/m^3 ST 3 mg/m^3 *Note: Also see specific listings for Manganese cyclopentadienyl tricarbonyl, Methyl cyclopentadienyl manganese tricarbonyl, and Manganese tetroxide. NIOSH IDLH: 500 mg/m^3 (as Mn) See: 7439965	**INHALATION RISK:** Evaporation at 20°C is negligible; a harmful concentration of airborne particles can, however, be reached quickly when dispersed. **EFFECTS OF SHORT-TERM EXPOSURE:** The aerosol is irritating to the respiratory tract . **EFFECTS OF LONG-TERM OR REPEATED EXPOSURE:** The substance may have effects on the lungs and central nervous system , resulting in increased susceptibility to bronchitis, pneumonitis and neurologic, neuropsychiatric disorders (manganism). Animal tests show that this substance possibly causes toxicity to human reproduction or development.
PHYSICAL PROPERTIES	Boiling point: 1962°C Melting point: 1244°C Density: 7.47 g/cm³	Solubility in water: none
ENVIRONMENTAL DATA	This substance may be hazardous in the environment; special attention should be given to aquatic organisms.	

N O T E S

Depending on the degree of exposure, periodic medical examination is suggested. The recommendations on this Card also apply to ferro manganese.

ADDITIONAL INFORMATION

ICSC: 0174 **MANGANESE**

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International Chemical Safety Cards

MERCURY

ICSC: 0056

Quicksilver
Liquid silver
Hg
Atomic mass: 200.6

ICSC # 0056
CAS # 7439-97-6
RTECS # OV4550000
UN # 2809
EC # 080-001-00-0
April 22, 2004 Peer reviewed

TYPES OF HAZARD/ EXPOSURE	ACUTE HAZARDS/ SYMPTOMS	PREVENTION	FIRST AID/ FIRE FIGHTING
FIRE	Not combustible. Gives off irritating or toxic fumes (or gases) in a fire.		In case of fire in the surroundings: use appropriate extinguishing media.
EXPLOSION	Risk of fire and explosion.		In case of fire: keep drums, etc., cool by spraying with water.
EXPOSURE		STRICT HYGIENE! AVOID EXPOSURE OF (PREGNANT) WOMEN! AVOID EXPOSURE OF ADOLESCENTS AND CHILDREN!	IN ALL CASES CONSULT A DOCTOR!
•INHALATION	Abdominal pain. Cough. Diarrhoea. Shortness of breath. Vomiting. Fever or elevated body temperature.	Local exhaust or breathing protection.	Fresh air, rest. Artificial respiration if indicated. Refer for medical attention.
•SKIN	MAY BE ABSORBED! Redness.	Protective gloves. Protective clothing.	Remove contaminated clothes. Rinse and then wash skin with water and soap. Refer for medical attention.
•EYES		Face shield, or eye protection in combination with breathing protection.	First rinse with plenty of water for several minutes (remove contact lenses if easily possible), then take to a doctor.
•INGESTION		Do not eat, drink, or smoke during work. Wash hands before eating.	Refer for medical attention.

SPILLAGE DISPOSAL	STORAGE	PACKAGING & LABELLING
Evacuate danger area in case of a large spill! Consult an expert! Ventilation. Collect leaking and spilled liquid in sealable non-metallic containers as far as possible. Do NOT wash away into sewer. Do NOT let this chemical enter the environment. Chemical protection suit including self-contained breathing apparatus.	Provision to contain effluent from fire extinguishing. Separated from food and feedstuffs Well closed.	Special material. Do not transport with food and feedstuffs. T symbol N symbol R: 23-33-50/53 S: 1/2-7-45-60-61 UN Hazard Class: 8 UN Packing Group: III

SEE IMPORTANT INFORMATION ON BACK

Prepared in the context of cooperation between the International Programme on Chemical Safety & the Commission of the European Communities (C) IPCS CEC 1994. No modifications to the International version have been made except to add the OSHA PELs, NIOSH RELs and NIOSH IDLH values.

International Chemical Safety Cards

MERCURY

ICSC: 0056

IMPORTANT DATA	**PHYSICAL STATE; APPEARANCE:** ODOURLESS, HEAVY AND MOBILE SILVERY LIQUID METAL. **PHYSICAL DANGERS:** **CHEMICAL DANGERS:** Upon heating, toxic fumes are formed. Reacts violently with ammonia and halogens causing fire and explosion hazard. Attacks aluminium and many other metals forming amalgams. **OCCUPATIONAL EXPOSURE LIMITS:** TLV: 0.025 mg/m³ as TWA (skin) A4 BEI issued (ACGIH 2004). MAK: 0.1 mg/m³ Sh Peak limitation category: II(8) Carcinogen category: 3B (DFG 2003). OSHA PEL†: C 0.1 mg/m^3 NIOSH REL: Hg Vapor: TWA 0.05 mg/m^3 skin Other: C 0.1 mg/m^3 skin NIOSH IDLH: 10 mg/m^3 (as Hg) See: 7439976 **ROUTES OF EXPOSURE:** The substance can be absorbed into the body by inhalation of its vapour and through the skin , also as a vapour! **INHALATION RISK:** A harmful contamination of the air can be reached very quickly on evaporation of this substance at 20°C. **EFFECTS OF SHORT-TERM EXPOSURE:** The substance is irritating to the skin. Inhalation of the vapours may cause pneumonitis. The substance may cause effects on the central nervous systemandkidneys. The effects may be delayed. Medical observation is indicated. **EFFECTS OF LONG-TERM OR REPEATED EXPOSURE:** The substance may have effects on the central nervous system kidneys , resulting in irritability, emotional instability, tremor, mental and memory disturbances, speech disorders. Danger of cumulative effects. Animal tests show that this substance possibly causes toxic effects upon human reproduction.
PHYSICAL PROPERTIES	Boiling point: 357°C Melting point: -39°C Relative density (water = 1): 13.5 Solubility in water: none Vapour pressure, Pa at 20°C: 0.26 Relative vapour density (air = 1): 6.93 Relative density of the vapour/air-mixture at 20°C (air = 1): 1.009
ENVIRONMENTAL DATA	The substance is very toxic to aquatic organisms. In the food chain important to humans, bioaccumulation takes place, specifically in fish.

N O T E S

Depending on the degree of exposure, periodic medical examination is indicated. No odour warning if toxic concentrations are present. Do NOT take working clothes home.

Transport Emergency Card: TEC (R)-80GC9-II+III

ADDITIONAL INFORMATION

ICSC: 0056 **MERCURY**

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International Chemical Safety Cards

NICKEL

ICSC: 0062

Ni
Atomic mass: 58.7
(powder)

ICSC # 0062
CAS # 7440-02-0
RTECS # QR5950000
EC # 028-002-00-7
October 17, 2001 Peer reviewed

TYPES OF HAZARD/ EXPOSURE	ACUTE HAZARDS/ SYMPTOMS	PREVENTION	FIRST AID/ FIRE FIGHTING
FIRE	Flammable as dust. Toxic fumes may be released in a fire.		Dry sand. NO carbon dioxide. NO water.
EXPLOSION	Finely dispersed particles form explosive mixtures in air.	Prevent deposition of dust; closed system, dust explosion-proof electrical equipment and lighting.	
EXPOSURE		PREVENT DISPERSION OF DUST! AVOID ALL CONTACT!	
•INHALATION	Cough. Shortness of breath.	Local exhaust or breathing protection.	Fresh air, rest.
•SKIN		Protective gloves. Protective clothing.	Remove contaminated clothes. Rinse and then wash skin with water and soap.
•EYES		Safety spectacles, or eye protection in combination with breathing protection.	First rinse with plenty of water for several minutes (remove contact lenses if easily possible), then take to a doctor.
•INGESTION		Do not eat, drink, or smoke during work.	Rinse mouth.

SPILLAGE DISPOSAL	STORAGE	PACKAGING & LABELLING
Vacuum spilled material. Carefully collect remainder, then remove to safe place. Personal protection: P2 filter respirator for harmful particles.	Separated from strong acids.	Xn symbol R: 40-43 S: 2-22-36

SEE IMPORTANT INFORMATION ON BACK

ICSC: 0062

Prepared in the context of cooperation between the International Programme on Chemical Safety & the Commission of the European Communities (C) IPCS CEC 1994. No modifications to the International version have been made except to add the OSHA PELs, NIOSH RELs and NIOSH IDLH values.

International Chemical Safety Cards

NICKEL

ICSC: 0062

I

PHYSICAL STATE; APPEARANCE:
SILVERY METALLIC SOLID IN VARIOUS FORMS.

PHYSICAL DANGERS:

ROUTES OF EXPOSURE:
The substance can be absorbed into the body by inhalation of the dust.

IMPORTANT DATA	Dust explosion possible if in powder or granular form, mixed with air. **CHEMICAL DANGERS:** Reacts violently, in powder form, with titanium powder and potassium perchlorate, and oxidants such as ammonium nitrate, causing fire and explosion hazard. Reacts slowly with non-oxidizing acids and more rapidly with oxidizing acids. Toxic gases and vapours (such as nickel carbonyl) may be released in a fire involving nickel. **OCCUPATIONAL EXPOSURE LIMITS:** TLV: (Inhalable fraction) 1.5 mg/m³ as TWA A5 (not suspected as a human carcinogen); (ACGIH 2004). MAK: (Inhalable fraction) sensitization of respiratory tract and skin (Sah); Carcinogen category: 1; (DFG 2004). OSHA PEL*†: TWA 1 mg/m^3 *Note: The PEL does not apply to Nickel carbonyl. NIOSH REL*: Ca TWA 0.015 mg/m^3 See Appendix A *Note: The REL does not apply to Nickel carbonyl. NIOSH IDLH: Ca 10 mg/m^3 (as Ni) See: 7440020 **INHALATION RISK:** Evaporation at 20°C is negligible; a harmful concentration of airborne particles can, however, be reached quickly when dispersed. **EFFECTS OF SHORT-TERM EXPOSURE:** May cause mechanical irritation. Inhalation of fumes may cause pneumonitis. **EFFECTS OF LONG-TERM OR REPEATED EXPOSURE:** Repeated or prolonged contact may cause skin sensitization. Repeated or prolonged inhalation exposure may cause asthma. Lungs may be affected by repeated or prolonged exposure. This substance is possibly carcinogenic to humans.
PHYSICAL PROPERTIES	Boiling point: 2730°C Melting point: 1455°C Density: 8.9 g/cm3 Solubility in water: none
ENVIRONMENTAL DATA	

N O T E S

At high temperatures, nickel oxide fumes will be formed. Depending on the degree of exposure, periodic medical examination is suggested. The symptoms of asthma often do not become manifest until a few hours have passed and they are aggravated by physical effort. Rest and medical observation are therefore essential. Anyone who has shown symptoms of asthma due to this substance should avoid all further contact with this substance.

ADDITIONAL INFORMATION

ICSC: 0062 **NICKEL**

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International Chemical Safety Cards

POTASSIUM

ICSC: 0716

Kalium
K
Atomic mass: 39.1

ICSC # 0716
CAS # 7440-09-7
RTECS # TS6460000
UN # 2257
EC # 019-001-00-2
April 06, 2006 Validated

TYPES OF HAZARD/ EXPOSURE	ACUTE HAZARDS/ SYMPTOMS	PREVENTION	FIRST AID/ FIRE FIGHTING
FIRE	Highly flammable. Many reactions may cause fire or explosion. Gives off irritating or toxic fumes (or gases) in a fire.	NO contact with water, acid(s) or halogens . NO open flames, NO sparks, and NO smoking.	Special powder, dry sand, NO other agents.
EXPLOSION	Risk of fire and explosion. on contact with acid(s) , halogens , water .		Combat fire from a sheltered position.
EXPOSURE			
•INHALATION	Cough. Sore throat. Burning sensation.	Closed system and ventilation.	Fresh air, rest. Half-upright position. Artificial respiration may be needed. Refer for medical attention.
•SKIN	Pain. Blisters. Serious skin burns.	Protective gloves. Protective clothing.	Remove contaminated clothes. Rinse skin with plenty of water or shower. Refer for medical attention.
•EYES	Severe deep burns. loss of vision.	Face shield .	First rinse with plenty of water for several minutes (remove contact lenses if easily possible), then take to a doctor.
•INGESTION	Burning sensation. Shock or collapse.	Do not eat, drink, or smoke during work.	Rinse mouth. Refer for medical attention.

SPILLAGE DISPOSAL	STORAGE	PACKAGING & LABELLING
Evacuate danger area! Consult an expert! Chemical protection suit including self-contained breathing apparatus. Cover the spilled material with dry powder.	Fireproof. Keep under mineral oil. Dry. Well closed.	Airtight. Unbreakable packaging; put breakable packaging into closed unbreakable container. F symbol C symbol R: 14/15-34 S: (1/2)-5-8-45 UN Hazard Class: 4.3 UN Packing Group: I Signal: Danger Flame-Corr In contact with water releases flammable gases which may ignite spontaneously Causes severe skin burns and eye damage

SEE IMPORTANT INFORMATION ON BACK

ICSC: 0716

Prepared in the context of cooperation between the International Programme on Chemical Safety & the Commission of the European Communities (C) IPCS CEC 1994. No modifications to the International version have been made except to add the OSHA PELs, NIOSH RELs and NIOSH IDLH values.

International Chemical Safety Cards

POTASSIUM

ICSC: 0716

I M P O R T A N T D A T A

PHYSICAL STATE; APPEARANCE:
WHITE TO GREY LUMPS

PHYSICAL DANGERS:

CHEMICAL DANGERS:
Reacts violently with water , causing fire and explosion hazard . The substance decomposes rapidly under the influence of air and moisture , forming flammable/explosive gas (Hydrogen - see ICSC0001) .

OCCUPATIONAL EXPOSURE LIMITS:
TLV not established.
MAK not established.

ROUTES OF EXPOSURE:
Serious local effects by all routes of exposure.

INHALATION RISK:

EFFECTS OF SHORT-TERM EXPOSURE:
See ICSC 0357 (Potassium hydroxide)

EFFECTS OF LONG-TERM OR REPEATED EXPOSURE:

PHYSICAL PROPERTIES

Boiling point: 765.5°C
Melting point: 63.2°C
Density: 0.856
g/cm³

Solubility in water, g/100 ml: (reaction)
Vapour pressure, Pa at 20°C: negligible

ENVIRONMENTAL DATA

N O T E S

Potassium is always kept under mineral oil. Reacts violently with fire extinguishing agents such as water and carbon dioxide .

Transport Emergency Card: TEC (R)-43S2257a
NFPA Code: H3; F3; R2;

ADDITIONAL INFORMATION

ICSC: 0716 **POTASSIUM**

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International Chemical Safety Cards

SELENIUM

ICSC: 0072

Se
Atomic mass: 79.0
(powder)

ICSC # 0072
CAS # 7782-49-2
RTECS # VS7700000
EC # 034-001-00-2
April 26, 1993 Peer reviewed

TYPES OF HAZARD/ EXPOSURE	ACUTE HAZARDS/ SYMPTOMS	PREVENTION	FIRST AID/ FIRE FIGHTING
FIRE	Combustible. Gives off irritating or toxic fumes (or gases) in a fire.	NO open flames. NO contact with oxidants.	Powder, AFFF, foam, carbon dioxide. NO water
EXPLOSION	Risk of fire and explosion on contact with oxidants.		
EXPOSURE		PREVENT DISPERSION OF DUST! STRICT HYGIENE!	
•INHALATION	Irritation of nose. Cough. Dizziness. Headache. Laboured breathing. Nausea. Sore throat. Vomiting. Weakness. Symptoms may be delayed (see Notes).	Ventilation, local exhaust, or breathing protection.	Fresh air, rest. Refer for medical attention.
•SKIN	Redness. Skin burns. Pain. Discolouration.	Protective gloves. Protective clothing.	Rinse skin with plenty of water or shower. Refer for medical attention. Remove and isolate contaminated clothes.
•EYES	Redness. Pain. Blurred vision.	Safety spectacles or eye protection in combination with breathing protection.	First rinse with plenty of water for several minutes (remove contact lenses if easily possible), then take to a doctor.
•INGESTION	Metallic taste. Diarrhoea. Chills. Fever. (Further see Inhalation).	Do not eat, drink, or smoke during work.	Rinse mouth. Induce vomiting (ONLY IN CONSCIOUS PERSONS!). Refer for medical attention.

SPILLAGE DISPOSAL	STORAGE	PACKAGING & LABELLING
Do NOT wash away into sewer. Sweep spilled substance into containers; if appropriate, moisten first to prevent dusting. Carefully collect remainder, then remove to safe place. Personal protection: P3 filter respirator for toxic particles.	Fireproof. Separated from strong oxidants, strong acids, food and feedstuffs Dry.	Airtight. Do not transport with food and feedstuffs. T symbol R: 23/25-33-53 S: 1/2-20/21-28-45-61

SEE IMPORTANT INFORMATION ON BACK

ICSC: 0072

Prepared in the context of cooperation between the International Programme on Chemical Safety & the Commission of the European Communities (C) IPCS CEC 1994. No modifications to the International version have been made except to add the OSHA PELs, NIOSH RELs and NIOSH IDLH values.

International Chemical Safety Cards

SELENIUM

ICSC: 0072

I M P O R T A N T D A T A

PHYSICAL STATE; APPEARANCE:
ODOURLESS SOLID IN VARIOUS FORMS. DARK RED-BROWN TO BLUISH-BLACK AMORPHOUS SOLID OR RED TRANSPARENT CRYSTALS OR METALLIC GREY TO BLACK CRYSTALS.

PHYSICAL DANGERS:

CHEMICAL DANGERS:
Upon heating, toxic fumes are formed. Reacts violently with oxidants strong acids Reacts withwater at 50°C forming flammable/explosive gas (hydrogen - see ICSC0001) and selenious acids. Reacts with incandescence on gentle heating with phosphorous and metals such as nickel, zinc, sodium, potassium, platinum.

OCCUPATIONAL EXPOSURE LIMITS:
TLV: 0.2 mg/m³ as TWA (ACGIH 2004).
MAK: (Inhalable fraction) 0.05 mg/m³
Peak limitation category: II(4); Carcinogen category: 3B; Pregnancy risk group: C;
(DFG 2004).
OSHA PEL*: TWA 0.2 mg/m^3 *Note: The PEL also applies to other selenium compounds (as Se) except Selenium hexafluoride.
NIOSH REL*: TWA 0.2 mg/m^3 *Note: The REL also applies to other selenium compounds (as Se) except Selenium hexafluoride.
NIOSH IDLH: 1 mg/m^3 (as Se) See: 7782492

ROUTES OF EXPOSURE:
The substance can be absorbed into the body by inhalation, through the skin and by ingestion.

INHALATION RISK:
Evaporation at 20°C is negligible; a harmful concentration of airborne particles can, however, be reached quickly when dispersed.

EFFECTS OF SHORT-TERM EXPOSURE:
The substance is irritating to the eyes and the respiratory tract Inhalation of dust may cause lung oedema (see Notes). Inhalation of fume may cause symptoms of asphyxiation, chills and fever and bronchitis. The effects may be delayed.

EFFECTS OF LONG-TERM OR REPEATED EXPOSURE:
Repeated or prolonged contact with skin may cause dermatitis. The substance may have effects on the respiratory tract, gastrointestinal tract, and skin , resulting in nausea, vomiting, cough, yellowish skin discolouration, loss of nails, garlic breath and bad teeth.

PHYSICAL PROPERTIES

Boiling point: 685°C
Melting point: 170-217°C
Relative density (water = 1): 4.8

Solubility in water:
none
Vapour pressure, Pa at 20°C: 0.1

ENVIRONMENTAL DATA

N O T E S

Do NOT take working clothes home.

ADDITIONAL INFORMATION

ICSC: 0072 **SELENIUM**

(C) IPCS, CEC, 1994

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International Chemical Safety Cards

SILVER

ICSC: 0810

Argentium
C.I. 77820
Ag

ICSC # 0810
CAS # 7440-22-4
RTECS # VW3500000
September 10, 1997 Validated

TYPES OF HAZARD/ EXPOSURE	ACUTE HAZARDS/ SYMPTOMS	PREVENTION	FIRST AID/ FIRE FIGHTING
FIRE	Not combustible, except as powder.		
EXPLOSION			
EXPOSURE		PREVENT DISPERSION OF DUST!	
•INHALATION		Local exhaust or breathing protection.	Fresh air, rest.
•SKIN		Protective gloves.	Rinse skin with plenty of water or shower.
•EYES		Safety spectacles, or eye protection in combination with breathing protection if powder.	First rinse with plenty of water for several minutes (remove contact lenses if easily possible), then take to a doctor.
•INGESTION		Do not eat, drink, or smoke during work.	

SPILLAGE DISPOSAL	STORAGE	PACKAGING & LABELLING
Sweep spilled substance into containers; if appropriate, moisten first to prevent dusting. Carefully collect remainder, then remove to safe place. Do NOT let this chemical enter the environment.	Separated from ammonia, strong hydrogen peroxide solutions, strong acids.	

SEE IMPORTANT INFORMATION ON BACK

ICSC: 0810

Prepared in the context of cooperation between the International Programme on Chemical Safety & the Commission of the European Communities (C) IPCS CEC 1994. No modifications to the International version have been made except to add the OSHA PELs, NIOSH RELs and NIOSH IDLH values.

International Chemical Safety Cards

SILVER

ICSC: 0810

I
M
P
O
R

PHYSICAL STATE; APPEARANCE:
WHITE METAL, TURNS DARK ON EXPOSURE TO OZONE, HYDROGEN SULFIDE OR SULFUR.

PHYSICAL DANGERS:

CHEMICAL DANGERS:
Shock-sensitive compounds are formed with acetylene.

ROUTES OF EXPOSURE:
The substance can be absorbed into the body by inhalation and by ingestion.

INHALATION RISK:
Evaporation at 20°C is negligible; a harmful concentration of airborne particles can, however, be reached quickly when dispersed.

T A N T D A T A	Reacts with acids causing fire hazard. Contact with strong hydrogen peroxide solution will cause violent decomposition to oxygen gas. Contact with ammonia may cause formation of compounds that are explosive when dry. **OCCUPATIONAL EXPOSURE LIMITS:** TLV (metal): 0.1 mg/m³ (ACGIH 1997). EU OEL: 0.1 mg/m³ as TWA (EU 2000). OSHA PEL: TWA 0.01 mg/m^3 NIOSH REL: TWA 0.01 mg/m^3 NIOSH IDLH: 10 mg/m^3 (as Ag) See: IDLH INDEX	**EFFECTS OF SHORT-TERM EXPOSURE:** Inhalation of high amounts of metallic silver vapours may cause lung damage with pulmonary oedema. **EFFECTS OF LONG-TERM OR REPEATED EXPOSURE:** The substance may cause a grey-blue discoloration of the eyes, nose, throat and skin (argyria/argyrosis).
PHYSICAL PROPERTIES	Boiling point: 2212°C Melting point: 962°C	Relative density (water = 1): 10.5 Solubility in water: none
ENVIRONMENTAL DATA	This substance may be hazardous to the environment; special attention should be given to aquatic organisms.	

N O T E S

Card has been partially updated in March 2008: see Occupational Exposure Limits.

ADDITIONAL INFORMATION

ICSC: 0810 **SILVER**

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International Chemical Safety Cards

SODIUM

ICSC: 0717

Natrium
Na
Atomic mass: 23.0

ICSC # 0717
CAS # 7440-23-5
RTECS # VY0686000
UN # 1428
EC # 011-001-00-0
April 06, 2006 Validated

TYPES OF HAZARD/ EXPOSURE	ACUTE HAZARDS/ SYMPTOMS	PREVENTION	FIRST AID/ FIRE FIGHTING
FIRE	Highly flammable. Many reactions may cause fire or explosion. Gives off irritating or toxic fumes (or gases) in a fire.	NO contact with water, acid(s) or halogens . NO open flames, NO sparks, and NO smoking.	Special powder, dry sand, NO other agents.
EXPLOSION	Risk of fire and explosion. on contact with acid(s) , halogens , water .		Combat fire from a sheltered position.
EXPOSURE			
•INHALATION	Cough. Sore throat. Burning sensation.	Closed system and ventilation.	Fresh air, rest. Half-upright position. Artificial respiration may be needed. Refer for medical attention.
•SKIN	Pain. Blisters. Serious skin burns.	Protective gloves. Protective clothing.	Remove contaminated clothes. Rinse skin with plenty of water or shower. Refer for medical attention.
•EYES	Severe deep burns. loss of vision.	Face shield .	First rinse with plenty of water for several minutes (remove contact lenses if easily possible), then take to a doctor.
•INGESTION	Burning sensation. Shock or collapse.	Do not eat, drink, or smoke during work.	Rinse mouth. Refer for medical attention.

SPILLAGE DISPOSAL	STORAGE	PACKAGING & LABELLING
Evacuate danger area! Consult an expert! Chemical protection suit including self-contained breathing apparatus. Cover the spilled material with dry powder.	Fireproof. Keep under mineral oil. Dry. Well closed.	Airtight. Unbreakable packaging; put breakable packaging into closed unbreakable container. F symbol C symbol R: 14/15-34 S: (1/2)-5 -8-43-45 UN Hazard Class: 4.3 UN Packing Group: I Signal: Danger Flame-Corr In contact with water releases flammable gases which may ignite spontaneously Causes severe skin burns and eye damage

SEE IMPORTANT INFORMATION ON BACK

ICSC: 0717

Prepared in the context of cooperation between the International Programme on Chemical Safety & the Commission of the European Communities (C) IPCS CEC 1994. No modifications to the International version have been made except to add the OSHA PELs, NIOSH RELs and NIOSH IDLH values.

International Chemical Safety Cards

SODIUM

ICSC: 0717

IMPORTANT DATA

PHYSICAL STATE; APPEARANCE:
SILVERY SOLID IN VARIOUS FORMS

PHYSICAL DANGERS:

CHEMICAL DANGERS:
Reacts violently with water , causing fire and explosion hazard . The substance decomposes rapidly under the influence of air and moisture , forming flammable/explosive gas (Hydrogen - see ICSC0001) .

OCCUPATIONAL EXPOSURE LIMITS:
TLV not established.
MAK not established.

ROUTES OF EXPOSURE:
Serious local effects by all routes of exposure.

INHALATION RISK:

EFFECTS OF SHORT-TERM EXPOSURE:
See ICSC 0360 (Sodium hydroxide)

EFFECTS OF LONG-TERM OR REPEATED EXPOSURE:

PHYSICAL PROPERTIES

Boiling point: 880°C
Melting point: 97.4°C
Density: 0.97 g/cm³
Solubility in water: reaction
Vapour pressure, Pa at 20°C: negligible
Auto-ignition temperature: 120-125°C

ENVIRONMENTAL DATA

NOTES

Sodium is always kept under mineral oil. Reacts violently with fire extinguishing agents such as water and carbon dioxide .

Transport Emergency Card: TEC (R)-43S1428a
NFPA Code: H3; F3; R2;

ADDITIONAL INFORMATION

ICSC: 0717 **SODIUM**

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International Chemical Safety Cards

VANADIUM TRIOXIDE

ICSC: 0455

Divanadium trioxide
Vanadium sesquioxide
Vanadic oxide
Vanadium(III) oxide
V_2O_3
Molecular mass: 149.9

ICSC # 0455
CAS # 1314-34-7
RTECS # YW3050000
UN # 3285
April 04, 2006 Validated

TYPES OF HAZARD/ EXPOSURE	ACUTE HAZARDS/ SYMPTOMS	PREVENTION	FIRST AID/ FIRE FIGHTING
FIRE	Not combustible. Gives off irritating or toxic fumes (or gases) in a fire.		In case of fire in the surroundings: all extinguishing agents allowed.
EXPLOSION			
EXPOSURE		PREVENT DISPERSION OF DUST!	
•INHALATION	Sore throat. Cough. Symptoms may be delayed (see Notes).	Local exhaust or breathing protection.	Fresh air, rest.
•SKIN	Redness.	Protective gloves.	Remove contaminated clothes. Rinse skin with plenty of water or shower.
•EYES	Redness.	Safety goggles or eye protection in combination with breathing protection.	First rinse with plenty of water for several minutes (remove contact lenses if easily possible), then take to a doctor.
•INGESTION		Do not eat, drink, or smoke during work.	Rinse mouth. Refer for medical attention.

SPILLAGE DISPOSAL	STORAGE	PACKAGING & LABELLING
Personal protection: P3 filter respirator for toxic particles. Sweep spilled substance into containers; if appropriate, moisten first to prevent dusting. Carefully collect remainder, then remove to safe place.	Separated from food and feedstuffs.	Do not transport with food and feedstuffs. UN Hazard Class: 6.1 UN Packing Group: III Signal: Warning Excl mark-Health haz Harmful if inhaled dust Suspected of causing cancer

SEE IMPORTANT INFORMATION ON BACK

ICSC: 0455

Prepared in the context of cooperation between the International Programme on Chemical Safety & the Commission of the European Communities (C) IPCS CEC 1994. No modifications to the International version have been made except to add the OSHA PELs, NIOSH RELs and NIOSH IDLH values.

International Chemical Safety Cards

ICSC: 0455

VANADIUM TRIOXIDE

IMPORTANT DATA

PHYSICAL STATE; APPEARANCE:
BLACK POWDER.

PHYSICAL DANGERS:

CHEMICAL DANGERS:
The substance decomposes on heating producing toxic fumes (vanadium oxides).

OCCUPATIONAL EXPOSURE LIMITS:
TLV not established.
MAK (V and its inorganic compounds):
Carcinogen category: 2; Germ cell mutagen group: 2 (DFG 2005).

ROUTES OF EXPOSURE:
The substance can be absorbed into the body by inhalation of its aerosol.

INHALATION RISK:
A harmful concentration of airborne particles can be reached quickly when dispersed.

EFFECTS OF SHORT-TERM EXPOSURE:
The substance is irritating to the eyes , the skin and the respiratory tract .

EFFECTS OF LONG-TERM OR REPEATED EXPOSURE:
The substance may have effects on the respiratory tract , resulting in chronic rhinitis and chronic bronchitis. This substance is possibly carcinogenic to humans.

PHYSICAL PROPERTIES		
	Melting point: 1970°C	Solubility in water, g/100 ml at 20°C: 0.01 (very poor)
	Density: 4.87 g/cm³	

ENVIRONMENTAL DATA	

NOTES

Depending on the degree of exposure, periodic medical examination is suggested. Respiratory symptoms may be delayed 1 day or more. See also ICSC 0596 Vanadium pentoxide.

Transport Emergency Card: TEC (R)-61GT5-III
Card has been partially updated in January 2008: see GHS classification.

ADDITIONAL INFORMATION

ICSC: 0455 **VANADIUM TRIOXIDE**

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International Chemical Safety Cards

ZINC POWDER

ICSC: 1205

Blue powder
Merrillite
Zn
Atomic mass: 65.4
(powder)

ICSC # 1205
CAS # 7440-66-6
RTECS # ZG8600000
UN # 1436 (zinc powder or dust)
EC # 030-001-00-1
October 24, 1994 Peer reviewed

TYPES OF HAZARD/ EXPOSURE	ACUTE HAZARDS/ SYMPTOMS	PREVENTION	FIRST AID/ FIRE FIGHTING
FIRE	Highly flammable. Many reactions may cause fire or explosion. Gives off irritating or toxic fumes (or gases) in a fire.	NO open flames, NO sparks, and NO smoking. NO contact with acid(s), base (s) and incompatible substances (see Chemical Dangers).	Special powder, dry sand, NO other agents. NO water.
EXPLOSION	Risk of fire and explosion on contact with acid(s), base(s), water and incompatible substances.	Closed system, ventilation, explosion-proof electrical equipment and lighting. Prevent build-up of electrostatic charges (e.g., by grounding). Prevent deposition of dust.	In case of fire: cool drums, etc., by spraying with water but avoid contact of the substance with water.
EXPOSURE		PREVENT DISPERSION OF DUST! STRICT HYGIENE!	
•**INHALATION**	Metallic taste and metal fume fever. Symptoms may be delayed (see Notes).	Local exhaust.	Fresh air, rest. Refer for medical attention.
•**SKIN**	Dry skin.	Protective gloves.	Rinse and then wash skin with water and soap.
•**EYES**		Safety spectacles.	First rinse with plenty of water for several minutes (remove contact lenses if easily possible), then take to a doctor.
•**INGESTION**	Abdominal pain. Nausea. Vomiting.	Do not eat, drink, or smoke during work. Wash hands before eating.	Rinse mouth. Refer for medical attention.

SPILLAGE DISPOSAL	STORAGE	PACKAGING & LABELLING
Extinguish or remove all ignition sources. Do NOT wash away into sewer. Sweep spilled substance into containers. then remove to safe place. Personal protection: self-contained breathing apparatus.	Fireproof. Separated from acids, bases oxidants Dry.	Airtight. F symbol N symbol R: 15-17-50/53 S: 2-7/8-43-46-60-61 UN Hazard Class: 4.3 UN Subsidiary Risks: 4.2

SEE IMPORTANT INFORMATION ON BACK

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International Chemical Safety Cards

ZINC POWDER

ICSC: 1205

I M P O R T A N T D A T A	**PHYSICAL STATE; APPEARANCE:** ODOURLESS GREY TO BLUE POWDER. **PHYSICAL DANGERS:** Dust explosion possible if in powder or granular form, mixed with air. If dry, it can be charged electrostatically by swirling, pneumatic transport, pouring, etc. **CHEMICAL DANGERS:** Upon heating, toxic fumes are formed. The substance is a strong reducing agent and reacts violently with oxidants. Reacts with water and reacts violently with acids and bases forming flammable/explosive gas (hydrogen - see ICSC0001) Reacts violently with sulfur, halogenated hydrocarbons and many other substances causing fire and explosion hazard. **OCCUPATIONAL EXPOSURE LIMITS:** TLV not established. **ROUTES OF EXPOSURE:** The substance can be absorbed into the body by inhalation and by ingestion. **INHALATION RISK:** Evaporation at 20°C is negligible; a harmful concentration of airborne particles can, however, be reached quickly when dispersed. **EFFECTS OF SHORT-TERM EXPOSURE:** Inhalation of fumes may cause metal fume fever. The effects may be delayed. **EFFECTS OF LONG-TERM OR REPEATED EXPOSURE:** Repeated or prolonged contact with skin may cause dermatitis.
PHYSICAL PROPERTIES	Boiling point: 907°C Melting point: 419°C Relative density (water = 1): 7.14 Solubility in water: reaction Vapour pressure, kPa at 487°C: 0.1 Auto-ignition temperature: 460°C
ENVIRONMENTAL DATA	

N O T E S

Zinc may contain trace amounts of arsenic, when forming hydrogen, may also form toxic gas arsine (see ICSC 0001 and ICSC 0222). Reacts violently with fire extinguishing agents such as water, halons, foam and carbon dioxide. The symptoms of metal fume fever do not become manifest until several hours later. Rinse contaminated clothes (fire hazard) with plenty of water.

Transport Emergency Card: TEC (R)-43GWS-II+III
NFPA Code: H0; F1; R1;

ADDITIONAL INFORMATION

ICSC: 1205 **ZINC POWDER**

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International Chemical Safety Cards

1,1,1,2-TETRACHLOROETHANE

ICSC: 1486

$C_2H_2Cl_4$ / Cl_3CCH_2Cl
Molecular mass: 167.8

ICSC # 1486
CAS # 630-20-6
RTECS # KI8450000
UN # 1702
April 23, 2004 Validated

TYPES OF HAZARD/ EXPOSURE	ACUTE HAZARDS/ SYMPTOMS	PREVENTION	FIRST AID/ FIRE FIGHTING
FIRE	Combustible under specific conditions. Gives off irritating or toxic fumes (or gases) in a fire.	NO contact with hot surfaces. NO open flames.	In case of fire in the surroundings: powder, water spray, foam, carbon dioxide.
EXPLOSION			In case of fire: keep drums, etc., cool by spraying with water.
EXPOSURE			
•INHALATION	Headache. Nausea. Shortness of breath. Vomiting.	Ventilation, local exhaust, or breathing protection.	Fresh air, rest.
•SKIN	Redness. Burning sensation. Pain.	Protective gloves.	Remove contaminated clothes. Rinse and then wash skin with water and soap.
•EYES	Redness. Pain.	Safety goggles, or eye protection in combination with breathing protection.	First rinse with plenty of water for several minutes (remove contact lenses if easily possible), then take to a doctor.
•INGESTION	Burning sensation. Headache. Nausea.	Do not eat, drink, or smoke during work.	Do NOT induce vomiting. Refer for medical attention. Give plenty of water to drink.

SPILLAGE DISPOSAL	STORAGE	PACKAGING & LABELLING
Collect leaking liquid in covered containers. Absorb remaining liquid in dry sand or inert absorbent and remove to safe place. Personal protection: filter respirator for organic gases and vapours. Do NOT let this chemical enter the environment.	Separated from strong oxidants, strong bases. Well closed.	Do not transport with food and feedstuffs. UN Hazard Class: 6.1 UN Packing Group: II

SEE IMPORTANT INFORMATION ON BACK

ICSC: 1486

Prepared in the context of cooperation between the International Programme on Chemical Safety & the Commission of the European Communities (C) IPCS CEC 1994. No modifications to the International version have been made except to add the OSHA PELs, NIOSH RELs and NIOSH IDLH values.

International Chemical Safety Cards

1,1,1,2-TETRACHLOROETHANE

ICSC: 1486

I	

M P O R T A N T D A T A	**PHYSICAL STATE; APPEARANCE:** YELLOW TO RED LIQUID . **PHYSICAL DANGERS:** **CHEMICAL DANGERS:** The substance decomposes on heating producing toxic and corrosive gases including hydrogen chloride . Reacts with strong bases and strong oxidants . **OCCUPATIONAL EXPOSURE LIMITS:** TLV not established. MAK not established. OSHA PEL: none NIOSH REL: Handle with caution in the workplace. See Appendix C (Chloroethanes) NIOSH IDLH: N.D. See: IDLH INDEX	**ROUTES OF EXPOSURE:** The substance can be absorbed into the body by ingestion and by inhalation. **INHALATION RISK:** No indication can be given about the rate in which a harmful concentration in the air is reached on evaporation of this substance at 20°C. **EFFECTS OF SHORT-TERM EXPOSURE:** The substance is irritating to the eyes and the skin . The substance may cause effects on the central nervous system . **EFFECTS OF LONG-TERM OR REPEATED EXPOSURE:**

PHYSICAL PROPERTIES	Boiling point: 130.5°C Melting point: -70.2°C Relative density (water = 1): 1.54	Solubility in water, g/100 ml at 25°C: 0.11 Vapour pressure, kPa at 25°C: 1.9 Octanol/water partition coefficient as log Pow: 2.66
ENVIRONMENTAL DATA	The substance is harmful to aquatic organisms.	

N O T E S

See ICSC 0332 1,1,2,2,-Tetrachloroethane.

Transport Emergency Card: TEC (R)-61GT1-II

ADDITIONAL INFORMATION

ICSC: 1486 **1,1,1,2-TETRACHLOROETHANE**

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International Chemical Safety Cards

1,1,1-TRICHLOROETHANE

ICSC: 0079

Methyl chloroform
Methyltrichloromethane
alpha-Trichloroethane
$C_2H_3Cl_3$ / CCl_3CH_3
Molecular mass: 133.4

ICSC # 0079
CAS # 71-55-6
RTECS # KJ2975000
UN # 2831
EC # 602-013-00-2
April 19, 2007 Validated

TYPES OF HAZARD/ EXPOSURE	ACUTE HAZARDS/ SYMPTOMS	PREVENTION	FIRST AID/ FIRE FIGHTING
FIRE	Combustible under specific conditions. Heating will cause rise in pressure with risk of bursting. Gives off irritating or toxic fumes (or gases) in a fire. See Notes.		In case of fire in the surroundings: use appropriate extinguishing media.
EXPLOSION			In case of fire: keep drums, etc., cool by spraying with water.
EXPOSURE		PREVENT GENERATION OF MISTS!	
•INHALATION	Cough. Sore throat. Headache. Dizziness. Drowsiness. Nausea. Ataxia. Unconsciousness.	Ventilation, local exhaust, or breathing protection.	Fresh air, rest. Artificial respiration may be needed. Refer for medical attention.
•SKIN	Dry skin. Redness.	Protective gloves.	Remove contaminated clothes. Rinse and then wash skin with water and soap.
•EYES	Redness. Pain.	Safety goggles or eye protection in combination with breathing protection.	First rinse with plenty of water for several minutes (remove contact lenses if easily possible), then take to a doctor.
•INGESTION	Nausea. Vomiting. Abdominal pain. Diarrhoea. (Further see Inhalation).	Do not eat, drink, or smoke during work.	Do NOT induce vomiting. Rinse mouth. Give a slurry of activated charcoal in water to drink. Refer for medical attention.

SPILLAGE DISPOSAL	STORAGE	PACKAGING & LABELLING
Personal protection: self-contained breathing apparatus. Ventilation. Collect leaking and spilled liquid in sealable, suitable containers as far as possible. Absorb remaining liquid in sand or inert absorbent and remove to safe place. Do NOT let this chemical enter the environment.	Separated from food and feedstuffs and strong oxidants, aluminium , manganese and zinc . Cool. Dry. Store in an area without drain or sewer access.	Do not transport with food and feedstuffs. Note: F Xn symbol N symbol R: 20-59 S: 2-24/25-59-61 UN Hazard Class: 6.1 UN Packing Group: III Signal: Warning

		Excl mark-Health haz Causes mild skin irritation Causes eye irritation May cause drowsiness or dizziness May cause damage to cardiovascular system if inhaled Harmful to aquatic life

SEE IMPORTANT INFORMATION ON BACK

ICSC: 0079

Prepared in the context of cooperation between the International Programme on Chemical Safety & the Commission of the European Communities (C) IPCS CEC 1994. No modifications to the International version have been made except to add the OSHA PELs, NIOSH RELs and NIOSH IDLH values.

International Chemical Safety Cards

1,1,1-TRICHLOROETHANE

ICSC: 0079

IMPORTANT DATA

PHYSICAL STATE; APPEARANCE:
COLOURLESS LIQUID , WITH CHARACTERISTIC ODOUR.

PHYSICAL DANGERS:
The vapour is heavier than air.

CHEMICAL DANGERS:
The substance decomposes on burning, producing toxic and corrosive fumes . Reacts violently with aluminium and its alloys with magnesium, bases , strong oxidants , acetone, and zinc

OCCUPATIONAL EXPOSURE LIMITS:
TLV: 350 ppm as TWA, 450 ppm as STEL; A4 (not classifiable as a human carcinogen); BEI issued (ACGIH 2006).
MAK: 200 ppm, 1100 mg/m³;
Peak limitation category: II(1);
skin absorption (H);
Pregnancy risk group: C;
(DFG 2006).
OSHA PEL†: TWA 350 ppm (1900 mg/m^3)
NIOSH REL: C 350 ppm (1900 mg/m^3) 15-minute See Appendix C (Chloroethanes)
NIOSH IDLH: 700 ppm See: 71556

ROUTES OF EXPOSURE:
The substance can be absorbed into the body by inhalation of its vapour and by ingestion.

INHALATION RISK:
A harmful contamination of the air can be reached rather quickly on evaporation of this substance at 20°C.

EFFECTS OF SHORT-TERM EXPOSURE:
The substance is mildly irritating to the eyes , the respiratory tract and the skin . The substance may cause effects on the central nervous system , resulting in lowering of consciousness . Exposure at high levels may result in cardiac dysrhythmia.

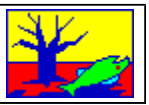
EFFECTS OF LONG-TERM OR REPEATED EXPOSURE:
The liquid defats the skin.

PHYSICAL PROPERTIES

Boiling point: 74°C
Melting point: -30°C
Relative density (water = 1): 1.34
Solubility in water: (poor)
Vapour pressure, kPa at 20°C: 13.3
Relative vapour density (air = 1): 4.6
Flash point: see Notes
Auto-ignition temperature: 537°C
Explosive limits, vol% in air: 8-16
Octanol/water partition coefficient as log Pow: 2.49

ENVIRONMENTAL DATA

The substance is harmful to aquatic organisms.



NOTES

Combustible vapour/air mixtures difficult to ignite, may be developed under certain conditions. The substance burns only in excess oxygen or if a strong source of ignition is present. Do NOT use in the vicinity of a fire or a hot surface, or during welding. Use of alcoholic beverages enhances the harmful effect. Depending on the degree of exposure, periodic medical examination is suggested. An added stabilizer or inhibitor can influence the toxicological properties of this substance, consult an expert.

Transport Emergency Card: TEC (R)-61S2831 or 61GTI-III

NFPA Code: H2; F1; R0

Card has been partially updated in February 2009: see Chemical Dangers.

ADDITIONAL INFORMATION

ICSC: 0079 **1,1,1-TRICHLOROETHANE**

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International Chemical Safety Cards

1,1,2,2-TETRACHLOROETHANE

ICSC: 0332

Acetylene tetrachloride
sym-Tetrachloroethane
1,1-Dichloro-2-2,dichloroethane
$C_2H_2Cl_4$ / $CHCl_2CHCl_2$
Molecular mass: 167.9

ICSC # 0332
CAS # 79-34-5
RTECS # KI8575000
UN # 1702
EC # 602-015-00-3
April 20, 2005 Validated

TYPES OF HAZARD/ EXPOSURE	ACUTE HAZARDS/ SYMPTOMS	PREVENTION	FIRST AID/ FIRE FIGHTING
FIRE	Not combustible. Gives off irritating or toxic fumes (or gases) in a fire.		In case of fire in the surroundings: use appropriate extinguishing media.
EXPLOSION			
EXPOSURE		STRICT HYGIENE!	IN ALL CASES CONSULT A DOCTOR!
•INHALATION	Abdominal pain. Cough. Sore throat. Headache. Nausea. Vomiting. Dizziness. Drowsiness. Confusion. Tremor. Convulsions.	Ventilation, local exhaust, or breathing protection.	Fresh air, rest. Artificial respiration may be needed. Refer for medical attention.
•SKIN	MAY BE ABSORBED! Redness. Dry skin. (Further see Inhalation).	Protective gloves. Protective clothing.	Remove contaminated clothes. Rinse skin with plenty of water or shower. Refer for medical attention.
•EYES	Redness. Pain.	Face shield or eye protection in combination with breathing protection.	First rinse with plenty of water for several minutes (remove contact lenses if easily possible), then take to a doctor.
•INGESTION	Abdominal pain. Nausea. Vomiting. (Further see Inhalation).	Do not eat, drink, or smoke during work.	Induce vomiting (ONLY IN CONSCIOUS PERSONS!). Rest. Refer for medical attention.

SPILLAGE DISPOSAL	STORAGE	PACKAGING & LABELLING
Personal protection: complete protective clothing including self-contained breathing apparatus. Ventilation. Do NOT let this chemical enter the environment. Collect leaking and spilled liquid in sealable containers as far as possible. Absorb remaining liquid in sand or inert absorbent and remove to safe place.	Store in an area without drain or sewer access. Separated from strong bases, alkali metals , food and feedstuffs . Cool. Keep in the dark. Well closed. Keep in a well-ventilated room.	Do not transport with food and feedstuffs. Marine pollutant. T+ symbol N symbol R: 26/27-51/53 S: 1/2-38-45-61 UN Hazard Class: 6.1 UN Packing Group: II

SEE IMPORTANT INFORMATION ON BACK

ICSC: 0332

Prepared in the context of cooperation between the International Programme on Chemical Safety & the Commission of the European Communities (C) IPCS CEC 1994. No modifications to the International version have been made except to add the OSHA PELs, NIOSH RELs and NIOSH IDLH values.

International Chemical Safety Cards

1,1,2,2-TETRACHLOROETHANE

ICSC: 0332

I M P O R T A N T D A T A

PHYSICAL STATE; APPEARANCE:
COLOURLESS LIQUID , WITH CHARACTERISTIC ODOUR.

PHYSICAL DANGERS:
The vapour is heavier than air.

CHEMICAL DANGERS:
The substance decomposes on heating and under influence of air , UV light and moisture producing toxic and corrosive gases including hydrogen chloride , phosgene . Reacts violently with alkali metals , strong bases and powdered metals producing toxic and corrosive gases . Attacks plastic and rubber.

OCCUPATIONAL EXPOSURE LIMITS:
TLV: 1 ppm as TWA; (skin); A3 (confirmed animal carcinogen with unknown relevance to humans); (ACGIH 2005).
MAK: 1 ppm, 7.0 mg/m³
Peak limitation category: II(2);
skin absorption (H);
Carcinogen category: 3B; Pregnancy risk group: D; (DFG 2006).
OSHA PEL†: TWA 5 ppm (35 mg/m^3) skin
NIOSH REL: Ca TWA 1 ppm (7 mg/m^3) skin See Appendix A See Appendix C (Chloroethanes)
NIOSH IDLH: Ca 100 ppm See: 79345

ROUTES OF EXPOSURE:
The substance can be absorbed into the body by inhalation of its vapour, through the skin and by ingestion.

INHALATION RISK:
A harmful contamination of the air can be reached rather quickly on evaporation of this substance at 20°C.

EFFECTS OF SHORT-TERM EXPOSURE:
The substance is irritating to the eyes , the skin and the respiratory tract . The substance may cause effects on the central nervous system , liver and kidneys , resulting in central nervous system depression and impaired functions . Exposure may result in unconsciousness. Exposure may result in death.

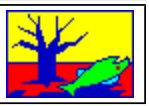
EFFECTS OF LONG-TERM OR REPEATED EXPOSURE:
The liquid defats the skin. The substance may have effects on the central nervous system and liver , resulting in impaired functions .

PHYSICAL PROPERTIES

Boiling point: 146°C
Melting point: -44°C
Relative density (water = 1): 1.59
Solubility in water, g/100 ml at 20°C: 0.29
Vapour pressure, Pa at 20°C: 647
Relative vapour density (air = 1): 5.8
Relative density of the vapour/air-mixture at 20°C (air = 1): 1.03
Octanol/water partition coefficient as log Pow: 2.39

ENVIRONMENTAL DATA

The substance is toxic to aquatic organisms.



N O T E S

Use of alcoholic beverages enhances the harmful effect. The odour warning when the exposure limit value is exceeded is insufficient. Do NOT use in the vicinity of a fire or a hot surface, or during welding. Card has been partly updated in October 2005. See section Storage.

Transport Emergency Card: TEC (R)-61S1702 or 61GT1-II
Card has been partially updated in July 2007: see Occupational Exposure Limits.

ADDITIONAL INFORMATION

ICSC: 0332 **1,1,2,2-TETRACHLOROETHANE**

(C) IPCS, CEC, 1994

IMPORTANT LEGAL NOTICE:

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International Chemical Safety Cards

1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE

ICSC: 0050

Trichlorotrifluoroethane
CFC 113
R 113
$C_2Cl_3F_3$ / $Cl_2FCCClF_2$
Molecular mass: 187.4

ICSC # 0050
CAS # 76-13-1
RTECS # KJ4000000
March 07, 2002 Validated

TYPES OF HAZARD/ EXPOSURE	ACUTE HAZARDS/ SYMPTOMS	PREVENTION	FIRST AID/ FIRE FIGHTING
FIRE	Combustible under specific conditions. Gives off irritating or toxic fumes (or gases) in a fire.	NO open flames.	In case of fire in the surroundings: use appropriate extinguishing media.
EXPLOSION			In case of fire: keep drums, etc., cool by spraying with water.
EXPOSURE			
•INHALATION	Cardiac arrhythmia. Confusion. Drowsiness. Unconsciousness.	Ventilation, local exhaust, or breathing protection.	Fresh air, rest. Artificial respiration may be needed. Refer for medical attention.
•SKIN	Redness.	Protective gloves.	Remove contaminated clothes. Rinse skin with plenty of water or shower. Refer for medical attention.
•EYES	Redness. Pain.	Safety goggles .	First rinse with plenty of water for several minutes (remove contact lenses if easily possible), then take to a doctor.
•INGESTION		Do not eat, drink, or smoke during work.	Rinse mouth. Refer for medical attention.

SPILLAGE DISPOSAL	STORAGE	PACKAGING & LABELLING
Collect leaking and spilled liquid in sealable containers as far as possible. Absorb remaining liquid in sand or inert absorbent and remove to safe place. Do NOT let this chemical enter the environment. Personal protection: self-contained breathing apparatus.	Separated from metals and alloys. See Chemical Dangers. Cool. Ventilation along the floor.	

SEE IMPORTANT INFORMATION ON BACK

ICSC: 0050

Prepared in the context of cooperation between the International Programme on Chemical Safety & the Commission of the European Communities (C) IPCS CEC 1994. No modifications to the International version have been made except to add the OSHA PELs, NIOSH RELs and NIOSH IDLH values.

International Chemical Safety Cards

1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE

ICSC: 0050

I M P O R T A N T D A T A

PHYSICAL STATE; APPEARANCE:
COLOURLESS VOLATILE LIQUID , WITH CHARACTERISTIC ODOUR.

PHYSICAL DANGERS:
The vapour is heavier than air and may accumulate in low ceiling spaces causing deficiency of oxygen.

CHEMICAL DANGERS:
On contact with hot surfaces or flames this substance decomposes forming toxic and corrosive gases (hydrogen chloride ICSC 0163, phosgene ICSC 0007, hydrogen fluoride ICSC 0283, carbonyl fluoride ICSC 0633). Reacts violently with powdered metals causing fire and explosion hazard. Attacks magnesium and its alloys.

OCCUPATIONAL EXPOSURE LIMITS:
TLV: 1000 ppm as TWA; 1250 ppm as STEL; A4 (not classifiable as a human carcinogen); (ACGIH 2004).
MAK: 500 ppm, 3900 mg/m³;
Peak limitation category: II(2); Pregnancy risk group: D; (DFG 2006).
OSHA PEL†: TWA 1000 ppm (7600 mg/m^3)
NIOSH REL: TWA 1000 ppm (7600 mg/m^3) ST 1250 ppm (9500 mg/m^3)
NIOSH IDLH: 2000 ppm See: 76131

ROUTES OF EXPOSURE:
The substance can be absorbed into the body by inhalation and by ingestion.

INHALATION RISK:
On loss of containment this liquid evaporates very quickly displacing the air and causing a serious risk of suffocation when in confined areas.

EFFECTS OF SHORT-TERM EXPOSURE:
The substance is irritating to the eyes . The substance may cause effects on the cardiovascular system and central nervous system , resulting in cardiac disorders and central nervous system depression. Exposure could cause lowering of consciousness. See Notes.

EFFECTS OF LONG-TERM OR REPEATED EXPOSURE:
Repeated or prolonged contact with skin may cause dermatitis.

PHYSICAL PROPERTIES

Boiling point: 48°C
Melting point: -36°C
Relative density (water = 1): 1.56
Solubility in water, g/100 ml at 20°C: 0.02
Vapour pressure, kPa at 20°C: 36
Relative vapour density (air = 1): 6.5
Relative density of the vapour/air-mixture at 20°C (air = 1): 3.0
Auto-ignition temperature: 680°C
Octanol/water partition coefficient as log Pow: 3.30

ENVIRONMENTAL DATA

The substance is toxic to aquatic organisms. This substance may be hazardous to the environment; special attention should be given to its impact on the ozone layer.

N O T E S

High concentrations in the air cause a deficiency of oxygen with the risk of unconsciousness or death. Check oxygen content before entering area. The odour warning when the exposure limit value is exceeded is insufficient. Do NOT use in the vicinity of a fire or a hot surface, or during welding. Freon 113, Frigen 113, Halon 113 are trade names.

Card has been partially updated in July 2007: see Occupational Exposure Limits.

ADDITIONAL INFORMATION

ICSC: 0050 **1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE**

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International Chemical Safety Cards

1,1,2-TRICHLOROETHANE

ICSC: 0080

Vinyl trichloride
beta-Trichloroethane
$C_2H_3Cl_3$ / $CHCl_2CH_2Cl$
Molecular mass: 133.4

ICSC # 0080
CAS # 79-00-5
RTECS # KJ3150000
UN # 3082
EC # 602-014-00-8
March 13, 1995 Validated

TYPES OF HAZARD/ EXPOSURE	ACUTE HAZARDS/ SYMPTOMS	PREVENTION	FIRST AID/ FIRE FIGHTING
FIRE	Combustible under specific conditions. Heating will cause rise in pressure with risk of bursting. See Notes.	NO open flames. NO contact with hot surfaces.	Powder, water spray, foam, carbon dioxide.
EXPLOSION	See Notes.		In case of fire: keep drums, etc., cool by spraying with water.
EXPOSURE		PREVENT GENERATION OF MISTS!	
•INHALATION	Dizziness. Drowsiness. Headache. Nausea. Shortness of breath. Unconsciousness.	Ventilation, local exhaust, or breathing protection.	Fresh air, rest. Refer for medical attention.
•SKIN	MAY BE ABSORBED! Dry skin.	Protective gloves. Protective clothing.	Remove contaminated clothes. Rinse and then wash skin with water and soap. Refer for medical attention.
•EYES		Safety spectacles or face shield .	First rinse with plenty of water for several minutes (remove contact lenses if easily possible), then take to a doctor.
•INGESTION	(Further see Inhalation).	Do not eat, drink, or smoke during work.	Rinse mouth. Induce vomiting (ONLY IN CONSCIOUS PERSONS!). Refer for medical attention.

SPILLAGE DISPOSAL	STORAGE	PACKAGING & LABELLING
Collect leaking and spilled liquid in sealable containers as far as possible. Absorb remaining liquid in sand or inert absorbent and remove to safe place. Do NOT let this chemical enter the environment. Personal protection: self-contained breathing apparatus.	Provision to contain effluent from fire extinguishing. Separated from strong oxidants, strong bases, many metals . Well closed. Ventilation along the floor.	Marine pollutant. Xn symbol R: 20/21/22-40-66 S: 2-9-36/37-46 UN Hazard Class: 9 UN Packing Group: III

SEE IMPORTANT INFORMATION ON BACK

ICSC: 0080

Prepared in the context of cooperation between the International Programme on Chemical Safety & the Commission of the European Communities (C) IPCS CEC 1994. No modifications to the International version have been made except to add the

OSHA PELs, NIOSH RELs and NIOSH IDLH values.

International Chemical Safety Cards

1,1,2-TRICHLOROETHANE

ICSC: 0080

IMPORTANT DATA

PHYSICAL STATE; APPEARANCE:
COLOURLESS LIQUID , WITH CHARACTERISTIC ODOUR.

PHYSICAL DANGERS:
The vapour is heavier than air.

CHEMICAL DANGERS:
On contact with hot surfaces or flames this substance decomposes forming hydrogen chloride (see ICSC0163), phosgene (see ICSC0007), and other toxic gases. Reacts with strong oxidants, strong bases and metals such as sodium, potassium, magnesium and powdered aluminium. Attacks many plastic, rubber, steel and zinc.

OCCUPATIONAL EXPOSURE LIMITS:
TLV: 10 ppm as TWA; (skin); A3 (confirmed animal carcinogen with unknown relevance to humans); (ACGIH 2004).
MAK: 10 ppm, 55 mg/m³
Peak limitation category: II(2);
skin absorption (H);
Carcinogen category: 3B;
(DFG 2004).
OSHA PEL: TWA 10 ppm (45 mg/m^3) skin
NIOSH REL: Ca TWA 10 ppm (45 mg/m^3) skin See Appendix A See Appendix C (Chloroethanes)
NIOSH IDLH: Ca 100 ppm See: 79005

ROUTES OF EXPOSURE:
The substance can be absorbed into the body by inhalation of its vapour, through the skin and by ingestion.

INHALATION RISK:
A harmful contamination of the air can be reached rather quickly on evaporation of this substance at 20°C.

EFFECTS OF SHORT-TERM EXPOSURE:
The substance may cause effects on the central nervous system , kidneys , liver , resulting in central nervous depression, liver impairment and kidney impairment . Exposure at high levels may result in unconsciousness.

EFFECTS OF LONG-TERM OR REPEATED EXPOSURE:
The liquid defats the skin.

PHYSICAL PROPERTIES

Boiling point: 114°C
Melting point: -36°C
Relative density (water = 1): 1.44
Solubility in water: none
Vapour pressure, kPa at 20°C: 2.5
Relative vapour density (air = 1): 4.6
Relative density of the vapour/air-mixture at 20°C (air = 1): 4.6
Explosive limits, vol% in air: 6-15.5
Octanol/water partition coefficient as log Pow: 2.35

ENVIRONMENTAL DATA

The substance is harmful to aquatic organisms.

NOTES

Flash point unknown in literature. Combustible vapour/air mixtures difficult to ignite, may be developed under certain conditions. Use of alcoholic beverages enhances the harmful effect. The relation between odour and the occupational exposure limit cannot be indicated. Do NOT use in the vicinity of a fire or a hot surface, or during welding. Card has been partly updated in April 2005. See sections Occupational Exposure Limits, EU classification.

Transport Emergency Card: TEC (R)-90GM6-III
NFPA Code: H 3; F 1; R 0;

ADDITIONAL INFORMATION

ICSC: 0080 **1,1,2-TRICHLOROETHANE**

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IMPORTANT LEGAL NOTICE:	Committee and may not reflect in all cases all the detailed requirements included in national legislation on the subject. The user should verify compliance of the cards with the relevant legislation in the country of use. The only modifications made to produce the U.S. version is inclusion of the OSHA PELs, NIOSH RELs and NIOSH IDLH values.

1,1-DICHLOROETHANE

ICSC: 0249

Ethane, 1,1-dichloro-
Ethylidene chloride
CH_3CHCl_2
Molecular mass: 99.0

ICSC # 0249
CAS # 75-34-3
RTECS # KI0175000
UN # 2362
EC # 602-011-00-1
September 20, 1993 Validated

TYPES OF HAZARD/ EXPOSURE	ACUTE HAZARDS/ SYMPTOMS	PREVENTION	FIRST AID/ FIRE FIGHTING
FIRE	Highly flammable. Gives off irritating or toxic fumes (or gases) in a fire.	NO open flames, NO sparks, and NO smoking.	Water spray, foam, powder, carbon dioxide.
EXPLOSION	Vapour/air mixtures are explosive.	Closed system, ventilation, explosion-proof electrical equipment and lighting. Do NOT use compressed air for filling, discharging, or handling.	In case of fire: keep drums, etc., cool by spraying with water.
EXPOSURE		PREVENT GENERATION OF MISTS!	
•INHALATION	Dizziness. Drowsiness. Dullness. Nausea. Unconsciousness.	Ventilation, local exhaust, or breathing protection.	Fresh air, rest. Refer for medical attention.
•SKIN	Dry skin. Roughness.	Protective gloves	Remove contaminated clothes. Rinse skin with plenty of water or shower.
•EYES	Redness. Pain.	Safety spectacles.	First rinse with plenty of water for several minutes (remove contact lenses if easily possible), then take to a doctor.
•INGESTION	Burning sensation. (Further see Inhalation).	Do not eat, drink, or smoke during work.	Rinse mouth. Refer for medical attention.

SPILLAGE DISPOSAL	STORAGE	PACKAGING & LABELLING
Collect leaking liquid in sealable containers. Absorb remaining liquid in sand or inert absorbent and remove to safe place. Do NOT wash away into sewer. Personal protection: self-contained breathing apparatus.	Fireproof. Separated from: see Chemical Dangers. Cool.	Marine pollutant. F symbol Xn symbol R: 11-22-36/37-52/53 S: 2-16-23-61 UN Hazard Class: 3 UN Packing Group: II

SEE IMPORTANT INFORMATION ON BACK

ICSC: 0249

Prepared in the context of cooperation between the International Programme on Chemical Safety & the Commission of the European Communities (C) IPCS CEC 1994. No modifications to the International version have been made except to add the OSHA PELs, NIOSH RELs and NIOSH IDLH values.

International Chemical Safety Cards

1,1-DICHLOROETHANE

ICSC: 0249

I M P O R T A N T D A T A

PHYSICAL STATE; APPEARANCE:
COLOURLESS LIQUID , WITH CHARACTERISTIC ODOUR.

PHYSICAL DANGERS:
The vapour is heavier than air and may travel along the ground; distant ignition possible.

CHEMICAL DANGERS:
The substance decomposes on heating and on burning producing toxic and corrosive fumes including phosgene (see ICSC 0007) and hydrogen chloride (see ICSC 0163). Reacts violently withstrong oxidants,alkali metalsand earth-alkali metals,powdered metals, causing fire and explosion hazard. Attacks aluminium, iron and polyethylene. Contact with strong caustic will cause formation of flammable and toxic acetaldehyde gas.

OCCUPATIONAL EXPOSURE LIMITS:
TLV: 100 ppm as TWA; A4 (not classifiable as a human carcinogen); (ACGIH 2004).
MAK: 100 ppm, 410 mg/m³;
Peak limitation category: II(2); Pregnancy risk group: C; (DFG 2006).
OSHA PEL: TWA 100 ppm (400 mg/m^3)
NIOSH REL: TWA 100 ppm (400 mg/m^3) See Appendix C (Chloroethanes)
NIOSH IDLH: 3000 ppm See: 75343

ROUTES OF EXPOSURE:
The substance can be absorbed into the body by inhalation and by ingestion.

INHALATION RISK:
A harmful contamination of the air can be reached rather quickly on evaporation of this substance at 20°C.

EFFECTS OF SHORT-TERM EXPOSURE:
The substance may cause effects on the central nervous system. Exposure at high levels may result in unconsciousness.

EFFECTS OF LONG-TERM OR REPEATED EXPOSURE:
The liquid defats the skin. The substance may have effects on the kidneys and liver.

PHYSICAL PROPERTIES

Boiling point: 57°C
Melting point: -98°C
Relative density (water = 1): 1.2
Solubility in water, g/100 ml at 20°C: 0.6
Vapour pressure, kPa at 20°C: 24
Relative vapour density (air = 1): 3.4
Flash point: -6°C c.c.
Auto-ignition temperature: 458°C
Explosive limits, vol% in air: 5.6-11.4
Octanol/water partition coefficient as log Pow: 1.8

ENVIRONMENTAL DATA

N O T E S

Do NOT use in the vicinity of a fire or a hot surface, or during welding. Card has been partly updated in October 2005: see sections Occupational Exposure Limits, EU classification, Emergency Response. Card has been partly updated in October 2006: see sections Occupational Exposure Limits.

Transport Emergency Card: TEC (R)-30GF1-I+II

NFPA Code: H 2; F 3; R 0;

ADDITIONAL INFORMATION

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International Chemical Safety Cards

VINYLIDENE CHLORIDE

ICSC: 0083

1,1-Dichloroethene
1,1-Dichloroethylene
VDC
$C_2H_2Cl_2$ / $H_2C=CCl_2$
Molecular mass: 97

ICSC # 0083
CAS # 75-35-4
RTECS # KV9275000
UN # 1303 (stabilized)
EC # 602-025-00-8
April 13, 2000 Validated

TYPES OF HAZARD/ EXPOSURE	ACUTE HAZARDS/ SYMPTOMS	PREVENTION	FIRST AID/ FIRE FIGHTING
FIRE	Extremely flammable. Gives off irritating or toxic fumes (or gases) in a fire.	NO open flames, NO sparks, and NO smoking.	Powder, water spray, foam, carbon dioxide.
EXPLOSION	Vapour/air mixtures are explosive.	Closed system, ventilation, explosion-proof electrical equipment and lighting. Use non-sparking handtools.	In case of fire: keep drums, etc., cool by spraying with water.
EXPOSURE		PREVENT GENERATION OF MISTS!	
•**INHALATION**	Dizziness. Drowsiness. Unconsciousness.	Ventilation, local exhaust, or breathing protection.	Fresh air, rest. Artificial respiration if indicated. Refer for medical attention.
•**SKIN**	Redness. Pain.	Protective gloves. Protective clothing.	Remove contaminated clothes. Rinse and then wash skin with water and soap.
•**EYES**	Redness. Pain.	Safety goggles, or eye protection in combination with breathing protection.	First rinse with plenty of water for several minutes (remove contact lenses if easily possible), then take to a doctor.
•**INGESTION**	Abdominal pain. Sore throat. (Further see Inhalation).	Do not eat, drink, or smoke during work.	Rinse mouth. Do NOT induce vomiting. Give plenty of water to drink. Rest.

SPILLAGE DISPOSAL	STORAGE	PACKAGING & LABELLING
Evacuate danger area! Consult an expert! Remove all ignition sources. Collect leaking and spilled liquid in sealable containers as far as possible. Absorb remaining liquid in sand or inert absorbent and remove to safe place. Do NOT wash away into sewer. Do NOT let this chemical enter the environment. Personal protection: complete protective clothing including self-contained breathing apparatus.	Fireproof. Provision to contain effluent from fire extinguishing. Separated from incompatible materials (see Chemical Dangers). Cool. Keep in the dark. Store only if stabilized.	Airtight. Unbreakable packaging; put breakable packaging into closed unbreakable container. Marine pollutant. Note: D F+ symbol Xn symbol R: 12-20-40 S: 2-7-16-29-36/37-46 UN Hazard Class: 3 UN Packing Group: I

SEE IMPORTANT INFORMATION ON BACK

ICSC: 0083

Prepared in the context of cooperation between the International Programme on Chemical Safety & the Commission of the European Communities (C) IPCS CEC 1994. No modifications to the International version have been made except to add the OSHA PELs, NIOSH RELs and NIOSH IDLH values.

International Chemical Safety Cards

VINYLIDENE CHLORIDE

ICSC: 0083

I M P O R T A N T D A T A

PHYSICAL STATE; APPEARANCE:
VOLATILE COLOURLESS LIQUID , WITH CHARACTERISTIC ODOUR.

PHYSICAL DANGERS:
The vapour is heavier than air and may travel along the ground; distant ignition possible. Vinylidine chloride monomer vapours are uninhibited and may form polymers in vents or flame arresters of storage tanks, resulting in blockage of vents.

CHEMICAL DANGERS:
The substance can readily form explosive peroxides. The substance willl polymerize readily due to heating or under the influence of oxygen, sunlight, copper or aluminium, with fire or explosion hazard. May explode on heating or on contact with flames. The substance decomposes on burning producing toxic and corrosive fumes (hydrogen chloride , phosgene). Reacts violently with oxidants.

OCCUPATIONAL EXPOSURE LIMITS:
TLV: 5 ppm as TWA; A4 (not classifiable as a human carcinogen); (ACGIH 2004).
MAK: 2 ppm, 8.0 mg/m³;
Peak limitation category: II(2); Carcinogen category: 3B; Pregnancy risk group: C;
(DFG 2004).
OSHA PEL†: none
NIOSH REL: Ca See Appendix A
NIOSH IDLH: Ca N.D. See: IDLH INDEX

ROUTES OF EXPOSURE:
The substance can be absorbed into the body by inhalation and by ingestion.

INHALATION RISK:
A harmful contamination of the air can be reached very quickly on evaporation of this substance at 20°C.

EFFECTS OF SHORT-TERM EXPOSURE:
The substance irritates the eyes, the skin and the respiratory tract. Swallowing the liquid may cause aspiration into the lungs with the risk of chemical pneumonitis. Exposure at high levels could cause lowering of consciousness.

EFFECTS OF LONG-TERM OR REPEATED EXPOSURE:
Repeated or prolonged contact with skin may cause dermatitis. The substance may have effects on the kidneys and liver .

PHYSICAL PROPERTIES

Boiling point: 32°C
Melting point: -122°C
Relative density (water = 1): 1.2
Solubility in water, g/100 ml at 25°C: 0.25
Vapour pressure, kPa at 20°C: 66.5
Relative vapour density (air = 1): 3.3
Relative density of the vapour/air-mixture at 20°C (air = 1): 2.5
Flash point:
-25°C c.c.
Auto-ignition temperature: 570°C
Explosive limits, vol% in air: 5.6-16
Octanol/water partition coefficient as log Pow: 1.32

ENVIRONMENTAL DATA

The substance is harmful to aquatic organisms.

N O T E S

Depending on the degree of exposure, periodic medical examination is suggested. An added stabilizer or inhibitor can influence the toxicological properties of this substance, consult an expert. The odour warning when the exposure limit value is exceeded is insufficient. Do NOT use in the vicinity of a fire or a hot surface, or during welding. Card has been partly updated October 2004 and in April 2005. See section Occupational Exposure Limits.

Transport Emergency Card: TEC (R)-30S1303

NFPA Code: H2; F4; R2;

ADDITIONAL INFORMATION	

ICSC: 0083 **VINYLIDENE CHLORIDE**

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========== Product Identification ==========

Product ID:F824 1,1-DICHLOROPROPENE
MSDS Date:09/30/1992
FSC:6550
NIIN:00F037539
MSDS Number: BWJHM
=== Responsible Party ===
Company Name:CHEM SERVICE INC
Address:660 TOWER LN
Box:3108
City:WEST CHESTER
State:PA
ZIP:19381-3108
Country:US
Info Phone Num:215-692-3026/800-452-9994
Emergency Phone Num:215-692-3026/800-452-9994
CAGE:84898
=== Contractor Identification ===
Company Name:CHEM SERVICE INC
Box:3108
City:WEST CHESTER
State:PA
ZIP:19381
Country:US
Phone:215-692-3026
CAGE:84898
Company Name:CHEM SERVICE, INC
Address:660 TOWER LN
Box:599
City:WEST CHESTER
State:PA
ZIP:19301-9650
Country:US
Phone:610-692-3026
CAGE:8Y898

========== Composition/Information on Ingredients ==========

Ingred Name:1,1-DICHLOROPROPYLENE
CAS:563-58-6
RTECS #:UC8290000

========== Hazards Identification ==========

Routes of Entry: Inhalation:YES Skin:YES Ingestion:YES
Reports of Carcinogenicity:NTP:NO IARC:NO OSHA:NO
Health Hazards Acute and Chronic:LACHRYMATOR-EYES: SEVERE
IRRITATION/SEVERE BURNS. SKIN: HARMFUL IF ABSORBED, BURNS.
INHALATION: HARMFUL/FATAL. EXTREMELY DESTRUCTIVE OF MUCOUS
MEMBRANES & UPPER RESPIRATORY TRACT. CAN CAUSE EDEMA. ING ESTION:
HARMFUL.
Explanation of Carcinogenicity:NONE
Effects of Overexposure:IRRITATION, BURNS, SWELLING, BURNING SENSATION,
COUGHING, WHEEZING, LARYNGITIS, SHORTNESS OF BREATH, HEADACHE,
NAUSEA, VOMITING.

========== First Aid Measures ==========

First Aid:EYES: FLUSH CONTINUOUSLY W/WATER FOR 15-20 MINS. SKIN: FLUSH
W/WATER FOR 15-20 MINS. IF NOT BURNED, WASH W/SOAP & WATER TO
CLEANSE. INHALATION: REMOVE TO FRESH AIR. GIVE CPR/OXYGEN IF NEEDED
& CONTINU E UNTIL MEDICAL ASSISTANCE ARRIVES. OBTAIN MEDICAL
ATTENTION IN ALL CASES.

========== Fire Fighting Measures ==========

Flash Point:32F
Extinguishing Media:CO2, DRY CHEMICAL POWDER/SPRAY.
Unusual Fire/Explosion Hazard:FLAMMABLE CHEMICAL.

========== Accidental Release Measures ==========

Spill Release Procedures:EVACUATE AREA. WEAR APPRORPRIATE OSHA REGULATED EQUIPMENT. VENTILATE AREA. ABSORB ON VERMICULITE/SIMILAR MATERIAL. SWEEP UP & PLACE IN APPROPRIATE CONTAINER/HOLD FOR DISPOSAL. WASH CONTAMINATED SURFAC ES TO REMOVE ANY RESIDUES.

========== Handling and Storage ==========

Handling and Storage Precautions:STORE IN A COOL DRY PLACE ONLY W/COMPATIBLE CHEMICALS. KEEP TIGHTLY CLOSED. FOR LABORATORY USE ONLY.
Other Precautions:AVOID CONTACT W/SKIN, EYES & CLOTHING. DON'T BREATH VAPORS. CONTACT LENSES SHOULDN'T BE WORN IN THE LABORATORY. ALL CHEMICALS SHOULD BE CONSIDERED HAZARDOUS. AVOID DIRECT PHYSICAL CONTACT.

========== Exposure Controls/Personal Protection ==========

Respiratory Protection:WEAR APPROPRIATE OSHA/MSHA APPROVED SAFETY EQUIPMENT.
Ventilation:CHEMICAL SHOULD BE HANDLED ONLY IN A HOOD.
Eye Protection:EYE SHIELDS
Supplemental Safety and Health

========== Physical/Chemical Properties ==========

Appearance and Odor:CRYSTALLINE SOLID

========== Stability and Reactivity Data ==========

Stability Indicator/Materials to Avoid:YES
STRONG OXIDIZING AGENTS/ACIDS.
Hazardous Decomposition Products:TOXIC FUMES. DECOMPOSITION PRODUCTS ARE CORROSIVE.

========== Disposal Considerations ==========

Waste Disposal Methods:BURN IN A CHEMICAL INCINERATOR EQUIPPED W/AN AFTERBURNER & SCRUBBER IAW/FEDERAL, STATE & LOCAL REGULATIONS.

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International Chemical Safety Cards

1,2,3-TRICHLOROBENZENE

ICSC: 1222

vic-Trichlorobenzene
1,2,6-Trichlorobenzene
$C_6H_3Cl_3$
Molecular mass: 181.5

ICSC # 1222
CAS # 87-61-6
RTECS # DC2095000
UN # 3077
November 26, 2003 Validated

TYPES OF HAZARD/ EXPOSURE	ACUTE HAZARDS/ SYMPTOMS	PREVENTION	FIRST AID/ FIRE FIGHTING
FIRE	Combustible. Gives off irritating or toxic fumes (or gases) in a fire.	NO open flames.	Dry powder, water spray, foam, carbon dioxide.
EXPLOSION			
EXPOSURE		PREVENT DISPERSION OF DUST!	
•INHALATION	Cough. Sore throat.	Local exhaust or breathing protection.	Fresh air, rest. Refer for medical attention.
•SKIN		Protective gloves.	Remove contaminated clothes. Rinse and then wash skin with water and soap.
•EYES	Redness. Pain.	Safety goggles.	First rinse with plenty of water for several minutes (remove contact lenses if easily possible), then take to a doctor.
•INGESTION	Abdominal pain. Diarrhoea. Nausea. Vomiting.	Do not eat, drink, or smoke during work.	Rinse mouth. Give plenty of water to drink. Refer for medical attention.

SPILLAGE DISPOSAL	STORAGE	PACKAGING & LABELLING
Sweep spilled substance into covered containers; if appropriate, moisten first to prevent dusting. Carefully collect remainder, then remove to safe place. Do NOT let this chemical enter the environment. (Extra personal protection: P2 filter respirator for harmful particles.)	Separated from strong oxidants. Keep in a well-ventilated room.	UN Hazard Class: 9

SEE IMPORTANT INFORMATION ON BACK

ICSC: 1222

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International Chemical Safety Cards

1,2,3-TRICHLOROBENZENE

ICSC: 1222

IMPORTANT DATA		
	PHYSICAL STATE; APPEARANCE: WHITE CRYSTALS , WITH CHARACTERISTIC ODOUR. **PHYSICAL DANGERS:** **CHEMICAL DANGERS:** The substance decomposes on burning producing toxic and corrosive fumes including hydrogen chloride . Reacts with strong oxidants . **OCCUPATIONAL EXPOSURE LIMITS:** TLV not established. MAK: 5 ppm, 38 mg/m³; H; Peak limitation category: II(2); Pregnancy risk group: D; (DFG 2003).	**ROUTES OF EXPOSURE:** The substance can be absorbed into the body by inhalation of its aerosol and by ingestion. **INHALATION RISK:** A harmful contamination of the air will be reached rather slowly on evaporation of this substance at 20°C; on spraying or dispersing, however, much faster. **EFFECTS OF SHORT-TERM EXPOSURE:** The substance is irritating to the eyes and the respiratory tract . **EFFECTS OF LONG-TERM OR REPEATED EXPOSURE:**
PHYSICAL PROPERTIES	Boiling point: 218.5°C Melting point: 53.5°C Density: 1.45 g/cm³ Solubility in water: very poor	Vapour pressure, Pa at 25°C: 17.3 Relative vapour density (air = 1): 6.26 Flash point: 112.7°C c.c. Octanol/water partition coefficient as log Pow: 4.05
ENVIRONMENTAL DATA	The substance is very toxic to aquatic organisms. Bioaccumulation of this chemical may occur in fish.	

N O T E S

UN number 2321 refers to liquid trichlorobenzenes. Liquid trichlorobenzenes are marine pollutants. See ICSC 1049 1,2,4-Trichlorobenzene and 0344 1,3,5-Trichlorobenzene.

Transport Emergency Card: TEC (R)-90GM7-III

ADDITIONAL INFORMATION

ICSC: 1222 **1,2,3-TRICHLOROBENZENE**

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International Chemical Safety Cards

1,2,3-TRICHLOROPROPANE

ICSC: 0683

Glycerol trichlorohydrin
Allyl trichloride
$C_3H_5Cl_3$ / $CH_2ClCHClCH_2Cl$
Molecular mass: 147.4

ICSC # 0683
CAS # 96-18-4
RTECS # TZ9275000
UN # 2810
EC # 602-062-00-X
April 21, 2005 Validated

TYPES OF HAZARD/ EXPOSURE	ACUTE HAZARDS/ SYMPTOMS	PREVENTION	FIRST AID/ FIRE FIGHTING
FIRE	Combustible. Gives off irritating or toxic fumes (or gases) in a fire.	NO open flames.	Powder, alcohol-resistant foam, water spray, carbon dioxide.
EXPLOSION	Above 73°C explosive vapour/air mixtures may be formed. Risk of fire and explosion on contact with metals.	Above 73°C use a closed system, ventilation, and explosion-proof electrical equipment.	In case of fire: keep drums, etc., cool by spraying with water.
EXPOSURE		AVOID ALL CONTACT!	IN ALL CASES CONSULT A DOCTOR!
•INHALATION	Cough. Sore throat. Headache. Drowsiness. Unconsciousness.	Ventilation, local exhaust, or breathing protection.	Fresh air, rest. Refer for medical attention.
•SKIN	Dry skin. Redness. Prickling.	Protective gloves. Protective clothing.	Remove contaminated clothes. Rinse skin with plenty of water or shower. Refer for medical attention.
•EYES	Redness. Pain.	Safety spectacles or eye protection in combination with breathing protection.	First rinse with plenty of water for several minutes (remove contact lenses if easily possible), then take to a doctor.
•INGESTION	Nausea. Headache. Vomiting. Diarrhoea. Drowsiness. Unconsciousness.	Do not eat, drink, or smoke during work. Wash hands before eating.	Rinse mouth. Do NOT induce vomiting. Give plenty of water to drink. Refer for medical attention.

SPILLAGE DISPOSAL	STORAGE	PACKAGING & LABELLING
Personal protection: filter respirator for organic gases and vapours. Collect leaking and spilled liquid in sealable containers as far as possible. Absorb remaining liquid in sand or inert absorbent and remove to safe place. Do NOT let this chemical enter the environment.	Separated from powdered metals , food and feedstuffs . Cool. Keep in a well-ventilated room. Store in an area without drain or sewer access.	Do not transport with food and feedstuffs. Marine pollutant. Note: D T symbol R: 45-60-20/21/22 S: 53-45 UN Hazard Class: 6.1 UN Packing Group: III

SEE IMPORTANT INFORMATION ON BACK

ICSC: 0683

Prepared in the context of cooperation between the International Programme on Chemical Safety & the Commission of the European Communities (C) IPCS CEC 1994. No modifications to the International version have been made except to add the OSHA PELs, NIOSH RELs and NIOSH IDLH values.

International Chemical Safety Cards

1,2,3-TRICHLOROPROPANE

ICSC: 0683

IMPORTANT DATA	**PHYSICAL STATE; APPEARANCE:** COLOURLESS LIQUID , WITH CHARACTERISTIC ODOUR. **PHYSICAL DANGERS:** The vapour is heavier than air. **CHEMICAL DANGERS:** The substance decomposes on burning producing toxic and corrosive fumes . Reacts violently with some powdered metals causing explosion hazard. **OCCUPATIONAL EXPOSURE LIMITS:** TLV: 10 ppm as TWA; (skin); A3 (confirmed animal carcinogen with unknown relevance to humans); (ACGIH 2005). MAK: skin absorption (H); Carcinogen category: 2; (DFG 2005). OSHA PEL†: TWA 50 ppm (300 mg/m^3) NIOSH REL: Ca TWA 10 ppm (60 mg/m^3) skin See Appendix A NIOSH IDLH: Ca 100 ppm See: 96184 **ROUTES OF EXPOSURE:** The substance can be absorbed into the body by inhalation of its vapour, through the skin and by ingestion. **INHALATION RISK:** A harmful contamination of the air will be reached rather slowly on evaporation of this substance at 20°C. **EFFECTS OF SHORT-TERM EXPOSURE:** The substance is irritating to the eyes and the respiratory tract . The substance may cause effects on the liver and kidneys , resulting in impaired functions . Exposure at high levels may result in lowering of consciousness. **EFFECTS OF LONG-TERM OR REPEATED EXPOSURE:** This substance is probably carcinogenic to humans.
PHYSICAL PROPERTIES	Boiling point: 156°C Melting point: -14°C Relative density (water = 1): 1.39 Solubility in water, g/100 ml: 0.18 (very poor) Vapour pressure, kPa at 20°C: 0.29 Relative vapour density (air = 1): 5.1 Relative density of the vapour/air-mixture at 20°C (air = 1): 1.01 Flash point: 73°C c.c. Auto-ignition temperature: 304°C Explosive limits, vol% in air: 3.2-12.6 Octanol/water partition coefficient as log Pow: 2.27
ENVIRONMENTAL DATA	The substance is harmful to aquatic organisms. This substance may be hazardous to the environment; special attention should be given to ground water contamination.

N O T E S

Do NOT take working clothes home. Card has been partly updated in October 2005. See section Occupational Exposure Limits.

Transport Emergency Card: TEC (R)-61GT1-III

NFPA Code: H3; F2; R0;

ADDITIONAL INFORMATION

ICSC: 0683 **1,2,3-TRICHLOROPROPANE**

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International Chemical Safety Cards

1,2,4-TRICHLOROBENZENE

ICSC: 1049

1,2,4-Trichlorobenzol
unsym-Trichlorobenzene
$C_6H_3Cl_3$
Molecular mass: 181.5

ICSC # 1049
CAS # 120-82-1
RTECS # DC2100000
UN # 2321
EC # 602-087-00-6
November 26, 2003 Validated

TYPES OF HAZARD/ EXPOSURE	ACUTE HAZARDS/ SYMPTOMS	PREVENTION	FIRST AID/ FIRE FIGHTING
FIRE	Combustible. Gives off irritating or toxic fumes (or gases) in a fire.	NO open flames.	Powder, water spray, foam, carbon dioxide.
EXPLOSION			
EXPOSURE		PREVENT GENERATION OF MISTS!	
•INHALATION	Cough. Sore throat. Burning sensation.	Ventilation, local exhaust, or breathing protection.	Fresh air, rest. Refer for medical attention.
•SKIN	Dry skin. Redness. Roughness.	Protective gloves.	Remove contaminated clothes. Rinse skin with plenty of water or shower. Refer for medical attention.
•EYES	Redness. Pain.	Safety goggles, or eye protection in combination with breathing protection.	First rinse with plenty of water for several minutes (remove contact lenses if easily possible), then take to a doctor.
•INGESTION	Abdominal pain. Sore throat. Vomiting.	Do not eat, drink, or smoke during work.	Rinse mouth. Give plenty of water to drink. Refer for medical attention.

SPILLAGE DISPOSAL	STORAGE	PACKAGING & LABELLING
Collect leaking and spilled liquid in sealable containers as far as possible. Absorb remaining liquid in sand or inert absorbent and remove to safe place. Sweep spilled substance into sealable containers , if solid. Do NOT let this chemical enter the environment. (Extra personal protection: filter respirator for organic gases and vapours.)	Separated from strong oxidants, acids, food and feedstuffs .	Do not transport with food and feedstuffs. Marine pollutant. Xn symbol N symbol R: 22-38-50/53 S: 2-23-37/39-60-61 UN Hazard Class: 6.1 UN Packing Group: III

SEE IMPORTANT INFORMATION ON BACK

ICSC: 1049

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International Chemical Safety Cards

1,2,4-TRICHLOROBENZENE

ICSC: 1049

IMPORTANT DATA

PHYSICAL STATE; APPEARANCE:
COLOURLESS LIQUID OR WHITE CRYSTALS , WITH CHARACTERISTIC ODOUR.

PHYSICAL DANGERS:

CHEMICAL DANGERS:
The substance decomposes on burning producing toxic fumes including hydrogen chloride . Reacts violently with oxidants .

OCCUPATIONAL EXPOSURE LIMITS:
TLV: 5 ppm; (Ceiling value); (ACGIH 2003).
EU OEL: as TWA 2 ppm, 15.1 mg/m³; as STEL 5 ppm, 37.8 mg/m³; (skin); (EU 2003).
OSHA PEL†: none
NIOSH REL: C 5 ppm (40 mg/m^3)
NIOSH IDLH: N.D. See: IDLH INDEX

ROUTES OF EXPOSURE:
The substance can be absorbed into the body by inhalation, through the skin and by ingestion.

INHALATION RISK:
A harmful contamination of the air will be reached rather slowly on evaporation of this substance at 20°C; on spraying or dispersing, however, much faster.

EFFECTS OF SHORT-TERM EXPOSURE:
The substance is irritating to the eyes the skin and the respiratory tract .

EFFECTS OF LONG-TERM OR REPEATED EXPOSURE:
The liquid defats the skin. The substance may have effects on the liver .

PHYSICAL PROPERTIES

Boiling point: 213°C
Melting point: 17°C
Relative density (water = 1): 1.5
Solubility in water: 34.6 mg/l
Vapour pressure, Pa at 25°C: 40
Relative vapour density (air = 1): 6.26
Relative density of the vapour/air-mixture at 20°C (air = 1): 1.002
Flash point: 105°C c.c.
Auto-ignition temperature: 571°C
Explosive limits, vol% in air: 2.5-6.6 (at 150°C)
Octanol/water partition coefficient as log Pow: 3.98

ENVIRONMENTAL DATA

The substance is toxic to aquatic organisms. Bioaccumulation of this chemical may occur in fish.

NOTES

The occupational exposure limit value should not be exceeded during any part of the working exposure. Also consult ICSC0344 1,3,5-Trichlorobenzene, and ICSC1222 1,2,3-Trichlorobenzene.

Transport Emergency Card: TEC (R)-61GT1-III

NFPA Code: H2; F1; R0;

ADDITIONAL INFORMATION

ICSC: 1049 **1,2,4-TRICHLOROBENZENE**

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International Chemical Safety Cards

1,2,4-TRIMETHYLBENZENE

ICSC: 1433

Pseudocumene

C_9H_{12}

Molecular mass: 120,2

ICSC # 1433
CAS # 95-63-6
RTECS # DC3325000
UN # 1993
EC # 601-043-00-3
March 06, 2002 Peer reviewed

TYPES OF HAZARD/ EXPOSURE	ACUTE HAZARDS/ SYMPTOMS	PREVENTION	FIRST AID/ FIRE FIGHTING
FIRE	Flammable.	NO open flames, NO sparks, and NO smoking.	Alcohol-resistant foam, dry powder, carbon dioxide.
EXPLOSION	Above 44°C explosive vapour/air mixtures may be formed.	Above 44°C use a closed system, ventilation, and explosion-proof electrical equipment. Prevent build-up of electrostatic charges (e.g., by grounding).	In case of fire: keep drums, etc., cool by spraying with water.
EXPOSURE		PREVENT GENERATION OF MISTS!	
•INHALATION	Confusion. Cough. Dizziness. Drowsiness. Headache. Sore throat. Vomiting.	Ventilation, local exhaust, or breathing protection.	Fresh air, rest. Refer for medical attention.
•SKIN	Redness. Dry skin.	Protective gloves.	Rinse skin with plenty of water or shower.
•EYES	Redness. Pain.	Safety spectacles.	First rinse with plenty of water for several minutes (remove contact lenses if easily possible), then take to a doctor.
•INGESTION	(See Inhalation).	Do not eat, drink, or smoke during work.	Rinse mouth. Do NOT induce vomiting. Refer for medical attention.

SPILLAGE DISPOSAL	STORAGE	PACKAGING & LABELLING
Collect leaking and spilled liquid in sealable containers as far as possible. Absorb remaining liquid in sand or inert absorbent and remove to safe place. Do NOT wash away into sewer. Do NOT let this chemical enter the environment. Personal protection: filter respirator for organic gases and vapours.	Fireproof. Separated from strong oxidants. Well closed. Keep in a well-ventilated room.	Xn symbol N symbol R: 10-20-36/37/38-51/53 S: 2-26-61 UN Hazard Class: 3 UN Packing Group: III

SEE IMPORTANT INFORMATION ON BACK

ICSC: 1433

Prepared in the context of cooperation between the International Programme on Chemical Safety & the Commission of the European Communities (C) IPCS CEC 1994. No modifications to the International version have been made except to add the OSHA PELs, NIOSH RELs and NIOSH IDLH values.

International Chemical Safety Cards

1,2,4-TRIMETHYLBENZENE

ICSC: 1433

IMPORTANT DATA	**PHYSICAL STATE; APPEARANCE:** COLOURLESS LIQUID , WITH CHARACTERISTIC ODOUR. **PHYSICAL DANGERS:** **CHEMICAL DANGERS:** The substance decomposes on burning producing toxic and irritating fumes Reacts violently with strong oxidants causing fire and explosion hazard. **OCCUPATIONAL EXPOSURE LIMITS:** TLV: (as mixed isomers) 25 ppm as TWA (ACGIH 2004). MAK: (as mixed isomers) 20 ppm 100 mg/m³ Peak limitation category: II(2) Pregnancy risk group: C (DFG 2004). OSHA PEL†: none NIOSH REL: TWA 25 ppm (125 mg/m^3) NIOSH IDLH: N.D. See: IDLH INDEX	**ROUTES OF EXPOSURE:** The substance can be absorbed into the body by inhalation. **INHALATION RISK:** A harmful contamination of the air will be reached rather slowly on evaporation of this substance at 20°C; on spraying or dispersing, however, much faster. **EFFECTS OF SHORT-TERM EXPOSURE:** The substance is irritating to the eyes the skin and the respiratory tract If this liquid is swallowed, aspiration into the lungs may result in chemical pneumonitis. The substance may cause effects on the central nervous system **EFFECTS OF LONG-TERM OR REPEATED EXPOSURE:** The liquid defats the skin. Lungs may be affected by repeated or prolonged exposure , resulting in chronic bronchitis The substance may have effects on the central nervous system blood See Notes.
PHYSICAL PROPERTIES	Boiling point: 169°C Melting point: -44°C Relative density (water = 1): 0.88 Solubility in water: very poor Relative vapour density (air = 1): 4.1	Relative density of the vapour/air-mixture at 20°C (air = 1): 1.01 Flash point: 44°C c.c. Auto-ignition temperature: 500°C Explosive limits, vol% in air: 0.9-6.4 Octanol/water partition coefficient as log Pow: 3.8
ENVIRONMENTAL DATA	The substance is toxic to aquatic organisms. Bioaccumulation of this chemical may occur in fish.	

N O T E S

Use of alcoholic beverages enhances the harmful effect. Depending on the degree of exposure, periodic medical examination is suggested. See also ICSC 1155 1,3,5-Trimethylbenzene (Mesitylene), ICSC 1362 1,2,3-Trimethylbenzene (Hemimellitene), ICSC 1389 Trimethyl benzene (mixed isomers). 1,3,5-Trimethylbenzene (Mesitylene) is classified as a marine pollutant.

Transport Emergency Card: TEC (R)-30GF1-III
NFPA Code: H0; F2; R0;

ADDITIONAL INFORMATION

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International Chemical Safety Cards

1,2-DIBROMO-3-CHLOROPROPANE

ICSC: 0002

3-Chloro-1,2-dibromopropane
DBCP
1-Chloro-2,3-dibromopropane
$C_3H_5Br_2Cl$
Molecular mass: 236.4

ICSC # 0002
CAS # 96-12-8
RTECS # TX8750000
UN # 2872
EC # 602-021-00-6
August 10, 2002 Validated

TYPES OF HAZARD/ EXPOSURE	ACUTE HAZARDS/ SYMPTOMS	PREVENTION	FIRST AID/ FIRE FIGHTING
FIRE	Combustible. Liquid formulations containing organic solvents may be flammable. Gives off irritating or toxic fumes (or gases) in a fire.	NO open flames.	Powder, water spray, foam, carbon dioxide.
EXPLOSION	Above 77°C explosive vapour/air mixtures may be formed.	Above 77°C closed system, ventilation.	In case of fire: keep drums, etc., cool by spraying with water.
EXPOSURE		AVOID ALL CONTACT! PREVENT GENERATION OF MISTS! AVOID EXPOSURE OF (PREGNANT) WOMEN!	IN ALL CASES CONSULT A DOCTOR!
•INHALATION	Burning sensation. Cough. Sore throat. Headache. Shortness of breath. Weakness.	Local exhaust or breathing protection.	Fresh air, rest. Refer for medical attention.
•SKIN	Redness.	Protective gloves. Protective clothing.	Remove contaminated clothes. Rinse and then wash skin with water and soap. Refer for medical attention.
•EYES	Redness. Pain.	Safety goggles, or eye protection in combination with breathing protection.	First rinse with plenty of water for several minutes (remove contact lenses if easily possible), then take to a doctor.
•INGESTION	Burning sensation. Sore throat. Nausea. Vomiting.	Do not eat, drink, or smoke during work.	Rinse mouth. Give plenty of water to drink. Refer for medical attention.

SPILLAGE DISPOSAL	STORAGE	PACKAGING & LABELLING
Evacuate danger area! Consult an expert! Ventilation. Collect leaking and spilled liquid in sealable containers as far as possible. Absorb remaining liquid in sand or inert absorbent and remove to safe place. Do NOT let this chemical enter the environment. (Extra personal protection: complete protective clothing including self-contained breathing apparatus.)	Separated from food and feedstuffs , metals such as aluminium or magnesium. Well closed.	Unbreakable packaging; put breakable packaging into closed unbreakable container. Do not transport with food and feedstuffs. Note: E T symbol R: 45-46-60-25-48/20/22-52/53 S: 53-45-61 UN Hazard Class: 6.1 UN Packing Group: III

SEE IMPORTANT INFORMATION ON BACK

ICSC: 0002

Prepared in the context of cooperation between the International Programme on Chemical Safety & the Commission of the European Communities (C) IPCS CEC 1994. No modifications to the International version have been made except to add the OSHA PELs, NIOSH RELs and NIOSH IDLH values.

International Chemical Safety Cards

1,2-DIBROMO-3-CHLOROPROPANE

ICSC: 0002

IMPORTANT

PHYSICAL STATE; APPEARANCE:
COLOURLESS LIQUID , WITH PUNGENT ODOUR.
TECHNICAL GRADE: AMBER TO DARK BROWN LIQUID.

PHYSICAL DANGERS:
The vapour is heavier than air and may travel along the ground; distant ignition possible.

CHEMICAL DANGERS:
The substance decomposes on heating above the boiling point and on burning producing toxic fumes including hydrogen bromide , hydrogen chloride . Reacts with aluminium, magnesium, tin and their alloys in presence of water. Attacks some forms of rubber and coatings.

OCCUPATIONAL EXPOSURE LIMITS:
TLV not established.
MAK: skin absorption (H);
Carcinogen category: 2; Germ cell mutagen group: 2; (DFG 2002).
OSHA PEL: 1910.1044 TWA 0.001 ppm
NIOSH REL: Ca See Appendix A
NIOSH IDLH: Ca N.D. See: IDLH INDEX

ROUTES OF EXPOSURE:
The substance can be absorbed into the body by inhalation of its vapour, through the skin and by ingestion.

INHALATION RISK:
A harmful contamination of the air can be reached very quickly on evaporation of this substance at 20°C.

EFFECTS OF SHORT-TERM EXPOSURE:
The substance is irritating to the eyes, the skin and the respiratory tract . The substance may cause effects on the central nervous system and kidneys , resulting in impaired functions . Exposure could cause lowering of consciousness.

EFFECTS OF LONG-TERM OR REPEATED EXPOSURE:
The substance may have effects on the liver , lungs , kidneys and testes , resulting in impaired functions and tissue lesions . This substance is possibly carcinogenic to humans. Causes toxicity to human reproduction or development.

PHYSICAL PROPERTIES

Boiling point (decomposes): 196°C
Melting point: 6.7°C
Relative density (water = 1): 2.1
Solubility in water: poor

Vapour pressure, kPa at 20°C: 0.1
Relative density of the vapour/air-mixture at 20°C (air = 1): 1.01
Flash point: 77°C
Octanol/water partition coefficient as log Pow: 2.96

ENVIRONMENTAL DATA

The substance is harmful to aquatic organisms.

N O T E S

Depending on the degree of exposure, periodic medical examination is indicated. An added stabilizer or inhibitor can influence the toxicological properties of this substance, consult an expert. Carrier solvents used in commercial formulations may change physical and toxicological properties. Do NOT take working clothes home.

Transport Emergency Card: TEC (R)-61GT1-III

NFPA Code: H2; F1; R1;

ADDITIONAL INFORMATION

ICSC: 0002 **1,2-DIBROMO-3-CHLOROPROPANE**

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LEGAL NOTICE:	The user should verify compliance of the cards with the relevant legislation in the country of use. The only modifications made to produce the U.S. version is inclusion of the OSHA PELs, NIOSH RELs and NIOSH IDLH values.

International Chemical Safety Cards

ETHYLENE DIBROMIDE

ICSC: 0045

1,2-Dibromoethane
EDB
$Br(CH_2)_2Br$ / $C_2H_4Br_2$
Molecular mass: 187.9

ICSC # 0045
CAS # 106-93-4
RTECS # KH9275000
UN # 1605
EC # 602-010-00-6
April 27, 1993 Validated

TYPES OF HAZARD/ EXPOSURE	ACUTE HAZARDS/ SYMPTOMS	PREVENTION	FIRST AID/ FIRE FIGHTING
FIRE	Not combustible. Gives off irritating or toxic fumes (or gases) in a fire.		In case of fire in the surroundings: use appropriate extinguishing media.
EXPLOSION	Risk of fire and explosion on contact with powdered metals: see Chemical Dangers.		
EXPOSURE		AVOID ALL CONTACT!	IN ALL CASES CONSULT A DOCTOR!
•INHALATION	Burning sensation. Cough. Laboured breathing. Shortness of breath. Unconsciousness.	Ventilation, local exhaust, or breathing protection.	Fresh air, rest. Half-upright position. Artificial respiration may be needed. Refer for medical attention.
•SKIN	MAY BE ABSORBED! Pain. Redness. Blisters.	Protective gloves. Protective clothing.	Remove contaminated clothes. Rinse skin with plenty of water or shower. Refer for medical attention.
•EYES	Pain. Redness. Severe deep burns.	Face shield or eye protection in combination with breathing protection.	First rinse with plenty of water for several minutes (remove contact lenses if easily possible), then take to a doctor.
•INGESTION			

SPILLAGE DISPOSAL	STORAGE	PACKAGING & LABELLING
Evacuate danger area! Consult an expert! Collect leaking and spilled liquid in sealable containers as far as possible. Absorb remaining liquid in dry sand or inert absorbent and remove to safe place. Do NOT let this chemical enter the environment. Personal protection: complete protective clothing including self-contained breathing apparatus.	Separated from strong oxidants, strong bases, powdered metals , food and feedstuffs : see Chemical Dangers. Dry. Keep in the dark. Ventilation along the floor.	Do not transport with food and feedstuffs. Marine pollutant. Note: E T symbol N symbol R: 45-23/24/25-36/37/38-51/53 S: 53-45-61 UN Hazard Class: 6.1 UN Packing Group: II

SEE IMPORTANT INFORMATION ON BACK

ICSC: 0045

Prepared in the context of cooperation between the International Programme on Chemical Safety & the Commission of the European Communities (C) IPCS CEC 1994. No modifications to the International version have been made except to add the OSHA PELs, NIOSH RELs and NIOSH IDLH values.

International Chemical Safety Cards

ETHYLENE DIBROMIDE

ICSC: 0045

I M P O R T A N T D A T A

PHYSICAL STATE; APPEARANCE:
COLOURLESS LIQUID , WITH CHARACTERISTIC ODOUR.

PHYSICAL DANGERS:

CHEMICAL DANGERS:
On contact with hot surfaces or flames this substance decomposes forming toxic and corrosive fumes, hydrogen bromide (see ICSC0282) and bromine (see ICSC0107). The substance decomposes slowly under influence of light and moisture producing corrosive hydrogen bromide. Reacts vigorously with powdered aluminium or magnesium, metals such as sodium, potassium and calcium, strong bases and strong oxidants, causing fire and explosion hazard. Attacks fats, rubber, some forms of plastic, coatings.

OCCUPATIONAL EXPOSURE LIMITS:
TLV: (skin); A3 (confirmed animal carcinogen with unknown relevance to humans); (ACGIH 2004).
MAK: skin absorption (H);
Carcinogen category: 2;
(DFG 2004).
OSHA PEL: TWA 20 ppm C 30 ppm 50 ppm 5-minute maximum peak
NIOSH REL: Ca TWA 0.045 ppm C 0.13 ppm 15-minute See Appendix A
NIOSH IDLH: Ca 100 ppm See: 106934

ROUTES OF EXPOSURE:
The substance can be absorbed into the body by inhalation of its vapour, through the skin and by ingestion.

INHALATION RISK:
A harmful contamination of the air can be reached very quickly on evaporation of this substance at 20°C.

EFFECTS OF SHORT-TERM EXPOSURE:
The substance is irritating to the eyes , the skin and the respiratory tract The substance may cause effects on the central nervous system , resulting in lowering of consciousness .

EFFECTS OF LONG-TERM OR REPEATED EXPOSURE:
Lungs may be affected by repeated or prolonged exposure causing bronchitis. The substance may have effects on the liver and kidneys. This substance is probably carcinogenic to humans. Animal tests show that this substance possibly causes toxic effects upon human reproduction.

PHYSICAL PROPERTIES

Boiling point: 131°C
Melting point: 10°C
Relative density (water = 1): 2.2
Solubility in water:
poor

Vapour pressure, kPa at 20°C: 1.5
Relative vapour density (air = 1): 6.5
Relative density of the vapour/air-mixture at 20°C (air = 1): 1.08
Octanol/water partition coefficient as log Pow: 1.93

ENVIRONMENTAL DATA

This substance may be hazardous to the environment; special attention should be given to water.

N O T E S

Depending on the degree of exposure, periodic medical examination is suggested. Card has been partly updated in April 2005. See sections Occupational Exposure Limits, EU classification.

Transport Emergency Card: TEC (R)-61S1605

NFPA Code: H3; F0; R0;

ADDITIONAL INFORMATION

ICSC: 0045 **ETHYLENE DIBROMIDE**

(C) IPCS, CEC, 1994

IMPORTANT LEGAL

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NOTICE:	The user should verify compliance of the cards with the relevant legislation in the country of use. The only modifications made to produce the U.S. version is inclusion of the OSHA PELs, NIOSH RELs and NIOSH IDLH values.

International Chemical Safety Cards

1,2-DICHLOROBENZENE

ICSC: 1066

ortho-Dichlorobenzene
$C_6H_4Cl_2$
Molecular mass: 147.0

ICSC # 1066
CAS # 95-50-1
RTECS # CZ4500000
UN # 1591
EC # 602-034-00-7
November 26, 2003 Validated

TYPES OF HAZARD/ EXPOSURE	ACUTE HAZARDS/ SYMPTOMS	PREVENTION	FIRST AID/ FIRE FIGHTING
FIRE	Combustible.	NO open flames.	Powder, water spray, foam, carbon dioxide.
EXPLOSION	Above 66°C explosive vapour/air mixtures may be formed.	Above 66°C use a closed system, ventilation.	
EXPOSURE			
•INHALATION	Cough. Drowsiness. Sore throat. Unconsciousness.	Ventilation, local exhaust, or breathing protection.	Fresh air, rest. Refer for medical attention.
•SKIN	Redness. Pain. Dry skin.	Protective gloves. Protective clothing.	Remove contaminated clothes. Rinse skin with plenty of water or shower. Refer for medical attention.
•EYES	Redness. Pain.	Face shield.	First rinse with plenty of water for several minutes (remove contact lenses if easily possible), then take to a doctor.
•INGESTION	Burning sensation. Diarrhoea. Nausea. Vomiting.	Do not eat, drink, or smoke during work.	Rinse mouth. Give plenty of water to drink. Do NOT induce vomiting. Refer for medical attention.

SPILLAGE DISPOSAL	STORAGE	PACKAGING & LABELLING
Collect leaking and spilled liquid in sealable containers as far as possible. Absorb remaining liquid in sand or inert absorbent and remove to safe place. Do NOT let this chemical enter the environment. (Extra personal protection: filter respirator for organic gases and vapours.)	Separated from aluminium , oxidants and food and feedstuffs .	Do not transport with food and feedstuffs. Marine pollutant. Xn symbol N symbol R: 22-36/37/38-50/53 S: 2-23-60-61 UN Hazard Class: 6.1 UN Packing Group: III

SEE IMPORTANT INFORMATION ON BACK

ICSC: 1066

Prepared in the context of cooperation between the International Programme on Chemical Safety & the Commission of the European Communities (C) IPCS CEC 1994. No modifications to the International version have been made except to add the OSHA PELs, NIOSH RELs and NIOSH IDLH values.

International Chemical Safety Cards

1,2-DICHLOROBENZENE

ICSC: 1066

IMPORTANT DATA

PHYSICAL STATE; APPEARANCE:
COLOURLESS TO YELLOW LIQUID , WITH CHARACTERISTIC ODOUR.

PHYSICAL DANGERS:

CHEMICAL DANGERS:
The substance decomposes on burning producing toxic and corrosive gases including hydrogen chloride . Reacts with aluminium and oxidants . Attacks plastic and rubber.

OCCUPATIONAL EXPOSURE LIMITS:
OSHA PEL: C 50 ppm (300 mg/m^3)
NIOSH REL: C 50 ppm (300 mg/m^3)
NIOSH IDLH: 200 ppm See: 95501
TLV: 25 ppm as TWA; 50 ppm as STEL; A4; (ACGIH 2003).
MAK: 10 ppm, 61 mg/m^3; H;
Peak limitation category: II(2); Pregnancy risk group: C;

(DFG 2003).

ROUTES OF EXPOSURE:
The substance can be absorbed into the body by inhalation, through the skin and by ingestion.

INHALATION RISK:
A harmful contamination of the air will be reached rather slowly on evaporation of this substance at 20°C.

EFFECTS OF SHORT-TERM EXPOSURE:
The substance is irritating to the eyes , the skin and the respiratory tract . The substance may cause effects on the central nervous system and liver . Exposure could cause lowering of consciousness.

EFFECTS OF LONG-TERM OR REPEATED EXPOSURE:
The liquid defats the skin. The substance may have effects on the kidneys , blood .

PHYSICAL PROPERTIES

Boiling point: 180-183°C
Melting point: -17°C
Relative density (water = 1): 1.3
Solubility in water:
very poor
Vapour pressure, kPa at 20°C: 0.16

Relative vapour density (air = 1): 5.1
Relative density of the vapour/air-mixture at 20°C (air = 1): 1.006
Flash point: 66°C c.c.
Auto-ignition temperature: 648°C
Explosive limits, vol% in air: 2.2-9.2
Octanol/water partition coefficient as log Pow: 3.38

ENVIRONMENTAL DATA

The substance is toxic to aquatic organisms. Bioaccumulation of this chemical may occur in fish. It is strongly advised that this substance does not enter the environment.

NOTES

Transport Emergency Card: TEC (R)-61GT1-III

NFPA Code: H2; F2; R0;

ADDITIONAL INFORMATION

ICSC: 1066 **1,2-DICHLOROBENZENE**

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International Chemical Safety Cards

1,2-DICHLOROETHANE

ICSC: 0250

Ethylene dichloride
1,2-Ethylene dichloride
Ethane dichloride
$ClCH_2CH_2Cl$ / $C_2H_4Cl_2$
Molecular mass: 98.96

ICSC # 0250
CAS # 107-06-2
RTECS # KI0525000
UN # 1184
EC # 602-012-00-7
March 13, 1995 Validated

TYPES OF HAZARD/ EXPOSURE	ACUTE HAZARDS/ SYMPTOMS	PREVENTION	FIRST AID/ FIRE FIGHTING
FIRE	Highly flammable. Gives off irritating or toxic fumes (or gases) in a fire.	NO open flames, NO sparks, and NO smoking.	Water spray, foam, powder, carbon dioxide.
EXPLOSION	Vapour/air mixtures are explosive.	Closed system, ventilation, explosion-proof electrical equipment and lighting. Prevent build-up of electrostatic charges (e.g., by grounding). Do NOT use compressed air for filling, discharging, or handling.	In case of fire: keep drums, etc., cool by spraying with water.
EXPOSURE		AVOID ALL CONTACT!	IN ALL CASES CONSULT A DOCTOR!
•INHALATION	Abdominal pain. Cough. Dizziness. Drowsiness. Headache. Nausea. Sore throat. Unconsciousness. Vomiting. Symptoms may be delayed (see Notes).	Ventilation, local exhaust, or breathing protection.	Fresh air, rest. Half-upright position. Artificial respiration may be needed. Refer for medical attention.
•SKIN	Redness.	Protective gloves.	Remove contaminated clothes. Rinse and then wash skin with water and soap. Refer for medical attention.
•EYES	Redness. Pain. Blurred vision.	Safety goggles face shield or eye protection in combination with breathing protection.	First rinse with plenty of water for several minutes (remove contact lenses if easily possible), then take to a doctor.
•INGESTION	Abdominal cramps. Diarrhoea. (Further see Inhalation).	Do not eat, drink, or smoke during work. Wash hands before eating.	Give nothing to drink. Refer for medical attention.

SPILLAGE DISPOSAL	STORAGE	PACKAGING & LABELLING
Evacuate danger area! Collect leaking and spilled liquid in sealable containers as far as possible. Absorb remaining liquid in sand or inert absorbent and remove to safe place. Do NOT wash away into sewer. Personal protection: self-contained breathing apparatus.	Fireproof. Separated from strong oxidants, food and feedstuffs , and other incompatible materials . See Chemical Dangers. Cool. Dry.	Unbreakable packaging; put breakable packaging into closed unbreakable container. Do not transport with food and feedstuffs. Marine pollutant. Note: E F symbol T symbol R: 45-11-22-36/37/38

		S: 53-45 UN Hazard Class: 3 UN Subsidiary Risks: 6.1 UN Packing Group: II

SEE IMPORTANT INFORMATION ON BACK

ICSC: 0250

Prepared in the context of cooperation between the International Programme on Chemical Safety & the Commission of the European Communities (C) IPCS CEC 1994. No modifications to the International version have been made except to add the OSHA PELs, NIOSH RELs and NIOSH IDLH values.

International Chemical Safety Cards

1,2-DICHLOROETHANE

ICSC: 0250

IMPORTANT DATA

PHYSICAL STATE; APPEARANCE:
COLOURLESS VISCOUS LIQUID , WITH CHARACTERISTIC ODOUR. TURNS DARK ON EXPOSURE TO AIR, MOISTURE AND LIGHT.

PHYSICAL DANGERS:
The vapour is heavier than air and may travel along the ground; distant ignition possible. As a result of flow, agitation, etc., electrostatic charges can be generated.

CHEMICAL DANGERS:
The substance decomposes on heating and on burning producing toxic and corrosive fumes including hydrogen chloride (ICSC 0163) and phosgene (ICSC 0007). Reacts violently with aluminium, alkali metals, alkali amides, ammonia, bases, strong oxidants. Attacks many metals in presence of water. Attacks plastic.

OCCUPATIONAL EXPOSURE LIMITS:
TLV: 10 ppm as TWA; A4 (not classifiable as a human carcinogen); (ACGIH 2004).
MAK: skin absorption (H);
Carcinogen category: 2;
(DFG 2004).
OSHA PEL†: TWA 50 ppm C 100 ppm 200 ppm 5-minute maximum peak in any 3 hours
NIOSH REL: Ca TWA 1 ppm (4 mg/m^3) ST 2 ppm (8 mg/m^3) See Appendix A See Appendix C (Chloroethanes)

NIOSH IDLH: Ca 50 ppm See: 107062

ROUTES OF EXPOSURE:
The substance can be absorbed into the body by inhalation of its vapour, through the skin and by ingestion.

INHALATION RISK:
A harmful contamination of the air can be reached very quickly on evaporation of this substance at 20°C.

EFFECTS OF SHORT-TERM EXPOSURE:
The vapour is irritating to the eyes , the skin and the respiratory tract . Inhalation of the vapour may cause lung oedema (see Notes). The substance may cause effects on the central nervous system, kidneys, liver , resulting in impaired functions.

EFFECTS OF LONG-TERM OR REPEATED EXPOSURE:
Repeated or prolonged contact with skin may cause dermatitis. This substance is probably carcinogenic to humans.

PHYSICAL PROPERTIES

Boiling point: 83.5°C
Melting point: -35.7°C
Relative density (water = 1): 1.235
Solubility in water, g/100 ml: 0.87
Vapour pressure, kPa at 20°C: 8.7
Relative vapour density (air = 1): 3.42
Relative density of the vapour/air-mixture at 20°C (air = 1): 1.2
Flash point: 13°C c.c.
Auto-ignition temperature: 413°C
Explosive limits, vol% in air: 6.2-16
Octanol/water partition coefficient as log Pow: 1.48

ENVIRONMENTAL DATA

NOTES

Depending on the degree of exposure, periodic medical examination is suggested. The symptoms of lung oedema often do not become manifest until a few hours have passed and they are aggravated by physical effort. Rest and medical observation are therefore essential. Immediate administration of an appropriate inhalation therapy by a doctor or a person authorized by him/her, should be considered. Card has been partly updated in October 2005. See sections Occupational Exposure Limits, Emergency Response.

Transport Emergency Card: TEC (R)-30GTF1-II

NFPA Code: H 2; F 3; R 0;

ADDITIONAL INFORMATION

ICSC: 0250 **1,2-DICHLOROETHANE**

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International Chemical Safety Cards

1,2-DICHLOROPROPANE

ICSC: 0441

Propylene dichloride
$C_3H_6Cl_2$
Molecular mass: 113.0

ICSC # 0441
CAS # 78-87-5
RTECS # TX9625000
UN # 1279
EC # 602-020-00-0
March 25, 1999 Validated

TYPES OF HAZARD/ EXPOSURE	ACUTE HAZARDS/ SYMPTOMS	PREVENTION	FIRST AID/ FIRE FIGHTING
FIRE	Highly flammable.	NO open flames, NO sparks, and NO smoking.	Powder . Foam. Carbon dioxide.
EXPLOSION	Vapour/air mixtures are explosive.	Closed system, ventilation, explosion-proof electrical equipment and lighting.	In case of fire: keep drums, etc., cool by spraying with water.
EXPOSURE		PREVENT GENERATION OF MISTS!	
•INHALATION	Cough. Drowsiness. Headache. Sore throat.	Ventilation, local exhaust, or breathing protection.	Fresh air, rest. Artificial respiration may be needed. Refer for medical attention.
•SKIN	Dry skin. Redness. Pain.	Protective gloves.	First rinse with plenty of water, then remove contaminated clothes and rinse again. Refer for medical attention.
•EYES	Redness. Pain.	Safety goggles.	First rinse with plenty of water for several minutes (remove contact lenses if easily possible), then take to a doctor.
•INGESTION	Abdominal pain. Diarrhoea. Drowsiness. Headache. Nausea. Vomiting.	Do not eat, drink, or smoke during work.	Rinse mouth. Refer for medical attention.

SPILLAGE DISPOSAL	STORAGE	PACKAGING & LABELLING
Ventilation. Collect leaking and spilled liquid in sealable containers as far as possible. Absorb remaining liquid in sand or inert absorbent and remove to safe place. Do NOT wash away into sewer. Personal protection: self-contained breathing apparatus.	Fireproof. Provision to contain effluent from fire extinguishing.	F symbol Xn symbol R: 11-20/22 S: 2-16-24 UN Hazard Class: 3 UN Packing Group: II

SEE IMPORTANT INFORMATION ON BACK

ICSC: 0441

Prepared in the context of cooperation between the International Programme on Chemical Safety & the Commission of the European Communities (C) IPCS CEC 1994. No modifications to the International version have been made except to add the OSHA PELs, NIOSH RELs and NIOSH IDLH values.

International Chemical Safety Cards

1,2-DICHLOROPROPANE

ICSC: 0441

IMPORTANT DATA	**PHYSICAL STATE; APPEARANCE:** COLOURLESS LIQUID , WITH CHARACTERISTIC ODOUR. **PHYSICAL DANGERS:** The vapour is heavier than air and may travel along the ground; distant ignition possible. **CHEMICAL DANGERS:** On combustion, forms toxic and corrosive fumes. Attacks aluminum alloys and some types of plastics. **OCCUPATIONAL EXPOSURE LIMITS:** TLV: 10 ppm as TWA, SEN A4 (not classifiable as a human carcinogen); (ACGIH 2007). MAK: Carcinogen category: 3B; (DFG 2006). OSHA PEL†: TWA 75 ppm (350 mg/m^3) NIOSH REL: Ca See Appendix A NIOSH IDLH: Ca 400 ppm See: 78875 **ROUTES OF EXPOSURE:** The substance can be absorbed into the body by inhalation and by ingestion. **INHALATION RISK:** A harmful contamination of the air can be reached rather quickly on evaporation of this substance at 20°C. **EFFECTS OF SHORT-TERM EXPOSURE:** The substance irritates the eyes, the skin and the respiratory tract. The substance may cause effects on the central nervous system. **EFFECTS OF LONG-TERM OR REPEATED EXPOSURE:** The liquid defats the skin. The substance may have effects on the liver and kidneys.
PHYSICAL PROPERTIES	Boiling point: 96°C Melting point: -100°C Relative density (water = 1): 1.16 Solubility in water, g/100 ml at 20°C: 0.26 Vapour pressure, kPa at 20°C: 27.9 Relative vapour density (air = 1): 3.9 Relative density of the vapour/air-mixture at 20°C (air = 1): 1.15 Flash point: 16°C c.c. Auto-ignition temperature: 557°C Explosive limits, vol% in air: 3.4-14.5 Octanol/water partition coefficient as log Pow: 2.02 (calculated)
ENVIRONMENTAL DATA	

N O T E S

Card has been partly updated in October 2005. See sections Occupational Exposure Limits, Emergency Response.

Transport Emergency Card: TEC (R)-30S1279 or 30GF1-I+II

NFPA Code: H2; F3; R0;

Card has been partially updated in July 2007: see Occupational Exposure Limits.

Card has been partially updated in January 2008: see Fire fighting.

ADDITIONAL INFORMATION

ICSC: 0441 **1,2-DICHLOROPROPANE**

(C) IPCS, CEC, 1994

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International Chemical Safety Cards

1,3,5-TRIMETHYLBENZENE

ICSC: 1155

Mesitylene
C_9H_{12}
Molecular mass: 120.2

ICSC # 1155
CAS # 108-67-8
RTECS # OX6825000
UN # 2325
EC # 601-025-00-5
March 06, 2002 Peer reviewed

TYPES OF HAZARD/ EXPOSURE	ACUTE HAZARDS/ SYMPTOMS	PREVENTION	FIRST AID/ FIRE FIGHTING
FIRE	Flammable.	NO open flames, NO sparks, and NO smoking.	Alcohol-resistant foam, dry powder, carbon dioxide.
EXPLOSION	Above 50°C explosive vapour/air mixtures may be formed.	Above 50°C use a closed system, ventilation, and explosion-proof electrical equipment. Prevent build-up of electrostatic charges (e.g., by grounding).	In case of fire: keep drums, etc., cool by spraying with water.
EXPOSURE		PREVENT GENERATION OF MISTS!	
•**INHALATION**	Confusion. Cough. Dizziness. Drowsiness. Headache. Sore throat. Vomiting.	Ventilation, local exhaust, or breathing protection.	Fresh air, rest. Refer for medical attention.
•**SKIN**	Redness. Dry skin.	Protective gloves.	Remove contaminated clothes. Rinse skin with plenty of water or shower.
•**EYES**	Redness. Pain.	Safety spectacles.	First rinse with plenty of water for several minutes (remove contact lenses if easily possible), then take to a doctor.
•**INGESTION**	(See Inhalation).	Do not eat, drink, or smoke during work.	Rinse mouth. Do NOT induce vomiting. Refer for medical attention.

SPILLAGE DISPOSAL	STORAGE	PACKAGING & LABELLING
Collect leaking and spilled liquid in sealable containers as far as possible. Absorb remaining liquid in sand or inert absorbent and remove to safe place. Do NOT wash away into sewer. Do NOT let this chemical enter the environment. (Extra personal protection: filter respirator for organic gases and vapours.)	Fireproof. Separated from strong oxidants. Well closed. Keep in a well-ventilated room.	Marine pollutant. Xi symbol N symbol R: 10-37-51/53 S: 2-61 UN Hazard Class: 3 UN Packing Group: III

SEE IMPORTANT INFORMATION ON BACK

Prepared in the context of cooperation between the International Programme on Chemical Safety & the Commission of the European Communities (C) IPCS CEC 1994. No modifications to the International version have been made except to add the OSHA PELs, NIOSH RELs and NIOSH IDLH values.

International Chemical Safety Cards

1,3,5-TRIMETHYLBENZENE

ICSC: 1155

IMPORTANT DATA	**PHYSICAL STATE; APPEARANCE:** COLOURLESS LIQUID , WITH CHARACTERISTIC ODOUR. **PHYSICAL DANGERS:** **CHEMICAL DANGERS:** The substance decomposes on burning producing toxic and irritating fumes. Reacts violently with strong oxidants causing fire and explosion hazard. **OCCUPATIONAL EXPOSURE LIMITS:** TLV (as mixed isomers): 25 ppm; (ACGIH 2001). MAK (all isomers): 20 ppm; 100 mg/m^3; class II 1 © (2001) OSHA PEL†: none NIOSH REL: TWA 25 ppm (125 mg/m^3) NIOSH IDLH: N.D. See: IDLH INDEX **ROUTES OF EXPOSURE:** The substance can be absorbed into the body by inhalation. **INHALATION RISK:** A harmful contamination of the air will be reached rather slowly on evaporation of this substance at 20°C; on spraying or dispersing, however, much faster. **EFFECTS OF SHORT-TERM EXPOSURE:** The substance is irritating to the eyes the skin and the respiratory tract If this liquid is swallowed, aspiration into the lungs may result in chemical pneumonitis. The substance may cause effects on the central nervous system. **EFFECTS OF LONG-TERM OR REPEATED EXPOSURE:** The liquid defats the skin. Lungs may be affected by repeated or prolonged exposure, resulting in chronic bronchitis. The substance may have effects on the central nervous system blood See Notes.
PHYSICAL PROPERTIES	Boiling point: 165°C Melting point: -45°C Relative density (water = 1): 0.86 Solubility in water: very poor Vapour pressure, kPa at 20°C: 0.25 Relative vapour density (air = 1): 4.1 Relative density of the vapour/air-mixture at 20°C (air = 1): 1.01 Flash point: 50°C (c.c.) Auto-ignition temperature: 550°C Octanol/water partition coefficient as log Pow: 3.42
ENVIRONMENTAL DATA	The substance is harmful to aquatic organisms. Bioaccumulation of this chemical may occur in fish.

NOTES

Use of alcoholic beverages enhances the harmful effect. Depending on the degree of exposure, periodic medical examination is indicated. See ICSC 1433 1,2,4-Trimethylbenzene (Pseudocumene), ICSC 1362 1,2,3-Trimethylbenzene (Hemimellitene), ICSC 1389 Trimethyl benzene (mixed isomers).

Transport Emergency Card: TEC (R)-30S2325
NFPA Code: H0; F2; R0

ADDITIONAL INFORMATION

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International Chemical Safety Cards

1,3-DICHLOROBENZENE

ICSC: 1095

m-Dichlorobenzene
m-Phenylene dichloride
$C_6H_4Cl_2$
Molecular mass: 147.00

ICSC # 1095
CAS # 541-73-1
RTECS # CZ4499000
UN # 2810
EC # 602-067-00-7
April 10, 2000 Validated

TYPES OF HAZARD/ EXPOSURE	ACUTE HAZARDS/ SYMPTOMS	PREVENTION	FIRST AID/ FIRE FIGHTING
FIRE	Combustible. Gives off irritating or toxic fumes (or gases) in a fire.	NO open flames.	Powder, water spray, foam, carbon dioxide.
EXPLOSION	Above 63°C explosive vapour/air mixtures may be formed.	Above 63°C use a closed system, ventilation.	In case of fire: keep drums, etc., cool by spraying with water.
EXPOSURE		PREVENT GENERATION OF MISTS!	
•INHALATION	Cough. Drowsiness. Nausea. Sore throat. Vomiting. See Notes.	Ventilation, local exhaust, or breathing protection.	Fresh air, rest. Refer for medical attention.
•SKIN	Redness. Pain.	Protective gloves.	Remove contaminated clothes. Rinse skin with plenty of water or shower. Refer for medical attention.
•EYES	Redness. Pain.	Safety goggles.	First rinse with plenty of water for several minutes (remove contact lenses if easily possible), then take to a doctor.
•INGESTION	Burning sensation. Diarrhoea. Nausea. Vomiting.	Do not eat, drink, or smoke during work. Wash hands before eating.	Rinse mouth. Refer for medical attention.

SPILLAGE DISPOSAL	STORAGE	PACKAGING & LABELLING
Collect leaking and spilled liquid in sealable containers as far as possible. Absorb remaining liquid in sand or inert absorbent and remove to safe place. Do NOT let this chemical enter the environment. (Extra personal protection: A/P2 filter respirator for organic vapour and harmful dust).	Provision to contain effluent from fire extinguishing. Store in an area without drain or sewer access. Separated from strong oxidants, aluminium , food and feedstuffs . Well closed.	Do not transport with food and feedstuffs. Xn symbol N symbol R: 22-51/53 S: 2-61 UN Hazard Class: 6.1 UN Packing Group: III

SEE IMPORTANT INFORMATION ON BACK

ICSC: 1095

Prepared in the context of cooperation between the International Programme on Chemical Safety & the Commission of the European Communities (C) IPCS CEC 1994. No modifications to the International version have been made except to add the OSHA PELs, NIOSH RELs and NIOSH IDLH values.

International Chemical Safety Cards

1,3-DICHLOROBENZENE

ICSC: 1095

IMPORTANT DATA

PHYSICAL STATE; APPEARANCE:
COLOURLESS LIQUID

PHYSICAL DANGERS:
The vapour is heavier than air.

CHEMICAL DANGERS:
The substance decomposes on burning producing toxic fumes including hydrogen chloride . Reacts with strong oxidants. Reacts violently with aluminium .

OCCUPATIONAL EXPOSURE LIMITS:
TLV not established.
MAK: 2 ppm, 12 mg/m³;
Peak limitation category: II(2); Pregnancy risk group: C;

(DFG 2008).

ROUTES OF EXPOSURE:
The substance can be absorbed into the body by inhalation and by ingestion.

INHALATION RISK:
No indication can be given about the rate in which a harmful concentration in the air is reached on evaporation of this substance at 20°C.

EFFECTS OF SHORT-TERM EXPOSURE:
The vapour irritates the eyes, the skin and the respiratory tract. See Notes.

EFFECTS OF LONG-TERM OR REPEATED EXPOSURE:
The substance may have effects on the kidneys and liver . See Notes.

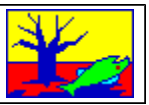
PHYSICAL PROPERTIES

Boiling point: 173°C
Melting point: -24.8°C
Relative density (water = 1): 1.288
Solubility in water:
none

Vapour pressure, kPa at 25°C: 0.286
Relative vapour density (air = 1): 5.1
Flash point: 63°C
Octanol/water partition coefficient as log Pow: 3.53

ENVIRONMENTAL DATA

The substance is toxic to aquatic organisms. In the food chain important to humans, bioaccumulation takes place, specifically in fish .



NOTES

Data on the toxicity of m-dichlorobenzene are limited. Also consult ICSC #0037 (p-Dichlorobenzene) and #1066 (o-Dichlorobenzene).

Card has been partially updated in November 2008: see Occupational Exposure Limits, Storage.

ADDITIONAL INFORMATION

ICSC: 1095 **1,3-DICHLOROBENZENE**

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International Chemical Safety Cards

1,3-DICHLOROPROPANE

ICSC: 0724

$C_3H_6Cl_2$ / $CH_2ClCH_2CH_2Cl$
Molecular mass: 113.0

ICSC # 0724
CAS # 142-28-9
RTECS # TX9660000
UN # 1992
July 04, 1997 Validated

TYPES OF HAZARD/ EXPOSURE	ACUTE HAZARDS/ SYMPTOMS	PREVENTION	FIRST AID/ FIRE FIGHTING
FIRE	Highly flammable. Gives off irritating or toxic fumes (or gases) in a fire.	NO open flames, NO sparks, and NO smoking.	Powder, water spray, foam, carbon dioxide.
EXPLOSION	Above 16°C explosive vapour/air mixtures may be formed.	Above 16°C use a closed system, ventilation, and explosion-proof electrical equipment.	In case of fire: keep drums, etc., cool by spraying with water.
EXPOSURE		PREVENT GENERATION OF MISTS!	
•INHALATION	Dizziness.	Ventilation, local exhaust, or breathing protection.	Fresh air, rest.
•SKIN	Redness. Pain.	Protective gloves.	First rinse with plenty of water, then remove contaminated clothes and rinse again.
•EYES	Redness. Pain.	Safety spectacles.	First rinse with plenty of water for several minutes (remove contact lenses if easily possible), then take to a doctor.
•INGESTION		Do not eat, drink, or smoke during work.	Rinse mouth. Do NOT induce vomiting.

SPILLAGE DISPOSAL	STORAGE	PACKAGING & LABELLING
Evacuate danger area! Ventilation. Collect leaking liquid in sealable containers. Absorb remaining liquid in sand or inert absorbent and remove to safe place. Do NOT wash away into sewer. Personal protection: filter respirator for organic gases and vapours.	Separated from food and feedstuffs oxidants acids, bases alumina. Cool. Well closed. Keep in a well-ventilated room.	Do not transport with food and feedstuffs. Marine pollutant. UN Hazard Class: 3 UN Subsidiary Risks: 6.1 UN Packing Group: II

SEE IMPORTANT INFORMATION ON BACK

ICSC: 0724

Prepared in the context of cooperation between the International Programme on Chemical Safety & the Commission of the European Communities (C) IPCS CEC 1994. No modifications to the International version have been made except to add the OSHA PELs, NIOSH RELs and NIOSH IDLH values.

International Chemical Safety Cards

1,3-DICHLOROPROPANE

ICSC: 0724

I	

IMPORTANT DATA	**PHYSICAL STATE; APPEARANCE:** COLOURLESS LIQUID , WITH CHARACTERISTIC ODOUR. **PHYSICAL DANGERS:** The vapour is heavier than air and may travel along the ground; distant ignition possible. **CHEMICAL DANGERS:** The substance decomposes on heating producing hydrogen chloride and phosgene . **OCCUPATIONAL EXPOSURE LIMITS:** TLV not established.	**ROUTES OF EXPOSURE:** The substance can be absorbed into the body by inhalation and by ingestion. **INHALATION RISK:** No indication can be given about the rate in which a harmful concentration in the air is reached on evaporation of this substance at 20°C. **EFFECTS OF SHORT-TERM EXPOSURE:** The substance irritates the eyes, the skin and the respiratory tract. **EFFECTS OF LONG-TERM OR REPEATED EXPOSURE:**
PHYSICAL PROPERTIES	Boiling point: 120°C Melting point: -99°C Relative density (water = 1): 1.19 Solubility in water, g/100 ml at 20°C: 0.3 Vapour pressure, kPa at 20°C: 2.4	Relative vapour density (air = 1): 3.9 Flash point: 16°C o.c. Explosive limits, vol% in air: see Notes Octanol/water partition coefficient as log Pow: 2.0
ENVIRONMENTAL DATA		

N O T E S

Explosive limits are unknown in literature, although the substance is combustible and has a flash point < 61°C. Insufficient data are available on the effect of this substance on human health, therefore utmost care must be taken.

Transport Emergency Card: TEC (R)-30G32

ADDITIONAL INFORMATION

ICSC: 0724 **1,3-DICHLOROPROPANE**

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International Chemical Safety Cards

1,4-DICHLOROBENZENE

ICSC: 0037

p-Dichlorobenzene
PDCB
$C_6H_4Cl_2$
Molecular mass: 147

ICSC # 0037
CAS # 106-46-7
RTECS # CZ4550000
UN # 3077
EC # 602-035-00-2
November 26, 2003 Peer reviewed

TYPES OF HAZARD/ EXPOSURE	ACUTE HAZARDS/ SYMPTOMS	PREVENTION	FIRST AID/ FIRE FIGHTING
FIRE	Combustible. Gives off irritating or toxic fumes (or gases) in a fire.	NO open flames.	Powder, water spray, foam, carbon dioxide.
EXPLOSION	Above 66°C explosive vapour/air mixtures may be formed.	Above 66°C use a closed system, ventilation, and explosion-proof electrical equipment.	In case of fire: keep drums, etc., cool by spraying with water.
EXPOSURE		AVOID ALL CONTACT!	
•INHALATION	Burning sensation. Cough. Drowsiness. Headache. Nausea. Shortness of breath. Vomiting.	Ventilation, local exhaust, or breathing protection.	Fresh air, rest. Refer for medical attention.
•SKIN		Protective gloves.	Remove contaminated clothes. Rinse and then wash skin with water and soap.
•EYES	Redness. Pain.	Safety goggles, or eye protection in combination with breathing protection.	First rinse with plenty of water for several minutes (remove contact lenses if easily possible), then take to a doctor.
•INGESTION	Diarrhoea. (Further see Inhalation).	Do not eat, drink, or smoke during work.	Give plenty of water to drink. Refer for medical attention.

SPILLAGE DISPOSAL	STORAGE	PACKAGING & LABELLING
Sweep spilled substance into containers; if appropriate, moisten first to prevent dusting. Carefully collect remainder, then remove to safe place. Personal protection: filter respirator for organic gases and vapours. Do NOT let this chemical enter the environment.	Provision to contain effluent from fire extinguishing. Separated from strong oxidants, food and feedstuffs . Keep in a well-ventilated room.	Do not transport with food and feedstuffs. Marine pollutant. Xn symbol N symbol R: 36-40-50/53 S: 2-36/37-46-60-61 UN Hazard Class: 9 UN Packing Group: III

SEE IMPORTANT INFORMATION ON BACK

ICSC: 0037

Prepared in the context of cooperation between the International Programme on Chemical Safety & the Commission of the European Communities (C) IPCS CEC 1994. No modifications to the International version have been made except to add the OSHA PELs, NIOSH RELs and NIOSH IDLH values.

International Chemical Safety Cards

1,4-DICHLOROBENZENE

ICSC: 0037

IMPORTANT DATA	**PHYSICAL STATE; APPEARANCE:** COLOURLESS TO WHITE CRYSTALS , WITH CHARACTERISTIC ODOUR. **PHYSICAL DANGERS:** **CHEMICAL DANGERS:** On combustion, forms toxic and corrosive fumesincludinghydrogen chloride. Reacts with strong oxidants . **OCCUPATIONAL EXPOSURE LIMITS:** TLV: 10 ppm as TWA; A3; (ACGIH 2004). MAK: H; Carcinogen category: 2; Germ cell mutagen group: 3B; (DFG 2004). OSHA PEL†: TWA 75 ppm (450 mg/m^3) NIOSH REL: Ca See Appendix A NIOSH IDLH: Ca 150 ppm See: 106467 **ROUTES OF EXPOSURE:** The substance can be absorbed into the body by inhalation and by ingestion. **INHALATION RISK:** A harmful contamination of the air will be reached rather slowly on evaporation of this substance at 20° C. **EFFECTS OF SHORT-TERM EXPOSURE:** The substance is irritating to the eyes and the respiratory tract . The substance may cause effects on the blood , resulting in haemolytic anaemia. The substance may cause effects on the central nervous system. Medical observation is indicated. **EFFECTS OF LONG-TERM OR REPEATED EXPOSURE:** The substance may have effects on the liver, kidneys and blood. This substance is possibly carcinogenic to humans.
PHYSICAL PROPERTIES	Boiling point: 174°C Melting point: 53°C Density: 1.2 g/cm3 Solubility in water: at 25 °C 80 mg/l Vapour pressure, Pa at 20°C: 170 Relative vapour density (air = 1): 5.08 Relative density of the vapour/air-mixture at 20°C (air = 1): 1.01 Flash point: 66°C c.c. Explosive limits, vol% in air: 6.2-16 Octanol/water partition coefficient as log Pow: 3.37
ENVIRONMENTAL DATA	The substance is toxic to aquatic organisms. Bioaccumulation of this chemical may occur in fish.

N O T E S

Depending on the degree of exposure, periodic medical examination is suggested. Do NOT take working clothes home. Card has been partly updated in October 2004. See sections Occupational Exposure Limits, EU classification, Emergency Response.

Transport Emergency Card: TEC (R)-90GM7-III

NFPA Code: H 2; F 2; R 0;

ADDITIONAL INFORMATION

ICSC: 0037 **1,4-DICHLOROBENZENE**

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Material Safety Data Sheet

Version 3.0
Revision Date 01/01/2009
Print Date 12/07/2011

1. PRODUCT AND COMPANY IDENTIFICATION

Product name : 2,2-Dichloropropane

Product Number : 36270
Brand : Fluka

Company : Sigma-Aldrich
3050 Spruce Street
SAINT LOUIS MO 63103
USA
Telephone : +1 800-325-5832
Fax : +1 800-325-5052
Emergency Phone # : (314) 776-6555

2. COMPOSITION/INFORMATION ON INGREDIENTS

Formula : C3H6Cl2
Molecular Weight : 112.99 g/mol

CAS-No.	EC-No.	Index-No.	Concentration
2,2-Dichloropropane			
594-20-7	209-832-0	-	-

3. HAZARDS IDENTIFICATION

Emergency Overview

OSHA Hazards
Flammable Liquid

HMIS Classification
Health Hazard: 0
Flammability: 3
Physical hazards: 0

NFPA Rating
Health Hazard: 0
Fire: 3
Reactivity Hazard: 0

Potential Health Effects

Inhalation May be harmful if inhaled. May cause respiratory tract irritation.
Skin May be harmful if absorbed through skin. May cause skin irritation.
Eyes May cause eye irritation.
Ingestion May be harmful if swallowed.

4. FIRST AID MEASURES

General advice
Consult a physician. Show this safety data sheet to the doctor in attendance.Move out of dangerous area.

If inhaled
If breathed in, move person into fresh air. If not breathing give artificial respiration Consult a physician.

In case of skin contact
Wash off with soap and plenty of water. Consult a physician.

In case of eye contact
Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician.

If swallowed
Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

5. FIRE-FIGHTING MEASURES

Flammable properties

Flash point	-5.0 °C (23.0 °F) - closed cup
Ignition temperature	no data available

Suitable extinguishing media
For small (incipient) fires, use media such as "alcohol" foam, dry chemical, or carbon dioxide. For large fires, apply water from as far as possible. Use very large quantities (flooding) of water applied as a mist or spray; solid streams of water may be ineffective. Cool all affected containers with flooding quantities of water.

Special protective equipment for fire-fighters
Wear self contained breathing apparatus for fire fighting if necessary.

Further information
Use water spray to cool unopened containers.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions
Avoid breathing vapors, mist or gas. Ensure adequate ventilation. Remove all sources of ignition. Evacuate personnel to safe areas. Beware of vapours accumulating to form explosive concentrations. Vapours can accumulate in low areas.

Environmental precautions
Prevent further leakage or spillage if safe to do so. Do not let product enter drains.

Methods for cleaning up
Contain spillage, and then collect with non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and place in container for disposal according to local / national regulations (see section 13).

7. HANDLING AND STORAGE

Handling
Avoid contact with skin and eyes. Avoid inhalation of vapour or mist.
Keep away from sources of ignition - No smoking. Take measures to prevent the build up of electrostatic charge.

Storage
Keep container tightly closed in a dry and well-ventilated place. Containers which are opened must be carefully resealed and kept upright to prevent leakage. Store in cool place.

Recommended storage temperature: 2 - 8 °C

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Contains no substances with occupational exposure limit values.

Personal protective equipment

Respiratory protection
Where risk assessment shows air-purifying respirators are appropriate use a full-face respirator with multi-purpose combination (US) or type ABEK (EN 14387) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

Hand protection
For prolonged or repeated contact use protective gloves.

Eye protection
Safety glasses

Skin and body protection
Choose body protection according to the amount and concentration of the dangerous substance at the work place.

Hygiene measures
Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance

Form	liquid, clear
Colour	colourless

Safety data

pH	no data available
Melting point	-35.0 °C (-31.0 °F)
Boiling point	66.0 - 69.0 °C (150.8 - 156.2 °F)
Flash point	-5.0 °C (23.0 °F) - closed cup
Ignition temperature	no data available
Lower explosion limit	no data available
Upper explosion limit	no data available
Vapour pressure	206.6 hPa (155.0 mmHg)
Density	1.09 g/cm3
Water solubility	no data available
Partition coefficient: n-octanol/water	log Pow: 1.89

10. STABILITY AND REACTIVITY

Storage stability
Stable under recommended storage conditions.

Conditions to avoid
Heat, flames and sparks.

Materials to avoid
Strong oxidizing agents

Hazardous decomposition products
Hazardous decomposition products formed under fire conditions. - Carbon oxides, Hydrogen chloride gas

Hazardous reactions
Vapours may form explosive mixture with air.

11. TOXICOLOGICAL INFORMATION

Acute toxicity

no data available

Irritation and corrosion

no data available

Sensitisation

no data available

Chronic exposure

IARC:	No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.
ACGIH:	No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH.
NTP:	No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.
OSHA:	No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

Signs and Symptoms of Exposure

To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

Potential Health Effects

Inhalation	May be harmful if inhaled. May cause respiratory tract irritation.
Skin	May be harmful if absorbed through skin. May cause skin irritation.
Eyes	May cause eye irritation.
Ingestion	May be harmful if swallowed.

Additional Information
RTECS: TX9662500

12. ECOLOGICAL INFORMATION

Elimination information (persistence and degradability)

no data available

Ecotoxicity effects

no data available

Further information on ecology

no data available

13. DISPOSAL CONSIDERATIONS

Product
Burn in a chemical incinerator equipped with an afterburner and scrubber but exert extra care in igniting as this material is highly flammable. Observe all federal, state, and local environmental regulations. Contact a licensed professional waste disposal service to dispose of this material.

Contaminated packaging
Dispose of as unused product.

14. TRANSPORT INFORMATION

DOT (US)
UN-Number: 1993 Class: 3 Packing group: II
Proper shipping name: Flammable liquids, n.o.s. (2,2-Dichloropropane)
Marine pollutant: No
Poison Inhalation Hazard: No

IMDG
UN-Number: 1993 Class: 3 Packing group: II EMS-No: F-E, S-E
Proper shipping name: FLAMMABLE LIQUID, N.O.S. (2,2-Dichloropropane)
Marine pollutant: No

IATA
UN-Number: 1993 Class: 3 Packing group: II
Proper shipping name: Flammable liquid n.o.s. (2,2-Dichloropropane)

15. REGULATORY INFORMATION

OSHA Hazards
Flammable Liquid

DSL Status
All components of this product are on the Canadian DSL list.

SARA 302 Components
SARA 302: No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

SARA 313 Components
SARA 313: This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

SARA 311/312 Hazards
Fire Hazard

Massachusetts Right To Know Components

	CAS-No.	Revision Date
2,2-Dichloropropane	594-20-7	1991-07-01

Pennsylvania Right To Know Components

	CAS-No.	Revision Date
2,2-Dichloropropane	594-20-7	1991-07-01

New Jersey Right To Know Components

	CAS-No.	Revision Date
2,2-Dichloropropane	594-20-7	1991-07-01

California Prop. 65 Components
This product does not contain any chemicals known to State of California to cause cancer, birth, or any other reproductive defects.

16. OTHER INFORMATION

Further information

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The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. Sigma-Aldrich Co., shall not be held liable for any damage resulting from handling or from contact with the above product. See reverse side of invoice or packing slip for additional terms and conditions of sale.

International Chemical Safety Cards

2-CHLOROTOLUENE

ICSC: 1458

1-Chloro-2-methylbenzene
o-Chlorotoluene
o-Tolyl chloride
C_7H_7Cl / $CH_3C_6H_4Cl$
Molecular mass: 126.59

ICSC # 1458
CAS # 95-49-8
RTECS # XS9000000
UN # 2238
EC # 602-040-00-X
August 05, 2003 Validated

TYPES OF HAZARD/ EXPOSURE	ACUTE HAZARDS/ SYMPTOMS	PREVENTION	FIRST AID/ FIRE FIGHTING
FIRE	Flammable. Gives off irritating or toxic fumes (or gases) in a fire.	NO open flames, NO sparks, and NO smoking.	Carbon dioxide, water spray, foam, powder.
EXPLOSION	Above 43°C explosive vapour/air mixtures may be formed.	Above 43°C use a closed system, ventilation, and explosion-proof electrical equipment.	In case of fire: keep drums, etc., cool by spraying with water.
EXPOSURE		PREVENT GENERATION OF MISTS!	
•**INHALATION**	Cough. Shortness of breath. Dizziness.	Ventilation, local exhaust, or breathing protection.	Fresh air, rest. Refer for medical attention.
•**SKIN**	Dry skin. Redness. Pain.	Protective gloves.	First rinse with plenty of water, then remove contaminated clothes and rinse again.
•**EYES**	Redness. Pain.	Safety spectacles.	First rinse with plenty of water for several minutes (remove contact lenses if easily possible), then take to a doctor.
•**INGESTION**		Do not eat, drink, or smoke during work.	Do NOT induce vomiting. Give plenty of water to drink. Refer for medical attention.

SPILLAGE DISPOSAL	STORAGE	PACKAGING & LABELLING
Ventilation. Remove all ignition sources. Collect leaking and spilled liquid in sealable containers as far as possible. Absorb remaining liquid in sand or inert absorbent and remove to safe place. (Extra personal protection: filter respirator for organic gases and vapours.) Do NOT let this chemical enter the environment.	Fireproof. Separated from strong oxidants.	Marine pollutant. Note: C Xn symbol N symbol R: 20-51/53 S: 2-24/25-61 UN Hazard Class: 3 UN Packing Group: III

SEE IMPORTANT INFORMATION ON BACK

ICSC: 1458

Prepared in the context of cooperation between the International Programme on Chemical Safety & the Commission of the European Communities (C) IPCS CEC 1994. No modifications to the International version have been made except to add the

OSHA PELs, NIOSH RELs and NIOSH IDLH values.

International Chemical Safety Cards

2-CHLOROTOLUENE

ICSC: 1458

IMPORTANT DATA	**PHYSICAL STATE; APPEARANCE:** COLOURLESS LIQUID , WITH CHARACTERISTIC ODOUR. **PHYSICAL DANGERS:** **CHEMICAL DANGERS:** On combustion, forms toxic and corrosive fumes including hydrogen chloride and phosgene . Reacts with oxidants. **OCCUPATIONAL EXPOSURE LIMITS:** TLV: 50 ppm as TWA; (ACGIH 2003). OSHA PEL†: none NIOSH REL: TWA 50 ppm (250 mg/m^3) ST 75 ppm (375 mg/m^3) NIOSH IDLH: N.D. See: IDLH INDEX **ROUTES OF EXPOSURE:** The substance can be absorbed into the body by inhalation . **INHALATION RISK:** A harmful contamination of the air will be reached rather slowly on evaporation of this substance at 20°C; on spraying or dispersing, however, much faster. **EFFECTS OF SHORT-TERM EXPOSURE:** The substance is irritating to the eyes , the skin and the respiratory tract . **EFFECTS OF LONG-TERM OR REPEATED EXPOSURE:** The liquid defats the skin.
PHYSICAL PROPERTIES	Boiling point: 159.2°C Melting point: -35.1°C Relative density (water = 1): 1.08 Solubility in water, g/100 ml at 20°C: 0.47 Vapour pressure, kPa at 20°C: 0.35 Relative vapour density (air = 1): 4.4 Relative density of the vapour/air-mixture at 20°C (air = 1): 1.01 Flash point: 43°C c.c. Explosive limits, vol% in air: 1 - 12.6 Octanol/water partition coefficient as log Pow: 3.4
ENVIRONMENTAL DATA	The substance is harmful to aquatic organisms. This substance may be hazardous in the environment; special attention should be given to crustacea and fish.

NOTES

Transport Emergency Card: TEC (R)-30GFI-III

NFPA Code: H2; F2; R0;

ADDITIONAL INFORMATION

ICSC: 1458 **2-CHLOROTOLUENE**

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International Chemical Safety Cards

4-CHLOROTOLUENE

ICSC: 1386

p-Chlorotoluene
1-Chloro-4-methylbenzene
p-Tolyl chloride
C_7H_7Cl

Molecular mass: 126.6

ICSC # 1386
CAS # 106-43-4
RTECS # XS9010000
UN # 2238
EC # 602-040-00-X
March 14, 2001 Validated

TYPES OF HAZARD/ EXPOSURE	ACUTE HAZARDS/ SYMPTOMS	PREVENTION	FIRST AID/ FIRE FIGHTING
FIRE	Flammable. Gives off irritating or toxic fumes (or gases) in a fire.	NO open flames, NO sparks, and NO smoking.	Powder, AFFF, foam, carbon dioxide.
EXPLOSION	Above 49°C explosive vapour/air mixtures may be formed.	Above 49°C use a closed system, ventilation, and explosion-proof electrical equipment.	In case of fire: keep drums, etc., cool by spraying with water.
EXPOSURE			
•INHALATION		Ventilation, local exhaust, or breathing protection.	Fresh air, rest.
•SKIN	Dry skin. Redness. Pain.	Protective gloves. Protective clothing.	Remove contaminated clothes. Rinse and then wash skin with water and soap.
•EYES	Redness. Pain.	Safety spectacles.	First rinse with plenty of water for several minutes (remove contact lenses if easily possible), then take to a doctor.
•INGESTION		Do not eat, drink, or smoke during work.	Do NOT induce vomiting. Refer for medical attention.

SPILLAGE DISPOSAL	STORAGE	PACKAGING & LABELLING
Ventilation. Remove all ignition sources. Collect leaking and spilled liquid in sealable containers as far as possible. Absorb remaining liquid in sand or inert absorbent and remove to safe place. Do NOT wash away into sewer. (Extra personal protection: filter respirator for organic gases and vapours.)	Fireproof. Separated from strong oxidants.	Marine pollutant. Note: C Xn symbol N symbol R: 20-51/53 S: 2-24/25-61 UN Hazard Class: 3 UN Packing Group: III

SEE IMPORTANT INFORMATION ON BACK

ICSC: 1386

Prepared in the context of cooperation between the International Programme on Chemical Safety & the Commission of the European Communities (C) IPCS CEC 1994. No modifications to the International version have been made except to add the OSHA PELs, NIOSH RELs and NIOSH IDLH values.

International Chemical Safety Cards

4-CHLOROTOLUENE

ICSC: 1386

IMPORTANT DATA

PHYSICAL STATE; APPEARANCE:
COLOURLESS LIQUID , WITH CHARACTERISTIC ODOUR.

PHYSICAL DANGERS:

CHEMICAL DANGERS:
On combustion, forms toxic gases including carbon monoxide , hydrogen chloride , possibly phosgene . Reacts with strong oxidants.

OCCUPATIONAL EXPOSURE LIMITS:
TLV not established.
MAK not established.

ROUTES OF EXPOSURE:
The substance can be absorbed into the body by inhalation.

INHALATION RISK:

EFFECTS OF SHORT-TERM EXPOSURE:
Swallowing the liquid may cause aspiration into the lungs with the risk of chemical pneumonitis.

EFFECTS OF LONG-TERM OR REPEATED EXPOSURE:
The liquid defats the skin.

PHYSICAL PROPERTIES

Boiling point: 162°C
Melting point: 7.5°C
Relative density (water = 1): 1.07
Solubility in water, g/100 ml at 20°C: 0.01
Vapour pressure, kPa at 20°C: 0.35
Relative vapour density (air = 1): 4.4
Flash point: 49°C
Auto-ignition temperature: 595°C
Explosive limits, vol% in air: 0.7-12.2
Octanol/water partition coefficient as log Pow: 3.33

ENVIRONMENTAL DATA

The substance is toxic to aquatic organisms.

NOTES

Insufficient data are available on the effect of this substance on human health, therefore utmost care must be taken.

Transport Emergency Card: TEC (R)-30G35c

NFPA Code: H2; F2; R0;

ADDITIONAL INFORMATION

ICSC: 1386 **4-CHLOROTOLUENE**

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International Chemical Safety Cards

BENZENE

ICSC: 0015

Cyclohexatriene
Benzol
C_6H_6
Molecular mass: 78.1

ICSC # 0015
CAS # 71-43-2
RTECS # CY1400000
UN # 1114
EC # 601-020-00-8
May 06, 2003 Peer reviewed

TYPES OF HAZARD/ EXPOSURE	ACUTE HAZARDS/ SYMPTOMS	PREVENTION	FIRST AID/ FIRE FIGHTING
FIRE	Highly flammable.	NO open flames, NO sparks, and NO smoking.	Powder, AFFF, foam, carbon dioxide.
EXPLOSION	Vapour/air mixtures are explosive. Risk of fire and explosion: see Chemical Dangers.	Closed system, ventilation, explosion-proof electrical equipment and lighting. Do NOT use compressed air for filling, discharging, or handling. Use non-sparking handtools. Prevent build-up of electrostatic charges (e.g., by grounding).	In case of fire: keep drums, etc., cool by spraying with water.
EXPOSURE		AVOID ALL CONTACT!	
•**INHALATION**	Dizziness. Drowsiness. Headache. Nausea. Shortness of breath. Convulsions. Unconsciousness.	Ventilation, local exhaust, or breathing protection.	Fresh air, rest. Refer for medical attention.
•**SKIN**	MAY BE ABSORBED! Dry skin. Redness. Pain. (Further see Inhalation).	Protective gloves. Protective clothing.	Remove contaminated clothes. Rinse skin with plenty of water or shower. Refer for medical attention.
•**EYES**	Redness. Pain.	Face shield, or eye protection in combination with breathing protection.	First rinse with plenty of water for several minutes (remove contact lenses if easily possible), then take to a doctor.
•**INGESTION**	Abdominal pain. Sore throat. Vomiting. (Further see Inhalation).	Do not eat, drink, or smoke during work.	Rinse mouth. Do NOT induce vomiting. Refer for medical attention.

SPILLAGE DISPOSAL	STORAGE	PACKAGING & LABELLING
Remove all ignition sources. Collect leaking and spilled liquid in sealable containers as far as possible. Absorb remaining liquid in sand or inert absorbent and remove to safe place. Do NOT wash away into sewer. Do NOT let this chemical enter the environment. Personal protection: complete protective clothing including self-contained breathing apparatus.	Fireproof. Separated from food and feedstuffs oxidants halogens	Do not transport with food and feedstuffs. Note: E F symbol T symbol R: 45-46-11-36/38-48/23/24/25-65 S: 53-45 UN Hazard Class: 3 UN Packing Group: II

SEE IMPORTANT INFORMATION ON BACK

Prepared in the context of cooperation between the International Programme on Chemical Safety & the Commission of the European Communities (C) IPCS CEC 1994. No modifications to the International version have been made except to add the OSHA PELs, NIOSH RELs and NIOSH IDLH values.

International Chemical Safety Cards

BENZENE

ICSC: 0015

IMPORTANT DATA

PHYSICAL STATE; APPEARANCE:
COLOURLESS LIQUID , WITH CHARACTERISTIC ODOUR.

PHYSICAL DANGERS:
The vapour is heavier than air and may travel along the ground; distant ignition possible. As a result of flow, agitation, etc., electrostatic charges can be generated.

CHEMICAL DANGERS:
Reacts violently with oxidants, nitric acid, sulfuric acid and halogens causing fire and explosion hazard. Attacks plastic and rubber.

OCCUPATIONAL EXPOSURE LIMITS:
TLV: 0.5 ppm as TWA 2.5 ppm as STEL (skin) A1 BEI (ACGIH 2004).
MAK: H
Carcinogen category: 1 Germ cell mutagen group: 3A (DFG 2004).
OSHA PEL: 1910.1028 TWA 1 ppm ST 5 ppm See Appendix F
NIOSH REL: Ca TWA 0.1 ppm ST 1 ppm See Appendix A
NIOSH IDLH: Ca 500 ppm See: 71432

ROUTES OF EXPOSURE:
The substance can be absorbed into the body by inhalation through the skin and by ingestion

INHALATION RISK:
A harmful contamination of the air can be reached very quickly on evaporation of this substance at 20°C.

EFFECTS OF SHORT-TERM EXPOSURE:
The substance is irritating to the eyes the skin and the respiratory tract Swallowing the liquid may cause aspiration into the lungs with the risk of chemical pneumonitis. The substance may cause effects on the central nervous system , resulting in lowering of consciousness Exposure far above the occupational exposure limit value may result in unconsciousness death

EFFECTS OF LONG-TERM OR REPEATED EXPOSURE:
The liquid defats the skin. The substance may have effects on the bone marrow immune system , resulting in a decrease of blood cells. This substance is carcinogenic to humans.

PHYSICAL PROPERTIES

Boiling point: 80°C
Melting point: 6°C
Relative density (water = 1): 0.88
Solubility in water, g/100 ml at 25°C: 0.18
Vapour pressure, kPa at 20°C: 10
Relative vapour density (air = 1): 2.7
Relative density of the vapour/air-mixture at 20°C (air = 1): 1.2
Flash point:
-11°C c.c.
Auto-ignition temperature: 498°C
Explosive limits, vol% in air: 1.2-8.0
Octanol/water partition coefficient as log Pow: 2.13

ENVIRONMENTAL DATA

The substance is very toxic to aquatic organisms.

NOTES

Use of alcoholic beverages enhances the harmful effect. Depending on the degree of exposure, periodic medical examination is indicated. The odour warning when the exposure limit value is exceeded is insufficient.

Transport Emergency Card: TEC (R)-30S1114 / 30GF1-II
NFPA Code: H2; F3; R0

ADDITIONAL INFORMATION

ICSC: 0015 **BENZENE**

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International Chemical Safety Cards

ACETONE

ICSC: 0087

2-Propanone
Dimethyl ketone
Methyl ketone
C_3H_6O / CH_3COCH_3
Molecular mass: 58.1

ICSC # 0087
CAS # 67-64-1
RTECS # AL3150000
UN # 1090
EC # 606-001-00-8
April 22, 1994 Validated
Fi, review at IHE: 10/09/89

TYPES OF HAZARD/ EXPOSURE	ACUTE HAZARDS/ SYMPTOMS	PREVENTION	FIRST AID/ FIRE FIGHTING
FIRE	Highly flammable.	NO open flames, NO sparks, and NO smoking.	Powder, alcohol-resistant foam, water in large amounts, carbon dioxide.
EXPLOSION	Vapour/air mixtures are explosive.	Closed system, ventilation, explosion-proof electrical equipment and lighting. Do NOT use compressed air for filling, discharging, or handling.	In case of fire: keep drums, etc., cool by spraying with water.
EXPOSURE			
•INHALATION	Sore throat. Cough. Confusion. Headache. Dizziness. Drowsiness. Unconsciousness.	Ventilation, local exhaust, or breathing protection.	Fresh air, rest. Refer for medical attention.
•SKIN	Dry skin.	Protective gloves.	Remove contaminated clothes. Rinse skin with plenty of water or shower.
•EYES	Redness. Pain. Blurred vision. Possible corneal damage.	Safety spectacles or face shield . Contact lenses should not be worn.	First rinse with plenty of water for several minutes (remove contact lenses if easily possible), then take to a doctor.
•INGESTION	Nausea. Vomiting. (Further see Inhalation).	Do not eat, drink, or smoke during work.	Rinse mouth. Refer for medical attention.

SPILLAGE DISPOSAL	STORAGE	PACKAGING & LABELLING
Personal protection: self-contained breathing apparatus. Ventilation. Collect leaking liquid in sealable containers. Absorb remaining liquid in sand or inert absorbent and remove to safe place. Do NOT wash away into sewer. Then wash away with plenty of water.	Fireproof. Separated from strong oxidants. Store in an area without drain or sewer access.	F symbol Xi symbol R: 11-36-66-67 S: 2-9-16-26 UN Hazard Class: 3 UN Packing Group: II

SEE IMPORTANT INFORMATION ON BACK

ICSC: 0087

Prepared in the context of cooperation between the International Programme on Chemical Safety & the Commission of the European Communities (C) IPCS CEC 1994. No modifications to the International version have been made except to add the OSHA PELs, NIOSH RELs and NIOSH IDLH values.

International Chemical Safety Cards

ACETONE

ICSC: 0087

IMPORTANT DATA

PHYSICAL STATE; APPEARANCE:
COLOURLESS LIQUID , WITH CHARACTERISTIC ODOUR.

PHYSICAL DANGERS:
The vapour is heavier than air and may travel along the ground; distant ignition possible.

CHEMICAL DANGERS:
The substance can form explosive peroxides on contact with strong oxidants such as acetic acid, nitric acid, hydrogen peroxide. Reacts with chloroform and bromoform under basic conditions, causing fire and explosion hazard. Attacks plastic.

OCCUPATIONAL EXPOSURE LIMITS:
TLV: 500 ppm as TWA, 750 ppm as STEL; A4 (not classifiable as a human carcinogen); BEI issued; (ACGIH 2004).
MAK: 500 ppm 1200 mg/m³
Peak limitation category: I(2); Pregnancy risk group: D; (DFG 2006).
OSHA PEL†: TWA 1000 ppm (2400 mg/m^3)
NIOSH REL: TWA 250 ppm (590 mg/m^3)
NIOSH IDLH: 2500 ppm 10%LEL See: 67641

ROUTES OF EXPOSURE:
The substance can be absorbed into the body by inhalation and through the skin.

INHALATION RISK:
A harmful contamination of the air can be reached rather quickly on evaporation of this substance at 20°C; on spraying or dispersing, however, much faster.

EFFECTS OF SHORT-TERM EXPOSURE:
The vapour irritates the eyes and the respiratory tract. The substance may cause effects on the central nervous system , liver , kidneys and gastrointestinal tract .

EFFECTS OF LONG-TERM OR REPEATED EXPOSURE:
Repeated or prolonged contact with skin may cause dermatitis. The substance may have effects on the blood and bone marrow .

PHYSICAL PROPERTIES

Boiling point: 56°C
Melting point: -95°C
Relative density (water = 1): 0.8
Solubility in water:
miscible
Vapour pressure, kPa at 20°C: 24

Relative vapour density (air = 1): 2.0
Relative density of the vapour/air-mixture at 20°C (air = 1): 1.2
Flash point: -18°C c.c.
Auto-ignition temperature: 465°C
Explosive limits, vol% in air: 2.2-13
Octanol/water partition coefficient as log Pow: -0.24

ENVIRONMENTAL DATA

N O T E S

Use of alcoholic beverages enhances the harmful effect.

Transport Emergency Card: TEC (R)-30S1090

NFPA Code: H 1; F 3; R 0;
Card has been partially updated in July 2007: see Occupational Exposure Limits.
Card has been partially updated in January 2008: see Storage.

ADDITIONAL INFORMATION

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International Chemical Safety Cards

BROMOBENZENE

ICSC: 1016

Monobromobenzene
Phenyl bromide
C_6H_5Br
Molecular mass: 157.02

ICSC # 1016
CAS # 108-86-1
RTECS # CY9000000
UN # 2514
EC # 602-060-00-9
April 03, 2002 Validated

TYPES OF HAZARD/ EXPOSURE	ACUTE HAZARDS/ SYMPTOMS	PREVENTION	FIRST AID/ FIRE FIGHTING
FIRE	Flammable.	NO open flames. NO open flames, NO sparks, and NO smoking.	Powder, alcohol-resistant foam, water spray, carbon dioxide .
EXPLOSION	Above 51°C explosive vapour/air mixtures may be formed.	Above 51°C use a closed system, ventilation, and explosion-proof electrical equipment. Prevent build-up of electrostatic charges (e.g., by grounding).	
EXPOSURE		PREVENT GENERATION OF MISTS!	
•**INHALATION**	Dizziness.	Ventilation, local exhaust, or breathing protection.	Fresh air, rest. Refer for medical attention.
•**SKIN**	Redness.	Protective gloves.	Remove contaminated clothes. Rinse and then wash skin with water and soap. Refer for medical attention.
•**EYES**		Safety spectacles.	First rinse with plenty of water for several minutes (remove contact lenses if easily possible), then take to a doctor.
•**INGESTION**	Nausea. Diarrhoea.	Do not eat, drink, or smoke during work.	Do NOT induce vomiting. Refer for medical attention.

SPILLAGE DISPOSAL	STORAGE	PACKAGING & LABELLING
Remove all ignition sources. Absorb remaining liquid in sand or inert absorbent and remove to safe place. Do NOT let this chemical enter the environment. Collect leaking and spilled liquid in sealable containers as far as possible. (Extra personal protection: filter respirator for organic gases and vapours.)	Fireproof. Ventilation along the floor.	Do not transport with food and feedstuffs. Marine pollutant. Xi symbol N symbol R: 10-38-51/53 S: 2-61 UN Hazard Class: 3 UN Packing Group: III

SEE IMPORTANT INFORMATION ON BACK

ICSC: 1016

Prepared in the context of cooperation between the International Programme on Chemical Safety & the Commission of the European Communities (C) IPCS CEC 1994. No modifications to the International version have been made except to add the OSHA PELs, NIOSH RELs and NIOSH IDLH values.

International Chemical Safety Cards

BROMOBENZENE

ICSC: 1016

I M P O R T A N T D A T A

PHYSICAL STATE; APPEARANCE:
COLOURLESS LIQUID , WITH CHARACTERISTIC ODOUR.

PHYSICAL DANGERS:
As a result of flow, agitation, etc., electrostatic charges can be generated.

CHEMICAL DANGERS:
On combustion, forms toxic gases including hydrogen bromide.

OCCUPATIONAL EXPOSURE LIMITS:
TLV not established.

ROUTES OF EXPOSURE:
The substance can be absorbed into the body by inhalation and by ingestion.

INHALATION RISK:
No indication can be given about the rate in which a harmful concentration in the air is reached on evaporation of this substance at 20°C.

EFFECTS OF SHORT-TERM EXPOSURE:
The substance is irritating to the skin . If this liquid is swallowed, aspiration into the lungs may result in chemical pneumonitis. The substance may cause effects on the nervous system .

EFFECTS OF LONG-TERM OR REPEATED EXPOSURE:
The substance may have effects on the liver and kidneys , resulting in impaired functions .

PHYSICAL PROPERTIES

Boiling point: 156.2°C
Melting point: -30.7°C
Relative density (water = 1): 1.5
Solubility in water:
0.04 g/100 ml
at 25°C
Vapour pressure, kPa at 25°C: 0.55

Relative vapour density (air = 1): 5.41
Relative density of the vapour/air-mixture at 20°C (air = 1): 1.02
Flash point: 51°C c.c.
Auto-ignition temperature: 566°C
Explosive limits, vol% in air: 6-36.5
Octanol/water partition coefficient as log Pow: 2.99

ENVIRONMENTAL DATA

The substance is toxic to aquatic organisms.

N O T E S

Transport Emergency Card: TEC (R)-30GF1-III

NFPA Code: H2; F2; R0.

ADDITIONAL INFORMATION

ICSC: 1016 **BROMOBENZENE**

(C) IPCS, CEC, 1994

IMPORTANT LEGAL NOTICE:

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International Chemical Safety Cards

BROMOCHLOROMETHANE

ICSC: 0392

Chlorobromomethane
Methylene chlorobromide
CH_2BrCl
Molecular mass: 129.4

ICSC # 0392
CAS # 74-97-5
RTECS # PA5250000
UN # 1887
October 23, 1995 Validated

TYPES OF HAZARD/ EXPOSURE	ACUTE HAZARDS/ SYMPTOMS	PREVENTION	FIRST AID/ FIRE FIGHTING
FIRE	Not combustible.		In case of fire in the surroundings: use appropriate extinguishing media.
EXPLOSION			
EXPOSURE		PREVENT GENERATION OF MISTS!	
•INHALATION	Dizziness. Drowsiness. Headache. Nausea. Unconsciousness.	Ventilation, local exhaust, or breathing protection.	Fresh air, rest. Half-upright position. Artificial respiration may be needed. Refer for medical attention.
•SKIN	Dry skin. Redness.	Protective gloves.	Remove contaminated clothes. Rinse skin with plenty of water or shower.
•EYES	Redness.	Safety spectacles or eye protection in combination with breathing protection.	First rinse with plenty of water for several minutes (remove contact lenses if easily possible), then take to a doctor.
•INGESTION	(Further see Inhalation).	Do not eat, drink, or smoke during work.	Do NOT induce vomiting. Refer for medical attention.

SPILLAGE DISPOSAL	STORAGE	PACKAGING & LABELLING
Collect leaking liquid in sealable containers. Absorb remaining liquid in sand or inert absorbent and remove to safe place. Do NOT wash away into sewer, then remove to safe place. Personal protection: A filter respirator for organic gases and vapours.	Separated from food and feedstuffs . Dry. Ventilation along the floor.	Do not transport with food and feedstuffs. UN Hazard Class: 6.1 UN Packing Group: III

SEE IMPORTANT INFORMATION ON BACK

ICSC: 0392

Prepared in the context of cooperation between the International Programme on Chemical Safety & the Commission of the European Communities (C) IPCS CEC 1994. No modifications to the International version have been made except to add the OSHA PELs, NIOSH RELs and NIOSH IDLH values.

International Chemical Safety Cards

BROMOCHLOROMETHANE

ICSC: 0392

IMPORTANT DATA	**PHYSICAL STATE; APPEARANCE:** COLOURLESS TO YELLOW LIQUID , WITH CHARACTERISTIC ODOUR. **PHYSICAL DANGERS:** **CHEMICAL DANGERS:** The substance decomposes on heating producing toxic and corrosive fumes including hydrogen chloride , phosgene , hydrogen bromide . Attacks many metals including steel, aluminium, magnesium and zinc unless inhibited. **OCCUPATIONAL EXPOSURE LIMITS:** TLV: 200 ppm as TWA; (ACGIH 2004). MAK: skin absorption (H); Carcinogen category: 3B; (DFG 2004). OSHA PEL: TWA 200 ppm (1050 mg/m^3) NIOSH REL: TWA 200 ppm (1050 mg/m^3) NIOSH IDLH: 2000 ppm See: 74975 **ROUTES OF EXPOSURE:** The substance can be absorbed into the body by inhalation. **INHALATION RISK:** A harmful contamination of the air can be reached rather quickly on evaporation of this substance at 20°C. **EFFECTS OF SHORT-TERM EXPOSURE:** Inhalation of the substance may cause lung oedema (see Notes). The substance may cause effects on the central nervous system and blood , resulting in impaired functions and formation of carboxyhaemoglobin. Exposure may result in lowering of consciousness. **EFFECTS OF LONG-TERM OR REPEATED EXPOSURE:** Repeated or prolonged contact with skin may cause dermatitis. Lungs may be affected by repeated or prolonged exposure. The substance may have effects on the kidneys and liver , resulting in impaired functions .
PHYSICAL PROPERTIES	Boiling point: 68°C Melting point: -88°C Relative density (water = 1): 2.0 Solubility in water: poor Vapour pressure, kPa at 20°C: 15.6 Relative vapour density (air = 1): 4.5
ENVIRONMENTAL DATA	

N O T E S

The symptoms of lung oedema often do not become manifest until a few hours have passed and they are aggravated by physical effort. Rest and medical observation is therefore essential. Immediate administration of an appropriate inhalation therapy by a doctor or a person authorized by him/her, should be considered. Halon 1011 is a trade name. Card has been partly updated in October 2005. See sections Occupational Exposure Limits, Emergency Response.

Transport Emergency Card: TEC (R)-61GT1-III

ADDITIONAL INFORMATION

ICSC: 0392 **BROMOCHLOROMETHANE**

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International Chemical Safety Cards

BROMODICHLOROMETHANE

ICSC: 0393

Dichlorobromomethane
Methane, bromodichloro-
$CHBrCl_2$
Molecular mass: 163.8

ICSC # 0393
CAS # 75-27-4
RTECS # PA5310000
April 03, 2006 Validated

TYPES OF HAZARD/ EXPOSURE	ACUTE HAZARDS/ SYMPTOMS	PREVENTION	FIRST AID/ FIRE FIGHTING
FIRE	Not combustible. Gives off irritating or toxic fumes (or gases) in a fire.		In case of fire in the surroundings: use appropriate extinguishing media.
EXPLOSION			
EXPOSURE		AVOID ALL CONTACT!	
•INHALATION	See Notes.	Ventilation, local exhaust, or breathing protection.	Fresh air, rest.
•SKIN		Protective gloves.	Rinse and then wash skin with water and soap.
•EYES		Safety spectacles	First rinse with plenty of water for several minutes (remove contact lenses if easily possible), then take to a doctor.
•INGESTION	See EFFECTS OF LONG-TERM OR REPEATED EXPOSURE.	Do not eat, drink, or smoke during work.	Rinse mouth.

SPILLAGE DISPOSAL	STORAGE	PACKAGING & LABELLING
	Separated from strong oxidants, strong bases and magnesium. Ventilation along the floor.	Signal: Warning Excl mark-Health haz Harmful if swallowed Suspected of causing cancer May causes damage to liver and kidneys through prolonged or repeated exposure if swallowed

SEE IMPORTANT INFORMATION ON BACK

ICSC: 0393

Prepared in the context of cooperation between the International Programme on Chemical Safety & the Commission of the European Communities (C) IPCS CEC 1994. No modifications to the International version have been made except to add the OSHA PELs, NIOSH RELs and NIOSH IDLH values.

International Chemical Safety Cards

BROMODICHLOROMETHANE

ICSC: 0393

I	PHYSICAL STATE; APPEARANCE:	ROUTES OF EXPOSURE:

M P O R T A N T D A T A	COLOURLESS LIQUID **PHYSICAL DANGERS:** The vapour is heavier than air. **CHEMICAL DANGERS:** On contact with hot surfaces or flames this substance decomposes forming toxic and corrosive gases, including hydrogen bromide and hydrogen chloride. Reacts with strong bases , strong oxidants and magnesium . **OCCUPATIONAL EXPOSURE LIMITS:** TLV not established. MAK: skin absorption (H); Carcinogen category: 2; Germ cell mutagen group: 3B (DFG 2009).	The substance can be absorbed into the body by ingestion. **INHALATION RISK:** A harmful contamination of the air can be reached very quickly on evaporation of this substance at 20°C. **EFFECTS OF SHORT-TERM EXPOSURE:** **EFFECTS OF LONG-TERM OR REPEATED EXPOSURE:** The substance may have effects on the kidneys and liver , by ingestion , resulting in impaired functions . This substance is possibly carcinogenic to humans.
PHYSICAL PROPERTIES	Boiling point: 90°C Melting point: -57°C Density: 1.9 g/cm³ Solubility in water, g/100 ml at 20°C: 0.45 (poor)	Vapour pressure, kPa at 20°C: 6.6 Relative vapour density (air = 1): 5.6 Relative density of the vapour/air-mixture at 20°C (air = 1): 1.3 Octanol/water partition coefficient as log Pow: 2
ENVIRONMENTAL DATA		

N O T E S

Halon 1021 is a trade name. Bromodichloromethane can be found in chlorinated water. Health effects of exposure to the substance have not been investigated adequately other than by ingestion.

Card has been partially updated in August 2007: see GHS classification.
Card has been partially updated in April 2010: see Occupational Exposure Limits.

ADDITIONAL INFORMATION

ICSC: 0393 **BROMODICHLOROMETHANE**

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International Chemical Safety Cards

BROMOFORM

ICSC: 0108

Tribromomethane
Methenyl tribromide
$CHBr_3$
Molecular mass: 252.7

ICSC # 0108
CAS # 75-25-2
RTECS # PB5600000
UN # 2515
EC # 602-007-00-X
April 22, 1994 Validated

TYPES OF HAZARD/ EXPOSURE	ACUTE HAZARDS/ SYMPTOMS	PREVENTION	FIRST AID/ FIRE FIGHTING
FIRE	Not combustible. Gives off irritating or toxic fumes (or gases) in a fire.		In case of fire in the surroundings: use appropriate extinguishing media.
EXPLOSION			In case of fire: keep drums, etc., cool by spraying with water.
EXPOSURE		STRICT HYGIENE!	IN ALL CASES CONSULT A DOCTOR!
•INHALATION	Reddening of the face. Salivation. Disturbance of movements. Convulsions. Cough. Dizziness. Headache. Laboured breathing. Unconsciousness. Loss of memory. Shock.	Ventilation, local exhaust, or breathing protection.	Fresh air, rest. Half-upright position. Artificial respiration may be needed. Refer for medical attention.
•SKIN	MAY BE ABSORBED! Redness. (Further see Inhalation).	Protective gloves. Protective clothing.	Remove contaminated clothes. Rinse and then wash skin with water and soap. Refer for medical attention.
•EYES	Redness. Pain.	Safety spectacles or eye protection in combination with breathing protection.	First rinse with plenty of water for several minutes (remove contact lenses if easily possible), then take to a doctor.
•INGESTION	Burning sensation. (Further see Inhalation).	Do not eat, drink, or smoke during work.	Rinse mouth. Refer for medical attention.

SPILLAGE DISPOSAL	STORAGE	PACKAGING & LABELLING
Evacuate danger area! Consult an expert! Ventilation. Collect leaking and spilled liquid in sealable containers as far as possible. Absorb remaining liquid in sand or inert absorbent and remove to safe place. Do NOT wash away into sewer. Do NOT let this chemical enter the environment. Personal protection: complete protective clothing including self-contained breathing apparatus.	Separated from strong bases, food and feedstuffs , oxidants , metals . Keep in the dark. Ventilation along the floor. Store only if stabilized.	Do not transport with food and feedstuffs. Marine pollutant. T symbol N symbol R: 23-36/38-51/53 S: 1/2-28-45-61 UN Hazard Class: 6.1 UN Packing Group: III

SEE IMPORTANT INFORMATION ON BACK

Prepared in the context of cooperation between the International Programme on Chemical Safety & the Commission of the

ICSC: 0108

European Communities (C) IPCS CEC 1994. No modifications to the International version have been made except to add the OSHA PELs, NIOSH RELs and NIOSH IDLH values.

International Chemical Safety Cards

BROMOFORM

ICSC: 0108

IMPORTANT DATA

PHYSICAL STATE; APPEARANCE:
COLOURLESS LIQUID , WITH CHARACTERISTIC ODOUR. TURNS YELLOW ON EXPOSURE TO LIGHT AND AIR.

PHYSICAL DANGERS:

CHEMICAL DANGERS:
The substance decomposes on heating producing toxic and corrosive fumesincluding hydrogen bromide and bromine. The substance is a weak acid. Reacts violently with oxidants, bases in powdered form and is corrosive to most metals. Reacts with alkaline metals, powdered aluminium, zinc, magnesium, and acetone under basic conditions, causing fire and explosion hazard. Attacks some forms of plastic, rubber, coatings.

OCCUPATIONAL EXPOSURE LIMITS:
TLV: 0.5 ppm as TWA; (skin); A3 (confirmed animal carcinogen with unknown relevance to humans); (ACGIH 2004).
MAK:
Carcinogen category: 3B;
(DFG 2004).
OSHA PEL: TWA 0.5 ppm (5 mg/m^3) skin
NIOSH REL: TWA 0.5 ppm (5 mg/m^3) skin
NIOSH IDLH: 850 ppm See: 75252

ROUTES OF EXPOSURE:
The substance can be absorbed into the body by inhalation and through the skin.

INHALATION RISK:
A harmful contamination of the air can be reached very quickly on evaporation of this substance at 20°C.

EFFECTS OF SHORT-TERM EXPOSURE:
Lachrymation. The substance is irritating to the respiratory tract , the eyes and the skin . The substance may cause effects on the central nervous system and liver , resulting in impaired functions.

EFFECTS OF LONG-TERM OR REPEATED EXPOSURE:
The substance may have effects on the central nervous system and liver , resulting in tissue lesions .

PHYSICAL PROPERTIES

Boiling point: 149-152°C
Melting point: 8.3°C
Relative density (water = 1): 2.9
Solubility in water, g/100 ml at 20°C: 0.1

Vapour pressure, kPa at 20°C: 0.7
Relative vapour density (air = 1): 8.7
Relative density of the vapour/air-mixture at 20°C (air = 1): 1.05
Octanol/water partition coefficient as log Pow: 2.38

ENVIRONMENTAL DATA

This substance may be hazardous to the environment; special attention should be given to aquatic organisms. It is strongly advised not to let the chemical enter into the environment because it persists in the environment.

NOTES

Depending on the degree of exposure, periodic medical examination is suggested. An added stabilizer or inhibitor can influence the toxicological properties of this substance, consult an expert. Do NOT take working clothes home. Card has been partly updated in April 2005. See sections Occupational Exposure Limits, EU classification, Emergency Response.

Transport Emergency Card: TEC (R)-61S2515

ADDITIONAL INFORMATION

(C) IPCS, CEC, 1994

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LEGAL NOTICE:	The user should verify compliance of the cards with the relevant legislation in the country of use. The only modifications made to produce the U.S. version is inclusion of the OSHA PELs, NIOSH RELs and NIOSH IDLH values.

International Chemical Safety Cards

METHYL BROMIDE

ICSC: 0109

Bromomethane
Monobromomethane
CH_3Br
Molecular mass: 94.9
(cylinder)

ICSC # 0109
CAS # 74-83-9
RTECS # PA4900000
UN # 1062
EC # 602-002-00-2
November 25, 2009 Validated
Fi, review at IHE: 10/09/89

TYPES OF HAZARD/ EXPOSURE	ACUTE HAZARDS/ SYMPTOMS	PREVENTION	FIRST AID/ FIRE FIGHTING
FIRE	Combustible under specific conditions. Gives off irritating or toxic fumes (or gases) in a fire.	NO open flames. NO contact with aluminium, zinc, magnesium or pure oxygen.	Shut off supply; if not possible and no risk to surroundings, let the fire burn itself out; in other cases extinguish with appropriate extinguishing agent .
EXPLOSION	Risk of fire and explosion on contact with aluminium, zinc, magnesium or oxygen.		In case of fire: keep cylinder cool by spraying with water.
EXPOSURE		STRICT HYGIENE!	IN ALL CASES CONSULT A DOCTOR! FIRST AID: USE PERSONAL PROTECTION
•INHALATION	Cough. Sore throat. Dizziness. Headache. Abdominal pain. Vomiting. Weakness. Shortness of breath. Confusion. Hallucinations. Loss of speech. Incoordination. Convulsions. Symptoms may be delayed (see Notes).	Ventilation, local exhaust, or breathing protection.	Fresh air, rest. Half-upright position. Artificial respiration may be needed. Refer immediately for medical attention.
•SKIN	MAY BE ABSORBED! Tingling. Itching. Burning sensation. Redness. Blisters. Pain. ON CONTACT WITH LIQUID: FROSTBITE. (Further see Inhalation).	Cold-insulating gloves. Protective clothing.	Rinse skin with plenty of water or shower. ON FROSTBITE: rinse with plenty of water, do NOT remove clothes. Refer immediately for medical attention.
•EYES	Redness. Pain. Blurred vision. Temporary loss of vision.	Safety goggles , face shield or eye protection in combination with breathing protection.	Rinse with plenty of water (remove contact lenses if easily possible). Refer immediately for medical attention.
•INGESTION			

SPILLAGE DISPOSAL	STORAGE	PACKAGING & LABELLING
Evacuate danger area! Consult an expert! Personal protection: complete protective clothing including self-contained breathing apparatus. Ventilation. NEVER direct water	Fireproof if in building. Separated from strong oxidants, aluminium and cylinders containing oxygen. Cool. Ventilation along the floor.	T symbol N symbol R: 23/25-36/37/38-48/20-68-50-59

jet on liquid.		S: 1/2-15-27-36/39-38-45-59-61 UN Hazard Class: 2.3 Signal: Danger Cylinder-Skull-Health haz Contains gas under pressure; may explode if heated Toxic if inhaled (gas) Causes skin irritation Causes eye irritation Causes damage to lungs, kidneys and central nervous system if inhaled Causes damage to liver, kidneys and central nervous system through prolonged or repeated exposure if inhaled Harms public health and the environment by destroying ozone in the upper atmosphere

SEE IMPORTANT INFORMATION ON BACK

ICSC: 0109

Prepared in the context of cooperation between the International Programme on Chemical Safety & the Commission of the European Communities (C) IPCS CEC 1994. No modifications to the International version have been made except to add the OSHA PELs, NIOSH RELs and NIOSH IDLH values.

International Chemical Safety Cards

METHYL BROMIDE

ICSC: 0109

IMPORTANT DATA

PHYSICAL STATE; APPEARANCE:
ODOURLESS AND COLOURLESS COMPRESSED LIQUEFIED GAS.

PHYSICAL DANGERS:
The gas is heavier than air and may accumulate in lowered spaces causing a deficiency of oxygen.

CHEMICAL DANGERS:
The substance decomposes on heating producing <313353290\toxic and corrosive fumes \including hydrogen bromide, bromine and carbon oxybromide. Reacts with strong oxidants. Attacks many metals in presence of water. Attacks aluminium, zinc and magnesium with formation of pyrophoric compounds, causing fire and explosion hazard.

OCCUPATIONAL EXPOSURE LIMITS:
TLV: 1 ppm as TWA; (skin); A4 (not classifiable as a human carcinogen); (ACGIH 2009).
MAK: skin absorption (H);
Carcinogen category: 3B; BLW issued (DFG 2009).
OSHA PEL†: C 20 ppm (80 mg/m^3) skin
NIOSH REL: Ca See Appendix A
NIOSH IDLH: Ca 250 ppm See: 74839

ROUTES OF EXPOSURE:
The substance can be absorbed into the body by inhalation and through the skin , also as a vapour!

INHALATION RISK:
On loss of containment, a harmful concentration of this gas in the air will be reached very quickly.

EFFECTS OF SHORT-TERM EXPOSURE:
The substance, as a liquid, is severely irritating to the skin and is irritating to the eyes and the respiratory tract. Inhalation may cause lung oedema (see Notes). Rapid evaporation of the liquid may cause frostbite. The substance may cause effects on the central nervous system , and kidneys. The effects may be delayed up to 48 hours. Exposure at high levels may result in death. Medical observation is indicated.

EFFECTS OF LONG-TERM OR REPEATED EXPOSURE:
The substance may have effects on the central nervous system, Animal tests show that this substance possibly causes toxicity to human reproduction or development.

PHYSICAL PROPERTIES

Boiling point: 4°C
Melting point: -94°C
Relative density (water = 1): 1.7 at 0 C
Solubility in water, g/100 ml at 20°C: 1.5
instead of Solubility in water, ml/100 ml at 20°C: 1.5
sister PI suggestion
Vapour pressure, kPa at 20°C: 1893
Relative vapour density (air = 1): 3.3
Flash point: 194°C
Auto-ignition temperature: 537°C
Explosive limits, vol% in air: 10-16
Octanol/water partition coefficient as log Pow: 1.19

The substance is toxic to aquatic organisms. This substance may be hazardous in the environment;

ENVIRONMENTAL DATA	special attention should be given to its impact on the ozone layer. This substance does enter the environment under normal use. Great care, however, should be given to avoid any additional release, e.g. through inappropriate disposal.

N O T E S

Depending on the degree of exposure, periodic medical examination is suggested. The symptoms of lung oedema often do not become manifest until a few hours have passed and they are aggravated by physical effort. Rest and medical observation are therefore essential. Toxic effects on the nervous system may be delayed for several hours Immediate administration of an appropriate inhalation therapy by a doctor or a person authorized by him/her, should be considered. Turn leaking cylinder with the leak up to prevent escape of gas in liquid state. by IPCS Dec 09 - since inhal symptoms mentions delayed effects and these are not just pulmonary

NFPA Code: H 3; F 1; R 0;

ADDITIONAL INFORMATION

ICSC: 0109 **METHYL BROMIDE**

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International Chemical Safety Cards

CARBON TETRACHLORIDE

ICSC: 0024

Tetrachloromethane
Tetrachlorocarbon
Tetra
CCl_4
Molecular mass: 153.8

ICSC # 0024
CAS # 56-23-5
RTECS # FG4900000
UN # 1846
EC # 602-008-00-5
November 04, 2000 Validated

TYPES OF HAZARD/ EXPOSURE	ACUTE HAZARDS/ SYMPTOMS	PREVENTION	FIRST AID/ FIRE FIGHTING
FIRE	Not combustible. Gives off irritating or toxic fumes (or gases) in a fire.		In case of fire in the surroundings: use appropriate extinguishing media.
EXPLOSION			In case of fire: keep drums, etc., cool by spraying with water.
EXPOSURE		AVOID ALL CONTACT!	
•INHALATION	Dizziness. Drowsiness. Headache. Nausea. Vomiting.	Ventilation, local exhaust, or breathing protection.	Fresh air, rest. Artificial respiration may be needed. Refer for medical attention.
•SKIN	MAY BE ABSORBED! Redness. Pain.	Protective gloves. Protective clothing.	Remove contaminated clothes. Rinse skin with plenty of water or shower. Refer for medical attention.
•EYES	Redness. Pain.	Face shield or eye protection in combination with breathing protection.	First rinse with plenty of water for several minutes (remove contact lenses if easily possible), then take to a doctor.
•INGESTION	Abdominal pain. Diarrhoea. (Further see Inhalation).	Do not eat, drink, or smoke during work. Wash hands before eating.	Rinse mouth. Give one or two glasses of water to drink. Refer for medical attention.

SPILLAGE DISPOSAL	STORAGE	PACKAGING & LABELLING
Collect leaking liquid in covered containers. Absorb remaining liquid in sand or inert absorbent and remove to safe place. Do NOT let this chemical enter the environment. Personal protection: complete protective clothing including self-contained breathing apparatus.	Separated from food and feedstuffs , metals (see Chemical Dangers). Ventilation along the floor. Cool.	Unbreakable packaging; put breakable packaging into closed unbreakable container. Do not transport with food and feedstuffs. Marine pollutant. T symbol N symbol R: 23/24/25-40-48/23-52/53-59 S: 1/2-23-36/37-45-59-61 UN Hazard Class: 6.1 UN Packing Group: II

SEE IMPORTANT INFORMATION ON BACK

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ICSC: 0024 OSHA PELs, NIOSH RELs and NIOSH IDLH values.

International Chemical Safety Cards

CARBON TETRACHLORIDE

ICSC: 0024

I M P O R T A N T D A T A

PHYSICAL STATE; APPEARANCE:
COLOURLESS LIQUID , WITH CHARACTERISTIC ODOUR.

PHYSICAL DANGERS:
The vapour is heavier than air.

CHEMICAL DANGERS:
On contact with hot surfaces or flames this substance decomposes forming toxic and corrosive fumes (hydrogen chloride ICSC0163, chlorine fumes ICSC0126, phosgene ICSC0007). Reacts with some metals such as aluminium, magnesium, zinc causing fire and explosion hazard.

OCCUPATIONAL EXPOSURE LIMITS:
TLV: 5 ppm as TWA, 10 ppm as STEL; (skin); A2 (suspected human carcinogen); (ACGIH 2004).
MAK: 0.5 ppm, 3.2 mg/m³;
Peak limitation category: II(2);
skin absorption (H);
Carcinogen category: 4; Pregnancy risk group: C;
(DFG 2006).
OSHA PEL†: TWA 10 ppm C 25 ppm 200 ppm (5-minute maximum peak in any 4 hours)
NIOSH REL: Ca ST 2 ppm (12.6 mg/m^3) 60-minute See Appendix A
NIOSH IDLH: Ca 200 ppm See: 56235

ROUTES OF EXPOSURE:
The substance can be absorbed into the body by inhalation, through the skin and by ingestion.

INHALATION RISK:
A harmful contamination of the air can be reached very quickly on evaporation of this substance at 20°C.

EFFECTS OF SHORT-TERM EXPOSURE:
The substance is irritating to the eyes . The substance may cause effects on the liver , kidneys and central nervous system , resulting in unconsciousness. Medical observation is indicated.

EFFECTS OF LONG-TERM OR REPEATED EXPOSURE:
Repeated or prolonged contact with skin may cause dermatitis. This substance is possibly carcinogenic to humans.

PHYSICAL PROPERTIES

Boiling point: 76.5°C
Melting point: -23°C
Relative density (water = 1): 1.59
Solubility in water, g/100 ml at 20°C: 0.1
poor

Vapour pressure, kPa at 20°C: 12.2
Relative vapour density (air = 1): 5.3
Relative density of the vapour/air-mixture at 20°C (air = 1): 1.5
Octanol/water partition coefficient as log Pow: 2.64

ENVIRONMENTAL DATA

The substance is harmful to aquatic organisms. This substance may be hazardous in the environment; special attention should be given to its impact on the ozone layer.

N O T E S

Use of alcoholic beverages enhances the harmful effect. Depending on the degree of exposure, periodic medical examination is suggested. The odour warning when the exposure limit value is exceeded is insufficient. Do NOT use in the vicinity of a fire or a hot surface, or during welding. Card has been partly updated in April 2005. See sections Occupational Exposure Limits, Emergency Response. Card has been partly updated in October 2006. See sections Occupational Exposure Limits and Ingestion first aid.

Transport Emergency Card: TEC (R)-61S1846

NFPA Code: H 3; F 0; R 0;

ADDITIONAL INFORMATION

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International Chemical Safety Cards

CHLOROBENZENE

ICSC: 0642

Benzene chloride
Chlorobenzol
Phenyl chloride
C_6H_5Cl
Molecular mass: 112.6

ICSC # 0642
CAS # 108-90-7
RTECS # CZ0175000
UN # 1134
EC # 602-033-00-1
November 27, 2003 Peer reviewed

TYPES OF HAZARD/ EXPOSURE	ACUTE HAZARDS/ SYMPTOMS	PREVENTION	FIRST AID/ FIRE FIGHTING
FIRE	Flammable. Gives off irritating or toxic fumes (or gases) in a fire.	NO open flames, NO sparks, and NO smoking.	Powder, water spray, foam, carbon dioxide.
EXPLOSION	Above 27°C explosive vapour/air mixtures may be formed.	Above 27°C use a closed system, ventilation, and explosion-proof electrical equipment.	In case of fire: keep drums, etc., cool by spraying with water.
EXPOSURE			
•INHALATION	Drowsiness. Headache. Nausea. Unconsciousness.	Ventilation, local exhaust, or breathing protection.	Fresh air, rest. Refer for medical attention.
•SKIN	Redness. Dry skin.	Protective gloves.	Refer for medical attention.
•EYES	Redness. Pain.	Safety goggles, or eye protection in combination with breathing protection.	First rinse with plenty of water for several minutes (remove contact lenses if easily possible), then take to a doctor.
•INGESTION	Abdominal pain. (See Inhalation).	Do not eat, drink, or smoke during work.	Rinse mouth. Do NOT induce vomiting. Refer for medical attention.

SPILLAGE DISPOSAL	STORAGE	PACKAGING & LABELLING
Ventilation. Remove all ignition sources. Collect leaking and spilled liquid in sealable containers as far as possible. Absorb remaining liquid in sand or inert absorbent and remove to safe place. Do NOT let this chemical enter the environment. (Extra personal protection: filter respirator for organic gases and vapours.)	Fireproof. Separated from strong oxidants.	Xn symbol N symbol R: 10-20-51/53 S: 2-24/25-61 UN Hazard Class: 3 UN Packing Group: III

SEE IMPORTANT INFORMATION ON BACK

ICSC: 0642

Prepared in the context of cooperation between the International Programme on Chemical Safety & the Commission of the European Communities (C) IPCS CEC 1994. No modifications to the International version have been made except to add the OSHA PELs, NIOSH RELs and NIOSH IDLH values.

International Chemical Safety Cards

CHLOROBENZENE

ICSC: 0642

IMPORTANT DATA	**PHYSICAL STATE; APPEARANCE:** COLOURLESS LIQUID , WITH CHARACTERISTIC ODOUR. **PHYSICAL DANGERS:** **CHEMICAL DANGERS:** The substance decomposes on heating, on contact with hot surfaces or flames producing toxic and corrosive fumes . Reacts violently with strong oxidants causing fire and explosion hazard. Attacks rubber and some plastic. **OCCUPATIONAL EXPOSURE LIMITS:** TLV: 10 ppm as TWA; A3; BEI issued; (ACGIH 2003). MAK: 10 ppm, 47 mg/m³; Peak limitation category: II(2); Pregnancy risk group: C; (DFG 2003). OSHA PEL: TWA 75 ppm (350 mg/m^3) NIOSH REL: See Appendix D NIOSH IDLH: 1000 ppm See: 108907	**ROUTES OF EXPOSURE:** The substance can be absorbed into the body by inhalation of its vapour, through the skin and by ingestion. **INHALATION RISK:** A harmful contamination of the air can be reached rather quickly on evaporation of this substance at 20°C. **EFFECTS OF SHORT-TERM EXPOSURE:** The substance is irritating to the eyes and the skin . If this liquid is swallowed, aspiration into the lungs may result in chemical pneumonitis. The substance may cause effects on the central nervous system , resulting in lowering of consciousness . **EFFECTS OF LONG-TERM OR REPEATED EXPOSURE:** The liquid defats the skin. The substance may have effects on the liver and kidneys .
PHYSICAL PROPERTIES	Boiling point: 132°C Melting point: -45°C Relative density (water = 1): 1.11 Solubility in water, g/100 ml at 20°C: 0.05 Vapour pressure, kPa at 20°C: 1.17 Relative vapour density (air = 1): 3.88	Relative density of the vapour/air-mixture at 20°C (air = 1): 1.03 Flash point: 27°C c.c. Auto-ignition temperature: 590°C Explosive limits, vol% in air: 1.3-11 Octanol/water partition coefficient as log Pow: 2.18-2.84
ENVIRONMENTAL DATA	The substance is harmful to aquatic organisms. It is strongly advised that this substance does not enter the environment.	

N O T E S

Do NOT use in the vicinity of a fire or a hot surface, or during welding.

Transport Emergency Card: TEC (R)-30S1134

NFPA Code: H2; F3; R0;

ADDITIONAL INFORMATION

ICSC: 0642 **CHLOROBENZENE**

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International Chemical Safety Cards

1-CHLOROETHANE

ICSC: 0132

Ethyl chloride
Monochloroethane
C_2H_5Cl / CH_3CH_2Cl
Molecular mass: 64.5
(cylinder)

ICSC # 0132
CAS # 75-00-3
RTECS # KH7525000
UN # 1037
EC # 602-009-00-0
October 04, 2000 Validated

TYPES OF HAZARD/ EXPOSURE	ACUTE HAZARDS/ SYMPTOMS	PREVENTION	FIRST AID/ FIRE FIGHTING
FIRE	Extremely flammable. Gives off irritating or toxic fumes (or gases) in a fire.	NO open flames, NO sparks, and NO smoking.	Shut off supply; if not possible and no risk to surroundings, let the fire burn itself out; in other cases extinguish with powder, carbon dioxide.
EXPLOSION	Gas/air mixtures are explosive.	Closed system, ventilation, explosion-proof electrical equipment and lighting. Prevent build-up of electrostatic charges (e.g., by grounding) if in liquid state. Use non-sparking handtools.	In case of fire: keep cylinder cool by spraying with water.
EXPOSURE		STRICT HYGIENE!	
•INHALATION	Dizziness. Dullness. Headache. Abdominal cramps.	Ventilation, local exhaust, or breathing protection.	Fresh air, rest. Refer for medical attention.
•SKIN	ON CONTACT WITH LIQUID: FROSTBITE.	Cold-insulating gloves. Protective clothing.	ON FROSTBITE: rinse with plenty of water, do NOT remove clothes. Rinse skin with plenty of water or shower. Refer for medical attention.
•EYES	Redness. Pain. Blurred vision.	Face shield or eye protection in combination with breathing protection.	First rinse with plenty of water for several minutes (remove contact lenses if easily possible), then take to a doctor.
•INGESTION		Do not eat, drink, or smoke during work.	

SPILLAGE DISPOSAL	STORAGE	PACKAGING & LABELLING
Evacuate danger area! Consult an expert! Ventilation. Personal protection: self-contained breathing apparatus. Do NOT let this chemical enter the environment.	Fireproof.	Special insulated cylinder. Special fittings. F+ symbol Xn symbol R: 12-40-52/53 S: 2-9-16-33-36/37-61 UN Hazard Class: 2.1

SEE IMPORTANT INFORMATION ON BACK

Prepared in the context of cooperation between the International Programme on Chemical Safety & the Commission of the European Communities (C) IPCS CEC 1994. No modifications to the International version have been made except to add the

OSHA PELs, NIOSH RELs and NIOSH IDLH values.

International Chemical Safety Cards

1-CHLOROETHANE

ICSC: 0132

I M P O R T A N T D A T A

PHYSICAL STATE; APPEARANCE:
COLOURLESS COMPRESSED LIQUEFIED GAS , WITH CHARACTERISTIC ODOUR.

PHYSICAL DANGERS:
The gas is heavier than air and may travel along the ground; distant ignition possible.

CHEMICAL DANGERS:
The substance decomposes on heating or on burning producing toxic gases (hydrogen chloride - see ICSC 0163, phosgene - see ICSC 0007).

OCCUPATIONAL EXPOSURE LIMITS:
TLV: 100 ppm as TWA; (skin); A3 (confirmed animal carcinogen with unknown relevance to humans); (ACGIH 2004).
MAK: skin absorption (H);
Carcinogen category: 3B;
(DFG 2004).
EU OEL: 268 mg/m³; 1200 ppm as TWA (EU 2006).
OSHA PEL: TWA 1000 ppm (2600 mg/m^3)
NIOSH REL: Handle with caution in the workplace. See Appendix C (Chloroethanes)
NIOSH IDLH: 3800 ppm 10%LEL See: 75003

ROUTES OF EXPOSURE:
The substance can be absorbed into the body by inhalation.

INHALATION RISK:
A harmful concentration of this gas in the air will be reached very quickly on loss of containment.

EFFECTS OF SHORT-TERM EXPOSURE:
The substance is mildly irritating to the eyes , the skin and the respiratory tract . Rapid evaporation of the liquid may cause frostbite. The substance may cause effects on the central nervous system . Exposure far above the OEL may result in unconsciousness , cardiac dysrhythmia and death .

EFFECTS OF LONG-TERM OR REPEATED EXPOSURE:

PHYSICAL PROPERTIES

Boiling point: 12.5°C
Melting point: -138°C
Relative density (water = 1): 0.918
Solubility in water, g/100 ml at 20°C: 0.574
Vapour pressure, kPa at 20°C: 133.3
Relative vapour density (air = 1): 2.22

Flash point:
-50°C c.c.
Auto-ignition temperature: 519°C
Explosive limits, vol% in air: 3.6-14.8
Octanol/water partition coefficient as log Pow: 1.54

ENVIRONMENTAL DATA

The substance is harmful to aquatic organisms.

N O T E S

Use of alcoholic beverages enhances the harmful effect. Rinse contaminated clothes (fire hazard) with plenty of water. Do NOT use in the vicinity of a fire or a hot surface, or during welding. Turn leaking cylinder with the leak up to prevent escape of gas in liquid state. Card has been partly updated in April 2005: see sections Occupational Exposure Limits, Emergency Response. Card has been partly updated in October 2006: see section Occupational Exposure Limits.

Transport Emergency Card: TEC (R)-20S1037 or 20G2F

NFPA Code: H 2; F 4; R 0;

ADDITIONAL INFORMATION

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	made to produce the U.S. version is inclusion of the OSHA PELs, NIOSH RELs and NIOSH IDLH values.

International Chemical Safety Cards

CHLOROFORM

ICSC: 0027

Trichloromethane
Methane trichloride
Formyl trichloride
$CHCl_3$
Molecular mass: 119.4

ICSC # 0027
CAS # 67-66-3
RTECS # FS9100000
UN # 1888
EC # 602-006-00-4
November 04, 2000 Validated

TYPES OF HAZARD/ EXPOSURE	ACUTE HAZARDS/ SYMPTOMS	PREVENTION	FIRST AID/ FIRE FIGHTING
FIRE	Not combustible. See Notes. Gives off irritating or toxic fumes (or gases) in a fire.		In case of fire in the surroundings: use appropriate extinguishing media.
EXPLOSION			In case of fire: keep drums, etc., cool by spraying with water.
EXPOSURE		STRICT HYGIENE! AVOID EXPOSURE OF ADOLESCENTS AND CHILDREN!	
•INHALATION	Cough. Dizziness. Drowsiness. Headache. Nausea. Unconsciousness.	Ventilation, local exhaust, or breathing protection.	Fresh air, rest. Artificial respiration may be needed. Refer for medical attention.
•SKIN	Redness. Pain. Dry skin.	Protective gloves. Protective clothing.	Remove contaminated clothes. Rinse skin with plenty of water or shower. Refer for medical attention.
•EYES	Redness. Pain.	Face shield or eye protection in combination with breathing protection.	First rinse with plenty of water for several minutes (remove contact lenses if easily possible), then take to a doctor.
•INGESTION	Abdominal pain. Vomiting. (Further see Inhalation).	Do not eat, drink, or smoke during work.	Rinse mouth. Give plenty of water to drink. Rest. Refer for medical attention.

SPILLAGE DISPOSAL	STORAGE	PACKAGING & LABELLING
Evacuate danger area! Consult an expert! Collect leaking and spilled liquid in sealable containers as far as possible. Absorb remaining liquid in sand or inert absorbent and remove to safe place. Do NOT let this chemical enter the environment. Personal protection: complete protective clothing including self-contained breathing apparatus.	Separated from food and feedstuffs and incompatible materials ,(see Chemical Dangers). Ventilation along the floor.	Unbreakable packaging; put breakable packaging into closed unbreakable container. Do not transport with food and feedstuffs. Xn symbol R: 22-38-40-48/20/22 S: 2-36/37 UN Hazard Class: 6.1 UN Packing Group: III

SEE IMPORTANT INFORMATION ON BACK

Prepared in the context of cooperation between the International Programme on Chemical Safety & the Commission of the

ICSC: 0027

European Communities (C) IPCS CEC 1994. No modifications to the International version have been made except to add the OSHA PELs, NIOSH RELs and NIOSH IDLH values.

International Chemical Safety Cards

CHLOROFORM

ICSC: 0027

I M P O R T A N T D A T A

PHYSICAL STATE; APPEARANCE:
VOLATILE COLOURLESS LIQUID , WITH CHARACTERISTIC ODOUR.

PHYSICAL DANGERS:
The vapour is heavier than air.

CHEMICAL DANGERS:
On contact with hot surfaces or flames this substance decomposes forming toxic and corrosive fumes (hydrogen chloride ICSC0163,phosgene ICSC0007 andchlorine fumes ICSC0126). Reacts violently withstrong bases,strong oxidants, some metals, such as aluminium, magnesium and zinc, causing fire and explosion hazard. Attacks plastic, rubber and coatings.

OCCUPATIONAL EXPOSURE LIMITS:
TLV: 10 ppm as TWA; A3 (confirmed animal carcinogen with unknown relevance to humans); (ACGIH 2004).
MAK: 0.5 ppm, 2.5 mg/m³;
Peak limitation category: II(2);
skin absorption (H);
Carcinogen category: 4; Pregnancy risk group: C;
(DFG 2004).
OSHA PEL†: C 50 ppm (240 mg/m^3)
NIOSH REL: Ca ST 2 ppm (9.78 mg/m^3) 60-minute See Appendix A
NIOSH IDLH: Ca 500 ppm See: 67663

ROUTES OF EXPOSURE:
The substance can be absorbed into the body by inhalation, through the skin and by ingestion.

INHALATION RISK:
A harmful contamination of the air can be reached very quickly on evaporation of this substance at 20°C.

EFFECTS OF SHORT-TERM EXPOSURE:
The substance is irritating to the eyes . The substance may cause effects on the central nervous system , liver and kidneys . The effects may be delayed. Medical observation is indicated.

EFFECTS OF LONG-TERM OR REPEATED EXPOSURE:
The liquid defats the skin. The substance may have effects on the liver and kidneys . This substance is possibly carcinogenic to humans.

PHYSICAL PROPERTIES

Boiling point: 62°C
Melting point: -64°C
Relative density (water = 1): 1.48
Solubility in water, g/100 ml at 20°C: 0.8

Vapour pressure, kPa at 20°C: 21.2
Relative vapour density (air = 1): 4.12
Relative density of the vapour/air-mixture at 20°C (air = 1): 1.7
Octanol/water partition coefficient as log Pow: 1.97

ENVIRONMENTAL DATA

The substance is toxic to aquatic organisms.

N O T E S

Turns combustible on addition of small amounts of a flammable substance or an increase in the oxygen content of the air. Use of alcoholic beverages enhances the harmful effect. Depending on the degree of exposure, periodic medical examination is indicated. The odour warning when the exposure limit value is exceeded is insufficient. Do NOT use in the vicinity of a fire or a hot surface, or during welding. Card has been partly updated in April 2005. See section Occupational Exposure Limits.

Transport Emergency Card: TEC (R)-61S1888

NFPA Code: H 2; F 0; R 0;

ADDITIONAL INFORMATION

ICSC: 0027 **CHLOROFORM**

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International Chemical Safety Cards

METHYL CHLORIDE

ICSC: 0419

Chloromethane
Monochloromethane
CH_3Cl
Molecular mass: 50.5

ICSC # 0419
CAS # 74-87-3
RTECS # PA6300000
UN # 1063
EC # 602-001-00-7
March 25, 1999 Validated

TYPES OF HAZARD/ EXPOSURE	ACUTE HAZARDS/ SYMPTOMS	PREVENTION	FIRST AID/ FIRE FIGHTING
FIRE	Highly flammable. Heating will cause rise in pressure with risk of bursting.	NO open flames, NO sparks, and NO smoking.	Shut off supply; if not possible and no risk to surroundings, let the fire burn itself out; in other cases extinguish with water spray.
EXPLOSION	Gas/air mixtures are explosive.	Closed system, ventilation, explosion-proof electrical equipment and lighting. Use non-sparking handtools.	In case of fire: keep cylinder cool by spraying with water. Combat fire from a sheltered position.
EXPOSURE		STRICT HYGIENE!	
•INHALATION	Staggering gait. Dizziness. Headache. Nausea. Vomiting. Convulsions. Unconsciousness. See Notes.	Ventilation, local exhaust, or breathing protection.	Fresh air, rest. Artificial respiration may be needed. Refer for medical attention.
•SKIN	MAY BE ABSORBED! ON CONTACT WITH LIQUID: FROSTBITE.	Cold-insulating gloves. Protective clothing.	ON FROSTBITE: rinse with plenty of water, do NOT remove clothes.
•EYES	(See Skin).	Safety goggles face shield or eye protection in combination with breathing protection.	
•INGESTION			

SPILLAGE DISPOSAL	STORAGE	PACKAGING & LABELLING
Evacuate danger area! Consult an expert! Ventilation. NEVER direct water jet on liquid. Personal protection: complete protective clothing including self-contained breathing apparatus.	Fireproof. Ventilation along the floor.	F+ symbol Xn symbol R: 12-40-48/20 S: 2-9-16-33 UN Hazard Class: 2.1

SEE IMPORTANT INFORMATION ON BACK

ICSC: 0419

Prepared in the context of cooperation between the International Programme on Chemical Safety & the Commission of the European Communities (C) IPCS CEC 1994. No modifications to the International version have been made except to add the OSHA PELs, NIOSH RELs and NIOSH IDLH values.

International Chemical Safety Cards

METHYL CHLORIDE

ICSC: 0419

IMPORTANT DATA

PHYSICAL STATE; APPEARANCE:
COLOURLESS LIQUEFIED GAS.

PHYSICAL DANGERS:
The gas is heavier than air and may travel along the ground; distant ignition possible, and may accumulate in low ceiling spaces causing deficiency of oxygen. See Notes.

CHEMICAL DANGERS:
The substance decomposes on burning producing toxic and corrosive fumes including hydrogen chloride and phosgene . Reacts violently with powdered aluminium, powdered zinc, aluminium trichloride and ethylene causing fire and explosion hazard. Attacks many metals in the presence of moisture.

OCCUPATIONAL EXPOSURE LIMITS:
TLV: 50 ppm as TWA, 100 ppm as STEL; (skin); A4 (not classifiable as a human carcinogen); (ACGIH 2004).
MAK: 50 ppm 100 mg/m³;
Peak limitation category: II(2);
skin absorption (H);
Carcinogen category: 3B; Pregnancy risk group: B; (DFG 2004).
OSHA PEL†: TWA 100 ppm C 200 ppm 300 ppm (5-minute maximum peak in any 3 hours)
NIOSH REL: Ca See Appendix A
NIOSH IDLH: Ca 2000 ppm See: 74873

ROUTES OF EXPOSURE:
The substance can be absorbed into the body by inhalation and through the skin.

INHALATION RISK:
A harmful concentration of this gas in the air will be reached very quickly on loss of containment.

EFFECTS OF SHORT-TERM EXPOSURE:
The liquid may cause frostbite. The substance may cause effects on the central nervous system . Exposure may result in unconsciousness. Exposure far above the OEL may result in liver, cardiovascular system and kidney damage. Medical observation is indicated.

EFFECTS OF LONG-TERM OR REPEATED EXPOSURE:
The substance may have effects on the central nervous system , resulting in effects measured using behavioural tests. Animal tests show that this substance possibly causes toxic effects upon human reproduction.

PHYSICAL PROPERTIES

Boiling point: -24.2°C
Melting point: -97.6°C
Relative density (water = 1): 0.92
Solubility in water, g/100 ml at 25°C: 0.5
Vapour pressure, kPa at 21°C: 506
Relative vapour density (air = 1): 1.8
Flash point: Flammable Gas
Auto-ignition temperature: 632°C
Explosive limits, vol% in air: 8.1-17.4
Octanol/water partition coefficient as log Pow: 0.91

ENVIRONMENTAL DATA

N O T E S

Following intoxication patient should be observed carefully for 48 hours. Check oxygen content before entering area. Card has been partly updated in October 2005. See sections Occupational Exposure Limits, Emergency Response.

Transport Emergency Card: TEC (R)-20S1063 or 20G2F

NFPA Code: H2; F4; R0;

ADDITIONAL INFORMATION

ICSC: 0419 **METHYL CHLORIDE**

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Material Safety Data Sheet

cis-1,2-Dichloroethylene, 97%

ACC# 97773

Section 1 - Chemical Product and Company Identification

MSDS Name: cis-1,2-Dichloroethylene, 97%
Catalog Numbers: AC113380000, AC113380025, AC113380100
Synonyms: cis-Acetylene dichloride.
Company Identification:

Acros Organics N.V.
One Reagent Lane
Fair Lawn, NJ 07410

For information in North America, call: 800-ACROS-01
For emergencies in the US, call CHEMTREC: 800-424-9300

Section 2 - Composition, Information on Ingredients

CAS#	Chemical Name	Percent	EINECS/ELINCS
156-59-2	cis-1,2-Dichloroethylene	97	205-859-7

Section 3 - Hazards Identification

EMERGENCY OVERVIEW

Appearance: Clear liquid. Flash Point: 6 deg C.
Warning! Flammable liquid and vapor. Harmful if inhaled. Unstabilized substance may polymerize. Causes eye and skin irritation. May be harmful if swallowed. May cause respiratory tract irritation.
Target Organs: Central nervous system, respiratory system, eyes, skin.

Potential Health Effects

Eye: Causes moderate eye irritation.
Skin: Causes moderate skin irritation. May cause dermatitis.
Ingestion: May cause gastrointestinal irritation with nausea, vomiting and diarrhea. May be harmful if swallowed. May cause central nervous system depression.
Inhalation: May cause respiratory tract irritation. May cause narcotic effects in high concentration. Eye irritation, vertigo, and nausea were reported in humans exposed at 2200 ppm.
Chronic: Not available. Some German investigators reported fatty degeneration of the liver upon repeated narcotic doses in rats and

Section 4 - First Aid Measures

Eyes: In case of contact, immediately flush eyes with plenty of water for a t least 15 minutes. Get medical aid.
Skin: In case of contact, flush skin with plenty of water. Remove contaminated clothing and shoes. Get medical aid if irritation develops and persists. Wash clothing before reuse.
Ingestion: If swallowed, do not induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. Get medical aid.
Inhalation: If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical aid.
Notes to Physician: Treat symptomatically and supportively.

Section 5 - Fire Fighting Measures

General Information: As in any fire, wear a self-contained breathing apparatus in pressure-demand, MSHA/NIOSH (approved or equivalent), and full protective gear. Vapors may form an explosive mixture with air. Use water spray to keep fire-exposed containers cool. Flammable liquid and vapor. Fire or excessive heat may result in violent rupture of the container due to bulk polymerization. Vapors are heavier than air and may travel to a source of ignition and flash back. Vapors can spread along the ground and collect in low or confined areas. Hazardous polymerization may occur under fire conditions.
Extinguishing Media: Use water fog, dry chemical, carbon dioxide, or regular foam.
Flash Point: 6 deg C (42.80 deg F)
Autoignition Temperature: 440 deg C (824.00 deg F)
Explosion Limits, Lower:9.70 vol %
Upper: 12.80 vol %
NFPA Rating: (estimated) Health: 2; Flammability: 3; Instability: 2

Section 6 - Accidental Release Measures

General Information: Use proper personal protective equipment as indicated in Section 8.
Spills/Leaks: Absorb spill with inert material (e.g. vermiculite, sand or earth), then place in suitable container. Remove all sources of ignition. Use a spark-proof tool. Provide ventilation.

Section 7 - Handling and Storage

Handling: Wash thoroughly after handling. Remove contaminated clothing and wash before reuse. Ground and bond containers when transferring material. Use spark-proof tools and explosion proof equipment. Avoid contact with eyes, skin, and clothing. Empty containers retain product residue, (liquid and/or vapor), and can be dangerous. Avoid ingestion and inhalation. Do not pressurize, cut, weld, braze, solder, drill, grind, or expose empty containers to heat, sparks or open flames. Use only with adequate ventilation. Pure vapor will be uninhibited and may polymerize in vents or other confined spaces.
Storage: Keep away from sources of ignition. Store in a tightly closed container. Flammables-area. Store protected from light and air.

Section 8 - Exposure Controls, Personal Protection

Engineering Controls: Use process enclosure, local exhaust ventilation, or other engineering controls to control airborne levels below recommended exposure limits. Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower.
Exposure Limits

Chemical Name	ACGIH	NIOSH	OSHA - Final PELs
cis-1,2-Dichloroethylene	200 ppm TWA	none listed	none listed

OSHA Vacated PELs: cis-1,2-Dichloroethylene: No OSHA Vacated PELs are listed for this chemical.
Personal Protective Equipment
Eyes: Wear chemical splash goggles.
Skin: Wear appropriate protective gloves to prevent skin exposure.
Clothing: Wear appropriate protective clothing to prevent skin exposure.
Respirators: Follow the OSHA respirator regulations found in 29 CFR 1910.134 or European Standard EN 149. Use a NIOSH/MSHA or European Standard EN 149 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced.

Section 9 - Physical and Chemical Properties

Physical State: Liquid
Appearance: Clear
Odor: Pleasant odor
pH: Not available.
Vapor Pressure: 201 mm Hg @ 25 deg C
Vapor Density: 3.34 (air=1)
Evaporation Rate: Not available.
Viscosity: Not available.
Boiling Point: 60 deg C @ 760 mm Hg
Freezing/Melting Point:-80 deg C
Decomposition Temperature: Not available.
Solubility: Insoluble.
Specific Gravity/Density:1.2800
Molecular Formula:C2H2Cl2
Molecular Weight:96.94

Section 10 - Stability and Reactivity

Chemical Stability: Stable under normal temperatures and pressures. This material is a monomer and may polymerize under certain conditions if the stabilizer is lost.
Conditions to Avoid: Light, ignition sources, exposure to air, excess heat.
Incompatibilities with Other Materials: Strong oxidizing agents, strong bases, copper.
Hazardous Decomposition Products: Hydrogen chloride, phosgene, carbon monoxide, carbon dioxide.
Hazardous Polymerization: May occur.

Section 11 - Toxicological Information

RTECS#:
CAS# 156-59-2: KV9420000
LD50/LC50:
CAS# 156-59-2:
Inhalation, rat: LC50 = 13700 ppm;
.

Carcinogenicity:
CAS# 156-59-2: Not listed by ACGIH, IARC, NTP, or CA Prop 65.

Epidemiology: No data available.
Teratogenicity: No data available.
Reproductive Effects: No data available.
Mutagenicity: No data available.
Neurotoxicity: No data available.
Other Studies:

Section 12 - Ecological Information

No information available.

Section 13 - Disposal Considerations

Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste. US EPA guidelines for the classification determination are listed in 40 CFR Parts 261.3. Additionally, waste generators must consult state and local hazardous waste regulations to ensure complete and accurate classification.
RCRA P-Series: None listed.
RCRA U-Series: None listed.

Section 14 - Transport Information

	US DOT	Canada TDG
Shipping Name:	DOT regulated - small quantity provisions apply (see 49CFR173.4)	1,2-DICHLOROETHYLENE
Hazard Class:		3
UN Number:		UN1150
Packing Group:		II

Section 15 - Regulatory Information

US FEDERAL

TSCA
CAS# 156-59-2 is listed on the TSCA inventory.
Health & Safety Reporting List
None of the chemicals are on the Health & Safety Reporting List.
Chemical Test Rules
None of the chemicals in this product are under a Chemical Test Rule.
Section 12b
None of the chemicals are listed under TSCA Section 12b.
TSCA Significant New Use Rule
None of the chemicals in this material have a SNUR under TSCA.
CERCLA Hazardous Substances and corresponding RQs
None of the chemicals in this material have an RQ.
SARA Section 302 Extremely Hazardous Substances
None of the chemicals in this product have a TPQ.
Section 313 No chemicals are reportable under Section 313.
Clean Air Act:
This material does not contain any hazardous air pollutants.
This material does not contain any Class 1 Ozone depletors.
This material does not contain any Class 2 Ozone depletors.
Clean Water Act:
None of the chemicals in this product are listed as Hazardous Substances under the CWA.
None of the chemicals in this product are listed as Priority Pollutants under the CWA.
None of the chemicals in this product are listed as Toxic Pollutants under the CWA.
OSHA:
None of the chemicals in this product are considered highly hazardous by OSHA.
STATE
CAS# 156-59-2 can be found on the following state right to know lists: Pennsylvania, Massachusetts.

California Prop 65

California No Significant Risk Level: None of the chemicals in this product are listed.

European / International Regulations
European Labeling in Accordance with EC Directives
Hazard Symbols:
XN F
Risk Phrases:

R 11 Highly flammable.
R 20 Harmful by inhalation.
R 52/53 Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

Safety Phrases:

S 16 Keep away from sources of ignition - No smoking.
S 29 Do not empty into drains.
S 7 Keep container tightly closed.
S 61 Avoid release to the environment. Refer to special instructions /safety data sheets.

WGK (Water Danger/Protection)

CAS# 156-59-2: No information available.

Canada - DSL/NDSL

CAS# 156-59-2 is listed on Canada's NDSL List.

Canada - WHMIS

WHMIS: Not available.

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations and the MSDS contains all of the information required by those regulations.

Canadian Ingredient Disclosure List

Section 16 - Additional Information

MSDS Creation Date: 2/09/1998
Revision #5 Date: 3/16/2007

The information above is believed to be accurate and represents the best information currently available to us. However, we make no warranty of merchantability or any other warranty, express or implied, with respect to such information, and we assume no liability resulting from its use. Users should make their own investigations to determine the suitability of the information for their particular purposes. In no event shall Fisher be liable for any claims, losses, or damages of any third party or for lost profits or any special, indirect, incidental, consequential or exemplary damages, howsoever arising, even if Fisher has been advised of the possibility of such damages.

Material Safety Data Sheet

Version 4.2
Revision Date 04/08/2011
Print Date 12/07/2011

1. PRODUCT AND COMPANY IDENTIFICATION

Product name	:	*cis*-1,3-Dichloropropene
Product Number	:	377414
Brand	:	Aldrich
Supplier	:	Sigma-Aldrich 3050 Spruce Street SAINT LOUIS MO 63103 USA
Telephone	:	+1 800-325-5832
Fax	:	+1 800-325-5052
Emergency Phone # (For both supplier and manufacturer)	:	(314) 776-6555
Preparation Information	:	Sigma-Aldrich Corporation Product Safety - Americas Region 1-800-521-8956

2. HAZARDS IDENTIFICATION

Emergency Overview

OSHA Hazards
Flammable liquid, Toxic by ingestion, Harmful by skin absorption., Skin sensitiser, Irritant

Target Organs

Liver, Kidney

GHS Classification
Flammable liquids (Category 3)
Acute toxicity, Oral (Category 3)
Acute toxicity, Inhalation (Category 4)
Acute toxicity, Dermal (Category 4)
Skin irritation (Category 2)
Eye irritation (Category 2A)
Skin sensitization (Category 1)
Specific target organ toxicity - single exposure (Category 3)
Aspiration hazard (Category 1)
Acute aquatic toxicity (Category 1)

GHS Label elements, including precautionary statements

Pictogram

Signal word Danger

Hazard statement(s)

H226	Flammable liquid and vapour.
H301	Toxic if swallowed.
H304	May be fatal if swallowed and enters airways.
H312 + H332	Harmful in contact with skin or if inhaled.
H315	Causes skin irritation.
H317	May cause an allergic skin reaction.
H319	Causes serious eye irritation.

H335	May cause respiratory irritation.
H400	Very toxic to aquatic life.

Precautionary statement(s)

P261	Avoid breathing dust/ fume/ gas/ mist/ vapours/ spray.
P273	Avoid release to the environment.
P280	Wear protective gloves/ protective clothing.
P301 + P310	IF SWALLOWED: Immediately call a POISON CENTER or doctor/ physician.
P305 + P351 + P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P331	Do NOT induce vomiting.

HMIS Classification

Health hazard:	2
Flammability:	3
Physical hazards:	0

NFPA Rating

Health hazard:	2
Fire:	3
Reactivity Hazard:	0

Potential Health Effects

Inhalation	May be harmful if inhaled. Causes respiratory tract irritation.
Skin	Causes skin irritation.
Eyes	Causes eye irritation.
Ingestion	Toxic if swallowed. Aspiration hazard if swallowed - can enter lungs and cause damage.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Formula : $C_3H_4Cl_2$

Molecular Weight : 110.97 g/mol

CAS-No.	EC-No.	Index-No.	Concentration
(Z)-1,3-Dichloropropene			
10061-01-5	233-195-8	602-030-00-5	-

4. FIRST AID MEASURES

General advice
Consult a physician. Show this safety data sheet to the doctor in attendance.Move out of dangerous area.

If inhaled
If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.

In case of skin contact
Wash off with soap and plenty of water. Take victim immediately to hospital. Consult a physician.

In case of eye contact
Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician.

If swallowed
Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

5. FIRE-FIGHTING MEASURES

Conditions of flammability
Flammable in the presence of a source of ignition when the temperature is above the flash point. Keep away from heat/sparks/open flame/hot surface. No smoking.

Suitable extinguishing media
Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

Special protective equipment for fire-fighters
Wear self contained breathing apparatus for fire fighting if necessary.

Hazardous combustion products
Hazardous decomposition products formed under fire conditions. - Carbon oxides, Hydrogen chloride gas

Further information
Use water spray to cool unopened containers.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions
Wear respiratory protection. Avoid breathing vapors, mist or gas. Ensure adequate ventilation. Remove all sources of ignition. Evacuate personnel to safe areas. Beware of vapours accumulating to form explosive concentrations. Vapours can accumulate in low areas.

Environmental precautions
Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.

Methods and materials for containment and cleaning up
Contain spillage, and then collect with an electrically protected vacuum cleaner or by wet-brushing and place in container for disposal according to local regulations (see section 13).

7. HANDLING AND STORAGE

Precautions for safe handling
Avoid contact with skin and eyes. Avoid inhalation of vapour or mist.
Keep away from sources of ignition - No smoking. Take measures to prevent the build up of electrostatic charge.

Conditions for safe storage
Keep container tightly closed in a dry and well-ventilated place. Containers which are opened must be carefully resealed and kept upright to prevent leakage.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Contains no substances with occupational exposure limit values.

Personal protective equipment

Respiratory protection
Where risk assessment shows air-purifying respirators are appropriate use a full-face respirator with multi-purpose combination (US) or type ABEK (EN 14387) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

Hand protection
Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

Eye protection
Face shield and safety glasses Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

Skin and body protection
Complete suit protecting against chemicals, Flame retardant antistatic protective clothing, The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

Hygiene measures
Avoid contact with skin, eyes and clothing. Wash hands before breaks and immediately after handling the product.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance

Form	liquid
Colour	no data available

Safety data

pH	no data available
Melting point/freezing point	no data available
Boiling point	104 °C (219 °F) - lit.
Flash point	23.9 °C (75.0 °F) - closed cup
Ignition temperature	no data available
Autoignition temperature	no data available
Lower explosion limit	no data available
Upper explosion limit	no data available
Vapour pressure	no data available
Density	1.225 g/cm3 at 25 °C (77 °F)
Water solubility	no data available
Partition coefficient: n-octanol/water	no data available
Relative vapour density	no data available
Odour	no data available
Odour Threshold	no data available
Evaporation rate	no data available

10. STABILITY AND REACTIVITY

Chemical stability
Stable under recommended storage conditions.

Possibility of hazardous reactions

Vapours may form explosive mixture with air.

Conditions to avoid
Heat, flames and sparks.

Materials to avoid
Aluminum, Strong oxidizing agents, Metals, Halogens

Hazardous decomposition products
Other decomposition products - no data available
Hazardous decomposition products formed under fire conditions. - Carbon oxides, Hydrogen chloride gas

11. TOXICOLOGICAL INFORMATION

Acute toxicity

Oral LD50
no data available

Inhalation LC50
Dermal LD50
Other information on acute toxicity

no data available

Skin corrosion/irritation
no data available

Serious eye damage/eye irritation
no data available

Respiratory or skin sensitization
May cause sensitization by skin contact.

The preceding data, or interpretation of data, was determined using Quantitative Structure Activity Relationship (QSAR) modeling.

Germ cell mutagenicity

no data available

Carcinogenicity

This product is or contains a component that has been reported to be possibly carcinogenic based on its IARC, ACGIH, NTP, or EPA classification.

IARC:	No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.
ACGIH:	No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH.
NTP:	No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.
OSHA:	No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

Reproductive toxicity

no data available

Teratogenicity

no data available

Specific target organ toxicity - single exposure (Globally Harmonized System)
May cause respiratory irritation.

Specific target organ toxicity - repeated exposure (Globally Harmonized System)
no data available

Aspiration hazard
The substance or mixture is known to cause human aspiration toxicity hazards or has to be regarded as if it causes a human aspiration toxicity hazard.

Potential health effects

Inhalation	May be harmful if inhaled. Causes respiratory tract irritation.
Ingestion	Toxic if swallowed. Aspiration hazard if swallowed - can enter lungs and cause damage.
Skin	Causes skin irritation.
Eyes	Causes eye irritation.

Signs and Symptoms of Exposure

To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

Synergistic effects
no data available

Additional Information
RTECS: UC8325000

12. ECOLOGICAL INFORMATION

Toxicity

no data available

Persistence and degradability
no data available

Bioaccumulative potential
no data available

Mobility in soil
no data available

PBT and vPvB assessment
no data available

Other adverse effects

An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.

Very toxic to aquatic life.

13. DISPOSAL CONSIDERATIONS

Product
Burn in a chemical incinerator equipped with an afterburner and scrubber but exert extra care in igniting as this material is highly flammable. Offer surplus and non-recyclable solutions to a licensed disposal company. Contact a licensed professional waste disposal service to dispose of this material.

Contaminated packaging
Dispose of as unused product.

14. TRANSPORT INFORMATION

DOT (US)
UN number: 2047 Class: 3 Packing group: II
Proper shipping name: Dichloropropenes
Reportable Quantity (RQ):
Marine pollutant: No
Poison Inhalation Hazard: No

IMDG
UN number: 2047 Class: 3 Packing group: II EMS-No: F-E, S-D
Proper shipping name: DICHLOROPROPENES
Marine pollutant: No

IATA
UN number: 2047 Class: 3 Packing group: II
Proper shipping name: Dichloropropenes

15. REGULATORY INFORMATION

OSHA Hazards
Flammable liquid, Toxic by ingestion, Harmful by skin absorption., Skin sensitiser, Irritant

SARA 302 Components
SARA 302: No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

SARA 313 Components
SARA 313: This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

SARA 311/312 Hazards
Fire Hazard, Acute Health Hazard

Massachusetts Right To Know Components

	CAS-No.	Revision Date
(Z)-1,3-Dichloropropene	10061-01-5	1993-04-24

Pennsylvania Right To Know Components

	CAS-No.	Revision Date
(Z)-1,3-Dichloropropene	10061-01-5	1993-04-24

New Jersey Right To Know Components

	CAS-No.	Revision Date
(Z)-1,3-Dichloropropene	10061-01-5	1993-04-24

California Prop. 65 Components
This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.

16. OTHER INFORMATION

Further information
Copyright 2011 Sigma-Aldrich Co. License granted to make unlimited paper copies for internal use only.
The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. Sigma-Aldrich Co., shall not be held liable for any damage resulting from handling or from contact with the above product. See reverse side of invoice or packing slip for additional terms and conditions of sale.

Material Safety Data Sheet

Version 4.0
Revision Date 07/25/2010
Print Date 12/07/2011

1. PRODUCT AND COMPANY IDENTIFICATION

Product name	:	Dibromochloromethane
Product Number	:	206326
Brand	:	Aldrich
Company	:	Sigma-Aldrich 3050 Spruce Street SAINT LOUIS MO 63103 USA
Telephone	:	+1 800-325-5832
Fax	:	+1 800-325-5052
Emergency Phone #	:	(314) 776-6555

2. HAZARDS IDENTIFICATION

Emergency Overview

OSHA Hazards
Toxic by ingestion

GHS Label elements, including precautionary statements

Pictogram

Signal word Warning

Hazard statement(s)
H302 Harmful if swallowed.

Precautionary statement(s) none

HMIS Classification

Health hazard:	2
Flammability:	0
Physical hazards:	0

NFPA Rating

Health hazard:	2
Fire:	0
Reactivity Hazard:	0

Potential Health Effects

Inhalation	May be harmful if inhaled. May cause respiratory tract irritation.
Skin	May be harmful if absorbed through skin. May cause skin irritation.
Eyes	May cause eye irritation.
Ingestion	Toxic if swallowed.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Synonyms	:	Chlorodibromomethane
Formula	:	$CHBr_2Cl$
Molecular Weight	:	208.28 g/mol

CAS-No.	EC-No.	Index-No.	Concentration
Dibromochloromethane			
124-48-1	204-704-0	-	-

4. FIRST AID MEASURES

General advice
Consult a physician. Show this safety data sheet to the doctor in attendance.Move out of dangerous area.

If inhaled
If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.

In case of skin contact
Wash off with soap and plenty of water. Consult a physician.

In case of eye contact
Flush eyes with water as a precaution.

If swallowed
Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

5. FIRE-FIGHTING MEASURES

Suitable extinguishing media
Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

Special protective equipment for fire-fighters
Wear self contained breathing apparatus for fire fighting if necessary.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions
Use personal protective equipment. Avoid breathing vapors, mist or gas. Ensure adequate ventilation.

Environmental precautions
Do not let product enter drains.

Methods and materials for containment and cleaning up
Soak up with inert absorbent material and dispose of as hazardous waste. Keep in suitable, closed containers for disposal.

7. HANDLING AND STORAGE

Precautions for safe handling
Avoid contact with skin and eyes. Avoid inhalation of vapour or mist.
Normal measures for preventive fire protection.

Conditions for safe storage
Keep container tightly closed in a dry and well-ventilated place. Containers which are opened must be carefully resealed and kept upright to prevent leakage.

Recommended storage temperature: 2 - 8 °C

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Contains no substances with occupational exposure limit values.

Personal protective equipment

Respiratory protection
Where risk assessment shows air-purifying respirators are appropriate use a full-face respirator with multi-purpose combination (US) or type ABEK (EN 14387) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

Hand protection
Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

Eye protection
Face shield and safety glasses Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

Skin and body protection
Complete suit protecting against chemicals, The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

Hygiene measures
Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance

Form	liquid, clear
Colour	light yellow

Safety data

pH	no data available
Melting point	-22 °C (-8 °F) - lit.
Boiling point	119 - 120 °C (246 - 248 °F) at 997 hPa (748 mmHg) - lit.
Flash point	no data available
Ignition temperature	no data available
Lower explosion limit	no data available
Upper explosion limit	no data available
Density	2.451 g/cm3 at 25 °C (77 °F)
Water solubility	no data available

10. STABILITY AND REACTIVITY

Chemical stability
Stable under recommended storage conditions.

Conditions to avoid
no data available

Materials to avoid
Strong bases, Strong oxidizing agents, Magnesium

Hazardous decomposition products
Hazardous decomposition products formed under fire conditions. - Carbon oxides, Hydrogen chloride gas, Hydrogen bromide gas

11. TOXICOLOGICAL INFORMATION

Acute toxicity
LD50 Oral - rat - 370.0 mg/kg
Remarks: Peripheral Nerve and Sensation:Flaccid paralysis without anesthesia (usually neuromuscular blockage). Behavioral:Somnolence (general depressed activity). Behavioral:Tremor.

Skin corrosion/irritation
no data available

Serious eye damage/eye irritation
no data available

Respiratory or skin sensitization
no data available

Germ cell mutagenicity

no data available

Carcinogenicity

This product is or contains a component that is not classifiable as to its carcinogenicity based on its IARC, ACGIH, NTP, or EPA classification.

IARC: No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

ACGIH: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH.

NTP: No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

OSHA: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

Reproductive toxicity

no data available

Specific target organ toxicity - single exposure (Globally Harmonized System)
no data available

Specific target organ toxicity - repeated exposure (Globally Harmonized System)
no data available

Aspiration hazard
no data available

Potential health effects

Inhalation	May be harmful if inhaled. May cause respiratory tract irritation.
Ingestion	Toxic if swallowed.
Skin	May be harmful if absorbed through skin. May cause skin irritation.
Eyes	May cause eye irritation.

Signs and Symptoms of Exposure
prolonged or repeated exposure can cause:, Nausea, Dizziness, Headache, narcosis

Additional Information
RTECS: PA6360000

12. ECOLOGICAL INFORMATION

Toxicity

Toxicity to fish	LC50 - Cyprinus carpio (Carp) - 34 mg/l - 5 d

Persistence and degradability
no data available

Bioaccumulative potential
no data available

Mobility in soil
no data available

PBT and vPvB assessment
no data available

Other adverse effects

no data available

13. DISPOSAL CONSIDERATIONS

Product
Offer surplus and non-recyclable solutions to a licensed disposal company. Contact a licensed professional waste disposal service to dispose of this material. Dissolve or mix the material with a combustible solvent and burn in a chemical incinerator equipped with an afterburner and scrubber.

Contaminated packaging
Dispose of as unused product.

14. TRANSPORT INFORMATION

DOT (US)
UN-Number: 3082 Class: 9 Packing group: III
Proper shipping name: Environmentally hazardous substances, liquid, n.o.s. (Dibromochloromethane)
Reportable Quantity (RQ): 100 lbs
Marine pollutant: No
Poison Inhalation Hazard: No

IMDG
Not dangerous goods

IATA
Not dangerous goods

15. REGULATORY INFORMATION

OSHA Hazards
Toxic by ingestion

DSL Status
This product contains the following components listed on the Canadian NDSL list. All other components are on the Canadian DSL list.

	CAS-No.
Dibromochloromethane	124-48-1

SARA 302 Components
SARA 302: No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

SARA 313 Components
SARA 313: This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

SARA 311/312 Hazards
Acute Health Hazard

Massachusetts Right To Know Components

	CAS-No.	Revision Date
Dibromochloromethane	124-48-1	2007-03-01

Pennsylvania Right To Know Components

	CAS-No.	Revision Date
Dibromochloromethane	124-48-1	2007-03-01

New Jersey Right To Know Components

	CAS-No.	Revision Date
Dibromochloromethane	124-48-1	2007-03-01

California Prop. 65 Components
This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.

16. OTHER INFORMATION

Further information
Copyright 2010 Sigma-Aldrich Co. License granted to make unlimited paper copies for internal use only.

The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. Sigma-Aldrich Co., shall not be held liable for any damage resulting from handling or from contact with the above product. See reverse side of invoice or packing slip for additional terms and conditions of sale.

International Chemical Safety Cards

DIBROMOMETHANE

ICSC: 0354

Methylene bromide
Methylene dibromide
CH_2Br_2
Molecular mass: 173.8

ICSC # 0354
CAS # 74-95-3
RTECS # PA7350000
UN # 2664
EC # 602-003-00-8
October 27, 1995 Validated

TYPES OF HAZARD/ EXPOSURE	ACUTE HAZARDS/ SYMPTOMS	PREVENTION	FIRST AID/ FIRE FIGHTING
FIRE	Not combustible.		In case of fire in the surroundings: use appropriate extinguishing media.
EXPLOSION			In case of fire: keep drums, etc., cool by spraying with water.
EXPOSURE		PREVENT GENERATION OF MISTS!	
•INHALATION	Dizziness. Drowsiness. Headache. Nausea.	Ventilation, local exhaust, or breathing protection.	Fresh air, rest. Artificial respiration may be needed. Refer for medical attention.
•SKIN	Dry skin. Redness.	Protective gloves.	Remove contaminated clothes. Rinse skin with plenty of water or shower.
•EYES	Redness.	Safety spectacles or eye protection in combination with breathing protection.	First rinse with plenty of water for several minutes (remove contact lenses if easily possible), then take to a doctor.
•INGESTION	(Further see Inhalation).	Do not eat, drink, or smoke during work.	Rinse mouth. Do NOT induce vomiting. Refer for medical attention.

SPILLAGE DISPOSAL	STORAGE	PACKAGING & LABELLING
Collect leaking and spilled liquid in sealable, non-aluminium containers as far as possible. Absorb remaining liquid in sand or inert absorbent and remove to safe place. Do NOT wash away into sewer. Personal protection: A filter respirator for organic gases and vapours.	Separated from food and feedstuffs . Ventilation along the floor.	Do not transport with food and feedstuffs. Xn symbol R: 20-52/53 S: 2-24-61 UN Hazard Class: 6.1 UN Packing Group: III

SEE IMPORTANT INFORMATION ON BACK

ICSC: 0354

Prepared in the context of cooperation between the International Programme on Chemical Safety & the Commission of the European Communities (C) IPCS CEC 1994. No modifications to the International version have been made except to add the OSHA PELs, NIOSH RELs and NIOSH IDLH values.

International Chemical Safety Cards

DIBROMOMETHANE

ICSC: 0354

IMPORTANT DATA

PHYSICAL STATE; APPEARANCE:
COLOURLESS LIQUID.

PHYSICAL DANGERS:
The vapour is heavier than air.

CHEMICAL DANGERS:
The substance decomposes on heating, on burning or on contact with hot surfaces producing toxic and irritating fumes including hydrogen bromide .

OCCUPATIONAL EXPOSURE LIMITS:
TLV not established.

ROUTES OF EXPOSURE:
The substance can be absorbed into the body by inhalation.

INHALATION RISK:
A harmful contamination of the air can be reached very quickly on evaporation of this substance at 20°C.

EFFECTS OF SHORT-TERM EXPOSURE:
The substance may cause effects on the nervous system and blood , resulting in impaired functions and formation of carboxyhaemoglobinemia. Exposure could cause lowering of consciousness.

EFFECTS OF LONG-TERM OR REPEATED EXPOSURE:
The liquid defats the skin. The substance may have effects on the liver and kidneys.

PHYSICAL PROPERTIES

Boiling point: 97°C
Melting point: -52.7°C
Relative density (water = 1): 2.5
Solubility in water, g/100 ml at 15°C: 1.2
Vapour pressure, kPa at 20°C: 5
Relative vapour density (air = 1): 6.0
Relative density of the vapour/air-mixture at 20°C (air = 1): 1.25

ENVIRONMENTAL DATA

NOTES

Do NOT use in the vicinity of a fire or a hot surface, or during welding. Card has been partly updated in October 2005. See sections Occupational Exposure Limits, EU classification, Emergency Response.

Transport Emergency Card: TEC (R)-61GT1-III

ADDITIONAL INFORMATION

ICSC: 0354 **DIBROMOMETHANE**

(C) IPCS, CEC, 1994

IMPORTANT LEGAL NOTICE: Neither NIOSH, the CEC or the IPCS nor any person acting on behalf of NIOSH, the CEC or the IPCS is responsible for the use which might be made of this information. This card contains the collective views of the IPCS Peer Review Committee and may not reflect in all cases all the detailed requirements included in national legislation on the subject. The user should verify compliance of the cards with the relevant legislation in the country of use. The only modifications made to produce the U.S. version is inclusion of the OSHA PELs, NIOSH RELs and NIOSH IDLH values.

International Chemical Safety Cards

DICHLORODIFLUOROMETHANE

ICSC: 0048

Difluorodichloromethane
R 12
CFC 12
CCl_2F_2
Molecular mass: 120.9
(cylinder)

ICSC # 0048
CAS # 75-71-8
RTECS # PA8200000
UN # 1028
July 03, 2002 Validated

TYPES OF HAZARD/ EXPOSURE	ACUTE HAZARDS/ SYMPTOMS	PREVENTION	FIRST AID/ FIRE FIGHTING
FIRE	Not combustible. Gives off irritating or toxic fumes (or gases) in a fire.		In case of fire in the surroundings: use appropriate extinguishing media.
EXPLOSION			In case of fire: keep cylinder cool by spraying with water.
EXPOSURE			
•INHALATION	Cardiac arrhythmia. Confusion. Drowsiness. Unconsciousness.	Ventilation, local exhaust, or breathing protection.	Fresh air, rest. Artificial respiration may be needed. Refer for medical attention.
•SKIN	ON CONTACT WITH LIQUID: FROSTBITE.	Cold-insulating gloves.	ON FROSTBITE: rinse with plenty of water, do NOT remove clothes. Refer for medical attention.
•EYES	Redness. Pain.	Safety goggles.	First rinse with plenty of water for several minutes (remove contact lenses if easily possible), then take to a doctor.
•INGESTION		Do not eat, drink, or smoke during work.	

SPILLAGE DISPOSAL	STORAGE	PACKAGING & LABELLING
Ventilation.	Separated from incompatible materials . See Chemical Dangers. Cool. Ventilation along the floor.	Special insulated cylinder. UN Hazard Class: 2.2

SEE IMPORTANT INFORMATION ON BACK

ICSC: 0048

Prepared in the context of cooperation between the International Programme on Chemical Safety & the Commission of the European Communities (C) IPCS CEC 1994. No modifications to the International version have been made except to add the OSHA PELs, NIOSH RELs and NIOSH IDLH values.

International Chemical Safety Cards

DICHLORODIFLUOROMETHANE

ICSC: 0048

IMPORTANT DATA	**PHYSICAL STATE; APPEARANCE:** COLOURLESS COMPRESSED LIQUEFIED GAS , WITH CHARACTERISTIC ODOUR. **PHYSICAL DANGERS:** The gas is heavier than air and may accumulate in low ceiling spaces causing deficiency of oxygen. **CHEMICAL DANGERS:** On contact with hot surfaces or flames this substance decomposes forming toxic and corrosive gases(hydrogen chloride ICSC 0163,phosgene ICSC 0007,hydrogen fluoride ICSC 0283,carbonyl fluoride ICSC 0633). Reacts violently with metals such as zinc and powdered aluminium . Attacks magnesium and its alloys. **OCCUPATIONAL EXPOSURE LIMITS:** TLV: 1000 ppm as TWA A4 (ACGIH 2001). MAK: 1000 ppm; 5000 mg/m³; IV, C (DFG 2001). OSHA PEL: TWA 1000 ppm (4950 mg/m^3) NIOSH REL: TWA 1000 ppm (4950 mg/m^3) NIOSH IDLH: 15,000 ppm See: 75718 **ROUTES OF EXPOSURE:** The substance can be absorbed into the body by inhalation. **INHALATION RISK:** On loss of containment this liquid evaporates very quickly displacing the air and causing a serious risk of suffocation when in confined areas. **EFFECTS OF SHORT-TERM EXPOSURE:** Rapid evaporation of the liquid may cause frostbite. The substance may cause effects on the cardiovascular system and central nervous system , resulting in cardiac disorders and central nervous system depression. Exposure could cause lowering of consciousness. See Notes. **EFFECTS OF LONG-TERM OR REPEATED EXPOSURE:**
PHYSICAL PROPERTIES	Boiling point: -30°C Melting point: -158°C Relative density (water = 1): 1.5 Solubility in water, g/100 ml at 20°C: 0.03 Vapour pressure, kPa at 20°C: 568 Relative vapour density (air = 1): 4.2 Octanol/water partition coefficient as log Pow: 2.16
ENVIRONMENTAL DATA	This substance may be hazardous to the environment; special attention should be given to its impact on the ozone layer.

N O T E S

High concentrations in the air cause a deficiency of oxygen with the risk of unconsciousness or death. Check oxygen content before entering area. The odour warning when the exposure limit value is exceeded is insufficient. Do NOT use in the vicinity of a fire or a hot surface, or during welding. Turn leaking cylinder with the leak up to prevent escape of gas in liquid state. Freon 12, Frigen 12, Halon 122 are trade names.

Transport Emergency Card: TEC (R)-20G2A

ADDITIONAL INFORMATION

ICSC: 0048 **DICHLORODIFLUOROMETHANE**

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International Chemical Safety Cards

ETHYLBENZENE

ICSC: 0268

Ethylbenzol
Phenylethane
EB
C_8H_{10} / $C_6H_5C_2H_5$
Molecular mass: 106.2

ICSC # 0268
CAS # 100-41-4
RTECS # DA0700000
UN # 1175
EC # 601-023-00-4
March 13, 1995 Validated

TYPES OF HAZARD/ EXPOSURE	ACUTE HAZARDS/ SYMPTOMS	PREVENTION	FIRST AID/ FIRE FIGHTING
FIRE	Highly flammable.	NO open flames, NO sparks, and NO smoking.	Powder, AFFF, foam, carbon dioxide.
EXPLOSION	Vapour/air mixtures are explosive.	Closed system, ventilation, explosion-proof electrical equipment and lighting. Do NOT use compressed air for filling, discharging, or handling.	In case of fire: keep drums, etc., cool by spraying with water.
EXPOSURE		PREVENT GENERATION OF MISTS!	
•**INHALATION**	Cough. Dizziness. Drowsiness. Headache.	Ventilation, local exhaust, or breathing protection.	Fresh air, rest. Refer for medical attention.
•**SKIN**	Dry skin. Redness.	Protective gloves.	Remove contaminated clothes. Rinse and then wash skin with water and soap.
•**EYES**	Redness. Pain. Blurred vision.	Face shield or eye protection in combination with breathing protection.	First rinse with plenty of water for several minutes (remove contact lenses if easily possible), then take to a doctor.
•**INGESTION**	(Further see Inhalation).	Do not eat, drink, or smoke during work.	Rinse mouth. Give a slurry of activated charcoal in water to drink. Refer for medical attention.

SPILLAGE DISPOSAL	STORAGE	PACKAGING & LABELLING
Ventilation. Collect leaking liquid in covered containers. Absorb remaining liquid in sand or inert absorbent and remove to safe place. Do NOT wash away into sewer. Personal protection: A filter respirator for organic gases and vapours.	Fireproof. Separated from strong oxidants.	F symbol Xn symbol R: 11-20 S: 2-16-24/25-29 UN Hazard Class: 3 UN Packing Group: II

SEE IMPORTANT INFORMATION ON BACK

ICSC: 0268

Prepared in the context of cooperation between the International Programme on Chemical Safety & the Commission of the European Communities (C) IPCS CEC 1994. No modifications to the International version have been made except to add the OSHA PELs, NIOSH RELs and NIOSH IDLH values.

International Chemical Safety Cards

ETHYLBENZENE

ICSC: 0268

IMPORTANT DATA	**PHYSICAL STATE; APPEARANCE:** COLOURLESS LIQUID , WITH AROMATIC ODOUR. **PHYSICAL DANGERS:** The vapour mixes well with air, explosive mixtures are easily formed. **CHEMICAL DANGERS:** Reacts with strong oxidants. Attacks plastic and rubber. **OCCUPATIONAL EXPOSURE LIMITS:** TLV: 100 ppm as TWA 125 ppm as STEL A3 (confirmed animal carcinogen with unknown relevance to humans); BEI issued (ACGIH 2005). MAK: skin absorption (H); Carcinogen category: 3A; (DFG 2004). OSHA PEL†: TWA 100 ppm (435 mg/m^3) NIOSH REL: TWA 100 ppm (435 mg/m^3) ST 125 ppm (545 mg/m^3) NIOSH IDLH: 800 ppm 10%LEL See: 100414	**ROUTES OF EXPOSURE:** The substance can be absorbed into the body by inhalation of its vapour, through the skin and by ingestion. **INHALATION RISK:** A harmful contamination of the air will be reached rather slowly on evaporation of this substance at 20°C. **EFFECTS OF SHORT-TERM EXPOSURE:** The substance is irritating to the eyes the skin and the respiratory tract Swallowing the liquid may cause aspiration into the lungs with the risk of chemical pneumonitis. The substance may cause effects on the central nervous system Exposure far above the OEL could cause lowering of consciousness. **EFFECTS OF LONG-TERM OR REPEATED EXPOSURE:** Repeated or prolonged contact with skin may cause dermatitis.
PHYSICAL PROPERTIES	Boiling point: 136°C Melting point: -95°C Relative density (water = 1): 0.9 Solubility in water, g/100 ml at 20°C: 0.015 Vapour pressure, kPa at 20°C: 0.9 Relative vapour density (air = 1): 3.7	Relative density of the vapour/air-mixture at 20°C (air = 1): 1.02 Flash point: 18°C c.c. Auto-ignition temperature: 432°C Explosive limits, vol% in air: 1.0-6.7 Octanol/water partition coefficient as log Pow: 3.2
ENVIRONMENTAL DATA	The substance is harmful to aquatic organisms.	

N O T E S

The odour warning when the exposure limit value is exceeded is insufficient.

Transport Emergency Card: TEC (R)-30S1175 or 30GF1-I+II
NFPA Code: H2; F3; R0

ADDITIONAL INFORMATION

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International Chemical Safety Cards

HEXACHLOROBUTADIENE

ICSC: 0896

1,1,2,3,4,4-Hexachloro-1,3-butadiene
Perchlorobutadiene
C_4Cl_6 / CCl_2=CClCCl=CCl_2
Molecular mass: 260.8

ICSC # 0896
CAS # 87-68-3
RTECS # EJ0700000
UN # 2279
August 10, 1997 Validated

TYPES OF HAZARD/ EXPOSURE	ACUTE HAZARDS/ SYMPTOMS	PREVENTION	FIRST AID/ FIRE FIGHTING
FIRE	Combustible. Gives off irritating or toxic fumes (or gases) in a fire.	NO open flames.	Powder, water spray, foam, carbon dioxide.
EXPLOSION			In case of fire: keep drums, etc., cool by spraying with water.
EXPOSURE		AVOID ALL CONTACT!	
•INHALATION	Burning sensation. Cough. Sore throat. Symptoms may be delayed (see Notes). Coma.	Ventilation, local exhaust, or breathing protection.	Fresh air, rest. Refer for medical attention.
•SKIN	MAY BE ABSORBED! Pain. Redness. Blisters. Skin burns.	Protective gloves. Protective clothing.	Remove contaminated clothes. Rinse skin with plenty of water or shower. Refer for medical attention.
•EYES	Pain. Redness. Severe deep burns. Loss of vision.	Face shield, or eye protection in combination with breathing protection.	First rinse with plenty of water for several minutes (remove contact lenses if easily possible), then take to a doctor.
•INGESTION	Burning sensation. Abdominal pain. Shock or collapse.	Do not eat, drink, or smoke during work.	Rinse mouth. Do NOT induce vomiting. Give one or two glasses of water to drink. Refer for medical attention.

SPILLAGE DISPOSAL	STORAGE	PACKAGING & LABELLING
Collect leaking and spilled liquid in sealable containers as far as possible. Absorb remaining liquid in sand or inert absorbent and remove to safe place. Do NOT let this chemical enter the environment. (Extra personal protection: complete protective clothing including self-contained breathing apparatus).	Separated from food and feedstuffs. Well closed. Ventilation along the floor. Store in an area without drain or sewer access. Provision to contain effluent from fire extinguishing.	Do not transport with food and feedstuffs. Severe marine pollutant. UN Hazard Class: 6.1 UN Packing Group: III

SEE IMPORTANT INFORMATION ON BACK

ICSC: 0896

Prepared in the context of cooperation between the International Programme on Chemical Safety & the Commission of the European Communities (C) IPCS CEC 1994. No modifications to the International version have been made except to add the OSHA PELs, NIOSH RELs and NIOSH IDLH values.

International Chemical Safety Cards

HEXACHLOROBUTADIENE

ICSC: 0896

IMPORTANT DATA

PHYSICAL STATE; APPEARANCE:
COLOURLESS LIQUID , WITH CHARACTERISTIC ODOUR.

PHYSICAL DANGERS:

CHEMICAL DANGERS:
The substance decomposes on burning producing toxic and corrosive fumes including hydrogen chloride and phosgene. Attacks rubber and some forms of plastic.

OCCUPATIONAL EXPOSURE LIMITS:
TLV (as TWA): 0.02 ppm; 0.21 mg/m³ A3 (skin) (ACGIH 1997).
MAK: skin absorption (H);
Carcinogen category: 3B
(DFG 2008).
OSHA PEL†: none
NIOSH REL: Ca TWA 0.02 ppm (0.24 mg/m^3) skin See Appendix A
NIOSH IDLH: Ca N.D. See: IDLH INDEX

ROUTES OF EXPOSURE:
The substance can be absorbed into the body by inhalation of its vapour, through the skin and by ingestion.

INHALATION RISK:
A harmful contamination of the air can be reached rather quickly on evaporation of this substance at 20°C.

EFFECTS OF SHORT-TERM EXPOSURE:
The vapour irritates the eyes, the skin and the respiratory tract. The liquid is corrosive. The substance may cause effects on the kidneys.

EFFECTS OF LONG-TERM OR REPEATED EXPOSURE:
Repeated or prolonged contact may cause skin sensitization. May cause genetic damage in humans.

PHYSICAL PROPERTIES

Boiling point: 212°C
Melting point: -18°C
Relative density (water = 1): 1.68
Solubility in water: none
Vapour pressure, Pa at 20°C: 20

Relative vapour density (air = 1): 9.0
Relative density of the vapour/air-mixture at 20°C (air = 1): 1.00
Flash point: 90°C
Auto-ignition temperature: 610°C
Octanol/water partition coefficient as log Pow: 4.90

ENVIRONMENTAL DATA

The substance is toxic to aquatic organisms. In the food chain important to humans, bioaccumulation takes place, specifically in fish. The substance may cause long-term effects in the aquatic environment.

NOTES

Transport Emergency Card: TEC (R)-613

NFPA Code: H2; F1; R1;
Card has been partially updated in November 2008: see Occupational Exposure Limits,

ADDITIONAL INFORMATION

ICSC: 0896 **HEXACHLOROBUTADIENE**

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International Chemical Safety Cards

CUMENE

ICSC: 0170

(1-Methylethyl)benzene
2-Phenylpropane
Isopropylbenzene
C_9H_{12} / $C_6H_5CH(CH_3)_2$
Molecular mass: 120.2

ICSC # 0170
CAS # 98-82-8
RTECS # GR8575000
UN # 1918
EC # 601-024-00-X
April 13, 2000 Peer reviewed

TYPES OF HAZARD/ EXPOSURE	ACUTE HAZARDS/ SYMPTOMS	PREVENTION	FIRST AID/ FIRE FIGHTING
FIRE	Flammable.	NO open flames, NO sparks, and NO smoking.	Powder, AFFF, foam, carbon dioxide.
EXPLOSION	Above 31°C explosive vapour/air mixtures may be formed.	Above 31°C use a closed system, ventilation, and explosion-proof electrical equipment. Prevent build-up of electrostatic charges (e.g., by grounding).	In case of fire: keep drums, etc., cool by spraying with water.
EXPOSURE		PREVENT GENERATION OF MISTS!	
•INHALATION	Dizziness. Ataxia. Drowsiness. Headache. Unconsciousness.	Ventilation, local exhaust, or breathing protection.	Fresh air, rest. Refer for medical attention.
•SKIN	Dry skin.	Protective gloves. Protective clothing.	Remove contaminated clothes. Rinse and then wash skin with water and soap.
•EYES	Redness. Pain.	Safety spectacles.	First rinse with plenty of water for several minutes (remove contact lenses if easily possible), then take to a doctor.
•INGESTION	(See Inhalation).	Do not eat, drink, or smoke during work.	Rinse mouth. Do NOT induce vomiting. Refer for medical attention.

SPILLAGE DISPOSAL	STORAGE	PACKAGING & LABELLING
Collect leaking and spilled liquid in sealable containers as far as possible. Absorb remaining liquid in sand or inert absorbent and remove to safe place. Do NOT let this chemical enter the environment. Personal protection: filter respirator for organic gases and vapours.	Fireproof. Separated from strong oxidants, acids. Cool. Keep in the dark. Store only if stabilized.	Marine pollutant. Note: C Xn symbol N symbol R: 10-37-51/53-65 S: 2-24-37-61-62 UN Hazard Class: 3 UN Packing Group: III

SEE IMPORTANT INFORMATION ON BACK

ICSC: 0170

Prepared in the context of cooperation between the International Programme on Chemical Safety & the Commission of the European Communities (C) IPCS CEC 1994. No modifications to the International version have been made except to add the OSHA PELs, NIOSH RELs and NIOSH IDLH values.

International Chemical Safety Cards

CUMENE

ICSC: 0170

IMPORTANT DATA	**PHYSICAL STATE; APPEARANCE:** COLOURLESS LIQUID , WITH CHARACTERISTIC ODOUR. **PHYSICAL DANGERS:** As a result of flow, agitation, etc., electrostatic charges can be generated. **CHEMICAL DANGERS:** Reacts violently with acids and strong oxidants causing fire and explosion hazard. The substance can form explosive peroxides. **OCCUPATIONAL EXPOSURE LIMITS:** TLV: 50 ppm as TWA (ACGIH 2004). MAK: 50 ppm 250 mg/m³ Peak limitation category: II(4); skin absorption (H); Pregnancy risk group: C; (DFG 2004). OSHA PEL: TWA 50 ppm (245 mg/m^3) skin NIOSH REL: TWA 50 ppm (245 mg/m^3) skin NIOSH IDLH: 900 ppm 10%LEL See: 98828 **ROUTES OF EXPOSURE:** The substance can be absorbed into the body by inhalation and through the skin. **INHALATION RISK:** A harmful contamination of the air will be reached rather slowly on evaporation of this substance at 20°C. **EFFECTS OF SHORT-TERM EXPOSURE:** The substance is irritating to the eyes and the skin Swallowing the liquid may cause aspiration into the lungs with the risk of chemical pneumonitis. The substance may cause effects on the central nervous system Exposure far above the OEL may result in unconsciousness. **EFFECTS OF LONG-TERM OR REPEATED EXPOSURE:** Repeated or prolonged contact with skin may cause dermatitis.
PHYSICAL PROPERTIES	Boiling point: 152°C Melting point: -96°C Relative density (water = 1): 0.90 Solubility in water: none Vapour pressure, Pa at 20°C: 427 Relative vapour density (air = 1): 4.2 Relative density of the vapour/air-mixture at 20°C (air = 1): 1.01 Flash point: 31°C c.c. Auto-ignition temperature: 420°C Explosive limits, vol% in air: 0.9-6.5 Octanol/water partition coefficient as log Pow: 3.66
ENVIRONMENTAL DATA	The substance is toxic to aquatic organisms.

N O T E S

Check for peroxides prior to distillation; eliminate if found.

Transport Emergency Card: TEC (R)-30S1918 or 30GF1-III
NFPA Code: H2; F3; R1

ADDITIONAL INFORMATION

ICSC: 0170 **CUMENE**

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International Chemical Safety Cards

METHYL TERT-BUTYL ETHER

ICSC: 1164

tert-Butyl methyl ether
MTBE
Methyl-1,1-dimethylethyl ether
2-Methoxy-2-methyl propane
$(CH_3)_3COCH_3$ / $C_5H_{12}O$
Molecular mass: 88.2

ICSC # 1164
CAS # 1634-04-4
RTECS # KN5250000
UN # 2398
EC # 603-181-00-X
November 04, 2000 Validated

TYPES OF HAZARD/ EXPOSURE	ACUTE HAZARDS/ SYMPTOMS	PREVENTION	FIRST AID/ FIRE FIGHTING
FIRE	Highly flammable.	NO open flames, NO sparks, and NO smoking. NO contact with oxidants.	Powder, AFFF, foam, carbon dioxide.
EXPLOSION	Vapour/air mixtures are explosive.	Closed system, ventilation, explosion-proof electrical equipment and lighting. Do NOT use compressed air for filling, discharging, or handling.	In case of fire: keep drums, etc., cool by spraying with water.
EXPOSURE			
•INHALATION	Drowsiness. Dizziness. Headache. Weakness. Unconsciousness.	Ventilation, local exhaust, or breathing protection.	Fresh air, rest. Artificial respiration may be needed. Refer for medical attention.
•SKIN	Dry skin. Redness.	Protective gloves.	Remove contaminated clothes. Rinse and then wash skin with water and soap.
•EYES	Redness.	Safety goggles or face shield.	First rinse with plenty of water for several minutes (remove contact lenses if easily possible), then take to a doctor.
•INGESTION	Abdominal pain. Nausea. Vomiting. (Further see Inhalation).	Do not eat, drink, or smoke during work.	Rinse mouth. Give a slurry of activated charcoal in water to drink. Do NOT induce vomiting. Refer for medical attention.

SPILLAGE DISPOSAL	STORAGE	PACKAGING & LABELLING
Remove all ignition sources. Collect leaking and spilled liquid in sealable containers as far as possible. Absorb remaining liquid in sand or inert absorbent and remove to safe place. Do NOT wash away into sewer. Personal protection: filter respirator for organic gases and vapours.	Fireproof. Separated from strong oxidants, strong acids.	F symbol Xi symbol R: 11-38 S: 2-9-16-24 UN Hazard Class: 3 UN Packing Group: II

SEE IMPORTANT INFORMATION ON BACK

ICSC: 1164

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International Chemical Safety Cards

METHYL TERT-BUTYL ETHER

ICSC: 1164

I M P O R T A N T D A T A

PHYSICAL STATE; APPEARANCE:
COLOURLESS LIQUID , WITH CHARACTERISTIC ODOUR.

PHYSICAL DANGERS:
The vapour is heavier than air and may travel along the ground; distant ignition possible.

CHEMICAL DANGERS:
Reacts violently with strong oxidants causing fire hazard. The substance decomposes on contact with acids.

OCCUPATIONAL EXPOSURE LIMITS:
TLV: 50 ppm as TWA; A3; (ACGIH 2004).
MAK: 50 ppm, 180 mg/m³;
Peak limitation category: I(1.5); Carcinogen category: 3B; Pregnancy risk group: C;
(DFG 2004).

ROUTES OF EXPOSURE:
The substance can be absorbed into the body by inhalation and by ingestion.

INHALATION RISK:
A harmful contamination of the air can be reached rather quickly on evaporation of this substance at 20°C.

EFFECTS OF SHORT-TERM EXPOSURE:
The substance is irritating to the skin. If this liquid is swallowed, aspiration into the lungs may result in chemical pneumonitis. Exposure far above the OEL could cause lowering of consciousness.

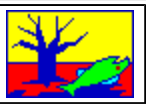
EFFECTS OF LONG-TERM OR REPEATED EXPOSURE:

PHYSICAL PROPERTIES

Boiling point: 55°C
Melting point: -109°C
Relative density (water = 1): 0.7
Solubility in water, g/100 ml at 20°C: 4.2
Vapour pressure, kPa at 20°C: 27
Relative vapour density (air = 1): 3.0
Relative density of the vapour/air-mixture at 20°C (air = 1): 1.5
Flash point:
-28°C c.c.
Auto-ignition temperature: 375°C
Explosive limits, vol% in air: 1.6-15.1
Octanol/water partition coefficient as log Pow: 1.06

ENVIRONMENTAL DATA

It is strongly advised not to let the chemical enter into the environment because it persists in the environment.



N O T E S

Much less likely to form peroxides than other ethers. Card has been partly updated in October 2004. See sections Occupational Exposure Limits, EU classification, Emergency Response.

Transport Emergency Card: TEC (R)-30GF1-I+II

ADDITIONAL INFORMATION

ICSC: 1164 **METHYL TERT-BUTYL ETHER**

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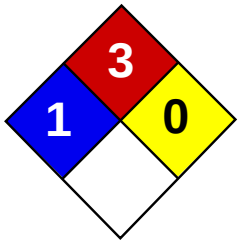

Material Safety Data Sheet
Methyl ethyl ketone MSDS

Section 1: Chemical Product and Company Identification

Product Name: Methyl ethyl ketone

Catalog Codes: SLM2626, SLM3232

CAS#: 78-93-3

RTECS: EL6475000

TSCA: TSCA 8(b) inventory: Methyl ethyl ketone

CI#: Not applicable.

Synonym: 2-Butanone

Chemical Name: Methyl Ethyl Ketone

Chemical Formula: C4H8O

Contact Information:

Sciencelab.com, Inc.
14025 Smith Rd.
Houston, Texas 77396

US Sales: **1-800-901-7247**
International Sales: **1-281-441-4400**

Order Online: ScienceLab.com

CHEMTREC (24HR Emergency Telephone), call:
1-800-424-9300

International CHEMTREC, call: 1-703-527-3887

For non-emergency assistance, call: 1-281-441-4400

Section 2: Composition and Information on Ingredients

Composition:

Name	CAS #	% by Weight
Methyl ethyl ketone	78-93-3	100

Toxicological Data on Ingredients: Methyl ethyl ketone: ORAL (LD50): Acute: 2737 mg/kg [Rat]. 4050 mg/kg [Mouse]. DERMAL (LD50): Acute: 6480 mg/kg [Rabbit]. VAPOR (LC50): Acute: 23500 mg/m 8 hours [Rat].

Section 3: Hazards Identification

Potential Acute Health Effects:
Hazardous in case of skin contact (irritant, permeator), of eye contact (irritant), of ingestion, of inhalation (lung irritant).

Potential Chronic Health Effects:
CARCINOGENIC EFFECTS: Not available. MUTAGENIC EFFECTS: Mutagenic for bacteria and/or yeast. TERATOGENIC EFFECTS: Classified POSSIBLE for human. DEVELOPMENTAL TOXICITY: Not available. The substance may be toxic to gastrointestinal tract, upper respiratory tract, skin, eyes, central nervous system (CNS). Repeated or prolonged exposure to the substance can produce target organs damage.

Section 4: First Aid Measures

Eye Contact:

Check for and remove any contact lenses. Immediately flush eyes with running water for at least 15 minutes, keeping eyelids open. Cold water may be used. Get medical attention.

Skin Contact:
In case of contact, immediately flush skin with plenty of water. Cover the irritated skin with an emollient. Remove contaminated clothing and shoes. Cold water may be used.Wash clothing before reuse. Thoroughly clean shoes before reuse. Get medical attention.

Serious Skin Contact:
Wash with a disinfectant soap and cover the contaminated skin with an anti-bacterial cream. Seek medical attention.

Inhalation:
If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.

Serious Inhalation:
Evacuate the victim to a safe area as soon as possible. Loosen tight clothing such as a collar, tie, belt or waistband. If breathing is difficult, administer oxygen. If the victim is not breathing, perform mouth-to-mouth resuscitation. Seek medical attention.

Ingestion:
Do NOT induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. Loosen tight clothing such as a collar, tie, belt or waistband. Get medical attention if symptoms appear.

Serious Ingestion: Not available.

Section 5: Fire and Explosion Data

Flammability of the Product: Flammable.

Auto-Ignition Temperature: 404°C (759.2°F)

Flash Points: CLOSED CUP: -9°C (15.8°F). OPEN CUP: -5.5556°C (22°F) (Tag).

Flammable Limits: LOWER: 1.8% UPPER: 10%

Products of Combustion: These products are carbon oxides (CO, CO2).

Fire Hazards in Presence of Various Substances: Highly flammable in presence of open flames and sparks, of heat.

Explosion Hazards in Presence of Various Substances:
Risks of explosion of the product in presence of mechanical impact: Not available. Risks of explosion of the product in presence of static discharge: Not available. Explosive in presence of oxidizing materials, of acids.

Fire Fighting Media and Instructions:
Flammable liquid, soluble or dispersed in water. SMALL FIRE: Use DRY chemical powder. LARGE FIRE: Use alcohol foam, water spray or fog.

Special Remarks on Fire Hazards:
Ignition on contact with potassium t-butoxide. Vapor may cause a flash fire

Special Remarks on Explosion Hazards:
Reaction with Hydrogen Peroxide + nitric acid forms heat and shock-sensitive explosive product. Mixture with 2-propanol will produce explosive peroxides during storage.

Section 6: Accidental Release Measures

Small Spill:
Dilute with water and mop up, or absorb with an inert dry material and place in an appropriate waste disposal container.

Large Spill:
Flammable liquid. Keep away from heat. Keep away from sources of ignition. Stop leak if without risk. Absorb with DRY earth, sand or other non-combustible material. Do not touch spilled material. Prevent entry into sewers, basements or confined

areas; dike if needed. Be careful that the product is not present at a concentration level above TLV. Check TLV on the MSDS and with local authorities.

Section 7: Handling and Storage

Precautions:
Keep locked up.. Keep away from heat. Keep away from sources of ignition. Ground all equipment containing material. Do not ingest. Do not breathe gas/fumes/ vapor/spray. Wear suitable protective clothing. In case of insufficient ventilation, wear suitable respiratory equipment. If ingested, seek medical advice immediately and show the container or the label. Avoid contact with skin and eyes. Keep away from incompatibles such as oxidizing agents, metals, acids, alkalis.

Storage:
Store in a segregated and approved area. Keep container in a cool, well-ventilated area. Keep container tightly closed and sealed until ready for use. Avoid all possible sources of ignition (spark or flame).

Section 8: Exposure Controls/Personal Protection

Engineering Controls:
Provide exhaust ventilation or other engineering controls to keep the airborne concentrations of vapors below their respective threshold limit value. Ensure that eyewash stations and safety showers are proximal to the work-station location.

Personal Protection:
Splash goggles. Lab coat. Vapor respirator. Be sure to use an approved/certified respirator or equivalent. Gloves.

Personal Protection in Case of a Large Spill:
Splash goggles. Full suit. Vapor respirator. Boots. Gloves. A self contained breathing apparatus should be used to avoid inhalation of the product. Suggested protective clothing might not be sufficient; consult a specialist BEFORE handling this product.

Exposure Limits:
TWA: 200 STEL: 300 (ppm) from ACGIH (TLV) [United States] [1999] TWA: 150 STEL: 300 (ppm) [Australia] TWA: 590 STEL: 885 (mg/m3) from NIOSH TWA: 200 STEL: 300 (ppm) from NIOSH TWA: 590 STEL: 885 (mg/m3) [Canada] TWA: 200 STEL: 300 (ppm) from OSHA (PEL) [United States] TWA: 590 STEL: 885 (mg/m3) from OSHA (PEL) [United States] Consult local authorities for acceptable exposure limits.

Section 9: Physical and Chemical Properties

Physical state and appearance: Liquid.

Odor:
Acetone-like Pleasant. Pungent. Sweetish. (Strong.)

Taste: Not available.

Molecular Weight: 72.12g/mole

Color: Clear Colorless.

pH (1% soln/water): Not available.

Boiling Point: 79.6 (175.3°F)

Melting Point: -86°C (-122.8°F)

Critical Temperature: 262.5°C (504.5°F)

Specific Gravity: 0.805(Water = 1)

Vapor Pressure: 10.3 kPa (@ 20°C)

Vapor Density: 2.41 (Air = 1)

Volatility: Not available.

Odor Threshold: 0.25 ppm

Water/Oil Dist. Coeff.: The product is more soluble in oil; log(oil/water) = 0.3

Ionicity (in Water): Not available.

Dispersion Properties: See solubility in water, diethyl ether, acetone.

Solubility: Soluble in cold water, diethyl ether, acetone.

Section 10: Stability and Reactivity Data

Stability: The product is stable.

Instability Temperature: Not available.

Conditions of Instability: Heat, ignition sources, mechanical shock, incompatible materials.

Incompatibility with various substances: Reactive with oxidizing agents, metals, acids, alkalis.

Corrosivity: Non-corrosive in presence of glass.

Special Remarks on Reactivity:
Incompatible with chloroform, copper, hydrogen peroxide, nitric acid, potassium t-butoxide, 2-propanol, chlorosulfonic acid, strong oxidizers, amines, ammonia, inorganic acids, isocyanates, caustics, pyrindines. Vigorous reaction with chloroform +alkali.

Special Remarks on Corrosivity: Not available.

Polymerization: Will not occur.

Section 11: Toxicological Information

Routes of Entry: Absorbed through skin. Dermal contact. Eye contact. Inhalation.

Toxicity to Animals:
WARNING: THE LC50 VALUES HEREUNDER ARE ESTIMATED ON THE BASIS OF A 4-HOUR EXPOSURE. Acute oral toxicity (LD50): 2737 mg/kg [Rat]. Acute dermal toxicity (LD50): 6480 mg/kg [Rabbit]. Acute toxicity of the vapor (LC50): 32000 mg/m3 4 hours [Mouse].

Chronic Effects on Humans:
MUTAGENIC EFFECTS: Mutagenic for bacteria and/or yeast. TERATOGENIC EFFECTS: Classified POSSIBLE for human. May cause damage to the following organs: gastrointestinal tract, upper respiratory tract, skin, eyes, central nervous system (CNS).

Other Toxic Effects on Humans: Hazardous in case of skin contact (irritant, permeator), of ingestion, of inhalation (lung irritant).

Special Remarks on Toxicity to Animals: Not available.

Special Remarks on Chronic Effects on Humans: May cause birth defects based on animal dats. Embryotoxic and/or foetotoxic in animal.

Special Remarks on other Toxic Effects on Humans:
Acute Potential Health Effects: Skin: Causes skin irritation. May be absorbed through the skin. Eyes: Causes eye irritation. Inhalation: Inhalation of high concentrations may cause central nervous effects characterized by headache, dizziness, unconsciousness, and coma. Causes respiratory tract irritation and affects the sense organs. May affect the liver and urinary system. Ingestion: Causes gastrointestinal tract irritation with nausea, vomiting and diarrhea. May affect the liver. Chronic Potential Health Effects: Chronic inhalation may cause effects similar to those of acute inhalation. Prolonged or repeated skin contact may cause defatting and dermatitis.

Section 12: Ecological Information

Ecotoxicity: Ecotoxicity in water (LC50): 3220 mg/l 96 hours [Fathead Minnow]. 1690 mg/l 96 hours [Bluegill].

BOD5 and COD: Not available.

Products of Biodegradation:
Possibly hazardous short term degradation products are not likely. However, long term degradation products may arise.

Toxicity of the Products of Biodegradation: The product itself and its products of degradation are not toxic.

Special Remarks on the Products of Biodegradation: Not available.

Section 13: Disposal Considerations

Waste Disposal:
Waste must be disposed of in accordance with federal, state and local environmental control regulations.

Section 14: Transport Information

DOT Classification: CLASS 3: Flammable liquid.

Identification: : Ethyl methyl ketone UNNA: 1193 PG: II

Special Provisions for Transport: Not available.

Section 15: Other Regulatory Information

Federal and State Regulations:
New York release reporting list: Methyl ethyl ketone Rhode Island RTK hazardous substances: Methyl ethyl ketone Pennsylvania RTK: Methyl ethyl ketone Minnesota: Methyl ethyl ketone Massachusetts RTK: Methyl ethyl ketone New Jersey: Methyl ethyl ketone California Director's list of Hazardous Substances: Methyl ethyl ketone TSCA 8(b) inventory: Methyl ethyl ketone TSCA 8(d) H and S data reporting: Methyl ethyl ketone: Effective: 10/4/82; Sunset: 10/4/92 SARA 313 toxic chemical notification and release reporting: Methyl ethyl ketone CERCLA: Hazardous substances.: Methyl ethyl ketone: 5000 lbs. (2268 kg)

Other Regulations:
OSHA: Hazardous by definition of Hazard Communication Standard (29 CFR 1910.1200). EINECS: This product is on the European Inventory of Existing Commercial Chemical Substances.

Other Classifications:

WHMIS (Canada):
CLASS B-2: Flammable liquid with a flash point lower than 37.8°C (100°F). CLASS D-2A: Material causing other toxic effects (VERY TOXIC).

DSCL (EEC):
R11- Highly flammable. R36/37- Irritating to eyes and respiratory system. S9- Keep container in a well-ventilated place. S16- Keep away from sources of ignition - No smoking. S25- Avoid contact with eyes. S33- Take precautionary measures against static discharges.

HMIS (U.S.A.):

Health Hazard: 2

Fire Hazard: 3

Reactivity: 0

Personal Protection: h

National Fire Protection Association (U.S.A.):

Health: 1

Flammability: 3

Reactivity: 0

Specific hazard:

Protective Equipment:
Gloves. Lab coat. Vapor respirator. Be sure to use an approved/certified respirator or equivalent. Wear appropriate respirator when ventilation is inadequate. Splash goggles.

Section 16: Other Information

References: Not available.

Other Special Considerations: Not available.

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Last Updated: 05/21/2013 12:00 PM

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International Chemical Safety Cards

DICHLOROMETHANE

ICSC: 0058

Methylene chloride
DCM
CH_2Cl_2
Molecular mass: 84.9

ICSC # 0058
CAS # 75-09-2
RTECS # PA8050000
UN # 1593
EC # 602-004-00-3
December 04, 2000 Validated

TYPES OF HAZARD/ EXPOSURE	ACUTE HAZARDS/ SYMPTOMS	PREVENTION	FIRST AID/ FIRE FIGHTING
FIRE	Combustible under specific conditions. Gives off irritating or toxic fumes (or gases) in a fire.		In case of fire in the surroundings: use appropriate extinguishing media.
EXPLOSION	Risk of fire and explosion (see Chemical Dangers).	Prevent build-up of electrostatic charges (e.g., by grounding).	In case of fire: keep drums, etc., cool by spraying with water.
EXPOSURE		PREVENT GENERATION OF MISTS! STRICT HYGIENE!	
•INHALATION	Dizziness. Drowsiness. Headache. Nausea. Weakness. Unconsciousness. Death.	Ventilation, local exhaust, or breathing protection.	Fresh air, rest. Artificial respiration may be needed. Refer for medical attention.
•SKIN	Dry skin. Redness. Burning sensation.	Protective gloves. Protective clothing.	Remove contaminated clothes. Rinse and then wash skin with water and soap.
•EYES	Redness. Pain. Severe deep burns.	Safety goggles , face shield or eye protection in combination with breathing protection.	First rinse with plenty of water for several minutes (remove contact lenses if easily possible), then take to a doctor.
•INGESTION	Abdominal pain. (Further see Inhalation).	Do not eat, drink, or smoke during work. Wash hands before eating.	Rinse mouth. Do NOT induce vomiting. Give plenty of water to drink. Rest.

SPILLAGE DISPOSAL	STORAGE	PACKAGING & LABELLING
Personal protection: filter respirator for organic gases and vapours. Do NOT let this chemical enter the environment. Ventilation. Collect leaking and spilled liquid in sealable containers as far as possible. Absorb remaining liquid in sand or inert absorbent and remove to safe place.	Separated from metals (see Chemical Dangers), food and feedstuffs . Cool. Ventilation along the floor.	Do not transport with food and feedstuffs. Xn symbol R: 40 S: (2-)23-24/25-36/37 UN Hazard Class: 6.1 UN Packing Group: III

SEE IMPORTANT INFORMATION ON BACK

ICSC: 0058

Prepared in the context of cooperation between the International Programme on Chemical Safety & the Commission of the European Communities (C) IPCS CEC 1994. No modifications to the International version have been made except to add the OSHA PELs, NIOSH RELs and NIOSH IDLH values.

International Chemical Safety Cards

DICHLOROMETHANE

ICSC: 0058

IMPORTANT DATA

PHYSICAL STATE; APPEARANCE:
COLOURLESS LIQUID , WITH CHARACTERISTIC ODOUR.

PHYSICAL DANGERS:
The vapour is heavier than air. As a result of flow, agitation, etc., electrostatic charges can be generated.

CHEMICAL DANGERS:
On contact with hot surfaces or flames this substance decomposes forming toxic and corrosive fumes. Reacts violently with metals such as aluminium powder and magnesium powder, strong bases and strong oxidants causing fire and explosion hazard. Attacks some forms of plastic rubber and coatings.

OCCUPATIONAL EXPOSURE LIMITS:
TLV: 50 ppm as TWA; A3 (confirmed animal carcinogen with unknown relevance to humans); BEI issued; (ACGIH 2004).
MAK:
Carcinogen category: 3A;
(DFG 2004).
OSHA PEL: 1910.1052 TWA 25 ppm ST 125 ppm
NIOSH REL: Ca See Appendix A
NIOSH IDLH: Ca 2300 ppm See: 75092

ROUTES OF EXPOSURE:
The substance can be absorbed into the body by inhalation and by ingestion.

INHALATION RISK:
A harmful contamination of the air can be reached very quickly on evaporation of this substance at 20°C.

EFFECTS OF SHORT-TERM EXPOSURE:
The substance is irritating to the eyes , the skin and the respiratory tract . Exposure could cause lowering of consciousness. Exposure could cause the formation of methaemoglobin.

EFFECTS OF LONG-TERM OR REPEATED EXPOSURE:
Repeated or prolonged contact with skin may cause dermatitis. The substance may have effects on the central nervous system and liver . This substance is possibly carcinogenic to humans.

PHYSICAL PROPERTIES

Boiling point: 40°C
Melting point: -95.1°C
Relative density (water = 1): 1.3
Solubility in water, g/100 ml at 20°C: 1.3
Vapour pressure, kPa at 20°C: 47.4
Relative vapour density (air = 1): 2.9
Relative density of the vapour/air-mixture at 20°C (air = 1): 1.9
Auto-ignition temperature: 556°C
Explosive limits, vol% in air: 12-25
Octanol/water partition coefficient as log Pow: 1.25

ENVIRONMENTAL DATA

This substance may be hazardous in the environment; special attention should be given to ground water contamination.

NOTES

Addition of small amounts of a flammable substance or an increase in the oxygen content of the air strongly enhances combustibility. Depending on the degree of exposure, periodic medical examination is suggested. The odour warning when the exposure limit value is exceeded is insufficient. Do NOT use in the vicinity of a fire or a hot surface, or during welding. R30 is a trade name. Card has been partly updated in April 2005. See section Occupational Exposure Limits.

Transport Emergency Card: TEC (R)-61S1593

NFPA Code: H2; F1; R0;

ADDITIONAL INFORMATION

ICSC: 0058 **DICHLOROMETHANE**

(C) IPCS, CEC, 1994

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	modifications made to produce the U.S. version is inclusion of the OSHA PELs, NIOSH RELs and NIOSH IDLH values.

International Chemical Safety Cards

NAPHTHALENE

ICSC: 0667

Naphthene
$C_{10}H_8$
Molecular mass: 128.18

ICSC # 0667
CAS # 91-20-3
RTECS # QJ0525000
UN # 1334 (solid); 2304 (molten)
EC # 601-052-00-2
April 21, 2005 Validated

TYPES OF HAZARD/ EXPOSURE	ACUTE HAZARDS/ SYMPTOMS	PREVENTION	FIRST AID/ FIRE FIGHTING
FIRE	Combustible.	NO open flames.	Powder, water spray, foam, carbon dioxide.
EXPLOSION	Above 80°C explosive vapour/air mixtures may be formed. Finely dispersed particles form explosive mixtures in air.	Prevent deposition of dust; closed system, dust explosion-proof electrical equipment and lighting.	
EXPOSURE		PREVENT DISPERSION OF DUST!	
•INHALATION	Headache. Weakness. Nausea. Vomiting. Sweating. Confusion. Jaundice. Dark urine.	Ventilation (not if powder), local exhaust, or breathing protection.	Fresh air, rest. Refer for medical attention.
•SKIN	MAY BE ABSORBED! (Further see Inhalation).	Protective gloves.	Rinse skin with plenty of water or shower.
•EYES		Safety spectacles.	First rinse with plenty of water for several minutes (remove contact lenses if easily possible), then take to a doctor.
•INGESTION	Abdominal pain. Diarrhoea. Convulsions. Unconsciousness. (Further see Inhalation).	Do not eat, drink, or smoke during work. Wash hands before eating.	Rest. Refer for medical attention.

SPILLAGE DISPOSAL	STORAGE	PACKAGING & LABELLING
Personal protection: filter respirator for organic gases and vapours. Do NOT let this chemical enter the environment. Sweep spilled substance into covered containers; if appropriate, moisten first to prevent dusting. Carefully collect remainder, then remove to safe place.	Separated from strong oxidants, food and feedstuffs . Store in an area without drain or sewer access.	Do not transport with food and feedstuffs. Marine pollutant. Xn symbol N symbol R: 22-40-50/53 S: 2-36/37-46-60-61 UN Hazard Class: 4.1 UN Packing Group: III

SEE IMPORTANT INFORMATION ON BACK

ICSC: 0667

Prepared in the context of cooperation between the International Programme on Chemical Safety & the Commission of the European Communities (C) IPCS CEC 1994. No modifications to the International version have been made except to add the OSHA PELs, NIOSH RELs and NIOSH IDLH values.

International Chemical Safety Cards

NAPHTHALENE

ICSC: 0667

IMPORTANT DATA

PHYSICAL STATE; APPEARANCE:
WHITE SOLID IN VARIOUS FORMS , WITH CHARACTERISTIC ODOUR.

PHYSICAL DANGERS:
Dust explosion possible if in powder or granular form, mixed with air.

CHEMICAL DANGERS:
On combustion, forms irritating and toxic gases. Reacts with strong oxidants .

OCCUPATIONAL EXPOSURE LIMITS:
TLV: 10 ppm as TWA; 15 ppm as STEL; (skin); A4 (not classifiable as a human carcinogen); (ACGIH 2005).
MAK: skin absorption (H);
Carcinogen category: 2; Germ cell mutagen group: 3B; (DFG 2004).
OSHA PEL†: TWA 10 ppm (50 mg/m^3)
NIOSH REL: TWA 10 ppm (50 mg/m^3) ST 15 ppm (75 mg/m^3)
NIOSH IDLH: 250 ppm See: 91203

ROUTES OF EXPOSURE:
The substance can be absorbed into the body by inhalation, through the skin and by ingestion.

INHALATION RISK:
A harmful contamination of the air will be reached rather slowly on evaporation of this substance at 20°C. See Notes.

EFFECTS OF SHORT-TERM EXPOSURE:
The substance may cause effects on the blood , resulting in lesions of blood cells (haemolysis) . See Notes. The effects may be delayed. Exposure by ingestion may result in death. Medical observation is indicated.

EFFECTS OF LONG-TERM OR REPEATED EXPOSURE:
The substance may have effects on the blood , resulting in chronic haemolytic anaemia. The substance may have effects on the eyes , resulting in the development of cataract. This substance is possibly carcinogenic to humans.

PHYSICAL PROPERTIES

Boiling point: 218°C

Sublimation slowly at room temperature
Melting point: 80°C
Density: 1.16
g/cm³
Solubility in water, g/100 ml at 25°C:
none

Vapour pressure, Pa at 25°C: 11
Relative vapour density (air = 1): 4.42
Flash point:
80°C c.c.
Auto-ignition temperature: 540°C
Explosive limits, vol% in air: 0.9-5.9
Octanol/water partition coefficient as log Pow: 3.3

ENVIRONMENTAL DATA

The substance is very toxic to aquatic organisms. The substance may cause long-term effects in the aquatic environment.

NOTES

Some individuals may be more sensitive to the effect of naphthalene on blood cells.

Transport Emergency Card: TEC (R)-41S1334 (solid); 41GF1-II+III (solid); 41S2304 (molten)

NFPA Code: H2; F2; R0;

ADDITIONAL INFORMATION

ICSC: 0667 **NAPHTHALENE**

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Material Safety Data Sheet

Normal-Butylbenzene, 99+%

ACC# 55434

Section 1 - Chemical Product and Company Identification

MSDS Name: Normal-Butylbenzene, 99+%
Catalog Numbers: AC107850000, AC107850050, AC107850250, AC107850500, AC107851000, AC107852500 AC107852500
Synonyms: 1-Phenylbutane
Company Identification:

Acros Organics N.V.
One Reagent Lane
Fair Lawn, NJ 07410

For information in North America, call: 800-ACROS-01
For emergencies in the US, call CHEMTREC: 800-424-9300

Section 2 - Composition, Information on Ingredients

CAS#	Chemical Name	Percent	EINECS/ELINCS
104-51-8	n-Butylbenzene	>99	203-209-7

Section 3 - Hazards Identification

EMERGENCY OVERVIEW

Appearance: clear, colorless liquid. Flash Point: 59 deg C.
Warning! Flammable liquid and vapor. May cause eye and skin irritation. May cause respiratory and digestive tract irritation. The toxicological properties of this material have not been fully investigated.
Target Organs: Liver, nervous system.

Potential Health Effects

Eye: May cause eye irritation. The toxicological properties of this material have not been fully investigated.
Skin: May cause skin irritation. The toxicological properties of this material have not been fully investigated.
Ingestion: May cause gastrointestinal irritation with nausea, vomiting and diarrhea. The toxicological properties of this substance have not been fully investigated.
Inhalation: May cause respiratory tract irritation. The toxicological properties of this substance have not been fully investigated. Vapors may cause dizziness or suffocation.
Chronic: No information found.

Section 4 - First Aid Measures

Eyes: Flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. Get medical aid immediately.
Skin: Get medical aid. Flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Wash clothing before reuse.
Ingestion: Never give anything by mouth to an unconscious person. Get medical aid immediately. Do NOT induce vomiting. If conscious and alert, rinse mouth and drink 2-4 cupfuls of milk or water.
Inhalation: Remove from exposure and move to fresh air immediately. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical aid.
Notes to Physician: Treat symptomatically and supportively.

Section 5 - Fire Fighting Measures

General Information: As in any fire, wear a self-contained breathing apparatus in pressure-demand, MSHA/NIOSH (approved or equivalent), and full protective gear. Vapors may form an explosive mixture with air. During a fire, irritating and highly toxic gases may be generated by thermal decomposition or combustion. Will burn if involved in a fire. Use water spray to keep fire-exposed containers cool. Containers may explode in the heat of a fire. Flammable liquid and vapor. Vapors may be heavier than air. They can spread along the ground and collect in low or confined areas.
Extinguishing Media: For small fires, use dry chemical, carbon dioxide, water spray or alcohol-resistant foam. For large fires, use water spray, fog, or alcohol-resistant foam. Use water spray to cool fire-exposed containers. Water may be ineffective. Use agent most appropriate to extinguish fire. Do NOT use straight streams of water.
Flash Point: 59 deg C (138.20 deg F)
Autoignition Temperature: 412 deg C (773.60 deg F)
Explosion Limits, Lower:.80 vol %
Upper: 5.80 vol %
NFPA Rating: (estimated) Health: 1; Flammability: 2; Instability: 0

Section 6 - Accidental Release Measures

General Information: Use proper personal protective equipment as indicated in Section 8.
Spills/Leaks: Absorb spill with inert material (e.g. vermiculite, sand or earth), then place in suitable container. Clean up spills immediately, observing precautions in the Protective Equipment section. Remove all sources of ignition. Use a spark-proof tool. Provide ventilation. A vapor suppressing foam may be used to reduce vapors.

Section 7 - Handling and Storage

Handling: Wash thoroughly after handling. Remove contaminated clothing and wash before reuse. Use with adequate ventilation. Ground and bond containers when transferring material. Use spark-proof tools and explosion proof equipment. Avoid contact with eyes, skin, and clothing. Empty containers retain product residue, (liquid and/or vapor), and can be dangerous. Keep container tightly closed. Keep away from heat, sparks and flame. Avoid ingestion and inhalation. Do not pressurize, cut, weld, braze, solder, drill, grind, or expose empty containers to heat, sparks or open flames.
Storage: Keep away from heat, sparks, and flame. Keep away from sources of ignition. Store in a tightly closed container. Store in a cool, dry, well-ventilated area away from incompatible substances. Flammables-area.

Section 8 - Exposure Controls, Personal Protection

Engineering Controls: Use adequate ventilation to keep airborne concentrations low. Use process enclosure, local exhaust ventilation, or other engineering controls to control airborne levels.
Exposure Limits

Chemical Name	ACGIH	NIOSH	OSHA - Final PELs
n-Butylbenzene	none listed	none listed	none listed

OSHA Vacated PELs: n-Butylbenzene: No OSHA Vacated PELs are listed for this chemical.
Personal Protective Equipment
Eyes: Wear appropriate protective eyeglasses or chemical safety goggles as described by OSHA's eye and face protection regulations in 29 CFR 1910.133 or European Standard EN166.
Skin: Wear appropriate protective gloves to prevent skin exposure.
Clothing: Wear appropriate protective clothing to prevent skin exposure.
Respirators: Wear a NIOSH/MSHA or European Standard EN 149 approved full-facepiece airline respirator in the positive pressure mode with emergency escape provisions. Follow the OSHA respirator regulations found in 29

CFR 1910.134 or European Standard EN 149. Use a NIOSH/MSHA or European Standard EN 149 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced.

Section 9 - Physical and Chemical Properties

Physical State: Liquid
Appearance: clear, colorless
Odor: None reported.
pH: Not available.
Vapor Pressure: 1.33 hPa @ 23 C
Vapor Density: 4.6
Evaporation Rate: Not available.
Viscosity: Not available.
Boiling Point: 183 deg C @ 760.00mm Hg
Freezing/Melting Point:-88 deg C
Decomposition Temperature:> 183 deg C
Solubility: insoluble
Specific Gravity/Density:.8600g/cm3
Molecular Formula:C10H14
Molecular Weight:134.22

Section 10 - Stability and Reactivity

Chemical Stability: Stable under normal temperatures and pressures.
Conditions to Avoid: Incompatible materials, ignition sources, excess heat, strong oxidants.
Incompatibilities with Other Materials: Oxidizing agents.
Hazardous Decomposition Products: Carbon monoxide, irritating and toxic fumes and gases, carbon dioxide.
Hazardous Polymerization: Has not been reported.

Section 11 - Toxicological Information

RTECS#:
CAS# 104-51-8: CY9070000
LD50/LC50:
Not available.

Carcinogenicity:
CAS# 104-51-8: Not listed by ACGIH, IARC, NTP, or CA Prop 65.

Epidemiology: No information available.
Teratogenicity: No information available.
Reproductive Effects: No information available.
Mutagenicity: No information available.
Neurotoxicity: No information available.
Other Studies:

Section 12 - Ecological Information

Ecotoxicity: No data available. No information available.
Environmental: Rapidly volatilizes into the atmosphere where it is photochemically degraded by hydroxyl radicals.

Physical: No information available.
Other: No information available.

Section 13 - Disposal Considerations

Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste. US EPA guidelines for the classification determination are listed in 40 CFR Parts 261.3. Additionally, waste generators must consult state and local hazardous waste regulations to ensure complete and accurate classification.
RCRA P-Series: None listed.
RCRA U-Series: None listed.

Section 14 - Transport Information

	US DOT	Canada TDG
Shipping Name:	BUTYL BENZENES	No information available.
Hazard Class:	3	
UN Number:	UN2709	
Packing Group:	III	

Section 15 - Regulatory Information

US FEDERAL

TSCA
CAS# 104-51-8 is listed on the TSCA inventory.
Health & Safety Reporting List
CAS# 104-51-8: Effective 6/1/87, Sunset 12/19/95
Chemical Test Rules
None of the chemicals in this product are under a Chemical Test Rule.
Section 12b
None of the chemicals are listed under TSCA Section 12b.
TSCA Significant New Use Rule
None of the chemicals in this material have a SNUR under TSCA.
CERCLA Hazardous Substances and corresponding RQs
None of the chemicals in this material have an RQ.
SARA Section 302 Extremely Hazardous Substances
None of the chemicals in this product have a TPQ.
SARA Codes
CAS # 104-51-8: immediate, fire.
Section 313 No chemicals are reportable under Section 313.
Clean Air Act:
This material does not contain any hazardous air pollutants.
This material does not contain any Class 1 Ozone depletors.
This material does not contain any Class 2 Ozone depletors.
Clean Water Act:
None of the chemicals in this product are listed as Hazardous Substances under the CWA.
None of the chemicals in this product are listed as Priority Pollutants under the CWA.
None of the chemicals in this product are listed as Toxic Pollutants under the CWA.
OSHA:
None of the chemicals in this product are considered highly hazardous by OSHA.
STATE
CAS# 104-51-8 can be found on the following state right to know lists: New Jersey, Pennsylvania, Massachusetts.

California Prop 65

California No Significant Risk Level: None of the chemicals in this product are listed.

European / International Regulations

European Labeling in Accordance with EC Directives

Hazard Symbols:

Not available.

Risk Phrases:

R 10 Flammable.

Safety Phrases:

S 16 Keep away from sources of ignition - No smoking.
S 24/25 Avoid contact with skin and eyes.
S 33 Take precautionary measures against static discharges.
S 37 Wear suitable gloves.
S 45 In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).
S 9 Keep container in a well-ventilated place.
S 28A After contact with skin, wash immediately with plenty of water
.

WGK (Water Danger/Protection)

CAS# 104-51-8: 1

Canada - DSL/NDSL

CAS# 104-51-8 is listed on Canada's DSL List.

Canada - WHMIS

This product has a WHMIS classification of B3, D2B.

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations and the MSDS contains all of the information required by those regulations.

Canadian Ingredient Disclosure List

Section 16 - Additional Information

MSDS Creation Date: 4/15/1998
Revision #4 Date: 3/16/2007

The information above is believed to be accurate and represents the best information currently available to us. However, we make no warranty of merchantability or any other warranty, express or implied, with respect to such information, and we assume no liability resulting from its use. Users should make their own investigations to determine the suitability of the information for their particular purposes. In no event shall Fisher be liable for any claims, losses, or damages of any third party or for lost profits or any special, indirect, incidental, consequential or exemplary damages, howsoever arising, even if Fisher has been advised of the possibility of such damages.

Material Safety Data Sheet

Version 4.0
Revision Date 07/28/2010
Print Date 12/07/2011

1. PRODUCT AND COMPANY IDENTIFICATION

Product name	:	Propylbenzene
Product Number	:	P52407
Brand	:	Aldrich
Company	:	Sigma-Aldrich 3050 Spruce Street SAINT LOUIS MO 63103 USA
Telephone	:	+1 800-325-5832
Fax	:	+1 800-325-5052
Emergency Phone #	:	(314) 776-6555

2. HAZARDS IDENTIFICATION

Emergency Overview

OSHA Hazards
Combustible Liquid

Target Organs

Lungs, Eyes, Kidney

GHS Label elements, including precautionary statements

Pictogram

Signal word Danger

Hazard statement(s)

H226	Flammable liquid and vapour.
H304	May be fatal if swallowed and enters airways.
H335	May cause respiratory irritation.
H401	Toxic to aquatic life.

Precautionary statement(s)

P261	Avoid breathing dust/ fume/ gas/ mist/ vapours/ spray.
P301 + P310	IF SWALLOWED: Immediately call a POISON CENTER or doctor/ physician.
P331	Do NOT induce vomiting.

HMIS Classification

Health hazard:	0
Chronic Health Hazard:	*
Flammability:	2
Physical hazards:	0

NFPA Rating

Health hazard:	1
Fire:	2
Reactivity Hazard:	0

Potential Health Effects

Inhalation	May be harmful if inhaled. May cause respiratory tract irritation.
Skin	May be harmful if absorbed through skin. May cause skin irritation.
Eyes	May cause eye irritation.

Ingestion Aspiration hazard if swallowed - can enter lungs and cause damage. May be harmful if swallowed.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Synonyms : 1-Phenylpropane

Formula : C_9H_{12}
Molecular Weight : 120.19 g/mol

CAS-No.	EC-No.	Index-No.	Concentration
Propylbenzene			
103-65-1	203-132-9	601-024-00-X	-

4. FIRST AID MEASURES

General advice
Consult a physician. Show this safety data sheet to the doctor in attendance.Move out of dangerous area.

If inhaled
If breathed in, move person into fresh air. If not breathing give artificial respiration Consult a physician.

In case of skin contact
Wash off with soap and plenty of water. Consult a physician.

In case of eye contact
Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician.

If swallowed
Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

5. FIRE-FIGHTING MEASURES

Suitable extinguishing media
For small (incipient) fires, use media such as "alcohol" foam, dry chemical, or carbon dioxide. For large fires, apply water from as far as possible. Use very large quantities (flooding) of water applied as a mist or spray; solid streams of water may be ineffective. Cool all affected containers with flooding quantities of water.

Special protective equipment for fire-fighters
Wear self contained breathing apparatus for fire fighting if necessary.

Further information
Use water spray to cool unopened containers.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions
Use personal protective equipment. Avoid breathing vapors, mist or gas. Ensure adequate ventilation. Remove all sources of ignition. Beware of vapours accumulating to form explosive concentrations. Vapours can accumulate in low areas.

Environmental precautions
Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.

Methods and materials for containment and cleaning up
Contain spillage, and then collect with non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and place in container for disposal according to local / national regulations (see section 13). Keep in suitable, closed containers for disposal.

7. HANDLING AND STORAGE

Precautions for safe handling
Avoid inhalation of vapour or mist.

Keep away from sources of ignition - No smoking. Take measures to prevent the build up of electrostatic charge.

Conditions for safe storage
Keep container tightly closed in a dry and well-ventilated place. Containers which are opened must be carefully resealed and kept upright to prevent leakage. Store in cool place.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Contains no substances with occupational exposure limit values.

Personal protective equipment

Respiratory protection
Where risk assessment shows air-purifying respirators are appropriate use a full-face respirator with multi-purpose combination (US) or type ABEK (EN 14387) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

Hand protection
For prolonged or repeated contact use protective gloves.

Eye protection
Face shield and safety glasses

Skin and body protection
Choose body protection according to the amount and concentration of the dangerous substance at the work place.

Hygiene measures
Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance

Form	liquid, clear
Colour	colourless

Safety data

pH	no data available
Melting point	-99 °C (-146 °F) - lit.
Boiling point	159 °C (318 °F) - lit.
Flash point	42.0 °C (107.6 °F) - closed cup
Ignition temperature	450 °C (842 °F)
Lower explosion limit	0.8 %(V)
Upper explosion limit	6 %(V)
Density	0.862 g/cm3 at 25 °C (77 °F)
Water solubility	slightly soluble

10. STABILITY AND REACTIVITY

Chemical stability
Stable under recommended storage conditions.

Possibility of hazardous reactions
Vapours may form explosive mixture with air.

Conditions to avoid
Heat, flames and sparks.

Materials to avoid
Strong oxidizing agents

Hazardous decomposition products
Hazardous decomposition products formed under fire conditions. - Carbon oxides

11. TOXICOLOGICAL INFORMATION

Acute toxicity
LD50 Oral - rat - 6,040 mg/kg
Remarks: Behavioral:Somnolence (general depressed activity).

LC50 Inhalation - rat - 2 h - 65000 ppm

Skin corrosion/irritation
no data available

Serious eye damage/eye irritation
no data available

Respiratory or skin sensitization
no data available

Germ cell mutagenicity
no data available

Carcinogenicity

IARC:	No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.
ACGIH:	No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH.
NTP:	No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.
OSHA:	No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

Reproductive toxicity
no data available

Specific target organ toxicity - single exposure (Globally Harmonized System)
May cause respiratory irritation.

Specific target organ toxicity - repeated exposure (Globally Harmonized System)
no data available

Aspiration hazard
May be fatal if swallowed and enters airways.

Potential health effects

Inhalation	May be harmful if inhaled. May cause respiratory tract irritation.
Ingestion	Aspiration hazard if swallowed - can enter lungs and cause damage. May be harmful if swallowed.
Skin	May be harmful if absorbed through skin. May cause skin irritation.
Eyes	May cause eye irritation.

Signs and Symptoms of Exposure
Damage to the lungs., To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

Additional Information
RTECS: DA8750000

12. ECOLOGICAL INFORMATION

Toxicity

Toxicity to fish	LC50 - Oncorhynchus mykiss (rainbow trout) - 1.55 mg/l - 96.0 h

Toxicity to daphnia and other aquatic invertebrates.	Immobilization EC50 - Daphnia magna (Water flea) - 2 mg/l - 24 h

Persistence and degradability
no data available

Bioaccumulative potential
no data available

Mobility in soil
no data available

PBT and vPvB assessment
no data available

Other adverse effects

An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.

Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

Avoid release to the environment.

13. DISPOSAL CONSIDERATIONS

Product
This combustible material may be burned in a chemical incinerator equipped with an afterburner and scrubber. Observe all federal, state, and local environmental regulations. Contact a licensed professional waste disposal service to dispose of this material.

Contaminated packaging
Dispose of as unused product.

14. TRANSPORT INFORMATION

DOT (US)
UN-Number: 2364 Class: 3 Packing group: III
Proper shipping name: n-Propyl benzene
Marine pollutant: No
Poison Inhalation Hazard: No

IMDG
UN-Number: 2364 Class: 3 Packing group: III EMS-No: F-E, S-D
Proper shipping name: PROPYLBENZENE
Marine pollutant: No

IATA
UN-Number: 2364 Class: 3 Packing group: III
Proper shipping name: n-Propylbenzene

15. REGULATORY INFORMATION

OSHA Hazards
Combustible Liquid

DSL Status
All components of this product are on the Canadian DSL list.

SARA 302 Components
SARA 302: No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

SARA 313 Components
SARA 313: This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

SARA 311/312 Hazards
Fire Hazard

Massachusetts Right To Know Components

	CAS-No.	Revision Date
Propylbenzene	103-65-1	2007-03-01

Pennsylvania Right To Know Components

	CAS-No.	Revision Date
Propylbenzene	103-65-1	2007-03-01

New Jersey Right To Know Components

	CAS-No.	Revision Date
Propylbenzene	103-65-1	2007-03-01

California Prop. 65 Components

This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.

16. OTHER INFORMATION

Further information

Copyright 2010 Sigma-Aldrich Co. License granted to make unlimited paper copies for internal use only.
The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. Sigma-Aldrich Co., shall not be held liable for any damage resulting from handling or from contact with the above product. See reverse side of invoice or packing slip for additional terms and conditions of sale.

International Chemical Safety Cards

o-XYLENE

ICSC: 0084

ortho-Xylene
1,2-Dimethylbenzene
o-Xylol
$C_6H_4(CH_3)_2$ / C_8H_{10}
Molecular mass: 106.2

ICSC # 0084
CAS # 95-47-6
RTECS # ZE2450000
UN # 1307
EC # 601-022-00-9
August 03, 2002 Validated

TYPES OF HAZARD/ EXPOSURE	ACUTE HAZARDS/ SYMPTOMS	PREVENTION	FIRST AID/ FIRE FIGHTING
FIRE	Flammable.	NO open flames, NO sparks, and NO smoking.	Powder, water spray, foam, carbon dioxide.
EXPLOSION	Above 32°C explosive vapour/air mixtures may be formed.	Above 32°C use a closed system, ventilation, and explosion-proof electrical equipment. Prevent build-up of electrostatic charges (e.g., by grounding).	In case of fire: keep drums, etc., cool by spraying with water.
EXPOSURE		STRICT HYGIENE! AVOID EXPOSURE OF (PREGNANT) WOMEN!	
•INHALATION	Dizziness. Drowsiness. Headache. Nausea.	Ventilation, local exhaust, or breathing protection.	Fresh air, rest. Refer for medical attention.
•SKIN	Dry skin. Redness.	Protective gloves.	Remove contaminated clothes. Rinse and then wash skin with water and soap.
•EYES	Redness. Pain.	Safety spectacles.	First rinse with plenty of water for several minutes (remove contact lenses if easily possible), then take to a doctor.
•INGESTION	Burning sensation. Abdominal pain. (Further see Inhalation).	Do not eat, drink, or smoke during work.	Rinse mouth. Do NOT induce vomiting. Refer for medical attention.

SPILLAGE DISPOSAL	STORAGE	PACKAGING & LABELLING
Ventilation. Remove all ignition sources. Collect leaking and spilled liquid in sealable containers as far as possible. Absorb remaining liquid in sand or inert absorbent and remove to safe place. Do NOT let this chemical enter the environment. (Extra personal protection: filter respirator for organic gases and vapours.)	Fireproof. Separated from strong oxidants and strong acids .	Note: C Xn symbol R: 10-20/21-38 S: 2-25 UN Hazard Class: 3 UN Packing Group: III

SEE IMPORTANT INFORMATION ON BACK

Prepared in the context of cooperation between the International Programme on Chemical Safety & the Commission of the

ICSC: 0084

European Communities (C) IPCS CEC 1994. No modifications to the International version have been made except to add the OSHA PELs, NIOSH RELs and NIOSH IDLH values.

International Chemical Safety Cards

o-XYLENE

ICSC: 0084

IMPORTANT DATA	**PHYSICAL STATE; APPEARANCE:** COLOURLESS LIQUID , WITH CHARACTERISTIC ODOUR. **PHYSICAL DANGERS:** As a result of flow, agitation, etc., electrostatic charges can be generated. **CHEMICAL DANGERS:** Reacts with strong acids and strong oxidants . **OCCUPATIONAL EXPOSURE LIMITS:** TLV: 100 ppm as TWA; 150 ppm as STEL A4 (ACGIH 2001). BEI specified by (ACGIH 2001). EU OEL: 50 ppm as TWA; 100 ppm as STEL (skin) (EU 2000). OSHA PEL†: TWA 100 ppm (435 mg/m^3) NIOSH REL: TWA 100 ppm (435 mg/m^3) ST 150 ppm (655 mg/m^3) NIOSH IDLH: 900 ppm See: 95476 **ROUTES OF EXPOSURE:** The substance can be absorbed into the body by inhalation, through the skin and by ingestion. **INHALATION RISK:** A harmful contamination of the air will be reached rather slowly on evaporation of this substance at 20°C. **EFFECTS OF SHORT-TERM EXPOSURE:** The substance is irritating to the eyes and the skin . The substance may cause effects on the central nervous system . If this liquid is swallowed, aspiration into the lungs may result in chemical pneumonitis. **EFFECTS OF LONG-TERM OR REPEATED EXPOSURE:** The liquid defats the skin. The substance may have effects on the central nervous system. Exposure to the substance may enhance hearing damage caused by exposure to noise. Animal tests show that this substance possibly causes toxicity to human reproduction or development.
PHYSICAL PROPERTIES	Boiling point: 144°C Melting point: -25°C Relative density (water = 1): 0.88 Solubility in water: none Vapour pressure, kPa at 20°C: 0.7 Relative vapour density (air = 1): 3.7 Relative density of the vapour/air-mixture at 20°C (air = 1): 1.02 Flash point: 32°C c.c. Auto-ignition temperature: 463°C Explosive limits, vol% in air: 0.9-6.7 Octanol/water partition coefficient as log Pow: 3.12
ENVIRONMENTAL DATA	The substance is toxic to aquatic organisms.

N O T E S

Depending on the degree of exposure, periodic medical examination is indicated. The recommendations on this Card also apply to technical xylene. See ICSC 0086 p-Xylene and 0085 m-Xylene.

Transport Emergency Card: TEC (R)-30S1307-III

NFPA Code: H 2; F 3; R 0;
Card has been partially updated in January 2008: see Occupational Exposure Limits.

ADDITIONAL INFORMATION

ICSC: 0084 **o-XYLENE**

(C) IPCS, CEC, 1994

IMPORTANT LEGAL	Neither NIOSH, the CEC or the IPCS nor any person acting on behalf of NIOSH, the CEC or the IPCS is responsible for the use which might be made of this information. This card contains the collective views of the IPCS Peer Review Committee and may not reflect in all cases all the detailed requirements included in national legislation on the subject. The user should verify compliance of the cards with the relevant legislation in the country of use. The only

NOTICE:	modifications made to produce the U.S. version is inclusion of the OSHA PELs, NIOSH RELs and NIOSH IDLH values.

International Chemical Safety Cards

o-XYLENE

ICSC: 0084

ortho-Xylene
1,2-Dimethylbenzene
o-Xylol
$C_6H_4(CH_3)_2$ / C_8H_{10}
Molecular mass: 106.2

ICSC # 0084
CAS # 95-47-6
RTECS # ZE2450000
UN # 1307
EC # 601-022-00-9
August 03, 2002 Validated

TYPES OF HAZARD/ EXPOSURE	ACUTE HAZARDS/ SYMPTOMS	PREVENTION	FIRST AID/ FIRE FIGHTING
FIRE	Flammable.	NO open flames, NO sparks, and NO smoking.	Powder, water spray, foam, carbon dioxide.
EXPLOSION	Above 32°C explosive vapour/air mixtures may be formed.	Above 32°C use a closed system, ventilation, and explosion-proof electrical equipment. Prevent build-up of electrostatic charges (e.g., by grounding).	In case of fire: keep drums, etc., cool by spraying with water.
EXPOSURE		STRICT HYGIENE! AVOID EXPOSURE OF (PREGNANT) WOMEN!	
•INHALATION	Dizziness. Drowsiness. Headache. Nausea.	Ventilation, local exhaust, or breathing protection.	Fresh air, rest. Refer for medical attention.
•SKIN	Dry skin. Redness.	Protective gloves.	Remove contaminated clothes. Rinse and then wash skin with water and soap.
•EYES	Redness. Pain.	Safety spectacles.	First rinse with plenty of water for several minutes (remove contact lenses if easily possible), then take to a doctor.
•INGESTION	Burning sensation. Abdominal pain. (Further see Inhalation).	Do not eat, drink, or smoke during work.	Rinse mouth. Do NOT induce vomiting. Refer for medical attention.

SPILLAGE DISPOSAL	STORAGE	PACKAGING & LABELLING
Ventilation. Remove all ignition sources. Collect leaking and spilled liquid in sealable containers as far as possible. Absorb remaining liquid in sand or inert absorbent and remove to safe place. Do NOT let this chemical enter the environment. (Extra personal protection: filter respirator for organic gases and vapours.)	Fireproof. Separated from strong oxidants strong acids	Note: C Xn symbol R: 10-20/21-38 S: 2-25 UN Hazard Class: 3 UN Packing Group: III

SEE IMPORTANT INFORMATION ON BACK

ICSC: 0084

Prepared in the context of cooperation between the International Programme on Chemical Safety & the Commission of the European Communities (C) IPCS CEC 1994. No modifications to the International version have been made except to add the OSHA PELs, NIOSH RELs and NIOSH IDLH values.

International Chemical Safety Cards

o-XYLENE

ICSC: 0084

I M P O R T A N T D A T A

PHYSICAL STATE; APPEARANCE:
COLOURLESS LIQUID , WITH CHARACTERISTIC ODOUR.

PHYSICAL DANGERS:
As a result of flow, agitation, etc., electrostatic charges can be generated.

CHEMICAL DANGERS:
Reacts with strong acids strong oxidants

OCCUPATIONAL EXPOSURE LIMITS:
TLV: 100 ppm as TWA 150 ppm as STEL A4 (ACGIH 2001). BEI (ACGIH 2001).
MAK: 100 ppm 440 mg/m³
Peak limitation category: II(2)
skin absorption (H);
Pregnancy risk group: D
(DFG 2005).
EU OEL: 50 ppm as TWA 100 ppm as STEL
(skin)
(EU 2000).
OSHA PEL†: TWA 100 ppm (435 mg/m^3)
NIOSH REL: TWA 100 ppm (435 mg/m^3) ST 150 ppm (655 mg/m^3)
NIOSH IDLH: 900 ppm See: 95476

ROUTES OF EXPOSURE:
The substance can be absorbed into the body by inhalation, through the skin and by ingestion.

INHALATION RISK:
A harmful contamination of the air will be reached rather slowly on evaporation of this substance at 20°C.

EFFECTS OF SHORT-TERM EXPOSURE:
The substance is irritating to the eyes and the skin The substance may cause effects on the central nervous system If this liquid is swallowed, aspiration into the lungs may result in chemical pneumonitis.

EFFECTS OF LONG-TERM OR REPEATED EXPOSURE:
The liquid defats the skin. The substance may have effects on the central nervous system. Exposure to the substance may enhance hearing damage caused by exposure to noise. Animal tests show that this substance possibly causes toxicity to human reproduction or development.

PHYSICAL PROPERTIES

Boiling point: 144°C
Melting point: -25°C
Relative density (water = 1): 0.88
Solubility in water:
none
Vapour pressure, kPa at 20°C: 0.7

Relative vapour density (air = 1): 3.7
Relative density of the vapour/air-mixture at 20°C (air = 1): 1.02
Flash point: 32°C c.c.
Auto-ignition temperature: 463°C
Explosive limits, vol% in air: 0.9-6.7
Octanol/water partition coefficient as log Pow: 3.12

ENVIRONMENTAL DATA

The substance is toxic to aquatic organisms.

N O T E S

Depending on the degree of exposure, periodic medical examination is indicated. The recommendations on this Card also apply to technical xylene. See ICSC 0086 p-Xylene and 0085 m-Xylene.

Transport Emergency Card: TEC (R)-30S1307-III
NFPA Code: H 2; F 3; R 0;

ADDITIONAL INFORMATION

(C) IPCS, CEC, 1994

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International Chemical Safety Cards

p-XYLENE

ICSC: 0086

para-Xylene
1,4-Dimethylbenzene
p-Xylol
$C_6H_4(CH_3)_2$ / C_8H_{10}
Molecular mass: 106.2

ICSC # 0086
CAS # 106-42-3
RTECS # ZE2625000
UN # 1307
EC # 601-022-00-9
August 03, 2002 Validated

TYPES OF HAZARD/ EXPOSURE	ACUTE HAZARDS/ SYMPTOMS	PREVENTION	FIRST AID/ FIRE FIGHTING
FIRE	Flammable.	NO open flames, NO sparks, and NO smoking.	Powder, water spray, foam, carbon dioxide.
EXPLOSION	Above 27°C explosive vapour/air mixtures may be formed.	Above 27°C use a closed system, ventilation, and explosion-proof electrical equipment. Prevent build-up of electrostatic charges (e.g., by grounding).	In case of fire: keep drums, etc., cool by spraying with water.
EXPOSURE		STRICT HYGIENE! AVOID EXPOSURE OF (PREGNANT) WOMEN!	
•INHALATION	Dizziness. Drowsiness. Headache. Nausea.	Ventilation, local exhaust, or breathing protection.	Fresh air, rest. Refer for medical attention.
•SKIN	Dry skin. Redness.	Protective gloves.	Remove contaminated clothes. Rinse and then wash skin with water and soap.
•EYES	Redness. Pain.	Safety spectacles.	First rinse with plenty of water for several minutes (remove contact lenses if easily possible), then take to a doctor.
•INGESTION	Burning sensation. Abdominal pain. (Further see Inhalation).	Do not eat, drink, or smoke during work.	Rinse mouth. Do NOT induce vomiting. Refer for medical attention.

SPILLAGE DISPOSAL	STORAGE	PACKAGING & LABELLING
Ventilation. Remove all ignition sources. Collect leaking and spilled liquid in sealable containers as far as possible. Absorb remaining liquid in sand or inert absorbent and remove to safe place. Do NOT let this chemical enter the environment. (Extra personal protection: filter respirator for organic gases and vapours.)	Fireproof. Separated from strong oxidants, strong acids	Note: C Xn symbol R: 10-20/21-38 S: 2-25 UN Hazard Class: 3 UN Packing Group: III

SEE IMPORTANT INFORMATION ON BACK

ICSC: 0086

Prepared in the context of cooperation between the International Programme on Chemical Safety & the Commission of the European Communities (C) IPCS CEC 1994. No modifications to the International version have been made except to add the OSHA PELs, NIOSH RELs and NIOSH IDLH values.

International Chemical Safety Cards

p-XYLENE

ICSC: 0086

I M P O R T A N T D A T A	**PHYSICAL STATE; APPEARANCE:** COLOURLESS LIQUID , WITH CHARACTERISTIC ODOUR. **PHYSICAL DANGERS:** As a result of flow, agitation, etc., electrostatic charges can be generated. **CHEMICAL DANGERS:** Reacts with strong acids strong oxidants **OCCUPATIONAL EXPOSURE LIMITS:** TLV: 100 ppm as TWA 150 ppm as STEL A4 (ACGIH 2001). BEI (ACGIH 2001). MAK: 100 ppm 440 mg/m³ Peak limitation category: II(2) skin absorption (H); Pregnancy risk group: D (DFG 2005). EU OEL: 50 ppm as TWA 100 ppm as STEL (skin) (EU 2000). OSHA PEL†: TWA 100 ppm (435 mg/m^3) NIOSH REL: TWA 100 ppm (435 mg/m^3) ST 150 ppm (655 mg/m^3) NIOSH IDLH: 900 ppm See: 95476 **ROUTES OF EXPOSURE:** The substance can be absorbed into the body by inhalation, through the skin and by ingestion. **INHALATION RISK:** A harmful contamination of the air will be reached rather slowly on evaporation of this substance at 20°C. **EFFECTS OF SHORT-TERM EXPOSURE:** The substance is irritating to the eyes and the skin The substance may cause effects on the central nervous system If this liquid is swallowed, aspiration into the lungs may result in chemical pneumonitis. **EFFECTS OF LONG-TERM OR REPEATED EXPOSURE:** The liquid defats the skin. The substance may have effects on the central nervous system. Animal tests show that this substance possibly causes toxicity to human reproduction or development.
PHYSICAL PROPERTIES	Boiling point: 138°C Melting point: 13°C Relative density (water = 1): 0.86 Solubility in water: none Vapour pressure, kPa at 20°C: 0.9 Relative vapour density (air = 1): 3.7 Relative density of the vapour/air-mixture at 20°C (air = 1): 1.02 Flash point: 27°C c.c. Auto-ignition temperature: 528°C Explosive limits, vol% in air: 1.1-7.0 Octanol/water partition coefficient as log Pow: 3.15
ENVIRONMENTAL DATA	The substance is toxic to aquatic organisms.

N O T E S

Depending on the degree of exposure, periodic medical examination is indicated. The recommendations on this Card also apply to technical xylene. See ICSC 0084 o-Xylene and 0085 m-Xylene.

Transport Emergency Card: TEC (R)-30S1307-III
NFPA Code: H 2; F 3; R 0;

ADDITIONAL INFORMATION

ICSC: 0086 **p-XYLENE**

(C) IPCS, CEC, 1994

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International Chemical Safety Cards

m-XYLENE

ICSC: 0085

meta-Xylene
1,3-Dimethylbenzene
m-Xylol
$C_6H_4(CH_3)_2$ / C_8H_{10}
Molecular mass: 106.2

ICSC # 0085
CAS # 108-38-3
RTECS # ZE2275000
UN # 1307
EC # 601-022-00-9
August 03, 2002 Validated

TYPES OF HAZARD/ EXPOSURE	ACUTE HAZARDS/ SYMPTOMS	PREVENTION	FIRST AID/ FIRE FIGHTING
FIRE	Flammable.	NO open flames, NO sparks, and NO smoking.	Powder, water spray, foam, carbon dioxide.
EXPLOSION	Above 27°C explosive vapour/air mixtures may be formed.	Above 27°C use a closed system, ventilation, and explosion-proof electrical equipment. Prevent build-up of electrostatic charges (e.g., by grounding).	In case of fire: keep drums, etc., cool by spraying with water.
EXPOSURE		STRICT HYGIENE!	
•INHALATION	Dizziness. Drowsiness. Headache. Nausea.	Ventilation, local exhaust, or breathing protection.	Fresh air, rest. Refer for medical attention.
•SKIN	Dry skin. Redness.	Protective gloves.	Remove contaminated clothes. Rinse and then wash skin with water and soap.
•EYES	Redness. Pain.	Safety spectacles.	First rinse with plenty of water for several minutes (remove contact lenses if easily possible), then take to a doctor.
•INGESTION	Burning sensation. Abdominal pain. (Further see Inhalation).	Do not eat, drink, or smoke during work.	Rinse mouth. Do NOT induce vomiting. Refer for medical attention.

SPILLAGE DISPOSAL	STORAGE	PACKAGING & LABELLING
Ventilation. Remove all ignition sources. Collect leaking and spilled liquid in sealable containers as far as possible. Absorb remaining liquid in sand or inert absorbent and remove to safe place. Do NOT let this chemical enter the environment. (Extra personal protection: filter respirator for organic gases and vapours.)	Fireproof. Separated from strong oxidants strong acids	Note: C Xn symbol R: 10-20/21-38 S: 2-25 UN Hazard Class: 3 UN Packing Group: III

SEE IMPORTANT INFORMATION ON BACK

ICSC: 0085

Prepared in the context of cooperation between the International Programme on Chemical Safety & the Commission of the European Communities (C) IPCS CEC 1994. No modifications to the International version have been made except to add the OSHA PELs, NIOSH RELs and NIOSH IDLH values.

International Chemical Safety Cards

m-XYLENE

ICSC: 0085

IMPORTANT DATA	**PHYSICAL STATE; APPEARANCE:** COLOURLESS LIQUID , WITH CHARACTERISTIC ODOUR. **PHYSICAL DANGERS:** As a result of flow, agitation, etc., electrostatic charges can be generated. **CHEMICAL DANGERS:** Reacts with strong acids strong oxidants **OCCUPATIONAL EXPOSURE LIMITS:** TLV: 100 ppm as TWA 150 ppm as STEL A4 (ACGIH 2001). BEI (ACGIH 2001). MAK: 100 ppm 440 mg/m³ Peak limitation category: II(2) skin absorption (H); Pregnancy risk group: D (DFG 2005). EU OEL: 50 ppm as TWA 100 ppm as STEL (skin) (EU 2000). OSHA PEL†: TWA 100 ppm (435 mg/m^3) NIOSH REL: TWA 100 ppm (435 mg/m^3) ST 150 ppm (655 mg/m^3) NIOSH IDLH: 900 ppm See: 95476 **ROUTES OF EXPOSURE:** The substance can be absorbed into the body by inhalation, through the skin and by ingestion. **INHALATION RISK:** A harmful contamination of the air will be reached rather slowly on evaporation of this substance at 20°C. **EFFECTS OF SHORT-TERM EXPOSURE:** The substance is irritating to the eyes and the skin The substance may cause effects on the central nervous system If this liquid is swallowed, aspiration into the lungs may result in chemical pneumonitis. **EFFECTS OF LONG-TERM OR REPEATED EXPOSURE:** The liquid defats the skin. The substance may have effects on the central nervous system Animal tests show that this substance possibly causes toxicity to human reproduction or development.
PHYSICAL PROPERTIES	Boiling point: 139°C Melting point: -48°C Relative density (water = 1): 0.86 Solubility in water: none Vapour pressure, kPa at 20°C: 0.8 Relative vapour density (air = 1): 3.7 Relative density of the vapour/air-mixture at 20°C (air = 1): 1.02 Flash point: 27°C c.c. Auto-ignition temperature: 527°C Explosive limits, vol% in air: 1.1-7.0 Octanol/water partition coefficient as log Pow: 3.20
ENVIRONMENTAL DATA	The substance is toxic to aquatic organisms.

N O T E S

Depending on the degree of exposure, periodic medical examination is indicated. The recommendations on this Card also apply to technical xylene. See ICSC 0084 o-Xylene and 0086 p-Xylene.

NFPA Code: H 2; F 3; R 0;
Transport Emergency Card: TEC (R)-30S1307-III

ADDITIONAL INFORMATION

ICSC: 0085 **m-XYLENE**

(C) IPCS, CEC, 1994

IMPORTANT LEGAL NOTICE: Neither NIOSH, the CEC or the IPCS nor any person acting on behalf of NIOSH, the CEC or the IPCS is responsible for the use which might be made of this information. This card contains the collective views of the IPCS Peer Review Committee and may not reflect in all cases all the detailed requirements included in national legislation on the subject. The user should verify compliance of the cards with the relevant legislation in the country of use. The only modifications made to produce the U.S. version is inclusion of the OSHA PELs, NIOSH RELs and NIOSH IDLH values.

International Chemical Safety Cards

p-CYMENE

ICSC: 0617

1-Methyl-4-isopropylbenzene
Dolcymene
Camphogen
$C_{10}H_{14}$ / $CH_3C_6H_4CH(CH_3)_2$
Molecular mass: 134.2

ICSC # 0617
CAS # 99-87-6
RTECS # GZ5950000
UN # 2046
November 04, 1997 Validated

TYPES OF HAZARD/ EXPOSURE	ACUTE HAZARDS/ SYMPTOMS	PREVENTION	FIRST AID/ FIRE FIGHTING
FIRE	Flammable.	NO open flames, NO sparks, and NO smoking.	Powder, AFFF, foam, carbon dioxide.
EXPLOSION	Above 47°C explosive vapour/air mixtures may be formed.	Above 47°C use a closed system, ventilation, and explosion-proof electrical equipment. Prevent build-up of electrostatic charges (e.g., by grounding).	In case of fire: keep drums, etc., cool by spraying with water.
EXPOSURE		PREVENT GENERATION OF MISTS!	
•**INHALATION**	Dizziness. Drowsiness. Vomiting.	Ventilation.	Fresh air, rest. Half-upright position. Artificial respiration if indicated. Refer for medical attention.
•**SKIN**	Dry skin. Redness.	Protective gloves.	Remove contaminated clothes. Rinse and then wash skin with water and soap. Wear protective gloves when administering first aid.
•**EYES**	Redness.	Safety spectacles.	First rinse with plenty of water for several minutes (remove contact lenses if easily possible), then take to a doctor.
•**INGESTION**	Diarrhoea. Drowsiness. Headache. Nausea. Vomiting. Unconsciousness.	Do not eat, drink, or smoke during work.	Rinse mouth. Do NOT induce vomiting. Rest. Refer for medical attention.

SPILLAGE DISPOSAL	STORAGE	PACKAGING & LABELLING
Collect leaking liquid in sealable containers. Absorb remaining liquid in sand or inert absorbent and remove to safe place. (Extra personal protection: filter respirator for organic gases and vapours).	Fireproof.	UN Hazard Class: 3 UN Packing Group: III

SEE IMPORTANT INFORMATION ON BACK

ICSC: 0617

Prepared in the context of cooperation between the International Programme on Chemical Safety & the Commission of the European Communities (C) IPCS CEC 1994. No modifications to the International version have been made except to add the OSHA PELs, NIOSH RELs and NIOSH IDLH values.

International Chemical Safety Cards

p-CYMENE

ICSC: 0617

IMPORTANT DATA	**PHYSICAL STATE; APPEARANCE:** COLOURLESS LIQUID , WITH CHARACTERISTIC ODOUR. **PHYSICAL DANGERS:** The vapour is heavier than air. **CHEMICAL DANGERS:** Reacts with oxidants. Attacks rubber. **OCCUPATIONAL EXPOSURE LIMITS:** TLV not established.	**ROUTES OF EXPOSURE:** The substance can be absorbed into the body by inhalation of its vapour and by ingestion. **INHALATION RISK:** No indication can be given about the rate in which a harmful concentration in the air is reached on evaporation of this substance at 20°C. **EFFECTS OF SHORT-TERM EXPOSURE:** The substance is irritating to the eyes and the skin . Swallowing the liquid may cause aspiration into the lungs with the risk of chemical pneumonitis. **EFFECTS OF LONG-TERM OR REPEATED EXPOSURE:** The liquid defats the skin.
PHYSICAL PROPERTIES	Boiling point: 177°C Melting point: -68°C Relative density (water = 1): 0.85 Solubility in water, g/100 ml at 25°C: 0.002 Vapour pressure, Pa at 20°C: 200	Relative vapour density (air = 1): 4.62 Flash point: 47°C c.c. Auto-ignition temperature: 435°C Explosive limits, vol% in air: 0.7-5.6 Octanol/water partition coefficient as log Pow: 4.1
ENVIRONMENTAL DATA		

N O T E S

Transport Emergency Card: TEC (R)-30G35

NFPA Code: H2; F2; R0;

ADDITIONAL INFORMATION

ICSC: 0617 **p-CYMENE**

(C) IPCS, CEC, 1994

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Material Safety Data Sheet

Version 4.0
Revision Date 07/24/2010
Print Date 12/07/2011

1. PRODUCT AND COMPANY IDENTIFICATION

Product name	:	*sec*-Butylbenzene
Product Number	:	B90408
Brand	:	Aldrich
Company	:	Sigma-Aldrich 3050 Spruce Street SAINT LOUIS MO 63103 USA
Telephone	:	+1 800-325-5832
Fax	:	+1 800-325-5052
Emergency Phone #	:	(314) 776-6555

2. HAZARDS IDENTIFICATION

Emergency Overview

OSHA Hazards
Combustible Liquid, Irritant

GHS Label elements, including precautionary statements

Pictogram

Signal word: Warning

Hazard statement(s)

H226	Flammable liquid and vapour.
H315 + H320	Causes skin and eye irritation.
H401	Toxic to aquatic life.

Precautionary statement(s)

P305 + P351 + P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

HMIS Classification

Health hazard:	2
Flammability:	2
Physical hazards:	0

NFPA Rating

Health hazard:	2
Fire:	2
Reactivity Hazard:	0

Potential Health Effects

Inhalation	May be harmful if inhaled. Causes respiratory tract irritation.
Skin	May be harmful if absorbed through skin. Causes skin irritation.
Eyes	Causes eye irritation.
Ingestion	May be harmful if swallowed.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Synonyms : 2-Phenylbutane

Formula	:	$C_{10}H_{14}$
Molecular Weight	:	134.22 g/mol

CAS-No.	EC-No.	Index-No.	Concentration
sec-Butylbenzene			
135-98-8	205-227-0	-	-

4. FIRST AID MEASURES

General advice
Consult a physician. Show this safety data sheet to the doctor in attendance.Move out of dangerous area.

If inhaled
If breathed in, move person into fresh air. If not breathing give artificial respiration Consult a physician.

In case of skin contact
Wash off with soap and plenty of water. Consult a physician.

In case of eye contact
Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician.

If swallowed
Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

5. FIRE-FIGHTING MEASURES

Suitable extinguishing media
For small (incipient) fires, use media such as "alcohol" foam, dry chemical, or carbon dioxide. For large fires, apply water from as far as possible. Use very large quantities (flooding) of water applied as a mist or spray; solid streams of water may be ineffective. Cool all affected containers with flooding quantities of water.

Special protective equipment for fire-fighters
Wear self contained breathing apparatus for fire fighting if necessary.

Further information
Use water spray to cool unopened containers.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions
Use personal protective equipment. Avoid breathing vapors, mist or gas. Ensure adequate ventilation. Remove all sources of ignition. Beware of vapours accumulating to form explosive concentrations. Vapours can accumulate in low areas.

Environmental precautions
Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.

Methods and materials for containment and cleaning up
Contain spillage, and then collect with non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and place in container for disposal according to local / national regulations (see section 13). Keep in suitable, closed containers for disposal.

7. HANDLING AND STORAGE

Precautions for safe handling
Avoid contact with skin and eyes. Avoid inhalation of vapour or mist.
Keep away from sources of ignition - No smoking. Take measures to prevent the build up of electrostatic charge.

Conditions for safe storage
Keep container tightly closed in a dry and well-ventilated place. Containers which are opened must be carefully resealed and kept upright to prevent leakage. Store in cool place.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Contains no substances with occupational exposure limit values.

Personal protective equipment

Respiratory protection
Where risk assessment shows air-purifying respirators are appropriate use a full-face respirator with multi-purpose combination (US) or type ABEK (EN 14387) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

Hand protection
Handle with gloves.

Eye protection
Face shield and safety glasses

Skin and body protection
Choose body protection according to the amount and concentration of the dangerous substance at the work place.

Hygiene measures
Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance

Form	liquid, clear
Colour	colourless

Safety data

pH	no data available
Melting point	75.5 °C (167.9 °F) - lit.
Boiling point	173 - 174 °C (343 - 345 °F) - lit.
Flash point	52.0 °C (125.6 °F) - closed cup
Ignition temperature	418 °C (784 °F)
Lower explosion limit	0.8 %(V)
Density	0.863 g/mL at 25 °C (77 °F)
Water solubility	no data available

10. STABILITY AND REACTIVITY

Chemical stability
Stable under recommended storage conditions.

Possibility of hazardous reactions
Vapours may form explosive mixture with air.

Conditions to avoid
Heat, flames and sparks.

Materials to avoid
Strong oxidizing agents

Hazardous decomposition products
Hazardous decomposition products formed under fire conditions. - Carbon oxides

11. TOXICOLOGICAL INFORMATION

Acute toxicity
LD50 Dermal - rabbit - > 13,792 mg/kg

Skin corrosion/irritation
Skin - rabbit - irritating - 24 h

Serious eye damage/eye irritation
Eyes - rabbit - Mild eye irritation - 24 h

Respiratory or skin sensitization
no data available

Germ cell mutagenicity
no data available

Carcinogenicity

IARC:	No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.
ACGIH:	No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH.
NTP:	No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.
OSHA:	No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

Reproductive toxicity
no data available

Specific target organ toxicity - single exposure (Globally Harmonized System)
no data available

Specific target organ toxicity - repeated exposure (Globally Harmonized System)
no data available

Aspiration hazard
no data available

Potential health effects

Inhalation	May be harmful if inhaled. Causes respiratory tract irritation.
Ingestion	May be harmful if swallowed.
Skin	May be harmful if absorbed through skin. Causes skin irritation.
Eyes	Causes eye irritation.

Signs and Symptoms of Exposure
To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

Additional Information
RTECS: CY9100000

12. ECOLOGICAL INFORMATION

Toxicity

no data available

Persistence and degradability
no data available

Bioaccumulative potential
no data available

Mobility in soil
no data available

PBT and vPvB assessment
no data available

Other adverse effects

An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.

Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

13. DISPOSAL CONSIDERATIONS

Product
This combustible material may be burned in a chemical incinerator equipped with an afterburner and scrubber. Observe all federal, state, and local environmental regulations. Contact a licensed professional waste disposal service to dispose of this material.

Contaminated packaging
Dispose of as unused product.

14. TRANSPORT INFORMATION

DOT (US)
UN-Number: 2709 Class: 3 Packing group: III
Proper shipping name: Butyl benzenes
Marine pollutant: No
Poison Inhalation Hazard: No

IMDG
UN-Number: 2709 Class: 3 Packing group: III EMS-No: F-E, S-D
Proper shipping name: BUTYLBENZENES
Marine pollutant: No

IATA
UN-Number: 2709 Class: 3 Packing group: III
Proper shipping name: Butylbenzenes

15. REGULATORY INFORMATION

OSHA Hazards
Combustible Liquid, Irritant

DSL Status
This product contains the following components that are not on the Canadian DSL nor NDSL lists.

	CAS-No.
sec-Butylbenzene	135-98-8

SARA 302 Components
SARA 302: No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

SARA 313 Components
SARA 313: This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

SARA 311/312 Hazards
Fire Hazard, Acute Health Hazard

Massachusetts Right To Know Components
No components are subject to the Massachusetts Right to Know Act.

Pennsylvania Right To Know Components

	CAS-No.	Revision Date
sec-Butylbenzene	135-98-8	

New Jersey Right To Know Components

	CAS-No.	Revision Date
sec-Butylbenzene	135-98-8	

California Prop. 65 Components
This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.

16. OTHER INFORMATION

Further information

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The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. Sigma-Aldrich Co., shall not be held liable for any damage resulting from handling or from contact with the above product. See reverse side of invoice or packing slip for additional terms and conditions of sale.

International Chemical Safety Cards

STYRENE

ICSC: 0073

Vinylbenzene
Phenylethylene
Ethenylbenzene
C_8H_8 / $C_6H_5CHCH_2$
Molecular mass: 104.2

ICSC # 0073
CAS # 100-42-5
RTECS # WL3675000
UN # 2055
EC # 601-026-00-0
April 04, 2006 Validated

TYPES OF HAZARD/ EXPOSURE	ACUTE HAZARDS/ SYMPTOMS	PREVENTION	FIRST AID/ FIRE FIGHTING
FIRE	Flammable. Gives off irritating or toxic fumes (or gases) in a fire.	NO open flames, NO sparks, and NO smoking.	Dry powder. Foam. Carbon dioxide.
EXPLOSION	Above 31°C explosive vapour/air mixtures may be formed. See Notes.	Above 31°C use a closed system, ventilation, and explosion-proof electrical equipment.	In case of fire: keep drums, etc., cool by spraying with water.
EXPOSURE		STRICT HYGIENE!	
•INHALATION	Dizziness. Drowsiness. Headache. Nausea. Vomiting. Weakness. Unconsciousness.	Ventilation, local exhaust, or breathing protection.	Fresh air, rest. Refer for medical attention.
•SKIN	Redness. Pain.	Protective clothing. Protective gloves.	Remove contaminated clothes. Rinse and then wash skin with water and soap.
•EYES	Redness. Pain.	Safety goggles, or eye protection in combination with breathing protection.	First rinse with plenty of water for several minutes (remove contact lenses if easily possible), then take to a doctor.
•INGESTION	Nausea. Vomiting.	Do not eat, drink, or smoke during work.	Rinse mouth. Do NOT induce vomiting. Give plenty of water to drink. Rest.

SPILLAGE DISPOSAL	STORAGE	PACKAGING & LABELLING
Remove all ignition sources. Personal protection: chemical protection suit including self-contained breathing apparatus. Do NOT let this chemical enter the environment. Do NOT wash away into sewer. Collect leaking liquid in covered containers. Absorb remaining liquid in sand or inert absorbent and remove to safe place.	Fireproof. Separated from incompatible materials See Chemical Dangers. Cool. Keep in the dark. Store only if stabilized. Store in an area without drain or sewer access.	Airtight. Marine pollutant. Note: D Xn symbol R: 10-20-36/38 S: 2-23 UN Hazard Class: 3 UN Packing Group: III Signal: Danger Flame-Excl mark-Health haz Flammable liquid and vapour Harmful if inhaled vapour Causes skin irritation

		Causes eye irritation Suspected of causing cancer Causes damage to central nervous system and liver through prolonged or repeated exposure Toxic to aquatic life

SEE IMPORTANT INFORMATION ON BACK

ICSC: 0073

Prepared in the context of cooperation between the International Programme on Chemical Safety & the Commission of the European Communities (C) IPCS CEC 1994. No modifications to the International version have been made except to add the OSHA PELs, NIOSH RELs and NIOSH IDLH values.

International Chemical Safety Cards

STYRENE

ICSC: 0073

IMPORTANT DATA

PHYSICAL STATE; APPEARANCE:
COLOURLESS TO YELLOW OILY LIQUID .

PHYSICAL DANGERS:

CHEMICAL DANGERS:
The substance can form explosive peroxides. The substance may polymerize due to warming, under the influence of light , oxidants oxygen , and peroxides , causing fire and explosion hazard. Reacts violently with strong acids , strong oxidants causing fire and explosion hazard. Attacks rubber, copper and copper alloys.

OCCUPATIONAL EXPOSURE LIMITS:
TLV: 20 ppm as TWA; 40 ppm as STEL; A4 (not classifiable as a human carcinogen); BEI issued (ACGIH 2005).
MAK: 20 ppm, 86 mg/m³;
Peak limitation category: II(2); Carcinogen category: 5; Pregnancy risk group: C; BAT issued;
(DFG 2006).
OSHA PEL†: TWA 100 ppm C 200 ppm 600 ppm (5-minute maximum peak in any 3 hours)
NIOSH REL: TWA 50 ppm (215 mg/m^3) ST 100 ppm (425 mg/m^3)
NIOSH IDLH: 700 ppm See: 100425

ROUTES OF EXPOSURE:
The substance can be absorbed into the body by inhalation of its vapour.

INHALATION RISK:
A harmful contamination of the air will be reached rather slowly on evaporation of this substance at 20°C.

EFFECTS OF SHORT-TERM EXPOSURE:
The substance is irritating to the eyes, the skin and the respiratory tract. Swallowing the liquid may cause aspiration into the lungs with the risk of chemical pneumonitis. The substance may cause effects on the central nervous system. Exposure at high levels may result in unconsciousness.

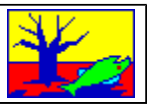
EFFECTS OF LONG-TERM OR REPEATED EXPOSURE:
The liquid defats the skin. The substance may have effects on the central nervous system. Exposure to the substance may enhance hearing damage caused by exposure to noise. This substance is possibly carcinogenic to humans. See Notes.

PHYSICAL PROPERTIES

Boiling point: 145°C
Melting point: -30.6°C
Relative density (water = 1): 0.91
Solubility in water, g/100 ml at 20°C: 0.03
Vapour pressure, kPa at 20°C: 0.67
Relative vapour density (air = 1): 3.6
Relative density of the vapour/air-mixture at 20°C (air = 1): 1.02
Flash point: 31°C c.c.
Auto-ignition temperature: 490°C
Explosive limits, vol% in air: 0.9-6.8
Octanol/water partition coefficient as log Pow: 3.0

ENVIRONMENTAL DATA

The substance is toxic to aquatic organisms. It is strongly advised that this substance does not enter the environment.



NOTES

Depending on the degree of exposure, periodic medical examination is indicated. Check for peroxides prior to distillation; eliminate if found. Styrene monomer vapours are uninhibited and may form polymers in vents or flame arresters of storage tanks, resulting in blockage of vents. Do NOT take working clothes home.

Transport Emergency Card: TEC (R)-30S2055; 30GF1-III-9
NFPA Code: H 2; F 3; R 2;
Card has been partially updated in 2007: see Occupational Exposure Limits, Fire fighting.

ADDITIONAL INFORMATION	

ICSC: 0073 **STYRENE**

(C) IPCS, CEC, 1994

IMPORTANT LEGAL NOTICE:	Neither NIOSH, the CEC or the IPCS nor any person acting on behalf of NIOSH, the CEC or the IPCS is responsible for the use which might be made of this information. This card contains the collective views of the IPCS Peer Review Committee and may not reflect in all cases all the detailed requirements included in national legislation on the subject. The user should verify compliance of the cards with the relevant legislation in the country of use. The only modifications made to produce the U.S. version is inclusion of the OSHA PELs, NIOSH RELs and NIOSH IDLH values.

Material Safety Data Sheet

Version 3.0
Revision Date 08/21/2009
Print Date 12/07/2011

1. PRODUCT AND COMPANY IDENTIFICATION

Product name : *tert*-Butylbenzene

Product Number : B90602
Brand : Aldrich

Company : Sigma-Aldrich
3050 Spruce Street
SAINT LOUIS MO 63103
USA
Telephone : +1 800-325-5832
Fax : +1 800-325-5052
Emergency Phone # : (314) 776-6555

2. COMPOSITION/INFORMATION ON INGREDIENTS

Synonyms : 2-Methyl-2-phenylpropane

Formula : $C_{10}H_{14}$
Molecular Weight : 134.22 g/mol

CAS-No.	EC-No.	Index-No.	Concentration
tert-Butylbenzene			
98-06-6	202-632-4	-	-

3. HAZARDS IDENTIFICATION

Emergency Overview

OSHA Hazards
Flammable Liquid, Irritant

HMIS Classification
Health Hazard: 2
Flammability: 3
Physical hazards: 0

NFPA Rating
Health Hazard: 2
Fire: 3
Reactivity Hazard: 0

Potential Health Effects

Inhalation May be harmful if inhaled. Causes respiratory tract irritation.
Skin May be harmful if absorbed through skin. Causes skin irritation.
Eyes Causes eye irritation.
Ingestion May be harmful if swallowed.

4. FIRST AID MEASURES

General advice
Consult a physician. Show this safety data sheet to the doctor in attendance.Move out of dangerous area.

If inhaled
If breathed in, move person into fresh air. If not breathing give artificial respiration Consult a physician.

In case of skin contact
Wash off with soap and plenty of water. Consult a physician.

In case of eye contact
Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician.

If swallowed
Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

5. FIRE-FIGHTING MEASURES

Flammable properties

Flash point	34.0 °C (93.2 °F) - closed cup
Ignition temperature	450 °C (842 °F)

Suitable extinguishing media
For small (incipient) fires, use media such as "alcohol" foam, dry chemical, or carbon dioxide. For large fires, apply water from as far as possible. Use very large quantities (flooding) of water applied as a mist or spray; solid streams of water may be ineffective. Cool all affected containers with flooding quantities of water.

Special protective equipment for fire-fighters
Wear self contained breathing apparatus for fire fighting if necessary.

Further information
Use water spray to cool unopened containers.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions
Use personal protective equipment. Avoid breathing vapors, mist or gas. Ensure adequate ventilation. Remove all sources of ignition. Beware of vapours accumulating to form explosive concentrations. Vapours can accumulate in low areas.

Environmental precautions
Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.

Methods for cleaning up
Contain spillage, and then collect with non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and place in container for disposal according to local / national regulations (see section 13). Keep in suitable, closed containers for disposal.

7. HANDLING AND STORAGE

Handling
Avoid contact with skin and eyes. Avoid inhalation of vapour or mist.
Keep away from sources of ignition - No smoking. Take measures to prevent the build up of electrostatic charge.

Storage
Keep container tightly closed in a dry and well-ventilated place. Containers which are opened must be carefully resealed and kept upright to prevent leakage. Store in cool place.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Contains no substances with occupational exposure limit values.

Personal protective equipment

Respiratory protection
Where risk assessment shows air-purifying respirators are appropriate use a full-face respirator with multi-purpose combination (US) or type ABEK (EN 14387) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

Hand protection
Handle with gloves.

Eye protection
Face shield and safety glasses

Skin and body protection
Choose body protection according to the amount and concentration of the dangerous substance at the work place.

Hygiene measures
Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance

Form	liquid, clear
Colour	colourless

Safety data

pH	no data available
Melting point	-58 °C (-72 °F) - lit.
Boiling point	169 °C (336 °F) - lit.
Flash point	34.0 °C (93.2 °F) - closed cup
Ignition temperature	450 °C (842 °F)
Lower explosion limit	0.8 %(V)
Density	0.867 g/mL at 25 °C (77 °F)
Water solubility	no data available
Partition coefficient: n-octanol/water	log Pow: 3.80

10. STABILITY AND REACTIVITY

Storage stability
Stable under recommended storage conditions.

Conditions to avoid
Heat, flames and sparks.

Materials to avoid
Strong oxidizing agents

Hazardous decomposition products
Hazardous decomposition products formed under fire conditions. - Carbon oxides

Hazardous reactions
Vapours may form explosive mixture with air.

11. TOXICOLOGICAL INFORMATION

Acute toxicity

LD50 Oral - rat - 3,045 mg/kg
Remarks: Behavioral:Somnolence (general depressed activity). Behavioral:Tremor. Gastrointestinal:Changes in structure or function of salivary glands.

Irritation and corrosion

no data available

Sensitisation

no data available

Chronic exposure

IARC:	No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.
ACGIH:	No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH.
NTP:	No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.
OSHA:	No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

Signs and Symptoms of Exposure

To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

Potential Health Effects

Inhalation	May be harmful if inhaled. Causes respiratory tract irritation.
Skin	May be harmful if absorbed through skin. Causes skin irritation.
Eyes	Causes eye irritation.
Ingestion	May be harmful if swallowed.

Additional Information
RTECS: CY9120000

12. ECOLOGICAL INFORMATION

Elimination information (persistence and degradability)

no data available

Ecotoxicity effects

Toxicity to fish	LC0 - Leuciscus idus (Golden orfe) - 44 mg/l - 48 h
	LC50 - Leuciscus idus (Golden orfe) - 65 mg/l - 48 h
Toxicity to daphnia and other aquatic	LC50 - Daphnia magna (Water flea) - 41 mg/l - 24 h

invertebrates.

Further information on ecology

An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.

Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

13. DISPOSAL CONSIDERATIONS

Product
Burn in a chemical incinerator equipped with an afterburner and scrubber but exert extra care in igniting as this material is highly flammable. This combustible material may be burned in a chemical incinerator equipped with an afterburner and scrubber. Observe all federal, state, and local environmental regulations. Contact a licensed professional waste disposal service to dispose of this material.

Contaminated packaging
Dispose of as unused product.

14. TRANSPORT INFORMATION

DOT (US)
UN-Number: 2709 Class: 3 Packing group: III
Proper shipping name: Butyl benzenes
Marine pollutant: No
Poison Inhalation Hazard: No

IMDG
UN-Number: 2709 Class: 3 Packing group: III EMS-No: F-E, S-D
Proper shipping name: BUTYLBENZENES
Marine pollutant: No

IATA
UN-Number: 2709 Class: 3 Packing group: III
Proper shipping name: Butylbenzenes

15. REGULATORY INFORMATION

OSHA Hazards
Flammable Liquid, Irritant

DSL Status
All components of this product are on the Canadian DSL list.

SARA 302 Components
SARA 302: No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

SARA 313 Components
SARA 313: This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

SARA 311/312 Hazards
Fire Hazard, Acute Health Hazard

Massachusetts Right To Know Components

	CAS-No.	Revision Date
tert-Butylbenzene	98-06-6	1993-04-24

Pennsylvania Right To Know Components

	CAS-No.	Revision Date
tert-Butylbenzene	98-06-6	1993-04-24

New Jersey Right To Know Components

	CAS-No.	Revision Date
tert-Butylbenzene	98-06-6	1993-04-24

California Prop. 65 Components

This product does not contain any chemicals known to State of California to cause cancer, birth, or any other reproductive defects.

16. OTHER INFORMATION

Further information

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The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. Sigma-Aldrich Co., shall not be held liable for any damage resulting from handling or from contact with the above product. See reverse side of invoice or packing slip for additional terms and conditions of sale.

International Chemical Safety Cards

TETRACHLOROETHYLENE

ICSC: 0076

1,1,2,2-Tetrachloroethylene
Perchloroethylene
Tetrachloroethene
C_2Cl_4 / $Cl_2C=CCl_2$
Molecular mass: 165.8

ICSC # 0076
CAS # 127-18-4
RTECS # KX3850000
UN # 1897
EC # 602-028-00-4
April 13, 2000 Validated

TYPES OF HAZARD/ EXPOSURE	ACUTE HAZARDS/ SYMPTOMS	PREVENTION	FIRST AID/ FIRE FIGHTING
FIRE	Not combustible. Gives off irritating or toxic fumes (or gases) in a fire.		In case of fire in the surroundings: use appropriate extinguishing media.
EXPLOSION			
EXPOSURE		STRICT HYGIENE! PREVENT GENERATION OF MISTS!	
•INHALATION	Dizziness. Drowsiness. Headache. Nausea. Weakness. Unconsciousness.	Ventilation, local exhaust, or breathing protection.	Fresh air, rest. Artificial respiration may be needed. Refer for medical attention.
•SKIN	Dry skin. Redness.	Protective gloves. Protective clothing.	Remove contaminated clothes. Rinse and then wash skin with water and soap.
•EYES	Redness. Pain.	Safety goggles , face shield .	First rinse with plenty of water for several minutes (remove contact lenses if easily possible), then take to a doctor.
•INGESTION	Abdominal pain. (Further see Inhalation).	Do not eat, drink, or smoke during work.	Rinse mouth. Do NOT induce vomiting. Give plenty of water to drink. Rest.

SPILLAGE DISPOSAL	STORAGE	PACKAGING & LABELLING
Ventilation. Collect leaking and spilled liquid in sealable containers as far as possible. Absorb remaining liquid in sand or inert absorbent and remove to safe place. Do NOT let this chemical enter the environment. Personal protection: filter respirator for organic gases and vapours.	Separated from metals ,(see Chemical Dangers), food and feedstuffs . Keep in the dark. Ventilation along the floor.	Do not transport with food and feedstuffs. Marine pollutant. Xn symbol N symbol R: 40-51/53 S: (2-)23-36/37-61 UN Hazard Class: 6.1 UN Packing Group: III

SEE IMPORTANT INFORMATION ON BACK

ICSC: 0076

Prepared in the context of cooperation between the International Programme on Chemical Safety & the Commission of the European Communities (C) IPCS CEC 1994. No modifications to the International version have been made except to add the OSHA PELs, NIOSH RELs and NIOSH IDLH values.

International Chemical Safety Cards

TETRACHLOROETHYLENE

ICSC: 0076

I M P O R T A N T D A T A

PHYSICAL STATE; APPEARANCE:
COLOURLESS LIQUID , WITH CHARACTERISTIC ODOUR.

PHYSICAL DANGERS:
The vapour is heavier than air.

CHEMICAL DANGERS:
On contact with hot surfaces or flames this substance decomposes forming toxic and corrosive fumes (hydrogen chloride, phosgene, chlorine). The substance decomposes slowly on contact with moisture producing trichloroacetic acid and hydrochloric acid. Reacts with metals such as aluminium, lithium, barium, beryllium.

OCCUPATIONAL EXPOSURE LIMITS:
TLV: 25 ppm as TWA, 100 ppm as STEL; A3 (confirmed animal carcinogen with unknown relevance to humans); BEI issued; (ACGIH 2004).
MAK: skin absorption (H);
Carcinogen category: 3B;
(DFG 2004).
OSHA PEL†: TWA 100 ppm C 200 ppm 300 ppm (5-minute maximum peak in any 3-hours)
NIOSH REL: Ca Minimize workplace exposure concentrations. See Appendix A
NIOSH IDLH: Ca 150 ppm See: 127184

ROUTES OF EXPOSURE:
The substance can be absorbed into the body by inhalation and by ingestion.

INHALATION RISK:
A harmful contamination of the air will be reached rather slowly on evaporation of this substance at 20°C.

EFFECTS OF SHORT-TERM EXPOSURE:
The substance is irritating to the eyes , the skin and the respiratory tract . If this liquid is swallowed, aspiration into the lungs may result in chemical pneumonitis. The substance may cause effects on the central nervous system. Exposure at high levels may result in unconsciousness.

EFFECTS OF LONG-TERM OR REPEATED EXPOSURE:
Repeated or prolonged contact with skin may cause dermatitis. The substance may have effects on the liver and kidneys. This substance is probably carcinogenic to humans.

PHYSICAL PROPERTIES

Boiling point: 121°C
Melting point: -22°C
Relative density (water = 1): 1.6
Solubility in water, g/100 ml at 20°C: 0.015

Vapour pressure, kPa at 20°C: 1.9
Relative vapour density (air = 1): 5.8
Relative density of the vapour/air-mixture at 20°C (air = 1): 1.09
Octanol/water partition coefficient as log Pow: 2.9

ENVIRONMENTAL DATA

The substance is toxic to aquatic organisms. The substance may cause long-term effects in the aquatic environment.

N O T E S

Depending on the degree of exposure, periodic medical examination is suggested. The odour warning when the exposure limit value is exceeded is insufficient. Do NOT use in the vicinity of a fire or a hot surface, or during welding. An added stabilizer or inhibitor can influence the toxicological properties of this substance, consult an expert. Card has been partly updated in April 2005. See section Occupational Exposure Limits.

Transport Emergency Card: TEC (R)-61S1897

NFPA Code: H2; F0; R0;

ADDITIONAL INFORMATION

(C) IPCS, CEC, 1994

IMPORTANT LEGAL NOTICE:

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	modifications made to produce the U.S. version is inclusion of the OSHA PELs, NIOSH RELs and NIOSH IDLH values.

International Chemical Safety Cards

TOLUENE

ICSC: 0078

Methylbenzene
Toluol
Phenylmethane
$C_6H_5CH_3$ / C_7H_8
Molecular mass: 92.1

ICSC # 0078
CAS # 108-88-3
RTECS # XS5250000
UN # 1294
EC # 601-021-00-3
October 10, 2002 Peer reviewed

TYPES OF HAZARD/ EXPOSURE	ACUTE HAZARDS/ SYMPTOMS	PREVENTION	FIRST AID/ FIRE FIGHTING
FIRE	Highly flammable.	NO open flames, NO sparks, and NO smoking.	Powder, AFFF, foam, carbon dioxide.
EXPLOSION	Vapour/air mixtures are explosive.	Closed system, ventilation, explosion-proof electrical equipment and lighting. Prevent build-up of electrostatic charges (e.g., by grounding). Do NOT use compressed air for filling, discharging, or handling. Use non-sparking handtools.	In case of fire: keep drums, etc., cool by spraying with water.
EXPOSURE		STRICT HYGIENE! AVOID EXPOSURE OF (PREGNANT) WOMEN!	
•**INHALATION**	Cough. Sore throat. Dizziness. Drowsiness. Headache. Nausea. Unconsciousness.	Ventilation, local exhaust, or breathing protection.	Fresh air, rest. Refer for medical attention.
•**SKIN**	Dry skin. Redness.	Protective gloves.	Remove contaminated clothes. Rinse and then wash skin with water and soap. Refer for medical attention.
•**EYES**	Redness. Pain.	Safety goggles.	First rinse with plenty of water for several minutes (remove contact lenses if easily possible), then take to a doctor.
•**INGESTION**	Burning sensation. Abdominal pain. (Further see Inhalation).	Do not eat, drink, or smoke during work.	Rinse mouth. Do NOT induce vomiting. Refer for medical attention.

SPILLAGE DISPOSAL	STORAGE	PACKAGING & LABELLING
Evacuate danger area in large spill! Consult an expert in large spill! Remove all ignition sources. Ventilation. Collect leaking liquid in sealable containers. Absorb remaining liquid in sand or inert absorbent and remove to safe place. Do NOT wash away into sewer. Do NOT let this chemical enter the environment. Personal protection: self-contained breathing apparatus	Fireproof. Separated from strong oxidants.	F symbol Xn symbol R: 11-38-48/20-63-65-67 S: 2-36/37-46-62 UN Hazard Class: 3 UN Packing Group: II

ICSC: 0078

Prepared in the context of cooperation between the International Programme on Chemical Safety & the Commission of the European Communities (C) IPCS CEC 1994. No modifications to the International version have been made except to add the OSHA PELs, NIOSH RELs and NIOSH IDLH values.

International Chemical Safety Cards

TOLUENE

ICSC: 0078

IMPORTANT DATA

PHYSICAL STATE; APPEARANCE:
COLOURLESS LIQUID , WITH CHARACTERISTIC ODOUR.

PHYSICAL DANGERS:
The vapour mixes well with air, explosive mixtures are formed easily. As a result of flow, agitation, etc., electrostatic charges can be generated.

CHEMICAL DANGERS:
Reacts violently with strong oxidants causing fire and explosion hazard.

OCCUPATIONAL EXPOSURE LIMITS:
TLV: 50 ppm as TWA (skin) A4 BEI issued (ACGIH 2004).
MAK: 50 ppm 190 mg/m³ H
Peak limitation category: II(4) Pregnancy risk group: C (DFG 2004).
OSHA PEL†: TWA 200 ppm C 300 ppm 500 ppm (10-minute maximum peak)
NIOSH REL: TWA 100 ppm (375 mg/m^3) ST 150 ppm (560 mg/m^3)
NIOSH IDLH: 500 ppm See: 108883

ROUTES OF EXPOSURE:
The substance can be absorbed into the body by inhalation, through the skin and by ingestion.

INHALATION RISK:
A harmful contamination of the air can be reached rather quickly on evaporation of this substance at 20°C.

EFFECTS OF SHORT-TERM EXPOSURE:
The substance is irritating to the eyes and the respiratory tract The substance may cause effects on the central nervous system If this liquid is swallowed, aspiration into the lungs may result in chemical pneumonitis. Exposure at high levels may result in cardiac dysrhythmiaandunconsciousness.

EFFECTS OF LONG-TERM OR REPEATED EXPOSURE:
The liquid defats the skin. The substance may have effects on the central nervous system Exposure to the substance may enhance hearing damage caused by exposure to noise. Animal tests show that this substance possibly causes toxicity to human reproduction or development.

PHYSICAL PROPERTIES

Boiling point: 111°C
Melting point: -95°C
Relative density (water = 1): 0.87
Solubility in water: none
Vapour pressure, kPa at 25°C: 3.8
Relative vapour density (air = 1): 3.1
Relative density of the vapour/air-mixture at 20°C (air = 1): 1.01
Flash point: 4°C c.c.
Auto-ignition temperature: 480°C
Explosive limits, vol% in air: 1.1-7.1
Octanol/water partition coefficient as log Pow: 2.69

ENVIRONMENTAL DATA

The substance is toxic to aquatic organisms.

NOTES

Depending on the degree of exposure, periodic medical examination is suggested. Use of alcoholic beverages enhances the harmful effect.

Transport Emergency Card: TEC (R)-30S1294
NFPA Code: H 2; F 3; R 0;

ADDITIONAL INFORMATION

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Material Safety Data Sheet

Version 4.2
Revision Date 01/19/2011
Print Date 12/07/2011

1. PRODUCT AND COMPANY IDENTIFICATION

Product name	:	*trans*-1,2-Dichloroethene
Product Number	:	48527
Brand	:	Supelco
Product Use	:	For laboratory research purposes.

Supplier	:	Sigma-Aldrich 3050 Spruce Street SAINT LOUIS MO 63103 USA	Manufacturer	: Sigma-Aldrich Corporation 3050 Spruce St. St. Louis, Missouri 63103 USA
Telephone	:	+1 800-325-5832		
Fax	:	+1 800-325-5052		
Emergency Phone # (For both supplier and manufacturer)	:	(314) 776-6555		
Preparation Information	:	Sigma-Aldrich Corporation Product Safety - Americas Region 1-800-521-8956		

2. HAZARDS IDENTIFICATION

Emergency Overview

OSHA Hazards
Flammable liquid, Harmful by ingestion., Irritant

Target Organs

Central nervous system, Liver, Kidney

GHS Classification
Flammable liquids (Category 2)
Acute toxicity, Inhalation (Category 4)
Acute toxicity, Oral (Category 4)
Skin irritation (Category 2)
Eye irritation (Category 2A)
Acute aquatic toxicity (Category 3)

GHS Label elements, including precautionary statements

Pictogram

Signal word Danger

Hazard statement(s)

H225	Highly flammable liquid and vapour.
H302 + H332	Harmful if swallowed or if inhaled.
H315	Causes skin irritation.
H319	Causes serious eye irritation.
H402	Harmful to aquatic life.

Precautionary statement(s)

P210	Keep away from heat/sparks/open flames/hot surfaces. - No smoking.
P305 + P351 + P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

HMIS Classification

Health hazard:	2
Chronic Health Hazard:	*
Flammability:	3
Physical hazards:	0

NFPA Rating

Health hazard:	2
Fire:	3
Reactivity Hazard:	0

Potential Health Effects

Inhalation	May be harmful if inhaled. Causes respiratory tract irritation.
Skin	Harmful if absorbed through skin. Causes skin irritation.
Eyes	Causes eye irritation.
Ingestion	Harmful if swallowed.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Synonyms : *trans*-1,2-Dichloroethene
trans-1,2-Dichloroethylene
trans-Acetylene dichloride

Formula : $C_2H_2Cl_2$ $C_2H_2Cl_2$
Molecular Weight : 96.94 g/mol

CAS-No.	EC-No.	Index-No.	Concentration
trans-Dichloroethylene			
156-60-5	205-860-2	602-026-00-3	-

4. FIRST AID MEASURES

General advice
Consult a physician. Show this safety data sheet to the doctor in attendance.Move out of dangerous area.

If inhaled
If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.

In case of skin contact
Wash off with soap and plenty of water. Consult a physician.

In case of eye contact
Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician.

If swallowed
Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

5. FIRE-FIGHTING MEASURES

Suitable extinguishing media
For small (incipient) fires, use media such as "alcohol" foam, dry chemical, or carbon dioxide. For large fires, apply water from as far as possible. Use very large quantities (flooding) of water applied as a mist or spray; solid streams of water may be ineffective. Cool all affected containers with flooding quantities of water.

Special protective equipment for fire-fighters
Wear self contained breathing apparatus for fire fighting if necessary.

Hazardous combustion products
Hazardous decomposition products formed under fire conditions. - Hydrogen chloride gas, Carbon oxides, Phosgene gas
Hazardous decomposition products formed under fire conditions. - Carbon oxides, Hydrogen chloride gas

Further information
Use water spray to cool unopened containers.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions
Use personal protective equipment. Avoid breathing vapors, mist or gas. Ensure adequate ventilation. Remove all sources of ignition. Evacuate personnel to safe areas. Beware of vapours accumulating to form explosive concentrations. Vapours can accumulate in low areas.

Environmental precautions
Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.

Methods and materials for containment and cleaning up
Contain spillage, and then collect with an electrically protected vacuum cleaner or by wet-brushing and place in container for disposal according to local regulations (see section 13).

7. HANDLING AND STORAGE

Precautions for safe handling
Avoid contact with skin and eyes. Avoid inhalation of vapour or mist.
Use explosion-proof equipment. Keep away from sources of ignition - No smoking. Take measures to prevent the build up of electrostatic charge.

Conditions for safe storage
Store in cool place. Keep container tightly closed in a dry and well-ventilated place. Containers which are opened must be carefully resealed and kept upright to prevent leakage.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Components with workplace control parameters

Components	CAS-No.	Value	Control parameters	Basis
trans-Dichloroethylene	156-60-5	TWA	200 ppm	USA. ACGIH Threshold Limit Values (TLV)
Remarks	Central Nervous System impairment Eye irritation			

Personal protective equipment

Respiratory protection
Where risk assessment shows air-purifying respirators are appropriate use a full-face respirator with multi-purpose combination (US) or type AXBEK (EN 14387) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

Hand protection
Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

Eye protection
Face shield and safety glasses Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

Skin and body protection
Complete suit protecting against chemicals, Flame retardant antistatic protective clothing, The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

Hygiene measures
Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance

Form	liquid, clear
Colour	light yellow

Safety data

pH	no data available
Melting/freezing point	Melting point/range: -50 °C (-58 °F)
Boiling point	48 °C (118 °F)
Flash point	6.0 °C (42.8 °F) - closed cup
Ignition temperature	no data available
Autoignition temperature	no data available
Lower explosion limit	9.7 %(V)
Upper explosion limit	12.8 %(V)
Vapour pressure	no data available
Density	1.257 g/mL at 25 °C (77 °F)
Water solubility	no data available
Partition coefficient: n-octanol/water	no data available
Relative vapour density	no data available
Odour	no data available
Odour Threshold	no data available
Evaporation rate	no data available

10. STABILITY AND REACTIVITY

Chemical stability
Stable under recommended storage conditions.

Possibility of hazardous reactions

Vapours may form explosive mixture with air.

Conditions to avoid
Heat, flames and sparks. Extremes of temperature and direct sunlight.

Materials to avoid
Oxidizing agents, Bases

Hazardous decomposition products
Hazardous decomposition products formed under fire conditions. - Hydrogen chloride gas, Carbon oxides, Phosgene gas
Hazardous decomposition products formed under fire conditions. - Carbon oxides, Hydrogen chloride gas
Other decomposition products - no data available

11. TOXICOLOGICAL INFORMATION

Acute toxicity

Oral LD50
LD50 Oral - rat - 1,235 mg/kg

Inhalation LC50
LC50 Inhalation - rat - 24100 ppm

Remarks: Behavioral:Somnolence (general depressed activity).

Dermal LD50
LD50 Dermal - rabbit - > 5,000 mg/kg
Remarks: Prolonged skin contact may cause skin irritation and/or dermatitis. Nutritional and Gross Metabolic:Weight loss or decreased weight gain.

Other information on acute toxicity
no data available

Skin corrosion/irritation
Skin - rabbit - Skin irritation - 24 h

Serious eye damage/eye irritation
Eyes - rabbit - Eye irritation

Respiratory or skin sensitization
no data available

Germ cell mutagenicity
no data available

Carcinogenicity

IARC:	No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.
ACGIH:	No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH.
NTP:	No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.
OSHA:	No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

Reproductive toxicity

no data available

Teratogenicity

no data available

Specific target organ toxicity - single exposure (Globally Harmonized System)
no data available

Specific target organ toxicity - repeated exposure (Globally Harmonized System)
no data available

Aspiration hazard
no data available

Potential health effects

Inhalation	May be harmful if inhaled. Causes respiratory tract irritation.
Ingestion	Harmful if swallowed.
Skin	Harmful if absorbed through skin. Causes skin irritation.
Eyes	Causes eye irritation.

Signs and Symptoms of Exposure
prolonged or repeated exposure can cause:, narcosis, To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

Synergistic effects
no data available

Additional Information

RTECS: Not available

12. ECOLOGICAL INFORMATION

Toxicity

Toxicity to daphnia and other aquatic invertebrates.	EC50 - Daphnia magna (Water flea) - 220.00 mg/l - 48 h

Persistence and degradability
no data available

Bioaccumulative potential
no data available

Mobility in soil
no data available

PBT and vPvB assessment
no data available

Other adverse effects

An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.

Harmful to aquatic life.

13. DISPOSAL CONSIDERATIONS

Product
Burn in a chemical incinerator equipped with an afterburner and scrubber but exert extra care in igniting as this material is highly flammable. Offer surplus and non-recyclable solutions to a licensed disposal company. Contact a licensed professional waste disposal service to dispose of this material.

Contaminated packaging
Dispose of as unused product.

14. TRANSPORT INFORMATION

DOT (US)
UN-Number: 1150 Class: 3 Packing group: II
Proper shipping name: 1,2-Dichloroethylene
Reportable Quantity (RQ): 1000 lbs
Marine pollutant: No
Poison Inhalation Hazard: No

IMDG
UN-Number: 1150 Class: 3 Packing group: II EMS-No: F-E, S-D
Proper shipping name: 1,2-DICHLOROETHYLENE
Marine pollutant: No

IATA
UN-Number: 1150 Class: 3 Packing group: II
Proper shipping name: 1,2-Dichloroethylene

15. REGULATORY INFORMATION

OSHA Hazards
Flammable liquid, Harmful by ingestion., Irritant

DSL Status
All components of this product are on the Canadian DSL list.

SARA 302 Components
SARA 302: No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

SARA 313 Components
SARA 313: This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

SARA 311/312 Hazards
Fire Hazard, Acute Health Hazard

Massachusetts Right To Know Components

	CAS-No.	Revision Date
trans-Dichloroethylene	156-60-5	1993-04-24

Pennsylvania Right To Know Components

	CAS-No.	Revision Date
trans-Dichloroethylene	156-60-5	1993-04-24

New Jersey Right To Know Components

	CAS-No.	Revision Date
trans-Dichloroethylene	156-60-5	1993-04-24

California Prop. 65 Components
This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.

16. OTHER INFORMATION

Further information
Copyright 2011 Sigma-Aldrich Co. License granted to make unlimited paper copies for internal use only.
The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. Sigma-Aldrich Co., shall not be held liable for any damage resulting from handling or from contact with the above product. See reverse side of invoice or packing slip for additional terms and conditions of sale.

Material Safety Data Sheet

Version 4.2
Revision Date 03/17/2011
Print Date 12/07/2011

1. PRODUCT AND COMPANY IDENTIFICATION

Product name	:	*trans*-1,3-Dichloropropene
Product Number	:	47793
Brand	:	Supelco
Supplier	:	Sigma-Aldrich 3050 Spruce Street SAINT LOUIS MO 63103 USA
Telephone	:	+1 800-325-5832
Fax	:	+1 800-325-5052
Emergency Phone # (For both supplier and manufacturer)	:	(314) 776-6555
Preparation Information	:	Sigma-Aldrich Corporation Product Safety - Americas Region 1-800-521-8956

2. HAZARDS IDENTIFICATION

Emergency Overview

OSHA Hazards
Flammable liquid, Toxic by ingestion, Toxic by skin absorption, Skin sensitiser, Irritant, Carcinogen

Target Organs

Liver, Kidney

GHS Classification
Flammable liquids (Category 3)
Acute toxicity, Oral (Category 3)
Acute toxicity, Inhalation (Category 4)
Acute toxicity, Dermal (Category 3)
Skin irritation (Category 2)
Eye irritation (Category 2A)
Skin sensitization (Category 1)
Carcinogenicity (Category 2)
Specific target organ toxicity - single exposure (Category 3)
Aspiration hazard (Category 1)
Acute aquatic toxicity (Category 1)
Chronic aquatic toxicity (Category 1)

GHS Label elements, including precautionary statements

Pictogram

Signal word Danger

Hazard statement(s)

H226	Flammable liquid and vapour.
H301 + H311	Toxic if swallowed or in contact with skin.
H304	May be fatal if swallowed and enters airways.
H315	Causes skin irritation.
H317	May cause an allergic skin reaction.

H319	Causes serious eye irritation.
H332	Harmful if inhaled.
H335	May cause respiratory irritation.
H351	Suspected of causing cancer.
H410	Very toxic to aquatic life with long lasting effects.

Precautionary statement(s)

P261	Avoid breathing dust/ fume/ gas/ mist/ vapours/ spray.
P273	Avoid release to the environment.
P280	Wear protective gloves/ protective clothing.
P301 + P310	IF SWALLOWED: Immediately call a POISON CENTER or doctor/ physician.
P305 + P351 + P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P312	Call a POISON CENTER or doctor/ physician if you feel unwell.
P331	Do NOT induce vomiting.
P501	Dispose of contents/ container to an approved waste disposal plant.

HMIS Classification

Health hazard:	2
Chronic Health Hazard:	*
Flammability:	3
Physical hazards:	0

NFPA Rating

Health hazard:	2
Fire:	3
Reactivity Hazard:	0

Potential Health Effects

Inhalation	May be harmful if inhaled. Causes respiratory tract irritation.
Skin	Toxic if absorbed through skin. Causes skin irritation.
Eyes	Causes eye irritation.
Ingestion	Toxic if swallowed. Aspiration hazard if swallowed - can enter lungs and cause damage.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Formula : $C_3H_4Cl_2$ $C_3H_4Cl_2$

Molecular Weight : 110.97 g/mol

CAS-No.	EC-No.	Index-No.	Concentration
(E)-1,3-Dichloropropene			
10061-02-6	-	-	-

4. FIRST AID MEASURES

General advice

Consult a physician. Show this safety data sheet to the doctor in attendance.Move out of dangerous area.

If inhaled

If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.

In case of skin contact

Wash off with soap and plenty of water. Take victim immediately to hospital. Consult a physician.

In case of eye contact

Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician.

If swallowed

Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

5. FIRE-FIGHTING MEASURES

Conditions of flammability
Flammable in the presence of a source of ignition when the temperature is above the flash point. Keep away from heat/sparks/open flame/hot surface. No smoking.

Suitable extinguishing media
Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

Special protective equipment for fire-fighters
Wear self contained breathing apparatus for fire fighting if necessary.

Hazardous combustion products
Hazardous decomposition products formed under fire conditions. - Carbon oxides, Hydrogen chloride gas

Further information
Use water spray to cool unopened containers.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions
Wear respiratory protection. Avoid breathing vapors, mist or gas. Ensure adequate ventilation. Remove all sources of ignition. Evacuate personnel to safe areas. Beware of vapours accumulating to form explosive concentrations. Vapours can accumulate in low areas.

Environmental precautions
Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.

Methods and materials for containment and cleaning up
Contain spillage, and then collect with an electrically protected vacuum cleaner or by wet-brushing and place in container for disposal according to local regulations (see section 13).

7. HANDLING AND STORAGE

Precautions for safe handling
Avoid contact with skin and eyes. Avoid inhalation of vapour or mist.
Keep away from sources of ignition - No smoking. Take measures to prevent the build up of electrostatic charge.

Conditions for safe storage
Keep container tightly closed in a dry and well-ventilated place. Containers which are opened must be carefully resealed and kept upright to prevent leakage.

Recommended storage temperature: -20 °C

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Contains no substances with occupational exposure limit values.

Personal protective equipment

Respiratory protection
Where risk assessment shows air-purifying respirators are appropriate use a full-face respirator with multi-purpose combination (US) or type ABEK (EN 14387) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

Hand protection
Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

Eye protection
Face shield and safety glasses Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

Skin and body protection

Complete suit protecting against chemicals, Flame retardant antistatic protective clothing, The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

Hygiene measures
Avoid contact with skin, eyes and clothing. Wash hands before breaks and immediately after handling the product.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance

Form	liquid
Colour	no data available

Safety data

pH	no data available
Melting point/freezing point	no data available
Boiling point	112.0 °C (233.6 °F)
Flash point	27 °C (81 °F) - closed cup
Ignition temperature	no data available
Autoignition temperature	no data available
Lower explosion limit	no data available
Upper explosion limit	no data available
Vapour pressure	no data available
Density	1.23 g/cm3 at 20 °C (68 °F)
Water solubility	no data available
Partition coefficient: n-octanol/water	no data available
Relative vapour density	no data available
Odour	no data available
Odour Threshold	no data available
Evaporation rate	no data available

10. STABILITY AND REACTIVITY

Chemical stability
Stable under recommended storage conditions.

Possibility of hazardous reactions

Vapours may form explosive mixture with air.

Conditions to avoid
Heat, flames and sparks.

Materials to avoid
Aluminum, Strong oxidizing agents, Metals, Halogens

Hazardous decomposition products
Hazardous decomposition products formed under fire conditions. - Carbon oxides, Hydrogen chloride gas
Other decomposition products - no data available

11. TOXICOLOGICAL INFORMATION

Acute toxicity

Oral LD50
no data available

Inhalation LC50
no data available

Dermal LD50
no data available

Other information on acute toxicity
no data available

Skin corrosion/irritation
no data available

Serious eye damage/eye irritation
no data available

Respiratory or skin sensitization
May cause sensitization by skin contact.

Germ cell mutagenicity

no data available

Carcinogenicity

This product is or contains a component that has been reported to be possibly carcinogenic based on its IARC, ACGIH, NTP, or EPA classification.

Limited evidence of carcinogenicity in animal studies

IARC:	No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.
ACGIH:	No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH.
NTP:	No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.
OSHA:	No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

Reproductive toxicity

no data available

Teratogenicity

no data available

Specific target organ toxicity - single exposure (Globally Harmonized System)
May cause respiratory irritation.

Specific target organ toxicity - repeated exposure (Globally Harmonized System)
no data available

Aspiration hazard
May be fatal if swallowed and enters airways.

Potential health effects

Inhalation	May be harmful if inhaled. Causes respiratory tract irritation.
Ingestion	Toxic if swallowed. Aspiration hazard if swallowed - can enter lungs and cause damage.
Skin	Toxic if absorbed through skin. Causes skin irritation.
Eyes	Causes eye irritation.

Signs and Symptoms of Exposure
To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

Synergistic effects
no data available

Additional Information
RTECS: UC8320000

12. ECOLOGICAL INFORMATION

Toxicity

no data available

Persistence and degradability
no data available

Bioaccumulative potential
no data available

Mobility in soil
no data available

PBT and vPvB assessment
no data available

Other adverse effects

An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.

Very toxic to aquatic life with long lasting effects.

no data available

13. DISPOSAL CONSIDERATIONS

Product
Burn in a chemical incinerator equipped with an afterburner and scrubber but exert extra care in igniting as this material is highly flammable. Offer surplus and non-recyclable solutions to a licensed disposal company. Contact a licensed professional waste disposal service to dispose of this material.

Contaminated packaging
Dispose of as unused product.

14. TRANSPORT INFORMATION

DOT (US)
UN number: 2047 Class: 3 Packing group: II
Proper shipping name: Dichloropropenes
Reportable Quantity (RQ):
Marine pollutant: No
Poison Inhalation Hazard: No

IMDG
UN number: 2047 Class: 3 Packing group: II EMS-No: F-E, S-D
Proper shipping name: DICHLOROPROPENES

Marine pollutant: No

IATA
UN number: 2047 Class: 3 Packing group: II
Proper shipping name: Dichloropropenes

15. REGULATORY INFORMATION

OSHA Hazards
Flammable liquid, Toxic by ingestion, Toxic by skin absorption, Skin sensitiser, Irritant, Carcinogen

SARA 302 Components
SARA 302: No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

SARA 313 Components
The following components are subject to reporting levels established by SARA Title III, Section 313:

	CAS-No.	Revision Date
(E)-1,3-Dichloropropene	10061-02-6	2007-07-01

SARA 311/312 Hazards
Fire Hazard, Acute Health Hazard, Chronic Health Hazard

Massachusetts Right To Know Components

	CAS-No.	Revision Date
(E)-1,3-Dichloropropene	10061-02-6	2007-07-01

Pennsylvania Right To Know Components

	CAS-No.	Revision Date
(E)-1,3-Dichloropropene	10061-02-6	2007-07-01

New Jersey Right To Know Components

	CAS-No.	Revision Date
(E)-1,3-Dichloropropene	10061-02-6	2007-07-01

California Prop. 65 Components
This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.

16. OTHER INFORMATION

Further information
Copyright 2011 Sigma-Aldrich Co. License granted to make unlimited paper copies for internal use only.
The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. Sigma-Aldrich Co., shall not be held liable for any damage resulting from handling or from contact with the above product. See reverse side of invoice or packing slip for additional terms and conditions of sale.

International Chemical Safety Cards

TRICHLOROETHYLENE

ICSC: 0081

1,1,2-Trichloroethylene
Trichloroethene
Ethylene trichloride
Acetylene trichloride
C_2HCl_3 / $ClCH=CCl_2$
Molecular mass: 131.4

ICSC # 0081
CAS # 79-01-6
RTECS # KX4550000
UN # 1710
EC # 602-027-00-9
April 10, 2000 Validated

TYPES OF HAZARD/ EXPOSURE	ACUTE HAZARDS/ SYMPTOMS	PREVENTION	FIRST AID/ FIRE FIGHTING
FIRE	Combustible under specific conditions. See Notes.		In case of fire in the surroundings: all extinguishing agents allowed.
EXPLOSION		Prevent build-up of electrostatic charges (e.g., by grounding).	In case of fire: keep drums, etc., cool by spraying with water.
EXPOSURE		PREVENT GENERATION OF MISTS! STRICT HYGIENE!	
•INHALATION	Dizziness. Drowsiness. Headache. Weakness. Nausea. Unconsciousness.	Ventilation, local exhaust, or breathing protection.	Fresh air, rest. Artificial respiration may be needed. Refer for medical attention.
•SKIN	Dry skin. Redness.	Protective gloves.	Remove contaminated clothes. Rinse and then wash skin with water and soap.
•EYES	Redness. Pain.	Safety spectacles, or eye protection in combination with breathing protection.	First rinse with plenty of water for several minutes (remove contact lenses if easily possible), then take to a doctor.
•INGESTION	Abdominal pain. (Further see Inhalation).	Do not eat, drink, or smoke during work.	Rinse mouth. Do NOT induce vomiting. Give one or two glasses of water to drink. Rest.

SPILLAGE DISPOSAL	STORAGE	PACKAGING & LABELLING
Ventilation. Personal protection: filter respirator for organic gases and vapours adapted to the airborne concentration of the substance. Collect leaking and spilled liquid in sealable containers as far as possible. Absorb remaining liquid in sand or inert absorbent and remove to safe place. Do NOT let this chemical enter the environment.	Separated from metals (see Chemical Dangers), strong bases, food and feedstuffs . Dry. Keep in the dark. Ventilation along the floor. Store in an area without drain or sewer access.	Do not transport with food and feedstuffs. Marine pollutant. T symbol R: 45-36/38-52/53-67 S: 53-45-61 UN Hazard Class: 6.1 UN Packing Group: III

SEE IMPORTANT INFORMATION ON BACK

Prepared in the context of cooperation between the International Programme on Chemical Safety & the Commission of the European Communities (C) IPCS CEC 1994. No modifications to the International version have been made except to add the

ICSC: 0081 OSHA PELs, NIOSH RELs and NIOSH IDLH values.

International Chemical Safety Cards

TRICHLOROETHYLENE

ICSC: 0081

I M P O R T A N T D A T A

PHYSICAL STATE; APPEARANCE:
COLOURLESS LIQUID , WITH CHARACTERISTIC ODOUR.

PHYSICAL DANGERS:
The vapour is heavier than air. As a result of flow, agitation, etc., electrostatic charges can be generated.

CHEMICAL DANGERS:
On contact with hot surfaces or flames this substance decomposes forming toxic and corrosive fumes (phosgene , hydrogen chloride). The substance decomposes on contact with strong alkali producing dichloroacetylene , which increases fire hazard. Reacts violently with metal powders such as magnesium, aluminium, titanium, and barium. Slowly decomposed by light in presence of moisture, with formation of corrosive hydrochloric acid.

OCCUPATIONAL EXPOSURE LIMITS:
TLV: 50 ppm as TWA; 100 ppm as STEL; A5; BEI issued; (ACGIH 2004).
MAK:
Carcinogen category: 1; Germ cell mutagen group: 3B; (DFG 2007).
OSHA PEL†: TWA 100 ppm C 200 ppm 300 ppm (5-minute maximum peak in any 2 hours)
NIOSH REL: Ca See Appendix A See Appendix C
NIOSH IDLH: Ca 1000 ppm See: 79016

ROUTES OF EXPOSURE:
The substance can be absorbed into the body by inhalation and by ingestion.

INHALATION RISK:
A harmful contamination of the air can be reached rather quickly on evaporation of this substance at 20°C.

EFFECTS OF SHORT-TERM EXPOSURE:
The substance is irritating to the eyes and the skin . Swallowing the liquid may cause aspiration into the lungs with the risk of chemical pneumonitis. The substance may cause effects on the central nervous system , resulting in respiratory failure . Exposure could cause lowering of consciousness.

EFFECTS OF LONG-TERM OR REPEATED EXPOSURE:
Repeated or prolonged contact with skin may cause dermatitis. The substance may have effects on the central nervous system , resulting in loss of memory. The substance may have effects on the liver and kidneys (see Notes). This substance is probably carcinogenic to humans.

PHYSICAL PROPERTIES

Boiling point: 87°C
Melting point: -73°C
Relative density (water = 1): 1.5
Solubility in water, g/100 ml at 20°C: 0.1
Vapour pressure, kPa at 20°C: 7.8
Relative vapour density (air = 1): 4.5
Relative density of the vapour/air-mixture at 20°C (air = 1): 1.3
Auto-ignition temperature: 410°C
Explosive limits, vol% in air: 8-10.5
Octanol/water partition coefficient as log Pow: 2.42
Electrical conductivity: 800pS/m

ENVIRONMENTAL DATA

The substance is harmful to aquatic organisms. The substance may cause long-term effects in the aquatic environment.

N O T E S

Combustible vapour/air mixtures difficult to ignite, may be developed under certain conditions. Use of alcoholic beverages enhances the harmful effect. Depending on the degree of exposure, periodic medical examination is suggested. The odour warning when the exposure limit value is exceeded is insufficient. Do NOT use in the vicinity of a fire or a hot surface, or during welding. An added stabilizer or inhibitor can influence the toxicological properties of this substance, consult an expert.

Transport Emergency Card: TEC (R)-61S1710

NFPA Code: H2; F1; R0;
Card has been partially updated in October 2004: see Occupational Exposure Limits, EU Classification, Emergency Response.
Card has been partially updated in April 2010: see Occupational Exposure Limits, Ingestion First Aid, Storage.

ADDITIONAL INFORMATION

ICSC: 0081 **TRICHLOROETHYLENE**

(C) IPCS, CEC, 1994

IMPORTANT LEGAL NOTICE:	Neither NIOSH, the CEC or the IPCS nor any person acting on behalf of NIOSH, the CEC or the IPCS is responsible for the use which might be made of this information. This card contains the collective views of the IPCS Peer Review Committee and may not reflect in all cases all the detailed requirements included in national legislation on the subject. The user should verify compliance of the cards with the relevant legislation in the country of use. The only modifications made to produce the U.S. version is inclusion of the OSHA PELs, NIOSH RELs and NIOSH IDLH values.

International Chemical Safety Cards

TRICHLOROFLUOROMETHANE

ICSC: 0047

Trichloromonofluoromethane
Fluorotrichloromethane
CFC 11
R 11
CCl_3F
Molecular mass: 137.4

ICSC # 0047
CAS # 75-69-4
RTECS # PB6125000
July 03, 2002 Validated

TYPES OF HAZARD/ EXPOSURE	ACUTE HAZARDS/ SYMPTOMS	PREVENTION	FIRST AID/ FIRE FIGHTING
FIRE	Not combustible. Gives off irritating or toxic fumes (or gases) in a fire.		In case of fire in the surroundings: use appropriate extinguishing media.
EXPLOSION			In case of fire: keep drums, etc., cool by spraying with water.
EXPOSURE			
•**INHALATION**	Cardiac arrhythmia. Confusion. Drowsiness. Unconsciousness.	Ventilation, local exhaust, or breathing protection.	Fresh air, rest. Artificial respiration may be needed. Refer for medical attention.
•**SKIN**	ON CONTACT WITH LIQUID: FROSTBITE. Dry skin.	Cold-insulating gloves.	ON FROSTBITE: rinse with plenty of water, do NOT remove clothes. Refer for medical attention.
•**EYES**	Redness. Pain.	Safety goggles.	First rinse with plenty of water for several minutes (remove contact lenses if easily possible), then take to a doctor.
•**INGESTION**		Do not eat, drink, or smoke during work.	

SPILLAGE DISPOSAL	STORAGE	PACKAGING & LABELLING
Ventilation.	Separated from incompatible materials . See Chemical Dangers. Cool.	

SEE IMPORTANT INFORMATION ON BACK

ICSC: 0047

Prepared in the context of cooperation between the International Programme on Chemical Safety & the Commission of the European Communities (C) IPCS CEC 1994. No modifications to the International version have been made except to add the OSHA PELs, NIOSH RELs and NIOSH IDLH values.

International Chemical Safety Cards

TRICHLOROFLUOROMETHANE

ICSC: 0047

I	**PHYSICAL STATE; APPEARANCE:** COLOURLESS GAS OR HIGHLY VOLATILE	**ROUTES OF EXPOSURE:** The substance can be absorbed into the body by

M P O R T A N T D A T A

LIQUID , WITH CHARACTERISTIC ODOUR.

PHYSICAL DANGERS:
The gas is heavier than air. The vapour is heavier than air and may accumulate in low ceiling spaces causing deficiency of oxygen.

CHEMICAL DANGERS:
On contact with hot surfaces or flames this substance decomposes forming toxic and corrosive gases(hydrogen chloride ICSC 0163,phosgene ICSC 0007,hydrogen fluoride ICSC 0283,carbonyl fluoride ICSC 0633). Reacts with powders of aluminium, zinc, magnesium and lithium shavings; granular barium.

OCCUPATIONAL EXPOSURE LIMITS:
TLV: 1000 ppm (Ceiling value); A4; (ACGIH 2004).
MAK: 1000 ppm; 5700 mg/m³;
Peak limitation category: II(2); Pregnancy risk group: C;

(DFG 2004).
OSHA PEL†: TWA 1000 ppm (5600 mg/m^3)
NIOSH REL: C 1000 ppm (5600 mg/m^3)
NIOSH IDLH: 2000 ppm See: 75694

inhalation.

INHALATION RISK:
On loss of containment this liquid evaporates very quickly displacing the air and causing a serious risk of suffocation when in confined areas.

EFFECTS OF SHORT-TERM EXPOSURE:
The liquid may cause frostbite. The substance may cause effects on the cardiovascular system and central nervous system , resulting in cardiac disorders and central nervous system depression. Exposure could cause lowering of consciousness. See Notes.

EFFECTS OF LONG-TERM OR REPEATED EXPOSURE:
The liquid defats the skin.

PHYSICAL PROPERTIES

Boiling point: 24°C
Melting point: -111°C
Relative density (water = 1): 1.49
Solubility in water, g/100 ml at 20°C: 0.1

Vapour pressure, kPa at 20°C: 89.0
Relative vapour density (air = 1): 4.7
Relative density of the vapour/air-mixture at 20°C (air = 1): 4.4
Octanol/water partition coefficient as log Pow: 2.53

ENVIRONMENTAL DATA

This substance may be hazardous to the environment; special attention should be given to its impact on the ozone layer.

N O T E S

High concentrations in the air cause a deficiency of oxygen with the risk of unconsciousness or death. Check oxygen content before entering area. The occupational exposure limit value should not be exceeded during any part of the working exposure. The odour warning when the exposure limit value is exceeded is insufficient. Do NOT use in the vicinity of a fire or a hot surface, or during welding. Turn leaking cylinder with the leak up to prevent escape of gas in liquid state. Freon 11, Frigen 11, Halon 11 are trade names. Card has been partly updated in October 2004. See sections Occupational Exposure Limits, EU classification, Emergency Response.

ADDITIONAL INFORMATION

ICSC: 0047 **TRICHLOROFLUOROMETHANE**

(C) IPCS, CEC, 1994

IMPORTANT LEGAL NOTICE:

Neither NIOSH, the CEC or the IPCS nor any person acting on behalf of NIOSH, the CEC or the IPCS is responsible for the use which might be made of this information. This card contains the collective views of the IPCS Peer Review Committee and may not reflect in all cases all the detailed requirements included in national legislation on the subject. The user should verify compliance of the cards with the relevant legislation in the country of use. The only modifications made to produce the U.S. version is inclusion of the OSHA PELs, NIOSH RELs and NIOSH IDLH values.

International Chemical Safety Cards

VINYL CHLORIDE

ICSC: 0082

Chloroethene
Chloroethylene
VCM
C_2H_3Cl / $H_2C=CHCl$
Molecular mass: 62.5
(cylinder)

ICSC # 0082
CAS # 75-01-4
RTECS # KU9625000
UN # 1086 (stabilized)
EC # 602-023-00-7
April 13, 2000 Validated

TYPES OF HAZARD/ EXPOSURE	ACUTE HAZARDS/ SYMPTOMS	PREVENTION	FIRST AID/ FIRE FIGHTING
FIRE	Extremely flammable. Gives off irritating or toxic fumes (or gases) in a fire.	NO open flames, NO sparks, and NO smoking.	Shut off supply; if not possible and no risk to surroundings, let the fire burn itself out; in other cases extinguish with powder, carbon dioxide.
EXPLOSION	Gas/air mixtures are explosive.	Closed system, ventilation, explosion-proof electrical equipment and lighting. Use non-sparking handtools.	In case of fire: keep cylinder cool by spraying with water. Combat fire from a sheltered position.
EXPOSURE		AVOID ALL CONTACT!	IN ALL CASES CONSULT A DOCTOR!
•INHALATION	Dizziness. Drowsiness. Headache. Unconsciousness.	Ventilation, local exhaust, or breathing protection.	Fresh air, rest. Refer for medical attention.
•SKIN	ON CONTACT WITH LIQUID: FROSTBITE.	Protective gloves. Cold-insulating gloves. Protective clothing.	ON FROSTBITE: rinse with plenty of water, do NOT remove clothes.
•EYES	Redness. Pain.	Safety goggles or eye protection in combination with breathing protection.	First rinse with plenty of water for several minutes (remove contact lenses if easily possible), then take to a doctor.
•INGESTION		Do not eat, drink, or smoke during work.	

SPILLAGE DISPOSAL	STORAGE	PACKAGING & LABELLING
Evacuate danger area! Consult an expert! Ventilation. Remove all ignition sources. Personal protection: complete protective clothing including self-contained breathing apparatus.	Fireproof. Separated from incompatible materials .(See Chemical Dangers.) Cool. Store only if stabilized.	Note: D F+ symbol T symbol R: 45-12 S: 53-45 UN Hazard Class: 2.1

SEE IMPORTANT INFORMATION ON BACK

ICSC: 0082

Prepared in the context of cooperation between the International Programme on Chemical Safety & the Commission of the European Communities (C) IPCS CEC 1994. No modifications to the International version have been made except to add the OSHA PELs, NIOSH RELs and NIOSH IDLH values.

International Chemical Safety Cards

VINYL CHLORIDE

ICSC: 0082

I M P O R T A N T D A T A

PHYSICAL STATE; APPEARANCE:
COLOURLESS COMPRESSED LIQUEFIED GAS , WITH CHARACTERISTIC ODOUR.

PHYSICAL DANGERS:
The gas is heavier than air, and may travel along the ground; distant ignition possible. Vinyl chloride monomer vapours are uninhibited and may form polymers in vents or flame arresters of storage tanks, resulting in blockage of vents.

CHEMICAL DANGERS:
The substance can under specific circumstances form peroxides, initiating explosive polymerization. The substance will polymerize readily due to heating and under the influence of air, light and on contact with a catalyst, strong oxidizing agents and metals such as copper and aluminium, with fire or explosion hazard. The substance decomposes on burning producing toxic and corrosive fumes (hydrogen chloride , phosgene). Attacks iron and steel in the presence of moisture.

OCCUPATIONAL EXPOSURE LIMITS:
TLV: 1 ppm as TWA; A1 (confirmed human carcinogen); (ACGIH 2004).
MAK:
Carcinogen category: 1;
(DFG 2004).
OSHA PEL: 1910.1017 TWA 1 ppm C 5 ppm 15-minute
NIOSH REL: Ca See Appendix A
NIOSH IDLH: Ca N.D. See: IDLH INDEX

ROUTES OF EXPOSURE:
The substance can be absorbed into the body by inhalation.

INHALATION RISK:
A harmful concentration of this gas in the air will be reached very quickly on loss of containment.

EFFECTS OF SHORT-TERM EXPOSURE:
The substance is irritating to the eyes . The liquid may cause frostbite. The substance may cause effects on the central nervous system . Exposure could cause lowering of consciousness. Medical observation is indicated.

EFFECTS OF LONG-TERM OR REPEATED EXPOSURE:
The substance may have effects on the liver, spleen, blood andperipheral blood vessels, and tissue and bones of the fingers. This substance is carcinogenic to humans.

PHYSICAL PROPERTIES

Boiling point: -13°C
Melting point: -154°C
Relative density (water = 1): 0.9 (liquid)
Density: 8 (vapour) at 15°C
g/l
Solubility in water:
none

Relative vapour density (air = 1): 2.2
Flash point:
-78°C c.c.
Auto-ignition temperature: 472°C
Explosive limits, vol% in air: 3.6-33
Octanol/water partition coefficient as log Pow: 0.6

ENVIRONMENTAL DATA

This substance may be hazardous to the environment; special attention should be given to ground water contamination.

N O T E S

Depending on the degree of exposure, periodic medical examination is suggested. The odour warning when the exposure limit value is exceeded is insufficient. Do NOT use in the vicinity of a fire or a hot surface, or during welding. An added stabilizer or inhibitor can influence the toxicological properties of this substance, consult an expert. Card has been partly updated in April 2005. See section Occupational Exposure Limits.

Transport Emergency Card: TEC (R)-20S1086

NFPA Code: H 2; F 4; R 2;

ADDITIONAL INFORMATION

(C) IPCS, CEC, 1994

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International Chemical Safety Cards

1,2,4-TRICHLOROBENZENE

ICSC: 1049

1,2,4-Trichlorobenzol
unsym-Trichlorobenzene
$C_6H_3Cl_3$
Molecular mass: 181.5

ICSC # 1049
CAS # 120-82-1
RTECS # DC2100000
UN # 2321
EC # 602-087-00-6
November 26, 2003 Validated

TYPES OF HAZARD/ EXPOSURE	ACUTE HAZARDS/ SYMPTOMS	PREVENTION	FIRST AID/ FIRE FIGHTING
FIRE	Combustible. Gives off irritating or toxic fumes (or gases) in a fire.	NO open flames.	Powder, water spray, foam, carbon dioxide.
EXPLOSION			
EXPOSURE		PREVENT GENERATION OF MISTS!	
•INHALATION	Cough. Sore throat. Burning sensation.	Ventilation, local exhaust, or breathing protection.	Fresh air, rest. Refer for medical attention.
•SKIN	Dry skin. Redness. Roughness.	Protective gloves.	Remove contaminated clothes. Rinse skin with plenty of water or shower. Refer for medical attention.
•EYES	Redness. Pain.	Safety goggles, or eye protection in combination with breathing protection.	First rinse with plenty of water for several minutes (remove contact lenses if easily possible), then take to a doctor.
•INGESTION	Abdominal pain. Sore throat. Vomiting.	Do not eat, drink, or smoke during work.	Rinse mouth. Give plenty of water to drink. Refer for medical attention.

SPILLAGE DISPOSAL	STORAGE	PACKAGING & LABELLING
Collect leaking and spilled liquid in sealable containers as far as possible. Absorb remaining liquid in sand or inert absorbent and remove to safe place. Sweep spilled substance into sealable containers , if solid. Do NOT let this chemical enter the environment. (Extra personal protection: filter respirator for organic gases and vapours.)	Separated from strong oxidants, acids, food and feedstuffs .	Do not transport with food and feedstuffs. Marine pollutant. Xn symbol N symbol R: 22-38-50/53 S: 2-23-37/39-60-61 UN Hazard Class: 6.1 UN Packing Group: III

SEE IMPORTANT INFORMATION ON BACK

ICSC: 1049

Prepared in the context of cooperation between the International Programme on Chemical Safety & the Commission of the European Communities (C) IPCS CEC 1994. No modifications to the International version have been made except to add the OSHA PELs, NIOSH RELs and NIOSH IDLH values.

International Chemical Safety Cards

1,2,4-TRICHLOROBENZENE

ICSC: 1049

IMPORTANT DATA

PHYSICAL STATE; APPEARANCE:
COLOURLESS LIQUID OR WHITE CRYSTALS , WITH CHARACTERISTIC ODOUR.

PHYSICAL DANGERS:

CHEMICAL DANGERS:
The substance decomposes on burning producing toxic fumes including hydrogen chloride . Reacts violently with oxidants .

OCCUPATIONAL EXPOSURE LIMITS:
TLV: 5 ppm; (Ceiling value); (ACGIH 2003).
EU OEL: as TWA 2 ppm, 15.1 mg/m³; as STEL 5 ppm, 37.8 mg/m³; (skin); (EU 2003).
OSHA PEL†: none
NIOSH REL: C 5 ppm (40 mg/m^3)
NIOSH IDLH: N.D. See: IDLH INDEX

ROUTES OF EXPOSURE:
The substance can be absorbed into the body by inhalation, through the skin and by ingestion.

INHALATION RISK:
A harmful contamination of the air will be reached rather slowly on evaporation of this substance at 20°C; on spraying or dispersing, however, much faster.

EFFECTS OF SHORT-TERM EXPOSURE:
The substance is irritating to the eyes the skin and the respiratory tract .

EFFECTS OF LONG-TERM OR REPEATED EXPOSURE:
The liquid defats the skin. The substance may have effects on the liver .

PHYSICAL PROPERTIES

Boiling point: 213°C
Melting point: 17°C
Relative density (water = 1): 1.5
Solubility in water: 34.6 mg/l
Vapour pressure, Pa at 25°C: 40
Relative vapour density (air = 1): 6.26
Relative density of the vapour/air-mixture at 20°C (air = 1): 1.002
Flash point: 105°C c.c.
Auto-ignition temperature: 571°C
Explosive limits, vol% in air: 2.5-6.6 (at 150°C)
Octanol/water partition coefficient as log Pow: 3.98

ENVIRONMENTAL DATA

The substance is toxic to aquatic organisms. Bioaccumulation of this chemical may occur in fish.

NOTES

The occupational exposure limit value should not be exceeded during any part of the working exposure. Also consult ICSC0344 1,3,5-Trichlorobenzene, and ICSC1222 1,2,3-Trichlorobenzene.

Transport Emergency Card: TEC (R)-61GT1-III

NFPA Code: H2; F1; R0;

ADDITIONAL INFORMATION

ICSC: 1049 **1,2,4-TRICHLOROBENZENE**

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International Chemical Safety Cards

1,2-DICHLOROBENZENE

ICSC: 1066

ortho-Dichlorobenzene
$C_6H_4Cl_2$
Molecular mass: 147.0

ICSC # 1066
CAS # 95-50-1
RTECS # CZ4500000
UN # 1591
EC # 602-034-00-7
November 26, 2003 Validated

TYPES OF HAZARD/ EXPOSURE	ACUTE HAZARDS/ SYMPTOMS	PREVENTION	FIRST AID/ FIRE FIGHTING
FIRE	Combustible.	NO open flames.	Powder, water spray, foam, carbon dioxide.
EXPLOSION	Above 66°C explosive vapour/air mixtures may be formed.	Above 66°C use a closed system, ventilation.	
EXPOSURE			
•INHALATION	Cough. Drowsiness. Sore throat. Unconsciousness.	Ventilation, local exhaust, or breathing protection.	Fresh air, rest. Refer for medical attention.
•SKIN	Redness. Pain. Dry skin.	Protective gloves. Protective clothing.	Remove contaminated clothes. Rinse skin with plenty of water or shower. Refer for medical attention.
•EYES	Redness. Pain.	Face shield.	First rinse with plenty of water for several minutes (remove contact lenses if easily possible), then take to a doctor.
•INGESTION	Burning sensation. Diarrhoea. Nausea. Vomiting.	Do not eat, drink, or smoke during work.	Rinse mouth. Give plenty of water to drink. Do NOT induce vomiting. Refer for medical attention.

SPILLAGE DISPOSAL	STORAGE	PACKAGING & LABELLING
Collect leaking and spilled liquid in sealable containers as far as possible. Absorb remaining liquid in sand or inert absorbent and remove to safe place. Do NOT let this chemical enter the environment. (Extra personal protection: filter respirator for organic gases and vapours.)	Separated from aluminium , oxidants and food and feedstuffs .	Do not transport with food and feedstuffs. Marine pollutant. Xn symbol N symbol R: 22-36/37/38-50/53 S: 2-23-60-61 UN Hazard Class: 6.1 UN Packing Group: III

SEE IMPORTANT INFORMATION ON BACK

ICSC: 1066

Prepared in the context of cooperation between the International Programme on Chemical Safety & the Commission of the European Communities (C) IPCS CEC 1994. No modifications to the International version have been made except to add the OSHA PELs, NIOSH RELs and NIOSH IDLH values.

International Chemical Safety Cards

1,2-DICHLOROBENZENE

ICSC: 1066

IMPORTANT DATA

PHYSICAL STATE; APPEARANCE:
COLOURLESS TO YELLOW LIQUID , WITH CHARACTERISTIC ODOUR.

PHYSICAL DANGERS:

CHEMICAL DANGERS:
The substance decomposes on burning producing toxic and corrosive gases including hydrogen chloride . Reacts with aluminium and oxidants . Attacks plastic and rubber.

OCCUPATIONAL EXPOSURE LIMITS:
OSHA PEL: C 50 ppm (300 mg/m^3)
NIOSH REL: C 50 ppm (300 mg/m^3)
NIOSH IDLH: 200 ppm See: 95501
TLV: 25 ppm as TWA; 50 ppm as STEL; A4; (ACGIH 2003).
MAK: 10 ppm, 61 mg/m³; H;
Peak limitation category: II(2); Pregnancy risk group: C; (DFG 2003).

ROUTES OF EXPOSURE:
The substance can be absorbed into the body by inhalation, through the skin and by ingestion.

INHALATION RISK:
A harmful contamination of the air will be reached rather slowly on evaporation of this substance at 20°C.

EFFECTS OF SHORT-TERM EXPOSURE:
The substance is irritating to the eyes , the skin and the respiratory tract . The substance may cause effects on the central nervous system and liver . Exposure could cause lowering of consciousness.

EFFECTS OF LONG-TERM OR REPEATED EXPOSURE:
The liquid defats the skin. The substance may have effects on the kidneys , blood .

PHYSICAL PROPERTIES

Boiling point: 180-183°C
Melting point: -17°C
Relative density (water = 1): 1.3
Solubility in water:
very poor
Vapour pressure, kPa at 20°C: 0.16

Relative vapour density (air = 1): 5.1
Relative density of the vapour/air-mixture at 20°C (air = 1): 1.006
Flash point: 66°C c.c.
Auto-ignition temperature: 648°C
Explosive limits, vol% in air: 2.2-9.2
Octanol/water partition coefficient as log Pow: 3.38

ENVIRONMENTAL DATA

The substance is toxic to aquatic organisms. Bioaccumulation of this chemical may occur in fish. It is strongly advised that this substance does not enter the environment.

NOTES

Transport Emergency Card: TEC (R)-61GT1-III

NFPA Code: H2; F2; R0;

ADDITIONAL INFORMATION

ICSC: 1066 **1,2-DICHLOROBENZENE**

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	version is inclusion of the OSHA PELs, NIOSH RELs and NIOSH IDLH values.

International Chemical Safety Cards

1,3-DICHLOROBENZENE

ICSC: 1095

m-Dichlorobenzene
m-Phenylene dichloride
$C_6H_4Cl_2$
Molecular mass: 147.00

ICSC # 1095
CAS # 541-73-1
RTECS # CZ4499000
UN # 2810
EC # 602-067-00-7
April 10, 2000 Validated

TYPES OF HAZARD/ EXPOSURE	ACUTE HAZARDS/ SYMPTOMS	PREVENTION	FIRST AID/ FIRE FIGHTING
FIRE	Combustible. Gives off irritating or toxic fumes (or gases) in a fire.	NO open flames.	Powder, water spray, foam, carbon dioxide.
EXPLOSION	Above 63°C explosive vapour/air mixtures may be formed.	Above 63°C use a closed system, ventilation.	In case of fire: keep drums, etc., cool by spraying with water.
EXPOSURE		PREVENT GENERATION OF MISTS!	
•**INHALATION**	Cough. Drowsiness. Nausea. Sore throat. Vomiting. See Notes.	Ventilation, local exhaust, or breathing protection.	Fresh air, rest. Refer for medical attention.
•**SKIN**	Redness. Pain.	Protective gloves.	Remove contaminated clothes. Rinse skin with plenty of water or shower. Refer for medical attention.
•**EYES**	Redness. Pain.	Safety goggles.	First rinse with plenty of water for several minutes (remove contact lenses if easily possible), then take to a doctor.
•**INGESTION**	Burning sensation. Diarrhoea. Nausea. Vomiting.	Do not eat, drink, or smoke during work. Wash hands before eating.	Rinse mouth. Refer for medical attention.

SPILLAGE DISPOSAL	STORAGE	PACKAGING & LABELLING
Collect leaking and spilled liquid in sealable containers as far as possible. Absorb remaining liquid in sand or inert absorbent and remove to safe place. Do NOT let this chemical enter	Provision to contain effluent from fire extinguishing. Store in an area without drain or sewer access. Separated from strong oxidants, aluminium , food and feedstuffs . Well closed.	Do not transport with food and feedstuffs. Xn symbol N symbol R: 22-51/53

the environment. (Extra personal protection: A/P2 filter respirator for organic vapour and harmful dust).		S: 2-61 UN Hazard Class: 6.1 UN Packing Group: III

SEE IMPORTANT INFORMATION ON BACK

ICSC: 1095

Prepared in the context of cooperation between the International Programme on Chemical Safety & the Commission of the European Communities (C) IPCS CEC 1994. No modifications to the International version have been made except to add the OSHA PELs, NIOSH RELs and NIOSH IDLH values.

International Chemical Safety Cards

1,3-DICHLOROBENZENE

ICSC: 1095

IMPORTANT DATA

PHYSICAL STATE; APPEARANCE:
COLOURLESS LIQUID

PHYSICAL DANGERS:
The vapour is heavier than air.

CHEMICAL DANGERS:
The substance decomposes on burning producing toxic fumes including hydrogen chloride . Reacts with strong oxidants. Reacts violently with aluminium .

OCCUPATIONAL EXPOSURE LIMITS:
TLV not established.
MAK: 2 ppm, 12 mg/m³;
Peak limitation category: II(2); Pregnancy risk group: C;
(DFG 2008).

ROUTES OF EXPOSURE:
The substance can be absorbed into the body by inhalation and by ingestion.

INHALATION RISK:
No indication can be given about the rate in which a harmful concentration in the air is reached on evaporation of this substance at 20° C.

EFFECTS OF SHORT-TERM EXPOSURE:
The vapour irritates the eyes, the skin and the respiratory tract. See Notes.

EFFECTS OF LONG-TERM OR REPEATED EXPOSURE:
The substance may have effects on the kidneys and liver . See Notes.

PHYSICAL PROPERTIES

Boiling point: 173°C
Melting point: -24.8°C
Relative density (water = 1): 1.288
Solubility in water:
none

Vapour pressure, kPa at 25°C: 0.286
Relative vapour density (air = 1): 5.1
Flash point: 63°C
Octanol/water partition coefficient as log Pow: 3.53

ENVIRONMENTAL DATA

The substance is toxic to aquatic organisms. In the food chain important to humans, bioaccumulation takes place, specifically in fish .

N O T E S

Data on the toxicity of m-dichlorobenzene are limited. Also consult ICSC #0037 (p-Dichlorobenzene) and #1066 (o-Dichlorobenzene).

Card has been partially updated in November 2008: see Occupational Exposure Limits, Storage.

ADDITIONAL INFORMATION

ICSC: 1095 **1,3-DICHLOROBENZENE**

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International Chemical Safety Cards

1,4-DICHLOROBENZENE

ICSC: 0037

p-Dichlorobenzene
PDCB
$C_6H_4Cl_2$
Molecular mass: 147

ICSC # 0037
CAS # 106-46-7
RTECS # CZ4550000
UN # 3077
EC # 602-035-00-2
November 26, 2003 Validated

TYPES OF HAZARD/ EXPOSURE	ACUTE HAZARDS/ SYMPTOMS	PREVENTION	FIRST AID/ FIRE FIGHTING
FIRE	Combustible. Gives off irritating or toxic fumes (or gases) in a fire.	NO open flames.	Powder, water spray, foam, carbon dioxide.
EXPLOSION	Above 66°C explosive vapour/air mixtures may be formed.	Above 66°C use a closed system, ventilation, and explosion-proof electrical equipment.	In case of fire: keep drums, etc., cool by spraying with water.
EXPOSURE		AVOID ALL CONTACT!	
•INHALATION	Burning sensation. Cough. Drowsiness. Headache. Nausea. Shortness of breath. Vomiting.	Ventilation, local exhaust, or breathing protection.	Fresh air, rest. Refer for medical attention.
•SKIN		Protective gloves.	Remove contaminated clothes. Rinse and then wash skin with water and soap.
•EYES	Redness. Pain.	Safety goggles, or eye protection in combination with breathing protection.	First rinse with plenty of water for several minutes (remove contact lenses if easily possible), then take to a doctor.
•INGESTION	Diarrhoea. (Further see Inhalation).	Do not eat, drink, or smoke during work.	Give plenty of water to drink. Refer for medical attention.

SPILLAGE DISPOSAL	STORAGE	PACKAGING & LABELLING
Sweep spilled substance into containers; if appropriate, moisten first to prevent dusting. Carefully collect remainder, then remove to safe place. Personal protection: filter respirator for organic gases and vapours. Do NOT let	Provision to contain effluent from fire extinguishing. Separated from strong oxidants, food and feedstuffs . Keep in a well-ventilated room.	Do not transport with food and feedstuffs. Marine pollutant. Xn symbol N symbol R: 36-40-50/53

this chemical enter the environment.		S: 2-36/37-46-60-61 UN Hazard Class: 9 UN Packing Group: III

SEE IMPORTANT INFORMATION ON BACK

ICSC: 0037

Prepared in the context of cooperation between the International Programme on Chemical Safety & the Commission of the European Communities (C) IPCS CEC 1994. No modifications to the International version have been made except to add the OSHA PELs, NIOSH RELs and NIOSH IDLH values.

International Chemical Safety Cards

1,4-DICHLOROBENZENE

ICSC: 0037

IMPORTANT DATA	**PHYSICAL STATE; APPEARANCE:** COLOURLESS TO WHITE CRYSTALS , WITH CHARACTERISTIC ODOUR. **PHYSICAL DANGERS:** **CHEMICAL DANGERS:** On combustion, forms toxic and corrosive fumesincludinghydrogen chloride. Reacts with strong oxidants . **OCCUPATIONAL EXPOSURE LIMITS:** TLV: 10 ppm as TWA; A3; (ACGIH 2004). MAK: H; Carcinogen category: 2; Germ cell mutagen group: 3B; (DFG 2004). OSHA PEL†: TWA 75 ppm (450 mg/m^3) NIOSH REL: Ca See Appendix A NIOSH IDLH: Ca 150 ppm See: 106467	**ROUTES OF EXPOSURE:** The substance can be absorbed into the body by inhalation and by ingestion. **INHALATION RISK:** A harmful contamination of the air will be reached rather slowly on evaporation of this substance at 20°C. **EFFECTS OF SHORT-TERM EXPOSURE:** The substance is irritating to the eyes and the respiratory tract . The substance may cause effects on the blood , resulting in haemolytic anaemia. The substance may cause effects on the central nervous system. Medical observation is indicated. **EFFECTS OF LONG-TERM OR REPEATED EXPOSURE:** The substance may have effects on the liver, kidneys and blood. This substance is possibly carcinogenic to humans.
PHYSICAL PROPERTIES	Boiling point: 174°C Melting point: 53°C Density: 1.2 g/cm^3 Solubility in water: at 25 °C 80 mg/l Vapour pressure, Pa at 20°C: 170	Relative vapour density (air = 1): 5.08 Relative density of the vapour/air-mixture at 20°C (air = 1): 1.01 Flash point: 66°C c.c. Explosive limits, vol% in air: 6.2-16 Octanol/water partition coefficient as log Pow: 3.37
ENVIRONMENTAL DATA	The substance is toxic to aquatic organisms. Bioaccumulation of this chemical may occur in fish.	

NOTES

Depending on the degree of exposure, periodic medical examination is suggested. Do NOT take working clothes home. Card has been partly updated in October 2004. See sections Occupational Exposure Limits, EU classification, Emergency Response.

Transport Emergency Card: TEC (R)-90GM7-III

NFPA Code: H 2; F 2; R 0;

ADDITIONAL INFORMATION

ICSC: 0037 **1,4-DICHLOROBENZENE**

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International Chemical Safety Cards

2,4,5-TRICHLOROPHENOL

ICSC: 0879

2,4,5-TCP
1-Hydroxy-2,4,5-trichlorobenzene
$C_6H_3Cl_3O$ / $C_6H_2Cl_3(OH)$
Molecular mass: 197.5

ICSC # 0879
CAS # 95-95-4
RTECS # SN1400000
UN # 2020
EC # 604-017-00-X
March 25, 1998 Validated

TYPES OF HAZARD/ EXPOSURE	ACUTE HAZARDS/ SYMPTOMS	PREVENTION	FIRST AID/ FIRE FIGHTING
FIRE	Combustible under specific conditions. Gives off irritating or toxic fumes (or gases) in a fire.	NO open flames. NO contact with strong oxidants.	Water spray, powder.
EXPLOSION			
EXPOSURE		PREVENT DISPERSION OF DUST!	
•INHALATION	Cough.	Local exhaust or breathing protection.	Fresh air, rest.
•SKIN	Redness. Pain.	Protective gloves. Protective clothing.	First rinse with plenty of water, then remove contaminated clothes and rinse again. Refer for medical attention.
•EYES	Redness. Pain. Blurred vision.	Safety goggles, face shield, or eye protection in combination with breathing protection if powder.	First rinse with plenty of water for several minutes (remove contact lenses if easily possible), then take to a doctor.
•INGESTION	Abdominal pain. Diarrhoea. Dizziness. Headache. Vomiting. Fatigue. Sweating.	Do not eat, drink, or smoke during work. Wash hands before eating.	Rinse mouth. Refer for medical attention.

SPILLAGE DISPOSAL	STORAGE	PACKAGING & LABELLING
(Extra personal protection: A/P2 filter respirator for organic vapour and harmful dust). Sweep spilled substance into sealable containers; if appropriate, moisten first to prevent dusting. Carefully collect remainder, then	Separated from strong oxidants, food and feedstuffs. Store in an area without drain or sewer access. Provision to contain effluent from fire extinguishing.	Do not transport with food and feedstuffs. Marine pollutant. Xn symbol N symbol R: 22-36/38-50/53

remove to safe place. Do NOT let this chemical enter the environment.		S: 2-26-28-60-61 UN Hazard Class: 6.1 UN Packing Group: III

SEE IMPORTANT INFORMATION ON BACK

ICSC: 0879

Prepared in the context of cooperation between the International Programme on Chemical Safety & the Commission of the European Communities (C) IPCS CEC 1994. No modifications to the International version have been made except to add the OSHA PELs, NIOSH RELs and NIOSH IDLH values.

International Chemical Safety Cards

2,4,5-TRICHLOROPHENOL

ICSC: 0879

IMPORTANT DATA

PHYSICAL STATE; APPEARANCE:
COLOURLESS CRYSTALS OR GREY FLAKES , WITH CHARACTERISTIC ODOUR.

PHYSICAL DANGERS:

CHEMICAL DANGERS:
May explode on heating to decomposition. The substance decomposes on heating and on contact with strong oxidants producing toxic and irritating fumes (chlorine, hydrochloric acid). The substance is a weak acid. Reacts in an alkaline medium at high temperatures producing highly toxic chlorinated dioxins.

OCCUPATIONAL EXPOSURE LIMITS:
TLV not established.
MAK: IIb (not established but data is available) (DFG 2008).

ROUTES OF EXPOSURE:
The substance can be absorbed into the body by inhalation and through the skin and by ingestion.

INHALATION RISK:
No indication can be given about the rate in which a harmful concentration in the air is reached on evaporation of this substance at 20° C.

EFFECTS OF SHORT-TERM EXPOSURE:
The substance irritates the eyes, the skin and the respiratory tract.

EFFECTS OF LONG-TERM OR REPEATED EXPOSURE:
Repeated or prolonged contact with skin may cause dermatitis. The substance may have effects on the liver and kidneys. (see Notes). ted at PR-update 2010, consulting K. Straif (IARC): for this particular compound there is inadequate evidence from animal data on carcinogenicity. There is human data for the mixture of polychlorophenols indicating that the mixture may have carcinogenic potential (equal to IARC group 3).

PHYSICAL PROPERTIES

Boiling point: 253°C
Melting point: 67°C
Density: 1.68 g/cm³

Solubility in water, g/100 ml at 25°C: 0.1
Vapour pressure, Pa at 25°C: 2.9
Octanol/water partition coefficient as log Pow: 3.7

ENVIRONMENTAL DATA

The substance is very toxic to aquatic organisms. The substance may cause long-term effects in the aquatic environment. Avoid release to the environment in circumstances different to normal use.

NOTES

Technical products may contain highly toxic impurities such as polychlorinated dibenzodioxins and dibenzofurans. The substance is combustible but no flash point is available in literature. Depending on the degree of exposure, periodic medical examination is indicated. If the substance is formulated with solvent(s) also consult the card(s) (ICSC) of the solvent(s). Carrier solvents used in commercial formulations may change physical and toxicological properties. Caswell No. 879, Collunosol, Dowicide 2, NCI-C61187, Nurelle, Preventol I are trade names. Also consult ICSC #0588 2,3,4-trichlorophenol, ICSC #0589 2,3,5-trichlorophenol, ICSC #0590 2,3,6-trichlorophenol and ICSC #1122 2,4,6-trichlorophenol.

Transport Emergency Card: TEC (R)-804
Card has been partially updated in November 2008: see Occupational Exposure Limits,
Card has been partially updated in May 2010: see Effects of Long-Term or Repeated Exposure.

ADDITIONAL INFORMATION

ICSC: 0879 **2,4,5-TRICHLOROPHENOL**

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International Chemical Safety Cards

2,4,6-TRICHLOROPHENOL

ICSC: 1122

2,4,6-TCP
$C_6H_3Cl_3O$ / $C_6H_2Cl_3OH$
Molecular mass: 197.45

ICSC # 1122
CAS # 88-06-2
RTECS # SN1575000
UN # 2020
EC # 604-018-00-5
November 25, 1998 Validated

TYPES OF HAZARD/ EXPOSURE	ACUTE HAZARDS/ SYMPTOMS	PREVENTION	FIRST AID/ FIRE FIGHTING
FIRE	Not combustible. Gives off irritating or toxic fumes (or gases) in a fire.		In case of fire in the surroundings: all extinguishing agents allowed.
EXPLOSION			
EXPOSURE		AVOID ALL CONTACT!	IN ALL CASES CONSULT A DOCTOR!
•INHALATION	Cough. Sore throat.	Ventilation (not if powder), local exhaust, or breathing protection.	Fresh air, rest. Refer for medical attention.
•SKIN	Redness.	Protective gloves. Protective clothing.	Remove contaminated clothes. Rinse and then wash skin with water and soap. Refer for medical attention.
•EYES	Redness. Pain.	Safety goggles, or face shield.	First rinse with plenty of water for several minutes (remove contact lenses if easily possible), then take to a doctor.
•INGESTION	Convulsions. Diarrhoea. Dizziness. Headache. Shortness of breath. Vomiting. Weakness. Ataxia.	Do not eat, drink, or smoke during work.	Rinse mouth. Refer immediately for medical attention.

SPILLAGE DISPOSAL	STORAGE	PACKAGING & LABELLING
Sweep spilled substance into sealable containers; if appropriate, moisten first to prevent dusting. Carefully collect remainder, then remove to safe place. Do NOT let this chemical enter the environment. (Extra personal protection: P2 filter respirator for	Separated from strong oxidants, and food and feedstuffs. Well closed.	Do not transport with food and feedstuffs. Xn symbol N symbol R: 22-36/38-40-50/53 S: 2-36/37-60-61 UN Hazard Class: 6.1

harmful particles).		UN Packing Group: III

SEE IMPORTANT INFORMATION ON BACK

ICSC: 1122	Prepared in the context of cooperation between the International Programme on Chemical Safety & the Commission of the European Communities (C) IPCS CEC 1994. No modifications to the International version have been made except to add the OSHA PELs, NIOSH RELs and NIOSH IDLH values.

International Chemical Safety Cards

2,4,6-TRICHLOROPHENOL

ICSC: 1122

IMPORTANT DATA	**PHYSICAL STATE; APPEARANCE:** COLOURLESS TO YELLOW CRYSTALS , WITH CHARACTERISTIC ODOUR. **PHYSICAL DANGERS:** **CHEMICAL DANGERS:** The substance decomposes on heating producing toxic and corrosive fumes including hydrogen chloride and chlorine fumes. Reacts with strong oxidants. **OCCUPATIONAL EXPOSURE LIMITS:** TLV not established. MAK not established.	**ROUTES OF EXPOSURE:** The substance can be absorbed into the body by inhalation of its vapour, through the skin and by ingestion. **INHALATION RISK:** Evaporation at 20°C is negligible; a harmful concentration of airborne particles can, however, be reached quickly when dispersed. **EFFECTS OF SHORT-TERM EXPOSURE:** The substance irritates the eyes , the skin and the respiratory tract . **EFFECTS OF LONG-TERM OR REPEATED EXPOSURE:** Repeated or prolonged contact with skin may cause dermatitis including chloracne. The substance may have effects on the liver , resulting in impaired functions. up 2B); 27 (EPA has determined that this substance is a probable carcinogen).;
PHYSICAL PROPERTIES	Boiling point: 246°C Melting point: 69°C Density: 1.5 g/cm³ at 58°C Solubility in water: none	Vapour pressure, Pa at 76.5°C: 133 Flash point: 99°C c.c. Octanol/water partition coefficient as log Pow: 3.87
ENVIRONMENTAL DATA	The substance is very toxic to aquatic organisms. In the food chain important to humans, bioaccumulation takes place, specifically in fish.	

N O T E S

Technical grade of this substance may include the polychlorinated dibenzo-p-dioxins, polychlorinated dibenzofurans and other contaminants. Dowicide 2S, Omal are trade names.

Transport Emergency Card: TEC (R)-804/61G12c

Card has been partially updated in May 2010: see Effects of Long-Term or Repeated Exposure.

ADDITIONAL INFORMATION

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International Chemical Safety Cards

2,4-DICHLOROPHENOL

ICSC: 0438

2,4-DCP
2,4-Dichlorohydroxybenzene
1-Hydroxy-2,4-dichlorobenzene
$C_6H_4Cl_2O$
Molecular mass: 163.0

ICSC # 0438
CAS # 120-83-2
RTECS # SK8575000
UN # 2020
EC # 604-011-00-7
June 06, 2010 Validated
Pu, hed in Series 6.

TYPES OF HAZARD/ EXPOSURE	ACUTE HAZARDS/ SYMPTOMS	PREVENTION	FIRST AID/ FIRE FIGHTING
FIRE	Combustible. Gives off irritating or toxic fumes (or gases) in a fire.	NO open flames.	water spray, foam, powder, carbon dioxide
EXPLOSION	Finely dispersed particles form explosive mixtures in air.	Prevent build-up of electrostatic charges (e.g., by grounding).	
EXPOSURE		PREVENT DISPERSION OF DUST! PREVENT GENERATION OF MISTS! AVOID ALL CONTACT!	IN ALL CASES CONSULT A DOCTOR!
•INHALATION	Sore throat. Cough. Burning sensation behind the breastbone. Shortness of breath. Laboured breathing. Further see Ingestion.	Local exhaust or breathing protection.	Fresh air, rest. Half-upright position. Refer immediately for medical attention.
•SKIN	MAY BE ABSORBED! Redness. Pain. Blisters. (Further see Inhalation).	Protective gloves. Protective clothing.	Wear protective gloves when administering first aid. Remove contaminated clothes. (See Notes). To remove substance use polyethylene glycol 400 or vegetable oil. Rinse skin with plenty of water or shower. Refer immediately for medical attention.
•EYES	Redness. Pain. Severe burns. vere corneal damage)	Face shield and eye protection in combination with breathing protection.	Rinse with plenty of water (remove contact lenses if easily possible). Refer immediately for medical attention.
	Burns in mouth and throat.	Do not eat, drink, or smoke	Rinse mouth. Do NOT induce

•**INGESTION**	Abdominal pain. Tremor. Convulsions. Shock or collapse.	during work.	vomiting. Refer immediately for medical attention.

SPILLAGE DISPOSAL	STORAGE	PACKAGING & LABELLING
Personal protection: Chemical protection suit including self-contained breathing apparatus. Sweep spilled substance into containers; if appropriate, moisten first to prevent dusting. Carefully collect remainder, then remove to safe place. Do NOT let this chemical enter the environment.	Fireproof. Store in an area without drain or sewer access. Provision to contain effluent from fire extinguishing. Separated from strong oxidants, food and feedstuffs . Ventilation along the floor. 22309000	Do not transport with food and feedstuffs. T symbol N symbol R: 22-24-34-51/53 S: 1/2-26-36/37/39-45-61 UN Hazard Class: 6.1 UN Packing Group: III Signal: Danger Corr-Skull-Health haz-Enviro Harmful if swallowed Toxic in contact with skin Causes severe skin burns and eye damage Causes damage to the central nervous system May cause damage to the respiratory system if inhaled Toxic to aquatic life with long-lasting effects

SEE IMPORTANT INFORMATION ON BACK

ICSC: 0438

Prepared in the context of cooperation between the International Programme on Chemical Safety & the Commission of the European Communities (C) IPCS CEC 1994. No modifications to the International version have been made except to add the OSHA PELs, NIOSH RELs and NIOSH IDLH values.

International Chemical Safety Cards

2,4-DICHLOROPHENOL

ICSC: 0438

IMPORTANT DATA

PHYSICAL STATE; APPEARANCE:
COLOURLESS CRYSTALS , WITH CHARACTERISTIC ODOUR.

PHYSICAL DANGERS:
Dust explosion possible if in powder or granular form, mixed with air. If dry, it can be charged electrostatically by swirling, pneumatic transport, pouring, etc. Wiley's Guide to Incombatible chemicals, 3rd ed.

CHEMICAL DANGERS:
The substance decomposes on heating producing toxic fumes including chlorine , hydrogen chloride, and on burning phosgene and dioxins. Reacts violently with acids and strong oxidants . ESTIS

OCCUPATIONAL EXPOSURE LIMITS:
TLV not established.
MAK not established.

ROUTES OF EXPOSURE:
The substance can be absorbed into the body by inhalation, through the skin and by ingestion. Serious local effects by all routes of exposure. ermal LD50 790mg/kg

INHALATION RISK:
A harmful contamination of the air will not or will only very slowly be reached on evaporation of this substance at 20°C; when in molten form, however, evaporation will be much faster.

EFFECTS OF SHORT-TERM EXPOSURE:
The substance is corrosive to the eyes, the skin and the respiratory tract. Corrosive on ingestion. The hot liquid may cause severe skin burns. Exposure to the molten substance may result in extensive skin absorption and rapid death. Inhalation of the vapour may cause lung oedema (see Notes). Medical observation is indicated. The substance may cause effects on

T **A**		the central nervous system **EFFECTS OF LONG-TERM OR REPEATED EXPOSURE:** nce is possibly carcinogenic to humans.
PHYSICAL PROPERTIES	Boiling point: 210.0°C Melting point: 45.0°C Density: 1.4 g/cm³ Solubility in water, g/100 ml at 20°C: 0.45 (poor)	Vapour pressure, Pa at 20°C: 10 Relative vapour density (air = 1): 5.6 Relative density of the vapour/air-mixture at 20°C (air = 1): 1.00 Flashpoint: 113°C c.c. Auto-ignition temperature: 500°C Octanol/water partition coefficient as log Pow: 3.17
ENVIRONMENTAL DATA	The substance is toxic to aquatic organisms. This substance does enter the environment under normal use. Great care, however, should be given to avoid any additional release, e.g. through inappropriate disposal. des.	

N O T E S

The symptoms of lung oedema often do not become manifest until a few hours have passed and they are aggravated by physical effort. Rest and medical observation is therefore essential. Isolate contaminated clothing by sealing in a bag or other container.

NFPA Code: H3; F1; R0.

ADDITIONAL INFORMATION

ICSC: 0438 **2,4-DICHLOROPHENOL**

(C) IPCS, CEC, 1994

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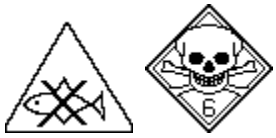
International Chemical Safety Cards

2,4-XYLENOL

ICSC: 0458

2,4-Dimethylphenol
m-Xylenol
1-Hydroxy-2.4-dimethylbenzene
$C_8H_{10}O$ / $(CH_3)_2C_6H_3OH$
Molecular mass: 122.17

ICSC # 0458
CAS # 105-67-9
RTECS # ZE5600000
UN # 2261
EC # 604-006-00-X
July 05, 2003 Validated



TYPES OF HAZARD/ EXPOSURE	ACUTE HAZARDS/ SYMPTOMS	PREVENTION	FIRST AID/ FIRE FIGHTING
FIRE	Combustible. Gives off irritating or toxic fumes (or gases) in a fire.	NO open flames.	Powder, alcohol-resistant foam, water spray, carbon dioxide.
EXPLOSION			
EXPOSURE		PREVENT DISPERSION OF DUST! PREVENT GENERATION OF MISTS! STRICT HYGIENE!	
•INHALATION	Burning sensation. Cough. Sore throat. Shortness of breath. See Notes.	Ventilation, local exhaust, or breathing protection.	Fresh air, rest. Half-upright position. Artificial respiration may be needed. Refer for medical attention.
•SKIN	Redness. Pain. Skin burns.	Protective clothing. Protective gloves.	Remove contaminated clothes. Rinse skin with plenty of water or shower. Refer for medical attention.
•EYES	Redness. Pain. Severe deep burns.	Safety goggles, face shield or eye protection in combination with breathing protection.	First rinse with plenty of water for several minutes (remove contact lenses if easily possible), then take to a doctor.
•INGESTION	Burning sensation. Abdominal pain. Nausea. Vomiting. Shock or collapse.	Do not eat, drink, or smoke during work.	Rinse mouth. Give plenty of water to drink. Do NOT induce vomiting. Refer for medical attention.

SPILLAGE DISPOSAL	STORAGE	PACKAGING & LABELLING

Sweep spilled substance into containers; if appropriate, moisten first to prevent dusting. Carefully collect remainder, then remove to safe place. If liquid: Collect leaking liquid in covered plastic containers. Do NOT let this chemical enter the environment. Chemical protection suit including self-contained breathing apparatus.	Separated from food and feedstuffs , acid anhydrides , acid chlorides , bases and oxidants .	Do not transport with food and feedstuffs. Marine pollutant. Note: C T symbol N symbol R: 24/25-34-51/53 S: 1/2-26-36/37/39-45-61 UN Hazard Class: 6.1 UN Packing Group: II

SEE IMPORTANT INFORMATION ON BACK

ICSC: 0458

Prepared in the context of cooperation between the International Programme on Chemical Safety & the Commission of the European Communities (C) IPCS CEC 1994. No modifications to the International version have been made except to add the OSHA PELs, NIOSH RELs and NIOSH IDLH values.

International Chemical Safety Cards

2,4-XYLENOL

ICSC: 0458

IMPORTANT DATA

PHYSICAL STATE; APPEARANCE:
YELLOW TO BROWN LIQUID OR COLOURLESS CRYSTALS .

PHYSICAL DANGERS:

CHEMICAL DANGERS:
The substance decomposes on burning producing toxic gases and irritating fumes . Reacts with acid anhydrides , acid chlorides , bases , oxidants .

OCCUPATIONAL EXPOSURE LIMITS:
TLV not established.
MAK not established.

ROUTES OF EXPOSURE:
The substance can be absorbed into the body by inhalation, by ingestion and through the skin.

INHALATION RISK:
No indication can be given about the rate in which a harmful concentration in the air is reached on evaporation of this substance at 20° C.

EFFECTS OF SHORT-TERM EXPOSURE:
The substance is corrosive to the skin the respiratory tract and the eyes. Corrosive on ingestion. Inhalation of an aerosol of this substance may cause lung oedema (see Notes).

EFFECTS OF LONG-TERM OR REPEATED EXPOSURE:
Repeated or prolonged contact may cause skin sensitization.

PHYSICAL PROPERTIES

Boiling point: 211.5°C
Melting point: 25.4-26°C
Density: 0.97
g/cm^3
Solubility in water, g/100 ml at 25°C: 0.79

Vapour pressure, Pa at 20°C: 8
Flash point: >112°C c.c.
Auto-ignition temperature: 599°C
Explosive limits, vol% in air: 1.1-6.4
Octanol/water partition coefficient as log Pow: 2.3

ENVIRONMENTAL DATA

The substance is toxic to aquatic organisms. Bioaccumulation of this chemical may occur in fish.

NOTES

The symptoms of lung oedema often do not become manifest until a few hours have passed and they are aggravated by physical effort. Rest and medical observation is therefore essential. Immediate administration of an appropriate inhalation therapy by a doctor or a person authorized by him/her, should be considered. Card has been partly updated in October 2005. See section EU classification.

NFPA Code: H2; F1; R; 0
Transport Emergency Card: TEC (R)-61GT1-II

ADDITIONAL INFORMATION

ICSC: 0458 **2,4-XYLENOL**

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International Chemical Safety Cards

2,4-DINITROPHENOL

ICSC: 0464

1-Hydroxy-2,4-dinitrobenzene
$C_6H_4N_2O_5$ / $C_6H_3(OH)(NO_2)_2$
Molecular mass: 184.11

ICSC # 0464
CAS # 51-28-5
RTECS # SL2800000
UN # 1320 (wetted with no less than 15% water)
EC # 609-041-00-4
March 25, 1996 Validated

TYPES OF HAZARD/ EXPOSURE	ACUTE HAZARDS/ SYMPTOMS	PREVENTION	FIRST AID/ FIRE FIGHTING
FIRE	Combustible. Gives off irritating or toxic fumes (or gases) in a fire.	NO open flames.	Water in large amounts.
EXPLOSION	Risk of fire and explosion.	Do NOT expose to friction or shock.	In case of fire: keep drums, etc., cool by spraying with water. Combat fire from a sheltered position.
EXPOSURE		PREVENT DISPERSION OF DUST! STRICT HYGIENE!	
•INHALATION	See Ingestion.	Local exhaust or breathing protection.	Fresh air, rest (see Notes). Refer for medical attention.
•SKIN	MAY BE ABSORBED! Redness. Roughness. Yellow staining of the skin. (Further see Inhalation).	Protective gloves. Protective clothing.	Remove contaminated clothes. Rinse skin with plenty of water or shower. Refer for medical attention.
•EYES		Safety goggles.	First rinse with plenty of water for several minutes (remove contact lenses if easily possible), then take to a doctor.
•INGESTION	Nausea. Vomiting. Palpitations. Collapse. Sweating.	Do not eat, drink, or smoke during work.	Rest. Refer for medical attention.

SPILLAGE DISPOSAL	STORAGE	PACKAGING & LABELLING
Evacuate danger area! Do not allow to dry out. Sweep spilled substance into containers. Wipe up remainder in sand or other inert material, then remove to safe place. Personal protection: complete protective clothing including	Fireproof. Separated from combustible and reducing substances, food and feedstuffs . Cool.	Unbreakable packaging; put breakable packaging into closed unbreakable container. Do not transport with food and feedstuffs. Marine pollutant. Note: C

self-contained breathing apparatus.		T symbol N symbol R: 23/24/25-33-50 S: 1/2-28-37-45-61 UN Hazard Class: 4.1 UN Subsidiary Risks: 6.1 UN Packing Group: I

SEE IMPORTANT INFORMATION ON BACK

ICSC: 0464

Prepared in the context of cooperation between the International Programme on Chemical Safety & the Commission of the European Communities (C) IPCS CEC 1994. No modifications to the International version have been made except to add the OSHA PELs, NIOSH RELs and NIOSH IDLH values.

International Chemical Safety Cards

2,4-DINITROPHENOL

ICSC: 0464

IMPORTANT DATA

PHYSICAL STATE; APPEARANCE:
YELLOW CRYSTALS. (SEE NOTES).

PHYSICAL DANGERS:
Dust explosion possible if in powder or granular form, mixed with air.

CHEMICAL DANGERS:
May explosively decompose on shock, friction, or concussion. May explode on heating. Shock-sensitive compounds are formed with alkalis, ammonia and most metals. The substance decomposes on heating producing toxic gases including nitrogen oxides (see Notes).

OCCUPATIONAL EXPOSURE LIMITS:
TLV not established.

ROUTES OF EXPOSURE:
The substance can be absorbed into the body by inhalation, through the skin and by ingestion.

INHALATION RISK:
Evaporation at 20°C is negligible; a harmful concentration of airborne particles can, however, be reached quickly.

EFFECTS OF SHORT-TERM EXPOSURE:
The substance may cause effects on metabolism , resulting in very high body temperature. Exposure may result in death.

EFFECTS OF LONG-TERM OR REPEATED EXPOSURE:
Repeated or prolonged contact with skin may cause dermatitis. The substance may have effects on the peripheral nervous system. The substance may have effects on the eyes , resulting in cataracts.

PHYSICAL PROPERTIES

Sublimation
Melting point: 112°C
Relative density (water = 1): 1.68

Solubility in water, g/100 ml at 54.5°C: 0.14
Relative vapour density (air = 1): 6.36

ENVIRONMENTAL DATA

This substance may be hazardous to the environment; special attention should be given to aquatic organisms.

NOTES

Use all available methods for reducing body temperature. Because of its explosive properties, the compound is used in the form of a water paste. UN 0076 applies to the dry compound. CAS 25550-58-7 applies to unspecified isomers of dinitrophenol. Card has been partly updated in October 2005. See sections Occupational Exposure Limits, EU classification, Emergency Response.

Transport Emergency Card: TEC (R)-41GDT-I

ADDITIONAL INFORMATION	

ICSC: 0464 **2,4-DINITROPHENOL**

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International Chemical Safety Cards

2,4-DINITROTOLUENE

ICSC: 0727

1-Methyl-2,4-dinitrobenzene
2,4-DNT
$C_7H_6N_2O_4$ / $C_6H_3CH_3(NO_2)_2$
Molecular mass: 182.1

ICSC # 0727
CAS # 121-14-2
RTECS # XT1575000
UN # 3454
EC # 609-007-00-9
April 21, 2005 Validated

TYPES OF HAZARD/ EXPOSURE	ACUTE HAZARDS/ SYMPTOMS	PREVENTION	FIRST AID/ FIRE FIGHTING
FIRE	Combustible. Gives off irritating or toxic fumes (or gases) in a fire.	NO open flames.	Powder, water spray, foam, carbon dioxide.
EXPLOSION	Finely dispersed particles form explosive mixtures in air. Risk of explosion on contact with many substances.	Prevent deposition of dust; closed system, dust explosion-proof electrical equipment and lighting.	In case of fire: keep drums, etc., cool by spraying with water. Combat fire from a sheltered position.
EXPOSURE		PREVENT DISPERSION OF DUST! STRICT HYGIENE!	
•INHALATION	Blue lips or finger nails. Blue skin. Headache. Dizziness. Nausea. Confusion. Convulsions. Unconsciousness.	Local exhaust or breathing protection.	Fresh air, rest. Artificial respiration may be needed. Refer for medical attention.
•SKIN	MAY BE ABSORBED! (See Inhalation).	Protective gloves. Protective clothing.	Remove contaminated clothes. Rinse and then wash skin with water and soap. Refer for medical attention.
•EYES		Safety goggles.	First rinse with plenty of water for several minutes (remove contact lenses if easily possible), then take to a doctor.
•INGESTION	(See Inhalation).	Do not eat, drink, or smoke during work. Wash hands before eating.	Rinse mouth. Give plenty of water to drink. Refer for medical attention.

SPILLAGE DISPOSAL	STORAGE	PACKAGING & LABELLING
Consult an expert! Personal protection: chemical protection suit including self-	Fireproof. Separated from strong bases,food and	Do not transport with food and feedstuffs.

contained breathing apparatus. Do NOT let this chemical enter the environment. Sweep spilled substance into containers; if appropriate, moisten first to prevent dusting. Carefully collect remainder, then remove to safe place.	feedstuffsoxidants,strong reducing agents. Well closed. Keep in a well-ventilated room. Store in an area without drain or sewer access.	Note: E T symbol N symbol R: 45-23/24/25-48/22-62-68-51/53 S: 53-45-61 UN Hazard Class: 6.1 UN Packing Group: II

SEE IMPORTANT INFORMATION ON BACK

ICSC: 0727

Prepared in the context of cooperation between the International Programme on Chemical Safety & the Commission of the European Communities (C) IPCS CEC 1994. No modifications to the International version have been made except to add the OSHA PELs, NIOSH RELs and NIOSH IDLH values.

International Chemical Safety Cards

2,4-DINITROTOLUENE

ICSC: 0727

IMPORTANT DATA

PHYSICAL STATE; APPEARANCE:
YELLOW CRYSTALS , WITH CHARACTERISTIC ODOUR.

PHYSICAL DANGERS:
Dust explosion possible if in powder or granular form, mixed with air.

CHEMICAL DANGERS:
May explode on heating. The substance decomposes on heating producing toxic and corrosive fumesincluding nitrogen oxides even in absence of air. Reacts with reducing agents , strong bases and oxidants causing explosion hazard.

OCCUPATIONAL EXPOSURE LIMITS:
TLV: 0.2 mg/m³ as TWA; A3 (confirmed animal carcinogen with unknown relevance to humans); BEI issued; (ACGIH 2005).
MAK: skin absorption (H);
Carcinogen category: 2;
(DFG 2004).
TLV and MAK are for mixed isomers (CAS 25321-14-6)

ROUTES OF EXPOSURE:
The substance can be absorbed into the body by inhalation, through the skin and by ingestion.

INHALATION RISK:
A harmful concentration of airborne particles can be reached quickly when dispersed, especially if powdered.

EFFECTS OF SHORT-TERM EXPOSURE:
The substance may cause effects on the blood , resulting in formation of methaemoglobin. The effects may be delayed. Medical observation is indicated.

EFFECTS OF LONG-TERM OR REPEATED EXPOSURE:
The substance may have effects on the blood , resulting in formation of methaemoglobin. This substance is possibly carcinogenic to humans.

PHYSICAL PROPERTIES

Boiling point (decomposes): >250°C
Melting point: 71°C
Density: 1.52 g/cm³
Solubility in water: very poor
Vapour pressure, Pa at 25°C: 0.02
Relative vapour density (air = 1): 6.28
Flash point: 169°C c.c.
Octanol/water partition coefficient as log Pow: 1.98

ENVIRONMENTAL DATA

The substance is harmful to aquatic organisms.

NOTES

Depending on the degree of exposure, periodic medical examination is suggested. Specific treatment is necessary in case

of poisoning with this substance; the appropriate means with instructions must be available. Do NOT take working clothes home. UN number for molten form: UN1600, TEC (R): 61GT1-II

Transport Emergency Card: TEC (R)-61S3454; 61GT2-II

NFPA Code: H3; F1; R3;

ADDITIONAL INFORMATION

ICSC: 0727 **2,4-DINITROTOLUENE**

(C) IPCS, CEC, 1994

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International Chemical Safety Cards

2,6-DINITROTOLUENE

ICSC: 0728

1-Methyl-2,6-dinitrobenzene
2,6-DNT
$C_7H_6N_2O_4$ / $C_6H_3CH_3(NO_2)_2$
Molecular mass: 182.1

ICSC # 0728
CAS # 606-20-2
RTECS # XT1925000
UN # 3454
EC # 609-049-00-8
April 21, 2005 Validated

TYPES OF HAZARD/ EXPOSURE	ACUTE HAZARDS/ SYMPTOMS	PREVENTION	FIRST AID/ FIRE FIGHTING
FIRE	Combustible. Gives off irritating or toxic fumes (or gases) in a fire.	NO open flames.	Powder, water spray, foam, carbon dioxide.
EXPLOSION	Finely dispersed particles form explosive mixtures in air. Risk of explosion on contact with many substances.	Prevent deposition of dust; closed system, dust explosion-proof electrical equipment and lighting.	In case of fire: keep drums, etc., cool by spraying with water. Combat fire from a sheltered position.
EXPOSURE		PREVENT DISPERSION OF DUST! AVOID ALL CONTACT! AVOID EXPOSURE OF (PREGNANT) WOMEN!	
•INHALATION	Blue lips or finger nails. Blue skin. Headache. Dizziness. Nausea. Confusion. Convulsions. Unconsciousness.	Local exhaust or breathing protection.	Fresh air, rest. Artificial respiration may be needed. Refer for medical attention.
•SKIN	MAY BE ABSORBED! (See Inhalation).	Protective gloves. Protective clothing.	Remove contaminated clothes. Rinse and then wash skin with water and soap. Refer for medical attention.
•EYES		Face shield.	First rinse with plenty of water for several minutes (remove contact lenses if easily possible), then take to a doctor.
•INGESTION	(See Inhalation).	Do not eat, drink, or smoke during work. Wash hands before eating.	Rinse mouth. Give plenty of water to drink. Refer for medical attention.

SPILLAGE DISPOSAL	STORAGE	PACKAGING &

		LABELLING
Consult an expert! Personal protection: chemical protection suit including self-contained breathing apparatus. Sweep spilled substance into containers; if appropriate, moisten first to prevent dusting. Carefully collect remainder, then remove to safe place.	Fireproof. Separated from strong bases,food and feedstuffsoxidants,strong reducing agents. Well closed. Keep in a well-ventilated room.	Do not transport with food and feedstuffs. Note: E T symbol R: 45-23/24/25-48/22-62-68-52/53 S: 53-45-61 UN Hazard Class: 6.1 UN Packing Group: II

SEE IMPORTANT INFORMATION ON BACK

ICSC: 0728

Prepared in the context of cooperation between the International Programme on Chemical Safety & the Commission of the European Communities (C) IPCS CEC 1994. No modifications to the International version have been made except to add the OSHA PELs, NIOSH RELs and NIOSH IDLH values.

International Chemical Safety Cards

2,6-DINITROTOLUENE

ICSC: 0728

IMPORTANT DATA

PHYSICAL STATE; APPEARANCE:
YELLOW , BROWN TO RED CRYSTALS , WITH CHARACTERISTIC ODOUR.

PHYSICAL DANGERS:
Dust explosion possible if in powder or granular form, mixed with air.

CHEMICAL DANGERS:
May explode on heating. The substance decomposes on heating producing toxic and corrosive fumesincluding nitrogen oxides even in absence of air. Reacts with reducing agents , strong bases and oxidants causing explosion hazard.

OCCUPATIONAL EXPOSURE LIMITS:
TLV: 0.2 mg/m³ as TWA; (skin); A3 (confirmed animal carcinogen with unknown relevance to humans); BEI issued; (ACGIH 2004).
MAK: skin absorption (H);
Carcinogen category: 2;
(DFG 2004).
TLV and MAK are for mixed isomers (CAS 25321-14-6)

ROUTES OF EXPOSURE:
The substance can be absorbed into the body by inhalation, through the skin and by ingestion.

INHALATION RISK:
A harmful concentration of airborne particles can be reached quickly when dispersed, especially if powdered.

EFFECTS OF SHORT-TERM EXPOSURE:
The substance may cause effects on the blood , resulting in formation of methaemoglobin. The effects may be delayed. Medical observation is indicated.

EFFECTS OF LONG-TERM OR REPEATED EXPOSURE:
The substance may have effects on the blood , resulting in formation of methaemoglobin. This substance is possibly carcinogenic to humans. Animal tests show that this substance possibly causes toxicity to human reproduction or development.

PHYSICAL PROPERTIES

Boiling point (decomposes): 285°C
Melting point: 66°C
Relative density (water = 1): 1.283 (liquid)
Solubility in water:
very poor

Vapour pressure, Pa at 20°C: 2.4
Relative vapour density (air = 1): 6.28
Flash point: 207°C c.c.
Octanol/water partition coefficient as log Pow: 2.05

ENVIRONMENTAL DATA

N O T E S

Depending on the degree of exposure, periodic medical examination is suggested. Specific treatment is necessary in case of poisoning with this substance; the appropriate means with instructions must be available. Do NOT take working clothes home. UN number for molten form: UN1600. See also ICSC0465 Dinitrotoluene (mixed isomers).

Transport Emergency Card: TEC (R)-61S3454; 61GT2-II

NFPA Code: H3; F1; R3;

ADDITIONAL INFORMATION

ICSC: 0728 **2,6-DINITROTOLUENE**

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Material Safety Data Sheet

Version 3.0
Revision Date 10/30/2008
Print Date 12/09/2011

1. PRODUCT AND COMPANY IDENTIFICATION

Product name : 4-Bromodiphenyl ether

Product Number : B65209
Brand : Aldrich

Company : Sigma-Aldrich
3050 Spruce Street
SAINT LOUIS MO 63103
USA
Telephone : +1 800-325-5832
Fax : +1 800-325-5052
Emergency Phone # : (314) 776-6555

2. COMPOSITION/INFORMATION ON INGREDIENTS

Formula : C12H9BrO
Molecular Weight : 249.1 g/mol

CAS-No.	EC-No.	Index-No.	Concentration
4-Bromophenyl phenyl ether			
101-55-3	202-952-4	-	-

3. HAZARDS IDENTIFICATION

Emergency Overview

OSHA Hazards
Harmful by ingestion., Skin sensitizer, Irritant

HMIS Classification
Health Hazard: 2
Flammability: 1
Physical hazards: 0

NFPA Rating
Health Hazard: 2
Fire: 1
Reactivity Hazard: 0

Potential Health Effects

Inhalation May be harmful if inhaled. Causes respiratory tract irritation.
Skin May be harmful if absorbed through skin. Causes skin irritation.
Eyes Causes eye irritation.
Ingestion Harmful if swallowed.

4. FIRST AID MEASURES

General advice
Consult a physician. Show this safety data sheet to the doctor in attendance.Move out of dangerous area.

If inhaled
If breathed in, move person into fresh air. If not breathing give artificial respiration Consult a physician.

In case of skin contact
Wash off with soap and plenty of water. Consult a physician.

In case of eye contact
Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician.

If swallowed
Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

5. FIRE-FIGHTING MEASURES

Flammable properties

Flash point	> 113.0 °C (> 235.4 °F) - closed cup
Ignition temperature	no data available

Suitable extinguishing media
Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

Special protective equipment for fire-fighters
Wear self contained breathing apparatus for fire fighting if necessary.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions
Use personal protective equipment. Avoid breathing vapors, mist or gas. Ensure adequate ventilation.

Environmental precautions
Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.

Methods for cleaning up
Soak up with inert absorbent material and dispose of as hazardous waste. Keep in suitable, closed containers for disposal.

7. HANDLING AND STORAGE

Handling
Avoid inhalation of vapour or mist.
Normal measures for preventive fire protection.

Storage
Keep container tightly closed in a dry and well-ventilated place. Containers which are opened must be carefully resealed and kept upright to prevent leakage.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Contains no substances with occupational exposure limit values.

Personal protective equipment

Respiratory protection
Where risk assessment shows air-purifying respirators are appropriate use a full-face respirator with multi-purpose combination (US) or type ABEK (EN 14387) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

Hand protection
Handle with gloves.

Eye protection
Safety glasses

Skin and body protection
Choose body protection according to the amount and concentration of the dangerous substance at the work place.

Hygiene measures
Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance

Form	liquid
Colour	colourless

Safety data

pH	no data available
Melting point	18 °C (64 °F)
Boiling point	305 °C (581 °F)
Flash point	> 113.0 °C (> 235.4 °F) - closed cup
Ignition temperature	no data available
Lower explosion limit	no data available
Upper explosion limit	no data available
Density	1.423 g/mL at 25 °C (77 °F)
Water solubility	no data available
Partition coefficient: n-octanol/water	log Pow: 4.34

10. STABILITY AND REACTIVITY

Storage stability
Stable under recommended storage conditions.

Materials to avoid
Strong oxidizing agents

Hazardous decomposition products
Hazardous decomposition products formed under fire conditions. - Carbon oxides, Hydrogen bromide gas

11. TOXICOLOGICAL INFORMATION

Acute toxicity

no data available

Irritation and corrosion

no data available

Sensitisation

May cause sensitization by skin contact.

Chronic exposure

This product is or contains a component that is not classifiable as to its carcinogenicity based on its IARC, ACGIH, NTP, or EPA classification.

IARC: No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

ACGIH: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH.

NTP: No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

OSHA: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

Signs and Symptoms of Exposure

To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

Potential Health Effects

Inhalation	May be harmful if inhaled. Causes respiratory tract irritation.
Skin	May be harmful if absorbed through skin. Causes skin irritation.
Eyes	Causes eye irritation.
Ingestion	Harmful if swallowed.

12. ECOLOGICAL INFORMATION

Elimination information (persistence and degradability)

no data available

Ecotoxicity effects

Toxicity to fish	LC50 - Lepomis macrochirus (Bluegill) - 50.90 mg/l - 24 h
	LC50 - Lepomis macrochirus (Bluegill) - 9.60 mg/l - 48 h

Further information on ecology

An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.

Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

13. DISPOSAL CONSIDERATIONS

Product
Observe all federal, state, and local environmental regulations. Contact a licensed professional waste disposal service to dispose of this material. Dissolve or mix the material with a combustible solvent and burn in a chemical incinerator equipped with an afterburner and scrubber.

Contaminated packaging
Dispose of as unused product.

14. TRANSPORT INFORMATION

DOT (US)

UN-Number: 3082 Class: 9 Packing group: III
Proper shipping name: Environmentally hazardous substances, liquid, n.o.s.
Marine pollutant: No
Poison Inhalation Hazard: No

IMDG
UN-Number: 3082 Class: 9 Packing group: III EMS-No: F-A, S-F
Proper shipping name: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (4-Bromophenyl phenyl ether)
Marine pollutant: No

IATA
UN-Number: 3082 Class: 9 Packing group: III
Proper shipping name: Environmentally hazardous substance, liquid n.o.s. (4-Bromophenyl phenyl ether)

15. REGULATORY INFORMATION

OSHA Hazards
Harmful by ingestion., Skin sensitizer, Irritant

DSL Status
This product contains the following components listed on the Canadian NDSL list. All other components are on the Canadian DSL list.

	CAS-No.
4-Bromophenyl phenyl ether	101-55-3

SARA 302 Components
SARA 302: No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

SARA 313 Components
SARA 313: This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

SARA 311/312 Hazards
Acute Health Hazard

Massachusetts Right To Know Components

	CAS-No.	Revision Date
4-Bromophenyl phenyl ether	101-55-3	1989-12-01

Pennsylvania Right To Know Components

	CAS-No.	Revision Date
4-Bromophenyl phenyl ether	101-55-3	1989-12-01

New Jersey Right To Know Components

	CAS-No.	Revision Date
4-Bromophenyl phenyl ether	101-55-3	1989-12-01

California Prop. 65 Components
This product does not contain any chemicals known to State of California to cause cancer, birth, or any other reproductive defects.

16. OTHER INFORMATION

Further information
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The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. Sigma-Aldrich Co., shall not be held liable for any damage resulting from handling or from contact with the above product. See reverse side of invoice or packing slip for additional terms and conditions of sale.

International Chemical Safety Cards

o-CHLOROPHENOL

ICSC: 0849

2-Chlorophenol
2-Chloro-1-hydroxybenzene
2-Hydroxychlorobenzene
C_6H_5ClO / C_6H_4ClOH
Molecular mass: 128.6

ICSC # 0849
CAS # 95-57-8
RTECS # SK2625000
UN # 2021
EC # 604-008-00-0
March 24, 1999 Validated

TYPES OF HAZARD/ EXPOSURE	ACUTE HAZARDS/ SYMPTOMS	PREVENTION	FIRST AID/ FIRE FIGHTING
FIRE	Combustible. Gives off irritating or toxic fumes (or gases) in a fire.	NO open flames.	Powder, water spray, foam, carbon dioxide.
EXPLOSION	Above 64°C explosive vapour/air mixtures may be formed.	Above 64°C use a closed system, ventilation.	In case of fire: keep drums, etc., cool by spraying with water.
EXPOSURE		PREVENT GENERATION OF MISTS!	
•INHALATION	Cough. Shortness of breath. Sore throat. (see Ingestion). Symptoms may be delayed (see Notes).	Ventilation, local exhaust, or breathing protection.	Fresh air, rest. Half-upright position. Artificial respiration if indicated. Refer for medical attention.
•SKIN	MAY BE ABSORBED! Redness. Pain.	Protective gloves. Protective clothing.	Remove contaminated clothes. Rinse and then wash skin with water and soap. Refer for medical attention.
•EYES	Redness. Pain. Blurred vision.	Face shield, or eye protection in combination with breathing protection.	First rinse with plenty of water for several minutes (remove contact lenses if easily possible), then take to a doctor.
•INGESTION	Abdominal pain. Drowsiness. Weakness. Convulsions.	Do not eat, drink, or smoke during work.	Rinse mouth. Do NOT induce vomiting. Refer for medical attention.

SPILLAGE DISPOSAL	STORAGE	PACKAGING & LABELLING
Collect leaking liquid in covered containers. Carefully collect remainder,	Separated from strong oxidants, food and feedstuffs. Well closed.	Do not transport with food and feedstuffs.

then remove to safe place. Do NOT let this chemical enter the environment. (Extra personal protection: filter respirator for organic gases and vapours). Chemical protection suit.		Marine pollutant. Note: C Xn symbol N symbol R: 20/21/22-51/53 S: 2-28-61 UN Hazard Class: 6.1 UN Packing Group: III

SEE IMPORTANT INFORMATION ON BACK

ICSC: 0849

Prepared in the context of cooperation between the International Programme on Chemical Safety & the Commission of the European Communities (C) IPCS CEC 1994. No modifications to the International version have been made except to add the OSHA PELs, NIOSH RELs and NIOSH IDLH values.

International Chemical Safety Cards

o-CHLOROPHENOL

ICSC: 0849

IMPORTANT DATA

PHYSICAL STATE; APPEARANCE:
COLOURLESS LIQUID , WITH CHARACTERISTIC ODOUR.

PHYSICAL DANGERS:
The vapour is heavier than air.

CHEMICAL DANGERS:
The substance decomposes on burning producing toxic and corrosive fumes (hydrochloric acid, chlorine). Reacts with oxidants.

OCCUPATIONAL EXPOSURE LIMITS:
TLV not established.

ROUTES OF EXPOSURE:
The substance can be absorbed into the body by inhalation of its vapour, through the skin and by ingestion.

INHALATION RISK:
No indication can be given about the rate in which a harmful concentration in the air is reached on evaporation of this substance at 20° C.

EFFECTS OF SHORT-TERM EXPOSURE:
The substance strongly irritates the eyes, the skin and the respiratory tract. Inhalation of the aerosol may cause lung oedema (see Notes). The substance may cause effects on the central nervous system.

EFFECTS OF LONG-TERM OR REPEATED EXPOSURE:

PHYSICAL PROPERTIES

Boiling point: 175°C
Melting point: 9.3-9.8
Relative density (water = 1): 1.3
Solubility in water, g/100 ml at 20°C: 2.85
Vapour pressure, Pa at 20°C: 230
Relative vapour density (air = 1): 4.4
Relative density of the vapour/air-mixture at 20°C (air = 1): 1.08
Flash point: 64°C c.c.
Octanol/water partition coefficient as log Pow: 2.15

ENVIRONMENTAL DATA

The substance is toxic to aquatic organisms. The substance may cause long-term effects in the aquatic environment.

NOTES

The symptoms of lung oedema often do not become manifest until a few hours have passed and they are aggravated by physical effort. Rest and medical observation is therefore essential. Immediate administration of an appropriate spray, by

a doctor or a person authorized by him/her, should be considered. Pine-O Disinfectant and Septi-Kleen are trade names.

Transport Emergency Card: TEC (R)-799

NFPA Code: H3; F2; R0;

ADDITIONAL INFORMATION

ICSC: 0849 **o-CHLOROPHENOL**

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International Chemical Safety Cards

2-METHYLNAPHTHALENE

ICSC: 1276

beta-Methylnaphthalene
$C_{11}H_{10}$
Molecular mass: 142.2

ICSC # 1276
CAS # 91-57-6
RTECS # QJ9635000
September 10, 1997 Validated

TYPES OF HAZARD/ EXPOSURE	ACUTE HAZARDS/ SYMPTOMS	PREVENTION	FIRST AID/ FIRE FIGHTING
FIRE	Combustible.	NO open flames.	Powder , foam , carbon dioxide .
EXPLOSION			
EXPOSURE		PREVENT DISPERSION OF DUST!	
•INHALATION	Cough.	Local exhaust.	Fresh air, rest.
•SKIN		Protective gloves.	Remove contaminated clothes. Rinse and then wash skin with water and soap.
•EYES	Redness. Pain.	Safety goggles.	First rinse with plenty of water for several minutes (remove contact lenses if easily possible), then take to a doctor.
•INGESTION		Do not eat, drink, or smoke during work.	Rinse mouth. Give a slurry of activated charcoal in water to drink. Rest. Refer for medical attention.

SPILLAGE DISPOSAL	STORAGE	PACKAGING & LABELLING
Sweep spilled substance into containers; if appropriate, moisten first to prevent dusting. Carefully collect remainder, then remove to safe place. Do NOT let this chemical enter the environment.	Provision to contain effluent from fire extinguishing. Store in an area without drain or sewer access.	Marine pollutant.

SEE IMPORTANT INFORMATION ON BACK

ICSC: 1276

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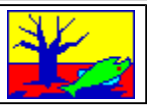
International Chemical Safety Cards

2-METHYLNAPHTHALENE

ICSC: 1276

I **M** **P**	**PHYSICAL STATE; APPEARANCE:** CRYSTALS **PHYSICAL DANGERS:**	**ROUTES OF EXPOSURE:** The substance can be absorbed into the body by inhalation of its aerosol and by ingestion. **INHALATION RISK:**

O R T A N T D A T A	**CHEMICAL DANGERS:** The substance decomposes on heating producing acrid smoke and irritating fumes. **OCCUPATIONAL EXPOSURE LIMITS:** TLV: 0.5 ppm as TWA; (skin); A4 (not classifiable as a human carcinogen); (ACGIH 2008). MAK not established.	No indication can be given about the rate in which a harmful concentration in the air is reached on evaporation of this substance at 20°C. **EFFECTS OF SHORT-TERM EXPOSURE:** The substance irritates the eyes. **EFFECTS OF LONG-TERM OR REPEATED EXPOSURE:** Lungs may be affected by repeated or prolonged exposure.
PHYSICAL PROPERTIES	Boiling point: 241°C Melting point: 35°C Relative density (water = 1): 1.00	Solubility in water, g/100 ml at 25°C: 0.003 Vapour pressure, Pa at °C: 9 Octanol/water partition coefficient as log Pow: 3.86
ENVIRONMENTAL DATA	The substance is toxic to aquatic organisms. The substance may cause long-term effects in the aquatic environment. 	

N O T E S

Insufficient data are available on the effect of this substance on human health, therefore utmost care must be taken.

Card has been partially updated in February 2009: see Occupational Exposure Limits,

ADDITIONAL INFORMATION

ICSC: 1276 **2-METHYLNAPHTHALENE**

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International Chemical Safety Cards

o-CRESOL

ICSC: 0030

2-Hydroxy-1-methylbenzene
2-Methylphenol
ortho-Hydroxytoluene
2-Cresol
C_7H_8O / $CH_3C_6H_4OH$
Molecular mass: 108.1

ICSC # 0030
CAS # 95-48-7
RTECS # GO6300000
UN # 3455
EC # 604-004-00-9
November 13, 2008 Validated

TYPES OF HAZARD/ EXPOSURE	ACUTE HAZARDS/ SYMPTOMS	PREVENTION	FIRST AID/ FIRE FIGHTING
FIRE	Combustible. Gives off irritating or toxic fumes (or gases) in a fire.	NO open flames.	Water spray, foam, powder, carbon dioxide.
EXPLOSION	Above 81°C explosive vapour/air mixtures may be formed.	Above 81°C use a closed system, ventilation.	
EXPOSURE		AVOID ALL CONTACT!	IN ALL CASES CONSULT A DOCTOR!
•INHALATION	Cough. Sore throat. Burning sensation. Headache. Nausea. Vomiting. Shortness of breath. Laboured breathing.	Local exhaust or breathing protection.	Fresh air, rest. Half-upright position. Artificial respiration if indicated. Refer immediately for medical attention.
•SKIN	MAY BE ABSORBED! Redness. Pain. Blisters. Skin burns.	Protective gloves. Protective clothing.	Remove contaminated clothes. Rinse skin with plenty of water or shower. Refer immediately for medical attention.
•EYES	Redness. Pain. Severe deep burns.	Face shield or eye protection in combination with breathing protection.	Rinse with plenty of water (remove contact lenses if easily possible). Refer immediately for medical attention
•INGESTION	Burns in mouth and throat. Burning sensation in the throat and chest. Nausea. Vomiting. Abdominal pain. Shock or collapse.	Do not eat, drink, or smoke during work. Wash hands before eating.	Rinse mouth. Do NOT induce vomiting. Refer immediately for medical attention.

SPILLAGE DISPOSAL	STORAGE	PACKAGING & LABELLING

Personal protection: filter respirator for organic gases and particulates adapted to the airborne concentration of the substance . Chemical protection suit. Sweep spilled substance into containers; if appropriate, moisten first to prevent dusting. Carefully collect remainder, then remove to safe place. Do NOT let this chemical enter the environment.	Separated from strong oxidants, food and feedstuffs . Store in an area without drain or sewer access. Provision to contain effluent from fire extinguishing.	Do not transport with food and feedstuffs. Marine pollutant. Note: C T symbol C symbol R: 24/25-34 S: 1/2-36/37/39-45 UN Hazard Class: 6.1 UN Subsidiary Risks: 8 UN Packing Group: II Signal: Danger Corr-Skull-Health haz Toxic if swallowed Toxic in contact with skin Causes severe skin burns and eye damage Causes damage to the central nervous system and blood cells Causes damage to nervous system and blood cells through prolonged or repeated exposure Toxic to aquatic life

SEE IMPORTANT INFORMATION ON BACK

ICSC: 0030

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International Chemical Safety Cards

o-CRESOL

ICSC: 0030

I M P O R T A N T D A

PHYSICAL STATE; APPEARANCE:
COLOURLESS CRYSTALS , WITH CHARACTERISTIC ODOUR. TURNS DARK ON EXPOSURE TO AIR AND LIGHT .

PHYSICAL DANGERS:

CHEMICAL DANGERS:
Reacts violently with strong oxidants . The solution in water is a weak acid.

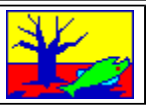
OCCUPATIONAL EXPOSURE LIMITS:
TLV: 5 ppm as TWA (skin) (ACGIH 2008).
MAK: skin absorption (H);
Carcinogen category: 3A; BAT issued; (DFG 2008).
tions for the allocation into the category 4 or 5 would be fulfilled but there is not enough information to derive a MAK-value.
OSHA PEL: TWA 5 ppm (22 mg/m^3) skin
NIOSH REL: TWA 2.3 ppm (10 mg/m^3)
NIOSH IDLH: 250 ppm See: cresol

ROUTES OF EXPOSURE:
The substance can be absorbed into the body by inhalation, through the skin and by ingestion. Serious local effects by all routes of exposure.

INHALATION RISK:
A harmful contamination of the air will be reached rather slowly on evaporation of this substance at 20°C.

EFFECTS OF SHORT-TERM EXPOSURE:
The substance is corrosive to the eyes, the skin and the respiratory tract. Corrosive on ingestion. Inhalation may cause lung oedema, but only after initial corrosive effects on eyes and/or airways have become manifest. The substance may cause effects on the central nervous system , resulting in lowering of consciousness. The substance may cause effects on the blood , resulting in destruction of blood cells. Exposure far above the OEL may result in death . Medical observation is indicated.

EFFECTS OF LONG-TERM OR REPEATED EXPOSURE:

T **A**		Repeated or prolonged contact with skin may cause dermatitis. The substance may have effects on the nervous system , resulting in impaired functions. The substance may have effects on the blood , resulting in anaemia.
PHYSICAL PROPERTIES	Boiling point: 191°C Melting point: 31°C Density: 1.05 g/cm³ Solubility in water, g/100 ml at 25°C: 2.5 (moderate) Vapour pressure, Pa at 25°C: 33	Relative vapour density (air = 1): 3.7 Relative density of the vapour/air-mixture at 20°C (air = 1): 1.00 Flash point: 81°C c.c. Auto-ignition temperature: 555°C Explosive limits, vol% in air: 1.3-? Octanol/water partition coefficient as log Pow: 1.95
ENVIRONMENTAL DATA	The substance is toxic to aquatic organisms. It is strongly advised that this substance does not enter the environment. 	

N O T E S

Transport Emergency Card: TEC (R)-61GTC2-II

NFPA Code: H 3; F 2; R 0;

ADDITIONAL INFORMATION

ICSC: 0030 **o-CRESOL**

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International Chemical Safety Cards

2-NITROPHENOL

ICSC: 0523

o-Nitrophenol
2-Hydroxynitrobenzene
o-Hydroxynitrobenzene
$C_6H_5NO_3$
Molecular mass: 139.1

ICSC # 0523
CAS # 88-75-5
RTECS # SM2100000
UN # 1663
October 20, 2005 Validated

TYPES OF HAZARD/ EXPOSURE	ACUTE HAZARDS/ SYMPTOMS	PREVENTION	FIRST AID/ FIRE FIGHTING
FIRE	Combustible. Gives off irritating or toxic fumes (or gases) in a fire.	NO open flames.	Dry powder. Carbon dioxide. Water spray . Alcohol-resistant foam.
EXPLOSION			
EXPOSURE			
•INHALATION		Local exhaust or breathing protection.	Fresh air, rest. Refer for medical attention.
•SKIN	Redness.	Protective gloves.	Remove contaminated clothes. Rinse and then wash skin with water and soap.
•EYES	Redness.	Safety goggles .	First rinse with plenty of water for several minutes (remove contact lenses if easily possible), then take to a doctor.
•INGESTION	Headache. Drowsiness. Nausea. Blue lips or fingernails. Blue skin. Confusion. Convulsions. Dizziness. Unconsciousness.	Do not eat, drink, or smoke during work.	Refer for medical attention.

SPILLAGE DISPOSAL	STORAGE	PACKAGING & LABELLING
Personal protection: P2 filter respirator for harmful particles. Do NOT let this chemical enter the environment. Sweep spilled substance into covered containers.	Store in an area without drain or sewer access. Separated from strong oxidants, strong bases, strong acids, food and feedstuffs .	Do not transport with food and feedstuffs. UN Hazard Class: 6.1 UN Packing Group: III

SEE IMPORTANT INFORMATION ON BACK

ICSC: 0523	Prepared in the context of cooperation between the International Programme on Chemical Safety & the Commission of the European Communities (C) IPCS CEC 1994. No modifications to the International version have been made except to add the OSHA PELs, NIOSH RELs and NIOSH IDLH values.

International Chemical Safety Cards

2-NITROPHENOL

ICSC: 0523

IMPORTANT DATA

PHYSICAL STATE; APPEARANCE:
YELLOW CRYSTALS

PHYSICAL DANGERS:

CHEMICAL DANGERS:
The substance decomposes on burning producing toxic and corrosive fumes including nitrogen oxides . Reacts with strong acids , strong bases and strong oxidants .

OCCUPATIONAL EXPOSURE LIMITS:
TLV not established.
MAK not established.

ROUTES OF EXPOSURE:
The substance can be absorbed into the body by ingestion.

INHALATION RISK:
A harmful concentration of airborne particles can be reached quickly.

EFFECTS OF SHORT-TERM EXPOSURE:
The substance is mildly irritating to the eyes and the skin . When ingested the substance may cause effects on the blood , resulting in the formation of methaemoglobin.

EFFECTS OF LONG-TERM OR REPEATED EXPOSURE:

PHYSICAL PROPERTIES

Boiling point: 216°C
Melting point: 45-46°C
Density: 1.49 g/cm³
Solubility in water, g/100 ml at 20°C: 210 (poor)

Vapour pressure, kPa at 25°C: 0.015
Flash point: 108°C c.c.
Auto-ignition temperature: 550°C
Octanol/water partition coefficient as log Pow: 1.79

ENVIRONMENTAL DATA

The substance is harmful to aquatic organisms.

NOTES

Specific treatment is necessary in case of poisoning with this substance; the appropriate means with instructions must be available.

Transport Emergency Card: TEC (R)-61S1663 or 61GT2-III

ADDITIONAL INFORMATION

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International Chemical Safety Cards

4-NITROANILINE

ICSC: 0308

p-Nitroaniline
1-Amino-4-nitrobenzene
C.I. 37035
$C_6H_6N_2O_2$
Molecular mass: 138.1

ICSC # 0308
CAS # 100-01-6
RTECS # BY7000000
UN # 1661
EC # 612-012-00-9
December 03, 2001 Validated

TYPES OF HAZARD/ EXPOSURE	ACUTE HAZARDS/ SYMPTOMS	PREVENTION	FIRST AID/ FIRE FIGHTING
FIRE	Combustible. Many reactions may cause fire or explosion.	NO open flames. NO contact with combustible substances.	Powder, water spray, foam, carbon dioxide.
EXPLOSION	Finely dispersed particles form explosive mixtures in air.	Prevent deposition of dust; closed system, dust explosion-proof electrical equipment and lighting.	In case of fire: keep drums, etc., cool by spraying with water. Combat fire from a sheltered position.
EXPOSURE		PREVENT DISPERSION OF DUST!	
•**INHALATION**	Blue lips or finger nails. Blue skin. Headache. Dizziness. Nausea. Confusion. Convulsions. Laboured breathing. Unconsciousness.	Local exhaust or breathing protection.	Fresh air, rest. Artificial respiration if indicated. Refer for medical attention.
•**SKIN**	MAY BE ABSORBED! (Further see Inhalation).	Protective gloves. Protective clothing.	Remove contaminated clothes. Rinse skin with plenty of water or shower. Refer for medical attention.
•**EYES**	Redness. Pain.	Face shield, or eye protection in combination with breathing protection.	First rinse with plenty of water for several minutes (remove contact lenses if easily possible), then take to a doctor.
•**INGESTION**	(Further see Inhalation).	Do not eat, drink, or smoke during work. Wash hands before eating.	Induce vomiting (ONLY IN CONSCIOUS PERSONS!). Refer for medical attention.

SPILLAGE DISPOSAL	STORAGE	PACKAGING & LABELLING

Sweep spilled substance into containers; if appropriate, moisten first to prevent dusting. Wash away remainder with plenty of water. (Extra personal protection: P3 filter respirator for toxic particles.) Do NOT let this chemical enter the environment.	Separated from strong acids, strong oxidants, combustible and reducing substances, food and feedstuffs . Dry.	Do not transport with food and feedstuffs. Note: C T symbol R: 23/24/25-33-52/53 S: 1/2-28-36/37-45-61 UN Hazard Class: 6.1 UN Packing Group: II

SEE IMPORTANT INFORMATION ON BACK

ICSC: 0308

Prepared in the context of cooperation between the International Programme on Chemical Safety & the Commission of the European Communities (C) IPCS CEC 1994. No modifications to the International version have been made except to add the OSHA PELs, NIOSH RELs and NIOSH IDLH values.

International Chemical Safety Cards

4-NITROANILINE

ICSC: 0308

IMPORTANT DATA

PHYSICAL STATE; APPEARANCE:
YELLOW CRYSTALS OR POWDER.

PHYSICAL DANGERS:
Dust explosion possible if in powder or granular form, mixed with air.

CHEMICAL DANGERS:
May explode on heating. On combustion, forms toxic fumes of nitrogen oxides. Reacts with strong acids , strong oxidants and strong reducing agents . Reacts with organic materials in presence of moisture causing fire hazard.

OCCUPATIONAL EXPOSURE LIMITS:
TLV: 3 mg/m³
(as TWA)
(skin) A4 (not classifiable as a human carcinogen); BEI issued (ACGIH 2005).
MAK: skin absorption (H);
Carcinogen category: 3A
(DFG 2005).
OSHA PEL†: TWA 6 mg/m^3 (1 ppm) skin
NIOSH REL: TWA 3 mg/m^3 skin
NIOSH IDLH: 300 mg/m^3 See: 100016

ROUTES OF EXPOSURE:
The substance can be absorbed into the body by inhalation of its vapour, through the skin and by ingestion.

INHALATION RISK:
A harmful contamination of the air can be reached rather quickly on evaporation of this substance at 20°C; on spraying or dispersing, however, much faster.

EFFECTS OF SHORT-TERM EXPOSURE:
The substance is mildly irritating to the eyes . The substance may cause effects on the blood , resulting in formation of methaemoglobin. The effects may be delayed. Medical observation is indicated. See Notes.

EFFECTS OF LONG-TERM OR REPEATED EXPOSURE:
The substance may have effects on the blood , resulting in the formation of methaemoglobin. See Notes.

PHYSICAL PROPERTIES

Boiling point: 332°C
Melting point: 148°C
Density: 1.4
g/cm³
Solubility in water, g/100 ml at 18.5°C: 0.08
Vapour pressure, Pa at 20°C: 0.2
Relative vapour density (air = 1): 4.8
Flash point: 199°C
Octanol/water partition coefficient as log Pow: 2.66

ENVIRONMENTAL DATA

The substance is harmful to aquatic organisms. Do not let this chemical enter the environment.

NOTES

Depending on the degree of exposure, periodic medical examination is indicated. Specific treatment is necessary in case

of poisoning with this substance; the appropriate means with instructions must be available. Also consult ICSC 0306 2-Nitroaniline, and ICSC 0307 3-Nitroaniline.

Transport Emergency Card: TEC (R)-61G12b

NFPA Code: H 3; F 1; R 2;

ADDITIONAL INFORMATION

ICSC: 0308 **4-NITROANILINE**

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International Chemical Safety Cards

3,3'-DICHLOROBENZIDINE

ICSC: 0481

3,3'-Dichlorobiphenyl-4,4'-ylenediamine
4,4'-Diamino-3,3'-dichlorobiphenyl
$C_6H_3ClNH_2C_6H_3ClNH_2/C_{12}H_{10}Cl_2N_2$
Molecular mass: 253.1

ICSC # 0481
CAS # 91-94-1
RTECS # DD0525000
EC # 612-068-00-4
May 05, 2010 Validated

TYPES OF HAZARD/ EXPOSURE	ACUTE HAZARDS/ SYMPTOMS	PREVENTION	FIRST AID/ FIRE FIGHTING
FIRE	Combustible. Gives off irritating or toxic fumes (or gases) in a fire.	NO open flames.	Fine water spray, Dry powder. Carbon dioxide.
EXPLOSION			
EXPOSURE	See EFFECTS OF LONG-TERM OR REPEATED EXPOSURE.	PREVENT DISPERSION OF DUST! STRICT HYGIENE!	
•INHALATION	Cough. Sore throat.	Avoid inhalation of dust Local exhaust or breathing protection.	Fresh air, rest. Seek medical attention if you feel unwell .
•SKIN	MAY BE ABSORBED!	Protective gloves. Protective clothing.	Remove contaminated clothes. Rinse and then wash skin with water and soap. Seek medical attention if you feel unwell .
•EYES		Face shield or eye protection in combination with breathing protection if powder.	Rinse with plenty of water (remove contact lenses if easily possible).
•INGESTION		Do not eat, drink, or smoke during work.	Rinse mouth. Refer for medical attention.

SPILLAGE DISPOSAL	STORAGE	PACKAGING & LABELLING
Personal protection: complete protective clothing including self-contained breathing apparatus. Do NOT let this chemical enter the environment . Sweep spilled substance into sealable containers; if appropriate, moisten first to prevent dusting. Carefully collect remainder, then remove to safe place. ase sealable	Provision to contain effluent from fire extinguishing. Separated from food and feedstuffs. Well closed. Store in original container. Store in an area without drain or sewer access. replaced by 22211100 in update May 2010	Do not transport with food and feedstuffs. Note: E T symbol N symbol R: 45-21-43-50/53 S: 53-45-60-61 Signal: Danger Excl mark-Health haz-Enviro

deleted and replaced by 21223060 in update May 2010		Suspected of causing genetic defects May cause cancer May cause respiratory irritation May cause damage to liver through prolonged or repeated exposure if swallowed Toxic to aquatic life with long-lasting effects

SEE IMPORTANT INFORMATION ON BACK

ICSC: 0481	Prepared in the context of cooperation between the International Programme on Chemical Safety & the Commission of the European Communities (C) IPCS CEC 1994. No modifications to the International version have been made except to add the OSHA PELs, NIOSH RELs and NIOSH IDLH values.

International Chemical Safety Cards

3,3'-DICHLOROBENZIDINE

ICSC: 0481

IMPORTANT DATA

PHYSICAL STATE; APPEARANCE:
GREY TO PURPLE CRYSTALS.

PHYSICAL DANGERS:

CHEMICAL DANGERS:
The substance decomposes on burning producing toxic and corrosive fumes including nitrogen oxides and hydrogen chloride . update may 2010 and replaced by 13347000 according to the CG

OCCUPATIONAL EXPOSURE LIMITS:
TLV: (skin); A3 (confirmed animal carcinogen with unknown relevance to humans); (ACGIH 2009).
MAK: skin absorption (H);
Carcinogen category: 2
(DFG 2009).
OSHA PEL: 1910.1007 See Appendix B
NIOSH REL: Ca See Appendix A
NIOSH IDLH: Ca N.D. See: IDLH INDEX

ROUTES OF EXPOSURE:
The substance can be absorbed into the body by inhalation of its aerosol, through the skin and by ingestion. ion in the list of OELs mouse = 488 mg/kg bw (according to IUCLID)

INHALATION RISK:
Evaporation at 20°C is negligible; a harmful concentration of airborne particles can, however, be reached quickly when dispersed, especially if powdered.

EFFECTS OF SHORT-TERM EXPOSURE:
The substance is irritating to the respiratory tract. update May 2010 and replaced by 13709030

EFFECTS OF LONG-TERM OR REPEATED EXPOSURE:
Repeated or prolonged contact with skin may cause dermatitis. The substance may have effects on the liver. This substance is possibly carcinogenic to humans.

PHYSICAL PROPERTIES

Boiling point: 368°C
Melting point: 132-133°C
Solubility in water:
(none)

Auto-ignition temperature: 350°C
Octanol/water partition coefficient as log Pow:
3.51

ENVIRONMENTAL DATA

The substance is toxic to aquatic organisms. The substance may cause long-term effects in the aquatic environment. It is strongly advised that this substance does not enter the environment. 0 added

NOTES

The substance is combustible but no flash point is available in literature. Curithane C126 is a trade name.

ADDITIONAL INFORMATION

ICSC: 0481	**3,3'-DICHLOROBENZIDINE**

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International Chemical Safety Cards

3-NITROANILINE

ICSC: 0307

m-Nitroaniline
1-Amino-3-nitrobenzene
C.I. 37030
$C_6H_6N_2O_2$
Molecular mass: 138.1

ICSC # 0307
CAS # 99-09-2
RTECS # BY6825000
UN # 1661
EC # 612-012-00-9
December 03, 2001 Validated

TYPES OF HAZARD/ EXPOSURE	ACUTE HAZARDS/ SYMPTOMS	PREVENTION	FIRST AID/ FIRE FIGHTING
FIRE	Combustible. Many reactions may cause fire or explosion.	NO open flames. NO contact with combustible substances.	Powder, water spray, foam, carbon dioxide.
EXPLOSION	Finely dispersed particles form explosive mixtures in air.	Prevent deposition of dust; closed system, dust explosion-proof electrical equipment and lighting.	In case of fire: keep drums, etc., cool by spraying with water. Combat fire from a sheltered position.
EXPOSURE		PREVENT DISPERSION OF DUST!	
•**INHALATION**	Blue lips or finger nails. Blue skin. Headache. Dizziness. Nausea. Confusion. Convulsions. Laboured breathing. Unconsciousness.	Local exhaust or breathing protection.	Fresh air, rest. Artificial respiration if indicated. Refer for medical attention.
•**SKIN**	MAY BE ABSORBED! (Further see Inhalation).	Protective gloves. Protective clothing.	Remove contaminated clothes. Rinse skin with plenty of water or shower. Refer for medical attention.
•**EYES**		Face shield, or eye protection in combination with breathing protection.	First rinse with plenty of water for several minutes (remove contact lenses if easily possible), then take to a doctor.
•**INGESTION**	(Further see Inhalation).	Do not eat, drink, or smoke during work. Wash hands before eating.	Induce vomiting (ONLY IN CONSCIOUS PERSONS!). Refer for medical attention.

SPILLAGE DISPOSAL	STORAGE	PACKAGING & LABELLING

Sweep spilled substance into covered containers; if appropriate, moisten first to prevent dusting. Carefully collect remainder. (Extra personal protection: P3 filter respirator for toxic particles.) Do NOT let this chemical enter the environment.	Separated from strong acids, strong oxidants, combustible and reducing substances, food and feedstuffs . Dry.	Do not transport with food and feedstuffs. Note: C T symbol R: 23/24/25-33-52/53 S: 1/2-28-36/37-45-61 UN Hazard Class: 6.1 UN Packing Group: II

SEE IMPORTANT INFORMATION ON BACK

ICSC: 0307

Prepared in the context of cooperation between the International Programme on Chemical Safety & the Commission of the European Communities (C) IPCS CEC 1994. No modifications to the International version have been made except to add the OSHA PELs, NIOSH RELs and NIOSH IDLH values.

International Chemical Safety Cards

3-NITROANILINE

ICSC: 0307

IMPORTANT DATA	**PHYSICAL STATE; APPEARANCE:** YELLOW CRYSTALS. **PHYSICAL DANGERS:** Dust explosion possible if in powder or granular form, mixed with air. **CHEMICAL DANGERS:** On combustion, forms toxic fumes of nitrogen oxides. Reacts with strong acids , strong oxidants and strong reducing agents . Reacts with organic materials in presence of moisture causing fire hazard. **OCCUPATIONAL EXPOSURE LIMITS:** TLV not established.	**ROUTES OF EXPOSURE:** The substance can be absorbed into the body by inhalation of its vapour, through the skin and by ingestion. **INHALATION RISK:** No indication can be given about the rate in which a harmful concentration in the air is reached on evaporation of this substance at 20° C. **EFFECTS OF SHORT-TERM EXPOSURE:** The substance may cause effects on the blood , resulting in formation of methaemoglobin. Medical observation is indicated. The effects may be delayed. See Notes. **EFFECTS OF LONG-TERM OR REPEATED EXPOSURE:** The substance may have effects on the blood , resulting in the formation of methaemoglobin. See Notes.
PHYSICAL PROPERTIES	Boiling point (decomposes): 306°C Melting point: 114°C Density: 1.4 g/cm³	Solubility in water, g/100 ml at 25°C: 0.089 Vapour pressure, Pa at 25°C: 0.005 Octanol/water partition coefficient as log Pow: 1.37
ENVIRONMENTAL DATA	The substance is harmful to aquatic organisms. Do not let this chemical enter the environment.	

NOTES

Depending on the degree of exposure, periodic medical examination is indicated. Specific treatment is necessary in case of poisoning with this substance; the appropriate means with instructions must be available. Also consult ICSC 0306 2-Nitroaniline, and ICSC 0308 4-Nitroaniline.

Transport Emergency Card: TEC (R)-61G12b

NFPA Code: H3; F1; R2;

ADDITIONAL INFORMATION

ICSC: 0307 **3-NITROANILINE**

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International Chemical Safety Cards

DINITRO-o-CRESOL

ICSC: 0462

4,6-Dinitro-ortho-cresol
2-Methyl-4,6-dinitrophenol
DNOC
2,4-Dinitro-ortho-cresol
$C_7H_6N_2O_5$ / $CH_3C_6H_2OH(NO_2)_2$
Molecular mass: 198.1

ICSC # 0462
CAS # 534-52-1
RTECS # GO9625000
UN # 1598
EC # 609-020-00-X
April 19, 2004 Validated

TYPES OF HAZARD/ EXPOSURE	ACUTE HAZARDS/ SYMPTOMS	PREVENTION	FIRST AID/ FIRE FIGHTING
FIRE	Combustible. Gives off irritating or toxic fumes (or gases) in a fire.	NO open flames. NO contact with oxidants.	Water spray, foam, dry powder, carbon dioxide.
EXPLOSION	Finely dispersed particles form explosive mixtures in air. Risk of fire and explosion on contact withoxidants.	Prevent deposition of dust; closed system, dust explosion-proof electrical equipment and lighting.	In case of fire: keep drums, etc., cool by spraying with water.
EXPOSURE		PREVENT DISPERSION OF DUST! STRICT HYGIENE!	
•INHALATION	Sweating. Fever or elevated body temperature. Nausea. Shortness of breath. Laboured breathing. Headache. Convulsions. Unconsciousness.	Local exhaust or breathing protection.	Fresh air, rest. Artificial respiration may be needed. Refer for medical attention.
•SKIN	MAY BE ABSORBED! Yellow stain. (Further see Inhalation).	Protective gloves. Protective clothing.	Remove contaminated clothes. Rinse skin with plenty of water or shower. Refer for medical attention.
•EYES	Redness. Pain.	Safety goggles or eye protection in combination with breathing protection.	First rinse with plenty of water for several minutes (remove contact lenses if easily possible), then take to a doctor.
•INGESTION	Abdominal pain. Vomiting. (Further see Inhalation).	Do not eat, drink, or smoke during work. Wash hands before eating.	Rinse mouth. Give a slurry of activated charcoal in water to drink. Refer for medical attention.

SPILLAGE DISPOSAL	STORAGE	PACKAGING & LABELLING
Sweep spilled substance into sealable containers; if appropriate, moisten first to prevent dusting. Carefully collect remainder, then remove to safe place. Do NOT let this chemical enter the environment. Personal protection: chemical protection suit including self-contained breathing apparatus.	Separated from strong oxidants, food and feed stuffs . Well closed.	Do not transport with food and feedstuffs. T+ symbol N symbol R: 26/27/28-38-41-43-44-50/53-68 S: 1/2-36/37-45-60-61 UN Hazard Class: 6.1 UN Packing Group: II

SEE IMPORTANT INFORMATION ON BACK

ICSC: 0462

Prepared in the context of cooperation between the International Programme on Chemical Safety & the Commission of the European Communities (C) IPCS CEC 1994. No modifications to the International version have been made except to add the OSHA PELs, NIOSH RELs and NIOSH IDLH values.

International Chemical Safety Cards

DINITRO-o-CRESOL

ICSC: 0462

IMPORTANT DATA

PHYSICAL STATE; APPEARANCE:
ODOURLESS , YELLOW CRYSTALS

PHYSICAL DANGERS:
Dust explosion possible if in powder or granular form, mixed with air.

CHEMICAL DANGERS:
The substance decomposes on burning producing toxic fumes including nitrogen oxides. Reacts violently with strong oxidants.

OCCUPATIONAL EXPOSURE LIMITS:
TLV: 0.2 mg/m³ as TWA; (skin); (ACGIH 2004).
MAK: IIb (not established but data is available); skin absorption (H); (DFG 2004).
OSHA PEL: TWA 0.2 mg/m^3 skin
NIOSH REL: TWA 0.2 mg/m^3 skin
NIOSH IDLH: 5 mg/m^3 See: 534521

ROUTES OF EXPOSURE:
The substance can be absorbed into the body by inhalation, through the skin and by ingestion.

INHALATION RISK:
A harmful contamination of the air will not or will only very slowly be reached on evaporation of this substance at 20°C; on spraying or dispersing, however, much faster.

EFFECTS OF SHORT-TERM EXPOSURE:
The substance is corrosive to the eyes and is irritating to the skin . Yellow staining of the skin. The substance may cause effects on the metabolic rate. Exposure at high levels may result in death.

EFFECTS OF LONG-TERM OR REPEATED EXPOSURE:

PHYSICAL PROPERTIES

Boiling point: 312°C
Melting point: 87.5°C
Density: 1.58 g/cm³
Solubility in water, g/100 ml at 20°C: 0.694

Vapour pressure, Pa at 25°C: 0.016
Relative vapour density (air = 1): 6.8
Auto-ignition temperature: 340°C
Octanol/water partition coefficient as log Pow: 2.56

ENVIRONMENTAL DATA

The substance is very toxic to aquatic organisms.

NOTES

Do NOT take working clothes home. Antinonnin, Detal, Dinitrol, Elgetol, Lipan, Selinon and Effusan are trade names. Technical grade may cause skin sensitization.

Transport Emergency Card: TEC (R)-61S1598 or 61GT2-II

ADDITIONAL INFORMATION

ICSC: 0462 **DINITRO-o-CRESOL**

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Material Safety Data Sheet

Version 3.0
Revision Date 10/30/2008
Print Date 12/09/2011

1. PRODUCT AND COMPANY IDENTIFICATION

Product name : 4-Bromodiphenyl ether

Product Number : B65209
Brand : Aldrich

Company : Sigma-Aldrich
3050 Spruce Street
SAINT LOUIS MO 63103
USA
Telephone : +1 800-325-5832
Fax : +1 800-325-5052
Emergency Phone # : (314) 776-6555

2. COMPOSITION/INFORMATION ON INGREDIENTS

Formula : C12H9BrO
Molecular Weight : 249.1 g/mol

CAS-No.	EC-No.	Index-No.	Concentration
4-Bromophenyl phenyl ether			
101-55-3	202-952-4	-	-

3. HAZARDS IDENTIFICATION

Emergency Overview

OSHA Hazards
Harmful by ingestion., Skin sensitizer, Irritant

HMIS Classification
Health Hazard: 2
Flammability: 1
Physical hazards: 0

NFPA Rating
Health Hazard: 2
Fire: 1
Reactivity Hazard: 0

Potential Health Effects

Inhalation May be harmful if inhaled. Causes respiratory tract irritation.
Skin May be harmful if absorbed through skin. Causes skin irritation.
Eyes Causes eye irritation.
Ingestion Harmful if swallowed.

4. FIRST AID MEASURES

General advice
Consult a physician. Show this safety data sheet to the doctor in attendance.Move out of dangerous area.

If inhaled
If breathed in, move person into fresh air. If not breathing give artificial respiration Consult a physician.

In case of skin contact
Wash off with soap and plenty of water. Consult a physician.

In case of eye contact
Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician.

If swallowed
Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

5. FIRE-FIGHTING MEASURES

Flammable properties

Flash point	> 113.0 °C (> 235.4 °F) - closed cup
Ignition temperature	no data available

Suitable extinguishing media
Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

Special protective equipment for fire-fighters
Wear self contained breathing apparatus for fire fighting if necessary.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions
Use personal protective equipment. Avoid breathing vapors, mist or gas. Ensure adequate ventilation.

Environmental precautions
Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.

Methods for cleaning up
Soak up with inert absorbent material and dispose of as hazardous waste. Keep in suitable, closed containers for disposal.

7. HANDLING AND STORAGE

Handling
Avoid inhalation of vapour or mist.
Normal measures for preventive fire protection.

Storage
Keep container tightly closed in a dry and well-ventilated place. Containers which are opened must be carefully resealed and kept upright to prevent leakage.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Contains no substances with occupational exposure limit values.

Personal protective equipment

Respiratory protection
Where risk assessment shows air-purifying respirators are appropriate use a full-face respirator with multi-purpose combination (US) or type ABEK (EN 14387) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

Hand protection
Handle with gloves.

Eye protection
Safety glasses

Skin and body protection
Choose body protection according to the amount and concentration of the dangerous substance at the work place.

Hygiene measures
Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance

Form	liquid
Colour	colourless

Safety data

pH	no data available
Melting point	18 °C (64 °F)
Boiling point	305 °C (581 °F)
Flash point	> 113.0 °C (> 235.4 °F) - closed cup
Ignition temperature	no data available
Lower explosion limit	no data available
Upper explosion limit	no data available
Density	1.423 g/mL at 25 °C (77 °F)
Water solubility	no data available
Partition coefficient: n-octanol/water	log Pow: 4.34

10. STABILITY AND REACTIVITY

Storage stability
Stable under recommended storage conditions.

Materials to avoid
Strong oxidizing agents

Hazardous decomposition products
Hazardous decomposition products formed under fire conditions. - Carbon oxides, Hydrogen bromide gas

11. TOXICOLOGICAL INFORMATION

Acute toxicity

no data available

Irritation and corrosion

no data available

Sensitisation

May cause sensitization by skin contact.

Chronic exposure

This product is or contains a component that is not classifiable as to its carcinogenicity based on its IARC, ACGIH, NTP, or EPA classification.

IARC: No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

ACGIH: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH.

NTP: No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

OSHA: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

Signs and Symptoms of Exposure

To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

Potential Health Effects

Inhalation	May be harmful if inhaled. Causes respiratory tract irritation.
Skin	May be harmful if absorbed through skin. Causes skin irritation.
Eyes	Causes eye irritation.
Ingestion	Harmful if swallowed.

12. ECOLOGICAL INFORMATION

Elimination information (persistence and degradability)

no data available

Ecotoxicity effects

Toxicity to fish	LC50 - Lepomis macrochirus (Bluegill) - 50.90 mg/l - 24 h
	LC50 - Lepomis macrochirus (Bluegill) - 9.60 mg/l - 48 h

Further information on ecology

An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.

Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

13. DISPOSAL CONSIDERATIONS

Product
Observe all federal, state, and local environmental regulations. Contact a licensed professional waste disposal service to dispose of this material. Dissolve or mix the material with a combustible solvent and burn in a chemical incinerator equipped with an afterburner and scrubber.

Contaminated packaging
Dispose of as unused product.

14. TRANSPORT INFORMATION

DOT (US)

UN-Number: 3082 Class: 9 Packing group: III
Proper shipping name: Environmentally hazardous substances, liquid, n.o.s.
Marine pollutant: No
Poison Inhalation Hazard: No

IMDG
UN-Number: 3082 Class: 9 Packing group: III EMS-No: F-A, S-F
Proper shipping name: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (4-Bromophenyl phenyl ether)
Marine pollutant: No

IATA
UN-Number: 3082 Class: 9 Packing group: III
Proper shipping name: Environmentally hazardous substance, liquid n.o.s. (4-Bromophenyl phenyl ether)

15. REGULATORY INFORMATION

OSHA Hazards
Harmful by ingestion., Skin sensitizer, Irritant

DSL Status
This product contains the following components listed on the Canadian NDSL list. All other components are on the Canadian DSL list.

	CAS-No.
4-Bromophenyl phenyl ether	101-55-3

SARA 302 Components
SARA 302: No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

SARA 313 Components
SARA 313: This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

SARA 311/312 Hazards
Acute Health Hazard

Massachusetts Right To Know Components

	CAS-No.	Revision Date
4-Bromophenyl phenyl ether	101-55-3	1989-12-01

Pennsylvania Right To Know Components

	CAS-No.	Revision Date
4-Bromophenyl phenyl ether	101-55-3	1989-12-01

New Jersey Right To Know Components

	CAS-No.	Revision Date
4-Bromophenyl phenyl ether	101-55-3	1989-12-01

California Prop. 65 Components
This product does not contain any chemicals known to State of California to cause cancer, birth, or any other reproductive defects.

16. OTHER INFORMATION

Further information
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The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. Sigma-Aldrich Co., shall not be held liable for any damage resulting from handling or from contact with the above product. See reverse side of invoice or packing slip for additional terms and conditions of sale.

International Chemical Safety Cards

4-CHLORO-m-CRESOL

ICSC: 0131

p-Chloro-m-cresol
2-Chloro-5-hydroxytoluene
4-Chloro-3-methylphenol
C_7H_7ClO / $C_6H_3OHCH_3Cl$
Molecular mass: 142.58

ICSC # 0131
CAS # 59-50-7
RTECS # GO7100000
UN # 2669
EC # 604-014-00-3
June 10, 1997 Validated

TYPES OF HAZARD/ EXPOSURE	ACUTE HAZARDS/ SYMPTOMS	PREVENTION	FIRST AID/ FIRE FIGHTING
FIRE	Combustible. Gives off irritating or toxic fumes (or gases) in a fire.	NO open flames.	Water spray, powder.
EXPLOSION			
EXPOSURE		PREVENT DISPERSION OF DUST! AVOID ALL CONTACT!	
•INHALATION	Cough. Sore throat. (See Ingestion).	Local exhaust or breathing protection.	Fresh air, rest. Refer for medical attention.
•SKIN	Redness. Pain.	Protective gloves.	Remove contaminated clothes. Rinse skin with plenty of water or shower. Refer for medical attention.
•EYES	Redness. Pain. Severe deep burns.	Safety goggles, or eye protection in combination with breathing protection.	First rinse with plenty of water for several minutes (remove contact lenses if easily possible), then take to a doctor.
•INGESTION	Headache. Dizziness. Shortness of breath. Abdominal pain. Vomiting. Diarrhoea.	Do not eat, drink, or smoke during work.	Rinse mouth. Refer for medical attention.

SPILLAGE DISPOSAL	STORAGE	PACKAGING & LABELLING
Sweep spilled substance into sealable containers; if appropriate, moisten first to prevent dusting, then remove to safe place. Do NOT let this chemical enter	Separated from food and feedstuffs . Dry.	Xn symbol N symbol R: 21/22-41-43-50

the environment. Personal protection: chemical protection suit including self-contained breathing apparatus.		S: 2-26-36/37/39-61 UN Hazard Class: 6.1 UN Packing Group: II

SEE IMPORTANT INFORMATION ON BACK

ICSC: 0131

Prepared in the context of cooperation between the International Programme on Chemical Safety & the Commission of the European Communities (C) IPCS CEC 1994. No modifications to the International version have been made except to add the OSHA PELs, NIOSH RELs and NIOSH IDLH values.

International Chemical Safety Cards

4-CHLORO-m-CRESOL

ICSC: 0131

IMPORTANT DATA

PHYSICAL STATE; APPEARANCE:
WHITE OR SLIGHTLY PINK, HYGROSCOPIC CRYSTALS OR CRYSTALLINE POWDER.

PHYSICAL DANGERS:

CHEMICAL DANGERS:
The substance decomposes on burning producing toxic and corrosive fumes including hydrogen chloride and phosgene .

OCCUPATIONAL EXPOSURE LIMITS:
TLV not established.
MAK: IIb (not established but data is available); sensitization of skin (Sh); (DFG 2005).

ROUTES OF EXPOSURE:
The substance can be absorbed into the body by inhalation and through the skin and by ingestion.

INHALATION RISK:
Evaporation at 20°C is negligible; a harmful concentration of airborne particles can, however, be reached quickly.

EFFECTS OF SHORT-TERM EXPOSURE:
The substance is irritating to the eyes , the skin and the respiratory tract .

EFFECTS OF LONG-TERM OR REPEATED EXPOSURE:
Repeated or prolonged contact may cause skin sensitization.

PHYSICAL PROPERTIES

Boiling point: 235°C
Melting point: 66°C
Density: 1.4 g/cm³
Solubility in water, g/100 ml at 20°C: 0.38
Flash point: 118°C
Auto-ignition temperature: 590°C
Octanol/water partition coefficient as log Pow: 3.1

ENVIRONMENTAL DATA

The substance is toxic to aquatic organisms. In the food chain important to humans, bioaccumulation takes place, specifically in fish.

NOTES

Aptal, Baktolan, Parmetol, Raschit are trade names. Card has been partly updated in October 2005. See sections Occupational Exposure Limits, Emergency Response.

Transport Emergency Card: TEC (R)-61GT2-II

ADDITIONAL INFORMATION

ICSC: 0131 **4-CHLORO-m-CRESOL**

(C) IPCS, CEC, 1994

IMPORTANT LEGAL NOTICE:	Neither NIOSH, the CEC or the IPCS nor any person acting on behalf of NIOSH, the CEC or the IPCS is responsible for the use which might be made of this information. This card contains the collective views of the IPCS Peer Review Committee and may not reflect in all cases all the detailed requirements included in national legislation on the subject. The user should verify compliance of the cards with the relevant legislation in the country of use. The only modifications made to produce the U.S. version is inclusion of the OSHA PELs, NIOSH RELs and NIOSH IDLH values.

International Chemical Safety Cards

4-CHLOROANILINE

ICSC: 0026

Chloroaminobenzene, p-
Chloroaniline, p-
C_6H_6ClN / $ClC_6H_4NH_2$
Molecular mass: 127.6

ICSC # 0026
CAS # 106-47-8
RTECS # BX0700000
UN # 2018
EC # 612-137-00-9
October 18, 2001 Validated

TYPES OF HAZARD/ EXPOSURE	ACUTE HAZARDS/ SYMPTOMS	PREVENTION	FIRST AID/ FIRE FIGHTING
FIRE	Combustible. Gives off irritating or toxic fumes (or gases) in a fire.	NO open flames.	Powder, water spray, foam, carbon dioxide.
EXPLOSION			
EXPOSURE		PREVENT DISPERSION OF DUST! STRICT HYGIENE!	IN ALL CASES CONSULT A DOCTOR!
•INHALATION	Blue lips or finger nails. Blue skin. Confusion. Convulsions. Dizziness. Headache. Nausea. Unconsciousness.	Local exhaust or breathing protection.	Fresh air, rest. Refer for medical attention.
•SKIN	MAY BE ABSORBED! (Further see Inhalation).	Protective gloves. Protective clothing.	Remove contaminated clothes. Rinse and then wash skin with water and soap. Refer for medical attention.
•EYES	Redness. Pain.	Safety goggles, or eye protection in combination with breathing protection.	First rinse with plenty of water for several minutes (remove contact lenses if easily possible), then take to a doctor.
•INGESTION	(See Inhalation).	Do not eat, drink, or smoke during work.	Rinse mouth. Refer for medical attention.

SPILLAGE DISPOSAL	STORAGE	PACKAGING & LABELLING
Personal protection: particulate filter respirator adapted to the airborne concentration of the substance. Chemical protection suit. Sweep spilled substance into sealable containers; if	Separated from strong oxidants, food and feedstuffs . Store in an area without drain or sewer access.	Do not transport with food and feedstuffs. Note: E T symbol N symbol

appropriate, moisten first to prevent dusting. Carefully collect remainder, then remove to safe place. Do NOT let this chemical enter the environment.		R: 45-23/24/25-43-50/53 S: 53-45-60-61 UN Hazard Class: 6.1 UN Packing Group: II

SEE IMPORTANT INFORMATION ON BACK

ICSC: 0026

Prepared in the context of cooperation between the International Programme on Chemical Safety & the Commission of the European Communities (C) IPCS CEC 1994. No modifications to the International version have been made except to add the OSHA PELs, NIOSH RELs and NIOSH IDLH values.

International Chemical Safety Cards

4-CHLOROANILINE

ICSC: 0026

I M P O R T A N T D A T A	**PHYSICAL STATE; APPEARANCE:** COLOURLESS TO YELLOW CRYSTALS , WITH CHARACTERISTIC ODOUR. **PHYSICAL DANGERS:** **CHEMICAL DANGERS:** The substance decomposes on burning producing toxic and corrosive fumes including hydrogen chloride , nitrogen oxides . Reacts violently with oxidants. **OCCUPATIONAL EXPOSURE LIMITS:** TLV not established. MAK: skin absorption (H); sensitization of skin (Sh); Carcinogen category: 2 (DFG 2009).	**ROUTES OF EXPOSURE:** The substance can be absorbed into the body by inhalation, through the skin and by ingestion. **INHALATION RISK:** A harmful concentration of airborne particles can be reached quickly when dispersed. **EFFECTS OF SHORT-TERM EXPOSURE:** The substance is irritating to the eyes . The substance may cause effects on the red blood cells , resulting in lesions of blood cells and formation of methaemoglobin. Medical observation is indicated. The effects may be delayed. **EFFECTS OF LONG-TERM OR REPEATED EXPOSURE:** Repeated or prolonged contact may cause skin sensitization. The substance may have effects on the spleen. Tumours have been detected in experimental animals but may not be relevant to humans (see Notes).
PHYSICAL PROPERTIES	Boiling point: 232°C Melting point: 69-72.5°C Relative density (water = 1): 1.4 Solubility in water, g/100 ml at 20°C: 0.39 Vapour pressure, Pa at 20°C: 2	Relative vapour density (air = 1): 4.4 Relative density of the vapour/air-mixture at 20°C (air = 1): 1.00 Flash point: 120-123°C o.c. Auto-ignition temperature: 685°C Octanol/water partition coefficient as log Pow: 1.8
ENVIRONMENTAL DATA	The substance is toxic to aquatic organisms. It is strongly advised that this substance does not enter the environment.	

N O T E S

Depending on the degree of exposure, periodic medical examination is suggested. Specific treatment is necessary in case of poisoning with this substance; the appropriate means with instructions must be available.

Transport Emergency Card: TEC (R)-61S2018

Card has been partially updated in April 2010: see Occupational Exposure Limits.

ADDITIONAL INFORMATION	

ICSC: 0026 **4-CHLOROANILINE**

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Material Safety Data Sheet

Version 3.0
Revision Date 05/08/2008
Print Date 12/09/2011

1. PRODUCT AND COMPANY IDENTIFICATION

Product name : 4-Chlorodiphenyl ether

Product Number : 357650
Brand : Aldrich

Company : Sigma-Aldrich
3050 Spruce Street
SAINT LOUIS MO 63103
USA
Telephone : +1 800-325-5832
Fax : +1 800-325-5052
Emergency Phone # : (314) 776-6555

2. COMPOSITION/INFORMATION ON INGREDIENTS

Synonyms : 4-Chlorophenyl phenyl ether

Formula : $C_{12}H_9ClO$
Molecular Weight : 204.65 g/mol

CAS-No.	EC-No.	Index-No.	Concentration
1-Chloro-4-phenoxybenzene			
7005-72-3	**230-281-7**	**-**	**-**

3. HAZARDS IDENTIFICATION

Emergency Overview

OSHA Hazards
Harmful by ingestion., Skin sensitizer, Irritant

HMIS Classification
Health Hazard: 2
Flammability: 1
Physical hazards: 0

NFPA Rating
Health Hazard: 3
Fire: 1
Reactivity Hazard: 0

Potential Health Effects

Inhalation **May be harmful if inhaled. Causes respiratory tract irritation.**
Skin **May be harmful if absorbed through skin. Causes skin irritation.**
Eyes **Causes eye irritation.**

Ingestion **Harmful if swallowed.**

4. FIRST AID MEASURES

General advice
Consult a physician. Show this safety data sheet to the doctor in attendance.Move out of dangerous area.

If inhaled
If breathed in, move person into fresh air. If not breathing give artificial respiration Consult a physician.

In case of skin contact
Wash off with soap and plenty of water. Consult a physician.

In case of eye contact
Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician.

If swallowed
Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

5. FIRE-FIGHTING MEASURES

Flammable properties

Flash point	**113.0 °C (235.4 °F)** - closed cup
Ignition temperature	no data available

Suitable extinguishing media
Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

Special protective equipment for fire-fighters
Wear self contained breathing apparatus for fire fighting if necessary.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions
Use personal protective equipment. Avoid breathing vapors, mist or gas. Ensure adequate ventilation.

Environmental precautions
Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.

Methods for cleaning up
Soak up with inert absorbent material and dispose of as hazardous waste. Keep in suitable, closed containers for disposal.

7. HANDLING AND STORAGE

Handling
Avoid inhalation of vapour or mist.
Normal measures for preventive fire protection.

Storage
Keep container tightly closed in a dry and well-ventilated place. Containers which are opened must be carefully resealed and kept upright to prevent leakage.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Contains no substances with occupational exposure limit values.

Personal protective equipment

Respiratory protection
Where risk assessment shows air-purifying respirators are appropriate use a full-face respirator with multi-purpose combination (US) or type ABEK (EN 14387) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

Hand protection
Handle with gloves.

Eye protection
Safety glasses

Skin and body protection
Choose body protection according to the amount and concentration of the dangerous substance at the work place.

Hygiene measures
Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance

Form	liquid
Colour	colourless

Safety data

pH	no data available
Melting point	no data available
Boiling point	161 - 162 °C (322 - 324 °F) **at 25 hPa (19 mmHg)**
Flash point	**113.0 °C (235.4 °F)** - closed cup
Ignition temperature	no data available
Lower explosion limit	no data available
Upper explosion limit	no data available
Density	1.193 g/mL at 25 °C (77 °F)
Water solubility	**no data available**
Partition coefficient: n-octanol/water	**log Pow: 4.20**

10. STABILITY AND REACTIVITY

Storage stability
Stable under recommended storage conditions.

Materials to avoid
Strong oxidizing agents

Hazardous decomposition products
Hazardous decomposition products formed under fire conditions. - Carbon oxides, Hydrogen chloride gas

11. TOXICOLOGICAL INFORMATION

Acute toxicity

no data available

Irritation and corrosion

no data available

Sensitisation

May cause sensitization by skin contact.

Chronic exposure

IARC:	**No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.**
ACGIH:	**No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH.**
NTP:	**No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.**
OSHA:	**No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.**

Signs and Symptoms of Exposure

To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

Potential Health Effects

Inhalation	**May be harmful if inhaled. Causes respiratory tract irritation.**
Skin	**May be harmful if absorbed through skin. Causes skin irritation.**
Eyes	**Causes eye irritation.**
Ingestion	**Harmful if swallowed.**

12. ECOLOGICAL INFORMATION

Elimination information (persistence and degradability)

no data available

Ecotoxicity effects

Toxicity to fish	**LC50 - other fish - 0.73 mg/l - 96 h**

Further information on ecology

An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.

Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

13. DISPOSAL CONSIDERATIONS

Product
Observe all federal, state, and local environmental regulations. Contact a licensed professional waste disposal service to dispose of this material. Dissolve or mix the material with a combustible solvent and burn in a chemical incinerator equipped with an afterburner and scrubber.

Contaminated packaging
Dispose of as unused product.

14. TRANSPORT INFORMATION

DOT (US)
UN-Number: 3082 Class: 9 Packing group: III
Proper shipping name: Environmentally hazardous substances, liquid, n.o.s. (1-Chloro-4-phenoxybenzene)
Marine pollutant: No
Poison Inhalation Hazard: No

IMDG
Not dangerous goods

IATA
Not dangerous goods

15. REGULATORY INFORMATION

OSHA Hazards
Harmful by ingestion., Skin sensitizer, Irritant

TSCA Status
On TSCA Inventory

DSL Status
This product contains the following components listed on the Canadian NDSL list. All other components are on the Canadian DSL list.

	CAS-No.
1-Chloro-4-phenoxybenzene	7005-72-3

SARA 302 Components
SARA 302: No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

SARA 313 Components
SARA 313: This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

SARA 311/312 Hazards
Acute Health Hazard

Massachusetts Right To Know Components

	CAS-No.	Revision Date
1-Chloro-4-phenoxybenzene	7005-72-3	1989-12-01

Pennsylvania Right To Know Components

	CAS-No.	Revision Date
1-Chloro-4-phenoxybenzene	7005-72-3	1989-12-01

New Jersey Right To Know Components

	CAS-No.	Revision Date
1-Chloro-4-phenoxybenzene	7005-72-3	1989-12-01

California Prop. 65 Components
This product does not contain any chemicals known to State of California to cause cancer, birth, or any other reproductive defects.

16. OTHER INFORMATION

Further information
Copyright 2008 Sigma-Aldrich Co. License granted to make unlimited paper copies for internal use only.
The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. Sigma-Aldrich Co., shall not be held liable for any damage resulting from handling or from contact with the above product. See reverse side of invoice or packing slip for additional terms and conditions of sale.

International Chemical Safety Cards

p-NITROPHENOL

ICSC: 0066

4-Nitrophenol
4-Hydroxynitrobenzene
$C_6H_5NO_3$
Molecular mass: 139.1

ICSC # 0066
CAS # 100-02-7
RTECS # SM2275000
UN # 1663
EC # 609-015-00-2
November 25, 1998 Validated

TYPES OF HAZARD/ EXPOSURE	ACUTE HAZARDS/ SYMPTOMS	PREVENTION	FIRST AID/ FIRE FIGHTING
FIRE	Combustible. Gives off irritating or toxic fumes (or gases) in a fire.	NO open flames.	Powder, water spray, foam, carbon dioxide.
EXPLOSION	Finely dispersed particles form explosive mixtures in air.	Prevent deposition of dust; closed system, dust explosion-proof electrical equipment and lighting.	In case of fire: keep drums, etc., cool by spraying with water.
EXPOSURE		PREVENT DISPERSION OF DUST! STRICT HYGIENE!	
•INHALATION	Blue lips or finger nails. Blue skin. Cough. Burning sensation. Confusion. Convulsions. Dizziness. Headache. Nausea. Sore throat. Unconsciousness. Weakness.	Local exhaust or breathing protection.	Fresh air, rest. Refer for medical attention.
•SKIN	MAY BE ABSORBED! Redness. (Further see Inhalation).	Protective gloves. Protective clothing.	Remove contaminated clothes. Rinse and then wash skin with water and soap. Refer for medical attention.
•EYES	Redness. Pain.	Safety spectacles , face shield or eye protection in combination with breathing protection.	First rinse with plenty of water for several minutes (remove contact lenses if easily possible), then take to a doctor.
•INGESTION	Abdominal pain. Sore throat. Vomiting. (See Inhalation).	Do not eat, drink, or smoke during work.	Rinse mouth. Rest. Refer for medical attention.

SPILLAGE DISPOSAL	STORAGE	PACKAGING & LABELLING
Sweep spilled substance into sealable	Separated from combustible and	Do not transport with food and

containers; if appropriate, moisten first to prevent dusting. Carefully collect remainder, then remove to safe place. Do NOT let this chemical enter the environment. Personal protection: P2 filter respirator for harmful particles.	reducing substances, food and feedstuffs . Well closed.	feedstuffs. Xn symbol R: 20/21/22-33 S: 2-28 UN Hazard Class: 6.1 UN Packing Group: III

SEE IMPORTANT INFORMATION ON BACK

ICSC: 0066

Prepared in the context of cooperation between the International Programme on Chemical Safety & the Commission of the European Communities (C) IPCS CEC 1994. No modifications to the International version have been made except to add the OSHA PELs, NIOSH RELs and NIOSH IDLH values.

International Chemical Safety Cards

p-NITROPHENOL

ICSC: 0066

IMPORTANT DATA

PHYSICAL STATE; APPEARANCE:
COLOURLESS TO PALE YELLOW CRYSTALS

PHYSICAL DANGERS:
Dust explosion possible if in powder or granular form, mixed with air.

CHEMICAL DANGERS:
May explode on heating. The substance decomposes on heating producing toxic fumes including nitrogen oxides . Mixtures with potassium hydroxide are explosive.

OCCUPATIONAL EXPOSURE LIMITS:
TLV not established.

ROUTES OF EXPOSURE:
The substance can be absorbed into the body by inhalation, through the skin and by ingestion.

INHALATION RISK:
Evaporation at 20°C is negligible; a harmful concentration of airborne particles can, however, be reached quickly when dispersed.

EFFECTS OF SHORT-TERM EXPOSURE:
The substance is irritating to the eyes, the skin and the respiratory tract . Yellow staining of the skin. The substance may cause effects on the blood , resulting in formation of methaemoglobin. The effects may be delayed. Medical observation is indicated.

EFFECTS OF LONG-TERM OR REPEATED EXPOSURE:
Repeated or prolonged contact may cause skin sensitization.

PHYSICAL PROPERTIES

Boiling point (decomposes): 279°C
Melting point: 111-116°C
Density: 1.5
g/cm³
Solubility in water, g/100 ml at 20°C: 1.24

Vapour pressure, Pa at 20°C: 0.0032
Flash point: 169°C
Auto-ignition temperature: 490°C
Octanol/water partition coefficient as log Pow: 1.91

ENVIRONMENTAL DATA

The substance is toxic to aquatic organisms.

NOTES

Depending on the degree of exposure, periodic medical examination is suggested. Specific treatment is necessary in case of poisoning with this substance; the appropriate means with instructions must be available. Card has been partly updated in April 2005. See section Physical properties.

Transport Emergency Card: TEC (R)-61S1663

NFPA Code: H3; F1; R2;

ADDITIONAL INFORMATION

ICSC: 0066 **p-NITROPHENOL**

(C) IPCS, CEC, 1994

IMPORTANT LEGAL NOTICE:	Neither NIOSH, the CEC or the IPCS nor any person acting on behalf of NIOSH, the CEC or the IPCS is responsible for the use which might be made of this information. This card contains the collective views of the IPCS Peer Review Committee and may not reflect in all cases all the detailed requirements included in national legislation on the subject. The user should verify compliance of the cards with the relevant legislation in the country of use. The only modifications made to produce the U.S. version is inclusion of the OSHA PELs, NIOSH RELs and NIOSH IDLH values.

Material Safety Data Sheet

Version 4.1
Revision Date 05/23/2011
Print Date 12/09/2011

1. PRODUCT AND COMPANY IDENTIFICATION

Product name	:	4-Nitroquinoline *N*-oxide
Product Number	:	N8141
Brand	:	Aldrich
Supplier	:	Sigma-Aldrich 3050 Spruce Street SAINT LOUIS MO 63103 USA
Telephone	:	+1 800-325-5832
Fax	:	+1 800-325-5052
Emergency Phone # (For both supplier and manufacturer)	:	(314) 776-6555
Preparation Information	:	Sigma-Aldrich Corporation Product Safety - Americas Region 1-800-521-8956

2. HAZARDS IDENTIFICATION

Emergency Overview

OSHA Hazards
No known OSHA hazards

GHS Classification
Carcinogenicity (Category 1B)

GHS Label elements, including precautionary statements

Pictogram

Signal word Danger

Hazard statement(s)
H350 May cause cancer.

Precautionary statement(s)
P201 Obtain special instructions before use.
P308 + P313 IF exposed or concerned: Get medical advice/ attention.

HMIS Classification
Health hazard: 0
Flammability: 0
Physical hazards: 0

NFPA Rating
Health hazard: 0
Fire: 0
Reactivity Hazard: 0

Potential Health Effects

Inhalation May be harmful if inhaled. May cause respiratory tract irritation.
Skin May be harmful if absorbed through skin. May cause skin irritation.
Eyes May cause eye irritation.
Ingestion May be harmful if swallowed.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Synonyms : 4-Nitroquinoline 1-oxide

Formula : $C_9H_6N_2O_3$
Molecular Weight : 190.16 g/mol

CAS-No.	EC-No.	Index-No.	Concentration
4-Nitroquinoline N-oxide			
56-57-5	200-281-1	-	-

4. FIRST AID MEASURES

General advice
Consult a physician. Show this safety data sheet to the doctor in attendance.

If inhaled
If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.

In case of skin contact
Wash off with soap and plenty of water. Consult a physician.

In case of eye contact
Flush eyes with water as a precaution.

If swallowed
Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

5. FIRE-FIGHTING MEASURES

Suitable extinguishing media
Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

Special protective equipment for fire-fighters
Wear self contained breathing apparatus for fire fighting if necessary.

Hazardous combustion products
Hazardous decomposition products formed under fire conditions. - Carbon oxides, nitrogen oxides (NOx)

6. ACCIDENTAL RELEASE MEASURES

Personal precautions
Use personal protective equipment. Avoid dust formation. Avoid breathing vapors, mist or gas. Ensure adequate ventilation. Evacuate personnel to safe areas. Avoid breathing dust.

Environmental precautions
Prevent further leakage or spillage if safe to do so. Do not let product enter drains.

Methods and materials for containment and cleaning up
Pick up and arrange disposal without creating dust. Sweep up and shovel. Keep in suitable, closed containers for disposal.

7. HANDLING AND STORAGE

Precautions for safe handling
Avoid formation of dust and aerosols.
Provide appropriate exhaust ventilation at places where dust is formed. Normal measures for preventive fire protection.

Conditions for safe storage
Keep container tightly closed in a dry and well-ventilated place.

Recommended storage temperature: -20 °C

Light sensitive. hygroscopic

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Contains no substances with occupational exposure limit values.

Personal protective equipment

Respiratory protection
Where risk assessment shows air-purifying respirators are appropriate use a full-face particle respirator type N100 (US) or type P3 (EN 143) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

Hand protection
Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

Eye protection
Safety glasses with side-shields conforming to EN166 Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

Skin and body protection
impervious clothing, The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

Hygiene measures
Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance

Form	crystalline
Colour	yellow

Safety data

pH	no data available
Melting point/freezing point	Melting point/range: 154 - 156 °C (309 - 313 °F) - lit.
Boiling point	no data available
Flash point	no data available
Ignition temperature	no data available
Autoignition temperature	no data available
Lower explosion limit	no data available
Upper explosion limit	no data available
Vapour pressure	no data available
Density	no data available
Water solubility	no data available
Partition coefficient: n-octanol/water	no data available
Relative vapour density	no data available
Odour	no data available
Odour Threshold	no data available

Evaporation rate no data available

10. STABILITY AND REACTIVITY

Chemical stability
Stable under recommended storage conditions.

Possibility of hazardous reactions
no data available

Conditions to avoid
no data available

Materials to avoid
Strong oxidizing agentsStrong oxidizing agents

Hazardous decomposition products
Hazardous decomposition products formed under fire conditions. - Carbon oxides, nitrogen oxides (NOx)
Other decomposition products - no data available

11. TOXICOLOGICAL INFORMATION

Acute toxicity

Oral LD50
Inhalation LC50
no data available

Dermal LD50
no data available

Other information on acute toxicity
LD50 Subcutaneous - rat - 12.6 mg/kg
Remarks: Lungs, Thorax, or Respiration:Acute pulmonary edema. Lungs, Thorax, or Respiration:Dyspnea. Nutritional and Gross Metabolic:Changes in:Body temperature decrease.

Skin corrosion/irritation
no data available

Serious eye damage/eye irritation
no data available

Respiratory or skin sensitization
no data available

Germ cell mutagenicity

no data available

Carcinogenicity

Possible human carcinogen

IARC:	No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.
ACGIH:	No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH.
NTP:	No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.
OSHA:	No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

Reproductive toxicity

no data available

Teratogenicity

no data available

Specific target organ toxicity - single exposure (Globally Harmonized System)
no data available

Specific target organ toxicity - repeated exposure (Globally Harmonized System)
no data available

Aspiration hazard
no data available

Potential health effects

Inhalation	May be harmful if inhaled. May cause respiratory tract irritation.
Ingestion	May be harmful if swallowed.
Skin	May be harmful if absorbed through skin. May cause skin irritation.
Eyes	May cause eye irritation.

Signs and Symptoms of Exposure
To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

Synergistic effects
no data available

Additional Information
RTECS: VC2100000

12. ECOLOGICAL INFORMATION

Toxicity

no data available

Persistence and degradability
no data available

Bioaccumulative potential
no data available

Mobility in soil
no data available

PBT and vPvB assessment
no data available

Other adverse effects

no data available

13. DISPOSAL CONSIDERATIONS

Product
Offer surplus and non-recyclable solutions to a licensed disposal company.

Contaminated packaging
Dispose of as unused product.

14. TRANSPORT INFORMATION

DOT (US)
Not dangerous goods

IMDG
Not dangerous goods

IATA
Not dangerous goods

15. REGULATORY INFORMATION

OSHA Hazards
No known OSHA hazards

SARA 302 Components
SARA 302: No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

SARA 313 Components
SARA 313: This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

SARA 311/312 Hazards
No SARA Hazards

Massachusetts Right To Know Components
No components are subject to the Massachusetts Right to Know Act.

Pennsylvania Right To Know Components

	CAS-No.	Revision Date
4-Nitroquinoline N-oxide	56-57-5	1989-08-11

New Jersey Right To Know Components

	CAS-No.	Revision Date
4-Nitroquinoline N-oxide	56-57-5	1989-08-11

California Prop. 65 Components
This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.

16. OTHER INFORMATION

Further information
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The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. Sigma-Aldrich Co., shall not be held liable for any damage resulting from handling or from contact with the above product. See reverse side of invoice or packing slip for additional terms and conditions of sale.

International Chemical Safety Cards

ACENAPHTHENE

ICSC: 1674

1,2-Dihydroacenaphthylene
1,8-Ethylenenaphthalene
$C_{12}H_{10}$
Molecular mass: 154.2

ICSC # 1674
CAS # 83-32-9
RTECS # AB1000000
UN # 3077
October 12, 2006 Validated

TYPES OF HAZARD/ EXPOSURE	ACUTE HAZARDS/ SYMPTOMS	PREVENTION	FIRST AID/ FIRE FIGHTING
FIRE	Combustible.	NO open flames.	Water spray. Dry powder. Foam. Carbon dioxide.
EXPLOSION	Finely dispersed particles form explosive mixtures in air.	Prevent deposition of dust; closed system, dust explosion-proof electrical equipment and lighting.	
EXPOSURE	See NOTES.	PREVENT DISPERSION OF DUST!	
•INHALATION		Local exhaust or breathing protection.	Fresh air, rest.
•SKIN		Protective gloves.	Remove contaminated clothes. Rinse and then wash skin with water and soap.
•EYES		Safety goggles	First rinse with plenty of water for several minutes (remove contact lenses if easily possible), then take to a doctor.
•INGESTION		Do not eat, drink, or smoke during work.	Rinse mouth.

SPILLAGE DISPOSAL	STORAGE	PACKAGING & LABELLING
Personal protection: P2 filter respirator for harmful particles. Do NOT let this chemical enter the environment. Sweep spilled substance into covered containers; if appropriate, moisten first to prevent dusting. Carefully collect remainder, then remove to safe place.	Separated from strong oxidants . Provision to contain effluent from fire extinguishing. Store in an area without drain or sewer access.	UN Hazard Class: 9 UN Packing Group: III Signal: Warning Enviro Very toxic to aquatic life with long lasting effects

SEE IMPORTANT INFORMATION ON BACK

ICSC: 1674

Prepared in the context of cooperation between the International Programme on Chemical Safety & the Commission of the European Communities (C) IPCS CEC 1994. No modifications to the International version have been made except to add the OSHA PELs, NIOSH RELs and NIOSH IDLH values.

International Chemical Safety Cards

ACENAPHTHENE

ICSC: 1674

IMPORTANT DATA

PHYSICAL STATE; APPEARANCE:
WHITE TO BEIGE CRYSTALS

PHYSICAL DANGERS:
Dust explosion possible if in powder or granular form, mixed with air.

CHEMICAL DANGERS:
On combustion, forms toxic gases including carbon monoxide. Reacts with strong oxidants .

OCCUPATIONAL EXPOSURE LIMITS:
TLV not established.
MAK not established.

ROUTES OF EXPOSURE:
The substance can be absorbed into the body by inhalation of its aerosol, through the skin and by ingestion.

INHALATION RISK:
A harmful concentration of airborne particles can be reached quickly when dispersed .

EFFECTS OF SHORT-TERM EXPOSURE:

EFFECTS OF LONG-TERM OR REPEATED EXPOSURE:
See Notes.

PHYSICAL PROPERTIES

Boiling point: 279°C
Melting point: 95°C
Density: 1.2
g/cm³
Solubility in water, g/100 ml at 25°C: 0.0004

Vapour pressure, Pa at 25°C: 0.3
Relative vapour density (air = 1): 5.3
Flash point: 135°C o.c.
Auto-ignition temperature: >450 °C
Octanol/water partition coefficient as log Pow: 3.9 - 4.5

ENVIRONMENTAL DATA

The substance is very toxic to aquatic organisms. The substance may cause long-term effects in the aquatic environment. It is strongly advised that this substance does not enter the environment.

NOTES

Acenaphthene occurs as a pure substance and also as a component of polyaromatic hydrocarbon (PAH) mixtures. Human population studies have associated PAH's exposure with cancer and cardiovascular diseases. Insufficient data are available on the effect of this substance on human health, therefore utmost care must be taken.

Transport Emergency Card: TEC (R)-90GM7-III

ADDITIONAL INFORMATION

(C) IPCS, CEC, 1994

IMPORTANT LEGAL NOTICE:	Neither NIOSH, the CEC or the IPCS nor any person acting on behalf of NIOSH, the CEC or the IPCS is responsible for the use which might be made of this information. This card contains the collective views of the IPCS Peer Review Committee and may not reflect in all cases all the detailed requirements included in national legislation on the subject. The user should verify compliance of the cards with the relevant legislation in the country of use. The only modifications made to produce the U.S. version is inclusion of the OSHA PELs, NIOSH RELs and NIOSH IDLH values.

Material Safety Data Sheet

Version 4.0
Revision Date 07/24/2010
Print Date 12/09/2011

1. PRODUCT AND COMPANY IDENTIFICATION

Product name	:	Acenaphthylene
Product Number	:	416703
Brand	:	Aldrich
Company	:	Sigma-Aldrich 3050 Spruce Street SAINT LOUIS MO 63103 USA
Telephone	:	+1 800-325-5832
Fax	:	+1 800-325-5052
Emergency Phone #	:	(314) 776-6555

2. HAZARDS IDENTIFICATION

Emergency Overview

OSHA Hazards
Carcinogen

GHS Label elements, including precautionary statements

Pictogram

Signal word Warning

Hazard statement(s)

H302	Harmful if swallowed.
H315	Causes skin irritation.
H319	Causes serious eye irritation.
H335	May cause respiratory irritation.

Precautionary statement(s)

P261	Avoid breathing dust/ fume/ gas/ mist/ vapours/ spray.
P305 + P351 + P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

HMIS Classification

Health hazard:	2
Chronic Health Hazard:	*
Flammability:	1
Physical hazards:	0

NFPA Rating

Health hazard:	2
Fire:	1
Reactivity Hazard:	0

Potential Health Effects

Inhalation	May be harmful if inhaled. May cause respiratory tract irritation.
Skin	May be harmful if absorbed through skin. May cause skin irritation.
Eyes	May cause eye irritation.
Ingestion	May be harmful if swallowed.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Formula	:	$C_{12}H_8$
Molecular Weight	:	152.19 g/mol

CAS-No.	EC-No.	Index-No.	Concentration
Acenaphthylene			
208-96-8	205-917-1	-	-

4. FIRST AID MEASURES

General advice
Consult a physician. Show this safety data sheet to the doctor in attendance.Move out of dangerous area.

If inhaled
If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.

In case of skin contact
Wash off with soap and plenty of water. Consult a physician.

In case of eye contact
Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician.

If swallowed
Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

5. FIRE-FIGHTING MEASURES

Suitable extinguishing media
Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

Special protective equipment for fire-fighters
Wear self contained breathing apparatus for fire fighting if necessary.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions
Use personal protective equipment. Avoid dust formation. Avoid breathing vapors, mist or gas. Ensure adequate ventilation. Evacuate personnel to safe areas. Avoid breathing dust.

Environmental precautions
Do not let product enter drains.

Methods and materials for containment and cleaning up
Pick up and arrange disposal without creating dust. Sweep up and shovel. Keep in suitable, closed containers for disposal.

7. HANDLING AND STORAGE

Precautions for safe handling
Avoid contact with skin and eyes. Avoid formation of dust and aerosols.
Provide appropriate exhaust ventilation at places where dust is formed. Normal measures for preventive fire protection.

Conditions for safe storage
Keep container tightly closed in a dry and well-ventilated place.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Contains no substances with occupational exposure limit values.

Personal protective equipment

Respiratory protection
For nuisance exposures use type P95 (US) or type P1 (EU EN 143) particle respirator.For higher level protection use type OV/AG/P99 (US) or type ABEK-P2 (EU EN 143) respirator cartridges. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

Hand protection
Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

Eye protection
Safety glasses with side-shields conforming to EN166 Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

Skin and body protection
Complete suit protecting against chemicals, The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

Hygiene measures
Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance

Form	solid

Safety data

pH	no data available
Melting point	78 - 82 °C (172 - 180 °F) - lit.
Boiling point	280 °C (536 °F) - lit.
Flash point	122.0 °C (251.6 °F) - closed cup
Ignition temperature	no data available
Lower explosion limit	no data available
Upper explosion limit	no data available
Density	0.899 g/mL at 25 °C (77 °F)
Water solubility	no data available

10. STABILITY AND REACTIVITY

Chemical stability
Stable under recommended storage conditions.

Conditions to avoid
no data available

Materials to avoid
Oxidizing agents

Hazardous decomposition products
Hazardous decomposition products formed under fire conditions. - Carbon oxides

11. TOXICOLOGICAL INFORMATION

Acute toxicity
LD50 Oral - mouse - 1,760 mg/kg
Remarks: Autonomic Nervous System:Other (direct) parasympathomimetic. Respiratory disorder Blood: Hemorrhage.

Skin corrosion/irritation
no data available

Serious eye damage/eye irritation
no data available

Respiratory or skin sensitization
no data available

Germ cell mutagenicity
no data available

Carcinogenicity

IARC: No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

ACGIH: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH.

NTP: No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

OSHA: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

Reproductive toxicity
no data available

Specific target organ toxicity - single exposure (Globally Harmonized System)
Inhalation - May cause respiratory irritation.

Specific target organ toxicity - repeated exposure (Globally Harmonized System)
no data available

Aspiration hazard
no data available

Potential health effects

Inhalation	May be harmful if inhaled. May cause respiratory tract irritation.
Ingestion	May be harmful if swallowed.
Skin	May be harmful if absorbed through skin. May cause skin irritation.
Eyes	May cause eye irritation.

Signs and Symptoms of Exposure
To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

Additional Information
RTECS: AB1254000

12. ECOLOGICAL INFORMATION

Toxicity

no data available

Persistence and degradability
no data available

Bioaccumulative potential
no data available

Mobility in soil
no data available

PBT and vPvB assessment
no data available

Other adverse effects

no data available

13. DISPOSAL CONSIDERATIONS

Product
Offer surplus and non-recyclable solutions to a licensed disposal company. Contact a licensed professional waste disposal service to dispose of this material. Dissolve or mix the material with a combustible solvent and burn in a chemical incinerator equipped with an afterburner and scrubber.

Contaminated packaging
Dispose of as unused product.

14. TRANSPORT INFORMATION

DOT (US)
UN-Number: 3077 Class: 9 Packing group: III
Proper shipping name: Environmentally hazardous substances, solid, n.o.s. (Acenaphthylene)
Marine pollutant: No
Poison Inhalation Hazard: No

IMDG
Not dangerous goods

IATA
Not dangerous goods

15. REGULATORY INFORMATION

OSHA Hazards
Carcinogen

DSL Status
This product contains the following components that are not on the Canadian DSL nor NDSL lists.

	CAS-No.
Acenaphthylene	208-96-8

SARA 302 Components
SARA 302: No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

SARA 313 Components
SARA 313: This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

SARA 311/312 Hazards
Chronic Health Hazard

Massachusetts Right To Know Components
No components are subject to the Massachusetts Right to Know Act.

Pennsylvania Right To Know Components

	CAS-No.	Revision Date
Acenaphthylene	208-96-8	

New Jersey Right To Know Components

	CAS-No.	Revision Date
Acenaphthylene	208-96-8	

California Prop. 65 Components
This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.

16. OTHER INFORMATION

Further information
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The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. Sigma-Aldrich Co., shall not be held liable for any damage resulting from handling or from contact with the above product. See reverse side of invoice or packing slip for additional terms and conditions of sale.

International Chemical Safety Cards

ANILINE

ICSC: 0011

Benzeneamine
Aminobenzene
Phenylamine
C_6H_7N / $C_6H_5NH_2$
Molecular mass: 93.1

ICSC # 0011
CAS # 62-53-3
RTECS # BW6650000
UN # 1547
EC # 612-008-00-7
March 15, 2001 Validated

TYPES OF HAZARD/ EXPOSURE	ACUTE HAZARDS/ SYMPTOMS	PREVENTION	FIRST AID/ FIRE FIGHTING
FIRE	Combustible. Gives off irritating or toxic fumes (or gases) in a fire.	NO open flames. NO contact with oxidants.	Powder, water spray, foam, carbon dioxide.
EXPLOSION	Above 70°C explosive vapour/air mixtures may be formed.	Above 70°C use a closed system, ventilation.	In case of fire: keep drums, etc., cool by spraying with water.
EXPOSURE		AVOID ALL CONTACT!	
•INHALATION	Blue lips or finger nails. Blue skin. Headache. Dizziness. Laboured breathing. Convulsions. Increased heartbeat. Vomiting. Weakness. Unconsciousness. Symptoms may be delayed (see Notes).	Ventilation, local exhaust, or breathing protection.	Fresh air, rest. Refer for medical attention.
•SKIN	MAY BE ABSORBED! Redness. (Further see Inhalation).	Protective gloves. Protective clothing.	Remove contaminated clothes. Rinse and then wash skin with water and soap. Refer for medical attention.
•EYES	Redness. Pain.	Face shield, or eye protection in combination with breathing protection.	First rinse with plenty of water for several minutes (remove contact lenses if easily possible), then take to a doctor.
•INGESTION	(Further see Inhalation).	Do not eat, drink, or smoke during work. Wash hands before eating.	Rinse mouth. Induce vomiting (ONLY IN CONSCIOUS PERSONS!). Refer for medical attention. See Notes.

SPILLAGE DISPOSAL	STORAGE	PACKAGING & LABELLING

Collect leaking liquid in sealable containers. Absorb remaining liquid in sand or inert absorbent and remove to safe place. Do NOT let this chemical enter the environment. Chemical protection suit including self-contained breathing apparatus.	Separated from strong oxidants, strong acids, food and feedstuffs . Well closed.	Do not transport with food and feedstuffs. T symbol N symbol R: 23/24/25-40-41-43-48/23/24/25-68-50 S: 1/2-26-27-36/37/39-45-46-63-61 UN Hazard Class: 6.1 UN Packing Group: II

SEE IMPORTANT INFORMATION ON BACK

ICSC: 0011

Prepared in the context of cooperation between the International Programme on Chemical Safety & the Commission of the European Communities (C) IPCS CEC 1994. No modifications to the International version have been made except to add the OSHA PELs, NIOSH RELs and NIOSH IDLH values.

International Chemical Safety Cards

ANILINE

ICSC: 0011

IMPORTANT DATA

PHYSICAL STATE; APPEARANCE:
COLOURLESS OILY LIQUID , WITH CHARACTERISTIC ODOUR. TURNS BROWN ON EXPOSURE TO AIR OR LIGHT.

PHYSICAL DANGERS:

CHEMICAL DANGERS:
The substance decomposes on heating at temperatures above 190°C, producing toxic and corrosive fumes (ammonia and nitrogen oxides) and flammable vapours. The substance is a weak base. Reacts vigorously with strong oxidants causing fire and explosion hazard. Reacts violently with strong acids . Attacks copper and its alloys.

OCCUPATIONAL EXPOSURE LIMITS:
TLV: 2 ppm; (skin); A3; BEI issued; (ACGIH 2004).
MAK: 2 ppm, 7.7 mg/m³; skin absorption (H); sensitization of skin (Sh);
Peak limitation category: II(2); Carcinogen category: 4; Pregnancy risk group: C; (DFG 2006).
OSHA PEL†: TWA 5 ppm (19 mg/m^3) skin
NIOSH REL: Ca See Appendix A
NIOSH IDLH: Ca 100 ppm See: 62533

ROUTES OF EXPOSURE:
The substance can be absorbed into the body by inhalation, through the skin and by ingestion , also as a vapour!

INHALATION RISK:
A harmful contamination of the air will be reached rather slowly on evaporation of this substance at 20°C ; on spraying or dispersing, however, much faster .

EFFECTS OF SHORT-TERM EXPOSURE:
The substance is irritating to the eyes and the skin . The substance may cause effects on the blood , resulting in the formation of methaemoglobin. Exposure at high levels may result in death. Medical observation is indicated. The effects may be delayed. See Notes.

EFFECTS OF LONG-TERM OR REPEATED EXPOSURE:
Repeated or prolonged contact may cause skin sensitization. The substance may have effects on the blood , resulting in formation of methaemoglobin.

PHYSICAL PROPERTIES

Boiling point: 184°C	Flash point: 70°C c.c.
Melting point: -6°C	Auto-ignition temperature: 615°C
Relative density (water = 1): 1.02	Explosive limits, vol% in air: 1.2-11
Solubility in water, g/100 ml at 20°C: 3.4	Octanol/water partition coefficient as log Pow: 0.94
Vapour pressure, Pa at 20°C: 40	
Relative vapour density (air = 1): 3.2	

ENVIRONMENTAL DATA	The substance is very toxic to aquatic organisms.

N O T E S

Use of alcoholic beverages enhances the harmful effect. Depending on the degree of exposure, periodic medical examination is indicated. Specific treatment is necessary in case of poisoning with this substance; the appropriate means with instructions must be available. The odour warning when the exposure limit value is exceeded is insufficient. Card has been partly updated in October 2004. See sections Occupational Exposure Limits, EU classification, Emergency Response. Card has been partly updated in October 2006. See Occupational Exposure Limits.

Transport Emergency Card: TEC (R)-61S1547

NFPA Code: H3; F2; R0;

ADDITIONAL INFORMATION

ICSC: 0011 **ANILINE**

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International Chemical Safety Cards

ANTHRACENE

ICSC: 0825

Anthracin
Paranaphthalene
$C_{14}H_{10}$ / $(C_6H_4CH)_2$
Molecular mass: 178.2

ICSC # 0825
CAS # 120-12-7
RTECS # CA9350000
March 24, 1999 Peer reviewed

TYPES OF HAZARD/ EXPOSURE	ACUTE HAZARDS/ SYMPTOMS	PREVENTION	FIRST AID/ FIRE FIGHTING
FIRE	Combustible.	NO open flames.	Powder, water spray, foam, carbon dioxide.
EXPLOSION	Finely dispersed particles form explosive mixtures in air.	Prevent deposition of dust; closed system, dust explosion-proof electrical equipment and lighting.	In case of fire: keep drums, etc., cool by spraying with water.
EXPOSURE		PREVENT DISPERSION OF DUST!	
•INHALATION	Cough. Sore throat.	Ventilation (not if powder), local exhaust, or breathing protection.	Fresh air, rest. Refer for medical attention.
•SKIN	Redness.	Protective gloves.	Remove contaminated clothes. Rinse and then wash skin with water and soap.
•EYES	Redness. Pain.	Safety spectacles, face shield, or eye protection in combination with breathing protection if powder.	First rinse with plenty of water for several minutes (remove contact lenses if easily possible), then take to a doctor.
•INGESTION	Abdominal pain.	Do not eat, drink, or smoke during work.	Rinse mouth. Rest. Refer for medical attention.

SPILLAGE DISPOSAL	STORAGE	PACKAGING & LABELLING
Sweep spilled substance into containers. Carefully collect remainder, then remove to safe place Do NOT let this chemical enter the environment. (Extra personal protection: P2 filter respirator for harmful particles).	Separated from strong oxidants. Well closed.	R: S:

SEE IMPORTANT INFORMATION ON BACK

ICSC: 0825

Prepared in the context of cooperation between the International Programme on Chemical Safety & the Commission of the European Communities (C) IPCS CEC 1994. No modifications to the International version have been made except to add the OSHA PELs, NIOSH RELs and NIOSH IDLH values.

International Chemical Safety Cards

ANTHRACENE

ICSC: 0825

I **M**	**PHYSICAL STATE; APPEARANCE:** WHITE CRYSTALS OR FLAKES.	**ROUTES OF EXPOSURE:** The substance can be absorbed into the body by

IMPORTANT DATA	inhalation. **PHYSICAL DANGERS:** Dust explosion possible if in powder or granular form, mixed with air. **CHEMICAL DANGERS:** The substance decomposes on heating, under influence of strong oxidants producing acrid, toxic fume , causing fire and explosion hazard. **OCCUPATIONAL EXPOSURE LIMITS:** TLV not established. **INHALATION RISK:** Evaporation at 20°C is negligible; a harmful concentration of airborne particles can, however, be reached quickly. **EFFECTS OF SHORT-TERM EXPOSURE:** The substance slightly irritates the skin and the respiratory tract. **EFFECTS OF LONG-TERM OR REPEATED EXPOSURE:** Repeated or prolonged contact with skin may cause dermatitis under the influence of UV light.
PHYSICAL PROPERTIES	Boiling point: 342°C Melting point: 218°C Density: 1.25-1.28 g/cm3 Solubility in water, g/100 ml at 20 °C: 0.00013 Vapour pressure, Pa at 25°C: 0.08 Relative vapour density (air = 1): 6.15 Flash point: 121°C Auto-ignition temperature: 538°C Explosive limits, vol% in air: 0.6-? Octanol/water partition coefficient as log Pow: 4.5 (calculated)
ENVIRONMENTAL DATA	The substance is very toxic to aquatic organisms. The substance may cause long-term effects in the aquatic environment.

N O T E S

Green oil, Tetra-olive N2G are trade names.

NFPA Code: H0; F1; R;

ADDITIONAL INFORMATION

ICSC: 0825 **ANTHRACENE**

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International Chemical Safety Cards

BENZ(a)ANTHRACENE

ICSC: 0385

1,2-Benzoanthracene
Benzo(a)anthracene
2,3-Benzphenanthrene
Naphthanthracene
$C_{18}H_{12}$
Molecular mass: 228.3

ICSC # 0385
CAS # 56-55-3
RTECS # CV9275000
EC # 601-033-00-9
October 23, 1995 Validated

TYPES OF HAZARD/ EXPOSURE	ACUTE HAZARDS/ SYMPTOMS	PREVENTION	FIRST AID/ FIRE FIGHTING
FIRE	Combustible.		Water spray, powder. In case of fire in the surroundings: use appropriate extinguishing media.
EXPLOSION	Finely dispersed particles form explosive mixtures in air.	Prevent deposition of dust; closed system, dust explosion-proof electrical equipment and lighting.	
EXPOSURE		AVOID ALL CONTACT!	
•INHALATION		Local exhaust or breathing protection.	Fresh air, rest.
•SKIN		Protective gloves. Protective clothing.	Remove contaminated clothes. Rinse and then wash skin with water and soap.
•EYES		Safety goggles face shield or eye protection in combination with breathing protection.	First rinse with plenty of water for several minutes (remove contact lenses if easily possible), then take to a doctor.
•INGESTION		Do not eat, drink, or smoke during work. Wash hands before eating.	Rinse mouth.

SPILLAGE DISPOSAL	STORAGE	PACKAGING & LABELLING
Sweep spilled substance into sealable containers; if appropriate, moisten first to prevent dusting. Carefully collect remainder, then remove to safe place. Personal protection: complete protective clothing including self-contained breathing apparatus.	Well closed.	T symbol N symbol R: 45-50/53 S: 53-45-60-61

SEE IMPORTANT INFORMATION ON BACK

ICSC: 0385

Prepared in the context of cooperation between the International Programme on Chemical Safety & the Commission of the European Communities (C) IPCS CEC 1994. No modifications to the International version have been made except to add the OSHA PELs, NIOSH RELs and NIOSH IDLH values.

International Chemical Safety Cards

ICSC: 0385

BENZ(a)ANTHRACENE

I M P O R T A N T D A T A

PHYSICAL STATE; APPEARANCE:
COLOURLESS TO YELLOW BROWN FLUORESCENT FLAKES OR POWDER.

PHYSICAL DANGERS:
Dust explosion possible if in powder or granular form, mixed with air.

CHEMICAL DANGERS:

OCCUPATIONAL EXPOSURE LIMITS:
TLV: A2 (suspected human carcinogen); (ACGIH 2004).
MAK:
Carcinogen category: 2 (as pyrolysis product of organic materials)
(DFG 2005).

ROUTES OF EXPOSURE:
The substance can be absorbed into the body by inhalation, through the skin and by ingestion.

INHALATION RISK:
Evaporation at 20°C is negligible; a harmful concentration of airborne particles can, however, be reached quickly.

EFFECTS OF SHORT-TERM EXPOSURE:

EFFECTS OF LONG-TERM OR REPEATED EXPOSURE:
This substance is probably carcinogenic to humans.

PHYSICAL PROPERTIES

Sublimation point: 435°C
Melting point: 162°C
Relative density (water = 1): 1.274
Solubility in water:
none

Vapour pressure, Pa at 20°C: 292
Octanol/water partition coefficient as log Pow: 5.61

ENVIRONMENTAL DATA

Bioaccumulation of this chemical may occur in seafood.

N O T E S

This substance is one of many polycyclic aromatic hydrocarbons - standards are usually established for them as mixtures, e.g., coal tar pitch volatiles. However, it may be encountered as a laboratory chemical in its pure form. Insufficient data are available on the effect of this substance on human health, therefore utmost care must be taken. Do NOT take working clothes home. Tetraphene is a common name. Card has been partly updated in October 2005 and August 2006: see sections Occupational Exposure Limits, EU classification.

ADDITIONAL INFORMATION

ICSC: 0385 **BENZ(a)ANTHRACENE**

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International Chemical Safety Cards

BENZO(a)PYRENE

ICSC: 0104

Benz(a)pyrene
3,4-Benzopyrene
Benzo(d,e,f)chrysene
$C_{20}H_{12}$
Molecular mass: 252.3

ICSC # 0104
CAS # 50-32-8
RTECS # DJ3675000
EC # 601-032-00-3
October 17, 2005 Peer reviewed

TYPES OF HAZARD/ EXPOSURE	ACUTE HAZARDS/ SYMPTOMS	PREVENTION	FIRST AID/ FIRE FIGHTING
FIRE	Combustible.	NO open flames.	Water spray, foam, powder, carbon dioxide.
EXPLOSION			
EXPOSURE	See EFFECTS OF LONG-TERM OR REPEATED EXPOSURE.	AVOID ALL CONTACT! AVOID EXPOSURE OF (PREGNANT) WOMEN!	
•INHALATION		Local exhaust or breathing protection.	Fresh air, rest.
•SKIN	MAY BE ABSORBED!	Protective gloves. Protective clothing.	Remove contaminated clothes. Rinse and then wash skin with water and soap.
•EYES		Safety goggles or eye protection in combination with breathing protection.	First rinse with plenty of water for several minutes (remove contact lenses if easily possible), then take to a doctor.
•INGESTION		Do not eat, drink, or smoke during work.	Induce vomiting (ONLY IN CONSCIOUS PERSONS!). Refer for medical attention.

SPILLAGE DISPOSAL	STORAGE	PACKAGING & LABELLING
Evacuate danger area! Personal protection: complete protective clothing including self-contained breathing apparatus. Do NOT let this chemical enter the environment. Sweep spilled substance into sealable containers; if appropriate, moisten first to prevent dusting. Carefully collect remainder, then remove to safe place.	Separated from strong oxidants.	T symbol N symbol R: 45-46-60-61-43-50/53 S: 53-45-60-61

SEE IMPORTANT INFORMATION ON BACK

ICSC: 0104

Prepared in the context of cooperation between the International Programme on Chemical Safety & the Commission of the European Communities (C) IPCS CEC 1994. No modifications to the International version have been made except to add the OSHA PELs, NIOSH RELs and NIOSH IDLH values.

International Chemical Safety Cards

BENZO(a)PYRENE

ICSC: 0104

I M P O R T A N T D A T A

PHYSICAL STATE; APPEARANCE:
PALE-YELLOW CRYSTALS

PHYSICAL DANGERS:

CHEMICAL DANGERS:
Reacts with strong oxidants causing fire and explosion hazard.

OCCUPATIONAL EXPOSURE LIMITS:
TLV: Exposure by all routes should be carefully controlled to levels as low as possible A2 (suspected human carcinogen); (ACGIH 2005).
MAK:
Carcinogen category: 2; Germ cell mutagen group: 2; (DFG 2005).

ROUTES OF EXPOSURE:
The substance can be absorbed into the body by inhalation of its aerosol, through the skin and by ingestion.

INHALATION RISK:
Evaporation at 20°C is negligible; a harmful concentration of airborne particles can, however, be reached quickly when dispersed.

EFFECTS OF SHORT-TERM EXPOSURE:

EFFECTS OF LONG-TERM OR REPEATED EXPOSURE:
This substance is carcinogenic to humans. May cause heritable genetic damage to human germ cells. Animal tests show that this substance possibly causes toxicity to human reproduction or development.

PHYSICAL PROPERTIES

Boiling point: 496°C
Melting point: 178.1°C
Density: 1.4
g/cm³

Solubility in water: none (<0.1 g/100 ml)
Vapour pressure :
negligible
Octanol/water partition coefficient as log Pow: 6.04

ENVIRONMENTAL DATA

The substance is very toxic to aquatic organisms. Bioaccumulation of this chemical may occur in fish, in plants and in molluscs. The substance may cause long-term effects in the aquatic environment.

N O T E S

Do NOT take working clothes home. Benzo(a)pyrene is present as a component of polycyclic aromatic hydrocarbons (PAHs) in the environment, usually resulting from the incomplete combustion or pyrolysis of organic matters, especially fossil fuels and tobacco.

ADDITIONAL INFORMATION

(C) IPCS, CEC, 1994

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International Chemical Safety Cards

BENZO(b)FLUORANTHENE

ICSC: 0720

Benz(e)acephenanthrylene
2,3-Benzofluoroanthene
Benzo(e)fluoranthene
3,4-Benzofluoranthene
$C_{20}H_{12}$
Molecular mass: 252.3

ICSC # 0720
CAS # 205-99-2
RTECS # CU1400000
EC # 601-034-00-4
March 25, 1999 Peer reviewed

TYPES OF HAZARD/ EXPOSURE	ACUTE HAZARDS/ SYMPTOMS	PREVENTION	FIRST AID/ FIRE FIGHTING
FIRE			In case of fire in the surroundings: use appropriate extinguishing media.
EXPLOSION			
EXPOSURE		AVOID ALL CONTACT!	
•INHALATION		Local exhaust or breathing protection.	Fresh air, rest.
•SKIN		Protective gloves. Protective clothing.	Remove contaminated clothes. Rinse and then wash skin with water and soap.
•EYES		Safety spectacles or eye protection in combination with breathing protection.	First rinse with plenty of water for several minutes (remove contact lenses if easily possible), then take to a doctor.
•INGESTION		Do not eat, drink, or smoke during work.	Rinse mouth. Refer for medical attention.

SPILLAGE DISPOSAL	STORAGE	PACKAGING & LABELLING
Sweep spilled substance into covered containers; if appropriate, moisten first to prevent dusting. Carefully collect remainder, then remove to safe place. Do NOT let this chemical enter the environment.	Provision to contain effluent from fire extinguishing. Well closed.	T symbol N symbol R: 45-50/53 S: 53-45-60-61

SEE IMPORTANT INFORMATION ON BACK

ICSC: 0720

Prepared in the context of cooperation between the International Programme on Chemical Safety & the Commission of the European Communities (C) IPCS CEC 1994. No modifications to the International version have been made except to add the OSHA PELs, NIOSH RELs and NIOSH IDLH values.

International Chemical Safety Cards

BENZO(b)FLUORANTHENE

ICSC: 0720

I	**PHYSICAL STATE; APPEARANCE:** COLOURLESS CRYSTALS	**ROUTES OF EXPOSURE:** The substance can be absorbed into the body by inhalation

IMPORTANT DATA

PHYSICAL DANGERS:

CHEMICAL DANGERS:
Upon heating, toxic fumes are formed.

OCCUPATIONAL EXPOSURE LIMITS:
TLV: A2 (suspected human carcinogen); (ACGIH 2004).
MAK:
Carcinogen category: 2;
(DFG 2004).

of its aerosol and through the skin.

INHALATION RISK:
Evaporation at 20°C is negligible; a harmful concentration of airborne particles can, however, be reached quickly.

EFFECTS OF SHORT-TERM EXPOSURE:

EFFECTS OF LONG-TERM OR REPEATED EXPOSURE:
This substance is possibly carcinogenic to humans. May cause genetic damage in humans.

PHYSICAL PROPERTIES

Boiling point: 481°C
Melting point: 168°C
Solubility in water:
none

Octanol/water partition coefficient as log Pow: 6.12

ENVIRONMENTAL DATA

This substance may be hazardous to the environment; special attention should be given to air quality and water quality.

NOTES

Benzo(b)fluoranthene is present as a component of polycyclic aromatic hydrocarbons (PAH) content in the environment usually resulting from the incomplete combustion or pyrolysis of organic matters, especially fossil fuels and tobacco.ACGIH recommends environment containing benzo(b)fluoranthene should be evaluated in terms of the TLV-TWA for coal tar pitch volatile, as benzene soluble 0.2 mg/m^3. Insufficient data are available on the effect of this substance on human health, therefore utmost care must be taken.

ADDITIONAL INFORMATION

ICSC: 0720 **BENZO(b)FLUORANTHENE**

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International Chemical Safety Cards

BENZO(g,h,i)FLUORANTHENE

ICSC: 0527

2,13-Benzofluoranthene
Benzo(mno)fluoranthene
$C_{18}H_{10}$
Molecular mass: 226.3

ICSC # 0527
CAS # 203-12-3
RTECS # DF6140000
March 25, 1998 Peer reviewed

TYPES OF HAZARD/ EXPOSURE	ACUTE HAZARDS/ SYMPTOMS	PREVENTION	FIRST AID/ FIRE FIGHTING
FIRE	Combustible.	NO open flames.	Water spray, powder.
EXPLOSION			
EXPOSURE		PREVENT DISPERSION OF DUST!	
•INHALATION		Local exhaust or breathing protection.	
•SKIN	MAY BE ABSORBED!	Protective gloves. Protective clothing.	Remove contaminated clothes. Rinse and then wash skin with water and soap. Refer for medical attention. Wear protective gloves when administering first aid.
•EYES		Safety goggles, face shield, or eye protection in combination with breathing protection if powder.	First rinse with plenty of water for several minutes (remove contact lenses if easily possible), then take to a doctor.
•INGESTION		Do not eat, drink, or smoke during work.	

SPILLAGE DISPOSAL	STORAGE	PACKAGING & LABELLING
Sweep spilled substance into containers; if appropriate, moisten first to prevent dusting. Carefully collect remainder, then remove to safe place. Do NOT let this chemical enter the environment.	Well closed.	R: S:

SEE IMPORTANT INFORMATION ON BACK

ICSC: 0527

Prepared in the context of cooperation between the International Programme on Chemical Safety & the Commission of the European Communities (C) IPCS CEC 1994. No modifications to the International version have been made except to add the OSHA PELs, NIOSH RELs and NIOSH IDLH values.

International Chemical Safety Cards

BENZO(g,h,i)FLUORANTHENE

ICSC: 0527

I

M

P

PHYSICAL STATE; APPEARANCE:
YELLOW CRYSTALS

PHYSICAL DANGERS:

ROUTES OF EXPOSURE:
The substance can be absorbed into the body by inhalation of its aerosol and through the skin.

O R T A N T D A T A	**CHEMICAL DANGERS:** The substance decomposes on heating producing toxic fumes. **OCCUPATIONAL EXPOSURE LIMITS:** TLV not established.	**INHALATION RISK:** **EFFECTS OF SHORT-TERM EXPOSURE:** **EFFECTS OF LONG-TERM OR REPEATED EXPOSURE:** See Notes.
PHYSICAL PROPERTIES	Melting point: 149°C Solubility in water: none Vapour pressure, Pa at 20°C: <10	Relative vapour density (air = 1): 7.8 Relative density of the vapour/air-mixture at 20°C (air = 1): 1.0 Octanol/water partition coefficient as log Pow: 7.23
ENVIRONMENTAL DATA	This substance may be hazardous to the environment; special attention should be given to the total environment. In the food chain important to humans, bioaccumulation takes place, specifically in oils and fats.	

N O T E S

Insufficient data are available on the effect of this substance on human health, therefore utmost care must be taken. Also consult ICSC #0720 and 0721.

ADDITIONAL INFORMATION

ICSC: 0527 **BENZO(g,h,i)FLUORANTHENE**

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International Chemical Safety Cards

BENZO(k)FLUORANTHENE

ICSC: 0721

Dibenzo(b,jk)fluorene
8,9-Benzofluoranthene
11,12-Benzofluoranthene
$C_{20}H_{12}$
Molecular mass: 252.3

ICSC # 0721
CAS # 207-08-9
RTECS # DF6350000
EC # 601-036-00-5
March 25, 1999 Peer reviewed

TYPES OF HAZARD/ EXPOSURE	ACUTE HAZARDS/ SYMPTOMS	PREVENTION	FIRST AID/ FIRE FIGHTING
FIRE			In case of fire in the surroundings: use appropriate extinguishing media.
EXPLOSION			
EXPOSURE		AVOID ALL CONTACT!	
•INHALATION		Local exhaust or breathing protection.	Fresh air, rest.
•SKIN		Protective gloves. Protective clothing.	Remove contaminated clothes. Rinse and then wash skin with water and soap.
•EYES		Safety spectacles or eye protection in combination with breathing protection if powder.	First rinse with plenty of water for several minutes (remove contact lenses if easily possible), then take to a doctor.
•INGESTION		Do not eat, drink, or smoke during work.	Rinse mouth. Refer for medical attention.

SPILLAGE DISPOSAL	STORAGE	PACKAGING & LABELLING
Sweep spilled substance into covered containers; if appropriate, moisten first to prevent dusting. Carefully collect remainder, then remove to safe place. Do NOT let this chemical enter the environment.	Provision to contain effluent from fire extinguishing. Well closed.	T symbol N symbol R: 45-50/53 S: 53-45-60-61

SEE IMPORTANT INFORMATION ON BACK

ICSC: 0721

Prepared in the context of cooperation between the International Programme on Chemical Safety & the Commission of the European Communities (C) IPCS CEC 1994. No modifications to the International version have been made except to add the OSHA PELs, NIOSH RELs and NIOSH IDLH values.

International Chemical Safety Cards

BENZO(k)FLUORANTHENE

ICSC: 0721

I **M**	**PHYSICAL STATE; APPEARANCE:** YELLOW CRYSTALS	**ROUTES OF EXPOSURE:** The substance can be absorbed into the body by inhalation of its aerosol and through the skin.

P O R T A N T D A T A	**PHYSICAL DANGERS:** **CHEMICAL DANGERS:** Upon heating, toxic fumes are formed. **OCCUPATIONAL EXPOSURE LIMITS:** TLV not established. MAK: Carcinogen category: 2; (DFG 2004). **INHALATION RISK:** Evaporation at 20°C is negligible; a harmful concentration of airborne particles can, however, be reached quickly. **EFFECTS OF SHORT-TERM EXPOSURE:** **EFFECTS OF LONG-TERM OR REPEATED EXPOSURE:** This substance is possibly carcinogenic to humans.
PHYSICAL PROPERTIES	Boiling point: 480°C Melting point: 217°C Solubility in water: none Octanol/water partition coefficient as log Pow: 6.84
ENVIRONMENTAL DATA	This substance may be hazardous to the environment; special attention should be given to air quality and water quality. Bioaccumulation of this chemical may occur in crustacea and in fish.

N O T E S

Benzo(k)fluoranthene is present as a component of polycyclic aromatic hydrocarbons (PAH) content in the environment usually resulting from the incomplete combustion or pyrolysis of organic matters, especially fossil fuels and tobacco.ACGIH recommends environment containing benzo(k)fluoranthene should be evaluated in terms of the TLV-TWA for coal tar pitch volatile, as benzene soluble 0.2 mg/m^3. Insufficient data are available on the effect of this substance on human health, therefore utmost care must be taken.

ADDITIONAL INFORMATION

ICSC: 0721 **BENZO(k)FLUORANTHENE**

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International Chemical Safety Cards

BENZYL ALCOHOL

ICSC: 0833

Benzenemethanol
Phenyl carbinol
alpha-Hydroxytoluene
Benzoyl alcohol
Phenyl methanol
C_7H_8O / $C_6H_5CH_2OH$
Molecular mass: 108.1

ICSC # 0833
CAS # 100-51-6
RTECS # DN3150000
EC # 603-057-00-5
April 13, 2000 Validated

TYPES OF HAZARD/ EXPOSURE	ACUTE HAZARDS/ SYMPTOMS	PREVENTION	FIRST AID/ FIRE FIGHTING
FIRE	Combustible.	NO open flames.	Powder, AFFF, foam, carbon dioxide.
EXPLOSION			
EXPOSURE			
•INHALATION	Cough. Dizziness. Headache.	Ventilation.	Fresh air, rest. Refer for medical attention.
•SKIN	Redness.	Protective gloves.	Remove contaminated clothes. First rinse with plenty of water, then remove contaminated clothes and rinse again.
•EYES	Redness.	Safety spectacles.	First rinse with plenty of water for several minutes (remove contact lenses if easily possible), then take to a doctor.
•INGESTION	Abdominal pain. Diarrhoea. Drowsiness. Nausea. Vomiting.	Do not eat, drink, or smoke during work.	Rinse mouth. Refer for medical attention.

SPILLAGE DISPOSAL	STORAGE	PACKAGING & LABELLING
Collect leaking liquid in sealable containers. Absorb remaining liquid in sand or inert absorbent and remove to safe place. Personal protection: filter respirator for organic gases and vapours.	Separated from strong oxidants.	Xn symbol R: 20/22 S: 2-26

SEE IMPORTANT INFORMATION ON BACK

ICSC: 0833

Prepared in the context of cooperation between the International Programme on Chemical Safety & the Commission of the European Communities (C) IPCS CEC 1994. No modifications to the International version have been made except to add the OSHA PELs, NIOSH RELs and NIOSH IDLH values.

International Chemical Safety Cards

BENZYL ALCOHOL

ICSC: 0833

IMPORTANT DATA

PHYSICAL STATE; APPEARANCE:
COLOURLESS LIQUID , WITH CHARACTERISTIC ODOUR.

PHYSICAL DANGERS:

CHEMICAL DANGERS:
Reacts with strong oxidants. Attacks some forms of plastic. On combustion, forms toxic gases including carbon monoxide.

OCCUPATIONAL EXPOSURE LIMITS:
TLV not established.
MAK: IIb (not established but data is available); (DFG 2004).

ROUTES OF EXPOSURE:
The substance can be absorbed into the body by inhalation of its vapour and by ingestion.

INHALATION RISK:
No indication can be given about the rate in which a harmful concentration in the air is reached on evaporation of this substance at 20° C.

EFFECTS OF SHORT-TERM EXPOSURE:
The aerosol irritates the eyes and the skin. The substance may cause effects on the nervous system .

EFFECTS OF LONG-TERM OR REPEATED EXPOSURE:
Repeated or prolonged contact may cause skin sensitization.

PHYSICAL PROPERTIES

Boiling point: 205°C
Melting point: -15°C
Relative density (water = 1): 1.04
Solubility in water, g/100 ml: 4
Vapour pressure, Pa at 20°C: 13.2
Relative vapour density (air = 1): 3.7

Relative density of the vapour/air-mixture at 20°C (air = 1): 1.0
Flash point:
93°C c.c.
Auto-ignition temperature: 436°C
Explosive limits, vol% in air: 1.3-13
Octanol/water partition coefficient as log Pow: 1.1

ENVIRONMENTAL DATA

The substance is toxic to aquatic organisms.

NOTES

Card has been partly updated in October 2005. See section Occupational Exposure Limits.

NFPA Code: H 2; F 1; R 0;

ADDITIONAL INFORMATION

(C) IPCS, CEC, 1994

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International Chemical Safety Cards

BUTYL BENZYL PHTHALATE

ICSC: 0834

Benzyl butyl phthalate
1,2-Benzenedicarboxylic acid, butyl phenylmethyl ester
BBP
$1,_2C_6H_4(COOCH_2C_6H_5)(COOC_4H_9)$ / $C_{19}H_{20}O_4$
Molecular mass: 312.4

ICSC # 0834
CAS # 85-68-7
RTECS # TH9990000
UN # 3082
EC # 607-430-00-3
October 20, 2005 Validated

TYPES OF HAZARD/ EXPOSURE	ACUTE HAZARDS/ SYMPTOMS	PREVENTION	FIRST AID/ FIRE FIGHTING
FIRE	Combustible. Gives off irritating or toxic fumes (or gases) in a fire.	NO open flames.	Alcohol-resistant foam. Powder, carbon dioxide. Water spray .
EXPLOSION			
EXPOSURE	See EFFECTS OF LONG-TERM OR REPEATED EXPOSURE.	PREVENT GENERATION OF MISTS! AVOID EXPOSURE OF (PREGNANT) WOMEN!	
•INHALATION		Ventilation, local exhaust, or breathing protection.	Fresh air, rest.
•SKIN		Protective gloves.	Remove contaminated clothes. Rinse and then wash skin with water and soap.
•EYES		Safety spectacles .	First rinse with plenty of water for several minutes (remove contact lenses if easily possible), then take to a doctor.
•INGESTION		Do not eat, drink, or smoke during work.	Rinse mouth.

SPILLAGE DISPOSAL	STORAGE	PACKAGING & LABELLING
Personal protection: filter respirator for organic gases and vapours. Do NOT let this chemical enter the environment. Collect leaking and spilled liquid in sealable containers as far as possible. Absorb remaining liquid in sand or inert absorbent and remove to safe place.	Store in an area without drain or sewer access. Separated from strong oxidants.	Marine pollutant. T symbol N symbol R: 61-62-50/53 S: 45-53-60-61 UN Hazard Class: 9 UN Packing Group: III

SEE IMPORTANT INFORMATION ON BACK

ICSC: 0834

Prepared in the context of cooperation between the International Programme on Chemical Safety & the Commission of the European Communities (C) IPCS CEC 1994. No modifications to the International version have been made except to add the OSHA PELs, NIOSH RELs and NIOSH IDLH values.

International Chemical Safety Cards

BUTYL BENZYL PHTHALATE

ICSC: 0834

IMPORTANT DATA

PHYSICAL STATE; APPEARANCE:
COLOURLESS OILY LIQUID

PHYSICAL DANGERS:

CHEMICAL DANGERS:
The substance decomposes on burning producing toxic fumes . Reacts with oxidants.

OCCUPATIONAL EXPOSURE LIMITS:
TLV not established.
MAK not established.

ROUTES OF EXPOSURE:
The substance can be absorbed into the body by inhalation of its aerosol and by ingestion.

INHALATION RISK:
Evaporation at 20°C is negligible; a harmful concentration of airborne particles can, however, be reached quickly on spraying.

EFFECTS OF SHORT-TERM EXPOSURE:

EFFECTS OF LONG-TERM OR REPEATED EXPOSURE:
Animal tests show that this substance possibly causes toxicity to human reproduction or development.

PHYSICAL PROPERTIES

Boiling point: 370°C
Melting point: -35°C
Relative density (water = 1): 1.1
Solubility in water: 0.71 mg/l (very poor)
Vapour pressure, Pa at 20°C: negligible
Relative vapour density (air = 1): 10.8
Flash point: 198°C
Auto-ignition temperature: 425°C
Octanol/water partition coefficient as log Pow: 4.77

ENVIRONMENTAL DATA

The substance is very toxic to aquatic organisms. Bioaccumulation of this chemical may occur in fish.

NOTES

Saniticizer 160, Sicol 160, Unimoll BB and Palatinol BB are trade names.

Transport Emergency Card: TEC (R)-90GM6-III

NFPA Code: H1; F1; R0;

ADDITIONAL INFORMATION

ICSC: 0834 **BUTYL BENZYL PHTHALATE**

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Material Safety Data Sheet

Catalog Number: 204180
Revision date: 25-Apr-2006

1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND COMPANY INFORMATION

Catalog Number: 204180

Product name: bis(2-CHLOROETHOXY)METHANE

Supplier:
MP Biomedicals, LLC
29525 Fountain Parkway
Solon, OH 44139
tel: 440-337-1200

Emergency telephone number: CHEMTREC: 1-800-424-9300 (1-703-527-3887)

2. COMPOSITION/INFORMATION ON INGREDIENTS

Components	CAS Number	Weight %	ACGIH Exposure Limits:	OSHA Exposure Limits:
bis(2-CHLOROETHOXY)METHANE	111-91-1	90 - 100%	None	None

3. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW: Toxic if swallowed. May be toxic by inhalation or skin contact.

Category of Danger:
Toxic

Principle routes of exposure: Skin
Inhalation: Harmful by inhalation.
Ingestion: Toxic if swallowed.
Skin contact: Harmful in contact with skin.
Eye contact: Risk of serious damage to eyes

Statements of hazard Toxic if swallowed
Statement of Spill or Leak - ANSI Label Eliminate all ignition sources. Absorb and/or contain spill with inert materials (e.g., sand, vermiculite). Then place in appropriate container. For large spills, use water spray to disperse vapors, flush spill area. Prevent runoff from entering waterways or sewers.
Statement of First Aid If swallowed, do NOT induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. Call a physician.
Precautions - ANSI Label Do not taste or swallow. Wash thoroughly after handling. Avoid breathing vapors. Avoid contact with skin, eyes and clothing

4. FIRST AID MEASURES

General advice: In the case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).
Inhalation: Move to fresh air. Call a physician immediately.
Skin contact: Rinse immediately with plenty of water and seek medical advice

Ingestion: Do not induce vomiting without medical advice. Never give anything by mouth to an unconscious person. Consult a physician If swallowed, seek medical advice immediately and show this container or label.
Eye contact: In the case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
Protection of first-aiders: No information available
Medical conditions aggravated by exposure: None known

5. FIRE FIGHTING MEASURES

Suitable extinguishing media: Use dry chemical, CO2, water spray or "alcohol" foam
Specific hazards: Burning produces irritant fumes.
Unusual hazards: None known
Special protective equipment for firefighters: As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear
Specific methods: Water mist may be used to cool closed containers.
Flash point: Not determined
Autoignition temperature: Not determined
NFPA rating:

NFPA Health:	2
NFPA Flammability:	0
NFPA Reactivity:	0

6. ACCIDENTAL RELEASE MEASURES

Personal precautions: Use personal protective equipment.
Environmental precautions: Prevent product from entering drains.
Methods for cleaning up: Sweep up and shovel into suitable containers for disposal.

7. HANDLING AND STORAGE

Storage:

ROOM TEMPERATURE

Handling: Use only in area provided with appropriate exhaust ventilation.
Safe handling advice: Wear personal protective equipment. Remove and wash contaminated clothing before reuse.
Technical measures/storage conditions: Keep containers tightly closed in a cool, well-ventilated place. Keep container tightly closed in a dry and well-ventilated place.
Incompatible products: Oxidising and spontaneously flammable products

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Engineering measures: Ensure adequate ventilation.
PERSONAL PROTECTIVE EQUIPMENT
Respiratory protection: Breathing apparatus only if aerosol or dust is formed.
Hand protection: Pvc or other plastic material gloves
Skin and body protection: Usual safety precautions while handling the product will provide adequate protection against this potential effect.
Eye protection: Safety glasses with side-shields
Hygiene measures: Handle in accordance with good industrial hygiene and safety practice.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance and Odor	Colorless
Physical state:	Liquid
Formula:	C5H10Cl2O2
Molecular weight:	173.05
Melting point/range:	-33 °C
Boiling point/range:	218.1 °C
Density:	1.2339 at 20 °C (water = 1)
Vapor pressure:	0.1 mm Hg at 20 °C
Evaporation rate:	No data available
Vapor density:	6.0 (air = 1)
Solubility (in water):	Slightly soluble
Flash point:	Not determined
Autoignition temperature:	Not determined

10. STABILITY AND REACTIVITY

Stability:	Stable under recommended storage conditions.
Polymerization:	None under normal processing.
Hazardous decomposition products:	Chloride/Hydrochloric acid
Materials to avoid:	Strong oxidising agents
Conditions to avoid:	Exposure to air or moisture over prolonged periods.

11. TOXICOLOGICAL INFORMATION

Product Information

Acute toxicity

Components	RTECS Number:	Selected LD50s and LC50s
bis(2-CHLOROETHOXY)METHANE	PA3675000	Oral LD50 Rat : 65 mg/kg

Chronic toxicity:	Chronic exposure may cause nausea and vomiting, higher exposure causes unconsciousness.
Local effects:	Symptoms of overexposure may be headache, dizziness, tiredness, nausea and vomiting.
Specific effects:	May include moderate to severe erythema (redness) and moderate edema (raised skin), nausea, vomiting, headache.
Primary irritation:	No data is available on the product itself.
Carcinogenic effects:	No data is available on the product itself.
Mutagenic effects:	No data is available on the product itself.
Reproductive toxicity:	No data is available on the product itself.

12. ECOLOGICAL INFORMATION

Mobility:	No data available
Bioaccumulation:	No data available
Ecotoxicity effects:	No data available
Aquatic toxicity:	May cause long-term adverse effects in the aquatic environment.

Components	U.S. DOT - Appendix B - Marine Pollutan	U.S. DOT - Appendix B - Severe Marine Pollutants	United Kingdom - The Red List:
bis(2-CHLOROETHOXY)METHANE	Not Listed	Not Listed	Not Listed

Components	Germany VCI (WGK)	World Health Organization (WHO) - Drinking Water	Ecotoxicity - Fish Species Data
bis(2-CHLOROETHOXY)METHANE	Not Listed	Not Listed	Not Listed

Components	Ecotoxicity - Freshwater Algae Data	Ecotoxicity - Microtox Data	Ecotoxicity - Water Flea Data
bis(2-CHLOROETHOXY)METHANE	Not Listed	Not Listed	Not Listed

Components	EPA - ATSDR Priority List	EPA - HPV Challenge Program Chemical List	California - Priority Toxic Pollutants
bis(2-CHLOROETHOXY)METHANE	Not Listed	indicator 0; Fully sponsored	Not Listed

Components	California - Priority Toxic Pollutants	California - Priority Toxic Pollutants
bis(2-CHLOROETHOXY)METHANE	Not Listed	Not Listed

13. DISPOSAL CONSIDERATIONS

Waste from residues / unused products: Waste disposal must be in accordance with appropriate Federal, State, and local regulations. This product, if unaltered by use, may be disposed of by treatment at a permitted facility or as advised by your local hazardous waste regulatory authority. Residue from fires extinguished with this material may be hazardous.

Contaminated packaging: Do not re-use empty containers

14. TRANSPORT INFORMATION

UN/Id No: 2810

DOT:

Proper shipping name: Toxic liquid, organic, n.o.s.
IATA Hazard Label(s): Toxic
Hazard Class 6.1 **-** Toxic substances - oral
Packing group: III

Emergency Response Guide Number (ERG): 153

Components	U.S. DOT - Appendix A Table 1 - Reportable Quantities
bis(2-CHLOROETHOXY)METHANE	RQ = 1000 pounds (454 kg); also listed as Dichloromethoxy ethane; also listed as Ethane, 1,1"-[methylenebis(oxy)]bis(2-chloro)-

TDG (Canada):

WHMIS hazard class: D1b toxic materials

:

IMDG/IMO

Proper shipping name: Toxic liquid, organic, n.o.s.

IMDG - Hazard Classifications Not Applicable

Components	U.S. DOT - Appendix B - Marine Pollutan	U.S. DOT - Appendix B - Severe Marine Pollutants
bis(2-CHLOROETHOXY)METHANE	Not Listed	Not Listed

IMO-labels:

15. REGULATORY INFORMATION

International Inventories

Components	
bis(2-CHLOROETHOXY)METHANE	
Inventory - United States TSCA - Sect. 8(b)	Present
Canada DSL Inventory List -	Not Listed
Canada NDSL Inventory List -	C5H10Cl2O2
Inventory - China:	Present
EU EINECS List -	203-920-2; C5H10Cl2O2
Inventory - Japan:	2-497

U.S. regulations:

Components	California Proposition 65 -	Massachusetts Right to Know List:	New Jersey Right to Know List:	Pennsylvania Right to Know List:
bis(2-CHLOROETHOXY)METHANE	Not Listed	[present]	sn 2971	environmental hazard

Components	Florida substance List:	Rhode Island Right to Know List:	Illinois - Toxic Air Contaminants	Connecticut - Hazardous Air Pollutants
bis(2-CHLOROETHOXY)METHANE	[present]	Not Listed	Not Listed	Not Listed

Components	SARA 313 Emission reporting/Toxic Release of Chemicals	CERCLA/SARA - Section 302 Extremely Haz	NTP:	IARC:
bis(2-CHLOROETHOXY)METHANE	form R reporting required for 1.0% de minimis concentration	Not Listed	None	None

SARA 313 Notification: The above is your notification as to the SARA 313 listing for this product(s) pursuant to Section 313 of Title III of the Superfund Ammendments and Reauthorization Act of 1986 and 40 CFR Part 372.

If you are unsure if you are subject to the reporting requirements of Section 313, or need more information, please call the EPA Emergency Planning and Community Right-To-Know Information Hotline: (800) 535-0202 or (202) 479-2499 (in Washington, DC or Alaska).

State Notification: The above information is your notice as to the Right-to-Know listings of the stated product(s). Individual states will list chemicals for a variety of reasons including, but not limited to, the compounds toxicity; carcinogenic, tumorigenic and/or reproductive hazards; and the compounds environmental impact if accidentally released.

16. OTHER INFORMATION

Prepared by: Health & Safety
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End of Safety Data Sheet

International Chemical Safety Cards

BIS(2-CHLOROETHYL) ETHER

ICSC: 0417

Dichloroethyl ether
2,2'-Dichloroethyl ether
1,1'-Oxybis(2-chloro)ethane
sym-Dichloroethyl ether
Diethylene glycol dichloride
$C_4H_8Cl_2O$ / $(ClCH_2CH_2)_2O$
Molecular mass: 143.02

ICSC # 0417
CAS # 111-44-4
RTECS # KN0875000
UN # 1916
EC # 603-029-00-2
April 10, 2000 Validated

TYPES OF HAZARD/ EXPOSURE	ACUTE HAZARDS/ SYMPTOMS	PREVENTION	FIRST AID/ FIRE FIGHTING
FIRE	Flammable. Gives off irritating or toxic fumes (or gases) in a fire.	NO open flames, NO sparks, and NO smoking.	Water spray, foam, powder, carbon dioxide.
EXPLOSION	Above 55°C explosive vapour/air mixtures may be formed.	Above 55°C use a closed system, ventilation.	In case of fire: cool cylinder by spraying with water but avoid contact of the substance with water.
EXPOSURE		PREVENT GENERATION OF MISTS!	
•INHALATION	Cough. Sore throat. Nausea. Vomiting. Burning sensation. Laboured breathing. Symptoms may be delayed (see Notes).	Ventilation, local exhaust, or breathing protection.	Fresh air, rest. Half-upright position. Refer for medical attention.
•SKIN	MAY BE ABSORBED!	Protective gloves. Protective clothing.	Remove contaminated clothes. Rinse and then wash skin with water and soap. Refer for medical attention.
•EYES	Redness. Pain.	Face shield or eye protection in combination with breathing protection.	First rinse with plenty of water for several minutes (remove contact lenses if easily possible), then take to a doctor.
•INGESTION	Abdominal pain. Nausea. Vomiting. Burning sensation.	Do not eat, drink, or smoke during work. Wash hands before eating.	Rinse mouth. Induce vomiting (ONLY IN CONSCIOUS PERSONS!). Rest. Refer for medical attention.

SPILLAGE DISPOSAL	STORAGE	PACKAGING & LABELLING
Ventilation. Remove all ignition sources. Collect leaking and spilled liquid in sealable containers as far as possible. Absorb remaining liquid in sand or inert absorbent and remove to safe place. Personal protection: chemical protection suit.	Fireproof. Separated from food and feedstuffs . See Chemical Dangers. Keep in the dark. Well closed.	Do not transport with food and feedstuffs. Marine pollutant. T+ symbol R: 10-26/27/28-40 S: 1/2-7/9-27-28-36/37-45 UN Hazard Class: 6.1 UN Subsidiary Risks: 3 UN Packing Group: II

SEE IMPORTANT INFORMATION ON BACK

ICSC: 0417

Prepared in the context of cooperation between the International Programme on Chemical Safety & the Commission of the European Communities (C) IPCS CEC 1994. No modifications to the International version have been made except to add the OSHA PELs, NIOSH RELs and NIOSH IDLH values.

International Chemical Safety Cards

BIS(2-CHLOROETHYL) ETHER

ICSC: 0417

IMPORTANT DATA

PHYSICAL STATE; APPEARANCE:
CLEAR, COLOURLESS LIQUID , WITH CHARACTERISTIC ODOUR.

PHYSICAL DANGERS:
The vapour is heavier than air.

CHEMICAL DANGERS:
The substance can form explosive peroxides on exposure to air and light. The substance decomposes on burning or on contact with water, producing toxic fumes including hydrogen chloride. Reacts with strong oxidants. Reacts violently with chlorosulfonic acid and oleum.

OCCUPATIONAL EXPOSURE LIMITS:
TLV: 5 ppm as TWA, 10 ppm as STEL; (skin); A4 (not classifiable as a human carcinogen); (ACGIH 2004).
MAK: 10 ppm, 59 mg/m³;
Peak limitation category: I(1);
skin absorption (H); (DFG 2004).
OSHA PEL†: TWA 15 ppm (90 mg/m^3) skin
NIOSH REL: Ca TWA 5 ppm (30 mg/m^3) ST 10 ppm (60 mg/m^3) skin See Appendix A
NIOSH IDLH: Ca 100 ppm See: 111444

ROUTES OF EXPOSURE:
The substance can be absorbed into the body by inhalation of its vapour, through the skin and by ingestion.

INHALATION RISK:
A harmful contamination of the air can be reached rather quickly on evaporation of this substance at 20°C.

EFFECTS OF SHORT-TERM EXPOSURE:
The substance irritates the eyes and the respiratory tract. Inhalation of vapour may cause lung oedema (see Notes). Exposure far above the OEL may result in death. The effects may be delayed. Medical observation is indicated.

EFFECTS OF LONG-TERM OR REPEATED EXPOSURE:
Repeated or prolonged contact with skin may cause dermatitis.

PHYSICAL PROPERTIES

Boiling point: 178°C
Melting point: -50°C
Relative density (water = 1): 1.22
Vapour pressure, kPa at 25°C: 0.206
Relative vapour density (air = 1): 4.9
Flash point: 55°C c.c.
Auto-ignition temperature: 369°C
Explosive limits, vol% in air: 2.7-?
Octanol/water partition coefficient as log Pow: 1.29

ENVIRONMENTAL DATA	

N O T E S

The symptoms of lung oedema often do not become manifest until a few hours have passed and they are aggravated by physical effort. Rest and medical observation is therefore essential. Immediate administration of an appropriate inhalation therapy by a doctor or a person authorized by him/her, should be considered. An added stabilizer or inhibitor can influence the toxicological properties of this substance, consult an expert. Check for peroxides prior to distillation; eliminate if found. DCEE, Chlorex are trade names. Card has been partly updated in October 2005. See sections Occupational Exposure Limits, EU classification, Emergency Response.

Transport Emergency Card: TEC (R)-61GTF1-II

NFPA Code: H3; F2; R1;

ADDITIONAL INFORMATION

ICSC: 0417 **BIS(2-CHLOROETHYL) ETHER**

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International Chemical Safety Cards

DICHLOROISOPROPYL ETHER

ICSC: 0435

Bis(2-chloro-1-methylethyl) ether
2,2'-Oxybis(1-chloropropane)
Dichlorodiisopropyl ether
$C_6H_{12}Cl_2O$ / $(ClCH_2C(CH_3)H)_2O$
Molecular mass: 171.1

ICSC # 0435
CAS # 108-60-1
RTECS # KN1750000
UN # 2490
November 26, 2003 Validated

TYPES OF HAZARD/ EXPOSURE	ACUTE HAZARDS/ SYMPTOMS	PREVENTION	FIRST AID/ FIRE FIGHTING
FIRE	Combustible. Gives off irritating or toxic fumes (or gases) in a fire.	NO open flames.	Foam, alcohol-resistant foam, dry powder, carbon dioxide or water spray .
EXPLOSION	Above 85°C explosive vapour/air mixtures may be formed.	Above 85°C use a closed system, ventilation.	
EXPOSURE			
•INHALATION		Local exhaust.	Fresh air, rest.
•SKIN	Dry skin.	Protective gloves.	Remove contaminated clothes. Rinse and then wash skin with water and soap.
•EYES		Safety spectacles.	First rinse with plenty of water for several minutes (remove contact lenses if easily possible), then take to a doctor.
•INGESTION		Do not eat, drink, or smoke during work. Wash hands before eating.	Give plenty of water to drink.

SPILLAGE DISPOSAL	STORAGE	PACKAGING & LABELLING
Ventilation. Remove all ignition sources. Collect leaking liquid in sealable plastic containers. Absorb remaining liquid in sand or inert absorbent and remove to safe place. (Extra personal protection: filter respirator for organic gases and vapours.)	Cool. Keep in the dark. Separated from incompatible materials . See Chemical Dangers.	UN Hazard Class: 6.1 UN Packing Group: II

SEE IMPORTANT INFORMATION ON BACK

ICSC: 0435

Prepared in the context of cooperation between the International Programme on Chemical Safety & the Commission of the European Communities (C) IPCS CEC 1994. No modifications to the International version have been made except to add the OSHA PELs, NIOSH RELs and NIOSH IDLH values.

International Chemical Safety Cards

DICHLOROISOPROPYL ETHER

ICSC: 0435

IMPORTANT DATA

PHYSICAL STATE; APPEARANCE:
COLOURLESS TO BROWN , OILY LIQUID

PHYSICAL DANGERS:

CHEMICAL DANGERS:
The substance can form explosive peroxides standing in contact with air. Reacts with halogens , strong acids and strong oxidants . The substance decomposes on burning producing toxic fumes .

OCCUPATIONAL EXPOSURE LIMITS:
TLV not established.
MAK not established.

ROUTES OF EXPOSURE:
The substance can be absorbed into the body by inhalation and by ingestion.

INHALATION RISK:
No indication can be given about the rate at which a harmful concentration in the air is reached on evaporation of this substance at 20° C.

EFFECTS OF SHORT-TERM EXPOSURE:
See Notes.

EFFECTS OF LONG-TERM OR REPEATED EXPOSURE:
The liquid defats the skin.

PHYSICAL PROPERTIES

Boiling point: 187°C
Melting point: -97 to -102°C
Relative density (water = 1): 1.1
Solubility in water, g/100 ml at 20°C: 0.2
,
poor

Vapour pressure, Pa at 20°C: 75
Relative vapour density (air = 1): 6
Flash point: 85°C o.c.
Octanol/water partition coefficient as log Pow: 2.14 to 2.58

ENVIRONMENTAL DATA

NOTES

Insufficient data are available on the effect of this substance on human health, therefore utmost care must be taken. Environmental effects from the substance have not been investigated adequately.

Transport Emergency Card: TEC (R)-61GT1-II

NFPA Code: H3; F2; R0.

ADDITIONAL INFORMATION

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International Chemical Safety Cards

DI(2-ETHYLHEXYL) PHTHALATE

ICSC: 0271

Dioctylphthalate
DOP; DEHP
Bis-(2-ethylhexyl)phthalate
$C_{24}H_{38}O_4$ / $C_6H_4(COOC_8H_{17})_2$
Molecular mass: 390.6

ICSC # 0271
CAS # 117-81-7
RTECS # TI0350000
EC # 607-317-00-9
October 18, 2001 Validated

TYPES OF HAZARD/ EXPOSURE	ACUTE HAZARDS/ SYMPTOMS	PREVENTION	FIRST AID/ FIRE FIGHTING
FIRE	Combustible. Gives off irritating or toxic fumes (or gases) in a fire.	NO open flames.	Water spray, foam, powder, carbon dioxide.
EXPLOSION			
EXPOSURE		PREVENT GENERATION OF MISTS! AVOID EXPOSURE OF ADOLESCENTS AND CHILDREN!	
•INHALATION	Cough. Sore throat.	Ventilation, local exhaust, or breathing protection.	Fresh air, rest.
•SKIN		Protective gloves.	Remove contaminated clothes. Rinse skin with plenty of water or shower.
•EYES	Redness. Pain.	Safety goggles.	First rinse with plenty of water for several minutes (remove contact lenses if easily possible), then take to a doctor.
•INGESTION	Abdominal cramps. Diarrhoea. Nausea.	Do not eat, drink, or smoke during work. Wash hands before eating.	Rinse mouth. Give plenty of water to drink.

SPILLAGE DISPOSAL	STORAGE	PACKAGING & LABELLING
Remove all ignition sources. Collect leaking and spilled liquid in sealable containers as far as possible. Absorb remaining liquid in sand or inert absorbent and remove to safe place. Chemical protection suit.	Separated from strong oxidants, acids, alkalis, and nitrates. Cool. Dry. Well closed.	T symbol R: 60-61 S: 53-45

SEE IMPORTANT INFORMATION ON BACK

ICSC: 0271

Prepared in the context of cooperation between the International Programme on Chemical Safety & the Commission of the European Communities (C) IPCS CEC 1994. No modifications to the International version have been made except to add the OSHA PELs, NIOSH RELs and NIOSH IDLH values.

International Chemical Safety Cards

DI(2-ETHYLHEXYL) PHTHALATE

ICSC: 0271

IMPORTANT DATA

PHYSICAL STATE; APPEARANCE:
COLOURLESS TO LIGHT COLOURED VISCOUS LIQUID , WITH CHARACTERISTIC ODOUR.

PHYSICAL DANGERS:

CHEMICAL DANGERS:
The substance decomposes on heating producing irritating fumes . Reacts with strong oxidants acids alkalis and nitrates

OCCUPATIONAL EXPOSURE LIMITS:
TLV: 5 mg/m³; < A3 (confirmed animal carcinogen with unknown relevance to humans); (ACGIH 2004).
MAK: 10 mg/m³;
Peak limitation category: II(8); Carcinogen category: 4;
Pregnancy risk group: C;
(DFG 2004).
OSHA PEL†: TWA 5 mg/m^3
NIOSH REL: Ca TWA 5 mg/m^3 ST 10 mg/m^3 See Appendix A
NIOSH IDLH: Ca 5000 mg/m^3 See: 117817

ROUTES OF EXPOSURE:
The substance can be absorbed into the body by inhalation, through the skin and by ingestion.

INHALATION RISK:
Evaporation at 20°C is negligible; a harmful concentration of airborne particles can, however, be reached quickly on spraying.

EFFECTS OF SHORT-TERM EXPOSURE:
The substance is irritating to the eyes and the respiratory tract .

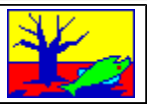
EFFECTS OF LONG-TERM OR REPEATED EXPOSURE:
The substance may have effects on the testes. Animal tests show that this substance possibly causes toxicity to human reproduction or development.

PHYSICAL PROPERTIES

Boiling point: 385°C
Melting point: -50°C
Relative density (water = 1): 0.986
Solubility in water:
none
Vapour pressure, kPa at 20°C: 0.001
Relative vapour density (air = 1): 13.45
Flash point: 215°C o.c.
Auto-ignition temperature: 350°C
Octanol/water partition coefficient as log Pow: 5.03

ENVIRONMENTAL DATA

Bioaccumulation of this chemical may occur in seafood.



NOTES

Card has been partly updated in October 2005. See section Occupational Exposure Limits.

NFPA Code: H 0; F 1; R 0

ADDITIONAL INFORMATION

ICSC: 0271 **DI(2-ETHYLHEXYL) PHTHALATE**

(C) IPCS, CEC, 1994

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International Chemical Safety Cards

CHRYSENE

ICSC: 1672

Benzoaphenanthrene
1,2-Benzophenanthrene
1,2,5,6-Dibenzonaphthalene
$C_{18}H_{12}$
Molecular mass: 228.3

ICSC # 1672
CAS # 218-01-9
RTECS # GC0700000
UN # 3077
EC # 601-048-00-0
October 12, 2006 Validated

TYPES OF HAZARD/ EXPOSURE	ACUTE HAZARDS/ SYMPTOMS	PREVENTION	FIRST AID/ FIRE FIGHTING
FIRE	Combustible.	NO open flames.	Water spray. Dry powder. Foam. Carbon dioxide.
EXPLOSION	Finely dispersed particles form explosive mixtures in air.	Prevent deposition of dust; closed system, dust explosion-proof electrical equipment and lighting.	
EXPOSURE	See EFFECTS OF LONG-TERM OR REPEATED EXPOSURE.	AVOID ALL CONTACT!	
•INHALATION		Local exhaust or breathing protection.	Fresh air, rest.
•SKIN		Protective gloves. Protective clothing.	Remove contaminated clothes. Rinse and then wash skin with water and soap.
•EYES		Safety goggles	First rinse with plenty of water for several minutes (remove contact lenses if easily possible), then take to a doctor.
•INGESTION		Do not eat, drink, or smoke during work.	Rinse mouth.

SPILLAGE DISPOSAL	STORAGE	PACKAGING & LABELLING
Personal protection: P3 filter respirator for toxic particles. Do NOT let this chemical enter the environment. Sweep spilled substance into sealable containers; if appropriate, moisten first to prevent dusting. Carefully collect remainder, then remove to safe place.	Separated from strong oxidants, Provision to contain effluent from fire extinguishing. Store in an area without drain or sewer access.	T symbol N symbol R: 45-68-50/53 S: 53-45-60-61 UN Hazard Class: 9 UN Packing Group: III Signal: Warning Aqua-Cancer Suspected of causing cancer Very toxic to aquatic life with long lasting effects Very toxic to aquatic life

SEE IMPORTANT INFORMATION ON BACK

Prepared in the context of cooperation between the International Programme on Chemical Safety & the Commission of the European

Communities (C) IPCS CEC 1994. No modifications to the International version have been made except to add the OSHA PELs, NIOSH RELs and NIOSH IDLH values.

International Chemical Safety Cards

CHRYSENE

ICSC: 1672

IMPORTANT DATA

PHYSICAL STATE; APPEARANCE:
COLOURLESS TO BEIGE CRYSTALS OR POWDER

PHYSICAL DANGERS:
Dust explosion possible if in powder or granular form, mixed with air.

CHEMICAL DANGERS:
The substance decomposes on burning producing toxic fumes Reacts violently with strong oxidants

OCCUPATIONAL EXPOSURE LIMITS:
TLV: A3 (confirmed animal carcinogen with unknown relevance to humans); (ACGIH 2006).
MAK not established.

ROUTES OF EXPOSURE:
The substance can be absorbed into the body by inhalation of its aerosol, through the skin and by ingestion.

INHALATION RISK:
A harmful concentration of airborne particles can be reached quickly when dispersed

EFFECTS OF SHORT-TERM EXPOSURE:

EFFECTS OF LONG-TERM OR REPEATED EXPOSURE:
This substance is possibly carcinogenic to humans.

PHYSICAL PROPERTIES

Boiling point: 448°C
Melting point: 254 - 256°C
Density: 1.3 g/cm³

Solubility in water:
very poor
Octanol/water partition coefficient as log Pow: 5.9

ENVIRONMENTAL DATA

The substance is very toxic to aquatic organisms. Bioaccumulation of this chemical may occur in seafood. It is strongly advised that this substance does not enter the environment.

NOTES

Depending on the degree of exposure, periodic medical examination is suggested. Do NOT take working clothes home. This substance does not usually occur as a pure substance but as a component of polyaromatic hydrocarbon (PAH) mixtures. Human population studies have associated PAH's exposure with cancer and cardiovascular diseases.

Transport Emergency Card: TEC (R)-90GM7-III

ADDITIONAL INFORMATION

(C) IPCS, CEC, 1994

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International Chemical Safety Cards

DIBENZO(a,h)ANTHRACENE

ICSC: 0431

1,25,6-Dibenzanthracene
$C_{22}H_{14}$
Molecular mass: 278.4

ICSC # 0431
CAS # 53-70-3
RTECS # HN2625000
EC # 601-041-00-2
October 23, 1995 Peer reviewed

TYPES OF HAZARD/ EXPOSURE	ACUTE HAZARDS/ SYMPTOMS	PREVENTION	FIRST AID/ FIRE FIGHTING
FIRE	Combustible.	NO open flames.	Water spray, powder.
EXPLOSION			
EXPOSURE		AVOID ALL CONTACT!	
•INHALATION		Local exhaust or breathing protection.	Fresh air, rest.
•SKIN	Redness. Swelling. Itching.	Protective gloves. Protective clothing.	Remove contaminated clothes. Rinse and then wash skin with water and soap.
•EYES	Redness.	Face shield or eye protection in combination with breathing protection.	First rinse with plenty of water for several minutes (remove contact lenses if easily possible), then take to a doctor.
•INGESTION		Do not eat, drink, or smoke during work. Wash hands before eating.	Rinse mouth.

SPILLAGE DISPOSAL	STORAGE	PACKAGING & LABELLING
Sweep spilled substance into sealable containers; if appropriate, moisten first to prevent dusting. Carefully collect remainder, then remove to safe place. Personal protection: P3 filter respirator for toxic particles.	Well closed.	T symbol N symbol R: 45-50/53 S: 53-45-60-61

SEE IMPORTANT INFORMATION ON BACK

ICSC: 0431

Prepared in the context of cooperation between the International Programme on Chemical Safety & the Commission of the European Communities (C) IPCS CEC 1994. No modifications to the International version have been made except to add the OSHA PELs, NIOSH RELs and NIOSH IDLH values.

International Chemical Safety Cards

DIBENZO(a,h)ANTHRACENE

ICSC: 0431

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PHYSICAL STATE; APPEARANCE:
COLOURLESS CRYSTALLINE POWDER.

PHYSICAL DANGERS:

ROUTES OF EXPOSURE:
The substance can be absorbed into the body by inhalation, through the skin and by ingestion.

INHALATION RISK:
Evaporation at 20°C is negligible; a harmful concentration

R T A N T D A T A	**CHEMICAL DANGERS:** **OCCUPATIONAL EXPOSURE LIMITS:** TLV not established.	of airborne particles can, however, be reached quickly. **EFFECTS OF SHORT-TERM EXPOSURE:** **EFFECTS OF LONG-TERM OR REPEATED EXPOSURE:** The substance may have effects on the skin , resulting in photosensitization. This substance is probably carcinogenic to humans.
PHYSICAL PROPERTIES	Boiling point: 524°C Melting point: 267°C Relative density (water = 1): 1.28	Solubility in water: none Octanol/water partition coefficient as log Pow: 6.5
ENVIRONMENTAL DATA	Bioaccumulation of this chemical may occur in seafood.	

N O T E S

This is one of many polycyclic aromatic hydrocarbons - standards are usually established for them as mixtures, e.g., coal tar pitch volatiles. However, it may be encountered as a laboratory chemical in its pure form. Insufficient data are available on the effect of this substance on human health, therefore utmost care must be taken. Do NOT take working clothes home. DBA is a commonly used name. This substance is one of many polycyclic aromatic hydrocarbons (PAH).

ADDITIONAL INFORMATION

ICSC: 0431 **DIBENZO(a,h)ANTHRACENE**

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Material Safety Data Sheet

Version 3.1
Revision Date 03/22/2010
Print Date 12/09/2011

1. PRODUCT AND COMPANY IDENTIFICATION

Product name : Dibenzofuran

Product Number : 236373
Brand : Aldrich

Company : Sigma-Aldrich
3050 Spruce Street
SAINT LOUIS MO 63103
USA
Telephone : +1 800-325-5832
Fax : +1 800-325-5052
Emergency Phone # : (314) 776-6555

2. HAZARDS IDENTIFICATION

Emergency Overview

OSHA Hazards
Toxic by ingestion

HMIS Classification
Health hazard: 2
Flammability: 1
Physical hazards: 0

NFPA Rating
Health hazard: 2
Fire: 1
Reactivity Hazard: 0

Potential Health Effects

Inhalation May be harmful if inhaled. May cause respiratory tract irritation.
Skin May be harmful if absorbed through skin. May cause skin irritation.
Eyes May cause eye irritation.
Ingestion Toxic if swallowed.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Synonyms : Diphenylene oxide

Formula : $C_{12}H_8O$
Molecular Weight : 168.19 g/mol

CAS-No.	EC-No.	Index-No.	Concentration
Dibenzofuran			
132-64-9	205-071-3	-	-

4. FIRST AID MEASURES

General advice
Consult a physician. Show this safety data sheet to the doctor in attendance.Move out of dangerous area.

If inhaled
If breathed in, move person into fresh air. If not breathing give artificial respiration Consult a physician.

In case of skin contact
Wash off with soap and plenty of water. Consult a physician.

In case of eye contact
Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician.

If swallowed
Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

5. FIRE-FIGHTING MEASURES

Suitable extinguishing media
Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

Special protective equipment for fire-fighters
Wear self contained breathing apparatus for fire fighting if necessary.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions
Use personal protective equipment. Avoid dust formation. Avoid breathing dust. Ensure adequate ventilation.

Environmental precautions
Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.

Methods and materials for containment and cleaning up
Pick up and arrange disposal without creating dust. Keep in suitable, closed containers for disposal.

7. HANDLING AND STORAGE

Precautions for safe handling
Avoid formation of dust and aerosols.
Provide appropriate exhaust ventilation at places where dust is formed. Normal measures for preventive fire protection.

Conditions for safe storage
Keep container tightly closed in a dry and well-ventilated place.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Contains no substances with occupational exposure limit values.

Personal protective equipment

Respiratory protection
Where risk assessment shows air-purifying respirators are appropriate use a dust mask type N95 (US) or type P1 (EN 143) respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

Hand protection
Handle with gloves.

Eye protection
Face shield and safety glasses

Skin and body protection
Choose body protection according to the amount and concentration of the dangerous substance at the work place.

Hygiene measures
Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance

Form	crystalline
Colour	white, beige

Safety data

pH	no data available
Melting point	80 - 82 °C (176 - 180 °F) - lit.
Boiling point	154 - 155 °C (309 - 311 °F) at 27 hPa (20 mmHg) - lit.
Flash point	130.0 °C (266.0 °F) - closed cup
Ignition temperature	no data available
Lower explosion limit	no data available
Upper explosion limit	no data available
Water solubility	no data available
Partition coefficient: n-octanol/water	log Pow: 3.77

10. STABILITY AND REACTIVITY

Chemical stability
Stable under recommended storage conditions.

Conditions to avoid
no data available

Materials to avoid
Strong oxidizing agents

Hazardous decomposition products
Hazardous decomposition products formed under fire conditions. - Carbon oxides

11. TOXICOLOGICAL INFORMATION

Acute toxicity
no data available

Skin corrosion/irritation
no data available

Serious eye damage/eye irritation
no data available

Respiratory or skin sensitization
no data available

Germ cell mutagenicity
no data available

Carcinogenicity

IARC:	No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.
ACGIH:	No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH.
NTP:	No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.
OSHA:	No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

Reproductive toxicity
no data available

Specific target organ toxicity - single exposure (GHS)
no data available

Specific target organ toxicity - repeated exposure (GHS)
no data available

Aspiration hazard
no data available

Potential health effects

Inhalation	May be harmful if inhaled. May cause respiratory tract irritation.
Ingestion	Toxic if swallowed.
Skin	May be harmful if absorbed through skin. May cause skin irritation.
Eyes	May cause eye irritation.

Signs and Symptoms of Exposure
To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

Additional Information
RTECS: HP4430000

12. ECOLOGICAL INFORMATION

Toxicity

Toxicity to fish	NOEC - Cyprinodon variegatus (sheepshead minnow) - 1 mg/l - 96.0 h
	LC50 - Pimephales promelas (fathead minnow) - 1.05 mg/l - 96.0 h

Persistence and degradability
no data available

Bioaccumulative potential
no data available

Mobility in soil
no data available

PBT and vPvB assessment
no data available

Other adverse effects

An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.

Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

13. DISPOSAL CONSIDERATIONS

Product
Observe all federal, state, and local environmental regulations. Contact a licensed professional waste disposal service to dispose of this material. Dissolve or mix the material with a combustible solvent and burn in a chemical incinerator equipped with an afterburner and scrubber.

Contaminated packaging
Dispose of as unused product.

14. TRANSPORT INFORMATION

DOT (US)
UN-Number: 3077 Class: 9 Packing group: III
Proper shipping name: Environmentally hazardous substances, solid, n.o.s. (Dibenzofuran)
Reportable Quantity (RQ): 100 lbs
Marine pollutant: Marine pollutant
Poison Inhalation Hazard: No

IMDG

UN-Number: 3077 Class: 9 Packing group: III EMS-No: F-A, S-F
Proper shipping name: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (Dibenzofuran)
Marine pollutant: Marine pollutant

IATA
UN-Number: 3077 Class: 9 Packing group: III
Proper shipping name: Environmentally hazardous substance, solid, n.o.s. (Dibenzofuran)

15. REGULATORY INFORMATION

OSHA Hazards
Toxic by ingestion

DSL Status
All components of this product are on the Canadian DSL list.

SARA 302 Components
SARA 302: No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

SARA 313 Components

	CAS-No.	Revision Date
Dibenzofuran	132-64-9	2007-07-01

SARA 311/312 Hazards
Acute Health Hazard

Massachusetts Right To Know Components

	CAS-No.	Revision Date
Dibenzofuran	132-64-9	2007-07-01

Pennsylvania Right To Know Components

	CAS-No.	Revision Date
Dibenzofuran	132-64-9	2007-07-01

New Jersey Right To Know Components

	CAS-No.	Revision Date
Dibenzofuran	132-64-9	2007-07-01

California Prop. 65 Components
This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.

16. OTHER INFORMATION

Further information
Copyright 2010 Sigma-Aldrich Co. License granted to make unlimited paper copies for internal use only.
The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. Sigma-Aldrich Co., shall not be held liable for any damage resulting from handling or from contact with the above product. See reverse side of invoice or packing slip for additional terms and conditions of sale.

International Chemical Safety Cards

DIETHYL PHTHALATE

ICSC: 0258

1,2-Benzenedicarboxylic acid diethyl ester
DEP
$C_6H_4(COOC_2H_5)_2$ / $C_{12}H_{14}O_4$
Molecular mass: 222.3

ICSC # 0258
CAS # 84-66-2
RTECS # TI1050000
March 13, 2001 Validated

TYPES OF HAZARD/ EXPOSURE	ACUTE HAZARDS/ SYMPTOMS	PREVENTION	FIRST AID/ FIRE FIGHTING
FIRE	Combustible. Gives off irritating or toxic fumes (or gases) in a fire.	NO open flames.	Alcohol-resistant foam, powder, carbon dioxide.
EXPLOSION			
EXPOSURE			
•INHALATION	Dizziness. Dullness.	Ventilation. Local exhaust.	Fresh air, rest.
•SKIN		Protective gloves.	Remove contaminated clothes. Rinse skin with plenty of water or shower.
•EYES		Safety spectacles.	First rinse with plenty of water for several minutes (remove contact lenses if easily possible), then take to a doctor.
•INGESTION	Abdominal pain. Nausea.	Do not eat, drink, or smoke during work.	Rinse mouth. Give one or two glasses of water to drink. Refer for medical attention.

SPILLAGE DISPOSAL	STORAGE	PACKAGING & LABELLING
Personal protection: particulate filter adapted to the airborne concentration of the substance. Collect leaking and spilled liquid in sealable containers as far as possible. Absorb remaining liquid in sand or inert absorbent and remove to safe place. Do NOT let this chemical enter the environment.		

SEE IMPORTANT INFORMATION ON BACK

Prepared in the context of cooperation between the International Programme on Chemical Safety & the Commission of the European Communities (C) IPCS CEC 1994. No modifications to the International version

ICSC: 0258	have been made except to add the OSHA PELs, NIOSH RELs and NIOSH IDLH values.

International Chemical Safety Cards

DIETHYL PHTHALATE

ICSC: 0258

IMPORTANT DATA		
	PHYSICAL STATE; APPEARANCE: COLOURLESS OILY LIQUID **PHYSICAL DANGERS:** **CHEMICAL DANGERS:** The substance decomposes on heating or on burning producing toxic fumes and gases (phthalic anhydride - see ICSC 0315). Attacks some plastics. **OCCUPATIONAL EXPOSURE LIMITS:** TLV: 5 mg/m³ as TWA; (skin); A4 (not classifiable as a human carcinogen); (ACGIH 2005). MAK not established. OSHA PEL†: none NIOSH REL: TWA 5 mg/m^3 NIOSH IDLH: N.D. See: IDLH INDEX	**ROUTES OF EXPOSURE:** The substance can be absorbed into the body by inhalation, through the skin and by ingestion. **INHALATION RISK:** A harmful contamination of the air will not or will only very slowly be reached on evaporation of this substance at 20°C. **EFFECTS OF SHORT-TERM EXPOSURE:** **EFFECTS OF LONG-TERM OR REPEATED EXPOSURE:**
PHYSICAL PROPERTIES	Boiling point: 295°C Melting point: -67 to -44°C Relative density (water = 1): 1.1 Solubility in water, g/100 ml at 25°C: none	Relative vapour density (air = 1): 7.7 Flash point: 117°C (c.c.) Auto-ignition temperature: 457°C Explosive limits, vol% in air: 0.7%- ? Octanol/water partition coefficient as log Pow: 2.47
ENVIRONMENTAL DATA	This substance may be hazardous to the environment; special attention should be given to fish.	

N O T E S

Card has been partly updated in October 2005. See sections Occupational Exposure Limits, Emergency Response.

NFPA Code: H 0; F 1; R 0;
Card has been partially updated in July 2007: see Spillage Disposal.

ADDITIONAL INFORMATION

ICSC: 0258 **DIETHYL PHTHALATE**

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International Chemical Safety Cards

DIMETHYL PHTHALATE

ICSC: 0261

Dimethyl 1,2-benzenedicarboxylate
Phthalic acid dimethyl ester
1,2-Benzenedicarboxylic acid, dimethyl ester
$C_6H_4(COOCH_3)_2$ / $C_{10}H_{10}O_4$
Molecular mass: 194.2

ICSC # 0261
CAS # 131-11-3
RTECS # TI1575000
October 19, 2005 Validated

TYPES OF HAZARD/ EXPOSURE	ACUTE HAZARDS/ SYMPTOMS	PREVENTION	FIRST AID/ FIRE FIGHTING
FIRE	Combustible.	NO open flames.	Water spray, foam, powder, carbon dioxide.
EXPLOSION			
EXPOSURE			
•INHALATION		Ventilation.	Fresh air, rest.
•SKIN		Protective gloves.	Rinse and then wash skin with water and soap.
•EYES		Safety spectacles.	First rinse with plenty of water for several minutes (remove contact lenses if easily possible), then take to a doctor.
•INGESTION		Do not eat, drink, or smoke during work.	Rinse mouth.

SPILLAGE DISPOSAL	STORAGE	PACKAGING & LABELLING
Do NOT let this chemical enter the environment. Collect leaking liquid in sealable containers. Absorb remaining liquid in sand or inert absorbent and remove to safe place.	Store in an area without drain or sewer access.	

SEE IMPORTANT INFORMATION ON BACK

ICSC: 0261

Prepared in the context of cooperation between the International Programme on Chemical Safety & the Commission of the European Communities (C) IPCS CEC 1994. No modifications to the International version have been made except to add the OSHA PELs, NIOSH RELs and NIOSH IDLH values.

International Chemical Safety Cards

DIMETHYL PHTHALATE

ICSC: 0261

IMPORTANT DATA

PHYSICAL STATE; APPEARANCE:
OILY COLOURLESS LIQUID

PHYSICAL DANGERS:

CHEMICAL DANGERS:
The substance decomposes on burning producing irritating fumes .

OCCUPATIONAL EXPOSURE LIMITS:
TLV: 5 mg/m³ as TWA; (ACGIH 2005).
MAK not established.
OSHA PEL: TWA 5 mg/m^3
NIOSH REL: TWA 5 mg/m^3
NIOSH IDLH: 2000 mg/m^3 See: 131113

ROUTES OF EXPOSURE:

INHALATION RISK:
A harmful contamination of the air will not or will only very slowly be reached on evaporation of this substance at 20°C.

EFFECTS OF SHORT-TERM EXPOSURE:

EFFECTS OF LONG-TERM OR REPEATED EXPOSURE:

PHYSICAL PROPERTIES

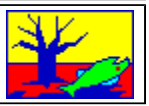
Boiling point: 284°C
Melting point: 5.5°C
Relative density (water = 1): 1.19
Solubility in water, g/100 ml at 20°C: 0.43
Vapour pressure, Pa at 20°C: 0.8
Relative vapour density (air = 1): 6.69

Flash point: 146 °C c.c.

Auto-ignition temperature: 490°C
Explosive limits, vol% in air: 0.9 at 180°C- 8.0 at 109°C
Octanol/water partition coefficient as log Pow: 1.47-2.12

ENVIRONMENTAL DATA

The substance is harmful to aquatic organisms.



NOTES

Common name: DMP. Other melting points: the commercial product freezes around 0°C.

NFPA Code: H1; F1; R0

ADDITIONAL INFORMATION

ICSC: 0261 **DIMETHYL PHTHALATE**

(C) IPCS, CEC, 1994

IMPORTANT LEGAL NOTICE:

Neither NIOSH, the CEC or the IPCS nor any person acting on behalf of NIOSH, the CEC or the IPCS is responsible for the use which might be made of this information. This card contains the collective views of the IPCS Peer Review Committee and may not reflect in all cases all the detailed requirements included in national legislation on the subject. The user should verify compliance of the cards with the relevant legislation in the country of use. The only modifications made to produce the U.S. version is inclusion of the OSHA PELs, NIOSH RELs and NIOSH IDLH values.

International Chemical Safety Cards

DIBUTYL PHTHALATE

ICSC: 0036

1,2-Benzenedicarboxylic acid dibutyl ester
Di-n-butyl phthalate
$C_{16}H_{22}O_4$ / $C_6H_4(COOC_4H_9)_2$
Molecular mass: 278.3

ICSC # 0036
CAS # 84-74-2
RTECS # TI0875000
UN # 3082
EC # 607-318-00-4
July 03, 2002 Validated

TYPES OF HAZARD/ EXPOSURE	ACUTE HAZARDS/ SYMPTOMS	PREVENTION	FIRST AID/ FIRE FIGHTING
FIRE	Combustible.	NO open flames.	Foam, dry powder, carbon dioxide.
EXPLOSION			
EXPOSURE		PREVENT GENERATION OF MISTS! AVOID ALL CONTACT!	
•INHALATION		Ventilation.	Fresh air, rest.
•SKIN		Protective gloves.	Remove contaminated clothes. Rinse skin with plenty of water or shower.
•EYES	Redness. Pain.	Safety goggles.	First rinse with plenty of water for several minutes (remove contact lenses if easily possible), then take to a doctor.
•INGESTION	Abdominal pain. Diarrhoea. Nausea. Vomiting.	Do not eat, drink, or smoke during work.	Rinse mouth. Refer for medical attention.

SPILLAGE DISPOSAL	STORAGE	PACKAGING & LABELLING
Collect leaking liquid in covered containers. Absorb remaining liquid in vermiculite, sand or inert absorbent and remove to safe place. Do NOT let this chemical enter the environment.	Separated from strong oxidants. Store in an area without drain or sewer access.	T symbol N symbol R: 61-62-50 S: 53-45-61 UN Hazard Class: 9 UN Packing Group: III

SEE IMPORTANT INFORMATION ON BACK

ICSC: 0036

Prepared in the context of cooperation between the International Programme on Chemical Safety & the Commission of the European Communities (C) IPCS CEC 1994. No modifications to the International version have been made except to add the OSHA PELs, NIOSH RELs and NIOSH IDLH values.

International Chemical Safety Cards

DIBUTYL PHTHALATE

ICSC: 0036

I M P O R T A N T D A T A

PHYSICAL STATE; APPEARANCE:
COLOURLESS TO YELLOW VISCOUS LIQUID , WITH CHARACTERISTIC ODOUR.

PHYSICAL DANGERS:
As a result of flow, agitation, etc., electrostatic charges can be generated.

CHEMICAL DANGERS:
The substance decomposes on burning producing toxic and irritating fumes (phthalic anhydride, ICSC 0315). Reacts with strong oxidants.

OCCUPATIONAL EXPOSURE LIMITS:
TLV: 5 mg/m³ as TWA (ACGIH 2001).
MAK: 0.05 ppm 0.58 mg/m³
Peak limitation category: I(2); Carcinogen category: 4; Pregnancy risk group: C (DFG 2009).
OSHA PEL: TWA 5 mg/m^3
NIOSH REL: TWA 5 mg/m^3
NIOSH IDLH: 4000 mg/m^3 See: 84742

ROUTES OF EXPOSURE:
The substance can be absorbed into the body by inhalation of its aerosol and by ingestion .

INHALATION RISK:
A harmful contamination of the air will not or will only very slowly be reached on evaporation of this substance at 20°C.

EFFECTS OF SHORT-TERM EXPOSURE:

EFFECTS OF LONG-TERM OR REPEATED EXPOSURE:
Animal tests show that this substance possibly causes toxicity to human reproduction or development.

PHYSICAL PROPERTIES

Boiling point: 340°C
Melting point: -35°C
Relative density (water = 1): 1.05
Solubility in water, g/100 ml at 25°C: 0.001
Vapour pressure, kPa at 20°C: < 0.01
Relative vapour density (air = 1): 9.58

Relative density of the vapour/air-mixture at 20°C (air = 1): 1.00
Flash point: 157°C c.c.
Auto-ignition temperature: 402°C
Explosive limits, vol% in air: 0.5 (at 235°C) to about 2.5
Octanol/water partition coefficient as log Pow: 4.72

ENVIRONMENTAL DATA

The substance is toxic to aquatic organisms.

N O T E S

NFPA Code: H0; F1; R0.

Transport Emergency Card: TEC (R)-90GM6-III
Card has been partially updated in April 2010: see Occupational Exposure Limits.

ADDITIONAL INFORMATION

ICSC: 0036 **DIBUTYL PHTHALATE**

(C) IPCS, CEC, 1994

IMPORTANT LEGAL NOTICE:	Neither NIOSH, the CEC or the IPCS nor any person acting on behalf of NIOSH, the CEC or the IPCS is responsible for the use which might be made of this information. This card contains the collective views of the IPCS Peer Review Committee and may not reflect in all cases all the detailed requirements included in national legislation on the subject. The user should verify compliance of the cards with the relevant legislation in the country of use. The only modifications made to produce the U.S. version is inclusion of the OSHA PELs, NIOSH RELs and NIOSH IDLH values.

Material Safety Data Sheet

Version 3.0
Revision Date 08/24/2008
Print Date 12/09/2011

1. PRODUCT AND COMPANY IDENTIFICATION

Product name : Di-n-octyl phthalate

Product Number : 80153
Brand : Aldrich

Company : Sigma-Aldrich
3050 Spruce Street
SAINT LOUIS MO 63103
USA
Telephone : +1 800-325-5832
Fax : +1 800-325-5052
Emergency Phone # : (314) 776-6555

2. COMPOSITION/INFORMATION ON INGREDIENTS

Formula : C24H38O4
Molecular Weight : 390.56 g/mol

CAS-No.	EC-No.	Index-No.	Concentration
Dioctyl phthalate			
117-84-0	204-214-7	-	-

3. HAZARDS IDENTIFICATION

Emergency Overview

OSHA Hazards
Reproductive hazard

Target Organs

Liver

HMIS Classification

Health Hazard: 1
Chronic Health Hazard: *
Flammability: 0
Physical hazards: 0

NFPA Rating

Health Hazard: 1
Fire: 0
Reactivity Hazard: 0

Potential Health Effects

Inhalation May be harmful if inhaled. May cause respiratory tract irritation.
Skin May be harmful if absorbed through skin. May cause skin irritation.

Eyes	May cause eye irritation.
Ingestion	May be harmful if swallowed.

4. FIRST AID MEASURES

General advice
Move out of dangerous area.

If inhaled
If breathed in, move person into fresh air. If not breathing give artificial respiration

In case of skin contact
Wash off with soap and plenty of water.

In case of eye contact
Flush eyes with water as a precaution.

If swallowed
Never give anything by mouth to an unconscious person. Rinse mouth with water.

5. FIRE-FIGHTING MEASURES

Flammable properties

Flash point	109.0 °C (228.2 °F) - closed cup
Ignition temperature	no data available

Suitable extinguishing media
Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

Special protective equipment for fire-fighters
Wear self contained breathing apparatus for fire fighting if necessary.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions
Avoid breathing vapors, mist or gas.

Environmental precautions
Do not let product enter drains.

Methods for cleaning up
Keep in suitable, closed containers for disposal.

7. HANDLING AND STORAGE

Handling
Normal measures for preventive fire protection.

Storage
Keep container tightly closed in a dry and well-ventilated place.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Contains no substances with occupational exposure limit values.

Personal protective equipment

Respiratory protection
Respiratory protection is not required. Where protection is desired, use multi-purpose combination (US) or type ABEK (EN 14387) respirator cartridges. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

Hand protection
Handle with gloves.

Eye protection
Safety glasses

Hygiene measures
General industrial hygiene practice.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance

Form	liquid, clear, viscous
Colour	colourless

Safety data

pH	no data available
Melting point	no data available
Boiling point	no data available
Flash point	109.0 °C (228.2 °F) - closed cup
Ignition temperature	no data available
Lower explosion limit	no data available
Upper explosion limit	no data available
Density	0.98 g/mL at 20 °C (68 °F)
Water solubility	no data available

10. STABILITY AND REACTIVITY

Storage stability
Stable under recommended storage conditions.

Materials to avoid
Strong oxidizing agents

Hazardous decomposition products
Hazardous decomposition products formed under fire conditions. - Carbon oxides

11. TOXICOLOGICAL INFORMATION

Acute toxicity

LD50 Oral - rat - 47,000 mg/kg

LD50 Dermal - guinea pig - > 5,000 mg/kg

Irritation and corrosion

Skin - rabbit - Mild skin irritation - 24 h

Eyes - rabbit - Mild eye irritation - 24 h

Sensitisation

no data available

Chronic exposure

IARC: No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

ACGIH: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH.

NTP: No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

OSHA: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

Overexposure may cause reproductive disorder(s) based on tests with laboratory animals.

Signs and Symptoms of Exposure

To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

Potential Health Effects

Inhalation	May be harmful if inhaled. May cause respiratory tract irritation.
Skin	May be harmful if absorbed through skin. May cause skin irritation.
Eyes	May cause eye irritation.
Ingestion	May be harmful if swallowed.
Target Organs	Liver,

Additional Information
RTECS: TI1925000

12. ECOLOGICAL INFORMATION

Elimination information (persistence and degradability)

Bioaccumulation	Gambusia affinis (Mosquito fish) - 33 d Bioconcentration factor (BCF): 9,400

Ecotoxicity effects

Toxicity to fish	NOEC - Cyprinodon variegatus (sheepshead minnow) - 168 mg/l - 96 h

Further information on ecology

no data available

13. DISPOSAL CONSIDERATIONS

Product
Observe all federal, state, and local environmental regulations. Contact a licensed professional waste disposal service to dispose of this material.

Contaminated packaging
Dispose of as unused product.

14. TRANSPORT INFORMATION

DOT (US)
UN-Number: 3082 Class: 9 Packing group: III
Proper shipping name: Environmentally hazardous substances, liquid, n.o.s. (Dioctyl phthalate)
Marine pollutant: No

Poison Inhalation Hazard: No

IMDG
Not dangerous goods

IATA
Not dangerous goods

15. REGULATORY INFORMATION

OSHA Hazards
Reproductive hazard

DSL Status
All components of this product are on the Canadian DSL list.

SARA 302 Components
SARA 302: No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

SARA 313 Components
SARA 313: This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

SARA 311/312 Hazards
Chronic Health Hazard

Massachusetts Right To Know Components

	CAS-No.	Revision Date
Dioctyl phthalate	117-84-0	1989-12-01

Pennsylvania Right To Know Components

	CAS-No.	Revision Date
Dioctyl phthalate	117-84-0	1989-12-01

New Jersey Right To Know Components

	CAS-No.	Revision Date
Dioctyl phthalate	117-84-0	1989-12-01

California Prop. 65 Components
This product does not contain any chemicals known to State of California to cause cancer, birth, or any other reproductive defects.

16. OTHER INFORMATION

Further information
Copyright 2008 Sigma-Aldrich Co. License granted to make unlimited paper copies for internal use only.
The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. Sigma-Aldrich Co., shall not be held liable for any damage resulting from handling or from contact with the above product. See reverse side of invoice or packing slip for additional terms and conditions of sale.

Material Safety Data Sheet

Version 4.2
Revision Date 05/19/2011
Print Date 12/09/2011

1. PRODUCT AND COMPANY IDENTIFICATION

Product name	:	Fluoranthene
Product Number	:	423947
Brand	:	Aldrich
Supplier	:	Sigma-Aldrich 3050 Spruce Street SAINT LOUIS MO 63103 USA
Telephone	:	+1 800-325-5832
Fax	:	+1 800-325-5052
Emergency Phone # (For both supplier and manufacturer)	:	(314) 776-6555
Preparation Information	:	Sigma-Aldrich Corporation Product Safety - Americas Region 1-800-521-8956

2. HAZARDS IDENTIFICATION

Emergency Overview

OSHA Hazards
Harmful by ingestion., Carcinogen

GHS Classification
Acute toxicity, Oral (Category 4)
Acute toxicity, Dermal (Category 5)
Acute aquatic toxicity (Category 1)
Chronic aquatic toxicity (Category 1)

GHS Label elements, including precautionary statements

Pictogram

Signal word Warning

Hazard statement(s)

H302	Harmful if swallowed.
H313	May be harmful in contact with skin.
H410	Very toxic to aquatic life with long lasting effects.

Precautionary statement(s)

P273	Avoid release to the environment.
P501	Dispose of contents/ container to an approved waste disposal plant.

HMIS Classification

Health hazard:	1
Chronic Health Hazard:	*
Flammability:	1
Physical hazards:	0

NFPA Rating

Health hazard:	1
Fire:	1
Reactivity Hazard:	0

Potential Health Effects

Inhalation	May be harmful if inhaled. May cause respiratory tract irritation.
Skin	Harmful if absorbed through skin. May cause skin irritation.
Eyes	May cause eye irritation.
Ingestion	Harmful if swallowed.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Synonyms : Benzo[*j*,*k*]fluorene

Formula : $C_{16}H_{10}$

Molecular Weight : 202.25 g/mol

CAS-No.	EC-No.	Index-No.	Concentration
Fluoranthene			
206-44-0	205-912-4	-	-

4. FIRST AID MEASURES

General advice
Consult a physician. Show this safety data sheet to the doctor in attendance.Move out of dangerous area.

If inhaled
If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.

In case of skin contact
Wash off with soap and plenty of water. Consult a physician.

In case of eye contact
Flush eyes with water as a precaution.

If swallowed
Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

5. FIRE-FIGHTING MEASURES

Suitable extinguishing media
Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

Special protective equipment for fire-fighters
Wear self contained breathing apparatus for fire fighting if necessary.

Hazardous combustion products
Hazardous decomposition products formed under fire conditions. - Carbon oxides

6. ACCIDENTAL RELEASE MEASURES

Personal precautions
Use personal protective equipment. Avoid dust formation. Avoid breathing vapors, mist or gas. Ensure adequate ventilation. Avoid breathing dust.

Environmental precautions
Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.

Methods and materials for containment and cleaning up
Pick up and arrange disposal without creating dust. Sweep up and shovel. Keep in suitable, closed containers for disposal.

7. HANDLING AND STORAGE

Precautions for safe handling
Avoid contact with skin and eyes. Avoid formation of dust and aerosols.
Provide appropriate exhaust ventilation at places where dust is formed. Normal measures for preventive fire protection.

Conditions for safe storage
Keep container tightly closed in a dry and well-ventilated place.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Contains no substances with occupational exposure limit values.

Personal protective equipment

Respiratory protection
For nuisance exposures use type P95 (US) or type P1 (EU EN 143) particle respirator.For higher level protection use type OV/AG/P99 (US) or type ABEK-P2 (EU EN 143) respirator cartridges. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

Hand protection
Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

Eye protection
Safety glasses with side-shields conforming to EN166 Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

Skin and body protection
Complete suit protecting against chemicals, The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

Hygiene measures
Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance

Form	solid
Colour	no data available

Safety data

pH	no data available
Melting point/freezing point	Melting point/range: 105 - 110 °C (221 - 230 °F) - lit.
Boiling point	384 °C (723 °F) - lit.
Flash point	198.0 °C (388.4 °F) - closed cup
Ignition temperature	no data available
Autoignition temperature	no data available
Lower explosion limit	no data available
Upper explosion limit	no data available
Vapour pressure	no data available
Density	no data available
Water solubility	no data available
Partition coefficient: n-octanol/water	no data available
Relative vapour density	no data available
Odour	no data available

Odour Threshold	no data available
Evaporation rate	no data available

10. STABILITY AND REACTIVITY

Chemical stability
Stable under recommended storage conditions.

Possibility of hazardous reactions
no data available

Conditions to avoid
no data available

Materials to avoid
Strong oxidizing agents

Hazardous decomposition products
Hazardous decomposition products formed under fire conditions. - Carbon oxides
Other decomposition products - no data available

11. TOXICOLOGICAL INFORMATION

Acute toxicity

Oral LD50
LD50 Oral - rat - 2,000 mg/kg

Inhalation LC50
no data available

Dermal LD50
LD50 Dermal - rabbit - 3,180 mg/kg

Other information on acute toxicity
no data available

Skin corrosion/irritation
no data available

Serious eye damage/eye irritation
no data available

Respiratory or skin sensitization
no data available

Germ cell mutagenicity
Laboratory experiments have shown mutagenic effects.

Carcinogenicity

This product is or contains a component that is not classifiable as to its carcinogenicity based on its IARC, ACGIH, NTP, or EPA classification.

IARC:	3 - Group 3: Not classifiable as to its carcinogenicity to humans (Fluoranthene)
ACGIH:	No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH.
NTP:	Reasonably anticipated to be human carcinogens. (Fluoranthene)
	Reasonably anticipated to be a human carcinogen (Fluoranthene)
OSHA:	No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

Reproductive toxicity

no data available

Teratogenicity

no data available

Specific target organ toxicity - single exposure (Globally Harmonized System)
no data available

Specific target organ toxicity - repeated exposure (Globally Harmonized System)
no data available

Aspiration hazard
no data available

Potential health effects

Inhalation	May be harmful if inhaled. May cause respiratory tract irritation.
Ingestion	Harmful if swallowed.
Skin	Harmful if absorbed through skin. May cause skin irritation.
Eyes	May cause eye irritation.

Signs and Symptoms of Exposure
To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

Synergistic effects
no data available

Additional Information
RTECS: LL4025000

12. ECOLOGICAL INFORMATION

Toxicity

Toxicity to fish	LC50 - Oncorhynchus mykiss (rainbow trout) - 0.0077 mg/l - 96 h
	NOEC - Cyprinodon variegatus (sheepshead minnow) - 560 mg/l - 96 h
Toxicity to daphnia and other aquatic invertebrates.	Immobilization EC50 - Daphnia magna (Water flea) - > 0.005 - < 0.01 mg/l - 3 d
	Immobilization EC50 - Daphnia magna (Water flea) - 0.78 mg/l - 20 h
	NOEC - Daphnia magna (Water flea) - 0.085 mg/l - 48 h

Persistence and degradability
no data available

Bioaccumulative potential
no data available

Mobility in soil
no data available

PBT and vPvB assessment
no data available

Other adverse effects

An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.

Very toxic to aquatic life with long lasting effects.

no data available

13. DISPOSAL CONSIDERATIONS

Product
Offer surplus and non-recyclable solutions to a licensed disposal company. Contact a licensed professional waste disposal service to dispose of this material. Dissolve or mix the material with a combustible solvent and burn in a chemical incinerator equipped with an afterburner and scrubber.

Contaminated packaging
Dispose of as unused product.

14. TRANSPORT INFORMATION

DOT (US)
UN number: 3077 Class: 9 Packing group: III
Proper shipping name: Environmentally hazardous substances, solid, n.o.s. (Fluoranthene)
Reportable Quantity (RQ): 100 lbs
Marine pollutant: No
Poison Inhalation Hazard: No

IMDG
Not dangerous goods

IATA
Not dangerous goods

15. REGULATORY INFORMATION

OSHA Hazards
Harmful by ingestion., Carcinogen

SARA 302 Components
SARA 302: No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

SARA 313 Components
The following components are subject to reporting levels established by SARA Title III, Section 313:

	CAS-No.	Revision Date
Fluoranthene	206-44-0	2007-03-01

SARA 311/312 Hazards
Acute Health Hazard, Chronic Health Hazard

Massachusetts Right To Know Components

	CAS-No.	Revision Date
Fluoranthene	206-44-0	2007-03-01

Pennsylvania Right To Know Components

	CAS-No.	Revision Date
Fluoranthene	206-44-0	2007-03-01

New Jersey Right To Know Components

	CAS-No.	Revision Date
Fluoranthene	206-44-0	2007-03-01

California Prop. 65 Components

	CAS-No.	Revision Date
WARNING! This product contains a chemical known to the State of California to cause cancer. Fluoranthene	206-44-0	1990-01-01

16. OTHER INFORMATION

Further information
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The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. Sigma-Aldrich Co., shall not be held liable for any damage resulting from handling or from contact with the above product. See reverse side of invoice or packing slip for additional terms and conditions of sale.

Material Safety Data Sheet

Version 3.1
Revision Date 10/15/2010
Print Date 12/09/2011

1. PRODUCT AND COMPANY IDENTIFICATION

Product name : Fluorene

Product Number : 46880
Brand : Aldrich
Product Use : For laboratory research purposes.

Supplier : Sigma-Aldrich
3050 Spruce Street
SAINT LOUIS MO 63103
USA

Manufacturer : Sigma-Aldrich Corporation
3050 Spruce St.
St. Louis, Missouri 63103
USA

Telephone : +1 800-325-5832
Fax : +1 800-325-5052
Emergency Phone # (For both supplier and manufacturer) : (314) 776-6555
Preparation Information : Sigma-Aldrich Corporation
Product Safety - Americas Region
1-800-521-8956

2. HAZARDS IDENTIFICATION

Emergency Overview

OSHA Hazards
No known OSHA hazards

GHS Classification
Acute aquatic toxicity (Category 1)
Chronic aquatic toxicity (Category 1)

GHS Label elements, including precautionary statements

Pictogram

Signal word Warning

Hazard statement(s)
H410 Very toxic to aquatic life with long lasting effects.

Precautionary statement(s)
P273 Avoid release to the environment.
P501 Dispose of contents/ container to an approved waste disposal plant.

HMIS Classification
Health hazard: 1
Flammability: 1
Physical hazards: 0

NFPA Rating
Health hazard: 1
Fire: 1
Reactivity Hazard: 0

Potential Health Effects

Inhalation May be harmful if inhaled. May cause respiratory tract irritation.
Skin May be harmful if absorbed through skin. May cause skin irritation.

Eyes	May cause eye irritation.
Ingestion	May be harmful if swallowed.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Formula : $C_{13}H_{10}$
Molecular Weight : 166.22 g/mol

CAS-No.	EC-No.	Index-No.	Concentration
Fluorene			
86-73-7	201-695-5	-	-

4. FIRST AID MEASURES

General advice
Consult a physician. Show this safety data sheet to the doctor in attendance.

If inhaled
If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.

In case of skin contact
Wash off with soap and plenty of water. Consult a physician.

In case of eye contact
Flush eyes with water as a precaution.

If swallowed
Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

5. FIRE-FIGHTING MEASURES

Suitable extinguishing media
Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

Special protective equipment for fire-fighters
Wear self contained breathing apparatus for fire fighting if necessary.

Hazardous combustion products
Hazardous decomposition products formed under fire conditions. - Carbon oxides

6. ACCIDENTAL RELEASE MEASURES

Personal precautions
Avoid dust formation. Avoid breathing vapors, mist or gas. Ensure adequate ventilation.

Environmental precautions
Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.

Methods and materials for containment and cleaning up
Pick up and arrange disposal without creating dust. Sweep up and shovel. Keep in suitable, closed containers for disposal.

7. HANDLING AND STORAGE

Precautions for safe handling
Provide appropriate exhaust ventilation at places where dust is formed. Normal measures for preventive fire protection.

Conditions for safe storage
Keep container tightly closed in a dry and well-ventilated place.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Contains no substances with occupational exposure limit values.

Personal protective equipment

Respiratory protection
Respiratory protection is not required. Where protection from nuisance levels of dusts are desired, use type N95 (US) or type P1 (EN 143) dust masks. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

Hand protection
Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

Eye protection
Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

Skin and body protection
Choose body protection in relation to its type, to the concentration and amount of dangerous substances, and to the specific work-place., The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

Hygiene measures
Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance

Form	crystalline
Colour	white

Safety data

pH	no data available
Melting/freezing point	Melting point/range: 113 - 115 °C (235 - 239 °F)
	Melting point/range: 111 - 114 °C (232 - 237 °F) - lit.
Boiling point	298 °C (568 °F) - lit.
Flash point	151.0 °C (303.8 °F) - closed cup
Ignition temperature	no data available
Autoignition temperature	no data available
Lower explosion limit	no data available
Upper explosion limit	no data available
Vapour pressure	no data available
Density	no data available
Water solubility	no data available
Partition coefficient: n-octanol/water	no data available
Relative vapour density	no data available
Odour	no data available

Odour Threshold	no data available
Evaporation rate	no data available

10. STABILITY AND REACTIVITY

Chemical stability
Stable under recommended storage conditions.

Possibility of hazardous reactions
no data available

Conditions to avoid
no data available

Materials to avoid
Strong oxidizing agents

Hazardous decomposition products
Hazardous decomposition products formed under fire conditions. - Carbon oxides

11. TOXICOLOGICAL INFORMATION

Acute toxicity

Oral LD50
Inhalation LC50
no data available

Dermal LD50
no data available

Other information on acute toxicity
LD50 Intraperitoneal - mouse - > 2.0 mg/kg

Skin corrosion/irritation
no data available

Serious eye damage/eye irritation
no data available

Respiratory or skin sensitization
no data available

Germ cell mutagenicity

no data available

Carcinogenicity

This product is or contains a component that is not classifiable as to its carcinogenicity based on its IARC, ACGIH, NTP, or EPA classification.

IARC:	3 - Group 3: Not classifiable as to its carcinogenicity to humans (Fluorene)
ACGIH:	No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH.
NTP:	No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.
OSHA:	No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

Reproductive toxicity

Teratogenicity

no data available

Specific target organ toxicity - single exposure (Globally Harmonized System)
no data available

Specific target organ toxicity - repeated exposure (Globally Harmonized System)
no data available

Aspiration hazard
no data available

Potential health effects

Inhalation	May be harmful if inhaled. May cause respiratory tract irritation.
Ingestion	May be harmful if swallowed.
Skin	May be harmful if absorbed through skin. May cause skin irritation.
Eyes	May cause eye irritation.

Signs and Symptoms of Exposure
To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

Synergistic effects
no data available

Additional Information
RTECS: LL5670000

12. ECOLOGICAL INFORMATION

Toxicity

Toxicity to fish	LC50 - Fish - 0.82 mg/l - 96 h
Toxicity to daphnia and other aquatic invertebrates.	Remarks: no data available
Toxicity to algae	EC50 - Algae - 3.4 mg/l - 96 h

Persistence and degradability

Bioaccumulative potential

Bioaccumulation	Oncorhynchus mykiss (rainbow trout) - 24 h Bioconcentration factor (BCF): 512

Mobility in soil
Adsorbs on soil.

PBT and vPvB assessment
no data available

Other adverse effects

An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.

Very toxic to aquatic life with long lasting effects.

no data available

13. DISPOSAL CONSIDERATIONS

Product
Offer surplus and non-recyclable solutions to a licensed disposal company.

Contaminated packaging
Dispose of as unused product.

14. TRANSPORT INFORMATION

DOT (US)
Not dangerous goods

IMDG
UN-Number: 3077 Class: 9 Packing group: III EMS-No: F-A, S-F
Proper shipping name: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (Fluorene)
Marine pollutant: Marine pollutant

IATA
UN-Number: 3077 Class: 9 Packing group: III
Proper shipping name: Environmentally hazardous substance, solid, n.o.s. (Fluorene)

Further information
EHS-Mark required (ADR 2.2.9.1.10, IMDG code 2.10.3) for single packagings and combination packagings containing inner packagings with Dangerous Goods > 5L for liquids or > 5kg for solids.

15. REGULATORY INFORMATION

OSHA Hazards
No known OSHA hazards

DSL Status
All components of this product are on the Canadian DSL list.

SARA 302 Components
SARA 302: No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

SARA 313 Components
SARA 313: This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

SARA 311/312 Hazards
No SARA Hazards

Massachusetts Right To Know Components

	CAS-No.	Revision Date
Fluorene	86-73-7	2007-03-01

Pennsylvania Right To Know Components

	CAS-No.	Revision Date
Fluorene	86-73-7	2007-03-01

New Jersey Right To Know Components

	CAS-No.	Revision Date
Fluorene	86-73-7	2007-03-01

California Prop. 65 Components
This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.

16. OTHER INFORMATION

Further information
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The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. Sigma-Aldrich Co., shall not be held liable for any damage resulting from handling or from contact with the above product. See reverse side of invoice or packing slip for additional terms and conditions of sale.

International Chemical Safety Cards

HEXACHLOROBENZENE

ICSC: 0895

Perchlorobenzene
HCB
Pentachlorophenylchloride
Phenyl perchloryl
C_6Cl_6
Molecular mass: 284.8

ICSC # 0895
CAS # 118-74-1
RTECS # DA2975000
UN # 2729
EC # 602-065-00-6
March 24, 1999 Validated

TYPES OF HAZARD/ EXPOSURE	ACUTE HAZARDS/ SYMPTOMS	PREVENTION	FIRST AID/ FIRE FIGHTING
FIRE	Combustible.	NO open flames.	Water spray, foam, powder, carbon dioxide.
EXPLOSION			
EXPOSURE		PREVENT DISPERSION OF DUST! AVOID ALL CONTACT!	
•INHALATION		Local exhaust or breathing protection.	Fresh air, rest. Refer for medical attention.
•SKIN	MAY BE ABSORBED!	Protective gloves. Protective clothing.	Rinse and then wash skin with water and soap. Refer for medical attention.
•EYES		Face shield or eye protection in combination with breathing protection.	First rinse with plenty of water for several minutes (remove contact lenses if easily possible), then take to a doctor.
•INGESTION		Do not eat, drink, or smoke during work.	Rinse mouth. Refer for medical attention.

SPILLAGE DISPOSAL	STORAGE	PACKAGING & LABELLING
Sweep spilled substance into sealable containers. Carefully collect remainder, then remove to safe place. Do NOT let this chemical enter the environment. Personal protection: P3 filter respirator for toxic particles. Chemical protection	Separated from food and feedstuffs . Well closed.	Do not transport with food and feedstuffs. Note: E T symbol N symbol R: 45-48/25-50/53

suit.		S: 53-45-60-61 UN Hazard Class: 6.1 UN Packing Group: III

SEE IMPORTANT INFORMATION ON BACK

ICSC: 0895

Prepared in the context of cooperation between the International Programme on Chemical Safety & the Commission of the European Communities (C) IPCS CEC 1994. No modifications to the International version have been made except to add the OSHA PELs, NIOSH RELs and NIOSH IDLH values.

International Chemical Safety Cards

HEXACHLOROBENZENE

ICSC: 0895

IMPORTANT DATA

PHYSICAL STATE; APPEARANCE:
COLOURLESS TO WHITE SOLID IN VARIOUS FORMS.

PHYSICAL DANGERS:

CHEMICAL DANGERS:
The substance decomposes on heating producing toxic fumes.

OCCUPATIONAL EXPOSURE LIMITS:
TLV: 0.002 mg/m³ as TWA; (skin); A3 (confirmed animal carcinogen with unknown relevance to humans); (ACGIH 2004).
MAK: skin absorption (H);
Carcinogen category: 4; Pregnancy risk group: D;
(DFG 2004).

ROUTES OF EXPOSURE:
The substance can be absorbed into the body by inhalation of its aerosol, through the skin and by ingestion.

INHALATION RISK:
Evaporation at 20°C is negligible; a harmful concentration of airborne particles can, however, be reached quickly on spraying.

EFFECTS OF SHORT-TERM EXPOSURE:

EFFECTS OF LONG-TERM OR REPEATED EXPOSURE:
The substance may have effects on the liver and nervous system , resulting in impaired functions of organs and skin lesions. This substance is possibly carcinogenic to humans. Animal tests show that this substance possibly causes toxic effects upon human reproduction.

PHYSICAL PROPERTIES

Boiling point: 323-326°C
Melting point: 231°C
Density: 1.21 g/cm³
Solubility in water, g/100 ml at 20°C: 0.0000005

Vapour pressure, Pa at 20°C: 0.001
Relative vapour density (air = 1): 9.8
Flash point: 242°C c.c.
Octanol/water partition coefficient as log Pow: 5.5-6.2

ENVIRONMENTAL DATA

The substance is very toxic to aquatic organisms. Bioaccumulation of this chemical may occur specifically in plants and in fish. The substance may cause long-term effects in the aquatic environment. This substance does enter the environment under normal use. Great care, however, should be given to avoid any additional release, e.g. through inappropriate disposal.

NOTES

Depending on the degree of exposure, periodic medical examination is suggested. Do NOT take working clothes home. Amatin, Anticarie, Bunt-cure, No Bunt 80, Bunt-no-more (Dow chemicals), Co-op-hexa (Bayer chemicals), Sanocide, Snieciotox are trade names. Card has been partly updated in October 2005. See sections Occupational Exposure Limits, Emergency Response.

Transport Emergency Card: TEC (R)-61GT2-III

ADDITIONAL INFORMATION

ICSC: 0895 **HEXACHLOROBENZENE**

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International Chemical Safety Cards

HEXACHLOROBUTADIENE

ICSC: 0896

1,1,2,3,4,4-Hexachloro-1,3-butadiene
Perchlorobutadiene
C_4Cl_6 / CCl_2=$CClCCl$=CCl_2
Molecular mass: 260.8

ICSC # 0896
CAS # 87-68-3
RTECS # EJ0700000
UN # 2279
August 10, 1997 Validated

TYPES OF HAZARD/ EXPOSURE	ACUTE HAZARDS/ SYMPTOMS	PREVENTION	FIRST AID/ FIRE FIGHTING
FIRE	Combustible. Gives off irritating or toxic fumes (or gases) in a fire.	NO open flames.	Powder, water spray, foam, carbon dioxide.
EXPLOSION			In case of fire: keep drums, etc., cool by spraying with water.
EXPOSURE		AVOID ALL CONTACT!	
•INHALATION	Burning sensation. Cough. Sore throat. Symptoms may be delayed (see Notes). Coma.	Ventilation, local exhaust, or breathing protection.	Fresh air, rest. Refer for medical attention.
•SKIN	MAY BE ABSORBED! Pain. Redness. Blisters. Skin burns.	Protective gloves. Protective clothing.	Remove contaminated clothes. Rinse skin with plenty of water or shower. Refer for medical attention.
•EYES	Pain. Redness. Severe deep burns. Loss of vision.	Face shield, or eye protection in combination with breathing protection.	First rinse with plenty of water for several minutes (remove contact lenses if easily possible), then take to a doctor.
•INGESTION	Burning sensation. Abdominal pain. Shock or collapse.	Do not eat, drink, or smoke during work.	Rinse mouth. Do NOT induce vomiting. Give one or two glasses of water to drink. Refer for medical attention.

SPILLAGE DISPOSAL	STORAGE	PACKAGING & LABELLING
Collect leaking and spilled liquid in sealable containers as far as possible. Absorb remaining liquid in sand or inert absorbent and remove to safe place. Do NOT let this chemical enter the environment. (Extra personal	Separated from food and feedstuffs. Well closed. Ventilation along the floor. Store in an area without drain or sewer access. Provision to contain effluent from fire extinguishing.	Do not transport with food and feedstuffs. Severe marine pollutant. UN Hazard Class: 6.1 UN Packing Group: III

protection: complete protective clothing including self-contained breathing apparatus).		

SEE IMPORTANT INFORMATION ON BACK

ICSC: 0896

Prepared in the context of cooperation between the International Programme on Chemical Safety & the Commission of the European Communities (C) IPCS CEC 1994. No modifications to the International version have been made except to add the OSHA PELs, NIOSH RELs and NIOSH IDLH values.

International Chemical Safety Cards

HEXACHLOROBUTADIENE

ICSC: 0896

IMPORTANT DATA

PHYSICAL STATE; APPEARANCE:
COLOURLESS LIQUID , WITH CHARACTERISTIC ODOUR.

PHYSICAL DANGERS:

CHEMICAL DANGERS:
The substance decomposes on burning producing toxic and corrosive fumes including hydrogen chloride and phosgene. Attacks rubber and some forms of plastic.

OCCUPATIONAL EXPOSURE LIMITS:
TLV (as TWA): 0.02 ppm; 0.21 mg/m³ A3 (skin) (ACGIH 1997).
MAK: skin absorption (H); Carcinogen category: 3B (DFG 2008).
OSHA PEL†: none
NIOSH REL: Ca TWA 0.02 ppm (0.24 mg/m^3) skin See Appendix A
NIOSH IDLH: Ca N.D. See: IDLH INDEX

ROUTES OF EXPOSURE:
The substance can be absorbed into the body by inhalation of its vapour, through the skin and by ingestion.

INHALATION RISK:
A harmful contamination of the air can be reached rather quickly on evaporation of this substance at 20°C.

EFFECTS OF SHORT-TERM EXPOSURE:
The vapour irritates the eyes, the skin and the respiratory tract. The liquid is corrosive. The substance may cause effects on the kidneys.

EFFECTS OF LONG-TERM OR REPEATED EXPOSURE:
Repeated or prolonged contact may cause skin sensitization. May cause genetic damage in humans.

PHYSICAL PROPERTIES

Boiling point: 212°C
Melting point: -18°C
Relative density (water = 1): 1.68
Solubility in water: none
Vapour pressure, Pa at 20°C: 20

Relative vapour density (air = 1): 9.0
Relative density of the vapour/air-mixture at 20°C (air = 1): 1.00
Flash point: 90°C
Auto-ignition temperature: 610°C
Octanol/water partition coefficient as log Pow: 4.90

ENVIRONMENTAL DATA

The substance is toxic to aquatic organisms. In the food chain important to humans, bioaccumulation takes place, specifically in fish. The substance may cause long-term effects in the aquatic environment.

NOTES

Transport Emergency Card: TEC (R)-613

NFPA Code: H2; F1; R1;
Card has been partially updated in November 2008: see Occupational Exposure Limits,

ADDITIONAL INFORMATION	

ICSC: 0896 **HEXACHLOROBUTADIENE**

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International Chemical Safety Cards

HEXACHLOROCYCLOPENTADIENE

ICSC: 1096

1,2,3,4,5,5-Hexachloro-1,3-cyclopentadiene
Perchlorocyclopentadiene
C_5Cl_6
Molecular mass: 272.7

ICSC # 1096
CAS # 77-47-4
RTECS # GY1225000
UN # 2646
EC # 602-078-00-7
October 19, 2005 Validated

TYPES OF HAZARD/ EXPOSURE	ACUTE HAZARDS/ SYMPTOMS	PREVENTION	FIRST AID/ FIRE FIGHTING
FIRE	Not combustible. Gives off irritating or toxic fumes (or gases) in a fire.		In case of fire in the surroundings: use appropriate extinguishing media.
EXPLOSION			
EXPOSURE		AVOID ALL CONTACT!	IN ALL CASES CONSULT A DOCTOR!
•INHALATION	Cough. Sore throat. Headache. Diarrhoea. Dizziness. Nausea. Vomiting. Laboured breathing.	Ventilation, local exhaust, or breathing protection.	Fresh air, rest. Half-upright position. Artificial respiration may be needed. Refer for medical attention.
•SKIN	MAY BE ABSORBED! Redness. Pain. Skin burns.	Protective gloves. Protective clothing.	Remove contaminated clothes. Rinse skin with plenty of water or shower. Refer for medical attention.
•EYES	Redness. Pain. Blurred vision. Severe deep burns.	Face shield or eye protection in combination with breathing protection.	First rinse with plenty of water for several minutes (remove contact lenses if easily possible), then take to a doctor.
•INGESTION	Abdominal pain. Burning sensation. Shock or collapse. (Further see Inhalation).	Do not eat, drink, or smoke during work. Wash hands before eating.	Rinse mouth. Do NOT induce vomiting. Give plenty of water to drink. Refer for medical attention.

SPILLAGE DISPOSAL	STORAGE	PACKAGING & LABELLING
Personal protection: chemical protection suit including self-contained breathing apparatus. Do NOT let this	Store in an area without drain or sewer access. Dry. Well closed. Ventilation along the floor.	T+ symbol N symbol

chemical enter the environment. Collect leaking liquid in sealable plastic containers. Absorb remaining liquid in sand or inert absorbent and remove to safe place.		R: 22-24-26-34-50/53 S: 1/2-25-39-45-53-60-61 UN Hazard Class: 6.1 UN Packing Group: I

SEE IMPORTANT INFORMATION ON BACK

ICSC: 1096

Prepared in the context of cooperation between the International Programme on Chemical Safety & the Commission of the European Communities (C) IPCS CEC 1994. No modifications to the International version have been made except to add the OSHA PELs, NIOSH RELs and NIOSH IDLH values.

International Chemical Safety Cards

HEXACHLOROCYCLOPENTADIENE

ICSC: 1096

IMPORTANT DATA

PHYSICAL STATE; APPEARANCE:
OILY YELLOW TO GREEN LIQUID , WITH PUNGENT ODOUR.

PHYSICAL DANGERS:
The vapour is heavier than air.

CHEMICAL DANGERS:
The substance decomposes on heating producing toxic and corrosive fumes including hydrogen chloride and phosgene . Reacts with moist air to produce hydrogen chloride (see ICSC0163) . Attacks many metals forming flammable/explosive gas (hydrogen - see ICSC 0001) in the presence of water.

OCCUPATIONAL EXPOSURE LIMITS:
TLV: 0.01 ppm as TWA; A4 (not classifiable as a human carcinogen); (ACGIH 2005).
MAK: IIb (not established but data is available); skin absorption (H); (DFG 2005).
OSHA PEL†: none
NIOSH REL: TWA 0.01 ppm (0.1 mg/m^3)
NIOSH IDLH: N.D. See: IDLH INDEX

ROUTES OF EXPOSURE:
The substance can be absorbed into the body by inhalation, through the skin and by ingestion.

INHALATION RISK:
A harmful contamination of the air can be reached rather quickly on evaporation of this substance at 20°C.

EFFECTS OF SHORT-TERM EXPOSURE:
The substance is corrosive to the eyes, the skin and the respiratory tract. Corrosive on ingestion. Inhalation of the substance may cause lung oedema (see Notes). The substance may cause effects on the kidneys and liver , resulting in tissue lesions . The effects may be delayed. Medical observation is indicated.

EFFECTS OF LONG-TERM OR REPEATED EXPOSURE:

PHYSICAL PROPERTIES

Boiling point: 239°C
Melting point: -9°C
Relative density (water = 1): 1.7
Solubility in water, g/100 ml at 25°C: 0.2
Vapour pressure, Pa at 20°C: 10.7
Relative vapour density (air = 1): 9.4
Relative density of the vapour/air-mixture at 20°C (air = 1): 1.00
Octanol/water partition coefficient as log Pow: 4-5

ENVIRONMENTAL DATA

The substance is very toxic to aquatic organisms. Bioaccumulation of this chemical may occur in fish. The substance may cause long-term effects in the aquatic environment.

NOTES

The symptoms of lung oedema often do not become manifest until a few hours have passed and they are aggravated by physical effort. Rest and medical observation is therefore essential. Immediate administration of an appropriate inhalation therapy by a doctor or a person authorized by him/her, should be considered.

Transport Emergency Card: TEC (R)-61S2646 or 61GT1-I

ADDITIONAL INFORMATION	

ICSC: 1096 **HEXACHLOROCYCLOPENTADIENE**

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International Chemical Safety Cards

ISOPHORONE

ICSC: 0169

1,1,3-Trimethyl-3-cyclohexene-5-one
3,5,5-Trimethylcyclohex-2-enone
Isoacetophorone
$C_9H_{14}O$
Molecular mass: 138.2

ICSC # 0169
CAS # 78-59-1
RTECS # GW7700000
EC # 606-012-00-8
October 04, 2000 Validated

TYPES OF HAZARD/ EXPOSURE	ACUTE HAZARDS/ SYMPTOMS	PREVENTION	FIRST AID/ FIRE FIGHTING
FIRE	Combustible.	NO open flames.	Powder, water spray, foam, carbon dioxide.
EXPLOSION	Above 84°C explosive vapour/air mixtures may be formed.	Above 84°C use a closed system, ventilation.	
EXPOSURE		PREVENT GENERATION OF MISTS!	
•**INHALATION**	Burning sensation. Sore throat. Cough. Dizziness. Headache. Nausea. Shortness of breath.	Ventilation, local exhaust, or breathing protection.	Fresh air, rest. Artificial respiration may be needed. Refer for medical attention.
•**SKIN**		Protective gloves.	Remove contaminated clothes. Rinse and then wash skin with water and soap.
•**EYES**	Redness. Pain. Blurred vision.	Safety spectacles.	First rinse with plenty of water for several minutes (remove contact lenses if easily possible), then take to a doctor.
•**INGESTION**	Abdominal pain. (Further see Inhalation).	Do not eat, drink, or smoke during work.	Rinse mouth. Give a slurry of activated charcoal in water to drink. Do NOT induce vomiting.

SPILLAGE DISPOSAL	STORAGE	PACKAGING & LABELLING
Collect leaking and spilled liquid in sealable containers as far as possible. Absorb remaining liquid in sand or inert absorbent and remove to safe place. Personal protection: filter respirator for organic gases and vapours.	Separated from strong oxidants, strong bases, amines .	Xn symbol R: 21/22-36/37-40 S: 2-13-23-36/37/39-46

SEE IMPORTANT INFORMATION ON BACK

ICSC: 0169

Prepared in the context of cooperation between the International Programme on Chemical Safety & the Commission of the European Communities (C) IPCS CEC 1994. No modifications to the International version have been made except to add the OSHA PELs, NIOSH RELs and NIOSH IDLH values.

International Chemical Safety Cards

ISOPHORONE

ICSC: 0169

IMPORTANT DATA	**PHYSICAL STATE; APPEARANCE:** COLOURLESS LIQUID , WITH CHARACTERISTIC ODOUR. **PHYSICAL DANGERS:** **CHEMICAL DANGERS:** Reacts with strong oxidants, strong bases and amines. **OCCUPATIONAL EXPOSURE LIMITS:** TLV: 5 ppm; (Ceiling value); A3 (confirmed animal carcinogen with unknown relevance to humans); (ACGIH 2004). MAK: 2 ppm, 11 mg/m^3; Peak limitation category: I(2); Carcinogen category: 3B; Pregnancy risk group: C; (DFG 2004). OSHA PEL†: TWA 25 ppm (140 mg/m^3) NIOSH REL: TWA 4 ppm (23 mg/m^3) NIOSH IDLH: 200 ppm See: 78591 **ROUTES OF EXPOSURE:** The substance can be absorbed into the body by inhalation, through the skin and by ingestion. **INHALATION RISK:** A harmful contamination of the air will be reached rather slowly on evaporation of this substance at 20°C. **EFFECTS OF SHORT-TERM EXPOSURE:** The substance and the vapour of this substance is irritating to the eyes and the respiratory tract . The substance may cause effects on the central nervous system . **EFFECTS OF LONG-TERM OR REPEATED EXPOSURE:**
PHYSICAL PROPERTIES	Boiling point: 215°C Melting point: -8°C Relative density (water = 1): 0.92 Solubility in water, g/100 ml at 25°C: 1.2 Vapour pressure, Pa at 20°C: 40 Relative vapour density (air = 1): 4.8 Flash point: 84°C c.c. Auto-ignition temperature: 460°C Explosive limits, vol% in air: 0.8-3.8 Octanol/water partition coefficient as log Pow: 1.67
ENVIRONMENTAL DATA	

N O T E S

The occupational exposure limit value should not be exceeded during any part of the working exposure. Card has been partly updated in April 2005. See sections Occupational Exposure Limits, EU classification, Emergency Response.

NFPA Code: H 2; F 2; R 0;

ADDITIONAL INFORMATION

ICSC: 0169 **ISOPHORONE**

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International Chemical Safety Cards

HEXACHLOROETHANE

ICSC: 0051

Perchloroethane
Carbon hexachloride
C_2Cl_6 / Cl_3CCCl_3
Molecular mass: 236.7

ICSC # 0051
CAS # 67-72-1
RTECS # KI4025000
April 28, 1993 Validated

TYPES OF HAZARD/ EXPOSURE	ACUTE HAZARDS/ SYMPTOMS	PREVENTION	FIRST AID/ FIRE FIGHTING
FIRE	Not combustible. Gives off irritating or toxic fumes (or gases) in a fire.		In case of fire in the surroundings: use appropriate extinguishing media.
EXPLOSION			In case of fire: keep drums, etc., cool by spraying with water.
EXPOSURE		PREVENT DISPERSION OF DUST! PREVENT GENERATION OF MISTS!	
•INHALATION		Local exhaust or breathing protection.	Fresh air, rest. Refer for medical attention.
•SKIN	MAY BE ABSORBED!	Protective gloves.	Remove contaminated clothes. Rinse skin with plenty of water or shower. Refer for medical attention.
•EYES		Safety goggles .	First rinse with plenty of water for several minutes (remove contact lenses if easily possible), then take to a doctor.
•INGESTION		Do not eat, drink, or smoke during work.	Rinse mouth. Give a slurry of activated charcoal in water to drink. Refer for medical attention.

SPILLAGE DISPOSAL	STORAGE	PACKAGING & LABELLING
Sweep spilled substance into containers. Carefully collect remainder, then remove to safe place.	Separated from metals , food and feedstuffs . See Chemical Dangers.	

SEE IMPORTANT INFORMATION ON BACK

Prepared in the context of cooperation between the International Programme on Chemical Safety & the

ICSC: 0051

Commission of the European Communities (C) IPCS CEC 1994. No modifications to the International version have been made except to add the OSHA PELs, NIOSH RELs and NIOSH IDLH values.

International Chemical Safety Cards

HEXACHLOROETHANE

ICSC: 0051

IMPORTANT DATA

PHYSICAL STATE; APPEARANCE:
COLOURLESS CRYSTALS , WITH CHARACTERISTIC ODOUR.

PHYSICAL DANGERS:

CHEMICAL DANGERS:
The substance decomposes on heating above 300°C producing toxic and corrosive fumes, phosgene (see ICSC 0007) and hydrogen chloride (see ICSC 0163). Reacts violently with zinc, aluminium powder and sodium. Attacks iron in the presence of moisture.

OCCUPATIONAL EXPOSURE LIMITS:
TLV: 1 ppm (skin); A3 (confirmed animal carcinogen with unknown relevance to humans); (ACGIH 2004).
MAK: 1 ppm, 9.8 mg/m³;
Peak limitation category: II(2);
(DFG 2004).
OSHA PEL: TWA 1 ppm (10 mg/m^3) skin
NIOSH REL: Ca TWA 1 ppm (10 mg/m^3) skin
See Appendix A See Appendix C
(Chloroethanes)
NIOSH IDLH: Ca 300 ppm See: 67721

ROUTES OF EXPOSURE:
The substance can be absorbed into the body by inhalation, through the skin and by ingestion.

INHALATION RISK:
A harmful contamination of the air can be reached very quickly on evaporation of this substance at 20°C.

EFFECTS OF SHORT-TERM EXPOSURE:
Exposure may result in unconsciousness.

EFFECTS OF LONG-TERM OR REPEATED EXPOSURE:
The substance may have effects on the liver and kidneys . Exposure at far above the OEL may have effects on the central nervous system, inducing tremors and ataxia.

PHYSICAL PROPERTIES

Sublimation point: 183-185°C
Relative density (water = 1): 2.1
Solubility in water:
none

Vapour pressure, Pa at 20°C: 53
Relative vapour density (air = 1): 8.2
Relative density of the vapour/air-mixture at 20°C (air = 1): 1.0
Octanol/water partition coefficient as log Pow: 3.9

ENVIRONMENTAL DATA

This substance may be hazardous in the environment; special attention should be given to fish.

NOTES

Use of alcoholic beverages enhances the harmful effect. The odour warning when the exposure limit value is exceeded is insufficient. Do NOT use in the vicinity of a fire or a hot surface, or during welding. Card has been partly updated in April 2005. See section Occupational Exposure Limits.

ADDITIONAL INFORMATION

(C) IPCS, CEC, 1994

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International Chemical Safety Cards

INDENO(1,2,3-cd)PYRENE

ICSC: 0730

o-Phenylenepyrene
2,3-Phenylenepyrene
$C_{22}H_{12}$
Molecular mass: 276.3

ICSC # 0730
CAS # 193-39-5
RTECS # NK9300000
March 25, 1999 Peer reviewed

TYPES OF HAZARD/ EXPOSURE	ACUTE HAZARDS/ SYMPTOMS	PREVENTION	FIRST AID/ FIRE FIGHTING
FIRE			In case of fire in the surroundings: use appropriate extinguishing media.
EXPLOSION			
EXPOSURE		AVOID ALL CONTACT!	
•INHALATION		Local exhaust or breathing protection.	Fresh air, rest.
•SKIN		Protective gloves. Protective clothing.	Remove contaminated clothes. Rinse and then wash skin with water and soap.
•EYES		Safety spectacles or eye protection in combination with breathing protection.	First rinse with plenty of water for several minutes (remove contact lenses if easily possible), then take to a doctor.
•INGESTION		Do not eat, drink, or smoke during work.	Rinse mouth. Refer for medical attention.

SPILLAGE DISPOSAL	STORAGE	PACKAGING & LABELLING
Sweep spilled substance into covered containers; if appropriate, moisten first to prevent dusting. Carefully collect remainder, then remove to safe place. Do NOT let this chemical enter the environment.	Provision to contain effluent from fire extinguishing. Well closed.	R: S:

SEE IMPORTANT INFORMATION ON BACK

ICSC: 0730

Prepared in the context of cooperation between the International Programme on Chemical Safety & the Commission of the European Communities (C) IPCS CEC 1994. No modifications to the International version have been made except to add the OSHA PELs, NIOSH RELs and NIOSH IDLH values.

International Chemical Safety Cards

INDENO(1,2,3-cd)PYRENE

ICSC: 0730

I **M** **P**	**PHYSICAL STATE; APPEARANCE:** YELLOW CRYSTALS **PHYSICAL DANGERS:**	**ROUTES OF EXPOSURE:** The substance can be absorbed into the body by inhalation of its aerosol and through the skin. **INHALATION RISK:**

O R T A N T D A T A	**CHEMICAL DANGERS:** Upon heating, toxic fumes are formed. **OCCUPATIONAL EXPOSURE LIMITS:** TLV not established. MAK: Carcinogen category: 2; (DFG 2004).	Evaporation at 20°C is negligible; a harmful concentration of airborne particles can, however, be reached quickly. **EFFECTS OF SHORT-TERM EXPOSURE:** **EFFECTS OF LONG-TERM OR REPEATED EXPOSURE:** This substance is possibly carcinogenic to humans.
PHYSICAL PROPERTIES	Boiling point: 536°C Melting point: 164°C Solubility in water: none	Octanol/water partition coefficient as log Pow: 6.58
ENVIRONMENTAL DATA	This substance may be hazardous to the environment; special attention should be given to air quality and water quality. Bioaccumulation of this chemical may occur in fish.	

N O T E S

Indeno(1,2,3-cd)pyrene is present as a component of polycyclic aromatic hydrocarbons (PAH) content in the environment usually resulting from the incomplete combustion or pyrolysis of organic matters, especially fossil fuels and tobacco.ACGIH recommends environment containing Indeno(1,2,3-c,d)pyrene should be evaluated in terms of the TLV-TWA for coal tar pitch volatile, as benzene soluble 0.2 mg/m^3. Insufficient data are available on the effect of this substance on human health, therefore utmost care must be taken.

ADDITIONAL INFORMATION

ICSC: 0730 **INDENO(1,2,3-cd)PYRENE**

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International Chemical Safety Cards

NAPHTHALENE

ICSC: 0667

Naphthene
$C_{10}H_8$
Molecular mass: 128.18

ICSC # 0667
CAS # 91-20-3
RTECS # QJ0525000
UN # 1334 (solid); 2304 (molten)
EC # 601-052-00-2
April 21, 2005 Peer reviewed

TYPES OF HAZARD/ EXPOSURE	ACUTE HAZARDS/ SYMPTOMS	PREVENTION	FIRST AID/ FIRE FIGHTING
FIRE	Combustible.	NO open flames.	Powder, water spray, foam, carbon dioxide.
EXPLOSION	Above 80°C explosive vapour/air mixtures may be formed. Finely dispersed particles form explosive mixtures in air.	Prevent deposition of dust; closed system, dust explosion-proof electrical equipment and lighting.	
EXPOSURE		PREVENT DISPERSION OF DUST!	
•INHALATION	Headache. Weakness. Nausea. Vomiting. Sweating. Confusion. Jaundice. Dark urine.	Ventilation (not if powder), local exhaust, or breathing protection.	Fresh air, rest. Refer for medical attention.
•SKIN	MAY BE ABSORBED! (Further see Inhalation).	Protective gloves.	Rinse skin with plenty of water or shower.
•EYES		Safety spectacles.	First rinse with plenty of water for several minutes (remove contact lenses if easily possible), then take to a doctor.
•INGESTION	Abdominal pain. Diarrhoea. Convulsions. Unconsciousness. (Further see Inhalation).	Do not eat, drink, or smoke during work. Wash hands before eating.	Rest. Refer for medical attention.

SPILLAGE DISPOSAL	STORAGE	PACKAGING & LABELLING
Personal protection: filter respirator for organic gases and vapours. Do NOT let this chemical enter the environment. Sweep spilled substance into covered containers; if appropriate, moisten first to prevent dusting. Carefully collect remainder, then remove to safe place.	Separated from strong oxidants, food and feedstuffs Store in an area without drain or sewer access.	Do not transport with food and feedstuffs. Marine pollutant. Xn symbol N symbol R: 22-40-50/53 S: 2-36/37-46-60-61 UN Hazard Class: 4.1 UN Packing Group: III

SEE IMPORTANT INFORMATION ON BACK

ICSC: 0667

Prepared in the context of cooperation between the International Programme on Chemical Safety & the Commission of the European Communities (C) IPCS CEC 1994. No modifications to the International version have been made except to add the OSHA PELs, NIOSH RELs and NIOSH IDLH values.

International Chemical Safety Cards

NAPHTHALENE

ICSC: 0667

I M P O R T A N T D A T A

PHYSICAL STATE; APPEARANCE:
WHITE SOLID IN VARIOUS FORMS , WITH CHARACTERISTIC ODOUR.

PHYSICAL DANGERS:
Dust explosion possible if in powder or granular form, mixed with air.

CHEMICAL DANGERS:
On combustion, forms irritating and toxic gases. Reacts with strong oxidants

OCCUPATIONAL EXPOSURE LIMITS:
TLV: 10 ppm as TWA 15 ppm as STEL (skin) A4 (not classifiable as a human carcinogen); (ACGIH 2005).
MAK: skin absorption (H);
Carcinogen category: 2; Germ cell mutagen group: 3B; (DFG 2004).
OSHA PEL†: TWA 10 ppm (50 mg/m^3)
NIOSH REL: TWA 10 ppm (50 mg/m^3) ST 15 ppm (75 mg/m^3)
NIOSH IDLH: 250 ppm See: 91203

ROUTES OF EXPOSURE:
The substance can be absorbed into the body by inhalation, through the skin and by ingestion.

INHALATION RISK:
A harmful contamination of the air will be reached rather slowly on evaporation of this substance at 20°C. See Notes.

EFFECTS OF SHORT-TERM EXPOSURE:
The substance may cause effects on the blood , resulting in lesions of blood cells (haemolysis) See Notes. The effects may be delayed. Exposure by ingestion may result in death. Medical observation is indicated.

EFFECTS OF LONG-TERM OR REPEATED EXPOSURE:
The substance may have effects on the blood , resulting in chronic haemolytic anaemia. The substance may have effects on the eyes , resulting in the development of cataract. This substance is possibly carcinogenic to humans.

PHYSICAL PROPERTIES

Boiling point: 218°C
Sublimation slowly at room temperature
Melting point: 80°C
Density: 1.16
g/cm3
Solubility in water, g/100 ml at 25°C:
none

Vapour pressure, Pa at 25°C: 11
Relative vapour density (air = 1): 4.42
Flash point:
80°C c.c.
Auto-ignition temperature: 540°C
Explosive limits, vol% in air: 0.9-5.9
Octanol/water partition coefficient as log Pow: 3.3

ENVIRONMENTAL DATA

The substance is very toxic to aquatic organisms. The substance may cause long-term effects in the aquatic environment.

N O T E S

Some individuals may be more sensitive to the effect of naphthalene on blood cells.

Transport Emergency Card: TEC (R)-41S1334 (solid); 41GF1-II+III (solid); 41S2304 (molten)
NFPA Code: H2; F2; R0;

ADDITIONAL INFORMATION

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International Chemical Safety Cards

NITROBENZENE

ICSC: 0065

$C_6H_5NO_2$
Molecular mass: 123.1

ICSC # 0065
CAS # 98-95-3
RTECS # DA6475000
UN # 1662
EC # 609-003-00-7
April 06, 2006 Validated

TYPES OF HAZARD/ EXPOSURE	ACUTE HAZARDS/ SYMPTOMS	PREVENTION	FIRST AID/ FIRE FIGHTING
FIRE	Combustible. Gives off irritating or toxic fumes (or gases) in a fire.	NO open flames.	Water spray. Alcohol-resistant foam. Dry powder. Carbon dioxide.
EXPLOSION	Above 88°C explosive vapour/air mixtures may be formed. Risk of fire and explosion (see Chemical Dangers).	Above 88°C use a closed system, ventilation.	In case of fire: keep drums, etc., cool by spraying with water.
EXPOSURE		AVOID ALL CONTACT!	IN ALL CASES CONSULT A DOCTOR!
•INHALATION	Headache. Blue lips or finger nails. Blue skin. Dizziness. Nausea. Weakness. Confusion. Convulsions. Unconsciousness.	Ventilation, local exhaust, or breathing protection.	Fresh air, rest. Artificial respiration may be needed. Refer for medical attention.
•SKIN	MAY BE ABSORBED! (Further see Inhalation).	Protective gloves. Protective clothing.	Remove contaminated clothes. Rinse and then wash skin with water and soap. Refer for medical attention.
•EYES		Safety goggles.	First rinse with plenty of water for several minutes (remove contact lenses if easily possible), then take to a doctor.
•INGESTION	(see Inhalation).	Do not eat, drink, or smoke during work.	Rinse mouth. Give a slurry of activated charcoal in water to drink. Rest. Refer for medical attention.

SPILLAGE DISPOSAL	STORAGE	PACKAGING & LABELLING
Personal protection: complete protective clothing including self-contained breathing apparatus. Collect	Separated from combustible and reducing substances, strong oxidants, strong acids, food and feedstuffs . Store	Do not transport with food and feedstuffs. T symbol

leaking and spilled liquid in sealable containers as far as possible. Absorb remaining liquid in sand or inert absorbent and remove to safe place. Do NOT let this chemical enter the environment.	in an area without drain or sewer access.	N symbol R: 23/24/25-40-48/23/24-51/53-62 S: 1/2-28-36/37-45-61 UN Hazard Class: 6.1 UN Packing Group: II Signal: Danger Skull-Health haz Harmful if swallowed Toxic if inhaled vapour Toxic in contact with skin Suspected of causing cancer Suspected of damaging fertility or the unborn child May cause damage to blood cells Harmful to aquatic life with long lasting effects

SEE IMPORTANT INFORMATION ON BACK

ICSC: 0065

Prepared in the context of cooperation between the International Programme on Chemical Safety & the Commission of the European Communities (C) IPCS CEC 1994. No modifications to the International version have been made except to add the OSHA PELs, NIOSH RELs and NIOSH IDLH values.

International Chemical Safety Cards

NITROBENZENE

ICSC: 0065

IMPORTANT DATA

PHYSICAL STATE; APPEARANCE:
PALE YELLOW OILY LIQUID , WITH CHARACTERISTIC ODOUR.

PHYSICAL DANGERS:

CHEMICAL DANGERS:
On combustion, forms toxic and corrosive fumes including nitrogen oxides. Reacts violently with strong oxidants and reducing agents causing fire and explosion hazard. Reacts violently with strong acids and nitrogen oxides causing explosion hazard.

OCCUPATIONAL EXPOSURE LIMITS:
TLV: 1 ppm as TWA; (skin); A3 (confirmed animal carcinogen with unknown relevance to humans); BEI issued; (ACGIH 2005).
MAK: skin absorption (H);
Carcinogen category: 3B; BAT issued; (DFG 2006).
EU OEL: 1 mg/m³, 0.2 ppm as TWA (skin) (EU 2006).
OSHA PEL: TWA 1 ppm (5 mg/m^3) skin
NIOSH REL: TWA 1 ppm (5 mg/m^3) skin
NIOSH IDLH: 200 ppm See: 98953

ROUTES OF EXPOSURE:
The substance can be absorbed into the body by inhalation through the skin and by ingestion

INHALATION RISK:
A harmful contamination of the air will be reached rather slowly on evaporation of this substance at 20°C; on spraying or dispersing, however, much faster.

EFFECTS OF SHORT-TERM EXPOSURE:
The substance may cause effects on the blood , resulting in the formation of methaemoglobin. Exposure could cause lowering of consciousness. The effects may be delayed. Medical observation is indicated.

EFFECTS OF LONG-TERM OR REPEATED EXPOSURE:
The substance may have effects on the blood , spleen and liver . This substance is possibly carcinogenic to humans. Animal tests show that this substance possibly causes toxicity to human reproduction or development.

	Boiling point: 211°C	Relative density of the vapour/air-mixture at

PHYSICAL PROPERTIES	Melting point: 5°C Relative density (water = 1): 1.2 Solubility in water, g/100 ml: 0.2 Vapour pressure, Pa at 20°C: 20 Relative vapour density (air = 1): 4.2	20°C (air = 1): 1.00 Flash point: 88°C c.c. Auto-ignition temperature: 480°C Explosive limits, vol% in air: 1.8-40 Octanol/water partition coefficient as log Pow: 1.86
ENVIRONMENTAL DATA	The substance is harmful to aquatic organisms. It is strongly advised that this substance does not enter the environment.	

N O T E S

Use of alcoholic beverages enhances the harmful effect. Depending on the degree of exposure, periodic medical examination is suggested. Specific treatment is necessary in case of poisoning with this substance; the appropriate means with instructions must be available. Do NOT take working clothes home. Card has been partly updated in October 2006: see sections Occupational Exposure Limits.

Transport Emergency Card: TEC (R)-61S1662 or 61GT1-II
NFPA Code: H 3; F 2; R 1;
Card has been partially updated in January 2008: see GHS classification.

ADDITIONAL INFORMATION

ICSC: 0065 **NITROBENZENE**

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International Chemical Safety Cards

N-NITROSODIMETHYLAMINE

ICSC: 0525

Dimethylnitrosamine
N-Methyl-N-nitrosomethylamine
DMN
$C_2H_6N_2O$ / $(CH_3)_2NN=O$
Molecular mass: 74.1

ICSC # 0525
CAS # 62-75-9
RTECS # IQ0525000
UN # 2810
EC # 612-077-00-3
March 13, 2001 Validated

TYPES OF HAZARD/ EXPOSURE	ACUTE HAZARDS/ SYMPTOMS	PREVENTION	FIRST AID/ FIRE FIGHTING
FIRE	Combustible.	NO open flames.	Powder, carbon dioxide.
EXPLOSION			
EXPOSURE		AVOID ALL CONTACT!	IN ALL CASES CONSULT A DOCTOR!
•INHALATION	Sore throat. Cough. Nausea. Diarrhoea. Vomiting. Headache. Weakness.	Ventilation, local exhaust, or breathing protection.	Fresh air, rest. Refer for medical attention.
•SKIN	Redness. Pain.	Protective gloves.	Remove contaminated clothes. Rinse skin with plenty of water or shower.
•EYES	Pain. Redness.	Face shield, or eye protection in combination with breathing protection.	First rinse with plenty of water for several minutes (remove contact lenses if easily possible), then take to a doctor.
•INGESTION	Abdominal cramps. (Further see Inhalation).	Do not eat, drink, or smoke during work. Wash hands before eating.	Give a slurry of activated charcoal in water to drink. Refer for medical attention.

SPILLAGE DISPOSAL	STORAGE	PACKAGING & LABELLING
Evacuate danger area! Collect leaking and spilled liquid in sealable containers as far as possible. Absorb remaining liquid in sand or inert absorbent and remove to safe place. Chemical protection suit including self-contained breathing apparatus.	Separated from strong oxidants, food and feedstuffs . Cool. Keep in the dark. Well closed.	Do not transport with food and feedstuffs. Unbreakable packaging; put breakable packaging into closed unbreakable container. Note: E T+ symbol N symbol

		R: 45-25-26-48/25-51/53 S: 53-45-61 UN Hazard Class: 6.1 UN Packing Group: I

SEE IMPORTANT INFORMATION ON BACK

ICSC: 0525	Prepared in the context of cooperation between the International Programme on Chemical Safety & the Commission of the European Communities (C) IPCS CEC 1994. No modifications to the International version have been made except to add the OSHA PELs, NIOSH RELs and NIOSH IDLH values.

International Chemical Safety Cards

N-NITROSODIMETHYLAMINE

ICSC: 0525

I M P O R T A N T D A T A	**PHYSICAL STATE; APPEARANCE:** YELLOW OILY LIQUID **PHYSICAL DANGERS:** **CHEMICAL DANGERS:** The substance decomposes on heating producing nitrogen oxides . Reacts with strong oxidants and strong bases . **OCCUPATIONAL EXPOSURE LIMITS:** TLV: (skin) A3 (confirmed animal carcinogen with unknown relevance to humans); (ACGIH 2000). MAK: skin absorption (H); Carcinogen category: 2 (DFG 2006). OSHA PEL: 1910.1016 See Appendix B NIOSH REL: Ca See Appendix A NIOSH IDLH: Ca N.D. See: IDLH INDEX	**ROUTES OF EXPOSURE:** The substance can be absorbed into the body by inhalation and by ingestion. **INHALATION RISK:** No indication can be given about the rate in which a harmful concentration in the air is reached on evaporation of this substance at 20° C. **EFFECTS OF SHORT-TERM EXPOSURE:** The substance is irritating to the eyes, the skin and the respiratory tract. The substance may cause effects on the liver , resulting in jaundice. The effects may be delayed. See Notes. Medical observation is indicated. **EFFECTS OF LONG-TERM OR REPEATED EXPOSURE:** The substance may have effects on the liver , resulting in liver function impairment and cirrhosis. This substance is probably carcinogenic to humans.
PHYSICAL PROPERTIES	Boiling point: 151°C Relative density (water = 1): 1.0 Solubility in water: very good	Vapour pressure, Pa at 20°C: 360 Relative vapour density (air = 1): 2.56 Flash point: 61°C Octanol/water partition coefficient as log Pow: -0.57
ENVIRONMENTAL DATA		

N O T E S

The symptoms of jaundice do not become manifest until some hours have passed. Environmental effects from the substance have not been investigated adequately .

Transport Emergency Card: TEC (R)-61G61b

Card has been partially updated in August 2007: see Ingestion First Aid, Occupational Exposure Limits.

ADDITIONAL INFORMATION

ICSC: 0525 **N-NITROSODIMETHYLAMINE**

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Material Safety Data Sheet

Version 4.1
Revision Date 11/22/2011
Print Date 12/09/2011

1. PRODUCT AND COMPANY IDENTIFICATION

Product name	:	*N*-Nitrosodi-*n*-propylamine
Product Number	:	48554
Brand	:	Supelco
Supplier	:	Sigma-Aldrich 3050 Spruce Street SAINT LOUIS MO 63103 USA
Telephone	:	+1 800-325-5832
Fax	:	+1 800-325-5052
Emergency Phone # (For both supplier and manufacturer)	:	(314) 776-6555
Preparation Information	:	Sigma-Aldrich Corporation Product Safety - Americas Region 1-800-521-8956

2. HAZARDS IDENTIFICATION

Emergency Overview

OSHA Hazards
Toxic by ingestion, Carcinogen

Target Organs

Liver, Kidney, Throat., Lungs

GHS Classification
Acute toxicity, Oral (Category 4)
Carcinogenicity (Category 1B)
Acute aquatic toxicity (Category 2)
Chronic aquatic toxicity (Category 4)

GHS Label elements, including precautionary statements

Pictogram

Signal word Danger

Hazard statement(s)

H302	Harmful if swallowed.
H350	May cause cancer.
H401	Toxic to aquatic life.
H413	May cause long lasting harmful effects to aquatic life.

Precautionary statement(s)

P201	Obtain special instructions before use.
P308 + P313	IF exposed or concerned: Get medical advice/ attention.

HMIS Classification

Health hazard:	2
Chronic Health Hazard:	*
Flammability:	0
Physical hazards:	0

NFPA Rating

Health hazard:	2
Fire:	0
Reactivity Hazard:	0

Potential Health Effects

Inhalation	May be harmful if inhaled. May cause respiratory tract irritation.
Skin	May be harmful if absorbed through skin. May cause skin irritation.
Eyes	May cause eye irritation.
Ingestion	Toxic if swallowed.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Formula	:	C6H14N2O
Molecular Weight	:	130.22 g/mol

Component		Concentration
N-Nitroso dipropylamine		
CAS-No.	621-64-7	-
EC-No.	210-698-0	
Index-No.	612-098-00-8	

4. FIRST AID MEASURES

General advice
Consult a physician. Show this safety data sheet to the doctor in attendance.Move out of dangerous area.

If inhaled
If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.

In case of skin contact
Wash off with soap and plenty of water. Consult a physician.

In case of eye contact
Flush eyes with water as a precaution.

If swallowed
Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

5. FIREFIGHTING MEASURES

Conditions of flammability
Not flammable or combustible.

Suitable extinguishing media
Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

Special protective equipment for firefighters
Wear self contained breathing apparatus for fire fighting if necessary.

Hazardous combustion products
Hazardous decomposition products formed under fire conditions. - Carbon oxides, nitrogen oxides (NOx)

6. ACCIDENTAL RELEASE MEASURES

Personal precautions
Use personal protective equipment. Avoid breathing vapors, mist or gas. Ensure adequate ventilation. Evacuate personnel to safe areas.

Environmental precautions
Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.

Methods and materials for containment and cleaning up
Soak up with inert absorbent material and dispose of as hazardous waste. Keep in suitable, closed containers for disposal.

7. HANDLING AND STORAGE

Precautions for safe handling
Avoid contact with skin and eyes. Avoid inhalation of vapour or mist.

Conditions for safe storage
Keep container tightly closed in a dry and well-ventilated place. Containers which are opened must be carefully resealed and kept upright to prevent leakage.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Contains no substances with occupational exposure limit values.

Personal protective equipment

Respiratory protection
Where risk assessment shows air-purifying respirators are appropriate use a full-face respirator with multi-purpose combination (US) or type ABEK (EN 14387) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

Hand protection
Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

Eye protection
Face shield and safety glasses Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

Skin and body protection
Complete suit protecting against chemicals, The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

Hygiene measures
Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance

Form	liquid
Colour	no data available

Safety data

pH	no data available
Melting point/freezing point	no data available
Boiling point	no data available
Flash point	no data available
Ignition temperature	no data available
Autoignition temperature	no data available
Lower explosion limit	no data available
Upper explosion limit	no data available
Vapour pressure	no data available
Density	0.92 g/cm3
Water solubility	no data available

Partition coefficient: n-octanol/water	log Pow: 1.36
Relative vapour density	no data available
Odour	no data available
Odour Threshold	no data available
Evaporation rate	no data available

10. STABILITY AND REACTIVITY

Chemical stability
Stable under recommended storage conditions.

Possibility of hazardous reactions
no data available

Conditions to avoid
no data available

Materials to avoid
copper salts, mercury salts, Strong mineral acids, Strong oxidizing agents

Hazardous decomposition products
Hazardous decomposition products formed under fire conditions. - Carbon oxides, nitrogen oxides (NOx)
Other decomposition products - no data available

11. TOXICOLOGICAL INFORMATION

Acute toxicity

Oral LD50
LD50 Oral - rat - 480.0 mg/kg

Inhalation LC50
no data available

Dermal LD50
no data available

Other information on acute toxicity
no data available

Skin corrosion/irritation
no data available

Serious eye damage/eye irritation
no data available

Respiratory or skin sensitization
no data available

Germ cell mutagenicity
no data available

Carcinogenicity

Possible human carcinogen

IARC:	2B - Group 2B: Possibly carcinogenic to humans (N-Nitroso dipropylamine)
ACGIH:	No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH.
NTP:	Reasonably anticipated to be a human carcinogen (N-Nitroso dipropylamine)

OSHA: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

Reproductive toxicity

no data available

Teratogenicity

no data available

Specific target organ toxicity - single exposure (Globally Harmonized System)
no data available

Specific target organ toxicity - repeated exposure (Globally Harmonized System)
no data available

Aspiration hazard
no data available

Potential health effects

Inhalation	May be harmful if inhaled. May cause respiratory tract irritation.
Ingestion	Toxic if swallowed.
Skin	May be harmful if absorbed through skin. May cause skin irritation.
Eyes	May cause eye irritation.

Signs and Symptoms of Exposure
To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

Synergistic effects
no data available

Additional Information
RTECS: JL9700000

12. ECOLOGICAL INFORMATION

Toxicity

no data available

Persistence and degradability
no data available

Bioaccumulative potential
no data available

Mobility in soil
no data available

PBT and vPvB assessment
no data available

Other adverse effects

An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.

Toxic to aquatic life.

13. DISPOSAL CONSIDERATIONS

Product
Offer surplus and non-recyclable solutions to a licensed disposal company. Contact a licensed professional waste disposal service to dispose of this material. Dissolve or mix the material with a combustible solvent and burn in a chemical incinerator equipped with an afterburner and scrubber.

Contaminated packaging
Dispose of as unused product.

14. TRANSPORT INFORMATION

DOT (US)
UN number: 3082 Class: 9 Packing group: III
Proper shipping name: Environmentally hazardous substances, liquid, n.o.s. (N-Nitroso dipropylamine)
Marine pollutant: No
Poison Inhalation Hazard: No

IMDG
UN number: 3082 Class: 9 Packing group: III EMS-No: F-A, S-F
Proper shipping name: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (N-Nitroso dipropylamine)
Marine pollutant: No

IATA
UN number: 3082 Class: 9 Packing group: III
Proper shipping name: Environmentally hazardous substance, liquid, n.o.s. (N-Nitroso dipropylamine)

Further information
EHS-Mark required (ADR 2.2.9.1.10, IMDG code 2.10.3) for single packagings and combination packagings containing inner packagings with Dangerous Goods > 5L for liquids or > 5kg for solids.

15. REGULATORY INFORMATION

OSHA Hazards
Toxic by ingestion, Carcinogen

SARA 302 Components
SARA 302: No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

SARA 313 Components
The following components are subject to reporting levels established by SARA Title III, Section 313:

	CAS-No.	Revision Date
N-Nitroso dipropylamine	621-64-7	2007-07-01

SARA 311/312 Hazards
Acute Health Hazard, Chronic Health Hazard

Massachusetts Right To Know Components

	CAS-No.	Revision Date
N-Nitroso dipropylamine	621-64-7	2007-07-01

Pennsylvania Right To Know Components

	CAS-No.	Revision Date
N-Nitroso dipropylamine	621-64-7	2007-07-01

New Jersey Right To Know Components

	CAS-No.	Revision Date
N-Nitroso dipropylamine	621-64-7	2007-07-01

California Prop. 65 Components

	CAS-No.	Revision Date
WARNING! This product contains a chemical known to the State of California to cause cancer. N-Nitroso dipropylamine	621-64-7	2007-09-28

16. OTHER INFORMATION

Further information
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The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. Sigma-Aldrich Co., shall not be held liable for any damage resulting from handling or from contact with the above product. See reverse side of invoice or packing slip for additional terms and conditions of sale.

International Chemical Safety Cards

N-NITROSODIPHENYLAMINE

ICSC: 0526

Diphenylnitrosamine
N-Nitroso-N-phenyl benzenamine
N-nitroso-N-phenylaniline
Nitrous diphenylamide
$C_{12}H_{10}N_2O$
Molecular mass: 198.2

ICSC # 0526
CAS # 86-30-6
RTECS # JJ9800000
November 26, 2003 Validated

TYPES OF HAZARD/ EXPOSURE	ACUTE HAZARDS/ SYMPTOMS	PREVENTION	FIRST AID/ FIRE FIGHTING
FIRE	Combustible. Gives off irritating or toxic fumes (or gases) in a fire.	NO open flames.	Foam , powder, carbon dioxide .
EXPLOSION			
EXPOSURE			
•INHALATION		Local exhaust or breathing protection.	Fresh air, rest. Refer for medical attention.
•SKIN		Protective gloves.	Remove contaminated clothes. Rinse and then wash skin with water and soap.
•EYES		Safety goggles.	First rinse with plenty of water for several minutes (remove contact lenses if easily possible), then take to a doctor.
•INGESTION		Do not eat, drink, or smoke during work.	Rinse mouth. Refer for medical attention.

SPILLAGE DISPOSAL	STORAGE	PACKAGING & LABELLING
Sweep spilled substance into containers; if appropriate, moisten first to prevent dusting. Do NOT let this chemical enter the environment.	Separated from strong oxidants. Store in an area without drain or sewer access.	

SEE IMPORTANT INFORMATION ON BACK

ICSC: 0526

Prepared in the context of cooperation between the International Programme on Chemical Safety & the Commission of the European Communities (C) IPCS CEC 1994. No modifications to the International version have been made except to add the OSHA PELs, NIOSH RELs and NIOSH IDLH values.

International Chemical Safety Cards

N-NITROSODIPHENYLAMINE

ICSC: 0526

IMPORTANT DATA	**PHYSICAL STATE; APPEARANCE:** YELLOW FLAKES **PHYSICAL DANGERS:** **CHEMICAL DANGERS:** The substance decomposes on burning producing nitrogen oxides . Reacts vigorously with oxidants. **OCCUPATIONAL EXPOSURE LIMITS:** TLV not established. MAK: Carcinogen category: 3B (DFG 2006).	**ROUTES OF EXPOSURE:** The substance can be absorbed into the body by ingestion. **INHALATION RISK:** Evaporation at 20°C is negligible; a harmful concentration of airborne particles can, however, be reached quickly when dispersed. **EFFECTS OF SHORT-TERM EXPOSURE:** **EFFECTS OF LONG-TERM OR REPEATED EXPOSURE:**
PHYSICAL PROPERTIES	Boiling point: 101°C Melting point: 66.5°C Density: 1.23 g/cm³	Solubility in water: none Octanol/water partition coefficient as log Pow: 2.57-3.13
ENVIRONMENTAL DATA	The substance is toxic to aquatic organisms. Bioaccumulation of this chemical may occur in fish. It is strongly advised that this substance does not enter the environment.	

N O T E S

Insufficient data are available on the effect of this substance on human health, therefore utmost care must be taken.

Card has been partially updated in August 2007: see Occupational Exposure Limits,

ADDITIONAL INFORMATION

ICSC: 0526 **N-NITROSODIPHENYLAMINE**

(C) IPCS, CEC, 1994

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International Chemical Safety Cards

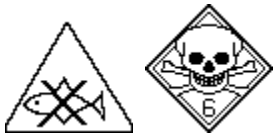
PENTACHLOROPHENOL

ICSC: 0069

C_6Cl_5OH

Molecular mass: 266.4

ICSC # 0069
CAS # 87-86-5
RTECS # SM6300000
UN # 3155
EC # 604-002-00-8
August 05, 2003 Validated



TYPES OF HAZARD/ EXPOSURE	ACUTE HAZARDS/ SYMPTOMS	PREVENTION	FIRST AID/ FIRE FIGHTING
FIRE	Not combustible. Liquid formulations containing organic solvents may be flammable.		In case of fire in the surroundings: use appropriate extinguishing media.
EXPLOSION			
EXPOSURE		PREVENT DISPERSION OF DUST! STRICT HYGIENE! AVOID EXPOSURE OF (PREGNANT) WOMEN! AVOID ALL CONTACT!	IN ALL CASES CONSULT A DOCTOR!
•INHALATION	Cough. Dizziness. Drowsiness. Headache. Fever or elevated body temperature. Laboured breathing. Sore throat.	Local exhaust or breathing protection.	Fresh air, rest. Half-upright position. Artificial respiration may be needed. Refer for medical attention.
•SKIN	MAY BE ABSORBED! Redness. Blisters. (Further see Inhalation).	Protective gloves. Protective clothing.	Remove contaminated clothes. Rinse and then wash skin with water and soap. Refer for medical attention. Wear protective gloves when administering first aid.
•EYES	Redness. Pain.	Safety goggles, face shield, or eye protection in combination with breathing protection.	First rinse with plenty of water for several minutes (remove contact lenses if easily possible), then take to a doctor.
•INGESTION	Abdominal cramps. Diarrhoea. Nausea. Unconsciousness. Vomiting. Weakness. (Further see Inhalation).	Do not eat, drink, or smoke during work. Wash hands before eating.	Rinse mouth. Give a slurry of activated charcoal in water to drink. Give plenty of water to drink. Refer for medical attention.

SPILLAGE DISPOSAL	STORAGE	PACKAGING & LABELLING

Sweep spilled substance into sealable containers; if appropriate, moisten first to prevent dusting. Carefully collect remainder, then remove to safe place. Do NOT let this chemical enter the environment. Complete protective clothing. (Extra personal protection: P3 filter respirator for toxic particles.)	Provision to contain effluent from fire extinguishing. Separated from strong oxidants, food and feedstuffs . Keep in a well-ventilated room.	Do not transport with food and feedstuffs. Severe marine pollutant. T+ symbol N symbol R: 24/25-26-36/37/38-40-50/53 S: 1/2-22-36/37-45-52-60-61 UN Hazard Class: 6.1 UN Packing Group: II

SEE IMPORTANT INFORMATION ON BACK

ICSC: 0069

Prepared in the context of cooperation between the International Programme on Chemical Safety & the Commission of the European Communities (C) IPCS CEC 1994. No modifications to the International version have been made except to add the OSHA PELs, NIOSH RELs and NIOSH IDLH values.

International Chemical Safety Cards

PENTACHLOROPHENOL

ICSC: 0069

IMPORTANT DATA

PHYSICAL STATE; APPEARANCE:
WHITE CRYSTALS OR SOLID IN VARIOUS FORMS , WITH CHARACTERISTIC ODOUR.

PHYSICAL DANGERS:

CHEMICAL DANGERS:
The substance decomposes on heating above 200°C, producing toxic and corrosive fumes including dioxins . Reacts violently with strong oxidants .

OCCUPATIONAL EXPOSURE LIMITS:
TLV: 0.5 mg/m³ as TWA; (skin); A3; BEI issued; (ACGIH 2003).
MAK: H;
Carcinogen category: 2;
(DFG 2002).
OSHA PEL: TWA 0.5 mg/m^3 skin
NIOSH REL: TWA 0.5 mg/m^3 skin
NIOSH IDLH: 2.5 mg/m^3 See: 87865

ROUTES OF EXPOSURE:
The substance can be absorbed into the body by inhalation, through the skin and by ingestion.

INHALATION RISK:
Evaporation at 20°C is negligible; a harmful concentration of airborne particles can, however, be reached quickly when dispersed.

EFFECTS OF SHORT-TERM EXPOSURE:
The substance is irritating to the eyes , the skin and the respiratory tract . The substance may cause effects on the cardiovascular system , resulting in cardiac disorders and heart failure.

EFFECTS OF LONG-TERM OR REPEATED EXPOSURE:
The substance may have effects on the central nervous system , kidneys , liver , lungs , immune system , thyroid . This substance is possibly carcinogenic to humans. Animal tests show that this substance possibly causes toxicity to human reproduction or development.

PHYSICAL PROPERTIES

Boiling point (decomposes): 309°C
Melting point: 191°C
Density: 1.98
Solubility in water, g/100 ml at 20°C: 0.001

Vapour pressure, Pa at 20°C: 0.02
Relative vapour density (air = 1): 9.2
Relative density of the vapour/air-mixture at 20°C (air = 1): 1.00
Octanol/water partition coefficient as log Pow: 5.01

ENVIRONMENTAL DATA

The substance is very toxic to aquatic organisms. The substance may cause long-term effects in the aquatic environment. This substance does enter the environment under normal use. Great care, however, should be given to avoid any additional release, e.g. through inappropriate disposal.

N O T E S

The commercial product may contain very toxic impurities (dioxins). The odour warning when the exposure limit value is exceeded is insufficient.

Transport Emergency Card: TEC (R)-61GT2-II

NFPA Code: H 3; F 0; R 0;

ADDITIONAL INFORMATION

ICSC: 0069 **PENTACHLOROPHENOL**

(C) IPCS, CEC, 1994

IMPORTANT LEGAL NOTICE:	Neither NIOSH, the CEC or the IPCS nor any person acting on behalf of NIOSH, the CEC or the IPCS is responsible for the use which might be made of this information. This card contains the collective views of the IPCS Peer Review Committee and may not reflect in all cases all the detailed requirements included in national legislation on the subject. The user should verify compliance of the cards with the relevant legislation in the country of use. The only modifications made to produce the U.S. version is inclusion of the OSHA PELs, NIOSH RELs and NIOSH IDLH values.

Material Safety Data Sheet

Version 4.0
Revision Date 07/24/2010
Print Date 12/09/2011

1. PRODUCT AND COMPANY IDENTIFICATION

Product name	:	Phenanthrene
Product Number	:	695114
Brand	:	Aldrich
Company	:	Sigma-Aldrich 3050 Spruce Street SAINT LOUIS MO 63103 USA
Telephone	:	+1 800-325-5832
Fax	:	+1 800-325-5052
Emergency Phone #	:	(314) 776-6555

2. HAZARDS IDENTIFICATION

Emergency Overview

OSHA Hazards
Harmful by ingestion., Irritant

Other hazards which do not result in classification
Photosensitizer.

GHS Label elements, including precautionary statements

Pictogram

Signal word Warning

Hazard statement(s)

H302	Harmful if swallowed.
H315	Causes skin irritation.
H319	Causes serious eye irritation.
H335	May cause respiratory irritation.
H400	Very toxic to aquatic life.
H413	May cause long lasting harmful effects to aquatic life.

Precautionary statement(s)

P261	Avoid breathing dust/ fume/ gas/ mist/ vapours/ spray.
P273	Avoid release to the environment.
P305 + P351 + P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

HMIS Classification

Health hazard:	2
Flammability:	0
Physical hazards:	0

NFPA Rating

Health hazard:	2
Fire:	0
Reactivity Hazard:	0

Potential Health Effects

Inhalation	May be harmful if inhaled. Causes respiratory tract irritation.
Skin	May be harmful if absorbed through skin. Causes skin irritation.

Eyes	Causes eye irritation.
Ingestion	Harmful if swallowed.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Formula : $C_{14}H_{10}$
Molecular Weight : 178.23 g/mol

CAS-No.	EC-No.	Index-No.	Concentration
Phenanthrene			
85-01-8	201-581-5	-	-

4. FIRST AID MEASURES

General advice
Consult a physician. Show this safety data sheet to the doctor in attendance.Move out of dangerous area.

If inhaled
If breathed in, move person into fresh air. If not breathing give artificial respiration Consult a physician.

In case of skin contact
Wash off with soap and plenty of water. Consult a physician.

In case of eye contact
Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician.

If swallowed
Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

5. FIRE-FIGHTING MEASURES

Suitable extinguishing media
Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

Special protective equipment for fire-fighters
Wear self contained breathing apparatus for fire fighting if necessary.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions
Use personal protective equipment. Avoid dust formation. Avoid breathing dust. Ensure adequate ventilation.

Environmental precautions
Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.

Methods and materials for containment and cleaning up
Pick up and arrange disposal without creating dust. Keep in suitable, closed containers for disposal.

7. HANDLING AND STORAGE

Precautions for safe handling
Avoid contact with skin and eyes. Avoid formation of dust and aerosols.
Provide appropriate exhaust ventilation at places where dust is formed. Normal measures for preventive fire protection.

Conditions for safe storage
Keep container tightly closed in a dry and well-ventilated place.

Handle and store under inert gas.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Components with workplace control parameters

Components	CAS-No.	Value	Control	Update	Basis

			parameters		
Phenanthrene	85-01-8	TWA	0.2 mg/m3	1993-06-30	USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants
		TWA	0.2 mg/m3	1989-03-01	USA. OSHA - TABLE Z-1 Limits for Air Contaminants - 1910.1000

Personal protective equipment

Respiratory protection
Where risk assessment shows air-purifying respirators are appropriate use a dust mask type N95 (US) or type P1 (EN 143) respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

Hand protection
Handle with gloves.

Eye protection
Safety glasses with side-shields conforming to EN166

Skin and body protection
Choose body protection according to the amount and concentration of the dangerous substance at the work place.

Hygiene measures
Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance

Form	solid

Safety data

pH	no data available
Melting point	98 - 100 °C (208 - 212 °F)
Boiling point	340 °C (644 °F)
Flash point	no data available
Ignition temperature	no data available
Lower explosion limit	no data available
Upper explosion limit	no data available
Density	1.063 g/mL at 25 °C (77 °F)
Water solubility	no data available
Partition coefficient: n-octanol/water	log Pow: 4.57

10. STABILITY AND REACTIVITY

Chemical stability
Stable under recommended storage conditions.

Conditions to avoid
no data available

Materials to avoid
Oxidizing agents

Hazardous decomposition products
Hazardous decomposition products formed under fire conditions. - Carbon oxides

11. TOXICOLOGICAL INFORMATION

Acute toxicity
LD50 Oral - mouse - 700.0 mg/kg

Skin corrosion/irritation
no data available

Serious eye damage/eye irritation
no data available

Respiratory or skin sensitization
Causes photosensitivity. Exposure to light can result in allergic reactions resulting in dermatologic lesions, which can vary from sunburnlike responses to edematous, vesiculated lesions, or bullae

Germ cell mutagenicity

no data available

Carcinogenicity

This product is or contains a component that is not classifiable as to its carcinogenicity based on its IARC, ACGIH, NTP, or EPA classification.

IARC:	No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.
IARC:	3 - Group 3: Not classifiable as to its carcinogenicity to humans (Phenanthrene)
ACGIH:	No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH.
NTP:	No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.
OSHA:	No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

Reproductive toxicity

no data available

Specific target organ toxicity - single exposure (Globally Harmonized System)
Inhalation - May cause respiratory irritation.

Specific target organ toxicity - repeated exposure (Globally Harmonized System)
no data available

Aspiration hazard
no data available

Potential health effects

Inhalation	May be harmful if inhaled. Causes respiratory tract irritation.
Ingestion	Harmful if swallowed.
Skin	May be harmful if absorbed through skin. Causes skin irritation.
Eyes	Causes eye irritation.

Signs and Symptoms of Exposure
To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

Additional Information

12. ECOLOGICAL INFORMATION

Toxicity

Toxicity to fish	LC50 - Oncorhynchus mykiss (rainbow trout) - 3.2 mg/l - 96.0 h
	LC100 - other fish - 1.5 mg/l - 1.0 h
Toxicity to daphnia	EC50 - Daphnia magna (Water flea) - 0.86 mg/l - 24 h

and other aquatic invertebrates.

EC50 - Daphnia magna (Water flea) - 0.38 mg/l - 48 h

Toxicity to algae EC50 - Chlorella vulgaris (Fresh water algae) - 1.20 mg/l - 3 h

Persistence and degradability

Biodegradability Result: 55 - 95 % - Partially biodegradable.

Bioaccumulative potential

Bioaccumulation Pimephales promelas (fathead minnow) - 28 d
Bioconcentration factor (BCF): 5,100

Mobility in soil

no data available

PBT and vPvB assessment

no data available

Other adverse effects

An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.

Very toxic to aquatic organisms.

13. DISPOSAL CONSIDERATIONS

Product

Observe all federal, state, and local environmental regulations. Contact a licensed professional waste disposal service to dispose of this material.

Contaminated packaging

Dispose of as unused product.

14. TRANSPORT INFORMATION

DOT (US)

UN-Number: 3077 Class: 9 Packing group: III
Proper shipping name: Environmentally hazardous substances, solid, n.o.s. (Phenanthrene)
Reportable Quantity (RQ): 5000 lbs
Marine pollutant: No
Poison Inhalation Hazard: No

IMDG

UN-Number: 3077 Class: 9 Packing group: III EMS-No: F-A, S-F
Proper shipping name: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (Phenanthrene)
Marine pollutant: No

IATA

UN-Number: 3077 Class: 9 Packing group: III
Proper shipping name: Environmentally hazardous substance, solid, n.o.s. (Phenanthrene)

Further information

EHS-Mark required (ADR 2.2.9.1.10, IMDG code 2.10.3) for single packagings and combination packagings containing inner packagings with Dangerous Goods > 5L for liquids or > 5kg for solids.

15. REGULATORY INFORMATION

OSHA Hazards

Harmful by ingestion., Irritant

DSL Status

All components of this product are on the Canadian DSL list.

SARA 302 Components
SARA 302: No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

SARA 313 Components

	CAS-No.	Revision Date
Phenanthrene	85-01-8	2007-07-01

SARA 311/312 Hazards
Acute Health Hazard

Massachusetts Right To Know Components

	CAS-No.	Revision Date
Phenanthrene	85-01-8	2007-07-01

Pennsylvania Right To Know Components

	CAS-No.	Revision Date
Phenanthrene	85-01-8	2007-07-01

New Jersey Right To Know Components

	CAS-No.	Revision Date
Phenanthrene	85-01-8	2007-07-01

California Prop. 65 Components

WARNING! This product contains a chemical known to the State of California to cause cancer.	CAS-No.	Revision Date
Phenanthrene	85-01-8	1990-01-01

16. OTHER INFORMATION

Further information
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The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. Sigma-Aldrich Co., shall not be held liable for any damage resulting from handling or from contact with the above product. See reverse side of invoice or packing slip for additional terms and conditions of sale.

International Chemical Safety Cards

PHENOL

ICSC: 0070

Carbolic acid
Phenic acid
Hydroxybenzene
C_6H_6O / C_6H_5OH
Molecular mass: 94.1

ICSC # 0070
CAS # 108-95-2
RTECS # SJ3325000
UN # 1671
EC # 604-001-00-2
October 15, 2001 Validated

TYPES OF HAZARD/ EXPOSURE	ACUTE HAZARDS/ SYMPTOMS	PREVENTION	FIRST AID/ FIRE FIGHTING
FIRE	Combustible.	NO open flames. NO contact with strong oxidants.	Alcohol-resistant foam, powder, water spray, foam, carbon dioxide.
EXPLOSION	Above 79°C explosive vapour/air mixtures may be formed.	Above 79°C use a closed system, ventilation.	In case of fire: keep drums, etc., cool by spraying with water.
EXPOSURE		AVOID ALL CONTACT!	IN ALL CASES CONSULT A DOCTOR!
•INHALATION	Sore throat. Burning sensation. Cough. Dizziness. Headache. Nausea. Vomiting. Shortness of breath. Laboured breathing. Unconsciousness. Symptoms may be delayed (see Notes).	Avoid inhalation of fine dust and mist. Ventilation, local exhaust, or breathing protection.	Fresh air, rest. Half-upright position. Refer for medical attention.
•SKIN	EASILY ABSORBED. Serious skin burns. Numbness. Convulsion. Collapse. Coma. Death.	Protective gloves. Protective clothing.	Remove contaminated clothes. Rinse skin with plenty of water or shower. To remove substance use polyethylene glycol 300 or vegetable oil. Refer for medical attention. Wear protective gloves when administering first aid.
•EYES	Pain. Redness. Permanent loss of vision. Severe deep burns.	Face shield, or eye protection in combination with breathing protection.	First rinse with plenty of water for several minutes (remove contact lenses if easily possible), then take to a doctor.
•INGESTION	Corrosive. Abdominal pain. Convulsions. Diarrhoea. Shock or collapse. Sore throat. Smoky, greenish-dark urine.	Do not eat, drink, or smoke during work. Wash hands before eating.	Rinse mouth. Give one or two glasses of water to drink. Do NOT induce vomiting. Refer for medical attention.

SPILLAGE DISPOSAL	STORAGE	PACKAGING & LABELLING
Personal protection: complete protective clothing including self-contained breathing apparatus. Sweep spilled substance into sealable containers; if appropriate, moisten first to prevent dusting. Carefully collect remainder, then remove to safe place. Do NOT let this chemical enter the environment.	Provision to contain effluent from fire extinguishing. Separated from strong oxidants, food and feedstuffs . Dry. Well closed. Keep in a well-ventilated room. Store in an area without drain or sewer access.	Do not transport with food and feedstuffs. T symbol C symbol R: 23/24/25-34-48/20/21/22-68 S: 1/2-24/25-26-28-36/37/39-45 UN Hazard Class: 6.1 UN Packing Group: II

SEE IMPORTANT INFORMATION ON BACK

ICSC: 0070

Prepared in the context of cooperation between the International Programme on Chemical Safety & the Commission of the European Communities (C) IPCS CEC 1994. No modifications to the International version have been made except to add the OSHA PELs, NIOSH RELs and NIOSH IDLH values.

International Chemical Safety Cards

PHENOL

ICSC: 0070

IMPORTANT DATA

PHYSICAL STATE; APPEARANCE:
COLOURLESS TO YELLOW OR LIGHT PINK CRYSTALS , WITH CHARACTERISTIC ODOUR.

PHYSICAL DANGERS:

CHEMICAL DANGERS:
Upon heating, toxic fumes are formed. The solution in water is a weak acid. Reacts with oxidants causing fire and explosion hazard.

OCCUPATIONAL EXPOSURE LIMITS:
TLV: 5 ppm as TWA; (skin); A4; BEI issued; (ACGIH 2004).
MAK: H;
Carcinogen category: 3B; Germ cell mutagen group: 3B
(DFG 2009).
OSHA PEL: TWA 5 ppm (19 mg/m^3) skin
NIOSH REL: TWA 5 ppm (19 mg/m^3) C 15.6 ppm (60 mg/m^3) 15-minute skin
NIOSH IDLH: 250 ppm See: 108952

ROUTES OF EXPOSURE:
The substance can be absorbed into the body rapidly by inhalation of its vapour, through the skin and by ingestion.

INHALATION RISK:
A harmful contamination of the air will be reached rather slowly on evaporation of this substance at 20°C.

EFFECTS OF SHORT-TERM EXPOSURE:
The substance and the vapour is corrosive to the eyes, the skin and the respiratory tract. Inhalation of vapour may cause lung oedema (see Notes). The substance may cause effects on the central nervous system , heart and kidneys , resulting in convulsions, coma, cardiac disorders respiratory failure, collapse. Exposure may result in death. The effects may be delayed. Medical observation is indicated.

EFFECTS OF LONG-TERM OR REPEATED EXPOSURE:
Repeated or prolonged contact with skin may cause dermatitis. The substance may have effects on the liver and kidneys .

PHYSICAL PROPERTIES

Boiling point: 182°C
Melting point: 43°C
Density: 1.06
g/cm³
Solubility in water:
moderate
Vapour pressure, Pa at 20°C: 47

Relative vapour density (air = 1): 3.2
Relative density of the vapour/air-mixture at 20°C (air = 1): 1.001
Flash point: 79°C c.c.
Auto-ignition temperature: 715°C
Explosive limits, vol% in air: 1.36-10
Octanol/water partition coefficient as log Pow: 1.46

ENVIRONMENTAL DATA	The substance is toxic to aquatic organisms.

N O T E S

Other UN numbers: 2312 (molten); 2821 (solution). Use of alcoholic beverages enhances the harmful effect. Depending on the degree of exposure, periodic medical examination is suggested. The symptoms of lung oedema often do not become manifest until a few hours have passed and they are aggravated by physical effort. Rest and medical observation are therefore essential. Immediate administration of an appropriate inhalation therapy by a doctor or a person authorized by him/her, should be considered.

Transport Emergency Card: TEC (R)-61S1671

NFPA Code: H 3; F 2; R 0;

Card has been partially updated in October 2004: see Occupational Exposure Limits, EU Classification, Emergency Response.

Card has been partially updated in April 2010: see Occupational Exposure Limits, Ingestion First Aid, Storage.

ADDITIONAL INFORMATION

ICSC: 0070 **PHENOL**

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International Chemical Safety Cards

PYRENE

ICSC: 1474

Benzo (d,e,f) phenanthrene
beta-Pyrene
$C_{16}H_{10}$
Molecular mass: 202.26

ICSC # 1474
CAS # 129-00-0
RTECS # UR2450000
November 27, 2003 Peer reviewed

TYPES OF HAZARD/ EXPOSURE	ACUTE HAZARDS/ SYMPTOMS	PREVENTION	FIRST AID/ FIRE FIGHTING
FIRE	Gives off irritating or toxic fumes (or gases) in a fire.	NO open flames, NO sparks, and NO smoking.	Water spray, carbon dioxide, dry powder, alcohol-resistant foam, foam.
EXPLOSION			
EXPOSURE			
•INHALATION		Avoid inhalation of dust	Fresh air, rest.
•SKIN	Redness.	Protective gloves.	Remove contaminated clothes. Rinse and then wash skin with water and soap.
•EYES	Redness.	Safety spectacles.	First rinse with plenty of water for several minutes (remove contact lenses if easily possible), then take to a doctor.
•INGESTION		Do not eat, drink, or smoke during work.	Do NOT induce vomiting. Give plenty of water to drink. Refer for medical attention.

SPILLAGE DISPOSAL	STORAGE	PACKAGING & LABELLING
Sweep spilled substance into containers; if appropriate, moisten first to prevent dusting. Carefully collect remainder Do NOT let this chemical enter the environment. (Extra personal protection: P2 filter respirator for harmful particles.)	Separated from strong oxidants. Keep in a well-ventilated room.	Do not transport with food and feedstuffs. R: S:

SEE IMPORTANT INFORMATION ON BACK

ICSC: 1474

Prepared in the context of cooperation between the International Programme on Chemical Safety & the Commission of the European Communities (C) IPCS CEC 1994. No modifications to the International version have been made except to add the OSHA PELs, NIOSH RELs and NIOSH IDLH values.

International Chemical Safety Cards

PYRENE

ICSC: 1474

I **M**	**PHYSICAL STATE; APPEARANCE:** YELLOW COLOURLESS SOLID IN VARIOUS FORMS	**ROUTES OF EXPOSURE:** The substance can be absorbed into the body by inhalation through the skin and by ingestion

P O R T A N T D A T A	**PHYSICAL DANGERS:** **CHEMICAL DANGERS:** The substance decomposes on heating producing irritating fumes **OCCUPATIONAL EXPOSURE LIMITS:** TLV not established. MAK not established. **INHALATION RISK:** Evaporation at 20°C is negligible; a harmful concentration of airborne particles can, however, be reached quickly when dispersed. **EFFECTS OF SHORT-TERM EXPOSURE:** Exposure to sun may provoke an irritating effect of pyrene on skin and lead to chronic skin discoloration. **EFFECTS OF LONG-TERM OR REPEATED EXPOSURE:**

PHYSICAL PROPERTIES	Boiling point: 404°C Melting point: 151°C Density: 1.27 g/cm3	Solubility in water: 0.135 mg/l at 25°C Vapour pressure, Pa at °C: 0.08 Octanol/water partition coefficient as log Pow: 4.88
ENVIRONMENTAL DATA	Bioaccumulation of this chemical may occur in crustacea,in fish,in milk,in algae andin molluscs. It is strongly advised that this substance does not enter the environment.	

N O T E S

Pyrene is one of many polycyclic aromatic hydrocarbons - standards are usually established for them as mixtures, e.g., coal tar pitch volatiles. However, pyrene may be encountered as a laboratory chemical in its pure form. Health effects of exposure to the substance have not been investigated adequately. See ICSC 1415 Coal-tar pitch.

ADDITIONAL INFORMATION

ICSC: 1474 **PYRENE**

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International Chemical Safety Cards

PYRIDINE

ICSC: 0323

Azine
Azabenzene
C_5H_5N
Molecular mass: 79.1

ICSC # 0323
CAS # 110-86-1
RTECS # UR8400000
UN # 1282
EC # 613-002-00-7
December 04, 2000 Validated

TYPES OF HAZARD/ EXPOSURE	ACUTE HAZARDS/ SYMPTOMS	PREVENTION	FIRST AID/ FIRE FIGHTING
FIRE	Highly flammable. Gives off irritating or toxic fumes (or gases) in a fire.	NO open flames, NO sparks, and NO smoking.	Powder, alcohol-resistant foam, water in large amounts, carbon dioxide.
EXPLOSION	Vapour/air mixtures are explosive.	Closed system, ventilation, explosion-proof electrical equipment and lighting. Do NOT use compressed air for filling, discharging, or handling.	In case of fire: keep drums, etc., cool by spraying with water.
EXPOSURE			
•INHALATION	Cough. Dizziness. Headache. Nausea. Shortness of breath. Unconsciousness.	Ventilation, local exhaust, or breathing protection.	Fresh air, rest. Artificial respiration if indicated. Refer for medical attention.
•SKIN	MAY BE ABSORBED! Redness. Burning sensation (further see Inhalation).	Protective gloves. Protective clothing.	Remove contaminated clothes. Rinse skin with plenty of water or shower. Refer for medical attention.
•EYES	Redness. Pain.	Safety spectacles. or face shield.	First rinse with plenty of water for several minutes (remove contact lenses if easily possible), then take to a doctor.
•INGESTION	Abdominal pain. Diarrhoea. Vomiting. Weakness (further see Inhalation).	Do not eat, drink, or smoke during work.	Rinse mouth. Do NOT induce vomiting. Give one or two glasses of water to drink. Refer for medical attention.

SPILLAGE DISPOSAL	STORAGE	PACKAGING & LABELLING
Personal protection: self-contained	Fireproof. Separated from strong	

breathing apparatus. Remove all ignition sources. Collect leaking and spilled liquid in sealable containers as far as possible. Absorb remaining liquid in sand or inert absorbent and remove to safe place. Do NOT wash away into sewer.	oxidants, strong acids. Cool. Dry. Well closed.	F symbol Xn symbol R: 11-20/21/22 S: 2-26-28 UN Hazard Class: 3 UN Packing Group: II

SEE IMPORTANT INFORMATION ON BACK

ICSC: 0323

Prepared in the context of cooperation between the International Programme on Chemical Safety & the Commission of the European Communities (C) IPCS CEC 1994. No modifications to the International version have been made except to add the OSHA PELs, NIOSH RELs and NIOSH IDLH values.

International Chemical Safety Cards

PYRIDINE

ICSC: 0323

IMPORTANT DATA

PHYSICAL STATE; APPEARANCE:
COLOURLESS LIQUID , WITH CHARACTERISTIC ODOUR.

PHYSICAL DANGERS:
The vapour is heavier than air and may travel along the ground; distant ignition possible.

CHEMICAL DANGERS:
The substance decomposes on burning producing toxic fumes (nitrogen oxides and hydrogen cyanide - see ICSC # 0492). The substance is a weak base. Reacts violently with strong oxidants and strong acids .

OCCUPATIONAL EXPOSURE LIMITS:
TLV: 1 ppm
(as TWA)
A3 (confirmed animal carcinogen with unknown relevance to humans); (ACGIH 2005).
MAK: skin absorption (H);
Carcinogen category: 3B
(DFG 2009).
OSHA PEL: TWA 5 ppm (15 mg/m^3)
NIOSH REL: TWA 5 ppm (15 mg/m^3)
NIOSH IDLH: 1000 ppm See: 110861

ROUTES OF EXPOSURE:
The substance can be absorbed into the body by inhalation, through the skin and by ingestion.

INHALATION RISK:
A harmful contamination of the air can be reached rather quickly on evaporation of this substance at 20°C.

EFFECTS OF SHORT-TERM EXPOSURE:
The substance irritates the eyes, the skin and the respiratory tract. The substance may cause effects on the central nervous system and gastrointestinal tract. Exposure far above the OEL could cause lowering of consciousness.

EFFECTS OF LONG-TERM OR REPEATED EXPOSURE:
The substance may have effects on the central nervous system , liver , kidneys .

PHYSICAL PROPERTIES

Boiling point: 115°C
Melting point: -42°C
Relative density (water = 1): 0.98
Solubility in water:
miscible
Vapour pressure, kPa at 20°C: 2.0
Relative vapour density (air = 1): 2.73

Relative density of the vapour/air-mixture at 20°C (air = 1): 1.03
Flash point:
20°C c.c.
Auto-ignition temperature: 482°C
Explosive limits, vol% in air: 1.8-12.4
Octanol/water partition coefficient as log Pow: 0.65

ENVIRONMENTAL

The substance is harmful to aquatic organisms.

DATA	

N O T E S

Pyridine can normally be detected by odour at levels well below the TLV. However, perception of the odour may decline quickly. Depending on the degree of exposure, periodic medical examination is indicated.

Transport Emergency Card: TEC (R)-98

NFPA Code: H 2; F 3; R 0;
Card has been partially updated in January 2008: see Ingestion First Aid.
Card has been partially updated in April 2010: see Occupational Exposure Limits, Spillage Disposal.

ADDITIONAL INFORMATION

ICSC: 0323 **PYRIDINE**

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Material Safety Data Sheet

Version 4.0
Revision Date 03/12/2010
Print Date 12/09/2011

1. PRODUCT AND COMPANY IDENTIFICATION

Product name	:	4,4'-DDD PESTANAL,250 MG (2,2-BIS(4-CHL&
Product Number	:	35486
Brand	:	Fluka
Company	:	Sigma-Aldrich 3050 Spruce Street SAINT LOUIS MO 63103 USA
Telephone	:	+1 800-325-5832
Fax	:	+1 800-325-5052
Emergency Phone #	:	(314) 776-6555

2. HAZARDS IDENTIFICATION

Emergency Overview

OSHA Hazards
Toxic by ingestion, Harmful by skin absorption., Possible carcinogen.

GHS Label elements, including precautionary statements

Pictogram

Signal word: Danger

Hazard statement(s)

H301	Toxic if swallowed.
H312	Harmful in contact with skin.
H351	Suspected of causing cancer.
H400	Very toxic to aquatic life.
H413	May cause long lasting harmful effects to aquatic life.

Precautionary statement(s)

P273	Avoid release to the environment.
P280	Wear protective gloves/protective clothing.
P301 + P310	IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician.

HMIS Classification

Health hazard:	2
Chronic Health Hazard:	*
Flammability:	0
Physical hazards:	0

NFPA Rating

Health hazard:	2
Fire:	0
Reactivity Hazard:	0

Potential Health Effects

Inhalation	May be harmful if inhaled. May cause respiratory tract irritation.
Skin	Harmful if absorbed through skin. May cause skin irritation.
Eyes	May cause eye irritation.
Ingestion	Toxic if swallowed.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Synonyms : 1,1-Dichloro-2,2-bis(4-chlorophenyl)ethane
4,4′-DDD
TDE

Formula : $C_{14}H_{10}Cl_4$
Molecular Weight : 320.04 g/mol

CAS-No.	EC-No.	Index-No.	Concentration
2,2-bis(4-Chlorophenyl)-1,1-dichloro-ethane			
72-54-8	200-783-0	-	-

4. FIRST AID MEASURES

General advice
Consult a physician. Show this safety data sheet to the doctor in attendance.Move out of dangerous area.

If inhaled
If breathed in, move person into fresh air. If not breathing give artificial respiration Consult a physician.

In case of skin contact
Wash off with soap and plenty of water. Consult a physician.

In case of eye contact
Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician.

If swallowed
Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

5. FIRE-FIGHTING MEASURES

Suitable extinguishing media
Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

Special protective equipment for fire-fighters
Wear self contained breathing apparatus for fire fighting if necessary.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions
Use personal protective equipment. Avoid dust formation. Avoid breathing dust. Ensure adequate ventilation. Evacuate personnel to safe areas.

Environmental precautions
Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.

Methods and materials for containment and cleaning up
Pick up and arrange disposal without creating dust. Keep in suitable, closed containers for disposal.

7. HANDLING AND STORAGE

Precautions for safe handling
Avoid contact with skin and eyes. Avoid formation of dust and aerosols.
Provide appropriate exhaust ventilation at places where dust is formed. Normal measures for preventive fire protection.

Conditions for safe storage
Keep container tightly closed in a dry and well-ventilated place.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Contains no substances with occupational exposure limit values.

Personal protective equipment

Respiratory protection
Where risk assessment shows air-purifying respirators are appropriate use a full-face particle respirator type N100 (US) or type P3 (EN 143) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

Hand protection
Handle with gloves.

Eye protection
Face shield and safety glasses

Skin and body protection
Choose body protection according to the amount and concentration of the dangerous substance at the work place.

Hygiene measures
Avoid contact with skin, eyes and clothing. Wash hands before breaks and immediately after handling the product.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance

Form	solid

Safety data

pH	no data available
Melting point	94.0 - 96.0 °C (201.2 - 204.8 °F)
Boiling point	193.0 °C (379.4 °F) at 1.3 hPa (1.0 mmHg)
Flash point	no data available
Ignition temperature	no data available
Lower explosion limit	no data available
Upper explosion limit	no data available
Vapour pressure	< 0.00001 hPa (< 0.00001 mmHg) at 25.0 °C (77.0 °F)
Density	1.38 g/cm3
Water solubility	no data available
Partition coefficient: n-octanol/water	log Pow: 6.02

10. STABILITY AND REACTIVITY

Chemical stability
Stable under recommended storage conditions.

Conditions to avoid
no data available

Materials to avoid
Strong oxidizing agents

Hazardous decomposition products
Hazardous decomposition products formed under fire conditions. - Carbon oxides, Hydrogen chloride gas
Hazardous decomposition products formed under fire conditions. - Nature of decomposition products not known.

11. TOXICOLOGICAL INFORMATION

Acute toxicity
LD50 Oral - Hamster - > 5,000 mg/kg

TDLo Oral - Human - 428.5 mg/kg
Remarks: Endocrine:Adrenal cortex hypoplasia.

TDLo Oral - rat - 6,000 mg/kg
Remarks: Cardiac:Other changes. Gastrointestinal:Other changes. Kidney, Ureter, Bladder:Changes in both tubules and glomeruli.

TDLo Oral - rat - 14 mg/kg
Remarks: Liver:Changes in liver weight. Endocrine:Estrogenic. Musculoskeletal:Other changes.

TDLo Oral - rat - 2,100 mg/kg
Remarks: Behavioral:Altered sleep time (including change in righting reflex).

LD50 Dermal - rabbit - 1,200 mg/kg
Remarks: Behavioral:Excitement. Behavioral:Convulsions or effect on seizure threshold. Skin irritation

Skin corrosion/irritation
no data available

Serious eye damage/eye irritation
no data available

Respiratory or skin sensitization
no data available

Germ cell mutagenicity

no data available

Carcinogenicity

This product is or contains a component that has been reported to be possibly carcinogenic based on its IARC, ACGIH, NTP, or EPA classification.

Limited evidence of carcinogenicity in animal studies

IARC:	No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.
ACGIH:	No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH.
NTP:	No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.
OSHA:	No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

Reproductive toxicity

no data available

Specific target organ toxicity - single exposure (GHS)
no data available

Specific target organ toxicity - repeated exposure (GHS)
no data available

Aspiration hazard
no data available

Potential health effects

Inhalation	May be harmful if inhaled. May cause respiratory tract irritation.
Ingestion	Toxic if swallowed.
Skin	Harmful if absorbed through skin. May cause skin irritation.

Eyes May cause eye irritation.

Signs and Symptoms of Exposure
To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

Additional Information
RTECS: KI0700000

12. ECOLOGICAL INFORMATION

Toxicity

Toxicity to fish	LC50 - other fish - 1.18 - 9 mg/l - 96.0 h
	LC50 - Lepomis macrochirus (Bluegill) - 0.04 - 0.05 mg/l - 96.0 h
	LC50 - Oncorhynchus mykiss (rainbow trout) - 0.06 - 0.09 mg/l - 96.0 h
	LC50 - Pimephales promelas (fathead minnow) - 3.47 - 5.58 mg/l - 96.0 h
Toxicity to daphnia and other aquatic invertebrates.	EC50 - Daphnia pulex (Water flea) - 0.01 mg/l - 48 h

Persistence and degradability
no data available

Bioaccumulative potential
Indication of bioaccumulation.

Mobility in soil
no data available

PBT and vPvB assessment
no data available

Other adverse effects

An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.

Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

13. DISPOSAL CONSIDERATIONS

Product
Observe all federal, state, and local environmental regulations. Contact a licensed professional waste disposal service to dispose of this material. Dissolve or mix the material with a combustible solvent and burn in a chemical incinerator equipped with an afterburner and scrubber.

Contaminated packaging
Dispose of as unused product.

14. TRANSPORT INFORMATION

DOT (US)
UN-Number: 2811 Class: 6.1 Packing group: III
Proper shipping name: Toxic solids, organic, n.o.s. (2,2-bis(4-Chlorophenyl)-1,1-dichloro-ethane)
Reportable Quantity (RQ): 1 lbs
Marine pollutant: No
Poison Inhalation Hazard: No

IMDG
UN-Number: 2811 Class: 6.1 Packing group: III EMS-No: F-A, S-A
Proper shipping name: TOXIC SOLID, ORGANIC, N.O.S. (2,2-bis(4-Chlorophenyl)-1,1-dichloro-ethane)
Marine pollutant: No

IATA
UN-Number: 2811 Class: 6.1 Packing group: III
Proper shipping name: Toxic solid, organic, n.o.s. (2,2-bis(4-Chlorophenyl)-1,1-dichloro-ethane)

15. REGULATORY INFORMATION

OSHA Hazards
Toxic by ingestion, Harmful by skin absorption., Possible carcinogen.

DSL Status
This product contains the following components that are not on the Canadian DSL nor NDSL lists.

	CAS-No.
2,2-bis(4-Chlorophenyl)-1,1-dichloro-ethane	72-54-8

SARA 302 Components
SARA 302: No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

SARA 313 Components
SARA 313: This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

SARA 311/312 Hazards
Acute Health Hazard

Massachusetts Right To Know Components

	CAS-No.	Revision Date
2,2-bis(4-Chlorophenyl)-1,1-dichloro-ethane	72-54-8	

Pennsylvania Right To Know Components

	CAS-No.	Revision Date
2,2-bis(4-Chlorophenyl)-1,1-dichloro-ethane	72-54-8	

New Jersey Right To Know Components

	CAS-No.	Revision Date
2,2-bis(4-Chlorophenyl)-1,1-dichloro-ethane	72-54-8	

California Prop. 65 Components

	CAS-No.	Revision Date
WARNING! This product contains a chemical known to the State of California to cause cancer. 2,2-bis(4-Chlorophenyl)-1,1-dichloro-ethane	72-54-8	

16. OTHER INFORMATION

Further information
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The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. Sigma-Aldrich Co., shall not be held liable for any damage resulting from handling or from contact with the above product. See reverse side of invoice or packing slip for additional terms and conditions of sale.

ChemCAS

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AdChoices

Ads by Google MSDS Sheets Data MSDS MSDS Search MSDS Chemical

Search
72-55-9 msds
GO
MSDS 250,000+

MSDS : 2,2-Bis-(4-chlorophenyl)-1,1-dichloroethylene, 99%
CAS : 72-55-9
SYNONYMS : p,p'-DDE ; ethylene,1,1-dichloro-2,2-bis-(p-chlorophenyl)- ; DDT dehydrochloride ; DDE; 1-1'-(Dichloroethenylidene)bis(4-chlorobenzene)

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AdChoices

Catalog of Chemical Suppliers, Buyers, Custom Synthesis Companies And Equipment Manufacturers
[2,2-Bis-(4-chlorophenyl)-1,1-dichloroethylene, 99% 72-55-9]

Suppliers:

Not Available

Buyers:

Not Available

Sprayon® LU711 Lubricant Because your environment demands a TRUE Industrial Lubricant Sprayon.com

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AdChoices

**** SECTION 2 - COMPOSITION, INFORMATION ON INGREDIENTS ****

CAS#	Chemical Name	%	EINECS#
72-55-9	2,2-Bis-(4-chlorophenyl)-1,1-dichloroethylene	99	200-784-6

Hazard Symbols: XN
Risk Phrases: 22 33

**** SECTION 3 - HAZARDS IDENTIFICATION ****

EMERGENCY OVERVIEW
Harmful if swallowed. Danger of cumulative effects.Cancer suspect agent.Possible risks of irreversible effects.

Potential Health Effects
Eye:
May cause eye irritation.
Skin:
May cause skin irritation.
Ingestion:
May cause irritation of the digestive tract. May be harmful if swallowed. Ingestion of large amounts may cause liver and/or kidney damage.
Inhalation:
May cause respiratory tract irritation.
Chronic:
May cause cancer according to animal studies. Adverse reproductive effects have been reported in animals. Laboratory experiments have resulted in mutagenic effects.

**** SECTION 4 - FIRST AID MEASURES ****

Eyes:
Flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. Get medical aid.
Skin:
Get medical aid. Flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Wash clothing before reuse.
Ingestion:
If victim is conscious and alert, give 2-4 cupfuls of milk or water. Never give anything by mouth to an unconscious person. Get medical aid immediately.
Inhalation:
Remove from exposure and move to fresh air immediately. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical aid.
Notes to Physician:
Treat symptomatically and supportively.

**** SECTION 5 - FIRE FIGHTING MEASURES ****

General Information:

As in any fire, wear a self-contained breathing apparatus in pressure-demand, MSHA/NIOSH (approved or equivalent), and full protective gear. Water runoff can cause environmental damage. Dike and collect water used to fight fire. During a fire, irritating and highly toxic gases may be generated by thermal decomposition or combustion. Will burn if involved in a fire.
Extinguishing Media:
For large fires, use water spray, fog or regular foam. For small fires, use dry chemical, carbon dioxide, water spray or regular foam. Cool containers with flooding quantities of water until well after fire is out.

**** SECTION 6 - ACCIDENTAL RELEASE MEASURES ****

General Information: Use proper personal protective equipment as indicated in Section 8.
Spills/Leaks:
Avoid runoff into storm sewers and ditches which lead to waterways. Clean up spills immediately, observing precautions in the Protective Equipment section. Sweep up, then place into a suitable container for disposal. Avoid generating dusty conditions. Provide ventilation.

**** SECTION 7 - HANDLING and STORAGE ****

Handling:
Wash thoroughly after handling. Remove contaminated clothing and wash before reuse. Minimize dust generation and accumulation. Avoid contact with eyes, skin, and clothing. Do not ingest or inhale. Use with adequate ventilation.
Storage:
Keep container closed when not in use. Store in a tightly closed container. Store in a cool, dry, well-ventilated area away from incompatible substances.

**** SECTION 8 - EXPOSURE CONTROLS, PERSONAL PROTECTION ****

Engineering Controls:
Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower. Use adequate ventilation to keep airborne concentrations low.
Exposure Limits
CAS# 72-55-9:

Personal Protective Equipment

Eyes:
Wear appropriate protective eyeglasses or chemical safety goggles as described by OSHA's eye and face protection regulations in 29 CFR 1910.133 or European Standard EN166.
Skin:
Wear appropriate protective gloves to prevent skin exposure.
Clothing:
Wear appropriate protective clothing to prevent skin exposure.
Respirators:
A respiratory protection program that meets OSHA's 29 CFR 1910.134 and ANSI Z88.2 requirements or European Standard EN 149 must be followed whenever workplace conditions warrant respirator use.

**** SECTION 9 - PHYSICAL AND CHEMICAL PROPERTIES ****

Physical State: Crystals
Color: white
Odor: None reported.
pH: Not available.
Vapor Pressure: 6.5106 mm Hg @ 20 C
Viscosity: Not available.
Boiling Point: 336 deg C
Freezing/Melting Point: 88.00 - 90.00 deg C
Autoignition Temperature: Not available.
Flash Point: Not available.
Explosion Limits, lower: Not available.
Explosion Limits, upper: Not available.
Decomposition Temperature:
Solubility in water: 0.010 ppm
Specific Gravity/Density:
Molecular Formula: C14H8Cl4
Molecular Weight: 318.02

**** SECTION 10 - STABILITY AND REACTIVITY ****

Chemical Stability:
Stable under normal temperatures and pressures.
Conditions to Avoid:
Incompatible materials, dust generation, strong oxidants.
Incompatibilities with Other Materials:
Strong oxidizing agents - strong bases.
Hazardous Decomposition Products:
Hydrogen chloride, carbon monoxide, carbon dioxide.
Hazardous Polymerization: Has not been reported.

**** SECTION 11 - TOXICOLOGICAL INFORMATION ****

RTECS#:
CAS# 72-55-9: KV9450000
LD50/LC50:
CAS# 72-55-9: Oral, mouse: LD50 = 700 mg/kg; Oral, rat: LD50 = 880 mg/kg.
Carcinogenicity:
2,2-Bis-(4-chlorophenyl)-1,1-dichloroethylene -
California: carcinogen, initial date 1/1/89

Other:
See actual entry in RTECS for complete information.

**** SECTION 12 - ECOLOGICAL INFORMATION ****

Ecotoxicity:
Estimated BCF value = 8,300 based on water solubility. Estimated Koc value = 8,300. There was no movement of DDE reported in soil column mobility experiments.

**** SECTION 13 - DISPOSAL CONSIDERATIONS ****

Dispose of in a manner consistent with federal, state, and local regulations.

**** SECTION 14 - TRANSPORT INFORMATION ****

IATA
Not regulated as a hazardous material.
IMO
Not regulated as a hazardous material.
RID/ADR
Not regulated as a hazardous material.
USA RQ: CAS# 72-55-9: 1 lb final RQ; 0.454 kg final RQ

**** SECTION 15 - REGULATORY INFORMATION ****

European/International Regulations
European Labeling in Accordance with EC Directives
Hazard Symbols: XN
Risk Phrases:
R 22 Harmful if swallowed.
R 33 Danger of cumulative effects.
Safety Phrases:
S 24/25 Avoid contact with skin and eyes.
WGK (Water Danger/Protection)
CAS# 72-55-9: 3
Canada
None of the chemicals in this product are listed on the DSL/NDSL list.
CAS# 72-55-9 is listed on Canada's Ingredient Disclosure List.
US FEDERAL
TSCA
CAS# 72-55-9 is not listed on the TSCA inventory.
It is for research and development use only.

**** SECTION 16 - ADDITIONAL INFORMATION ****

MSDS Creation Date: 9/28/1998 Revision #3 Date: 3/18/2003

The information above is believed to be accurate and represents the best information currently available to us. However, we make no warranty of merchantability or any other warranty, express or implied, with respect to such information, and we assume no liability resulting from its use. Users should make their own investigations to determine the suitability of the information for their particular purposes. In no way shall the company be liable for any claims, losses, or damages of any third party or for lost profits or any special, indirect, incidental, consequential or exemplary damages, howsoever arising, even if the company has been advised of the possibility of such damages.

Search More 72-55-9 msds GO

ALL MSDS PAGES IN THIS GROUP

NAME	CAS
M-Benzyloxybenzyl Alcohol , 97%	1700-30-7
Octaphenylcyclotetrasiloxane, 98%	546-56-5
Cetylpyridinium chloride	123-03-5
3,4-Difluorophenol, 99%	2713-33-9
1-Benzyl-4-Hydroxypiperidine, 97%	4727-72-4
4-tert-Butylbenzoyl chloride	1710-98-1
Borane-morpholine complex, 97%	4856-95-5
Benzyl Ether, 99%	103-50-4
5-Amino-1-Naphtol (Pract)	83-55-6
Pyridinium-P-Toluenesulfonate 98%	24057-28-1
Pyrogallol Red, 98% (Titr.)	32638-88-3
Amberlite ira 416	9002-26-0
3-Methoxybenzonitrile, 98%	1527-89-5
1-Adamantanemethanol, 99%	770-71-8
Inosine, 99%	58-63-9
Pentafluoropropionic Acid	422-64-0
Pyruvic Acid	127-17-3
Potassium hydrogen fluoride, 99+%	7789-29-9
Aluminum Nitride, 98% Particle Size <10 Micron	24304-00-5
Nickel(II) hydroxide, c.p., 60-61% Ni	12054-48-7
1-Adamantanamine sulfate, 99%	31377-23-8
S-(Thiobenzoyl)-Thioglycolic Acid, 97%	942-91-6
N,N-Dimethyl-P-Nitroaniline	100-23-2
Benzofuroxan	480-96-6
cis-2-Aminomethyl-1-cyclohexanol hydrochloride, 99%	24947-68-0
Silver Phosphate, 98% (Titr.)	7784-09-0

4-Cyano-4-Phenylpiperidine Hydrochloride, 99% (TLC)	51304-58-6
Methanesulfonamide	3144-09-0
gamma-Octanoic lactone, 98%	104-50-7
Cis,cis,cis,cis-1,2,3,4-cyclopentane- tetracarboxylic dianhydride,	4802-47-5
Tetrachloroethylene Carbonate, 98+%	22432-68-4
Oxamic Acid, 98%	471-47-6
1O,11-Dihydro-5H-Dibenzo(A,D)-Cycloheptene, 98%	833-48-7
Thallium (I) Sulfate, 99.9+%	7446-18-6
N-(2,6-Dimethylphenylcarbamoyl-Methyl)-Iminodiacetic Acid, 99%	59160-29-1
P-(Dimethylamino)cinnamic Acid, 99%	1552-96-1
Biebrich Scarlet, 99% (UV-VIS)	4196-99-0
4-Chlorobenzenediazonium hexafluoro- phosphate	1582-27-0
Ammonium hexachloroiridate(IV), 99.99%	16940-92-4
Methylamine-d2 deuteriochloride, 98+ atom % D	593-51-1
2,2-Bis-(4-chlorophenyl)-1,1-dichloroethylene, 99%	72-55-9
Nitro red	56431-61-9
Methyl 2,3-dichlorobenzoate, 98+%	2905-54-6
Isopropyl Bromoacetate, 98% (GC)	29921-57-1
1-Iodo-4-Nitrobenzene, 99%	636-98-6
4-Ethylcyclohexanol, 99% cis/trans mixture	4534-74-1
Fluorescamine	38183-12-9
Tris(2,2,6,6-Tetramethyl-3,5-Heptanedionato)Dysprosium(III), 99+%	15522-69-7
3-Amino-2,2,5,5-Tetramethyl-1-Pyrrolidinyloxy, 99% (Titr.)	34272-83-8
3,4-Dihydroxyphenylacetic Acid,98%	102-32-9

Free MSDS Search (Providing 250，000+ Material Properties)
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International Chemical Safety Cards

DDT

ICSC: 0034

Dichlorodiphenyltrichloroethane
1,1,1-Trichloro-2,2-bis(p-chlorophenyl)ethane
2,2-bis(p-Chlorophenyl)-1,1,1-trichloroethane
1,1'-(2,2,2-Trichloroethylidene)bis(4-chlorobenzene)
p,p'-DDT
$C_{14}H_9Cl_5$
Molecular mass: 354.5

ICSC # 0034
CAS # 50-29-3
RTECS # KJ3325000
UN # 2761
EC # 602-045-00-7
April 20, 2004 Peer reviewed

TYPES OF HAZARD/ EXPOSURE	ACUTE HAZARDS/ SYMPTOMS	PREVENTION	FIRST AID/ FIRE FIGHTING
FIRE	Combustible. Liquid formulations containing organic solvents may be flammable. Gives off irritating or toxic fumes (or gases) in a fire.	NO open flames.	Powder, water spray, foam, carbon dioxide.
EXPLOSION			
EXPOSURE		PREVENT DISPERSION OF DUST! STRICT HYGIENE! AVOID EXPOSURE OF (PREGNANT) WOMEN!	
•INHALATION	Cough.	Local exhaust or breathing protection.	Fresh air, rest.
•SKIN		Protective gloves.	Remove contaminated clothes. Rinse and then wash skin with water and soap.
•EYES	Redness.	Safety goggles, or eye protection in combination with breathing protection if powder.	First rinse with plenty of water for several minutes (remove contact lenses if easily possible), then take to a doctor.
•INGESTION	Tremors. Diarrhoea. Dizziness. Headache. Vomiting. Numbness. Paresthesias. Hyperexcitability. Convulsions.	Do not eat, drink, or smoke during work. Wash hands before eating.	Rinse mouth. Give a slurry of activated charcoal in water to drink. Rest. Refer for medical attention.

SPILLAGE DISPOSAL	STORAGE	PACKAGING & LABELLING
Do NOT let this chemical enter the environment. Sweep spilled substance into sealable non-metallic containers; if appropriate, moisten first to prevent dusting. Carefully collect remainder, then remove to safe place. Personal protection: P3 filter respirator for toxic particles.	Provision to contain effluent from fire extinguishing. Separated from iron, aluminum and its salts, food and feedstuffs See Chemical Dangers.	Do not transport with food and feedstuffs. Severe marine pollutant. T symbol N symbol R: 25-40-48/25-50/53 S: 1/2-22-36/37-45-60-61 UN Hazard Class: 6.1 UN Packing Group: III

SEE IMPORTANT INFORMATION ON BACK

Prepared in the context of cooperation between the International Programme on Chemical Safety & the Commission of the European Communities (C) IPCS CEC 1994. No modifications to the International version have been made except to add the OSHA PELs, NIOSH RELs and NIOSH IDLH values.

International Chemical Safety Cards

DDT

ICSC: 0034

IMPORTANT DATA	**PHYSICAL STATE; APPEARANCE:** COLOURLESS CRYSTALS WHITE POWDER. TECHNICAL PRODUCT IS WAXY SOLID. **PHYSICAL DANGERS:** **CHEMICAL DANGERS:** On combustion, forms toxic and corrosive fumesincludinghydrogen chloride. Reacts with aluminium and iron. **OCCUPATIONAL EXPOSURE LIMITS:** TLV: 1 mg/m³ as TWA A3 (ACGIH 2004). MAK: 1 mg/m³ H Peak limitation category: II(8) (DFG 2003). OSHA PEL: TWA 1 mg/m^3 skin NIOSH REL: Ca TWA 0.5 mg/m^3 See Appendix A NIOSH IDLH: Ca 500 mg/m^3 See: 50293 **ROUTES OF EXPOSURE:** The substance can be absorbed into the body by ingestion. **INHALATION RISK:** Evaporation at 20°C is negligible; a harmful concentration of airborne particles can, however, be reached quickly especially if powdered. **EFFECTS OF SHORT-TERM EXPOSURE:** May cause mechanical irritation. The substance may cause effects on the central nervous system , resulting in convulsions and respiratory depression Exposure at high levels may result in death. Medical observation is indicated. **EFFECTS OF LONG-TERM OR REPEATED EXPOSURE:** The substance may have effects on the central nervous system and liver. This substance is possibly carcinogenic to humans. Animal tests show that this substance possibly causes toxicity to human reproduction or development.
PHYSICAL PROPERTIES	Boiling point: 260°C Melting point: 109°C Density: 1.6 g/cm3 Solubility in water: poor Octanol/water partition coefficient as log Pow: 6.36
ENVIRONMENTAL DATA	The substance is very toxic to aquatic organisms. This substance may be hazardous to the environment; special attention should be given to birds. Bioaccumulation of this chemical may occur along the food chain, for example in milk and aquatic organisms. This substance does enter the environment under normal use. Great care, however, should be given to avoid any additional release, e.g. through inappropriate disposal.

N O T E S

Depending on the degree of exposure, periodic medical examination is indicated. Carrier solvents used in commercial formulations may change physical and toxicological properties. Do NOT take working clothes home. Consult national legislation. Agritan, Azotox, Anofex, Ixodex, Gesapon, Gesarex, Gesarol, Guesapon, Clofenotane, Zeidane, Dicophane, Neocid are trade names.

Transport Emergency Card: TEC (R)-61GT7-III

ADDITIONAL INFORMATION

ICSC: 0034 **DDT**

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International Chemical Safety Cards

ALDRIN

ICSC: 0774

1,2,3,4,10,10-Hexachloro-1,4,4a,5,8,8a-hexahydro-exo-1,4-endo-5,8-dimethanonaphthalene
1,45,8-Dimethanonaphthalene, 1,2,3,4,10,10-hexachloro-1,4,4a,5,8,8a-hexahydro-,
(1alpha,4alpha,4aß,5alpha,8alpha,8aß)
HHDN
$C_{12}H_8Cl_6$
Molecular mass: 364.9

ICSC # 0774
CAS # 309-00-2
RTECS # IO2100000
UN # 2761
EC # 602-048-00-3
March 26, 1998 Validated

TYPES OF HAZARD/ EXPOSURE	ACUTE HAZARDS/ SYMPTOMS	PREVENTION	FIRST AID/ FIRE FIGHTING
FIRE	Not combustible. Liquid formulations containing organic solvents may be flammable. Gives off irritating or toxic fumes (or gases) in a fire.		In case of fire in the surroundings: all extinguishing agents allowed.
EXPLOSION			
EXPOSURE		PREVENT DISPERSION OF DUST! STRICT HYGIENE! AVOID EXPOSURE OF ADOLESCENTS AND CHILDREN!	
•INHALATION	(See Ingestion).	Ventilation (not if powder).	Fresh air, rest. Refer for medical attention.
•SKIN	MAY BE ABSORBED! See Ingestion.	Protective gloves. Protective clothing.	Remove contaminated clothes. Rinse and then wash skin with water and soap. Refer for medical attention.
•EYES		Safety goggles, or face shield.	First rinse with plenty of water for several minutes (remove contact lenses if easily possible), then take to a doctor.
•INGESTION	Convulsions. Dizziness. Headache. Nausea. Vomiting. Muscle twitching.	Do not eat, drink, or smoke during work. Wash hands before eating.	Give a slurry of activated charcoal in water to drink. Do NOT induce vomiting. Rest. Refer for medical attention.

SPILLAGE DISPOSAL	STORAGE	PACKAGING & LABELLING
Do NOT wash away into sewer. Sweep spilled substance into sealable containers; if appropriate, moisten first to prevent dusting. Carefully collect remainder, then remove to safe place. (Extra personal protection: chemical protection suit including self-contained breathing apparatus).	Provision to contain effluent from fire extinguishing. Separated from food and feedstuffs and incompatible materials: See Chemical Dangers. Well closed. Keep in a well-ventilated room. Store in an area without drain or sewer access.	Do not transport with food and feedstuffs. Severe marine pollutant. T symbol N symbol R: 24/25-40-48/24/25-50/53 S: 1/2-22-36/37-45-60-61 UN Hazard Class: 6.1 UN Packing Group: II

SEE IMPORTANT INFORMATION ON BACK

Prepared in the context of cooperation between the International Programme on Chemical Safety & the Commission of the European Communities (C) IPCS CEC 1994. No modifications to the International version have been made except to add the OSHA PELs, NIOSH RELs and NIOSH IDLH values.

International Chemical Safety Cards

ALDRIN

ICSC: 0774

IMPORTANT DATA

PHYSICAL STATE; APPEARANCE:
COLOURLESS CRYSTALS

PHYSICAL DANGERS:

CHEMICAL DANGERS:
The substance decomposes on heating producing toxic and corrosive fumes including hydrogen chloride. Reacts with acids and oxidants. Attacks many metals in presence of water.

OCCUPATIONAL EXPOSURE LIMITS:
TLV: 0.25 mg/m³ (as TWA), A3 (skin) (ACGIH 1997).
MAK: (Inhalable fraction) 0.25 mg/m³; skin absorption (H);
Peak limitation category: II(8)
(DFG 2006).
OSHA PEL: TWA 0.25 mg/m^3 skin
NIOSH REL: Ca TWA 0.25 mg/m^3 skin See Appendix A
NIOSH IDLH: Ca 25 mg/m^3 See: 309002

ROUTES OF EXPOSURE:
The substance can be absorbed into the body through the skin and by ingestion.

INHALATION RISK:
Evaporation at 20°C is negligible; a harmful concentration of airborne particles can, however, be reached quickly on spraying.

EFFECTS OF SHORT-TERM EXPOSURE:
The substance may cause effects on the central nervous system , resulting in convulsions. The effects may be delayed. Medical observation is indicated.

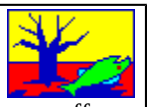
EFFECTS OF LONG-TERM OR REPEATED EXPOSURE:
The substance accumulates in the human body. Cumulative effects are possible: see Acute Hazards/Symptoms.

PHYSICAL PROPERTIES

Boiling point at 0.27kPa: 145°C
Melting point: 104-105°C
Density: 1.6
g/cm³

Solubility in water: none
Vapour pressure, Pa at 20°C: 0.009
Octanol/water partition coefficient as log Pow: 7.4

ENVIRONMENTAL DATA



The substance is very toxic to aquatic organisms. This substance may be hazardous to the environment; special attention should be given to birds, honey bees. In the food chain important to humans, bioaccumulation takes place, specifically in aquatic organisms. It is strongly advised not to let the chemical enter into the environment because it persists in the environment. The substance may cause long-term effects in the aquatic environment. Avoid release to the environment in circumstances different to normal use.

NOTES

Other melting points: 49-60°C (technical grade). Depending on the degree of exposure, periodic medical examination is indicated. If the substance is formulated with solvent(s) also consult the card(s) (ICSC) of the solvent(s). Carrier solvents used in commercial formulations may change physical and toxicological properties. Do NOT take working clothes home. The recommendations on this Card also apply to ICSC 0787 (dieldrin). Aldrec, Aldrex, Aldrite, Aldron, Aldrosol, Algran, Altox, Drinox, Octalene, Seedrin, and Toxadrin are trade names.

Transport Emergency Card: TEC (R)-61G41b.

NFPA Code: H2; F0; R0;
Card has been partially updated in August 2007: see Storage, Occupational Exposure Limits.

ADDITIONAL INFORMATION

(C) IPCS, CEC, 1994

IMPORTANT LEGAL

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NOTICE:	The user should verify compliance of the cards with the relevant legislation in the country of use. The only modifications made to produce the U.S. version is inclusion of the OSHA PELs, NIOSH RELs and NIOSH IDLH values.

International Chemical Safety Cards

alpha-HEXACHLOROCYCLOHEXANE

ICSC: 0795

alpha-1,2,3,4,5,6-Hexachlorocyclohexane
alpha-Benzenehexachloride (alpha-BHC)
alpha-Hexachloran
$C_6H_6Cl_6$
Molecular mass: 290.8

ICSC # 0795
CAS # 319-84-6
RTECS # GV3500000
UN # 2761
EC # 602-042-00-0
November 25, 2009 Validated

TYPES OF HAZARD/ EXPOSURE	ACUTE HAZARDS/ SYMPTOMS	PREVENTION	FIRST AID/ FIRE FIGHTING
FIRE	Not combustible. Liquid formulations containing organic solvents may be flammable. Gives off irritating or toxic fumes (or gases) in a fire.		In case of fire in the surroundings: use appropriate extinguishing media.
EXPLOSION	Risk of fire and explosion. if formulations contain flammable/explosive solvents		In case of fire: keep drums, etc., cool by spraying with water.
EXPOSURE		AVOID ALL CONTACT! AVOID EXPOSURE OF BREASTFEEDING WOMEN!	
•INHALATION	Cough. Sore throat. See Ingestion.	Avoid inhalation of dust	Fresh air, rest. Seek medical attention if you feel unwell
•SKIN	MAY BE ABSORBED!	Protective gloves. Protective clothing.	Wear protective gloves when administering first aid. Remove contaminated clothes. Rinse and then wash skin with water and soap. Seek medical attention if you feel unwell
•EYES	Redness.	Face shield or eye protection in combination with breathing protection.	Rinse with plenty of water (remove contact lenses if easily possible).
•INGESTION	Headache. Nausea. Vomiting. Diarrhoea. Dizziness. Tremors. Convulsions.	Do not eat, drink, or smoke during work. Wash hands before eating.	Rinse mouth. Give a slurry of activated charcoal in water to drink, NOT if convulsions occur . Refer immediately for medical attention.

SPILLAGE DISPOSAL	STORAGE	PACKAGING & LABELLING
Personal protection: filter respirator for organic gases and particulates adapted to the airborne concentration of the substance, chemical protection suit including self-contained breathing apparatus, protective gloves. Do NOT let this chemical enter the environment. Sweep spilled substance into non-metallic, sealable containers; if	Well closed. Store in an area without drain or sewer access. Provision to contain effluent from fire extinguishing. Separated from bases, metals, food and feedstuffs.	Do not transport with food and feedstuffs. Note: C T symbol N symbol R: 21-25-40-50/53 S: 1/2-22-36/37-45-60-61 UN Hazard Class: 6.1 UN Packing Group: III

appropriate, moisten first to prevent dusting. Carefully collect remainder, then remove to safe place.		Signal: Danger Skull-Health haz-Enviro Toxic if swallowed May be harmful in contact with skin Suspected of causing cancer May cause harm to the breast-fed children Causes damage to central nervous system May cause damage to liver and kidney through prolonged or repeated exposure Very toxic to aquatic life with long-lasting effects

SEE IMPORTANT INFORMATION ON BACK

ICSC: 0795

Prepared in the context of cooperation between the International Programme on Chemical Safety & the Commission of the European Communities (C) IPCS CEC 1994. No modifications to the International version have been made except to add the OSHA PELs, NIOSH RELs and NIOSH IDLH values.

International Chemical Safety Cards

alpha-HEXACHLOROCYCLOHEXANE

ICSC: 0795

IMPORTANT DATA

PHYSICAL STATE; APPEARANCE:
BROWN , WITH CHARACTERISTIC ODOUR.

PHYSICAL DANGERS:

CHEMICAL DANGERS:
The substance decomposes on contact with hot surfaces or flames, producing toxic and corrosive fumes including chlorine, hydrogen chloride and phosgene,

OCCUPATIONAL EXPOSURE LIMITS:
TLV not established.
MAK: (Inhalable fraction), 0.5 mg/m³;
Peak limitation category: II(8);
skin absorption (H); (DFG 2009).
see Notes

ROUTES OF EXPOSURE:
The substance can be absorbed into the body by inhalation of its aerosol, through the skin and by ingestion.

INHALATION RISK:
A harmful concentration of airborne particles can be reached quickly when dispersed.

EFFECTS OF SHORT-TERM EXPOSURE:
The substance may cause effects on the central nervous system , resulting in convulsions

EFFECTS OF LONG-TERM OR REPEATED EXPOSURE:
The substance may have effects on the central nervous system, kidneys and liver. This substance is probably carcinogenic to humans.

PHYSICAL PROPERTIES

Boiling point: 288°C
Melting point: 157-160°C
Density: 1.9
g/cm³

Solubility in water: (very poor)
Vapour pressure, Pa at 20°C: 0.003
Relative vapour density (air = 1): 10
Octanol/water partition coefficient as log Pow: 3.8

ENVIRONMENTAL DATA

The substance is very toxic to aquatic organisms. Bioaccumulation of this chemical may occur along the food chain, for example in fish and in seafood. The substance may cause long-term effects in the aquatic environment. This substance does enter the environment under normal use. Great care, however, should be given to avoid any additional release, e.g. through inappropriate disposal.

NOTES

This substance is a component of the insecticide hexachlorocyclohexane (mixed isomers). Carrier solvents used in commercial formulations may change physical and toxicological properties. The symptoms of convulsions do not become manifest until 0.5 to several hours. Do NOT take working clothes home. Do NOT use in the vicinity of a fire or a hot surface, or during welding.

Occupational Exposure Limits : MAK value is for technical mixture of alpha and beta isomers (0.5 mg/m^3=(Conc.alpha-HCH divided by 5) + Conc beta-HCH)

ADDITIONAL INFORMATION	

ICSC: 0795 **alpha-HEXACHLOROCYCLOHEXANE**

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Material Safety Data Sheet

Version 4.2
Revision Date 01/18/2011
Print Date 12/09/2011

1. PRODUCT AND COMPANY IDENTIFICATION

Product name	:	α-Chlordane
Product Number	:	442449
Brand	:	Supelco
Product Use	:	For laboratory research purposes.

Supplier	:	Sigma-Aldrich 3050 Spruce Street SAINT LOUIS MO 63103 USA	Manufacturer	: Sigma-Aldrich Corporation 3050 Spruce St. St. Louis, Missouri 63103 USA
Telephone	:	+1 800-325-5832		
Fax	:	+1 800-325-5052		
Emergency Phone # (For both supplier and manufacturer)	:	(314) 776-6555		
Preparation Information	:	Sigma-Aldrich Corporation Product Safety - Americas Region 1-800-521-8956		

2. HAZARDS IDENTIFICATION

Emergency Overview

OSHA Hazards
Toxic by inhalation., Toxic by ingestion, Toxic by skin absorption, Irritant

GHS Classification
Acute toxicity, Inhalation (Category 4)
Acute toxicity, Oral (Category 4)
Acute toxicity, Dermal (Category 3)
Skin irritation (Category 2)
Eye irritation (Category 2A)
Specific target organ toxicity - single exposure (Category 3)
Acute aquatic toxicity (Category 1)

GHS Label elements, including precautionary statements

Pictogram

Signal word: Danger

Hazard statement(s)

H302 + H332	Harmful if swallowed or if inhaled.
H311	Toxic in contact with skin.
H315	Causes skin irritation.
H319	Causes serious eye irritation.
H335	May cause respiratory irritation.
H400	Very toxic to aquatic life.

Precautionary statement(s)

P261	Avoid breathing dust/ fume/ gas/ mist/ vapours/ spray.
P273	Avoid release to the environment.
P280	Wear protective gloves/ protective clothing.
P305 + P351 + P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

P312 Call a POISON CENTER or doctor/ physician if you feel unwell.

HMIS Classification

Health hazard: 2
Flammability: 0
Physical hazards: 0

NFPA Rating

Health hazard: 2
Fire: 0
Reactivity Hazard: 0

Potential Health Effects

Inhalation Toxic if inhaled. Causes respiratory tract irritation.
Skin Toxic if absorbed through skin. Causes skin irritation.
Eyes Causes eye irritation.
Ingestion Toxic if swallowed.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Molecular Weight : 208.29 g/mol

CAS-No.	EC-No.	Index-No.	Concentration
Chlordane			
5103-71-9	225-825-5	-	-

4. FIRST AID MEASURES

General advice
Consult a physician. Show this safety data sheet to the doctor in attendance.Move out of dangerous area.

If inhaled
If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.

In case of skin contact
Wash off with soap and plenty of water. Take victim immediately to hospital. Consult a physician.

In case of eye contact
Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician.

If swallowed
Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

5. FIRE-FIGHTING MEASURES

Suitable extinguishing media
Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

Special protective equipment for fire-fighters
Wear self contained breathing apparatus for fire fighting if necessary.

Hazardous combustion products
Hazardous decomposition products formed under fire conditions. - Carbon oxides, Hydrogen chloride gas

6. ACCIDENTAL RELEASE MEASURES

Personal precautions
Wear respiratory protection. Avoid dust formation. Avoid breathing vapors, mist or gas. Ensure adequate ventilation. Evacuate personnel to safe areas. Avoid breathing dust.

Environmental precautions
Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.

Methods and materials for containment and cleaning up
Pick up and arrange disposal without creating dust. Sweep up and shovel. Keep in suitable, closed containers for disposal.

7. HANDLING AND STORAGE

Precautions for safe handling
Avoid contact with skin and eyes. Avoid formation of dust and aerosols.
Provide appropriate exhaust ventilation at places where dust is formed. Normal measures for preventive fire protection.

Conditions for safe storage
Keep container tightly closed in a dry and well-ventilated place.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Contains no substances with occupational exposure limit values.

Personal protective equipment

Respiratory protection
Where risk assessment shows air-purifying respirators are appropriate use a full-face particle respirator type N99 (US) or type P2 (EN 143) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

Hand protection
Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

Eye protection
Face shield and safety glasses Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

Skin and body protection
Complete suit protecting against chemicals, The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

Hygiene measures
Avoid contact with skin, eyes and clothing. Wash hands before breaks and immediately after handling the product.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance

Form	crystalline
Colour	colourless

Safety data

pH	no data available
Melting/freezing point	93.0 - 94.0 °C (199.4 - 201.2 °F)
Boiling point	no data available
Flash point	no data available
Ignition temperature	no data available
Autoignition temperature	no data available
Lower explosion limit	no data available
Upper explosion limit	no data available
Vapour pressure	no data available

Density	no data available
Water solubility	no data available
Partition coefficient: n-octanol/water	no data available
Relative vapour density	no data available
Odour	no data available
Odour Threshold	no data available
Evaporation rate	no data available

10. STABILITY AND REACTIVITY

Chemical stability
Stable under recommended storage conditions.

Possibility of hazardous reactions
no data available

Conditions to avoid
no data available

Materials to avoid
Strong oxidizing agents

Hazardous decomposition products
Hazardous decomposition products formed under fire conditions. - Carbon oxides, Hydrogen chloride gas
Other decomposition products - no data available

11. TOXICOLOGICAL INFORMATION

Acute toxicity

Oral LD50
LD50 Oral - rat - 500.0 mg/kg

Inhalation LC50
Dermal LD50
Other information on acute toxicity
no data available

Skin corrosion/irritation
no data available

Serious eye damage/eye irritation
no data available

Respiratory or skin sensitization
no data available

Germ cell mutagenicity
no data available

Carcinogenicity

IARC:	No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.
ACGIH:	No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH.
NTP:	No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.
OSHA:	No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

Reproductive toxicity

no data available

Teratogenicity

no data available

Specific target organ toxicity - single exposure (Globally Harmonized System)
no data available

Specific target organ toxicity - repeated exposure (Globally Harmonized System)
no data available

Aspiration hazard
no data available

Potential health effects

Inhalation	Toxic if inhaled. Causes respiratory tract irritation.
Ingestion	Toxic if swallowed.
Skin	Toxic if absorbed through skin. Causes skin irritation.
Eyes	Causes eye irritation.

Synergistic effects
no data available

Additional Information
RTECS: Not available

12. ECOLOGICAL INFORMATION

Toxicity

Toxicity to fish	LC50 - Lepomis macrochirus (Bluegill) - 0.0074 mg/l - 96 h

Persistence and degradability
no data available

Bioaccumulative potential

Bioaccumulation	Lepomis macrochirus (Bluegill) - 24 h Bioconcentration factor (BCF): 322

Mobility in soil
no data available

PBT and vPvB assessment
no data available

Other adverse effects

An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.

Very toxic to aquatic life.

no data available

An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.

Very toxic to aquatic life.

13. DISPOSAL CONSIDERATIONS

Product
Offer surplus and non-recyclable solutions to a licensed disposal company. Contact a licensed professional waste disposal service to dispose of this material. Dissolve or mix the material with a combustible solvent and burn in a chemical incinerator equipped with an afterburner and scrubber.

Contaminated packaging
Dispose of as unused product.

14. TRANSPORT INFORMATION

DOT (US)
UN-Number: 3077 Class: 9 Packing group: III
Proper shipping name: Environmentally hazardous substances, solid, n.o.s. (Chlordane)
Marine pollutant:
Poison Inhalation Hazard: No

IMDG
UN-Number: 3077 Class: 9 Packing group: III EMS-No: F-A, S-F
Proper shipping name: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (Chlordane)
Marine pollutant: Marine pollutant

IATA
UN-Number: 3077 Class: 9 Packing group: III
Proper shipping name: Environmentally hazardous substance, solid, n.o.s. (Chlordane)

Further information
EHS-Mark required (ADR 2.2.9.1.10, IMDG code 2.10.3) for single packagings and combination packagings containing inner packagings with Dangerous Goods > 5L for liquids or > 5kg for solids.

15. REGULATORY INFORMATION

OSHA Hazards
Toxic by inhalation., Toxic by ingestion, Toxic by skin absorption, Irritant

DSL Status
This product contains the following components that are not on the Canadian DSL nor NDSL lists.

	CAS-No.
Chlordane	5103-71-9

SARA 302 Components
SARA 302: No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

SARA 313 Components
SARA 313: This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

SARA 311/312 Hazards
Acute Health Hazard

Massachusetts Right To Know Components
No components are subject to the Massachusetts Right to Know Act.

Pennsylvania Right To Know Components

	CAS-No.	Revision Date
Chlordane	5103-71-9	

New Jersey Right To Know Components

	CAS-No.	Revision Date
Chlordane	5103-71-9	

California Prop. 65 Components
This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.

16. OTHER INFORMATION

Further information
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The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. Sigma-Aldrich Co., shall not be held liable for any damage resulting from handling or from contact with the above product. See reverse side of invoice or packing slip for additional terms and conditions of sale.

International Chemical Safety Cards

beta-HEXACHLOROCYCLOHEXANE

ICSC: 0796

1-alpha,2-beta,3-alpha,4-beta,5-alpha,6-beta-Hexachlorocyclohexane
beta-1,2,3,4,5,6-Hexachlorocyclohexane
beta-Benzenehexachloride (beta-BHC)
$C_6H_6Cl_6$
Molecular mass: 290.8

ICSC # 0796
CAS # 319-85-7
RTECS # GV4375000
UN # 2761
EC # 602-042-00-0
November 25, 2009 Validated

TYPES OF HAZARD/ EXPOSURE	ACUTE HAZARDS/ SYMPTOMS	PREVENTION	FIRST AID/ FIRE FIGHTING
FIRE	Not combustible. Gives off irritating or toxic fumes (or gases) in a fire.		In case of fire in the surroundings: use appropriate extinguishing media.
EXPLOSION	Risk of fire and explosion if formulations contain flammable/explosive solvents		In case of fire: keep drums, etc., cool by spraying with water.
EXPOSURE		AVOID ALL CONTACT! AVOID EXPOSURE OF BREASTFEEDING WOMEN!	
•INHALATION	Cough. Sore throat. See Ingestion.	Avoid inhalation of dust	Fresh air, rest. Seek medical attention if you feel unwell.
•SKIN	MAY BE ABSORBED!	Protective gloves. Protective clothing.	Wear protective gloves when administering first aid. Remove contaminated clothes. Rinse and then wash skin with water and soap. Seek medical attention if you feel unwell
•EYES	Redness.	Face shield or eye protection in combination with breathing protection if powder.	First rinse with plenty of water for several minutes (remove contact lenses if easily possible), then take to a doctor.
•INGESTION	Headache. Nausea. Vomiting. Dizziness. Diarrhoea. Tremors. Convulsions.	Do not eat, drink, or smoke during work. Wash hands before eating.	Rinse mouth. Give a slurry of activated charcoal in water to drink, NOT if convulsions occur . Refer immediately for medical attention.

SPILLAGE DISPOSAL	STORAGE	PACKAGING & LABELLING
Personal protection: filter respirator for organic gases and particulates adapted to the airborne concentration of the substance, chemical protection suit including self-contained breathing apparatus, protective gloves. Do NOT let this chemical enter the environment. Sweep spilled substance into non-metallic, sealable containers; if appropriate, moisten first to prevent dusting.	Well closed. Store in an area without drain or sewer access. Provision to contain effluent from fire extinguishing. Separated from bases, metals, food and feedstuffs.	Do not transport with food and feedstuffs. Note: C T symbol N symbol R: 21-25-40-50/53 S: 1/2-22-36/37-45-60-61 UN Hazard Class: 6.1 UN Packing Group: III Signal: Danger

Carefully collect remainder, then remove to safe place.		Skull-Health haz-Enviro Toxic if swallowed May be harmful in contact with skin Suspected of causing cancer May cause harm to the breast-fed children May cause damage to central nervous system May cause damage to liver and kidney through prolonged or repeated exposure if swallowed Very toxic to aquatic life with long-lasting effects

SEE IMPORTANT INFORMATION ON BACK

ICSC: 0796

Prepared in the context of cooperation between the International Programme on Chemical Safety & the Commission of the European Communities (C) IPCS CEC 1994. No modifications to the International version have been made except to add the OSHA PELs, NIOSH RELs and NIOSH IDLH values.

International Chemical Safety Cards

beta-HEXACHLOROCYCLOHEXANE

ICSC: 0796

IMPORTANT

PHYSICAL STATE; APPEARANCE:
WHITE CRYSTALLINE POWDER.

PHYSICAL DANGERS:

CHEMICAL DANGERS:
The substance decomposes on contact with hot surfaces or flames, producing toxic and corrosive fumes including chlorine, hydrogen chloride and phosgene,

OCCUPATIONAL EXPOSURE LIMITS:
TLV not established.
MAK: (Inhalable fraction) 0.5 mg/m³;
Peak limitation category: II(8);
skin absorption (H); (DFG 2009).
(See Notes)

ROUTES OF EXPOSURE:
The substance can be absorbed into the body by inhalation of its aerosol, through the skin and by ingestion.

INHALATION RISK:
A harmful concentration of airborne particles can be reached quickly when dispersed.

EFFECTS OF SHORT-TERM EXPOSURE:
The substance may cause effects on the central nervous system resulting in convulsions

EFFECTS OF LONG-TERM OR REPEATED EXPOSURE:
The substance may have effects on the central nervous system, This substance is possibly carcinogenic to humans. Animal tests show that this substance possibly causes toxic effects upon human reproduction.

PHYSICAL PROPERTIES

Boiling point at 0.07kPa: 60°C
Melting point: 309°C
Density: 1.9
g/cm³

Solubility in water: (very poor)
Vapour pressure, Pa at 20°C: 0.7
Octanol/water partition coefficient as log Pow: 3.8

ENVIRONMENTAL DATA

The substance is very toxic to aquatic organisms. Bioaccumulation of this chemical may occur along the food chain, for example in fish and in seafood. The substance may cause long-term effects in the aquatic environment. This substance does enter the environment under normal use. Great care, however, should be given to avoid any additional release, e.g. through inappropriate disposal.

NOTES

This substance is a component of the insecticide hexachlorocyclohexane (isomer mixture). Carrier solvents used in commercial formulations may change physical and toxicological properties. Do NOT take working clothes home. Do NOT use in the vicinity of a fire or a hot surface, or during welding.

Occupational Exposure Limits : MAK value is for technical mixture of alpha and beta isomers (0.5 mg/m^3=(Conc.alpha-HCH divided by 5) + Conc beta-HCH)

ADDITIONAL INFORMATION	

ICSC: 0796 **beta-HEXACHLOROCYCLOHEXANE**

(C) IPCS, CEC, 1994

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International Chemical Safety Cards

CHLORDANE (TECHNICAL PRODUCT)

ICSC: 0740

1,2,4,5,6,7,8,8-Octachloro-2,3,3a,4,7,7a-hexahydro-4,7-methanoindene
1,2,4,5,6,7,8,8-Octachloro-2,3,3a,4,7,7a-hexahydro-4,7-methano-1H-indene
$C_{10}H_6Cl_8$
Molecular mass: 409.8

ICSC # 0740
CAS # 57-74-9
RTECS #
UN # 2996
EC # 602-047-00-8
March 26, 1998 Peer reviewed

TYPES OF HAZARD/ EXPOSURE	ACUTE HAZARDS/ SYMPTOMS	PREVENTION	FIRST AID/ FIRE FIGHTING
FIRE	Liquid formulations containing organic solvents may be flammable. Gives off irritating or toxic fumes (or gases) in a fire.	NO open flames.	Alcohol-resistant foam, powder, carbon dioxide.
EXPLOSION			
EXPOSURE		PREVENT GENERATION OF MISTS! STRICT HYGIENE! AVOID EXPOSURE OF ADOLESCENTS AND CHILDREN!	IN ALL CASES CONSULT A DOCTOR!
•INHALATION	(See Ingestion).	Breathing protection.	Fresh air, rest. Refer for medical attention.
•SKIN	MAY BE ABSORBED!	Protective gloves. Protective clothing.	Remove contaminated clothes. Rinse and then wash skin with water and soap.
•EYES	Redness. Pain.	Safety goggles face shield or eye protection in combination with breathing protection.	First rinse with plenty of water for several minutes (remove contact lenses if easily possible), then take to a doctor.
•INGESTION	Confusion. Convulsions. Nausea. Vomiting.	Do not eat, drink, or smoke during work. Wash hands before eating.	Rest. Refer for medical attention.

SPILLAGE DISPOSAL	STORAGE	PACKAGING & LABELLING
Collect leaking and spilled liquid in sealable containers as far as possible. Absorb remaining liquid in sand or inert absorbent and remove to safe place. Do NOT wash away into sewer. Personal protection: chemical protection suit including self-contained breathing apparatus.	Provision to contain effluent from fire extinguishing. Separated from food and feedstuffs bases and incompatible materials See Chemical Dangers. Well closed. Keep in a well-ventilated room.	Do not transport with food and feedstuffs. Severe marine pollutant. Xn symbol N symbol R: 21/22-40-50/53 S: 2-36/37-60-61 UN Hazard Class: 6.1 UN Packing Group: III

SEE IMPORTANT INFORMATION ON BACK

Prepared in the context of cooperation between the International Programme on Chemical Safety & the Commission of the European Communities (C) IPCS CEC 1994. No modifications to the International version have been made except to add the OSHA PELs, NIOSH RELs and NIOSH IDLH values.

International Chemical Safety Cards

CHLORDANE (TECHNICAL PRODUCT)

ICSC: 0740

I M P O R T A N T D A T A

PHYSICAL STATE; APPEARANCE:
TECHNICAL: LIGHT YELLOW TO AMBER VISCOUS LIQUID

PHYSICAL DANGERS:

CHEMICAL DANGERS:
The substance decomposes on burning, on contact with bases producing toxic fumes including phosgene hydrogen chloride Attacks iron, zinc, plastic, rubber and coatings.

OCCUPATIONAL EXPOSURE LIMITS:
TLV: 0.5 mg/m³ as TWA (skin) A3 (confirmed animal carcinogen with unknown relevance to humans); (ACGIH 2004).
MAK: (Inhalable fraction) 0.5 mg/m³
Peak limitation category: II(8);
skin absorption (H);
Carcinogen category: 3B;
(DFG 2004).
OSHA PEL: TWA 0.5 mg/m^3 skin
NIOSH REL: Ca TWA 0.5 mg/m^3 skin See Appendix A
NIOSH IDLH: Ca 100 mg/m^3 See: 57749

ROUTES OF EXPOSURE:
The substance can be absorbed into the body by inhalation, through the skin and by ingestion.

INHALATION RISK:
Evaporation at 20°C is negligible; a harmful concentration of airborne particles can, however, be reached quickly on spraying.

EFFECTS OF SHORT-TERM EXPOSURE:
Exposure at high levels may result in disorientation, tremors, convulsions, respiratory failure and death. Medical observation is indicated.

EFFECTS OF LONG-TERM OR REPEATED EXPOSURE:
The substance may have effects on the liver immune system , resulting in tissue lesions and liver impairment. This substance is possibly carcinogenic to humans.

PHYSICAL PROPERTIES

Boiling point at 0.27kPa: 175°C
Relative density (water = 1): 1.59-1.63
Solubility in water:
none

Vapour pressure, Pa at 25°C: 0.0013
Octanol/water partition coefficient as log Pow: 2.78

ENVIRONMENTAL DATA

The substance is very toxic to aquatic organisms. This substance may be hazardous to the environment; special attention should be given to soil organisms, honey bees. It is strongly advised that this substance does not enter the environment. The substance may cause long-term effects in the aquatic environment.

N O T E S

If the substance is formulated with solvents also consult the ICSCs of these materials. Carrier solvents used in commercial formulations may change physical and toxicological properties. Belt, Chlor Kil, Chlortox, Corodan, Gold Crest, Intox, Kypchlor, Niran, Octachlor, Sydane, Synklor, Termi-Ded, Topiclor, and Toxichlor are trade names. Also consult ICSC 0743 Heptachlor.

Transport Emergency Card: TEC (R)-61GT6-III

ADDITIONAL INFORMATION

ICSC: 0740 **CHLORDANE (TECHNICAL PRODUCT)**

(C) IPCS, CEC, 1994

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Material Safety Data Sheet

Version 4.1
Revision Date 01/06/2011
Print Date 12/09/2011

1. PRODUCT AND COMPANY IDENTIFICATION

Product name : δ-BHC

Product Number : 48495
Brand : Supelco
Product Use : For laboratory research purposes.

Supplier : Sigma-Aldrich
3050 Spruce Street
SAINT LOUIS MO 63103
USA

Manufacturer : Sigma-Aldrich Corporation
3050 Spruce St.
St. Louis, Missouri 63103
USA

Telephone : +1 800-325-5832
Fax : +1 800-325-5052
Emergency Phone # (For both supplier and manufacturer) : (314) 776-6555
Preparation Information : Sigma-Aldrich Corporation
Product Safety - Americas Region
1-800-521-8956

2. HAZARDS IDENTIFICATION

Emergency Overview

OSHA Hazards
Carcinogen, Toxic by ingestion, Harmful by skin absorption.

Target Organs

Central nervous systemCentral nervous system

GHS Classification
Acute toxicity, Oral (Category 3)
Acute toxicity, Dermal (Category 4)
Carcinogenicity (Category 2)
Acute aquatic toxicity (Category 1)
Chronic aquatic toxicity (Category 1)

GHS Label elements, including precautionary statements

Pictogram

Signal word Danger

Hazard statement(s)

H301	Toxic if swallowed.
H312	Harmful in contact with skin.
H351	Suspected of causing cancer.
H410	Very toxic to aquatic life with long lasting effects.

Precautionary statement(s)

P273	Avoid release to the environment.
P280	Wear protective gloves/ protective clothing.
P301 + P310	IF SWALLOWED: Immediately call a POISON CENTER or doctor/ physician.
P501	Dispose of contents/ container to an approved waste disposal plant.

HMIS Classification

Health hazard: 2
Chronic Health Hazard: *
Flammability: 0
Physical hazards: 0

NFPA Rating

Health hazard: 2
Fire: 0
Reactivity Hazard: 0

Potential Health Effects

Inhalation May be harmful if inhaled. May cause respiratory tract irritation.
Skin May cause skin irritation.
Eyes May cause eye irritation.
Ingestion Toxic if swallowed.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Synonyms : δ-1,2,3,4,5,6-Hexachlorocyclohexane

Formula : C6H6Cl6
Molecular Weight : 290.8 g/mol

CAS-No.	EC-No.	Index-No.	Concentration
1α,2α,3α,4β,5α,6β)-1,2,3,4,5,6-Hexachlorocyclohexane			
319-86-8	206-272-9	602-042-00-0	-

4. FIRST AID MEASURES

General advice
Consult a physician. Show this safety data sheet to the doctor in attendance.Move out of dangerous area.

If inhaled
If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.

In case of skin contact
Wash off with soap and plenty of water. Take victim immediately to hospital. Consult a physician.

In case of eye contact
Flush eyes with water as a precaution.

If swallowed
Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

5. FIRE-FIGHTING MEASURES

Suitable extinguishing media
Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

Special protective equipment for fire-fighters
Wear self contained breathing apparatus for fire fighting if necessary.

Hazardous combustion products
Hazardous decomposition products formed under fire conditions. - Carbon oxides, Hydrogen chloride gas
Hazardous decomposition products formed under fire conditions. - Carbon oxides, Hydrogen chloride gas
Hazardous decomposition products formed under fire conditions. - Carbon oxides, Hydrogen chloride gas

6. ACCIDENTAL RELEASE MEASURES

Personal precautions
Wear respiratory protection. Avoid dust formation. Avoid breathing vapors, mist or gas. Ensure adequate ventilation. Evacuate personnel to safe areas. Avoid breathing dust.

Environmental precautions
Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.

Methods and materials for containment and cleaning up
Pick up and arrange disposal without creating dust. Sweep up and shovel. Keep in suitable, closed containers for disposal.

7. HANDLING AND STORAGE

Precautions for safe handling
Avoid contact with skin and eyes. Avoid formation of dust and aerosols.
Provide appropriate exhaust ventilation at places where dust is formed. Normal measures for preventive fire protection.

Conditions for safe storage
Keep container tightly closed in a dry and well-ventilated place.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Contains no substances with occupational exposure limit values.

Personal protective equipment

Respiratory protection
Where risk assessment shows air-purifying respirators are appropriate use a full-face particle respirator type N100 (US) or type P3 (EN 143) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

Hand protection
Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

Eye protection
Face shield and safety glasses Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

Skin and body protection
Complete suit protecting against chemicals, The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

Hygiene measures
Avoid contact with skin, eyes and clothing. Wash hands before breaks and immediately after handling the product.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance

Form	solid
Colour	no data available

Safety data

pH	no data available
Melting/freezing point	no data available
Boiling point	no data available
Flash point	no data available
Ignition temperature	no data available
Autoignition temperature	no data available
Lower explosion limit	no data available

Upper explosion limit	no data available
Vapour pressure	no data available
Density	no data available
Water solubility	no data available
Partition coefficient: n-octanol/water	no data available
Relative vapour density	no data available
Odour	no data available
Odour Threshold	no data available
Evaporation rate	no data available

10. STABILITY AND REACTIVITY

Chemical stability
Stable under recommended storage conditions.

Possibility of hazardous reactions
no data available

Conditions to avoid
no data available

Materials to avoid
Strong oxidizing agents

Hazardous decomposition products
Hazardous decomposition products formed under fire conditions. - Carbon oxides, Hydrogen chloride gas
Hazardous decomposition products formed under fire conditions. - Carbon oxides, Hydrogen chloride gas
Hazardous decomposition products formed under fire conditions. - Carbon oxides, Hydrogen chloride gas
Other decomposition products - no data available

11. TOXICOLOGICAL INFORMATION

Acute toxicity

Oral LD50
LD50 Oral - rat - 1,000 mg/kg

Inhalation LC50
no data available

Dermal LD50
Other information on acute toxicity
no data available

Skin corrosion/irritation
no data available

Serious eye damage/eye irritation
no data available

Respiratory or skin sensitization
no data available

Germ cell mutagenicity

no data available

Carcinogenicity

This product is or contains a component that has been reported to be possibly carcinogenic based on its IARC, ACGIH, NTP, or EPA classification.

Limited evidence of carcinogenicity in animal studies

IARC:	2B - Group 2B: Possibly carcinogenic to humans (1α,2α,3α,4β,5α,6β)-1,2,3,4,5,6-Hexachlorocyclohexane)
ACGIH:	No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH.
NTP:	No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.
OSHA:	No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

Reproductive toxicity

no data available

Teratogenicity

no data available

Specific target organ toxicity - single exposure (Globally Harmonized System)
no data available

Specific target organ toxicity - repeated exposure (Globally Harmonized System)
no data available

Aspiration hazard
no data available

Potential health effects

Inhalation	May be harmful if inhaled. May cause respiratory tract irritation.
Ingestion	Toxic if swallowed.
Skin	May cause skin irritation.
Eyes	May cause eye irritation.

Signs and Symptoms of Exposure
To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

Synergistic effects
no data available

Additional Information
RTECS: GV4550000

12. ECOLOGICAL INFORMATION

Toxicity

Toxicity to fish	LC50 - other fish - 2.83 mg/l - 96.0 h

Persistence and degradability
no data available

Bioaccumulative potential

Bioaccumulation	other fish - 33 d Bioconcentration factor (BCF): 326

Mobility in soil
no data available

PBT and vPvB assessment
no data available

Other adverse effects

An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.

Very toxic to aquatic life with long lasting effects.

13. DISPOSAL CONSIDERATIONS

Product
Offer surplus and non-recyclable solutions to a licensed disposal company. Contact a licensed professional waste disposal service to dispose of this material. Dissolve or mix the material with a combustible solvent and burn in a chemical incinerator equipped with an afterburner and scrubber.

Contaminated packaging
Dispose of as unused product.

14. TRANSPORT INFORMATION

DOT (US)
UN-Number: 3077 Class: 9 Packing group: III
Proper shipping name: Environmentally hazardous substances, solid, n.o.s. (1α,2α,3α,4β,5α,6β)-1,2,3,4,5,6-Hexachlorocyclohexane)
Reportable Quantity (RQ): 1 lbs
Marine pollutant: No
Poison Inhalation Hazard: No

IMDG
UN-Number: 3077 Class: 9 Packing group: III EMS-No: F-A, S-F
Proper shipping name: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (1α,2α,3α,4β,5α,6β)-1,2,3,4,5,6-Hexachlorocyclohexane)
Marine pollutant: No

IATA
UN-Number: 3077 Class: 9 Packing group: III
Proper shipping name: Environmentally hazardous substance, solid, n.o.s. (1α,2α,3α,4β,5α,6β)-1,2,3,4,5,6-Hexachlorocyclohexane)

Further information
EHS-Mark required (ADR 2.2.9.1.10, IMDG code 2.10.3) for single packagings and combination packagings containing inner packagings with Dangerous Goods > 5L for liquids or > 5kg for solids.

15. REGULATORY INFORMATION

OSHA Hazards
Carcinogen, Toxic by ingestion, Harmful by skin absorption.

DSL Status
This product contains the following components listed on the Canadian NDSL list. All other components are on the Canadian DSL list.

	CAS-No.
1α,2α,3α,4β,5α,6β)-1,2,3,4,5,6-Hexachlorocyclohexane	319-86-8

SARA 302 Components
SARA 302: No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

SARA 313 Components
SARA 313: This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

SARA 311/312 Hazards
Acute Health Hazard, Chronic Health Hazard

Massachusetts Right To Know Components

	CAS-No.	Revision Date
1α,2α,3α,4β,5α,6β)-1,2,3,4,5,6-Hexachlorocyclohexane	319-86-8	2007-03-01

Pennsylvania Right To Know Components

	CAS-No.	Revision Date
1α,2α,3α,4β,5α,6β)-1,2,3,4,5,6-Hexachlorocyclohexane	319-86-8	2007-03-01

New Jersey Right To Know Components

	CAS-No.	Revision Date
1α,2α,3α,4β,5α,6β)-1,2,3,4,5,6-Hexachlorocyclohexane	319-86-8	2007-03-01

California Prop. 65 Components

	CAS-No.	Revision Date
WARNING! This product contains a chemical known to the State of California to cause cancer. 1α,2α,3α,4β,5α,6β)-1,2,3,4,5,6-Hexachlorocyclohexane	319-86-8	1989-10-01

16. OTHER INFORMATION

Further information
Copyright 2011 Sigma-Aldrich Co. License granted to make unlimited paper copies for internal use only.
The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. Sigma-Aldrich Co., shall not be held liable for any damage resulting from handling or from contact with the above product. See reverse side of invoice or packing slip for additional terms and conditions of sale.

International Chemical Safety Cards

DIELDRIN

ICSC: 0787

1,2,3,4,10,10-Hexachloro-6,7-epoxy-1,4,4a,5,6,7,8,8a-octahydro-endo-1,4-exo- 5,8-dimethanonaphthalene
3,4,5,6,9,9-Hexachloro-1a,2,2a,3,6,6a,7,7a-octahydro-, (1aalpha,2ß,2aalpha,3ß,6ß,6aalpha,7ß,7aalpha)-2,73,6-dimethanonaphth(2,3-b)oxirene
HEOD
$C_{12}H_8Cl_6O$
Molecular mass: 380.9

ICSC # 0787
CAS # 60-57-1
RTECS # IO1750000
UN # 2761
EC # 602-049-00-9
March 26, 1998 Validated

TYPES OF HAZARD/ EXPOSURE	ACUTE HAZARDS/ SYMPTOMS	PREVENTION	FIRST AID/ FIRE FIGHTING
FIRE	Not combustible. Liquid formulations containing organic solvents may be flammable. Gives off irritating or toxic fumes (or gases) in a fire.		In case of fire in the surroundings: all extinguishing agents allowed.
EXPLOSION			
EXPOSURE		PREVENT DISPERSION OF DUST! STRICT HYGIENE! AVOID EXPOSURE OF ADOLESCENTS AND CHILDREN!	
•INHALATION	(See Ingestion).	Ventilation (not if powder).	Fresh air, rest. Refer for medical attention.
•SKIN	MAY BE ABSORBED! See Ingestion.	Protective gloves. Protective clothing.	Remove contaminated clothes. Rinse and then wash skin with water and soap. Refer for medical attention.
•EYES		Safety goggles, or face shield.	First rinse with plenty of water for several minutes (remove contact lenses if easily possible), then take to a doctor.
•INGESTION	Convulsions. Dizziness. Headache. Nausea. Vomiting. Muscle twitching.	Do not eat, drink, or smoke during work. Wash hands before eating.	Give a slurry of activated charcoal in water to drink. Do NOT induce vomiting. Rest. Refer for medical attention.

SPILLAGE DISPOSAL	STORAGE	PACKAGING & LABELLING
Do NOT wash away into sewer. Sweep spilled substance into sealable containers; if appropriate, moisten first to prevent dusting. Carefully collect remainder, then remove to safe place. (Extra personal protection: chemical protection suit including self-contained breathing apparatus).	Provision to contain effluent from fire extinguishing. Separated from food and feedstuffs and incompatible materials: See Chemical Dangers. Well closed. Keep in a well-ventilated room. Store in an area without drain or sewer access.	Do not transport with food and feedstuffs. Severe marine pollutant. T+ symbol N symbol R: 25-27-40-48/25-50/53 S: 1/2-22-36/37-45-60-61 UN Hazard Class: 6.1 UN Packing Group: II

SEE IMPORTANT INFORMATION ON BACK

Prepared in the context of cooperation between the International Programme on Chemical Safety & the Commission of the European Communities (C) IPCS CEC 1994. No modifications to the International version have been made except to add the OSHA PELs, NIOSH RELs and NIOSH IDLH values.

International Chemical Safety Cards

DIELDRIN

ICSC: 0787

IMPORTANT DATA

PHYSICAL STATE; APPEARANCE:
COLOURLESS CRYSTALS

PHYSICAL DANGERS:

CHEMICAL DANGERS:
The substance decomposes on heating producing toxic fumes including hydrogen chloride. Reacts with oxidants and acids. Attacks metal due to the slow formation of hydrogen chloride in storage.

OCCUPATIONAL EXPOSURE LIMITS:
TLV (as TWA): 0.25 mg/m³, A4 (skin) (ACGIH 1997).
MAK: (Inhalable fraction) 0.25 mg/m³ :
Peak limitation category: II(8)
skin absorption (H); (DFG 2007).
OSHA PEL: TWA 0.25 mg/m^3 skin
NIOSH REL: Ca TWA 0.25 mg/m^3 skin See Appendix A
NIOSH IDLH: Ca 50 mg/m^3 See: 60571

ROUTES OF EXPOSURE:
The substance can be absorbed into the body through the skin and by ingestion.

INHALATION RISK:
Evaporation at 20°C is negligible; a harmful concentration of airborne particles can, however, be reached quickly on spraying.

EFFECTS OF SHORT-TERM EXPOSURE:
The substance may cause effects on the central nervous system , resulting in convulsions. Medical observation is indicated.

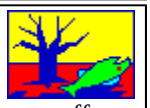
EFFECTS OF LONG-TERM OR REPEATED EXPOSURE:
The substance accumulates in the human body. Cumulative effects are possible: see Acute Hazards/Symptoms.

PHYSICAL PROPERTIES

Melting point: 175-176°C
Density: 1.7 g/cm³
Solubility in water: none

Vapour pressure, Pa at 20°C: 0.0004
Octanol/water partition coefficient as log Pow: 6.2

ENVIRONMENTAL DATA



The substance is very toxic to aquatic organisms. This substance may be hazardous to the environment; special attention should be given to honey bees, birds. In the food chain important to humans, bioaccumulation takes place, specifically in aquatic organisms. It is strongly advised not to let the chemical enter into the environment because it persists in the environment. The substance may cause long-term effects in the aquatic environment. Avoid release to the environment in circumstances different to normal use.

NOTES

Depending on the degree of exposure, periodic medical examination is indicated. If the substance is formulated with solvent(s) also consult the card(s) (ICSC) of the solvent(s). Carrier solvents used in commercial formulations may change physical and toxicological properties. Do NOT take working clothes home. Alvit, Dieldrex, Dieldrite, Illoxol, Octalox, Panoram, and Quintox are trade names. Also consult ICSC #0774, Aldrin.

Transport Emergency Card: TEC (R)-61G41b.
Card has been partially updated in August 2007: see Storage, Occupational Exposure Limits.

ADDITIONAL INFORMATION

(C) IPCS, CEC, 1994

IMPORTANT LEGAL NOTICE: Neither NIOSH, the CEC or the IPCS nor any person acting on behalf of NIOSH, the CEC or the IPCS is responsible for the use which might be made of this information. This card contains the collective views of the IPCS Peer Review Committee and may not reflect in all cases all the detailed requirements included in national legislation on the subject. The user should verify compliance of the cards with the relevant legislation in the country of use. The only modifications made to produce the U.S. version is inclusion of the OSHA PELs, NIOSH RELs and NIOSH IDLH values.

Material Safety Data Sheet

Version 5.0
Revision Date 08/05/2010
Print Date 12/09/2011

1. PRODUCT AND COMPANY IDENTIFICATION

Product name	:	α-Endosulfan
Product Number	:	45468
Brand	:	Fluka
Company	:	Sigma-Aldrich 3050 Spruce Street SAINT LOUIS MO 63103 USA
Telephone	:	+1 800-325-5832
Fax	:	+1 800-325-5052
Emergency Phone #	:	(314) 776-6555

2. HAZARDS IDENTIFICATION

Emergency Overview

OSHA Hazards
Toxic by ingestion

GHS Label elements, including precautionary statements

Pictogram

Signal word Danger

Hazard statement(s)

H301	Toxic if swallowed.
H410	Very toxic to aquatic life with long lasting effects.

Precautionary statement(s)

P273	Avoid release to the environment.
P301 + P310	IF SWALLOWED: Immediately call a POISON CENTER or doctor/ physician.
P501	Dispose of contents/ container to an approved waste disposal plant.

HMIS Classification

Health hazard:	2
Flammability:	0
Physical hazards:	0

NFPA Rating

Health hazard:	2
Fire:	0
Reactivity Hazard:	0

Potential Health Effects

Inhalation	May be harmful if inhaled. May cause respiratory tract irritation.
Skin	May be harmful if absorbed through skin. May cause skin irritation.
Eyes	May cause eye irritation.
Ingestion	Toxic if swallowed.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Formula	:	$C_9H_6Cl_6O_3S$
Molecular Weight	:	406.93 g/mol

CAS-No.	EC-No.	Index-No.	Concentration
Endosulfan (α isomer)			
959-98-8	-	-	-

4. FIRST AID MEASURES

General advice
Move out of dangerous area.Consult a physician. Show this safety data sheet to the doctor in attendance.

If inhaled
If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.

In case of skin contact
Wash off with soap and plenty of water. Take victim immediately to hospital. Consult a physician.

In case of eye contact
Flush eyes with water as a precaution.

If swallowed
Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

5. FIRE-FIGHTING MEASURES

Suitable extinguishing media
Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

Special protective equipment for fire-fighters
Wear self contained breathing apparatus for fire fighting if necessary.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions
Wear respiratory protection. Avoid dust formation. Avoid breathing vapors, mist or gas. Ensure adequate ventilation. Evacuate personnel to safe areas. Avoid breathing dust.

Environmental precautions
Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.

Methods and materials for containment and cleaning up
Pick up and arrange disposal without creating dust. Sweep up and shovel. Keep in suitable, closed containers for disposal.

7. HANDLING AND STORAGE

Precautions for safe handling
Avoid contact with skin and eyes. Avoid formation of dust and aerosols.
Provide appropriate exhaust ventilation at places where dust is formed. Normal measures for preventive fire protection.

Conditions for safe storage
Keep container tightly closed in a dry and well-ventilated place.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Contains no substances with occupational exposure limit values.

Personal protective equipment

Respiratory protection
Where risk assessment shows air-purifying respirators are appropriate use a full-face particle respirator type N99 (US) or type P2 (EN 143) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

Hand protection
Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

Eye protection
Face shield and safety glasses Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

Skin and body protection
Complete suit protecting against chemicals, The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

Hygiene measures
Avoid contact with skin, eyes and clothing. Wash hands before breaks and immediately after handling the product.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance

Form	crystalline
Colour	white

Safety data

pH	no data available
Melting point	108.0 - 110.0 °C (226.4 - 230.0 °F)
Boiling point	no data available
Flash point	no data available
Ignition temperature	no data available
Lower explosion limit	no data available
Upper explosion limit	no data available
Water solubility	insoluble

10. STABILITY AND REACTIVITY

Chemical stability
Stable under recommended storage conditions.

Conditions to avoid
no data available

Materials to avoid
Strong oxidizing agents

Hazardous decomposition products
Hazardous decomposition products formed under fire conditions. - Carbon oxides, Sulphur oxides, Hydrogen chloride gas

11. TOXICOLOGICAL INFORMATION

Acute toxicity
LD50 Oral - rat - 76.0 mg/kg

Skin corrosion/irritation
no data available

Serious eye damage/eye irritation
no data available

Respiratory or skin sensitization
no data available

Germ cell mutagenicity

no data available

Carcinogenicity

IARC: No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

ACGIH: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH.

NTP: No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

OSHA: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

Reproductive toxicity
no data available

Specific target organ toxicity - single exposure (Globally Harmonized System)
no data available

Specific target organ toxicity - repeated exposure (Globally Harmonized System)
no data available

Aspiration hazard
no data available

Potential health effects

Inhalation	May be harmful if inhaled. May cause respiratory tract irritation.
Ingestion	Toxic if swallowed.
Skin	May be harmful if absorbed through skin. May cause skin irritation.
Eyes	May cause eye irritation.

Additional Information
RTECS: RB9275100

12. ECOLOGICAL INFORMATION

Toxicity

Persistence and degradability

Bioaccumulative potential

Bioaccumulation	other fish - 21 d Bioconcentration factor (BCF): 10,994

Mobility in soil
no data available

PBT and vPvB assessment
no data available

Other adverse effects

An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.

Very toxic to aquatic life with long lasting effects.

13. DISPOSAL CONSIDERATIONS

Product
Offer surplus and non-recyclable solutions to a licensed disposal company. Contact a licensed professional waste disposal service to dispose of this material. Dissolve or mix the material with a combustible solvent and burn in a chemical incinerator equipped with an afterburner and scrubber.

Contaminated packaging
Dispose of as unused product.

14. TRANSPORT INFORMATION

DOT (US)
UN-Number: 2811 Class: 6.1 Packing group: III
Proper shipping name: Toxic solids, organic, n.o.s.
Reportable Quantity (RQ): 1 lbs
Marine pollutant: No
Poison Inhalation Hazard: No

IMDG
UN-Number: 2811 Class: 6.1 Packing group: III EMS-No: F-A, S-A
Proper shipping name: TOXIC SOLID, ORGANIC, N.O.S.
Marine pollutant: No

IATA
UN-Number: 2811 Class: 6.1 Packing group: III
Proper shipping name: Toxic solid, organic, n.o.s.

15. REGULATORY INFORMATION

OSHA Hazards
Toxic by ingestion

DSL Status
This product contains the following components that are not on the Canadian DSL nor NDSL lists.

	CAS-No.
Endosulfan (α isomer)	959-98-8

SARA 302 Components
SARA 302: No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

SARA 313 Components
SARA 313: This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

SARA 311/312 Hazards
Acute Health Hazard

Massachusetts Right To Know Components

	CAS-No.	Revision Date
Endosulfan (α isomer)	959-98-8	1993-04-24

Pennsylvania Right To Know Components

	CAS-No.	Revision Date
Endosulfan (α isomer)	959-98-8	1993-04-24

New Jersey Right To Know Components

	CAS-No.	Revision Date
Endosulfan (α isomer)	959-98-8	1993-04-24

California Prop. 65 Components
This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.

16. OTHER INFORMATION

Further information
Copyright 2010 Sigma-Aldrich Co. License granted to make unlimited paper copies for internal use only.
The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. Sigma-Aldrich Co., shall not be held liable for any damage resulting from handling or from contact with the above product. See reverse side of invoice or packing slip for additional terms and conditions of sale.

Material Safety Data Sheet

Version 4.0
Revision Date 03/12/2010
Print Date 12/09/2011

1. PRODUCT AND COMPANY IDENTIFICATION

Product name	:	beta-Endosulfan
Product Number	:	33385
Brand	:	Fluka
Company	:	Sigma-Aldrich 3050 Spruce Street SAINT LOUIS MO 63103 USA
Telephone	:	+1 800-325-5832
Fax	:	+1 800-325-5052
Emergency Phone #	:	(314) 776-6555

2. HAZARDS IDENTIFICATION

Emergency Overview

OSHA Hazards
Toxic by ingestion

Target Organs

Central nervous system, Eyes, Blood, Liver, Kidney

GHS Label elements, including precautionary statements

Pictogram

Signal word Danger

Hazard statement(s)

H301	Toxic if swallowed.
H410	Very toxic to aquatic life with long lasting effects.

Precautionary statement(s)

P273	Avoid release to the environment.
P301 + P310	IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician.
P501	Dispose of contents/container to an approved waste disposal plant.

HMIS Classification

Health hazard:	2
Chronic Health Hazard:	*
Flammability:	0
Physical hazards:	0

NFPA Rating

Health hazard:	2
Fire:	0
Reactivity Hazard:	0

Potential Health Effects

Inhalation	May be harmful if inhaled. May cause respiratory tract irritation.
Skin	May be harmful if absorbed through skin. May cause skin irritation.
Eyes	May cause eye irritation.
Ingestion	Toxic if swallowed.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Formula : C9H6Cl6O3S
Molecular Weight : 406.9 g/mol

CAS-No.	EC-No.	Index-No.	Concentration
beta-Endosulfan			
33213-65-9	-	-	-

4. FIRST AID MEASURES

General advice
Consult a physician. Show this safety data sheet to the doctor in attendance.Move out of dangerous area.

If inhaled
If breathed in, move person into fresh air. If not breathing give artificial respiration Consult a physician.

In case of skin contact
Wash off with soap and plenty of water. Consult a physician.

In case of eye contact
Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician.

If swallowed
Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

5. FIRE-FIGHTING MEASURES

Suitable extinguishing media
Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

Special protective equipment for fire-fighters
Wear self contained breathing apparatus for fire fighting if necessary.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions
Use personal protective equipment. Avoid dust formation. Avoid breathing dust. Ensure adequate ventilation.

Environmental precautions
Do not let product enter drains.

Methods and materials for containment and cleaning up
Pick up and arrange disposal without creating dust. Keep in suitable, closed containers for disposal.

7. HANDLING AND STORAGE

Precautions for safe handling
Avoid formation of dust and aerosols.
Provide appropriate exhaust ventilation at places where dust is formed. Normal measures for preventive fire protection.

Conditions for safe storage
Keep container tightly closed in a dry and well-ventilated place.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Contains no substances with occupational exposure limit values.

Personal protective equipment

Respiratory protection
Where risk assessment shows air-purifying respirators are appropriate use a dust mask type N95 (US) or type P1 (EN 143) respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

Hand protection
Handle with gloves.

Eye protection
Face shield and safety glasses

Skin and body protection
Choose body protection according to the amount and concentration of the dangerous substance at the work place.

Hygiene measures
Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance

Form	solid

Safety data

pH	no data available
Melting point	no data available
Boiling point	no data available
Flash point	no data available
Ignition temperature	no data available
Lower explosion limit	no data available
Upper explosion limit	no data available
Water solubility	no data available

10. STABILITY AND REACTIVITY

Chemical stability
Stable under recommended storage conditions.

Conditions to avoid
no data available

Materials to avoid
Strong oxidizing agents

Hazardous decomposition products
Hazardous decomposition products formed under fire conditions. - Carbon oxides, Sulphur oxides, Hydrogen chloride gas

11. TOXICOLOGICAL INFORMATION

Acute toxicity
LD50 Oral - rat - 240.0 mg/kg

Skin corrosion/irritation
no data available

Serious eye damage/eye irritation
no data available

Respiratory or skin sensitization
no data available

Germ cell mutagenicity
no data available

Carcinogenicity

IARC: No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

ACGIH: No component of this product present at levels greater than or equal to 0.1% is identified as a

carcinogen or potential carcinogen by ACGIH.

NTP: No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

OSHA: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

Reproductive toxicity
no data available

Specific target organ toxicity - single exposure (GHS)
no data available

Specific target organ toxicity - repeated exposure (GHS)
no data available

Aspiration hazard
no data available

Potential health effects

Inhalation	May be harmful if inhaled. May cause respiratory tract irritation.
Ingestion	Toxic if swallowed.
Skin	May be harmful if absorbed through skin. May cause skin irritation.
Eyes	May cause eye irritation.

Signs and Symptoms of Exposure
To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

Additional Information
RTECS: RB9875200

12. ECOLOGICAL INFORMATION

Toxicity

Toxicity to fish	LC50 - other fish - 0.0066 mg/l - 96 h
Toxicity to daphnia and other aquatic invertebrates.	LC50 - Daphnia magna (Water flea) - > 0.1 - < 1 mg/l - 48 h

Persistence and degradability

Bioaccumulative potential

Bioaccumulation	other fish - 21 d Bioconcentration factor (BCF): 9,908

Mobility in soil
no data available

PBT and vPvB assessment
no data available

Other adverse effects

no data available

13. DISPOSAL CONSIDERATIONS

Product
Observe all federal, state, and local environmental regulations. Contact a licensed professional waste disposal service to dispose of this material. Dissolve or mix the material with a combustible solvent and burn in a chemical incinerator equipped with an afterburner and scrubber.

Contaminated packaging
Dispose of as unused product.

14. TRANSPORT INFORMATION

DOT (US)
UN-Number: 2811 Class: 6.1 Packing group: II
Proper shipping name: Toxic solids, organic, n.o.s. (beta-Endosulfan)
Reportable Quantity (RQ): 1 lbs
Marine pollutant: No
Poison Inhalation Hazard: No

IMDG
UN-Number: 2811 Class: 6.1 Packing group: II EMS-No: F-A, S-A
Proper shipping name: TOXIC SOLID, ORGANIC, N.O.S. (beta-Endosulfan)
Marine pollutant: No

IATA
UN-Number: 2811 Class: 6.1 Packing group: II
Proper shipping name: Toxic solid, organic, n.o.s. (beta-Endosulfan)

15. REGULATORY INFORMATION

OSHA Hazards
Toxic by ingestion

DSL Status
This product contains the following components that are not on the Canadian DSL nor NDSL lists.

	CAS-No.
beta-Endosulfan	33213-65-9

SARA 302 Components
SARA 302: No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

SARA 313 Components
SARA 313: This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

SARA 311/312 Hazards
Acute Health Hazard

Massachusetts Right To Know Components

	CAS-No.	Revision Date
beta-Endosulfan	33213-65-9	1993-04-24

Pennsylvania Right To Know Components

	CAS-No.	Revision Date
beta-Endosulfan	33213-65-9	1993-04-24

New Jersey Right To Know Components

	CAS-No.	Revision Date
beta-Endosulfan	33213-65-9	1993-04-24

California Prop. 65 Components
This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.

16. OTHER INFORMATION

Further information
Copyright 2010 Sigma-Aldrich Co. License granted to make unlimited paper copies for internal use only.
The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. Sigma-Aldrich Co., shall not be held liable for any damage resulting from handling or from contact with the above product. See reverse side of invoice or packing slip for additional terms and conditions of sale.

Material Safety Data Sheet

Version 4.2
Revision Date 01/17/2011
Print Date 12/09/2011

1. PRODUCT AND COMPANY IDENTIFICATION

Product name : Endosulfan sulfate

Product Number : 48580
Brand : Supelco
Product Use : For laboratory research purposes.

Supplier : Sigma-Aldrich
3050 Spruce Street
SAINT LOUIS MO 63103
USA

Manufacturer : Sigma-Aldrich Corporation
3050 Spruce St.
St. Louis, Missouri 63103
USA

Telephone : +1 800-325-5832
Fax : +1 800-325-5052
Emergency Phone # (For both supplier and manufacturer) : (314) 776-6555
Preparation Information : Sigma-Aldrich Corporation
Product Safety - Americas Region
1-800-521-8956

2. HAZARDS IDENTIFICATION

Emergency Overview

OSHA Hazards
Highly toxic by ingestion

GHS Classification
Acute toxicity, Oral (Category 2)
Acute aquatic toxicity (Category 1)

GHS Label elements, including precautionary statements

Pictogram

Signal word Danger

Hazard statement(s)

H300	Fatal if swallowed.
H400	Very toxic to aquatic life.

Precautionary statement(s)

P264	Wash hands thoroughly after handling.
P273	Avoid release to the environment.
P301 + P310	IF SWALLOWED: Immediately call a POISON CENTER or doctor/ physician.

HMIS Classification

Health hazard:	3
Chronic Health Hazard:	*
Flammability:	0
Physical hazards:	0

NFPA Rating

Health hazard:	3
Fire:	0
Reactivity Hazard:	0

Potential Health Effects

Inhalation	May be harmful if inhaled. May cause respiratory tract irritation.
Skin	May be harmful if absorbed through skin. May cause skin irritation.
Eyes	May cause eye irritation.
Ingestion	May be fatal if swallowed.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Formula : $C_9H_6Cl_6O_4S$ $C_9H_6Cl_6O_4S$
Molecular Weight : 422.92 g/mol

CAS-No.	EC-No.	Index-No.	Concentration
Endosulfan sulfate			
1031-07-8	-	-	-

4. FIRST AID MEASURES

General advice
Consult a physician. Show this safety data sheet to the doctor in attendance.Move out of dangerous area.

If inhaled
If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.

In case of skin contact
Wash off with soap and plenty of water. Take victim immediately to hospital. Consult a physician.

In case of eye contact
Flush eyes with water as a precaution.

If swallowed
Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

5. FIRE-FIGHTING MEASURES

Suitable extinguishing media
Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

Special protective equipment for fire-fighters
Wear self contained breathing apparatus for fire fighting if necessary.

Hazardous combustion products
Hazardous decomposition products formed under fire conditions. - Carbon oxides, Sulphur oxides

6. ACCIDENTAL RELEASE MEASURES

Personal precautions
Wear respiratory protection. Avoid dust formation. Avoid breathing vapors, mist or gas. Ensure adequate ventilation. Evacuate personnel to safe areas. Avoid breathing dust.

Environmental precautions
Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.

Methods and materials for containment and cleaning up
Pick up and arrange disposal without creating dust. Sweep up and shovel. Keep in suitable, closed containers for disposal.

7. HANDLING AND STORAGE

Precautions for safe handling
Avoid contact with skin and eyes. Avoid formation of dust and aerosols.
Provide appropriate exhaust ventilation at places where dust is formed. Normal measures for preventive fire protection.

Conditions for safe storage
Keep container tightly closed in a dry and well-ventilated place.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Contains no substances with occupational exposure limit values.

Personal protective equipment

Respiratory protection
Where risk assessment shows air-purifying respirators are appropriate use a full-face particle respirator type N100 (US) or type P3 (EN 143) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

Hand protection
Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

Eye protection
Face shield and safety glasses Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

Skin and body protection
Complete suit protecting against chemicals, The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

Hygiene measures
Avoid contact with skin, eyes and clothing. Wash hands before breaks and immediately after handling the product.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance

Form	solid
Colour	no data available

Safety data

pH	no data available
Melting/freezing point	179.0 - 182.0 °C (354.2 - 359.6 °F)
Boiling point	no data available
Flash point	no data available
Ignition temperature	no data available
Autoignition temperature	no data available
Lower explosion limit	no data available
Upper explosion limit	no data available
Vapour pressure	no data available
Density	no data available
Water solubility	insoluble
Partition coefficient: n-octanol/water	log Pow: 3.66
Relative vapour density	no data available
Odour	no data available
Odour Threshold	no data available

Evaporation rate no data available

10. STABILITY AND REACTIVITY

Chemical stability
Stable under recommended storage conditions.

Possibility of hazardous reactions
no data available

Conditions to avoid
no data available

Materials to avoid
Strong oxidizing agents

Hazardous decomposition products
Hazardous decomposition products formed under fire conditions. - Carbon oxides, Sulphur oxides
Other decomposition products - no data available

11. TOXICOLOGICAL INFORMATION

Acute toxicity

Oral LD50
LD50 Oral - rat - 18.0 mg/kg

Inhalation LC50
no data available

Dermal LD50
no data available

Other information on acute toxicity
no data available

Skin corrosion/irritation
no data available

Serious eye damage/eye irritation
no data available

Respiratory or skin sensitization
no data available

Germ cell mutagenicity
no data available

Carcinogenicity

IARC: No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

ACGIH: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH.

NTP: No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

OSHA: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

Reproductive toxicity

no data available

Teratogenicity

no data available

Specific target organ toxicity - single exposure (Globally Harmonized System)
no data available

Specific target organ toxicity - repeated exposure (Globally Harmonized System)
no data available

Aspiration hazard
no data available

Potential health effects

Inhalation	May be harmful if inhaled. May cause respiratory tract irritation.
Ingestion	May be fatal if swallowed.
Skin	May be harmful if absorbed through skin. May cause skin irritation.
Eyes	May cause eye irritation.

Signs and Symptoms of Exposure
Cholinesterase inhibitors can cause heavy salivation and secretion in the lungs, lachrymation, blurred vision, involuntary defecation, diarrhea, tremor, ataxia, sweating, hypothermia, lowered heart rate, and/or a fall in blood pressure as a result of their action at cholinergic nerve sites., Headache, Nausea, Vomiting, Dizziness, Drowsiness, Confusion., Weakness, Muscle cramps/spasms., Change in pupil size., Fever, Seizures., Incoordination., Convulsions, Coma.

Synergistic effects
no data available

Additional Information
RTECS: RB9150000

12. ECOLOGICAL INFORMATION

Toxicity

Toxicity to fish	LC50 - Carassius auratus (goldfish) - > 0.01 - < 0.1 mg/l - 48.0 h
	LC50 - Leuciscus idus (Golden orfe) - > 0.01 - < 0.1 mg/l - 48.0 h
	LC50 - other fish - > 0.001 - < 0.01 mg/l - 48.0 h
Toxicity to daphnia and other aquatic invertebrates.	EC50 - Daphnia magna (Water flea) - 0.76 mg/l - 48 h
	LC50 - Daphnia magna (Water flea) - > 0.1 - < 1 mg/l - 48 h

Persistence and degradability
no data available

Bioaccumulative potential
no data available

Mobility in soil
no data available

PBT and vPvB assessment
no data available

Other adverse effects

An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.

Very toxic to aquatic life.

13. DISPOSAL CONSIDERATIONS

Product
Offer surplus and non-recyclable solutions to a licensed disposal company. Contact a licensed professional waste disposal service to dispose of this material. Dissolve or mix the material with a combustible solvent and burn in a chemical incinerator equipped with an afterburner and scrubber.

Contaminated packaging
Dispose of as unused product.

14. TRANSPORT INFORMATION

DOT (US)
UN-Number: 2811 Class: 6.1 Packing group: II
Proper shipping name: Toxic solids, organic, n.o.s. (Endosulfan sulfate)
Reportable Quantity (RQ): 1 lbs
Marine pollutant: No
Poison Inhalation Hazard: No

IMDG
UN-Number: 2811 Class: 6.1 Packing group: II EMS-No: F-A, S-A
Proper shipping name: TOXIC SOLID, ORGANIC, N.O.S. (Endosulfan sulfate)
Marine pollutant: No

IATA
UN-Number: 2811 Class: 6.1 Packing group: II
Proper shipping name: Toxic solid, organic, n.o.s. (Endosulfan sulfate)

15. REGULATORY INFORMATION

OSHA Hazards
Highly toxic by ingestion

DSL Status
This product contains the following components that are not on the Canadian DSL nor NDSL lists.

	CAS-No.
Endosulfan sulfate	1031-07-8

SARA 302 Components
SARA 302: No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

SARA 313 Components
SARA 313: This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

SARA 311/312 Hazards
Acute Health Hazard

Massachusetts Right To Know Components

	CAS-No.	Revision Date
Endosulfan sulfate	1031-07-8	2007-03-01

Pennsylvania Right To Know Components

	CAS-No.	Revision Date
Endosulfan sulfate	1031-07-8	2007-03-01

New Jersey Right To Know Components

	CAS-No.	Revision Date
Endosulfan sulfate	1031-07-8	2007-03-01

California Prop. 65 Components
This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.

16. OTHER INFORMATION

Further information
Copyright 2011 Sigma-Aldrich Co. License granted to make unlimited paper copies for internal use only.
The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. Sigma-Aldrich Co., shall not be held liable for any damage resulting from handling or from contact with the above product. See reverse side of invoice or packing slip for additional terms and conditions of sale.

International Chemical Safety Cards

ENDRIN

ICSC: 1023

$C_{12}H_8Cl_6O$
Molecular mass: 380.9

ICSC # 1023
CAS # 72-20-8
RTECS # IO1575000
UN # 2761
EC # 602-051-00-X
March 10, 2000 Validated

TYPES OF HAZARD/ EXPOSURE	ACUTE HAZARDS/ SYMPTOMS	PREVENTION	FIRST AID/ FIRE FIGHTING
FIRE	Not combustible. Liquid formulations containing organic solvents may be flammable. Gives off irritating or toxic fumes (or gases) in a fire.		In case of fire in the surroundings: all extinguishing agents allowed.
EXPLOSION			
EXPOSURE		PREVENT DISPERSION OF DUST! STRICT HYGIENE!	IN ALL CASES CONSULT A DOCTOR!
•INHALATION	(See Ingestion).	Local exhaust or breathing protection.	Fresh air, rest. Refer for medical attention.
•SKIN	MAY BE ABSORBED! (See Ingestion).	Protective gloves. Protective clothing.	Remove contaminated clothes. Rinse and then wash skin with water and soap. Refer for medical attention.
•EYES		Face shield or eye protection in combination with breathing protection if powder.	First rinse with plenty of water for several minutes (remove contact lenses if easily possible), then take to a doctor.
•INGESTION	Dizziness. Weakness. Headache. Nausea. Vomiting. Convulsions.	Do not eat, drink, or smoke during work. Wash hands before eating.	Give a slurry of activated charcoal in water to drink. Rest. Refer for medical attention.

SPILLAGE DISPOSAL	STORAGE	PACKAGING & LABELLING
Do NOT wash away into sewer. Sweep spilled substance into sealable containers; if appropriate, moisten first to prevent dusting. Carefully collect remainder, then remove to safe place. Do NOT let this chemical enter the environment. (Extra personal protection: chemical protection suit including self-contained breathing apparatus).	Separated from food and feedstuffs . Well closed. Keep in a well-ventilated room. Store in an area without drain or sewer access. Provision to contain effluent from fire extinguishing.	Do not transport with food and feedstuffs. Severe marine pollutant. T+ symbol N symbol R: 24-28-50/53 S: 1/2-22-36/37-45-60-61 UN Hazard Class: 6.1 UN Packing Group: I

SEE IMPORTANT INFORMATION ON BACK

ICSC: 1023

Prepared in the context of cooperation between the International Programme on Chemical Safety & the Commission of the European Communities (C) IPCS CEC 1994. No modifications to the International version have been made except to add the OSHA PELs, NIOSH RELs and NIOSH IDLH values.

International Chemical Safety Cards

ENDRIN

ICSC: 1023

IMPORTANT DATA

PHYSICAL STATE; APPEARANCE:
WHITE CRYSTALS .

PHYSICAL DANGERS:

CHEMICAL DANGERS:
The substance decomposes on heating above 245°C, producing hydrogen chloride , phosgene .

OCCUPATIONAL EXPOSURE LIMITS:
TLV: 0.1 mg/m³ as TWA; (skin); A4 (not classifiable as a human carcinogen); (ACGIH 2008).
MAK: 0.1 mg/m³ (Inhalable fraction);
Peak limitation category: II(8);
skin absorption (H);
Pregnancy risk group: C;
(DFG 2008).
OSHA PEL: TWA 0.1 mg/m^3 skin
NIOSH REL: TWA 0.1 mg/m^3 skin
NIOSH IDLH: 2 mg/m^3 See: 72208

ROUTES OF EXPOSURE:
The substance can be absorbed into the body by inhalation, through the skin and by ingestion.

INHALATION RISK:
Evaporation at 20°C is negligible; a harmful concentration of airborne particles can, however, be reached quickly on spraying or when dispersed, especially if powdered.

EFFECTS OF SHORT-TERM EXPOSURE:
The substance may cause effects on the central nervous system , resulting in convulsions and death. The effects may be delayed. Medical observation is indicated.

EFFECTS OF LONG-TERM OR REPEATED EXPOSURE:

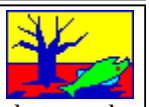
PHYSICAL PROPERTIES

Decomposes below boiling point at 245°C
Melting point: 200°C
Density: 1.7
g/cm³

Solubility in water, g/100 ml at 25°C:
none
Vapour pressure, Pa at 25°C: negligible
Octanol/water partition coefficient as log Pow: 5.34

ENVIRONMENTAL DATA

The substance is very toxic to aquatic organisms. This substance may be hazardous to the environment; special attention should be given to honey bees , birds and mammals . It is strongly advised not to let the chemical enter into the environment because it persists in the environment. In the food chain important to humans, bioaccumulation takes place, specifically in fish and seafood . Avoid release to the environment in circumstances different to normal use.



NOTES

If the substance is formulated with solvent(s) also consult the card(s) (ICSC) of the solvent(s). Carrier solvents used in commercial formulations may change physical and toxicological properties. Do NOT take working clothes home.

Transport Emergency Card: TEC (R)-61G41a

NFPA Code: H3; F0; R; 0
Card has been partially updated in November 2008: see Occupational Exposure Limits, Storage.

ADDITIONAL INFORMATION

ICSC: 1023 **ENDRIN**

(C) IPCS, CEC, 1994

IMPORTANT LEGAL NOTICE:

Neither NIOSH, the CEC or the IPCS nor any person acting on behalf of NIOSH, the CEC or the IPCS is responsible for the use which might be made of this information. This card contains the collective views of the IPCS Peer Review Committee and may not reflect in all cases all the detailed requirements included in national legislation on the subject. The user should verify compliance of the cards with the relevant legislation in the country of use. The only modifications made to produce the U.S. version is inclusion of the OSHA PELs, NIOSH RELs and NIOSH IDLH values.

Material Safety Data Sheet

Version 4.1
Revision Date 01/17/2011
Print Date 12/09/2011

1. PRODUCT AND COMPANY IDENTIFICATION

Product name	:	Endrin aldehyde
Product Number	:	442578
Brand	:	Supelco
Product Use	:	For laboratory research purposes.

Supplier	:	Sigma-Aldrich 3050 Spruce Street SAINT LOUIS MO 63103 USA	Manufacturer	: Sigma-Aldrich Corporation 3050 Spruce St. St. Louis, Missouri 63103 USA
Telephone	:	+1 800-325-5832		
Fax	:	+1 800-325-5052		
Emergency Phone # (For both supplier and manufacturer)	:	(314) 776-6555		
Preparation Information	:	Sigma-Aldrich Corporation Product Safety - Americas Region 1-800-521-8956		

2. HAZARDS IDENTIFICATION

Emergency Overview

OSHA Hazards
Toxic by ingestion

GHS Classification
Acute toxicity, Oral (Category 4)
Chronic aquatic toxicity (Category 4)

GHS Label elements, including precautionary statements

Pictogram

Signal word: Warning

Hazard statement(s)

H302	Harmful if swallowed.
H413	May cause long lasting harmful effects to aquatic life.

Precautionary statement(s): none

HMIS Classification

Health hazard:	2
Flammability:	0
Physical hazards:	0

NFPA Rating

Health hazard:	2
Fire:	0
Reactivity Hazard:	0

Potential Health Effects

Inhalation	May be harmful if inhaled. May cause respiratory tract irritation.
Skin	May be harmful if absorbed through skin. May cause skin irritation.

Eyes	May cause eye irritation.
Ingestion	Toxic if swallowed.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Molecular Weight : 380.89 g/mol

CAS-No.	EC-No.	Index-No.	Concentration
Endrin aldehyde			
7421-93-4	-	-	-

4. FIRST AID MEASURES

General advice
Consult a physician. Show this safety data sheet to the doctor in attendance.Move out of dangerous area.

If inhaled
If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.

In case of skin contact
Wash off with soap and plenty of water. Consult a physician.

In case of eye contact
Flush eyes with water as a precaution.

If swallowed
Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

5. FIRE-FIGHTING MEASURES

Suitable extinguishing media
Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

Special protective equipment for fire-fighters
Wear self contained breathing apparatus for fire fighting if necessary.

Hazardous combustion products
Hazardous decomposition products formed under fire conditions. - Carbon oxides, Hydrogen chloride gas

6. ACCIDENTAL RELEASE MEASURES

Personal precautions
Use personal protective equipment. Avoid dust formation. Avoid breathing vapors, mist or gas. Ensure adequate ventilation. Avoid breathing dust.

Environmental precautions
Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.

Methods and materials for containment and cleaning up
Pick up and arrange disposal without creating dust. Sweep up and shovel. Keep in suitable, closed containers for disposal.

7. HANDLING AND STORAGE

Precautions for safe handling
Avoid contact with skin and eyes. Avoid formation of dust and aerosols.
Provide appropriate exhaust ventilation at places where dust is formed. Normal measures for preventive fire protection.

Conditions for safe storage
Keep container tightly closed in a dry and well-ventilated place.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Contains no substances with occupational exposure limit values.

Personal protective equipment

Respiratory protection
For nuisance exposures use type P95 (US) or type P1 (EU EN 143) particle respirator.For higher level protection use type OV/AG/P99 (US) or type ABEK-P2 (EU EN 143) respirator cartridges. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

Hand protection
Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

Eye protection
Safety glasses with side-shields conforming to EN166 Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

Skin and body protection
Complete suit protecting against chemicals, The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

Hygiene measures
Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance

Form	solid
Colour	no data available

Safety data

pH	no data available
Melting/freezing point	151.0 °C (303.8 °F)
Boiling point	no data available
Flash point	no data available
Ignition temperature	no data available
Autoignition temperature	no data available
Lower explosion limit	no data available
Upper explosion limit	no data available
Vapour pressure	no data available
Density	no data available
Water solubility	insoluble
Partition coefficient: n-octanol/water	log Pow: 5.60
Relative vapour density	no data available
Odour	no data available
Odour Threshold	no data available
Evaporation rate	no data available

10. STABILITY AND REACTIVITY

Chemical stability
Stable under recommended storage conditions.

Possibility of hazardous reactions
no data available

Conditions to avoid
no data available

Materials to avoid
Strong oxidizing agents

Hazardous decomposition products
Hazardous decomposition products formed under fire conditions. - Carbon oxides, Hydrogen chloride gas
Other decomposition products - no data available

11. TOXICOLOGICAL INFORMATION

Acute toxicity

Oral LD50
LD50 Oral - rat - 500.0 mg/kg

Inhalation LC50
no data available

Dermal LD50
no data available

Other information on acute toxicity
no data available

Skin corrosion/irritation
no data available

Serious eye damage/eye irritation
no data available

Respiratory or skin sensitization
no data available

Germ cell mutagenicity
no data available

Carcinogenicity

IARC:	No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.
ACGIH:	No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH.
NTP:	No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.
OSHA:	No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

Reproductive toxicity

no data available

Teratogenicity

no data available

Specific target organ toxicity - single exposure (Globally Harmonized System)
no data available

Specific target organ toxicity - repeated exposure (Globally Harmonized System)
no data available

Aspiration hazard
no data available

Potential health effects

Inhalation	May be harmful if inhaled. May cause respiratory tract irritation.
Ingestion	Toxic if swallowed.
Skin	May be harmful if absorbed through skin. May cause skin irritation.
Eyes	May cause eye irritation.

Signs and Symptoms of Exposure
To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

Synergistic effects
no data available

Additional Information
RTECS: Not available

12. ECOLOGICAL INFORMATION

Toxicity

no data available

Persistence and degradability
no data available

Bioaccumulative potential
no data available

Mobility in soil
no data available

PBT and vPvB assessment
no data available

Other adverse effects

An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.

no data available

13. DISPOSAL CONSIDERATIONS

Product
Offer surplus and non-recyclable solutions to a licensed disposal company. Contact a licensed professional waste disposal service to dispose of this material. Dissolve or mix the material with a combustible solvent and burn in a chemical incinerator equipped with an afterburner and scrubber.

Contaminated packaging
Dispose of as unused product.

14. TRANSPORT INFORMATION

DOT (US)
Not dangerous goods

IMDG
Not dangerous goods

IATA
Not dangerous goods

15. REGULATORY INFORMATION

OSHA Hazards
Toxic by ingestion

DSL Status
This product contains the following components that are not on the Canadian DSL nor NDSL lists.

	CAS-No.
Endrin aldehyde	7421-93-4

SARA 302 Components
SARA 302: No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

SARA 313 Components
SARA 313: This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

SARA 311/312 Hazards
Acute Health Hazard

Massachusetts Right To Know Components
No components are subject to the Massachusetts Right to Know Act.

Pennsylvania Right To Know Components

	CAS-No.	Revision Date
Endrin aldehyde	7421-93-4	

New Jersey Right To Know Components

	CAS-No.	Revision Date
Endrin aldehyde	7421-93-4	

California Prop. 65 Components
This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.

16. OTHER INFORMATION

Further information
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The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. Sigma-Aldrich Co., shall not be held liable for any damage resulting from handling or from contact with the above product. See reverse side of invoice or packing slip for additional terms and conditions of sale.

Material Safety Data Sheet

Version 3.0
Revision Date 08/20/2009
Print Date 12/09/2011

1. PRODUCT AND COMPANY IDENTIFICATION

Product name : Endrin ketone

Product Number : 442579
Brand : Supelco

Company : Sigma-Aldrich
3050 Spruce Street
SAINT LOUIS MO 63103
USA
Telephone : +1 800-325-5832
Fax : +1 800-325-5052
Emergency Phone # : (314) 776-6555

2. COMPOSITION/INFORMATION ON INGREDIENTS

Molecular Weight : 41.05 g/mol

CAS-No.	EC-No.	Index-No.	Concentration
Endrin ketone			
53494-70-5	-	-	-

3. HAZARDS IDENTIFICATION

Emergency Overview

OSHA Hazards
Flammable Liquid, Highly toxic by ingestion

HMIS Classification
Health Hazard: 3
Flammability: 3
Physical hazards: 0

NFPA Rating
Health Hazard: 3
Fire: 3
Reactivity Hazard: 0

Potential Health Effects

Inhalation May be harmful if inhaled. May cause respiratory tract irritation.
Skin May be harmful if absorbed through skin. May cause skin irritation. May be fatal if absorbed through skin.
Eyes May cause eye irritation.
Ingestion May be fatal if swallowed.

4. FIRST AID MEASURES

General advice
Consult a physician. Show this safety data sheet to the doctor in attendance.Move out of dangerous area.

If inhaled
If breathed in, move person into fresh air. If not breathing give artificial respiration Consult a physician.

In case of skin contact
Wash off with soap and plenty of water. Consult a physician.

In case of eye contact
Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician.

If swallowed
Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

5. FIRE-FIGHTING MEASURES

Flammable properties

Flash point	2.0 °C (35.6 °F) - closed cup
Ignition temperature	523 °C (973 °F)

Suitable extinguishing media
Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

Special protective equipment for fire-fighters
Wear self contained breathing apparatus for fire fighting if necessary.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions
Use personal protective equipment. Avoid breathing vapors, mist or gas. Ensure adequate ventilation. Evacuate personnel to safe areas.

Environmental precautions
Prevent further leakage or spillage if safe to do so. Do not let product enter drains.

Methods for cleaning up
Soak up with inert absorbent material and dispose of as hazardous waste. Keep in suitable, closed containers for disposal.

7. HANDLING AND STORAGE

Handling
Avoid inhalation of vapour or mist.
Normal measures for preventive fire protection.

Storage
Keep container tightly closed in a dry and well-ventilated place. Containers which are opened must be carefully resealed and kept upright to prevent leakage.

Handle and store under inert gas.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Contains no substances with occupational exposure limit values.

Personal protective equipment

Respiratory protection
Where risk assessment shows air-purifying respirators are appropriate use a full-face respirator with multi-purpose combination (US) or type ABEK (EN 14387) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

Hand protection
Handle with gloves.

Eye protection
Face shield and safety glasses

Skin and body protection
Choose body protection according to the amount and concentration of the dangerous substance at the work place.

Hygiene measures
Avoid contact with skin, eyes and clothing. Wash hands before breaks and immediately after handling the product.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance

Form	liquid

Safety data

pH	no data available
Melting point	-48.0 °C (-54.4 °F)
Boiling point	81.0 - 82.0 °C (177.8 - 179.6 °F)
Flash point	2.0 °C (35.6 °F) - closed cup
Ignition temperature	523 °C (973 °F)
Lower explosion limit	4.4 %(V)
Upper explosion limit	16 %(V)
Vapour pressure	97.1 hPa (72.8 mmHg) at 20.0 °C (68.0 °F)
Density	0.78 g/cm3
Water solubility	no data available

10. STABILITY AND REACTIVITY

Storage stability
Stable under recommended storage conditions.

Materials to avoid
Strong oxidizing agents

Hazardous decomposition products
Hazardous decomposition products formed under fire conditions. - Carbon oxides

11. TOXICOLOGICAL INFORMATION

Acute toxicity

LD50 Oral - rat - 10.0 mg/kg

Irritation and corrosion

no data available

no data available

Sensitisation

no data available

Chronic exposure

This product is or contains a component that is not classifiable as to its carcinogenicity based on its IARC, ACGIH, NTP, or EPA classification.

IARC:	No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.
ACGIH:	No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH.
NTP:	No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.
OSHA:	No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

Potential Health Effects

Inhalation	May be harmful if inhaled. May cause respiratory tract irritation.
Skin	May be harmful if absorbed through skin. May cause skin irritation. May be fatal if absorbed through skin.
Eyes	May cause eye irritation.
Ingestion	May be fatal if swallowed.

Additional Information
RTECS: PC8600000

12. ECOLOGICAL INFORMATION

Elimination information (persistence and degradability)

no data available

Ecotoxicity effects

Toxicity to fish	LC50 - Pimephales promelas (fathead minnow) - 1,640.00 mg/l - 96 h
Toxicity to daphnia and other aquatic invertebrates.	EC50 - Daphnia magna (Water flea) - 3,600.00 mg/l - 48 h

Further information on ecology

no data available

13. DISPOSAL CONSIDERATIONS

Product
Burn in a chemical incinerator equipped with an afterburner and scrubber but exert extra care in igniting as this material is highly flammable. Observe all federal, state, and local environmental regulations. Contact a licensed professional waste disposal service to dispose of this material.

Contaminated packaging
Dispose of as unused product.

14. TRANSPORT INFORMATION

DOT (US)
UN-Number: 2810 Class: 6.1 Packing group: II
Proper shipping name: Toxic, liquids, organic, n.o.s. (Endrin ketone)
Marine pollutant: No
Poison Inhalation Hazard: No

IMDG
UN-Number: 2810 Class: 6.1 Packing group: II EMS-No: F-A, S-A
Proper shipping name: TOXIC LIQUID, ORGANIC, N.O.S. (Endrin ketone)
Marine pollutant: No

IATA
UN-Number: 2810 Class: 6.1 Packing group: II
Proper shipping name: Toxic liquid, organic n.o.s. (Endrin ketone)

15. REGULATORY INFORMATION

OSHA Hazards
Flammable Liquid, Highly toxic by ingestion

DSL Status
This product contains the following components that are not on the Canadian DSL nor NDSL lists.

	CAS-No.
Endrin ketone	53494-70-5

SARA 302 Components
SARA 302: No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

SARA 313 Components
SARA 313: This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

SARA 311/312 Hazards
Fire Hazard, Acute Health Hazard

Massachusetts Right To Know Components
No components are subject to the Massachusetts Right to Know Act.

Pennsylvania Right To Know Components

	CAS-No.	Revision Date
Endrin ketone	53494-70-5	1990-01-01

New Jersey Right To Know Components

	CAS-No.	Revision Date
Endrin ketone	53494-70-5	1990-01-01

California Prop. 65 Components
This product does not contain any chemicals known to State of California to cause cancer, birth, or any other reproductive defects.

16. OTHER INFORMATION

Further information

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The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. Sigma-Aldrich Co., shall not be held liable for any damage resulting from handling or from contact with the above product. See reverse side of invoice or packing slip for additional terms and conditions of sale.

International Chemical Safety Cards

LINDANE

ICSC: 0053

gamma-1,2,3,4,5,6-Hexachlorocyclohexane
gamma-BHC
gamma-HCH
$C_6H_6Cl_6$
Molecular mass: 290.8

ICSC # 0053
CAS # 58-89-9
RTECS # GV4900000
UN # 2761
EC # 602-043-00-6
November 25, 2009 Validated

TYPES OF HAZARD/ EXPOSURE	ACUTE HAZARDS/ SYMPTOMS	PREVENTION	FIRST AID/ FIRE FIGHTING
FIRE	Not combustible. Liquid formulations containing organic solvents may be flammable. Gives off irritating or toxic fumes (or gases) in a fire.		In case of fire in the surroundings: use appropriate extinguishing media.
EXPLOSION	Risk of fire and explosion if formulations contain flammable/explosive solvents.		In case of fire: keep drums, etc., cool by spraying with water.
EXPOSURE		AVOID ALL CONTACT! AVOID EXPOSURE OF BREASTFEEDING WOMEN!	
•INHALATION	Cough. Sore throat. Further see Ingestion.	Avoid inhalation of dust	Fresh air, rest. Refer for medical attention.
•SKIN	MAY BE ABSORBED!	Protective gloves. Protective clothing.	Wear protective gloves when administering first aid. Remove contaminated clothes. Rinse and then wash skin with water and soap. Refer for medical attention.
•EYES	Redness.	Face shield or eye protection in combination with breathing protection.	First rinse with plenty of water for several minutes (remove contact lenses if easily possible), then take to a doctor.
•INGESTION	Nausea. Vomiting. Diarrhoea. Headache. Dizziness. Tremor Convulsions.	Do not eat, drink, or smoke during work. Wash hands before eating.	Rinse mouth. Give a slurry of activated charcoal in water to drink, but NOT if convulsions occur . Refer immediately for medical attention.

SPILLAGE DISPOSAL	STORAGE	PACKAGING & LABELLING
Personal protection: filter respirator for organic gases and particulates adapted to the airborne concentration of the substance, chemical protection suit including self-contained breathing apparatus, protective gloves. Do NOT let this chemical enter the environment. Sweep spilled substance into	Well closed. Store in an area without drain or sewer access. Provision to contain effluent from fire extinguishing. Separated from bases, metals, food and feedstuffs.	Do not transport with food and feedstuffs. Note: C T symbol N symbol R: 20/21-25-48/22-64-50/53 S: 1/2-36/37-45-60-61 UN Hazard Class: 6.1

non-metallic, sealable containers; if appropriate, moisten first to prevent dusting. Carefully collect remainder, then remove to safe place.		UN Packing Group: III Signal: Danger Skull-Health haz-Enviro Toxic if swallowed Toxic in contact with skin Harmful if inhaled dust Suspected of causing cancer May cause harm to breast-fed children Causes damage to central nervous system May cause damage to nervous system, bone marrow and liver through prolonged or repeated exposure Very toxic to aquatic life with long lasting effects

SEE IMPORTANT INFORMATION ON BACK

ICSC: 0053

Prepared in the context of cooperation between the International Programme on Chemical Safety & the Commission of the European Communities (C) IPCS CEC 1994. No modifications to the International version have been made except to add the OSHA PELs, NIOSH RELs and NIOSH IDLH values.

International Chemical Safety Cards

LINDANE

ICSC: 0053

IMPORTANT DATA

PHYSICAL STATE; APPEARANCE:
WHITE CRYSTALLINE POWDER .

PHYSICAL DANGERS:

CHEMICAL DANGERS:
On contact with hot surfaces or flames this substance decomposes forming toxic and corrosive fumes including chlorine, hydrogen chloride and phosgene (See ICSCs #0007, #0126 and #0163.) Reacts with bases , producing trichlorobenzene , and with powdered metals .

OCCUPATIONAL EXPOSURE LIMITS:
OSHA PEL: TWA 0.5 mg/m^3 skin
NIOSH REL: TWA 0.5 mg/m^3 skin
NIOSH IDLH: 50 mg/m^3 See: 58899
TLV: 0.5 mg/m³ as TWA; (skin); A3 (confirmed animal carcinogen with unknown relevance to humans); (ACGIH 2009).
MAK: 0.1 mg/m³; (Inhalable fraction);
Peak limitation category: II(8);
skin absorption (H);
Carcinogen category: 4; Pregnancy risk group: C;
BAT issued;
(DFG 2009).

ROUTES OF EXPOSURE:
The substance can be absorbed into the body by inhalation of its aerosol, through the skin and by ingestion. 507

INHALATION RISK:
A harmful concentration of airborne particles can be reached quickly when dispersed.

EFFECTS OF SHORT-TERM EXPOSURE:
The substance may cause effects on the central nervous system , resulting in convulsions. Exposure may result in death. Medical observation is indicated.

EFFECTS OF LONG-TERM OR REPEATED EXPOSURE:
The substance may have effects on the the nervous system, bone marrow and the liver . Tumours have been detected in experimental animals but may not be relevant to humans. Animal tests show that this substance possibly causes toxicity to human reproduction or development. tter size in 2nd generation mice in mice when given orally (http://monographs.iarc.fr/ENG/Monographs/suppl7/Suppl7-88.pdf)

PHYSICAL PROPERTIES

Boiling point: 323°C
Melting point: 113°C
Density: 1.9
g/cm³
Solubility in water, g/100 ml at 20°C: 0.0007 (very poor)

Vapour pressure, Pa at 20°C: 0.0012
Relative density of the vapour/air-mixture at 20°C (air = 1): 1
Octanol/water partition coefficient as log Pow: 3.61-3.72

ENVIRONMENTAL

The substance is very toxic to aquatic organisms. Bioaccumulation of this chemical may occur along the food chain, for example in fish and in seafood. The substance may cause long-term effects in the

DATA	aquatic environment. This substance does enter the environment under normal use. Great care, however, should be given to avoid any additional release, e.g. through inappropriate disposal.

N O T E S

Depending on the degree of exposure, periodic medical examination is suggested. Carrier solvents used in commercial formulations may change physical and toxicological properties. Do NOT take working clothes home. Do NOT use in the vicinity of a fire or a hot surface, or during welding. See also ICSC #0487 Hexachlorocyclohexane (mixed isomers), #0795 alpha-Hexachlorocyclohexane, #0796 beta-Hexachlorocyclohexane .

ADDITIONAL INFORMATION

ICSC: 0053 **LINDANE**

(C) IPCS, CEC, 1994

IMPORTANT LEGAL NOTICE:	Neither NIOSH, the CEC or the IPCS nor any person acting on behalf of NIOSH, the CEC or the IPCS is responsible for the use which might be made of this information. This card contains the collective views of the IPCS Peer Review Committee and may not reflect in all cases all the detailed requirements included in national legislation on the subject. The user should verify compliance of the cards with the relevant legislation in the country of use. The only modifications made to produce the U.S. version is inclusion of the OSHA PELs, NIOSH RELs and NIOSH IDLH values.

Material Safety Data Sheet

Version 4.0
Revision Date 09/08/2010
Print Date 12/09/2011

1. PRODUCT AND COMPANY IDENTIFICATION

Product name	:	GAMMA-CHLORDANE
Product Number	:	442599
Brand	:	Supelco
Company	:	Sigma-Aldrich 3050 Spruce Street SAINT LOUIS MO 63103 USA
Telephone	:	+1 800-325-5832
Fax	:	+1 800-325-5052
Emergency Phone #	:	(314) 776-6555

2. HAZARDS IDENTIFICATION

Emergency Overview

OSHA Hazards

Harmful by ingestion., Carcinogen

GHS Label elements, including precautionary statements

Pictogram

Signal word Warning

Hazard statement(s)

H302	Harmful if swallowed.
H351	Suspected of causing cancer.
H400	Very toxic to aquatic life.

Precautionary statement(s)

P273	Avoid release to the environment.
P281	Use personal protective equipment as required.

HMIS Classification

Health hazard:	1
Chronic Health Hazard:	*
Flammability:	0
Physical hazards:	0

NFPA Rating

Health hazard:	1
Fire:	0
Reactivity Hazard:	0

Potential Health Effects

Inhalation	May be harmful if inhaled. May cause respiratory tract irritation.
Skin	Harmful if absorbed through skin. May cause skin irritation.
Eyes	May cause eye irritation.
Ingestion	Harmful if swallowed.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Formula : C10H6Cl8

Molecular Weight : 409.76 g/mol

CAS-No.	EC-No.	Index-No.	Concentration
trans-Chlordane			
5103-74-2	225-826-0	-	-

4. FIRST AID MEASURES

General advice
Consult a physician. Show this safety data sheet to the doctor in attendance.Move out of dangerous area.

If inhaled
If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.

In case of skin contact
Wash off with soap and plenty of water. Consult a physician.

In case of eye contact
Flush eyes with water as a precaution.

If swallowed
Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

5. FIRE-FIGHTING MEASURES

Suitable extinguishing media
Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

Special protective equipment for fire-fighters
Wear self contained breathing apparatus for fire fighting if necessary.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions
Use personal protective equipment. Avoid dust formation. Avoid breathing vapors, mist or gas. Ensure adequate ventilation. Evacuate personnel to safe areas. Avoid breathing dust.

Environmental precautions
Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.

Methods and materials for containment and cleaning up
Pick up and arrange disposal without creating dust. Sweep up and shovel. Keep in suitable, closed containers for disposal.

7. HANDLING AND STORAGE

Precautions for safe handling
Avoid contact with skin and eyes. Avoid formation of dust and aerosols.
Provide appropriate exhaust ventilation at places where dust is formed. Normal measures for preventive fire protection.

Conditions for safe storage
Keep container tightly closed in a dry and well-ventilated place.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Contains no substances with occupational exposure limit values.

Personal protective equipment

Respiratory protection
Where risk assessment shows air-purifying respirators are appropriate use a full-face particle respirator type N100 (US) or type P3 (EN 143) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

Hand protection
Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

Eye protection
Safety glasses with side-shields conforming to EN166 Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

Skin and body protection
Complete suit protecting against chemicals, The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

Hygiene measures
Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance

Form	crystalline
Colour	white
Odour	odourless

Safety data

pH	no data available
Melting point	no data available
Boiling point	no data available
Flash point	no data available
Ignition temperature	no data available
Lower explosion limit	no data available
Upper explosion limit	no data available
Density	1.590 g/cm3
Water solubility	insoluble

10. STABILITY AND REACTIVITY

Chemical stability
Stable under recommended storage conditions.

Conditions to avoid
no data available

Materials to avoid
Strong oxidizing agents

Hazardous decomposition products
Hazardous decomposition products formed under fire conditions. - Carbon oxides, Hydrogen chloride gas

11. TOXICOLOGICAL INFORMATION

Acute toxicity
LD50 Oral - rat - 1,100 mg/kg

Skin corrosion/irritation
no data available

Serious eye damage/eye irritation
no data available

Respiratory or skin sensitization
no data available

Germ cell mutagenicity
no data available

Carcinogenicity

Limited evidence of carcinogenicity in animal studies

IARC: No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

ACGIH: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH.

NTP: No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

OSHA: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

Reproductive toxicity

no data available

Specific target organ toxicity - single exposure (Globally Harmonized System)
no data available

Specific target organ toxicity - repeated exposure (Globally Harmonized System)
no data available

Aspiration hazard
no data available

Potential health effects

Inhalation	May be harmful if inhaled. May cause respiratory tract irritation.
Ingestion	Harmful if swallowed.
Skin	Harmful if absorbed through skin. May cause skin irritation.
Eyes	May cause eye irritation.

Additional Information

12. ECOLOGICAL INFORMATION

Toxicity

Toxicity to fish	LC50 - Lepomis macrochirus - 0.05 mg/l - 96 h

Persistence and degradability
no data available

Bioaccumulative potential
no data available

Mobility in soil
no data available

PBT and vPvB assessment
no data available

Other adverse effects

An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.

Very toxic to aquatic life.

13. DISPOSAL CONSIDERATIONS

Product
Offer surplus and non-recyclable solutions to a licensed disposal company. Contact a licensed professional waste disposal service to dispose of this material. Dissolve or mix the material with a combustible solvent and burn in a chemical incinerator equipped with an afterburner and scrubber.

Contaminated packaging
Dispose of as unused product.

14. TRANSPORT INFORMATION

DOT (US)
Not dangerous goods

IMDG
UN-Number: 3077 Class: 9 Packing group: III EMS-No: F-A, S-F
Proper shipping name: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S.
Marine pollutant: Marine pollutant

IATA
UN-Number: 3077 Class: 9 Packing group: III
Proper shipping name: Environmentally hazardous substance, solid, n.o.s.

Further information
EHS-Mark required (ADR 2.2.9.1.10, IMDG code 2.10.3) for single packagings and combination packagings containing inner packagings with Dangerous Goods > 5L for liquids or > 5kg for solids.

15. REGULATORY INFORMATION

OSHA Hazards
Harmful by ingestion., Carcinogen

DSL Status
This product contains the following components that are not on the Canadian DSL nor NDSL lists.

	CAS-No.
trans-Chlordane	5103-74-2

SARA 302 Components
SARA 302: No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

SARA 313 Components
SARA 313: This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

SARA 311/312 Hazards
Acute Health Hazard, Chronic Health Hazard

Massachusetts Right To Know Components
No components are subject to the Massachusetts Right to Know Act.

Pennsylvania Right To Know Components

	CAS-No.	Revision Date
trans-Chlordane	5103-74-2	

New Jersey Right To Know Components

	CAS-No.	Revision Date
trans-Chlordane	5103-74-2	

California Prop. 65 Components
This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.

16. OTHER INFORMATION

Further information
Copyright 2010 Sigma-Aldrich Co. License granted to make unlimited paper copies for internal use only.

The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. Sigma-Aldrich Co., shall not be held liable for any damage resulting from handling or from contact with the above product. See reverse side of invoice or packing slip for additional terms and conditions of sale.

International Chemical Safety Cards

HEPTACHLOR

ICSC: 0743

1,4,5,6,7,8,8-Heptachloro-3a,4,7,7a-tetrahydro-4,7-methanoindene
1,4,5,6,7,8,8-Heptachloro-3a,4,7,7a-tetrahydro-4,7-methano-1H-indene
3,4,5,6,8,8a-Heptachlorodicyclopentadiene
$C_{10}H_5Cl_7$
Molecular mass: 373.3

ICSC # 0743
CAS # 76-44-8
RTECS # PC0700000
UN # 2761
EC # 602-046-00-2
July 05, 2003 Validated

TYPES OF HAZARD/ EXPOSURE	ACUTE HAZARDS/ SYMPTOMS	PREVENTION	FIRST AID/ FIRE FIGHTING
FIRE	Not combustible. Liquid formulations containing organic solvents may be flammable. Gives off irritating or toxic fumes (or gases) in a fire.		In case of fire in the surroundings: use appropriate extinguishing media.
EXPLOSION			
EXPOSURE		PREVENT DISPERSION OF DUST! AVOID ALL CONTACT!	
•INHALATION	Convulsions. Tremor.	Local exhaust or breathing protection.	Fresh air, rest. Refer for medical attention.
•SKIN	MAY BE ABSORBED! (See Inhalation).	Protective gloves. Protective clothing.	Remove contaminated clothes. Rinse and then wash skin with water and soap. Refer for medical attention.
•EYES		Safety goggles or eye protection in combination with breathing protection.	First rinse with plenty of water for several minutes (remove contact lenses if easily possible), then take to a doctor.
•INGESTION	(See Inhalation).	Do not eat, drink, or smoke during work. Wash hands before eating.	Rinse mouth. Give a slurry of activated charcoal in water to drink. Rest. Refer for medical attention.

SPILLAGE DISPOSAL	STORAGE	PACKAGING & LABELLING
Personal protection: Chemical protection suit including self-contained breathing apparatus. Sweep spilled substance into sealable containers; if appropriate, moisten first to prevent dusting. Carefully collect remainder, then remove to safe place. Do NOT let this chemical enter the environment.	Provision to contain effluent from fire extinguishing. Separated from strong oxidants, metals , food and feedstuffs . Well closed. Keep in a well-ventilated room. Dry. Store in an area without drain or sewer access.	Do not transport with food and feedstuffs. Severe marine pollutant. T symbol N symbol R: 24/25-33-40-50/53 S: 1/2-36/37-45-60-61 UN Hazard Class: 6.1 UN Packing Group: II

SEE IMPORTANT INFORMATION ON BACK

Prepared in the context of cooperation between the International Programme on Chemical Safety & the Commission of the European Communities (C) IPCS CEC 1994. No modifications to the International version have been made except to add the

ICSC: 0743 OSHA PELs, NIOSH RELs and NIOSH IDLH values.

International Chemical Safety Cards

HEPTACHLOR

ICSC: 0743

I M P O R T A N T D A T A

PHYSICAL STATE; APPEARANCE:
WHITE CRYSTALS OR TAN WAXY SOLID , WITH CHARACTERISTIC ODOUR.

PHYSICAL DANGERS:

CHEMICAL DANGERS:
The substance decomposes on heating above 160°C producing toxic fumes including hydrogen chloride . Reacts with strong oxidants . Attacks metal.

OCCUPATIONAL EXPOSURE LIMITS:
TLV: 0.05 mg/m³ as TWA; (skin); A3 (confirmed animal carcinogen with unknown relevance to humans); (ACGIH 2004).
MAK: 0.05 mg/m³ (Inhalable fraction);
Peak limitation category: II(8);
skin absorption (H);
Carcinogen category: 4; Pregnancy risk group: D (DFG 20089.
OSHA PEL: TWA 0.5 mg/m^3 skin
NIOSH REL: Ca TWA 0.5 mg/m^3 skin See Appendix A
NIOSH IDLH: Ca 35 mg/m^3 See: 76448

ROUTES OF EXPOSURE:
The substance can be absorbed into the body by inhalation of dusts from powder concentrates, through the skin and by ingestion.

INHALATION RISK:
Evaporation at 20°C is negligible; a harmful concentration of airborne particles can, however, be reached quickly when dispersed, especially if powdered.

EFFECTS OF SHORT-TERM EXPOSURE:
The substance may cause effects on the central nervous system .

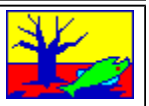
EFFECTS OF LONG-TERM OR REPEATED EXPOSURE:
The substance may have effects on the liver . This substance is possibly carcinogenic to humans.

PHYSICAL PROPERTIES

Decomposes below boiling point at 160°C
Melting point: 95-96°C
Density: 1.6 g/cm³
Solubility in water: none
Vapour pressure, Pa at 25°C: 0.053
Octanol/water partition coefficient as log Pow: 5.27-5.44

ENVIRONMENTAL DATA

The substance is very toxic to aquatic organisms. Bioaccumulation of this chemical may occur along the food chain, for example in fish and in milk. The substance may cause long-term effects in the aquatic environment. This substance does enter the environment under normal use. Great care, however, should be given to avoid any additional release, e.g. through inappropriate disposal.



N O T E S

Other melting points: 46-74°C for the technical product. Carrier solvents used in commercial formulations may change physical and toxicological properties. Do NOT take working clothes home. Depending on the degree of exposure, periodic medical examination is suggested.

Transport Emergency Card: TEC (R)-61GT7-II
Card has been partially updated in October 2005: see Occupational Exposure Limits, Emergency Response.
Card has been partially updated in April 2010: see Occupational Exposure Limits, Storage.

ADDITIONAL INFORMATION

ICSC: 0743 **HEPTACHLOR**

(C) IPCS, CEC, 1994

IMPORTANT LEGAL NOTICE: Neither NIOSH, the CEC or the IPCS nor any person acting on behalf of NIOSH, the CEC or the IPCS is responsible for the use which might be made of this information. This card contains the collective views of the IPCS Peer Review Committee and may not reflect in all cases all the detailed requirements included in national legislation on the subject. The user should verify compliance of the cards with the relevant legislation in the country of use. The only modifications made to produce the U.S. version is inclusion of the OSHA PELs, NIOSH RELs and NIOSH IDLH

	values.

Material Safety Data Sheet

Version 4.0
Revision Date 08/13/2010
Print Date 12/09/2011

1. PRODUCT AND COMPANY IDENTIFICATION

Product name	:	Heptachlor epoxide
Product Number	:	49042
Brand	:	Supelco
Company	:	Sigma-Aldrich 3050 Spruce Street SAINT LOUIS MO 63103 USA
Telephone	:	+1 800-325-5832
Fax	:	+1 800-325-5052
Emergency Phone #	:	(314) 776-6555

2. HAZARDS IDENTIFICATION

Emergency Overview

OSHA Hazards
Highly toxic by ingestion, Carcinogen

Target Organs

Central nervous system, Liver, Blood

GHS Label elements, including precautionary statements

Pictogram

Signal word Danger

Hazard statement(s)

H300	Fatal if swallowed.
H351	Suspected of causing cancer.
H410	Very toxic to aquatic life with long lasting effects.

Precautionary statement(s)

P264	Wash hands thoroughly after handling.
P273	Avoid release to the environment.
P281	Use personal protective equipment as required.
P301 + P310	IF SWALLOWED: Immediately call a POISON CENTER or doctor/ physician.
P501	Dispose of contents/ container to an approved waste disposal plant.

HMIS Classification

Health hazard:	3
Chronic Health Hazard:	*
Flammability:	0
Physical hazards:	0

NFPA Rating

Health hazard:	3
Fire:	0
Reactivity Hazard:	0

Potential Health Effects

Inhalation	May be harmful if inhaled. May cause respiratory tract irritation.
Skin	May be harmful if absorbed through skin. May cause skin irritation.

Eyes	May cause eye irritation.
Ingestion	May be fatal if swallowed.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Synonyms : Heptachlor exo-epoxide
HCE
exo-1,4,5,6,7,8,8-Heptachloro-2,3-epoxy-4,7-methano-3a,4,7,7a-tetrahydroindane

Formula : $C_{10}H_5Cl_7O$

Molecular Weight : 389.32 g/mol

CAS-No.	EC-No.	Index-No.	Concentration
Heptachlor epoxide			
1024-57-3	213-831-0	602-063-00-5	-

4. FIRST AID MEASURES

General advice
Consult a physician. Show this safety data sheet to the doctor in attendance.Move out of dangerous area.

If inhaled
If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.

In case of skin contact
Wash off with soap and plenty of water. Take victim immediately to hospital. Consult a physician.

In case of eye contact
Flush eyes with water as a precaution.

If swallowed
Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

5. FIRE-FIGHTING MEASURES

Suitable extinguishing media
Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

Special protective equipment for fire-fighters
Wear self contained breathing apparatus for fire fighting if necessary.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions
Wear respiratory protection. Avoid dust formation. Avoid breathing vapors, mist or gas. Ensure adequate ventilation. Evacuate personnel to safe areas. Avoid breathing dust.

Environmental precautions
Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.

Methods and materials for containment and cleaning up
Pick up and arrange disposal without creating dust. Sweep up and shovel. Keep in suitable, closed containers for disposal.

7. HANDLING AND STORAGE

Precautions for safe handling
Avoid contact with skin and eyes. Avoid formation of dust and aerosols.
Provide appropriate exhaust ventilation at places where dust is formed. Normal measures for preventive fire protection.

Conditions for safe storage
Keep container tightly closed in a dry and well-ventilated place.

Recommended storage temperature: 2 - 8 °C

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Contains no substances with occupational exposure limit values.

Personal protective equipment

Respiratory protection
Where risk assessment shows air-purifying respirators are appropriate use a full-face particle respirator type N100 (US) or type P3 (EN 143) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

Hand protection
Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

Eye protection
Face shield and safety glasses Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

Skin and body protection
Complete suit protecting against chemicals, The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

Hygiene measures
Avoid contact with skin, eyes and clothing. Wash hands before breaks and immediately after handling the product.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance

Form	solid

Safety data

pH	no data available
Melting point	157.0 - 161.0 °C (314.6 - 321.8 °F)
Boiling point	no data available
Flash point	no data available
Ignition temperature	no data available
Lower explosion limit	no data available
Upper explosion limit	no data available
Water solubility	no data available
Partition coefficient: n-octanol/water	log Pow: 5.40

10. STABILITY AND REACTIVITY

Chemical stability
Stable under recommended storage conditions.

Conditions to avoid
no data available

Materials to avoid
Strong oxidizing agents

Hazardous decomposition products
Hazardous decomposition products formed under fire conditions. - Carbon oxides, Hydrogen chloride gas

11. TOXICOLOGICAL INFORMATION

Acute toxicity
LD50 Oral - rat - 15.0 mg/kg

LD50 Oral - mouse - 39.0 mg/kg

LD50 Oral - rabbit - 144.0 mg/kg

LD50 Intracerebral - mouse - 8 mg/kg
Remarks: Behavioral:Convulsions or effect on seizure threshold.

Skin corrosion/irritation
no data available

Serious eye damage/eye irritation
no data available

Respiratory or skin sensitization
no data available

Germ cell mutagenicity

no data available

Carcinogenicity

This product is or contains a component that has been reported to be possibly carcinogenic based on its IARC, ACGIH, NTP, or EPA classification.

Limited evidence of carcinogenicity in animal studies

IARC:	No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.
ACGIH:	No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH.
NTP:	No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.
OSHA:	No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

Reproductive toxicity

no data available

Specific target organ toxicity - single exposure (Globally Harmonized System)
no data available

Specific target organ toxicity - repeated exposure (Globally Harmonized System)
no data available

Aspiration hazard
no data available

Potential health effects

Inhalation	May be harmful if inhaled. May cause respiratory tract irritation.
Ingestion	May be fatal if swallowed.
Skin	May be harmful if absorbed through skin. May cause skin irritation.
Eyes	May cause eye irritation.

Signs and Symptoms of Exposure
To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

Additional Information
RTECS: PB9450000

12. ECOLOGICAL INFORMATION

Toxicity

Toxicity to fish	LC50 - Oncorhynchus mykiss (rainbow trout) - 0.02 mg/l - 96.0 h
Toxicity to daphnia and other aquatic invertebrates.	LC50 - Daphnia magna (Water flea) - 0.24 mg/l - 48 h

Persistence and degradability
no data available

Bioaccumulative potential

Bioaccumulation	Pimephales promelas (fathead minnow) - 32 d Bioconcentration factor (BCF): 14,400

Mobility in soil
no data available

PBT and vPvB assessment
no data available

Other adverse effects

An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.

Very toxic to aquatic life with long lasting effects.

13. DISPOSAL CONSIDERATIONS

Product
Offer surplus and non-recyclable solutions to a licensed disposal company. Contact a licensed professional waste disposal service to dispose of this material. Dissolve or mix the material with a combustible solvent and burn in a chemical incinerator equipped with an afterburner and scrubber.

Contaminated packaging
Dispose of as unused product.

14. TRANSPORT INFORMATION

DOT (US)
UN-Number: 2811 Class: 6.1 Packing group: II
Proper shipping name: Toxic solids, organic, n.o.s. (Heptachlor epoxide)
Reportable Quantity (RQ): 1 lbs
Marine pollutant: No
Poison Inhalation Hazard: No

IMDG
UN-Number: 2811 Class: 6.1 Packing group: II EMS-No: F-A, S-A
Proper shipping name: TOXIC SOLID, ORGANIC, N.O.S. (Heptachlor epoxide)
Marine pollutant: No

IATA
UN-Number: 2811 Class: 6.1 Packing group: II
Proper shipping name: Toxic solid, organic, n.o.s. (Heptachlor epoxide)

15. REGULATORY INFORMATION

OSHA Hazards
Highly toxic by ingestion, Carcinogen

DSL Status
This product contains the following components that are not on the Canadian DSL nor NDSL lists.

	CAS-No.
Heptachlor epoxide	1024-57-3

SARA 302 Components
SARA 302: No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

SARA 313 Components
SARA 313: This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

SARA 311/312 Hazards
Acute Health Hazard, Chronic Health Hazard

Massachusetts Right To Know Components

	CAS-No.	Revision Date
Heptachlor epoxide	1024-57-3	1994-04-01

Pennsylvania Right To Know Components

	CAS-No.	Revision Date
Heptachlor epoxide	1024-57-3	1994-04-01

New Jersey Right To Know Components

	CAS-No.	Revision Date
Heptachlor epoxide	1024-57-3	1994-04-01

California Prop. 65 Components

	CAS-No.	Revision Date
WARNING! This product contains a chemical known to the State of California to cause cancer. Heptachlor epoxide	1024-57-3	2007-09-28

16. OTHER INFORMATION

Further information
Copyright 2010 Sigma-Aldrich Co. License granted to make unlimited paper copies for internal use only.
The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. Sigma-Aldrich Co., shall not be held liable for any damage resulting from handling or from contact with the above product. See reverse side of invoice or packing slip for additional terms and conditions of sale.

International Chemical Safety Cards

METHOXYCHLOR

ICSC: 1306

1,1-(2,2,2-Trichloroethylidene)bis(4-methoxybenzene)
1,1,1-Trichloro-2,2-bis(p-methoxyphenyl)ethane
Dimethoxy-DDT
$C_{16}H_{15}Cl_3O_2$
Molecular mass: 345.7

ICSC # 1306
CAS # 72-43-5
RTECS # KJ3675000
March 26, 1999 Validated
La, ntry of chemistry data: 25-11-1998.

TYPES OF HAZARD/ EXPOSURE	ACUTE HAZARDS/ SYMPTOMS	PREVENTION	FIRST AID/ FIRE FIGHTING
FIRE	Combustible. Liquid formulations containing organic solvents may be flammable. Gives off irritating or toxic fumes (or gases) in a fire.	NO open flames.	Powder, alcohol-resistant foam, water spray, carbon dioxide.
EXPLOSION			
EXPOSURE		PREVENT DISPERSION OF DUST! STRICT HYGIENE! AVOID EXPOSURE OF (PREGNANT) WOMEN!	
•INHALATION	See Ingestion.	Local exhaust or breathing protection.	Fresh air, rest.
•SKIN		Protective gloves. Protective clothing.	Remove contaminated clothes. Rinse and then wash skin with water and soap.
•EYES		Safety spectacles or eye protection in combination with breathing protection.	First rinse with plenty of water for several minutes (remove contact lenses if easily possible), then take to a doctor.
•INGESTION	Convulsions. Diarrhoea. Nausea. Vomiting.	Do not eat, drink, or smoke during work. Wash hands before eating.	Induce vomiting (ONLY IN CONSCIOUS PERSONS!). Give plenty of water to drink. Refer for medical attention.

SPILLAGE DISPOSAL	STORAGE	PACKAGING & LABELLING
Sweep spilled substance into sealable containers; if appropriate, moisten first to prevent dusting. Carefully collect remainder, then remove to safe place. Do NOT let this chemical enter the environment. Personal protection: P2 filter respirator for harmful particles.	Separated from food and feedstuffs . Well closed. Keep in a well-ventilated room.	Do not transport with food and feedstuffs.

SEE IMPORTANT INFORMATION ON BACK

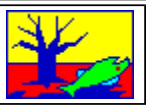
Prepared in the context of cooperation between the International Programme on Chemical Safety & the Commission of the European Communities (C) IPCS CEC 1994. No modifications to the International version have been made except to add the

OSHA PELs, NIOSH RELs and NIOSH IDLH values.

International Chemical Safety Cards

METHOXYCHLOR

ICSC: 1306

IMPORTANT DATA	**PHYSICAL STATE; APPEARANCE:** COLOURLESS TO LIGHT YELLOW CRYSTALS , WITH CHARACTERISTIC ODOUR. **PHYSICAL DANGERS:** **CHEMICAL DANGERS:** The substance decomposes on heating and on burning producing toxic and corrosive gasesincludinghydrogen chloride (see ICSC 0163). Reacts with oxidants . Attacks some plastics and rubber. **OCCUPATIONAL EXPOSURE LIMITS:** TLV: 10 mg/m³ as TWA; A4 (not classifiable as a human carcinogen); (ACGIH 2004). MAK: (Inhalable fraction) 15 mg/m³; Peak limitation category: II(8); Pregnancy risk group: D; (DFG 2004). OSHA PEL†: TWA 15 mg/m^3 NIOSH REL: Ca See Appendix A NIOSH IDLH: Ca 5000 mg/m^3 See: 72435
	ROUTES OF EXPOSURE: The substance can be absorbed into the body by inhalation of its aerosol, through the skin and by ingestion. **INHALATION RISK:** Evaporation at 20°C is negligible; a harmful concentration of airborne particles can, however, be reached quickly on spraying or when dispersed, especially if powdered. **EFFECTS OF SHORT-TERM EXPOSURE:** **EFFECTS OF LONG-TERM OR REPEATED EXPOSURE:** The substance may have effects on the liver, kidneys, central nervous systeml, when ingested in large amounts. Animal tests show that this substance possibly causes toxic effects upon human reproduction.
PHYSICAL PROPERTIES	Melting point: 89°C Density: 1.4 g/cm³ Solubility in water: none Vapour pressure: negligible Octanol/water partition coefficient as log Pow: 4.68-5.08
ENVIRONMENTAL DATA	The substance is very toxic to aquatic organisms. Bioaccumulation of this chemical may occur in fish. This substance does enter the environment under normal use. Great care, however, should be given to avoid any additional release, e.g. through inappropriate disposal. 

N O T E S

Temperature of decomposition unknown in literature. Depending on the degree of exposure, periodic medical examination is suggested. If the substance is formulated with solvent(s) also consult the card(s) (ICSC) of the solvent(s). Carrier solvents used in commercial formulations may change physical and toxicological properties. Maralate, Marlate, Metox, Prentox, Methoxicide are trade names. See also ICSC0034 for DDT. Card has been partly updated in April 2005. See section Occupational Exposure Limits.

ADDITIONAL INFORMATION

ICSC: 1306 **METHOXYCHLOR**

(C) IPCS, CEC, 1994

IMPORTANT LEGAL NOTICE: Neither NIOSH, the CEC or the IPCS nor any person acting on behalf of NIOSH, the CEC or the IPCS is responsible for the use which might be made of this information. This card contains the collective views of the IPCS Peer Review Committee and may not reflect in all cases all the detailed requirements included in national legislation on the subject. The user should verify compliance of the cards with the relevant legislation in the country of use. The only modifications made to produce the U.S. version is inclusion of the OSHA PELs, NIOSH RELs and NIOSH IDLH values.

Material Safety Data Sheet

Version 4.1
Revision Date 11/22/2011
Print Date 12/09/2011

1. PRODUCT AND COMPANY IDENTIFICATION

Product name	:	2,4′-DDD
Product Number	:	35485
Brand	:	Fluka
Supplier	:	Sigma-Aldrich 3050 Spruce Street SAINT LOUIS MO 63103 USA
Telephone	:	+1 800-325-5832
Fax	:	+1 800-325-5052
Emergency Phone # (For both supplier and manufacturer)	:	(314) 776-6555
Preparation Information	:	Sigma-Aldrich Corporation Product Safety - Americas Region 1-800-521-8956

2. HAZARDS IDENTIFICATION

Emergency Overview

OSHA Hazards
Target Organ Effect, Carcinogen

Target Organs

Central nervous system, Adrenal cortex.

GHS Classification
Carcinogenicity (Category 2)

GHS Label elements, including precautionary statements

Pictogram

Signal word Warning

Hazard statement(s)
H351 Suspected of causing cancer.

Precautionary statement(s)
P281 Use personal protective equipment as required.

HMIS Classification

Health hazard:	0
Chronic Health Hazard:	*
Flammability:	0
Physical hazards:	0

NFPA Rating

Health hazard:	0
Fire:	0
Reactivity Hazard:	0

Potential Health Effects

Inhalation May be harmful if inhaled. May cause respiratory tract irritation.

Skin	May be harmful if absorbed through skin. May cause skin irritation.
Eyes	May cause eye irritation.
Ingestion	May be harmful if swallowed.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Synonyms : Mitotane
o,p′-DDD
1-(2-Chlorophenyl)-1-(4-chlorophenyl)-2,2-dichloroethane
(2,4′-Dichlorodiphenyl)dichloroethane

Formula : $C_{14}H_{10}Cl_4$

Molecular Weight : 320.04 g/mol

Component		Concentration
Mitotane		
CAS-No. EC-No.	53-19-0 200-166-6	-

4. FIRST AID MEASURES

General advice
Consult a physician. Show this safety data sheet to the doctor in attendance.Move out of dangerous area.

If inhaled
If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.

In case of skin contact
Wash off with soap and plenty of water. Consult a physician.

In case of eye contact
Flush eyes with water as a precaution.

If swallowed
Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

5. FIREFIGHTING MEASURES

Suitable extinguishing media
Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

Special protective equipment for firefighters
Wear self contained breathing apparatus for fire fighting if necessary.

Hazardous combustion products
Hazardous decomposition products formed under fire conditions. - Carbon oxides, Hydrogen chloride gas

6. ACCIDENTAL RELEASE MEASURES

Personal precautions
Use personal protective equipment. Avoid dust formation. Avoid breathing vapors, mist or gas. Ensure adequate ventilation. Evacuate personnel to safe areas. Avoid breathing dust.

Environmental precautions
Prevent further leakage or spillage if safe to do so. Do not let product enter drains.

Methods and materials for containment and cleaning up
Pick up and arrange disposal without creating dust. Sweep up and shovel. Keep in suitable, closed containers for disposal.

7. HANDLING AND STORAGE

Precautions for safe handling
Avoid contact with skin and eyes. Avoid formation of dust and aerosols.
Provide appropriate exhaust ventilation at places where dust is formed. Normal measures for preventive fire protection.

Conditions for safe storage
Keep container tightly closed in a dry and well-ventilated place.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Contains no substances with occupational exposure limit values.

Personal protective equipment

Respiratory protection
Where risk assessment shows air-purifying respirators are appropriate use a full-face particle respirator type N100 (US) or type P3 (EN 143) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

Hand protection
Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

Eye protection
Safety glasses with side-shields conforming to EN166 Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

Skin and body protection
impervious clothing, The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

Hygiene measures
Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance

Form	crystalline
Colour	white

Safety data

pH	no data available
Melting point/freezing point	Melting point/range: 77 - 78 °C (171 - 172 °F) - lit.
Boiling point	no data available
Flash point	no data available
Ignition temperature	no data available
Autoignition temperature	no data available
Lower explosion limit	no data available
Upper explosion limit	no data available
Vapour pressure	no data available
Density	no data available
Water solubility	no data available
Partition coefficient: n-octanol/water	no data available
Relative vapour density	no data available

Odour	no data available
Odour Threshold	no data available
Evaporation rate	no data available

10. STABILITY AND REACTIVITY

Chemical stability
Stable under recommended storage conditions.

Possibility of hazardous reactions
no data available

Conditions to avoid
no data available

Materials to avoid
Strong oxidizing agents, Strong bases

Hazardous decomposition products
Hazardous decomposition products formed under fire conditions. - Carbon oxides, Hydrogen chloride gas
Other decomposition products - no data available

11. TOXICOLOGICAL INFORMATION

Acute toxicity

Oral LD50
LD50 Oral - rat - > 5,000 mg/kg

Inhalation LC50
no data available

Dermal LD50
no data available

Other information on acute toxicity
no data available

Skin corrosion/irritation
no data available

Serious eye damage/eye irritation
no data available

Respiratory or skin sensitization
no data available

Germ cell mutagenicity

no data available

Carcinogenicity

This product is or contains a component that has been reported to be possibly carcinogenic based on its IARC, ACGIH, NTP, or EPA classification.

Limited evidence of carcinogenicity in animal studies

IARC:	2B - Group 2B: Possibly carcinogenic to humans (Mitotane)
ACGIH:	No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH.
NTP:	No component of this product present at levels greater than or equal to 0.1% is identified as a known or

anticipated carcinogen by NTP.

OSHA: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

Reproductive toxicity

no data available

Teratogenicity

no data available

Specific target organ toxicity - single exposure (Globally Harmonized System)
no data available

Specific target organ toxicity - repeated exposure (Globally Harmonized System)
no data available

Aspiration hazard
no data available

Potential health effects

Inhalation	May be harmful if inhaled. May cause respiratory tract irritation.
Ingestion	May be harmful if swallowed.
Skin	May be harmful if absorbed through skin. May cause skin irritation.
Eyes	May cause eye irritation.

Synergistic effects
no data available

Additional Information
RTECS: KH7880000

12. ECOLOGICAL INFORMATION

Toxicity

no data available

Persistence and degradability
no data available

Bioaccumulative potential
no data available

Mobility in soil
no data available

PBT and vPvB assessment
no data available

Other adverse effects

no data available

13. DISPOSAL CONSIDERATIONS

Product
Offer surplus and non-recyclable solutions to a licensed disposal company. Contact a licensed professional waste disposal service to dispose of this material. Dissolve or mix the material with a combustible solvent and burn in a chemical incinerator equipped with an afterburner and scrubber.

Contaminated packaging
Dispose of as unused product.

14. TRANSPORT INFORMATION

DOT (US)
Not dangerous goods

IMDG
Not dangerous goods

IATA
Not dangerous goods

15. REGULATORY INFORMATION

OSHA Hazards
Target Organ Effect, Carcinogen

SARA 302 Components
SARA 302: No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

SARA 313 Components
SARA 313: This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

SARA 311/312 Hazards
Chronic Health Hazard

Massachusetts Right To Know Components
No components are subject to the Massachusetts Right to Know Act.

Pennsylvania Right To Know Components

	CAS-No.	Revision Date
Mitotane	53-19-0	2009-07-17

New Jersey Right To Know Components

	CAS-No.	Revision Date
Mitotane	53-19-0	2009-07-17

California Prop. 65 Components
This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.

16. OTHER INFORMATION

Further information
Copyright 2011 Sigma-Aldrich Co. License granted to make unlimited paper copies for internal use only.
The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. Sigma-Aldrich Co., shall not be held liable for any damage resulting from handling or from contact with the above product. See reverse side of invoice or packing slip for additional terms and conditions of sale.

International Chemical Safety Cards

PARATHION

ICSC: 0006

O,O-Diethyl-O-(4-nitrophenyl)phosphorothioate
Phosphorothioic acid O,O-diethyl O-(4-nitrophenyl) ester
Ethyl parathion
$(C_2H_5O)_2PSOC_6H_4NO_2$
Molecular mass: 291.3

ICSC # 0006
CAS # 56-38-2
RTECS # TF4550000
UN # 3018
EC # 015-034-00-1
April 22, 2004 Validated

TYPES OF HAZARD/ EXPOSURE	ACUTE HAZARDS/ SYMPTOMS	PREVENTION	FIRST AID/ FIRE FIGHTING
FIRE	Combustible. Gives off irritating or toxic fumes (or gases) in a fire. Liquid formulations containing organic solvents may be flammable.	NO open flames.	Water spray, dry powder, carbon dioxide.
EXPLOSION			In case of fire: keep drums, etc., cool by spraying with water.
EXPOSURE		PREVENT GENERATION OF MISTS! STRICT HYGIENE! AVOID EXPOSURE OF ADOLESCENTS AND CHILDREN!	IN ALL CASES CONSULT A DOCTOR!
•INHALATION	Pupillary constriction, muscle cramp, excessive salivation. Sweating. Nausea. Vomiting. Dizziness. Headache. Convulsions. Diarrhoea. Weakness. Laboured breathing. Wheezing. Unconsciousness.	Ventilation, local exhaust, or breathing protection.	Fresh air, rest. Artificial respiration may be needed. Refer for medical attention.
•SKIN	MAY BE ABSORBED! (Further see Inhalation).	Protective gloves. Protective clothing.	Remove contaminated clothes. Rinse and then wash skin with water and soap. Refer for medical attention.
•EYES	MAY BE ABSORBED! Redness. Pain. Blurred vision.	Face shield, or eye protection in combination with breathing protection.	First rinse with plenty of water for several minutes (remove contact lenses if easily possible), then take to a doctor.
•INGESTION	Abdominal cramps. Diarrhoea. Vomiting. (Further see Inhalation).	Do not eat, drink, or smoke during work. Wash hands before eating.	Give a slurry of activated charcoal in water to drink. Refer for medical attention. See Notes.

SPILLAGE DISPOSAL	STORAGE	PACKAGING & LABELLING
Evacuate danger area! Consult an expert! Collect leaking and spilled liquid in sealable containers as far as possible. Treat remaining liquid with an alkaline substance. Absorb remaining liquid in sand or inert absorbent and remove to safe place. Do NOT let this	Provision to contain effluent from fire extinguishing. Separated from strong oxidants, food and feedstuffs . Well closed. Keep in a well-ventilated room.	Do not transport with food and feedstuffs. Severe marine pollutant. T+ symbol N symbol R: 24-26/28-48/25-50/53 S: 1/2-28-36/37-45-60-61

chemical enter the environment. Personal protection: chemical protection suit including self-contained breathing apparatus.		UN Hazard Class: 6.1 UN Packing Group: I

SEE IMPORTANT INFORMATION ON BACK

ICSC: 0006

Prepared in the context of cooperation between the International Programme on Chemical Safety & the Commission of the European Communities (C) IPCS CEC 1994. No modifications to the International version have been made except to add the OSHA PELs, NIOSH RELs and NIOSH IDLH values.

International Chemical Safety Cards

PARATHION

ICSC: 0006

IMPORTANT DATA

PHYSICAL STATE; APPEARANCE:
PALE YELLOW TO BROWN (TECHNICAL PRODUCT) LIQUID , WITH CHARACTERISTIC ODOUR.

PHYSICAL DANGERS:

CHEMICAL DANGERS:
The substance decomposes on heating above 200°C, producing toxic gases including carbon monoxide , nitrogen oxides , phosphorous oxides and sulfur oxides . Reacts with strong oxidants. Attacks some forms of plastics, rubber and coatings.

OCCUPATIONAL EXPOSURE LIMITS:
TLV: (I,V) 0.05 mg/m³; A4; BEI issued; (skin); (ACGIH 2004).
MAK: (I) 0.1 mg/m³; H;
Peak limitation category: II (8); Pregnancy risk group: D;
(DFG 2003).
OSHA PEL: TWA 0.1 mg/m^3 skin
NIOSH REL: TWA 0.05 mg/m^3 skin
NIOSH IDLH: 10 mg/m^3 See: 56382

ROUTES OF EXPOSURE:
The substance can be absorbed into the body by inhalation of its aerosol, through the skin, by ingestion and through the eyes.

INHALATION RISK:
Evaporation at 20°C is negligible; a harmful concentration of airborne particles can, however, be reached quickly on spraying.

EFFECTS OF SHORT-TERM EXPOSURE:
The substance may cause effects on the nervous system , resulting in convulsions, respiratory failure, muscle weakness. Cholinesterase inhibition. Exposure may result in death. The effects may be delayed. Medical observation is indicated.

EFFECTS OF LONG-TERM OR REPEATED EXPOSURE:
Cholinesterase inhibitor; cumulative effect is possible: see acute hazards/symptoms.

PHYSICAL PROPERTIES

Boiling point: 375°C
Melting point: 6°C
Relative density (water = 1): 1.26
Solubility in water, g/100 ml at 25°C: 0.002
Flash point: 120°C
Octanol/water partition coefficient as log Pow: 3.8

ENVIRONMENTAL DATA

The substance is very toxic to aquatic organisms. This substance may be hazardous in the environment; special attention should be given to birds. The substance may cause long-term effects in the aquatic environment. This substance does enter the environment under normal use. Great care, however, should be given to avoid any additional release, e.g. through inappropriate disposal.

NOTES

Depending on the degree of exposure, periodic medical examination is indicated. Specific treatment is necessary in case of poisoning with this substance; the appropriate means with instructions must be available. If the substance is formulated with solvents also consult the ICSCs of these materials. Carrier solvents used in commercial formulations may change physical and toxicological properties. The odour warning when the exposure limit value is exceeded is insufficient. Do NOT take working clothes home.

Transport Emergency Card: TEC (R)-61GT6-I

ADDITIONAL INFORMATION

(C) IPCS, CEC, 1994

IMPORTANT LEGAL NOTICE:	Neither NIOSH, the CEC or the IPCS nor any person acting on behalf of NIOSH, the CEC or the IPCS is responsible for the use which might be made of this information. This card contains the collective views of the IPCS Peer Review Committee and may not reflect in all cases all the detailed requirements included in national legislation on the subject. The user should verify compliance of the cards with the relevant legislation in the country of use. The only modifications made to produce the U.S. version is inclusion of the OSHA PELs, NIOSH RELs and NIOSH IDLH values.

International Chemical Safety Cards

CAMPHECHLOR

ICSC: 0843

Toxaphene
Chlorinated camphene (60%)
Polychlorocamphene
$C_{10}H_{10}Cl_8$ (approx•)
Molecular mass: 413.8 (average)

ICSC # 0843
CAS # 8001-35-2
RTECS # XW5250000
UN # 2761
EC # 602-044-00-1
November 04, 1997 Validated

TYPES OF HAZARD/ EXPOSURE	ACUTE HAZARDS/ SYMPTOMS	PREVENTION	FIRST AID/ FIRE FIGHTING
FIRE	Liquid formulations containing organic solvents may be flammable. Gives off irritating or toxic fumes (or gases) in a fire.		Foam, powder, carbon dioxide. NO water.
EXPLOSION	The explosion hazard will depend on the solvent used in the formulation.		In case of fire: keep drums, etc., cool by spraying with water but NO direct contact with water.
EXPOSURE		STRICT HYGIENE!	IN ALL CASES CONSULT A DOCTOR!
•INHALATION		Local exhaust or breathing protection.	Fresh air, rest.
•SKIN	MAY BE ABSORBED! Redness.	Protective gloves. Protective clothing.	Remove contaminated clothes. Rinse and then wash skin with water and soap.
•EYES	Redness.	Safety goggles, or face shield.	First rinse with plenty of water for several minutes (remove contact lenses if easily possible), then take to a doctor.
•INGESTION	Convulsions. Dizziness. Nausea. Vomiting.	Do not eat, drink, or smoke during work.	Give a slurry of activated charcoal in water to drink. Induce vomiting (ONLY IN CONSCIOUS PERSONS!). Rest. Refer for medical attention.

SPILLAGE DISPOSAL	STORAGE	PACKAGING & LABELLING
Do NOT wash away into sewer. Sweep spilled substance into sealable containers. Carefully collect remainder, then remove to safe place.	Provision to contain effluent from fire extinguishing. Separated from food and feedstuffs. Keep in the dark.	Do not transport with food and feedstuffs. Marine pollutant. T symbol N symbol R: 21-25-37/38-40-50/53 S: 1/2-36/37-45-60-61 UN Hazard Class: 6.1

SEE IMPORTANT INFORMATION ON BACK

ICSC: 0843

Prepared in the context of cooperation between the International Programme on Chemical Safety & the Commission of the European Communities (C) IPCS CEC 1994. No modifications to the International version have been made except to add the OSHA PELs, NIOSH RELs and NIOSH IDLH values.

International Chemical Safety Cards

CAMPHECHLOR

ICSC: 0843

IMPORTANT DATA

PHYSICAL STATE; APPEARANCE:
YELLOW TO AMBER WAXY SOLID , WITH CHARACTERISTIC ODOUR.

PHYSICAL DANGERS:

CHEMICAL DANGERS:
The substance decomposes on heating, on burning and/or under influence of alkali, strong sunlight, and catalysts like iron producing toxic fumes. Attacks iron. Incompatible with strongly alkaline pesticides.

OCCUPATIONAL EXPOSURE LIMITS:
TLV: 0.5 mg/m³ as TWA; 1 mg/m³ as STEL; (skin); A3 (confirmed animal carcinogen with unknown relevance to humans); (ACGIH 2008).
MAK: skin absorption (H);
Carcinogen category: 2
(DFG 2008).
OSHA PEL†: TWA 0.5 mg/m^3 skin
NIOSH REL: Ca skin See Appendix A
NIOSH IDLH: Ca 200 mg/m^3 See: 8001352

ROUTES OF EXPOSURE:
The substance can be absorbed into the body through the skin, by ingestion.

INHALATION RISK:

EFFECTS OF SHORT-TERM EXPOSURE:
The substance irritates mildly the skin. The substance may cause effects on the central nervous system , resulting in tremors and convulsions. Exposure at high level may result in death.

EFFECTS OF LONG-TERM OR REPEATED EXPOSURE:
This substance is possibly carcinogenic to humans.

PHYSICAL PROPERTIES

Melting point: 65-90°C
Relative density (water = 1): 1.65
Solubility in water: None
Vapour pressure, Pa at 25°C: 53
Relative vapour density (air = 1): 14.3
Octanol/water partition coefficient as log Pow: 3.3

ENVIRONMENTAL DATA

This substance may be hazardous to the environment; special attention should be given to water organisms, some terrestrial species, and birds. In the food chain important to humans, bioaccumulation takes place, specifically in aquatic species.

NOTES

Decomposes near boiling point. Camphechlor is a reaction mixture of chlorinated camphenes containing 67-69% chlorine. Use of this organochlorine pesticide should be discouraged, except where there is no adequate alternative. Depending on the degree of exposure, periodic medical examination is indicated. Carrier solvents used in commercial formulations may change physical and toxicological properties. Do NOT take working clothes home. Alltox, Chem-Phene, M 5055, Clor Chem T-590, Crestoxo, Estonox, Fasco-Terpene, Geniphene, Gy-phene, Hercules 3956, Melipex, Penphene, Phenacide, Phenatox, Strobane-T, Toxakil, Toxyphene, Toxon 63 are trade names.

Transport Emergency Card: TEC (R)-61G53b
Card has been partially updated in November 2008: see Occupational Exposure Limits, EU Classification, Packaging & labelling.

ADDITIONAL INFORMATION

ICSC: 0843 **CAMPHECHLOR**

(C) IPCS, CEC, 1994

IMPORTANT LEGAL NOTICE:

Neither NIOSH, the CEC or the IPCS nor any person acting on behalf of NIOSH, the CEC or the IPCS is responsible for the use which might be made of this information. This card contains the collective views of the IPCS Peer Review Committee and may not reflect in all cases all the detailed requirements included in national legislation on the subject. The user should verify compliance of the cards with the relevant legislation in the country of use. The only modifications made to produce the U.S. version is inclusion of the OSHA PELs, NIOSH RELs and NIOSH IDLH

	values.

Material Safety Data Sheet

Version 4.3
Revision Date 06/30/2011
Print Date 12/09/2011

1. PRODUCT AND COMPANY IDENTIFICATION

Product name	:	Aroclor 1016
Product Number	:	48591
Brand	:	Supelco
Supplier	:	Sigma-Aldrich 3050 Spruce Street SAINT LOUIS MO 63103 USA
Telephone	:	+1 800-325-5832
Fax	:	+1 800-325-5052
Emergency Phone # (For both supplier and manufacturer)	:	(314) 776-6555
Preparation Information	:	Sigma-Aldrich Corporation Product Safety - Americas Region 1-800-521-8956

2. HAZARDS IDENTIFICATION

Emergency Overview

OSHA Hazards
No known OSHA hazards

GHS Classification
Acute toxicity, Oral (Category 5)
Specific target organ toxicity - repeated exposure (Category 2)
Acute aquatic toxicity (Category 1)
Chronic aquatic toxicity (Category 1)

GHS Label elements, including precautionary statements

Pictogram

Signal word: Warning

Hazard statement(s)

H303	May be harmful if swallowed.
H373	May cause damage to organs through prolonged or repeated exposure.
H410	Very toxic to aquatic life with long lasting effects.

Precautionary statement(s)

P273	Avoid release to the environment.
P501	Dispose of contents/ container to an approved waste disposal plant.

HMIS Classification

Health hazard:	1
Flammability:	0
Physical hazards:	0

NFPA Rating

Health hazard:	0
Fire:	0
Reactivity Hazard:	0

Potential Health Effects

Inhalation	May be harmful if inhaled. May cause respiratory tract irritation.
Skin	May be harmful if absorbed through skin. May cause skin irritation.
Eyes	May cause eye irritation.
Ingestion	May be harmful if swallowed.

3. COMPOSITION/INFORMATION ON INGREDIENTS

CAS-No.	EC-No.	Index-No.	Concentration
Aroclor 1016			
12674-11-2	-	602-039-00-4	-

4. FIRST AID MEASURES

General advice
Consult a physician. Show this safety data sheet to the doctor in attendance.

If inhaled
If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.

In case of skin contact
Wash off with soap and plenty of water. Consult a physician.

In case of eye contact
Flush eyes with water as a precaution.

If swallowed
Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

5. FIRE-FIGHTING MEASURES

Conditions of flammability
Not flammable or combustible.

Suitable extinguishing media
Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

Special protective equipment for fire-fighters
Wear self contained breathing apparatus for fire fighting if necessary.

Hazardous combustion products
Hazardous decomposition products formed under fire conditions. - Nature of decomposition products not known.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions
Use personal protective equipment. Avoid breathing vapors, mist or gas. Ensure adequate ventilation. Evacuate personnel to safe areas.

Environmental precautions
Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.

Methods and materials for containment and cleaning up
Soak up with inert absorbent material and dispose of as hazardous waste. Keep in suitable, closed containers for disposal.

7. HANDLING AND STORAGE

Precautions for safe handling
Avoid contact with skin and eyes. Avoid inhalation of vapour or mist.

Conditions for safe storage
Keep container tightly closed in a dry and well-ventilated place. Containers which are opened must be carefully resealed and kept upright to prevent leakage.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Contains no substances with occupational exposure limit values.

Personal protective equipment

Respiratory protection
Where risk assessment shows air-purifying respirators are appropriate use a full-face respirator with multi-purpose combination (US) or type ABEK (EN 14387) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

Hand protection
Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

Eye protection
Face shield and safety glasses Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

Skin and body protection
Complete suit protecting against chemicals, The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

Hygiene measures
Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance

Form	liquid
Colour	no data available

Safety data

pH	no data available
Melting point/freezing point	no data available
Boiling point	no data available
Flash point	no data available
Ignition temperature	no data available
Autoignition temperature	no data available
Lower explosion limit	no data available
Upper explosion limit	no data available
Vapour pressure	no data available
Density	no data available
Water solubility	no data available
Partition coefficient: n-octanol/water	no data available
Relative vapour density	no data available
Odour	no data available
Odour Threshold	no data available

Evaporation rate no data available

10. STABILITY AND REACTIVITY

Chemical stability
Stable under recommended storage conditions.

Possibility of hazardous reactions
no data available

Conditions to avoid
no data available

Materials to avoid
Strong oxidizing agents

Hazardous decomposition products
Hazardous decomposition products formed under fire conditions. - Nature of decomposition products not known.
Other decomposition products - no data available

11. TOXICOLOGICAL INFORMATION

Acute toxicity

Oral LD50
LD50 Oral - rat - 2,300 mg/kg

Inhalation LC50
no data available

Dermal LD50
no data available

Other information on acute toxicity
no data available

Skin corrosion/irritation
no data available

Serious eye damage/eye irritation
no data available

Respiratory or skin sensitization
no data available

Germ cell mutagenicity
no data available

Carcinogenicity

IARC:	No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.
ACGIH:	No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH.
NTP:	No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.
OSHA:	No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

Reproductive toxicity
Reproductive toxicity - rat - Oral
Effects on Newborn: Biochemical and metabolic.
Reproductive toxicity - Monkey - Oral
Effects on Newborn: Behavioral.
Reproductive toxicity - Mammal - Oral

Effects on Fertility: Other measures of fertility Effects on Newborn: Weaning or lactation index (e.g., # alive at weaning per # alive at day 4). Effects on Newborn: Growth statistics (e.g., reduced weight gain).

no data available

Teratogenicity

Developmental Toxicity - rat - Oral
Specific Developmental Abnormalities: Central nervous system.

no data available

Specific target organ toxicity - single exposure (Globally Harmonized System)
no data available

Specific target organ toxicity - repeated exposure (Globally Harmonized System)
May cause damage to organs through prolonged or repeated exposure.

Aspiration hazard
no data available

Potential health effects

Inhalation	May be harmful if inhaled. May cause respiratory tract irritation.
Ingestion	May be harmful if swallowed.
Skin	May be harmful if absorbed through skin. May cause skin irritation.
Eyes	May cause eye irritation.

Synergistic effects
no data available

Additional Information
RTECS: Not available

12. ECOLOGICAL INFORMATION

Toxicity

Toxicity to fish	LC50 - Oncorhynchus mykiss (rainbow trout) - 0.0010 mg/l - 96.0 h

Persistence and degradability

Biodegradability	Biotic/Aerobic Biochemical oxygen demand

Bioaccumulative potential

Bioaccumulation	Pimephales promelas (fathead minnow) - Bioconcentration factor (BCF): 42,500

Mobility in soil
no data available

PBT and vPvB assessment
no data available

Other adverse effects

An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.

Very toxic to aquatic life with long lasting effects.

13. DISPOSAL CONSIDERATIONS

Product
Offer surplus and non-recyclable solutions to a licensed disposal company.

Contaminated packaging
Dispose of as unused product.

14. TRANSPORT INFORMATION

DOT (US)
UN number: 2315 Class: 9 Packing group: II
Proper shipping name: Polychlorinated biphenyls, liquid
Reportable Quantity (RQ): 1 lbs
Marine pollutant: No
Poison Inhalation Hazard: No

IMDG
UN number: 2315 Class: 9 Packing group: II EMS-No: F-A, S-A
Proper shipping name: POLYCHLORINATED BIPHENYLS, LIQUID
Marine pollutant: No

IATA
UN number: 2315 Class: 9 Packing group: II
Proper shipping name: Polychlorinated biphenyls, liquid

15. REGULATORY INFORMATION

OSHA Hazards
No known OSHA hazards

SARA 302 Components
SARA 302: No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

SARA 313 Components
SARA 313: This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

SARA 311/312 Hazards
No SARA Hazards

Massachusetts Right To Know Components

	CAS-No.	Revision Date
Aroclor 1016	12674-11-2	1993-04-24

Pennsylvania Right To Know Components

	CAS-No.	Revision Date
Aroclor 1016	12674-11-2	1993-04-24

New Jersey Right To Know Components

	CAS-No.	Revision Date
Aroclor 1016	12674-11-2	1993-04-24

California Prop. 65 Components

	CAS-No.	Revision Date
WARNING! This product contains a chemical known to the State of California to cause cancer. Aroclor 1016	12674-11-2	2008-08-01

California Prop. 65 Components

	CAS-No.	Revision Date
WARNING! This product contains a chemical known to the State of California to cause birth defects or other reproductive harm. Aroclor 1016	12674-11-2	2008-08-01

16. OTHER INFORMATION

Further information
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The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. Sigma-Aldrich Co., shall not be held liable for any damage resulting from handling or from contact with the above product. See reverse side of invoice or packing slip for additional terms and conditions of sale.

Material Safety Data Sheet

Version 4.2
Revision Date 06/21/2011
Print Date 12/09/2011

1. PRODUCT AND COMPANY IDENTIFICATION

Product name	:	Aroclor 1221
Product Number	:	48587
Brand	:	Supelco
Supplier	:	Sigma-Aldrich 3050 Spruce Street SAINT LOUIS MO 63103 USA
Telephone	:	+1 800-325-5832
Fax	:	+1 800-325-5052
Emergency Phone # (For both supplier and manufacturer)	:	(314) 776-6555
Preparation Information	:	Sigma-Aldrich Corporation Product Safety - Americas Region 1-800-521-8956

2. HAZARDS IDENTIFICATION

Emergency Overview

OSHA Hazards
Target Organ Effect

Target Organs

Nerves.Nerves.

GHS Classification
Specific target organ toxicity - repeated exposure (Category 2)
Acute aquatic toxicity (Category 1)
Chronic aquatic toxicity (Category 1)

GHS Label elements, including precautionary statements

Pictogram

Signal word Warning

Hazard statement(s)

H373	May cause damage to organs through prolonged or repeated exposure.
H410	Very toxic to aquatic life with long lasting effects.

Precautionary statement(s)

P273	Avoid release to the environment.
P501	Dispose of contents/ container to an approved waste disposal plant.

HMIS Classification

Health hazard:	0
Chronic Health Hazard:	*
Flammability:	0
Physical hazards:	0

NFPA Rating

Health hazard:	0
Fire:	0

Reactivity Hazard: 0

Potential Health Effects

Inhalation	May be harmful if inhaled. May cause respiratory tract irritation.
Skin	May be harmful if absorbed through skin. May cause skin irritation.
Eyes	May cause eye irritation.
Ingestion	May be harmful if swallowed.

3. COMPOSITION/INFORMATION ON INGREDIENTS

CAS-No.	EC-No.	Index-No.	Concentration
PCB - Aroclor 1221			
11104-28-2	-	602-039-00-4	-

4. FIRST AID MEASURES

General advice
Consult a physician. Show this safety data sheet to the doctor in attendance.Move out of dangerous area.

If inhaled
If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.

In case of skin contact
Wash off with soap and plenty of water. Consult a physician.

In case of eye contact
Flush eyes with water as a precaution.

If swallowed
Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

5. FIRE-FIGHTING MEASURES

Conditions of flammability
Not flammable or combustible.

Suitable extinguishing media
Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

Special protective equipment for fire-fighters
Wear self contained breathing apparatus for fire fighting if necessary.

Hazardous combustion products
Hazardous decomposition products formed under fire conditions. - Nature of decomposition products not known.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions
Use personal protective equipment. Avoid breathing vapors, mist or gas. Ensure adequate ventilation. Evacuate personnel to safe areas.

Environmental precautions
Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.

Methods and materials for containment and cleaning up
Soak up with inert absorbent material and dispose of as hazardous waste. Keep in suitable, closed containers for disposal.

7. HANDLING AND STORAGE

Precautions for safe handling
Avoid contact with skin and eyes. Avoid inhalation of vapour or mist.

Conditions for safe storage
Keep container tightly closed in a dry and well-ventilated place. Containers which are opened must be carefully resealed and kept upright to prevent leakage.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Contains no substances with occupational exposure limit values.

Personal protective equipment

Respiratory protection
Where risk assessment shows air-purifying respirators are appropriate use a full-face respirator with multi-purpose combination (US) or type ABEK (EN 14387) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

Hand protection
Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

Eye protection
Face shield and safety glasses Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

Skin and body protection
Complete suit protecting against chemicals, The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

Hygiene measures
Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance

Form	liquid
Colour	no data available

Safety data

pH	no data available
Melting point/freezing point	no data available
Boiling point	no data available
Flash point	no data available
Ignition temperature	no data available
Autoignition temperature	no data available
Lower explosion limit	no data available
Upper explosion limit	no data available
Vapour pressure	no data available
Density	no data available
Water solubility	no data available
Partition coefficient: n-octanol/water	no data available
Relative vapour density	no data available

Odour	no data available
Odour Threshold	no data available
Evaporation rate	no data available

10. STABILITY AND REACTIVITY

Chemical stability
Stable under recommended storage conditions.

Possibility of hazardous reactions
no data available

Conditions to avoid
no data available

Materials to avoid
Strong oxidizing agents

Hazardous decomposition products
Hazardous decomposition products formed under fire conditions. - Nature of decomposition products not known.
Other decomposition products - no data available

11. TOXICOLOGICAL INFORMATION

Acute toxicity

Oral LD50
LD50 Oral - rat - 3,980 mg/kg

Inhalation LC50
Dermal LD50
no data available

Other information on acute toxicity
no data available

Skin corrosion/irritation
Serious eye damage/eye irritation

Respiratory or skin sensitization
no data available

Germ cell mutagenicity
no data available

Carcinogenicity

IARC:	No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.
ACGIH:	No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH.
NTP:	No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.
OSHA:	No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

Reproductive toxicity
Reproductive toxicity - rabbit - Oral
Effects on Newborn: Biochemical and metabolic.
Reproductive toxicity - rat - Subcutaneous
Maternal Effects: Uterus, cervix, vagina.
Reproductive toxicity - rat - Subcutaneous
Effects on Fertility: Other measures of fertility

no data available

Teratogenicity

no data available

Specific target organ toxicity - single exposure (Globally Harmonized System)

Specific target organ toxicity - repeated exposure (Globally Harmonized System)
May cause damage to organs through prolonged or repeated exposure.
no data available

Aspiration hazard
no data available

Potential health effects

Inhalation	May be harmful if inhaled. May cause respiratory tract irritation.
Ingestion	May be harmful if swallowed.
Skin	May be harmful if absorbed through skin. May cause skin irritation.
Eyes	May cause eye irritation.

Signs and Symptoms of Exposure
To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

Synergistic effects
no data available

Additional Information
RTECS: Not available

12. ECOLOGICAL INFORMATION

Toxicity

Toxicity to fish	LC50 - Oncorhynchus clarki - 1.17 mg/l - 96.0 h

Persistence and degradability

Biodegradability	Biotic/Aerobic Biochemical oxygen demand Result: 100 % - Readily biodegradable.

Bioaccumulative potential
no data available

Mobility in soil
no data available

PBT and vPvB assessment
no data available

Other adverse effects

An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.

Very toxic to aquatic life with long lasting effects.

no data available

13. DISPOSAL CONSIDERATIONS

Product
Offer surplus and non-recyclable solutions to a licensed disposal company.

Contaminated packaging
Dispose of as unused product.

14. TRANSPORT INFORMATION

DOT (US)
UN number: 2315 Class: 9 Packing group: II
Proper shipping name: Polychlorinated biphenyls, liquid
Reportable Quantity (RQ): 1 lbs
Marine pollutant: No
Poison Inhalation Hazard: No

IMDG
UN number: 2315 Class: 9 Packing group: II EMS-No: F-A, S-A
Proper shipping name: POLYCHLORINATED BIPHENYLS, LIQUID
Marine pollutant: No

IATA
UN number: 2315 Class: 9 Packing group: II
Proper shipping name: Polychlorinated biphenyls, liquid

15. REGULATORY INFORMATION

OSHA Hazards
Target Organ Effect

SARA 302 Components
SARA 302: No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

SARA 313 Components
SARA 313: This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

SARA 311/312 Hazards
Chronic Health Hazard

Massachusetts Right To Know Components

	CAS-No.	Revision Date
PCB - Aroclor 1221	11104-28-2	1993-04-24

Pennsylvania Right To Know Components

	CAS-No.	Revision Date
PCB - Aroclor 1221	11104-28-2	1993-04-24

New Jersey Right To Know Components

	CAS-No.	Revision Date
PCB - Aroclor 1221	11104-28-2	1993-04-24

California Prop. 65 Components

	CAS-No.	Revision Date
WARNING! This product contains a chemical known to the State of California to cause cancer. PCB - Aroclor 1221	11104-28-2	2008-08-01

California Prop. 65 Components

	CAS-No.	Revision Date
WARNING! This product contains a chemical known to the State of California to cause birth defects or other reproductive harm. PCB - Aroclor 1221	11104-28-2	2008-08-01

16. OTHER INFORMATION

Further information
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The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. Sigma-Aldrich Co., shall not be held liable for any damage resulting from handling or from contact with the above product. See reverse side of invoice or packing slip for additional terms and conditions of sale.

Material Safety Data Sheet

Version 4.1
Revision Date 08/03/2011
Print Date 12/09/2011

1. PRODUCT AND COMPANY IDENTIFICATION

Product name	:	Aroclor 1232
Product Number	:	48588
Brand	:	Supelco
Supplier	:	Sigma-Aldrich 3050 Spruce Street SAINT LOUIS MO 63103 USA
Telephone	:	+1 800-325-5832
Fax	:	+1 800-325-5052
Emergency Phone # (For both supplier and manufacturer)	:	(314) 776-6555
Preparation Information	:	Sigma-Aldrich Corporation Product Safety - Americas Region 1-800-521-8956

2. HAZARDS IDENTIFICATION

Emergency Overview

OSHA Hazards
No known OSHA hazards

GHS Classification
Acute toxicity, Oral (Category 5)
Acute aquatic toxicity (Category 1)

GHS Label elements, including precautionary statements

Pictogram

Signal word Warning

Hazard statement(s)

H303	May be harmful if swallowed.
H400	Very toxic to aquatic life.

Precautionary statement(s)

P273	Avoid release to the environment.

HMIS Classification

Health hazard:	1
Flammability:	0
Physical hazards:	0

NFPA Rating

Health hazard:	0
Fire:	0
Reactivity Hazard:	0

Potential Health Effects

Inhalation	May be harmful if inhaled. May cause respiratory tract irritation.
Skin	May be harmful if absorbed through skin. May cause skin irritation.
Eyes	May cause eye irritation.

Ingestion May be harmful if swallowed.

3. COMPOSITION/INFORMATION ON INGREDIENTS

CAS-No.	EC-No.	Index-No.	Concentration
Aroclor 1232			
11141-16-5	-	602-039-00-4	-

4. FIRST AID MEASURES

General advice
Consult a physician. Show this safety data sheet to the doctor in attendance.

If inhaled
If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.

In case of skin contact
Wash off with soap and plenty of water. Consult a physician.

In case of eye contact
Flush eyes with water as a precaution.

If swallowed
Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

5. FIRE-FIGHTING MEASURES

Suitable extinguishing media
Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

Special protective equipment for fire-fighters
Wear self contained breathing apparatus for fire fighting if necessary.

Hazardous combustion products
Hazardous decomposition products formed under fire conditions. - Carbon oxides, Hydrogen chloride gas

6. ACCIDENTAL RELEASE MEASURES

Personal precautions
Use personal protective equipment. Avoid breathing vapors, mist or gas. Ensure adequate ventilation. Evacuate personnel to safe areas.

Environmental precautions
Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.

Methods and materials for containment and cleaning up
Soak up with inert absorbent material and dispose of as hazardous waste. Keep in suitable, closed containers for disposal.

7. HANDLING AND STORAGE

Precautions for safe handling
Normal measures for preventive fire protection.

Conditions for safe storage
Keep container tightly closed in a dry and well-ventilated place. Containers which are opened must be carefully resealed and kept upright to prevent leakage.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Contains no substances with occupational exposure limit values.

Personal protective equipment

Respiratory protection
Where risk assessment shows air-purifying respirators are appropriate use a full-face respirator with multi-purpose combination (US) or type ABEK (EN 14387) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

Hand protection
Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

Eye protection
Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

Skin and body protection
impervious clothing, The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

Hygiene measures
Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance

Form	liquid
Colour	no data available

Safety data

pH	no data available
Melting point/freezing point	no data available
Boiling point	no data available
Flash point	no data available
Ignition temperature	no data available
Autoignition temperature	no data available
Lower explosion limit	no data available
Upper explosion limit	no data available
Vapour pressure	no data available
Density	no data available
Water solubility	no data available
Partition coefficient: n-octanol/water	no data available
Relative vapour density	no data available
Odour	no data available
Odour Threshold	no data available

Evaporation rate no data available

10. STABILITY AND REACTIVITY

Chemical stability
Stable under recommended storage conditions.

Possibility of hazardous reactions
no data available

Conditions to avoid
no data available

Materials to avoid
Strong oxidizing agents

Hazardous decomposition products
Hazardous decomposition products formed under fire conditions. - Carbon oxides, Hydrogen chloride gas
Other decomposition products - no data available

11. TOXICOLOGICAL INFORMATION

Acute toxicity

Oral LD50
LD50 Oral - rat - 4,470 mg/kg

Inhalation LC50
no data available

Dermal LD50
no data available

Other information on acute toxicity
no data available

Skin corrosion/irritation
no data available

Serious eye damage/eye irritation
no data available

Respiratory or skin sensitization
no data available

Germ cell mutagenicity
no data available

Carcinogenicity

IARC:	No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.
ACGIH:	No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH.
NTP:	No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.
OSHA:	No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

Reproductive toxicity

no data available

Teratogenicity

no data available

Specific target organ toxicity - single exposure (Globally Harmonized System)
no data available

Specific target organ toxicity - repeated exposure (Globally Harmonized System)
Ingestion - May cause damage to organs through prolonged or repeated exposure. - Skin

Aspiration hazard
no data available

Potential health effects

Inhalation	May be harmful if inhaled. May cause respiratory tract irritation.
Ingestion	May be harmful if swallowed.
Skin	May be harmful if absorbed through skin. May cause skin irritation.
Eyes	May cause eye irritation.

Signs and Symptoms of Exposure
chloracne, hair loss, hyperpigmentation, Liver injury may occur., May cause endocrine disruption.

Synergistic effects
no data available

Additional Information
RTECS: Not available

12. ECOLOGICAL INFORMATION

Toxicity

Toxicity to fish	LC50 - Onchorhynchus clarki - 1.72 mg/l - 96.0 h
Toxicity to algae	Growth inhibition EC50 - Thalassiosira rotula - 0.071 mg/l - 44 h

Persistence and degradability

Biodegradability	Biotic/Aerobic Result: 100 % - Readily biodegradable.

Bioaccumulative potential
no data available

Mobility in soil
no data available

PBT and vPvB assessment
no data available

Other adverse effects

An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.

Very toxic to aquatic life.

13. DISPOSAL CONSIDERATIONS

Product
Offer surplus and non-recyclable solutions to a licensed disposal company.

Contaminated packaging
Dispose of as unused product.

14. TRANSPORT INFORMATION

DOT (US)
UN number: 2315 Class: 9 Packing group: II
Proper shipping name: Polychlorinated biphenyls, liquid
Reportable Quantity (RQ): 1 lbs
Marine pollutant: No
Poison Inhalation Hazard: No

IMDG
UN number: 2315 Class: 9 Packing group: II EMS-No: F-A, S-A
Proper shipping name: POLYCHLORINATED BIPHENYLS, LIQUID
Marine pollutant: No

IATA
UN number: 2315 Class: 9 Packing group: II
Proper shipping name: Polychlorinated biphenyls, liquid

15. REGULATORY INFORMATION

OSHA Hazards
No known OSHA hazards

SARA 302 Components
SARA 302: No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

SARA 313 Components
SARA 313: This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

SARA 311/312 Hazards
No SARA Hazards

Massachusetts Right To Know Components

	CAS-No.	Revision Date
Aroclor 1232	11141-16-5	1993-04-24

Pennsylvania Right To Know Components

	CAS-No.	Revision Date
Aroclor 1232	11141-16-5	1993-04-24

New Jersey Right To Know Components

	CAS-No.	Revision Date
Aroclor 1232	11141-16-5	1993-04-24

California Prop. 65 Components
This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.

16. OTHER INFORMATION

Further information
Copyright 2011 Sigma-Aldrich Co. License granted to make unlimited paper copies for internal use only.
The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. Sigma-Aldrich Co., shall not be held liable for any damage resulting from handling or from contact with the above product. See reverse side of invoice or packing slip for additional terms and conditions of sale.

Material Safety Data Sheet

Version 4.1
Revision Date 07/06/2011
Print Date 12/09/2011

1. PRODUCT AND COMPANY IDENTIFICATION

Product name	:	Aroclor 1242
Product Number	:	48585
Brand	:	Supelco
Supplier	:	Sigma-Aldrich 3050 Spruce Street SAINT LOUIS MO 63103 USA
Telephone	:	+1 800-325-5832
Fax	:	+1 800-325-5052
Emergency Phone # (For both supplier and manufacturer)	:	(314) 776-6555
Preparation Information	:	Sigma-Aldrich Corporation Product Safety - Americas Region 1-800-521-8956

2. HAZARDS IDENTIFICATION

Emergency Overview

OSHA Hazards
No known OSHA hazards

GHS Classification
Acute toxicity, Oral (Category 5)
Specific target organ toxicity - repeated exposure (Category 1)
Acute aquatic toxicity (Category 1)
Chronic aquatic toxicity (Category 1)

GHS Label elements, including precautionary statements

Pictogram

Signal word: Danger

Hazard statement(s)

H303	May be harmful if swallowed.
H372	Causes damage to organs through prolonged or repeated exposure.
H410	Very toxic to aquatic life with long lasting effects.

Precautionary statement(s)

P273	Avoid release to the environment.
P314	Get medical advice/ attention if you feel unwell.
P501	Dispose of contents/ container to an approved waste disposal plant.

HMIS Classification

Health hazard:	1
Flammability:	0
Physical hazards:	0

NFPA Rating

Health hazard:	0
Fire:	0
Reactivity Hazard:	0

Potential Health Effects

Inhalation	May be harmful if inhaled. May cause respiratory tract irritation.
Skin	May be harmful if absorbed through skin. May cause skin irritation.
Eyes	May cause eye irritation.
Ingestion	May be harmful if swallowed.

3. COMPOSITION/INFORMATION ON INGREDIENTS

CAS-No.	EC-No.	Index-No.	Concentration
Aroclor 1242			
53469-21-9	-	602-039-00-4	-

4. FIRST AID MEASURES

General advice
Consult a physician. Show this safety data sheet to the doctor in attendance.

If inhaled
If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.

In case of skin contact
Wash off with soap and plenty of water. Take victim immediately to hospital. Consult a physician.

In case of eye contact
Flush eyes with water as a precaution.

If swallowed
Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

5. FIRE-FIGHTING MEASURES

Conditions of flammability
Not flammable or combustible.

Suitable extinguishing media
Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

Special protective equipment for fire-fighters
Wear self contained breathing apparatus for fire fighting if necessary.

Hazardous combustion products
Hazardous decomposition products formed under fire conditions. - Carbon oxides, Hydrogen chloride gas

6. ACCIDENTAL RELEASE MEASURES

Personal precautions
Use personal protective equipment. Avoid breathing vapors, mist or gas. Ensure adequate ventilation. Evacuate personnel to safe areas.

Environmental precautions
Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.

Methods and materials for containment and cleaning up
Soak up with inert absorbent material and dispose of as hazardous waste. Keep in suitable, closed containers for disposal.

7. HANDLING AND STORAGE

Precautions for safe handling
Avoid contact with skin and eyes. Avoid inhalation of vapour or mist.

Conditions for safe storage
Keep container tightly closed in a dry and well-ventilated place. Containers which are opened must be carefully resealed and kept upright to prevent leakage.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Components with workplace control parameters

Components	CAS-No.	Value	Control parameters	Basis
Aroclor 1242	53469-21-9	TWA	1 mg/m3	USA. ACGIH Threshold Limit Values (TLV)
Remarks	Eye irritation Liver damage Chloracne Danger of cutaneous absorption			
		TWA	1 mg/m3	USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants
	Skin designation			
		TWA	1 mg/m3	USA. OSHA - TABLE Z-1 Limits for Air Contaminants - 1910.1000
	Skin notation			
		TWA	0.001 mg/m3	USA. NIOSH Recommended Exposure Limits
	Potential Occupational Carcinogen See Appendix A			

Personal protective equipment

Respiratory protection
Where risk assessment shows air-purifying respirators are appropriate use a full-face respirator with multi-purpose combination (US) or type ABEK (EN 14387) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

Hand protection
Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

Eye protection
Face shield and safety glasses Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

Skin and body protection
Complete suit protecting against chemicals, The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

Hygiene measures
Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance

Form	liquid
Colour	no data available

Safety data

pH	no data available
Melting point/freezing point	no data available
Boiling point	no data available

Flash point	no data available
Ignition temperature	no data available
Autoignition temperature	no data available
Lower explosion limit	no data available
Upper explosion limit	no data available
Vapour pressure	no data available
Density	no data available
Water solubility	no data available
Partition coefficient: n-octanol/water	no data available
Relative vapour density	no data available
Odour	no data available
Odour Threshold	no data available
Evaporation rate	no data available

10. STABILITY AND REACTIVITY

Chemical stability
Stable under recommended storage conditions.

Possibility of hazardous reactions
no data available

Conditions to avoid
no data available

Materials to avoid
Strong oxidizing agents

Hazardous decomposition products
Hazardous decomposition products formed under fire conditions. - Carbon oxides, Hydrogen chloride gas
Other decomposition products - no data available

11. TOXICOLOGICAL INFORMATION

Acute toxicity

Oral LD50
LD50 Oral - rat - 4,250 mg/kg
Remarks: Sense Organs and Special Senses (Nose, Eye, Ear, and Taste):Eye:Chromodacryorrhea. Diarrhoea
Nutritional and Gross Metabolic:Weight loss or decreased weight gain.

Inhalation LC50
no data available

Dermal LD50
no data available

Other information on acute toxicity
no data available

Skin corrosion/irritation
no data available

Serious eye damage/eye irritation
no data available

Respiratory or skin sensitization

Germ cell mutagenicity

no data available

Carcinogenicity

IARC: No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

ACGIH: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH.

NTP: No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

OSHA: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

Reproductive toxicity

no data available

Teratogenicity

no data available

Specific target organ toxicity - single exposure (Globally Harmonized System)
no data available

Specific target organ toxicity - repeated exposure (Globally Harmonized System)
Causes damage to organs through prolonged or repeated exposure.
no data available

Aspiration hazard
no data available

Potential health effects

Inhalation	May be harmful if inhaled. May cause respiratory tract irritation.
Ingestion	May be harmful if swallowed.
Skin	May be harmful if absorbed through skin. May cause skin irritation.
Eyes	May cause eye irritation.

Signs and Symptoms of Exposure
To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

Synergistic effects
no data available

Additional Information
RTECS: Not available

12. ECOLOGICAL INFORMATION

Toxicity

Toxicity to fish	LC50 - Pimephales promelas (fathead minnow) - 0.015 mg/l - 96 h
Toxicity to daphnia and other aquatic invertebrates.	LC50 - Daphnia magna (Water flea) - 0.23 mg/l - 48 h
Toxicity to algae	LC50 - Algae - 0.006 mg/l - 28 h

Persistence and degradability

Biodegradability: Result: - According to the results of tests of biodegradability this product is not readily biodegradable.
Remarks: no data available

Bioaccumulative potential

Bioaccumulation	Pimephales promelas (fathead minnow) - 8.5 Months Bioconcentration factor (BCF): 274,000

Mobility in soil
no data available

PBT and vPvB assessment
no data available

Other adverse effects

An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.

Very toxic to aquatic life with long lasting effects.

13. DISPOSAL CONSIDERATIONS

Product
Offer surplus and non-recyclable solutions to a licensed disposal company.

Contaminated packaging
Dispose of as unused product.

14. TRANSPORT INFORMATION

DOT (US)
UN number: 2315 Class: 9 Packing group: II
Proper shipping name: Polychlorinated biphenyls, liquid (Aroclor 1242)
Reportable Quantity (RQ): 1 lbs
Marine pollutant: No
Poison Inhalation Hazard: No

IMDG
UN number: 2315 Class: 9 Packing group: II EMS-No: F-A, S-A
Proper shipping name: POLYCHLORINATED BIPHENYLS, LIQUID (Aroclor 1242)
Marine pollutant: No

IATA
UN number: 2315 Class: 9 Packing group: II
Proper shipping name: Polychlorinated biphenyls, liquid (Aroclor 1242)

15. REGULATORY INFORMATION

OSHA Hazards
No known OSHA hazards

SARA 302 Components
SARA 302: No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

SARA 313 Components
SARA 313: This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

SARA 311/312 Hazards
No SARA Hazards

Massachusetts Right To Know Components

	CAS-No.	Revision Date
Aroclor 1242	53469-21-9	1993-04-24

Pennsylvania Right To Know Components

	CAS-No.	Revision Date
Aroclor 1242	53469-21-9	1993-04-24

New Jersey Right To Know Components

	CAS-No.	Revision Date
Aroclor 1242	53469-21-9	1993-04-24

California Prop. 65 Components

WARNING! This product contains a chemical known to the State of California to cause cancer. Aroclor 1242	CAS-No. 53469-21-9	Revision Date 2008-08-01

California Prop. 65 Components

WARNING! This product contains a chemical known to the State of California to cause birth defects or other reproductive harm. Aroclor 1242	CAS-No. 53469-21-9	Revision Date 2008-08-01

16. OTHER INFORMATION

Further information

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The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. Sigma-Aldrich Co., shall not be held liable for any damage resulting from handling or from contact with the above product. See reverse side of invoice or packing slip for additional terms and conditions of sale.

Material Safety Data Sheet

Version 4.1
Revision Date 01/13/2011
Print Date 12/09/2011

1. PRODUCT AND COMPANY IDENTIFICATION

Product name : Aroclor 1248

Product Number : 48589
Brand : Supelco
Product Use : For laboratory research purposes.

Supplier : Sigma-Aldrich
3050 Spruce Street
SAINT LOUIS MO 63103
USA

Manufacturer : Sigma-Aldrich Corporation
3050 Spruce St.
St. Louis, Missouri 63103
USA

Telephone : +1 800-325-5832
Fax : +1 800-325-5052
Emergency Phone # (For both supplier and manufacturer) : (314) 776-6555
Preparation Information : Sigma-Aldrich Corporation
Product Safety - Americas Region
1-800-521-8956

2. HAZARDS IDENTIFICATION

Emergency Overview

OSHA Hazards
Target Organ Effect

Target Organs

LiverLiver

GHS Classification
Acute aquatic toxicity (Category 1)
Chronic aquatic toxicity (Category 1)

GHS Label elements, including precautionary statements

Pictogram

Signal word Warning

Hazard statement(s)
H410 Very toxic to aquatic life with long lasting effects.

Precautionary statement(s)
P273 Avoid release to the environment.
P501 Dispose of contents/ container to an approved waste disposal plant.

HMIS Classification
Health hazard: 0
Flammability: 0
Physical hazards: 0

NFPA Rating
Health hazard: 0
Fire: 0
Reactivity Hazard: 0

Potential Health Effects

Inhalation	May be harmful if inhaled. May cause respiratory tract irritation.
Skin	May be harmful if absorbed through skin. May cause skin irritation.
Eyes	May cause eye irritation.
Ingestion	May be harmful if swallowed.

3. COMPOSITION/INFORMATION ON INGREDIENTS

CAS-No.	EC-No.	Index-No.	Concentration
Aroclor 1248			
12672-29-6	-	-	-

4. FIRST AID MEASURES

General advice
Consult a physician. Show this safety data sheet to the doctor in attendance.Move out of dangerous area.

If inhaled
If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.

In case of skin contact
Wash off with soap and plenty of water. Consult a physician.

In case of eye contact
Flush eyes with water as a precaution.

If swallowed
Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

5. FIRE-FIGHTING MEASURES

Suitable extinguishing media
Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

Special protective equipment for fire-fighters
Wear self contained breathing apparatus for fire fighting if necessary.

Hazardous combustion products
Hazardous decomposition products formed under fire conditions. - Nature of decomposition products not known.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions
Avoid breathing vapors, mist or gas. Ensure adequate ventilation.

Environmental precautions
Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.

Methods and materials for containment and cleaning up
Keep in suitable, closed containers for disposal.

7. HANDLING AND STORAGE

Precautions for safe handling
Normal measures for preventive fire protection.

Conditions for safe storage
Keep container tightly closed in a dry and well-ventilated place. Containers which are opened must be carefully resealed and kept upright to prevent leakage.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Contains no substances with occupational exposure limit values.

Personal protective equipment

Respiratory protection
Respiratory protection not required. For nuisance exposures use type OV/AG (US) or type ABEK (EU EN 14387) respirator cartridges. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

Hand protection
Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

Eye protection
Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

Skin and body protection
impervious clothing, The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

Hygiene measures
Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance

Form	liquid
Colour	no data available

Safety data

pH	no data available
Melting/freezing point	no data available
Boiling point	no data available
Flash point	no data available
Ignition temperature	no data available
Autoignition temperature	no data available
Lower explosion limit	no data available
Upper explosion limit	no data available
Vapour pressure	no data available
Density	no data available
Water solubility	no data available
Partition coefficient: n-octanol/water	no data available
Relative vapour density	no data available
Odour	no data available
Odour Threshold	no data available
Evaporation rate	no data available

10. STABILITY AND REACTIVITY

Chemical stability
Stable under recommended storage conditions.

Possibility of hazardous reactions
no data available

Conditions to avoid
no data available

Materials to avoid
Strong oxidizing agents

Hazardous decomposition products
Hazardous decomposition products formed under fire conditions. - Nature of decomposition products not known.
Other decomposition products - no data available

11. TOXICOLOGICAL INFORMATION

Acute toxicity

Oral LD50
LD50 Oral - rat - 11,000 mg/kg

Inhalation LC50
no data available

Dermal LD50
no data available

Other information on acute toxicity
no data available

Skin corrosion/irritation
no data available

Serious eye damage/eye irritation
no data available

Respiratory or skin sensitization
no data available

Germ cell mutagenicity
no data available

Carcinogenicity

IARC:	No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.
ACGIH:	No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH.
NTP:	No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.
OSHA:	No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

Reproductive toxicity
Reproductive toxicity - Monkey - Oral
Maternal Effects: Menstrual cycle changes or disorders.
Reproductive toxicity - Monkey - Oral
Effects on Fertility: Post-implantation mortality (e.g., dead and/or resorbed implants per total number of implants).
Reproductive toxicity - Monkey - Oral
Effects on Fertility: Abortion.
Reproductive toxicity - Monkey - Oral

Effects on Newborn: Growth statistics (e.g., reduced weight gain). Effects on Newborn: Behavioral. Effects on Newborn: Other postnatal measures or effects.

no data available

Teratogenicity

Developmental Toxicity - rabbit - Oral
Specific Developmental Abnormalities: Immune and reticuloendothelial system.

no data available

Specific target organ toxicity - single exposure (Globally Harmonized System)
no data available

Specific target organ toxicity - repeated exposure (Globally Harmonized System)
no data available

Aspiration hazard
no data available

Potential health effects

Inhalation	May be harmful if inhaled. May cause respiratory tract irritation.
Ingestion	May be harmful if swallowed.
Skin	May be harmful if absorbed through skin. May cause skin irritation.
Eyes	May cause eye irritation.

Signs and Symptoms of Exposure
Nausea, Dizziness, Headache, muscle pain, muscle weakness, neck stiffness, trunk stiffness, stiffness of extremities, thick feeling in the tongue, Thirst

Synergistic effects
no data available

Additional Information
RTECS: Not available

12. ECOLOGICAL INFORMATION

Toxicity

Toxicity to fish	LC50 - Lepomis macrochirus - 0.278 mg/l - 96.0 h
Toxicity to algae	Growth inhibition EC50 - Thalassiosira rotula - 0.02 mg/l - 44 h

Persistence and degradability
no data available

Bioaccumulative potential

Bioaccumulation	Pimephales promelas (fathead minnow) - 250 d Bioconcentration factor (BCF): 120,000

Mobility in soil
no data available

PBT and vPvB assessment
no data available

Other adverse effects

An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.

Very toxic to aquatic life with long lasting effects.

no data available

13. DISPOSAL CONSIDERATIONS

Product
Offer surplus and non-recyclable solutions to a licensed disposal company.

Contaminated packaging
Dispose of as unused product.

14. TRANSPORT INFORMATION

DOT (US)
UN-Number: 2315 Class: 9 Packing group: II
Proper shipping name: Polychlorinated biphenyls, liquid (Aroclor 1248)
Reportable Quantity (RQ): 1 lbs
Marine pollutant: No
Poison Inhalation Hazard: No

IMDG
UN-Number: 2315 Class: 9 Packing group: II EMS-No: F-A, S-A
Proper shipping name: POLYCHLORINATED BIPHENYLS, LIQUID (Aroclor 1248)
Marine pollutant: Marine pollutant

IATA
UN-Number: 2315 Class: 9 Packing group: II
Proper shipping name: Polychlorinated biphenyls, liquid (Aroclor 1248)

15. REGULATORY INFORMATION

OSHA Hazards
Target Organ Effect

DSL Status
This product contains the following components that are not on the Canadian DSL nor NDSL lists.

	CAS-No.
Aroclor 1248	12672-29-6

SARA 302 Components
SARA 302: No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

SARA 313 Components
SARA 313: This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

SARA 311/312 Hazards
Chronic Health Hazard

Massachusetts Right To Know Components

	CAS-No.	Revision Date
Aroclor 1248	12672-29-6	1993-04-24

Pennsylvania Right To Know Components

	CAS-No.	Revision Date
Aroclor 1248	12672-29-6	1993-04-24

New Jersey Right To Know Components

	CAS-No.	Revision Date
Aroclor 1248	12672-29-6	1993-04-24

California Prop. 65 Components

	CAS-No.	Revision Date
WARNING! This product contains a chemical known to the State of California to cause cancer. Aroclor 1248	12672-29-6	2008-08-01

California Prop. 65 Components

	CAS-No.	Revision Date
WARNING! This product contains a chemical known to the State of California to cause birth defects or other reproductive harm. Aroclor 1248	12672-29-6	2008-08-01

16. OTHER INFORMATION

Further information

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The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. Sigma-Aldrich Co., shall not be held liable for any damage resulting from handling or from contact with the above product. See reverse side of invoice or packing slip for additional terms and conditions of sale.

International Chemical Safety Cards

POLYCHLORINATED BIPHENYL (AROCLOR 1254)

ICSC: 0939

Chlorobiphenyl (54% chlorine)
Chlorodiphenyl (54% chlorine)
PCB
Molecular mass: 327 (average)

ICSC # 0939
CAS # 11097-69-1
RTECS # TQ1360000
UN # 2315
EC # 602-039-00-4
October 20, 1999 Peer reviewed

TYPES OF HAZARD/ EXPOSURE	ACUTE HAZARDS/ SYMPTOMS	PREVENTION	FIRST AID/ FIRE FIGHTING
FIRE	Not combustible. Gives off irritating or toxic fumes (or gases) in a fire.		In case of fire in the surroundings: powder, carbon dioxide.
EXPLOSION			
EXPOSURE		PREVENT GENERATION OF MISTS! STRICT HYGIENE!	
•INHALATION		Ventilation.	Fresh air, rest. Refer for medical attention.
•SKIN	MAY BE ABSORBED! Dry skin. Redness.	Protective gloves. Protective clothing.	Remove contaminated clothes. Rinse and then wash skin with water and soap. Refer for medical attention.
•EYES		Safety goggles, face shield.	First rinse with plenty of water for several minutes (remove contact lenses if easily possible), then take to a doctor.
•INGESTION	Headache. Numbness.	Do not eat, drink, or smoke during work.	Rest. Refer for medical attention.

SPILLAGE DISPOSAL	STORAGE	PACKAGING & LABELLING
Consult an expert! Collect leaking liquid in sealable containers. Absorb remaining liquid in sand or inert absorbent and remove to safe place. Do NOT let this chemical enter the environment. Personal protection: complete protective clothing including self-contained breathing apparatus.	Separated from food and feedstuffs . Cool. Dry. Keep in a well-ventilated room.	Unbreakable packaging; put breakable packaging into closed unbreakable container. Do not transport with food and feedstuffs. Severe marine pollutant. Note: C Xn symbol N symbol R: 33-50/53 S: 2-35-60-61 UN Hazard Class: 9 UN Packing Group: II

SEE IMPORTANT INFORMATION ON BACK

Prepared in the context of cooperation between the International Programme on Chemical Safety & the Commission of the European Communities (C) IPCS CEC 1994. No modifications to the International version have been made except to add the OSHA PELs, NIOSH RELs and NIOSH IDLH values.

International Chemical Safety Cards

POLYCHLORINATED BIPHENYL (AROCLOR 1254)

ICSC: 0939

I M P O R T A N T D A T A	**PHYSICAL STATE; APPEARANCE:** LIGHT YELLOW VISCOUS LIQUID. **PHYSICAL DANGERS:** **CHEMICAL DANGERS:** The substance decomposes in a fire producing irritating and toxic gases . **OCCUPATIONAL EXPOSURE LIMITS:** TLV: 0.5 mg/m³ as TWA; (skin); A3; (ACGIH 2004). MAK: 0.05 ppm, 0.70 mg/m³; H; Peak limitation category: II(8); Carcinogen category: 3B; Pregnancy risk group: B; (DFG 2004). OSHA PEL: TWA 0.5 mg/m^3 skin NIOSH REL*: Ca TWA 0.001 mg/m^3 See Appendix A *Note: The REL also applies to other PCBs. NIOSH IDLH: Ca 5 mg/m^3 See: IDLH INDEX	**ROUTES OF EXPOSURE:** The substance can be absorbed into the body by inhalation of its aerosol, through the skin and by ingestion. **INHALATION RISK:** A harmful contamination of the air will be reached rather slowly on evaporation of this substance at 20° C. **EFFECTS OF SHORT-TERM EXPOSURE:** **EFFECTS OF LONG-TERM OR REPEATED EXPOSURE:** Repeated or prolonged contact with skin may cause dermatitis. Chloracne is the most visible effect. The substance may have effects on the liver . Animal tests show that this substance possibly causes toxic effects upon human reproduction.
PHYSICAL PROPERTIES	Relative density (water = 1): 1.5 Solubility in water: none	Vapour pressure, Pa at 25°C: 0.01 Octanol/water partition coefficient as log Pow: 6.30 (estimated)
ENVIRONMENTAL DATA	In the food chain important to humans, bioaccumulation takes place, specifically in aquatic organisms. It is strongly advised not to let the chemical enter into the environment.	

N O T E S

Changes into a resinous state (pour point) at 10°C. Distillation range: 365°-390°C. Card has been partly updated in October 2004. See sections Occupational Exposure Limits, EU classification, Emergency Response.

Transport Emergency Card: TEC (R)-90GM2-II-L

ADDITIONAL INFORMATION

(C) IPCS, CEC, 1994

IMPORTANT LEGAL NOTICE:	Neither NIOSH, the CEC or the IPCS nor any person acting on behalf of NIOSH, the CEC or the IPCS is responsible for the use which might be made of this information. This card contains the collective views of the IPCS Peer Review Committee and may not reflect in all cases all the detailed requirements included in national legislation on the subject. The user should verify compliance of the cards with the relevant legislation in the country of use. The only modifications made to produce the U.S. version is inclusion of the OSHA PELs, NIOSH RELs and NIOSH IDLH values.

Date of Issue:
27 May 2015

SAFETY DATA SHEET

1. SUBSTANCE AND SOURCE IDENTIFICATION

Product Identifier

SRM Number: 3080
SRM Name: Aroclor 1260 in Transformer Oil
Other Means of Identification: Not Applicable.

Recommended Use of This Material and Restrictions of Use

This Standard Reference Material (SRM) is a solution of Aroclor 1260 in transformer oil. This SRM is intended primarily for calibrating chromatographic instrumentation and methods of analysis used for the determination of Aroclor 1260 and polychlorinated biphenyls (PCBs) in transformer oil. A unit of SRM 3080 consists of five 2 mL ampoules, each containing approximately 1.2 mL of transformer oil.

Company Information

National Institute of Standards and Technology
Standard Reference Materials Program
100 Bureau Drive, Stop 2300
Gaithersburg, Maryland 20899-2300

Telephone: 301-975-2200
FAX: 301-948-3730
E-mail: SRMMSDS@nist.gov
Website: http://www.nist.gov/srm

Emergency Telephone ChemTrec:
1-800-424-9300 (North America)
+1-703-527-3887 (International)

2. HAZARDS IDENTIFICATION

Classification

Physical Hazard:	Not classified.	
Health Hazard:	Carcinogenicity	Category 1B
	Reproductive Toxicity	Category 2
	Aspiration Hazard	Category 1

Label Elements

Symbol

Signal Word

DANGER

Hazard Statement(s)

H304	May be fatal if swallowed and enters airways.
H350	May cause cancer <inhalation, ingestion>.
H361	Suspected of damaging fertility or the unborn child.

Precautionary Statement(s):

P201	Obtain special instructions before use.
P202	Do not handle until all safety precautions have been read and understood.
P280	Wear protective gloves, protective clothing, and eye protection.
P308+P313	If exposed or concerned: Get medical attention.
P301+P310	If swallowed: Immediately call a doctor.
P331	Do NOT induce vomiting.
P405	Store locked up.
P501	Dispose of contents and container according to local regulations.

Hazards Not Otherwise Classified: Not applicable.

Ingredients(s) with Unknown Acute Toxicity: Not applicable.

3. COMPOSITION AND INFORMATION ON HAZARDOUS INGREDIENTS

Substance: Aroclor 1260 in transformer oil.

Other Designations:

Transformer oil (hydrotreated light naphthenic distillate (petroleum), hydraulic petroleum oil, distillates, petroleum).

Aroclor 1260 (PCB 1260; chlorodiphenyl (60% Cl); polychlorinated biphenyl; chlorobiphenyls; PCB; PCBs)

Components are listed in compliance with OSHA 29 CFR 1910.1200.

Hazardous Component(s)	CAS Number	EC Number (EINECS)	Nominal Mass Concentration (%)
Transformer oil	64742-53-6	265-156-6	>99
Aroclor 1260	11096-82-5	215-648-1[(a)]	0.3

[(a)] EC Number as PCB, polychlorinated biphenyl

4. FIRST AID MEASURES

Description of First Aid Measures:

Inhalation: If adverse effects occur, remove to uncontaminated area. If not breathing, give artificial respiration or oxygen by qualified personnel. Seek immediate medical attention.

Skin Contact: Wash exposed skin with soap and water for at least 15 minutes. Seek medical attention if needed.

Eye Contact: Immediately flush eyes, including under the eyelids with copious amounts of water for at least 15 minutes. Seek immediate medical attention.

Ingestion: Aspiration hazard. Do not induce vomiting. If vomiting occurs, keep head lower than hips to prevent aspiration. If not breathing, give artificial respiration by qualified personnel. Seek immediate medical attention.

Most Important Symptoms/Effects, Acute and Delayed: Irritation, dizziness, nausea, coughing, and aspiration.

Indication of any immediate medical attention and special treatment needed, if necessary: Not applicable.

5. FIRE FIGHTING MEASURES

Fire and Explosion Hazards: Slight fire hazard. See Section 9, "Physical and Chemical Properties" for flammability properties.

Extinguishing Media:

Suitable: Regular dry chemical, carbon dioxide, regular foam.
Unsuitable: Straight streams of water.

Specific Hazards Arising from the Chemical: None listed.

Special Protective Equipment and Precautions for Fire-Fighters: Avoid inhalation of material or combustion byproducts. Wear full protective clothing and NIOSH approved self-contained breathing apparatus (SCBA).

NFPA Ratings (0 = Minimal; 1 = Slight; 2 = Moderate; 3 = Serious; 4 = Severe)

Health = 2 Fire = 1 Reactivity = 0

6. ACCIDENTAL RELEASE MEASURES

Personal Precautions, Protective Equipment and Emergency Procedures: Use suitable protective equipment; see Section 8, "Exposure Controls and Personal Protection".

Methods and Materials for Containment and Clean up: Absorb spilled material with sand or non-combustible material and collect in appropriate container for disposal. Keep out of water supplies and sewers.

7. HANDLING AND STORAGE

Safe Handling Precautions: See Section 8, "Exposure Controls and Personal Protection".

Storage: Store and handle in accordance with all current regulations and standards. The storage floor must be impermeable and form a collecting basin so that, in the event of an accident spillage, the liquid cannot spread beyond the storage area.

8. EXPOSURE CONTROLS AND PERSONAL PROTECTION

Exposure Limits:

Transformer oil: No occupational exposure limits established.

Aroclor 1260: NIOSH (TWA): 0.001 mg/m^3 (related to 1,1'-Biphenyl, chloro derivatives)

Engineering Controls: Provide local exhaust or process enclosure ventilation system. Ensure compliance with applicable exposure limits.

Personal Protection Measures: In accordance with OSHA 29 CFR 1910.132, subpart I, wear appropriate Personal Protective Equipment (PPE) to minimize exposure to this material.

Respiratory Protection: If workplace conditions warrant a respirator, a respiratory protection program that meets OSHA 29CFR 1910.134 must be followed. Refer to NIOSH 42 CFR 84 for applicable certified respirators.

Eye/Face Protection: Wear splash resistant safety goggles with a face shield. An eye wash station should be readily available near areas of use.

Skin and Body Protection: Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product. Chemical-resistant gloves should be worn at all times when handling chemicals.

9. PHYSICAL AND CHEMICAL PROPERTIES

Descriptive Properties	**Transformer oil (>99 %)**
Appearance (physical state, color, etc.):	clear, yellow liquid
Molecular Formula:	not applicable
Molar Mass (g/mol):	not applicable
Odor:	not available
Odor threshold:	not available
pH:	not available
Evaporation rate:	not available
Melting point/freezing point:	–55 °C (–67 °F)
Pour point:	–40 °C (–40 °F)
Density:	0.8912 g/mL at 22 °C[(b)]
Vapor Pressure:	0.1 mmHg 20 °C[(a)]
Vapor Density (air = 1):	>5 at 101 kPa[(a)]
Kinematic Viscosity:	12 cSt (12 mm^2/s) at 40 °C
Solubility(ies):	insoluble in water
Partition coefficient (n-octanol/water):	>6.5[(a)]
Thermal Stability Properties	
Autoignition Temperature:	>315 °C (599 °F)[(a)]
Thermal Decomposition:	not available
Initial boiling point and boiling range:	260 °C to 371 °C (500 °F to 700 °F)
Explosive Limits, LEL:	not available
Explosive Limits, UEL:	not available
Flash Point:	>145 °C (293 °F)[(a)]
Flammability (solid, gas):	not applicable

[(a)] Physical property listed in the NIST Certificate of Analysis. Values are not certified.
[(b)] Vendor supplied health and safety information.

10. STABILITY AND REACTIVITY

Reactivity: Stable at normal temperatures and pressure.

Stability: X Stable _____ Unstable

Possible Hazardous Reactions: None listed.

Conditions to Avoid: Avoid excessive heat; high energy ignition sources.

Incompatible Materials: Oxidizers.

Fire/Explosion Information: See Section 5, "Fire Fighting Measures".

Hazardous Decomposition: Oxides of carbon, sulfur oxides, aldehydes.

Hazardous Polymerization: _____ Will Occur X Will Not Occur

11. TOXICOLOGICAL INFORMATION

Route of Exposure: X Inhalation X Skin X Ingestion

Symptoms Related to the Physical, Chemical and Toxicological Characteristics: Dizziness, nausea, coughing.

Potential Health Effects (Acute, Chronic and Delayed):

Inhalation: Acute exposure to high levels of vapor from transformer oil may cause central nervous system depression, headache, dizziness, nausea, vomiting, anorexia, incoordination and unconsciousness. Prolonged or repeated exposure may cause irritation. Short term exposure to Aroclor 1260 may cause irritation or liver damage; long term exposure may cause rash, itching, hair loss, digestive issues, headache, dizziness, impotence, coma, and cancer.

Skin Contact: Short term and long term contact with transformer oil may cause skin irritation and dermatitis. Short-term exposure to Aroclor 1260 may cause skin irritation or liver damage; long term exposure to Aroclor 1260 may cause same effects as for inhalation, plus hair loss and reproductive effects.

Eye Contact: Acute exposure of liquid or vapor may cause irritation.

Ingestion: Acute ingestion of transformer oil may cause abdominal pain, nausea, and vomiting. Small amounts of oil aspirated during ingestion or vomiting may cause lung damage; no information available for long-term exposure to transformer oil. Short term exposure to Aroclor 1260 may cause liver damage; long term exposure to Aroclor 1260 may cause same effects as for inhalation, plus hyperactivity, menstrual disorders, reproductive effects.

Numerical Measures of Toxicity:

Acute Toxicity: Not classified.
Component: Transformer oil
Rat, Oral LD50: >5000 mg/kg
Rat, Inhalation LC50: 2180 mg/m^3 (4 h)
Rabbit, Skin LD50: >2000 mg/kg

Component: Aroclor 1260
Rat, Oral LD50: 1315 mg/kg

Skin Corrosion/Irritation: Not classified.
Transformer oil, Rabbit, skin: 0.5 mL/24 h, moderate

Serious Eye Damage/ Eye Irritation: Not classified.
Transformer oil, Rabbit, eye: 0.1 mL, mild

Respiratory Sensitization: No data available; not classified.

Skin Sensitization: No data available; not classified.

Germ Cell Mutagenicity: No data available; not classified.

Carcinogenicity: Category 1B

Listed as a Carcinogen/Potential Carcinogen X Yes _____ No

Transformer oil is not listed by NTP, IARC, or OSHA as a carcinogen/potential carcinogen.

Aroclor 1260 is listed by NTP as *reasonably anticipated to be a human carcinogen* (as PCB, polychlorinated biphenyl, CAS number 1336-36-3) and by IARC as Group 1, c*arcinogenic to humans* (related to Polychlorinated biphenyls).

Reproductive Toxicity: Category 2

Aroclor 1260: Overexposure has resulted in decreased birth weight in offspring of exposed mothers. Significant exposure to PCBs that reach the fetus can cause teratogenic effects.

Oral Rat TDLo: 210 mg/kg, pregnant 14-20 days

STOT, Single Exposure: No data available; not classified.

STOT, Repeated Exposure: Not classified; this SRM contains less than 1 % of Archlor 1260, a Category 2 target organ toxicant.

Aspiration Hazard: Category 1

Transformer oil is a human aspiration toxicity hazard.

12. ECOLOGICAL INFORMATION

Ecotoxicity Data:

Transformer oil:	Fish, Rainbow Trout (*Oncorhynchus mykiss*) LC50: >5000 mg/L (96 h)
	Invertebrate, Water flea (*Daphnia magna*) EC50: >1000 mg/L (48 h)
Aroclor 1260:	No data available.

Persistence and Degradability: Has the potential to biodegradable.

Bioaccumulative Potential: No data available

Mobility in Soil: Expected to migrate from land to water and vice versa.

Other Adverse effects: Keep out of water supplies.

13. DISPOSAL CONSIDERATIONS

Waste Disposal: Dispose of waste in accordance with all applicable federal, state, and local regulations.

14. TRANSPORTATION INFORMATION

U.S. DOT and IATA: This material is not regulated by IATA or DOT.

15. REGULATORY INFORMATION

U.S. Regulations:

CERCLA Sections 102a/103 (40 CFR 302.4): Aroclor 1260, 1 lb. (0.454 kg) final RQ.

SARA Title III Section 302 (40 CFR 355.30): Not regulated.

SARA Title III Section 304 (40 CFR 355.40): Not regulated.

SARA Title III Section 313 (40 CFR 372.65): Aroclor 1260, 0.1 % supplier notification limit (related or polychlorinated biphenyls).

OSHA Process Safety (29 CFR 1910.119): Not regulated.

SARA Title III Sections 311/312 Hazardous Categories (40 CFR 370.21):

ACUTE HEALTH:	Yes.
CHRONIC HEALTH:	Yes.
FIRE:	No.
REACTIVE:	No.
PRESSURE:	No.

State Regulations:

California Proposition 65:

> WARNING! This product contains a chemical (Aroclor 1260, related to PCBs) known to the state of California to cause cancer, reproductive, and/or developmental effects.

U.S. TSCA Inventory: Transformer oil is listed.

TSCA 12(b), Export Notification: Aroclor 1260 is listed in Section 6, 50 ppm de minimus concentration (see 40 CFR 761, related to polychlorinated biphenyls).

Canadian Regulations:

WHMIS Information: Not provided for this material.

16. OTHER INFORMATION

Issue Date: 27 May 2015

Sources: ChemADVISOR, Inc., SDS, *Aroclor 1260*, 20 March 2015.

ChemADVISOR, Inc., SDS, *Transformer Oil*, 20 March 2015.

Vendor MSDS, Exxon Mobile Corporation, UNIVOLT N 61 B, 30 May 2014.

Key of Acronyms:

ACGIH	American Conference of Governmental Industrial Hygienists	NRC	Nuclear Regulatory Commission
ALI	Annual Limit on Intake	NTP	National Toxicology Program
CAS	Chemical Abstracts Service	OSHA	Occupational Safety and Health Administration
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act	PEL	Permissible Exposure Limit
CFR	Code of Federal Regulations	RCRA	Resource Conservation and Recovery Act
DOT	Department of Transportation	REL	Recommended Exposure Limit
EINECS	European Inventory of Existing Commercial Chemical Substances	RQ	Reportable Quantity
EPCRA	Emergency Planning and Community Right-to-Know Act	RTECS	Registry of Toxic Effects of Chemical Substances
IARC	International Agency for Research on Cancer	SARA	Superfund Amendments and Reauthorization Act
IATA	International Air Transportation Agency	SCBA	Self-Contained Breathing Apparatus
IDLH	Immediately Dangerous to Life and Health	RM	Reference Material
LC50	Lethal Concentration	STEL	Short Term Exposure Limit
LD50	Median Lethal Dose or Lethal Dose, 50 %	STOT	Specific Target Organ Toxicity
LEL	Lower Explosive Limit	TLV	Threshold Limit Value
MSDS	Material Safety Data Sheet	TPQ	Threshold Planning Quantity
NFPA	National Fire Protection Association	TSCA	Toxic Substances Control Act
NIOSH	National Institute for Occupational Safety and Health	TWA	Time Weighted Average
NIST	National Institute of Standards and Technology	UEL	Upper Explosive Limit
		WHMIS	Workplace Hazardous Materials Information System

Disclaimer: Physical and chemical data contained in this SDS are provided only for use in assessing the hazardous nature of the material. The SDS was prepared carefully, using current references; however, NIST does not certify the data in the SDS. The certified values for this material are given in the NIST Certificate of Analysis.

Users of this SRM should ensure that the SDS in their possession is current. This can be accomplished by contacting the SRM Program: telephone (301) 975-2200; fax (301) 948-3730; e-mail srmmsds@nist.gov; or via the Internet at http://www.nist.gov/srm.

Material Safety Data Sheet

Version 4.2
Revision Date 07/07/2011
Print Date 12/09/2011

1. PRODUCT AND COMPANY IDENTIFICATION

Product name	:	Aroclor 1262
Product Number	:	442463
Brand	:	Supelco
Supplier	:	Sigma-Aldrich 3050 Spruce Street SAINT LOUIS MO 63103 USA
Telephone	:	+1 800-325-5832
Fax	:	+1 800-325-5052
Emergency Phone # (For both supplier and manufacturer)	:	(314) 776-6555
Preparation Information	:	Sigma-Aldrich Corporation Product Safety - Americas Region 1-800-521-8956

2. HAZARDS IDENTIFICATION

Emergency Overview

OSHA Hazards
Carcinogen

GHS Classification
Carcinogenicity (Category 1B)
Specific target organ toxicity - repeated exposure (Category 2)
Acute aquatic toxicity (Category 3)
Chronic aquatic toxicity (Category 3)

GHS Label elements, including precautionary statements

Pictogram

Signal word: Danger

Hazard statement(s)

H350	May cause cancer.
H373	May cause damage to organs through prolonged or repeated exposure.
H412	Harmful to aquatic life with long lasting effects.

Precautionary statement(s)

P201	Obtain special instructions before use.
P273	Avoid release to the environment.
P308 + P313	IF exposed or concerned: Get medical advice/ attention.

HMIS Classification

Health hazard:	0
Chronic Health Hazard:	*
Flammability:	0
Physical hazards:	0

NFPA Rating

Health hazard:	0
Fire:	0

Reactivity Hazard: 0

Potential Health Effects

Inhalation	May be harmful if inhaled. May cause respiratory tract irritation.
Skin	May be harmful if absorbed through skin. May cause skin irritation.
Eyes	May cause eye irritation.
Ingestion	May be harmful if swallowed.

3. COMPOSITION/INFORMATION ON INGREDIENTS

CAS-No.	EC-No.	Index-No.	Concentration
PCB - Aroclor 1262			
37324-23-5	-	602-039-00-4	-

4. FIRST AID MEASURES

General advice
Consult a physician. Show this safety data sheet to the doctor in attendance.Move out of dangerous area.

If inhaled
If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.

In case of skin contact
Wash off with soap and plenty of water. Consult a physician.

In case of eye contact
Flush eyes with water as a precaution.

If swallowed
Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

5. FIRE-FIGHTING MEASURES

Conditions of flammability
Not flammable or combustible.

Suitable extinguishing media
Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

Special protective equipment for fire-fighters
Wear self contained breathing apparatus for fire fighting if necessary.

Hazardous combustion products
Hazardous decomposition products formed under fire conditions. - Nature of decomposition products not known.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions
Use personal protective equipment. Avoid breathing vapors, mist or gas. Ensure adequate ventilation. Evacuate personnel to safe areas.

Environmental precautions
Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.

Methods and materials for containment and cleaning up
Soak up with inert absorbent material and dispose of as hazardous waste. Keep in suitable, closed containers for disposal.

7. HANDLING AND STORAGE

Precautions for safe handling
Avoid contact with skin and eyes. Avoid inhalation of vapour or mist.

Conditions for safe storage
Keep container tightly closed in a dry and well-ventilated place. Containers which are opened must be carefully resealed and kept upright to prevent leakage.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Contains no substances with occupational exposure limit values.

Personal protective equipment

Respiratory protection
Where risk assessment shows air-purifying respirators are appropriate use a full-face respirator with multi-purpose combination (US) or type ABEK (EN 14387) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

Hand protection
Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

Eye protection
Face shield and safety glasses Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

Skin and body protection
Complete suit protecting against chemicals, The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

Hygiene measures
Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance

Form	liquid
Colour	no data available

Safety data

pH	no data available
Melting point/freezing point	no data available
Boiling point	no data available
Flash point	no data available
Ignition temperature	no data available
Autoignition temperature	no data available
Lower explosion limit	no data available
Upper explosion limit	no data available
Vapour pressure	no data available
Density	no data available
Water solubility	no data available
Partition coefficient: n-octanol/water	no data available
Relative vapour density	no data available

Odour	no data available
Odour Threshold	no data available
Evaporation rate	no data available

10. STABILITY AND REACTIVITY

Chemical stability
Stable under recommended storage conditions.

Possibility of hazardous reactions
no data available

Conditions to avoid
no data available

Materials to avoid
Strong oxidizing agents

Hazardous decomposition products
Hazardous decomposition products formed under fire conditions. - Nature of decomposition products not known.
Other decomposition products - no data available

11. TOXICOLOGICAL INFORMATION

Acute toxicity

Oral LD50
LD50 Oral - rat - 11,300 mg/kg

Inhalation LC50
no data available

Dermal LD50
Other information on acute toxicity
no data available

Skin corrosion/irritation
no data available

Serious eye damage/eye irritation
no data available

Respiratory or skin sensitization
no data available

Germ cell mutagenicity

no data available

Carcinogenicity

Carcinogen

Possible human carcinogen

IARC:	No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.
ACGIH:	No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH.
NTP:	No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

OSHA: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

Reproductive toxicity

no data available

Teratogenicity

no data available

Specific target organ toxicity - single exposure (Globally Harmonized System)
no data available

Specific target organ toxicity - repeated exposure (Globally Harmonized System)
May cause damage to organs through prolonged or repeated exposure.
no data available

Aspiration hazard
no data available

Potential health effects

Inhalation	May be harmful if inhaled. May cause respiratory tract irritation.
Ingestion	May be harmful if swallowed.
Skin	May be harmful if absorbed through skin. May cause skin irritation.
Eyes	May cause eye irritation.

Signs and Symptoms of Exposure
To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

Synergistic effects
no data available

Additional Information
RTECS: TQ1364000

12. ECOLOGICAL INFORMATION

Toxicity

Toxicity to fish	LC50 - Oncorhynchus clarki - 50 mg/l - 96 h

Persistence and degradability

Biodegradability	Result: - According to the results of tests of biodegradability this product is not readily biodegradable. Remarks: no data available

Bioaccumulative potential
no data available

Mobility in soil
no data available

PBT and vPvB assessment
no data available

Other adverse effects

An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.

Harmful to aquatic life with long lasting effects.

13. DISPOSAL CONSIDERATIONS

Product
Offer surplus and non-recyclable solutions to a licensed disposal company. Contact a licensed professional waste disposal service to dispose of this material. Dissolve or mix the material with a combustible solvent and burn in a chemical incinerator equipped with an afterburner and scrubber.

Contaminated packaging
Dispose of as unused product.

14. TRANSPORT INFORMATION

DOT (US)
UN number: 2315 Class: 9 Packing group: II
Proper shipping name: Polychlorinated biphenyls, liquid
Reportable Quantity (RQ):
Marine pollutant: No
Poison Inhalation Hazard: No

IMDG
UN number: 2315 Class: 9 Packing group: II EMS-No: F-A, S-A
Proper shipping name: POLYCHLORINATED BIPHENYLS, LIQUID
Marine pollutant: No

IATA
UN number: 2315 Class: 9 Packing group: II
Proper shipping name: Polychlorinated biphenyls, liquid

15. REGULATORY INFORMATION

OSHA Hazards
Carcinogen

SARA 302 Components
SARA 302: No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

SARA 313 Components
SARA 313: This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

SARA 311/312 Hazards
Chronic Health Hazard

Massachusetts Right To Know Components
No components are subject to the Massachusetts Right to Know Act.

Pennsylvania Right To Know Components

	CAS-No.	Revision Date
PCB - Aroclor 1262	37324-23-5	1989-08-11

New Jersey Right To Know Components

	CAS-No.	Revision Date
PCB - Aroclor 1262	37324-23-5	1989-08-11

California Prop. 65 Components

	CAS-No.	Revision Date
WARNING! This product contains a chemical known to the State of California to cause cancer. PCB - Aroclor 1262	37324-23-5	2008-08-01

California Prop. 65 Components

	CAS-No.	Revision Date
WARNING! This product contains a chemical known to the State of California to cause birth defects or other reproductive harm. PCB - Aroclor 1262	37324-23-5	2008-08-01

16. OTHER INFORMATION

Further information

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The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. Sigma-Aldrich Co., shall not be held liable for any damage resulting from handling or from contact with the above product. See reverse side of invoice or packing slip for additional terms and conditions of sale.

APPENDIX D

HOSPITAL INFORMATION AND MAP

FIELD ACCIDENT REPORT

FIELD ACCIDENT REPORT

This report is to be filled out by the designated Site Safety Officer after EVERY accident.

PROJECT NAME _____ PROJECT. NO._____

Date of Accident _____ Time _____ Report By _____

Type of Accident (Check One):

( ) Vehicular ( ) Personal ( ) Property

Name of Injured _____ DOB or Age _____

How Long Employed _____

Names of Witnesses _____

_____

Description of Accident _____

_____

_____

Action Taken _____

_____

_____

Did the Injured Lose Any Time? _____ How Much (Days/Hrs.)? _____

Was Safety Equipment in Use at the Time of the Accident (Hard Hat, Safety Glasses, Gloves, Safety Shoes, etc.)? _____

_____

(If not, it is the EMPLOYEE'S sole responsibility to process his/her claim through his/her Health and Welfare Fund.)

INDICATE STREET NAMES, DESCRIPTION OF VEHICLES, AND NORTH ARROW

HOSPITAL INFORMATION AND MAP

The hospital nearest the site is:

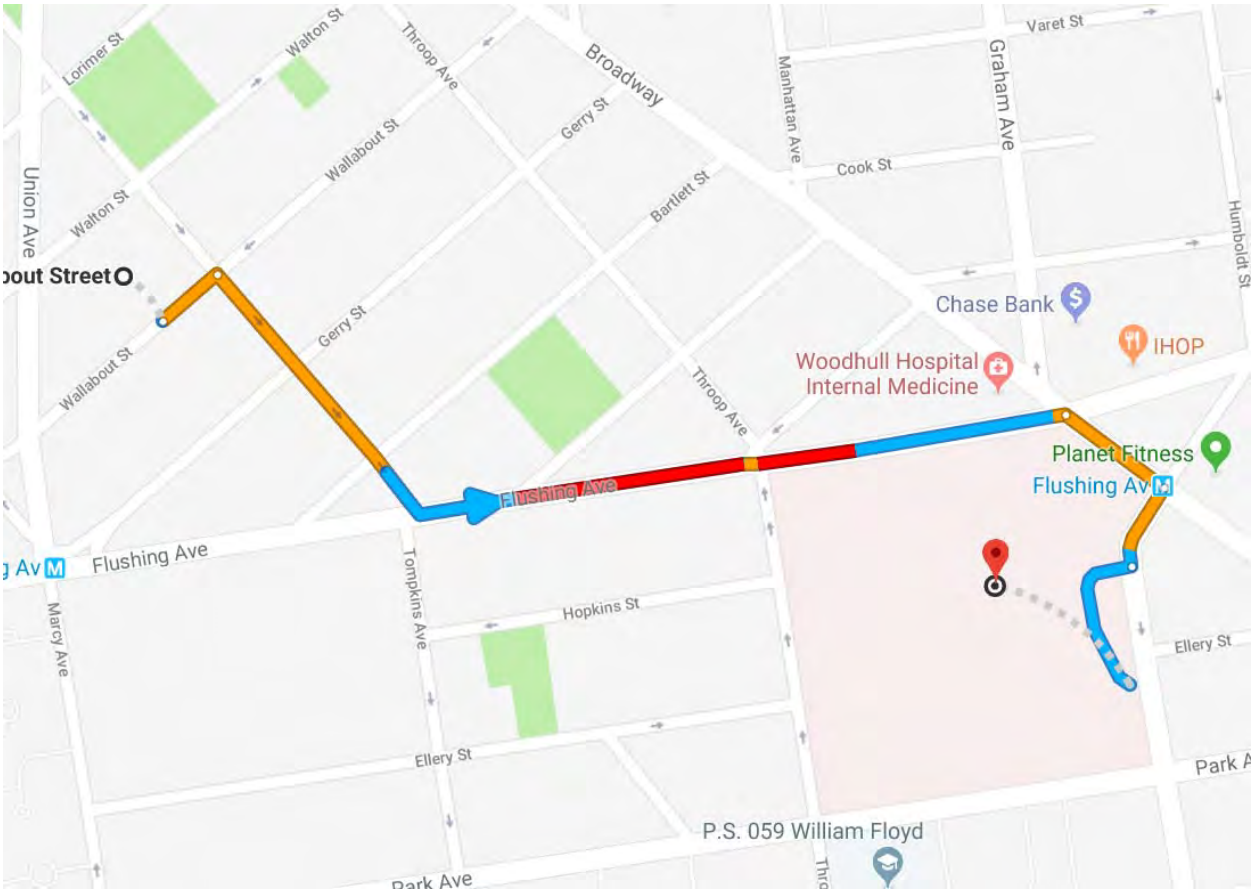
NYC Health and Hospitals - Woodhull
760 Broadway, Brooklyn, NY 11206
(718) 963-8000
0.6 Miles – About 5 Minutes

Directions:

Head northeast on Wallabout Street toward Harrison Avenue.

Turn Right onto Harrison Avenue.

Turn Left onto Flushing Avenue. The Hospital will be on the right at the intersection of Flushing Avenue and Broadway.



APPENDIX G

Responsibilities of Owner and Remedial Party

RESPONSIBILITIES of OWNER and REMEDIAL PARTY

Responsibilities

The responsibilities for implementing the Site Management Plan ("SMP") for the Former Pfizer Site A site (the "Site"), number C224284, are divided between the site owner(s) and a Remedial Party, as defined below. The owner(s) is/are currently listed as:

Harrison Realty LLC
505 Flushing Avenue, Unit 1D
Brooklyn, NY 11205

Solely for the purposes of this document and based upon the facts related to a particular site and the remedial program being carried out, the term Remedial Party ("RP") refers to any of the following: certificate of completion holder, Participant applicant, responsible party, and, in the event the New York State Department of Environmental Conservation ("NYSDEC") is carrying out remediation or site management, the NYSDEC and/or an agent acting on its behalf. The RP is:

Harrison Realty LLC
505 Flushing Avenue, Unit 1D
Brooklyn, NY 11205

Harrison Realty II LLC
505 Flushing Avenue, Unit 1D
Brooklyn, NY 11205

Nothing on this page shall supersede the provisions of an Environmental Easement, Consent Order, Consent Decree, Brownfield Cleanup Agreement and subsequent amendments, or other legally binding document that affects rights and obligations relating to the site.

Site Owner's Responsibilities:

1) The owner shall follow the provisions of the SMP as they relate to future construction and excavation at the site.
2) In accordance with a periodic time frame determined by the NYSDEC, the owner shall periodically certify, in writing, that all Institutional Controls set forth in the Environmental Easement remain in place and continue to be complied with. The owner

shall provide a written certification to the RP, upon the RP's request, in order to allow the RP to include the certification in the site's Periodic Review Report (PRR) certification to the NYSDEC.

3) The owner remains bound by the Environmental Easement and shall submit, upon request by the NYSDEC, a written certification that the Environmental Easement is still in place and has been complied with.
4) The owner shall grant access to the site to the RP and the NYSDEC and its agents for the purposes of performing activities required under the SMP and assuring compliance with the SMP.
5) The owner is responsible for assuring the security of the remedial components located on its property to the best of its ability. In the event that damage to the remedial components or vandalism is evident, the owner shall notify the site's RP and the NYSDEC in accordance with the timeframes indicated in Section 1.3-Notifications.
6) In the event some action or inaction by the owner adversely impacts the site, the owner must notify the site's RP and the NYSDEC in accordance with the time frame indicated in Section 1.3 - Notifications and (ii) coordinate the performance of necessary corrective actions with the RP.
7) The owner must notify the RP and the NYSDEC of any change in ownership of the site property (identifying the tax map numbers in any correspondence) and provide contact information for the new owner of the site property/ies. 6 NYCRR Part contains notification requirements applicable to any construction or activity changes and changes in ownership. Among the notification requirements is the following: Sixty days prior written notification must be made to the NYSDEC. Notification is to be submitted to the NYSDEC Division of Environmental Remediation's Site Control Section. Notification requirements for a change in use are detailed in Section 1.3 of the SMP. A 60-Day Advance Notification Form and Instructions are found at http://www.dec.ny.gov/chemical/76250.html.
8) In accordance with the tenant notification law, within 15 days of receipt, the owner must supply a copy of any vapor intrusion data, that is produced with respect to structures and that exceeds NYSDOH or OSHA guidelines on the site, whether produced by the NYSDEC, RP, or owner, to the tenants on the property. The owner

must otherwise comply with the tenant and occupant notification provisions of Environmental Conservation Law Article 27, Title 24.

Remedial Party Responsibilities

1) The RP must follow the SMP provisions regarding any construction and/or excavation it undertakes at the site.
2) The RP shall report to the NYSDEC all activities required for remediation, operation, maintenance, monitoring, and reporting. Such reporting includes, but is not limited to, periodic review reports and certifications, electronic data deliverables, corrective action work plans and reports, and updated SMPs.
3) Before accessing the site property to undertake a specific activity, the RP shall provide the owner advance notification that shall include an explanation of the work expected to be completed. The RP shall provide to (i) the owner, upon the owner's request, (ii) the NYSDEC, and (iii) other entities, if required by the SMP, a copy of any data generated during the site visit and/or any final report produced.
4) If the NYSDEC determines that an update of the SMP is necessary, the RP shall update the SMP and obtain final approval from the NYSDEC. Within 5 business days after NYSDEC approval, the RP shall submit a copy of the approved SMP to the owner(s).
5) The RP shall notify the NYSDEC and the owner of any changes in RP ownership and/or control and of any changes in the party/entity responsible for the operation, maintenance, and monitoring of and reporting with respect to any remedial system (Engineering Controls). The RP shall provide contact information for the new party/entity. Such activity constitutes a Change of Use pursuant to 375-1.11(d) and requires 60-days prior notice to the NYSDEC. A 60-Day Advance Notification Form and Instructions are found at http://www.dec.ny.gov/chemical/76250.html .
6) The RP shall notify the NYSDEC of any damage to or modification of the systems as required under Section 1.3 - Notifications of the SMP.
7) Prior to a change in use that impacts the remedial system or requirements and/or responsibilities for implementing the SMP, the RP shall submit to the NYSDEC for approval an amended SMP.

8) Any change in use, change in ownership, change in site classification (*e.g.*, delisting), reduction or expansion of remediation, and other significant changes related to the site may result in a change in responsibilities and, therefore, necessitate an update to the SMP and/or updated legal documents. The RP shall contact the Department to discuss the need to update such documents.

Change in RP ownership and/or control and/or site ownership does not affect the RP's obligations with respect to the site unless a legally binding document executed by the NYSDEC releases the RP of its obligations.

Future site owners and RPs and their successors and assigns are required to carry out the activities set forth above.