

2015 VAPOR INTRUSION ANNUAL MONITORING REPORT FOR BUILDING NO. 1

Former Macbeth Kollmorgen Corporate Site
617 Little Britian Road
New Windsor, Orange County, New York

NYSDEC Site Number: 3-36-037

H2M Project No.
ZMAC 0101

May 2015

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1.0 Introduction

As requested by the New York State Department of Environmental Conservation (NYSDEC) and the New York State Department of Health (NYSDOH), H2M architects + engineers (H2M) conducted annual soil vapor intrusion (SVI) monitoring in January 2015 at the former Macbeth-Kollmorgen Corporate Site (the Site) located at 617 Little Britain Road in New Windsor, New York (New York State Department of Environmental Conservation [NYSDEC] Site No. 3-36-037). The objectives of the annual SVI sampling event were to monitor indoor air and sub-slab soil vapor concentrations at Building No. 1 and assess the on-going level of risk posed to site workers by concentrations of site contaminants previously detected in sub-slab vapor samples.

Based on comparison to *Guidance for Evaluating Soil Vapor Intrusion in the State of New York* (October 2006), the prior (January 2014) vapor intrusion investigation results confirmed that indoor air quality was consistent with NYSDOH background levels and therefore was not a concern. However, based on the presence of trichloroethene (TCE), tetrachloroethene (PCE) and/or 1,1,1-trichloroethane (1,1,1-TCA) in prior sub-slab vapor samples at concentrations above NYSDOH Air Guidance Values (AGV), continued monitoring of sub-slab soil vapor at two (2) locations was required. No active mitigation was required based on the concentrations of TCE, PCE, and 1,1,1-TCA present in sub-slab soil vapor.

The scope of the annual vapor intrusion investigation conducted in January 2015 is described in H2M's April 2009 Vapor Intrusion Evaluation Report that was submitted to NYSDOH and NYSDOH, and the response to comments letter submitted to NYSDOH by H2M in May 2009.

2.0 Vapor Intrusion Investigation – January 2015

The vapor intrusion investigation conducted in January 2015 included the collection of sub-slab and indoor air samples from two (2) locations within Building No. 1. The current operator in Building No. 1 is Pratt Quality Carton, a manufacturer of corrugated products, including partitions and point of purchase displays. Pratt Quality Carton (formerly known as Quality Packaging) was purchased by Pratt Industries and is now known as Pratt Quality Carton; however, the personnel and operations at the facility are largely unchanged since the 2014 Vapor Intrusion Annual Monitoring Report for Building No. 1.

2.1 Product Inventory and Facility Operations

Prior to sampling, H2M reviewed and completed the NYSDOH Indoor Air Quality Questionnaire and Building Inventory form with Mr. Christopher McNamee of Pratt Quality Carton. The purpose of this review was to establish whether the building construction characteristics, air flow patterns, heating, venting, air conditioning systems, and product inventory have changed since the previous SVI monitoring event

(January 2014). The NYSDOH Indoor Air Quality Questionnaire and Building Inventory form is included as Appendix A of this report.

The purpose of the product inventory is to document the materials used by the current operator and/or present at the facility while the sampling activities are being conducted. Pratt Quality Carton receives materials from other manufacturers (including bubble and stretch wrap, clamshells and blank corrugated sheets) and cuts, folds, and assembles these materials into the final products that are then labeled in accordance with customer specifications. The products are created utilizing counter, stacker, and partition assembler equipment. Pratt Industries uses water-based inks to create labels on their products.

On January 20, 2015, H2M personnel conducted visual reconnaissance of the operational areas to identify materials present and requested a material inventory list from Pratt Quality Carton. Based on H2M's observations and information provided by Pratt Quality Carton, the materials present at the facility consist of water-based printing ink, primarily Hydro GCMI 90 Black. A Material Safety Data Sheet (MSDS) for Hydro GCMI 90 Black is included in Appendix A. Chemicals known to be found in various printing inks are stored in sealed 5-gallon buckets in the vicinity of sampling points SG-2 and IA-2, and are listed in Table 1, along with their respective CAS Registry numbers.

H2M also noted that several 55-gallon drums containing Sealed Air Corporation polyurethane foam resin 40W were present near the SG-2 / IA-2 location. This material contains glycerin (CAS No. 56-81-5), and the drums were labeled indicating that the polyurethane foam resin is "CFC and HCFC free."

During review of the Questionnaire with Pratt Quality Carton, Mr. McNamee indicated that lines on the manufacturing floor in Building No. 1 are painted on a regular basis and that a mason was scheduled in the next couple of days to repair the concrete floor and that the lines on the floor would then be reapplied and covered with varnish. As in previous years, an exterminator had been engaged to apply pesticide for mice in the last 30 days.

Based on the pre-sampling site walkthrough and discussions with Pratt Quality personnel, the product inventory in Building No. 1 at the time of the 2015 sampling was consistent with the inventory present during the previous (January 2014) SVI monitoring event. In the previous (January 2014) SVI survey Pratt Quality stated that a new supplier/manufacturer of inks used at the facility (J.M. Fry) and based on our 2015 inspection this transfer to the J.M. Fry Company was nearly complete. As in previous years Mr. McNamee stated that all of the printing inks used on the corrugated packaging are water-based inks. MSDS sheets for the J. M. Fry products used at the facility are included in the list of chemicals in Appendix A.

2.2 Soil Vapor and Indoor Air Sampling

Based on the results of the eight previous vapor intrusion sampling investigation events conducted between December 2006 and January 2014 and in accordance with NYSDEC letter dated October 8, 2008, an additional vapor intrusion investigation was performed to continue monitoring soil vapor and indoor air quality at the Site. On January 21, 2015, sub-slab vapor samples were collected from the two (2) permanent sub-slab vapor sampling points installed at the former SG-2 and SG-3 locations within Building No. 1. Two indoor air samples were also collected to monitor indoor air quality. The indoor air

samples (IA-2 and IA-3) were paired with the sub-slab samples (indoor air sample IA-2 was collected adjacent to SG-2, and IA-3 was collected adjacent to SG-3). The indoor air samples were collected on the same day as the sub-slab vapor samples. The locations of the sampling points are shown on Figure 1.

2.2.1 Sub-Slab Vapor Sample Collection

On January 21, 2015, sub-slab vapor samples were collected from SG-2 and SG-3 within the main building. Pursuant to the NYSDOH guidance, the soil vapor and indoor air samples were collected using laboratory-clean 6-liter stainless-steel SUMMA[®] canisters and calibrated regulators that were set to facilitate the collection of samples at a flow rate less than 0.2 liters per minute. Before and after sampling, a helium leak tracer test was performed to check the integrity of the seal at each sampling location (as discussed below) to confirm the sub-slab vapor sample was not cross contaminated with indoor air.

Prior to initiating sample collection, three volumes of air were purged from each sample location using a low-flow vacuum pump set to approximately 0.2 liters per minute. Before sampling, the initial pressure of each SUMMA[®] canister was recorded in inches of mercury (Hg). The initial pressures of the SUMMA[®] canisters were 30 inches of Hg for SG-3 and 29.4 inches of Hg for SG-2. The post-sampling pressures recorded for each SUMMA[®] canister was 0 inches of Hg for SG-2 and -2 inches of Hg for SG-3. A copy of the Canister Sampling Field Data Sheet is included in Appendix B.

Once sample collection was complete, the SUMMA[®] canisters were labeled and transported via FedEx to Accutest Laboratories of New England (NYSDEC Certification No. 11791) in Marlborough, Massachusetts (Accutest) under chain-of-custody protocols. The sub-slab vapor samples were analyzed via United States Environmental Protection Agency (EPA) Method TO-15 for Volatiles in Air and TO-15 SIM analysis to achieve NYSDEC-required reporting limits for compounds of concern including trichloroethene (TCE, <0.25 micrograms per cubic meter [$\mu\text{g}/\text{m}^3$]), tetrachloroethene (PCE, <3 $\mu\text{g}/\text{m}^3$), and 1,1,1-trichloroethane (1,1,1-TCA, <3 $\mu\text{g}/\text{m}^3$).

Helium Leak Tracer Test

A helium leak tracer test was performed at each sampling location before sampling to confirm the integrity of the seal around the tubing and a second helium leak tracer test was performed after the samples were collected to make sure that the seals had remained intact during sampling. Laboratory-grade helium, a Model MGD-2002 Multi-Gas Leak Locator, a plastic shroud, plumber's putty, and hydraulic cement were used for the leak tracer test. Sample dedicated Teflon tubing was attached to the barb fitting at the top of the sub-slab vapor probe that was extended through the bottom of the plastic shroud that had been secured to the ground and sealed with foam around the edges. The tubing extending from below the slab through the shroud and sealed was then connected to the helium detector. A separate length of Teflon tubing was connected to a sealed fitting in the shroud wall where helium was injected. After inflating the void space within the shroud, the helium detector was connected to the tubing to measure the concentration of helium within the shroud. After sufficient concentration is measured within the shroud (typically 10%), the helium detector was reconnected to the sealed sub-slab vapor tubing to check if the helium was able to infiltrate through the cement seal into the ground.

Based on the helium testing performed at the SG-2 and SG-3 locations before and after sample collection, helium was not detected at either sample point and it can be concluded that no significant leaks occurred for the duration of the sampling period at either location.

2.2.2 Indoor Air Sample Collection

On January 21, 2015, two (2) indoor air samples (IA-2 and IA-3) were collected at the Site. Each sample was collected adjacent to a soil gas sample location inside the main building to assess the indoor air in the locations where chlorinated volatile organic compounds (CVOCs) had been detected in the sub-slab vapor samples. IA-2 was collected adjacent to SG-2, and IA-3 was collected adjacent to the SG-3. Both indoor air samples were collected on the same day that the sub-slab vapor samples were collected. The indoor air sampling locations are presented in Figure 1.

The indoor air samples were collected using laboratory clean SUMMA[®] canisters and calibrated regulators that were set to facilitate the collection of samples at a flow rate less than 0.2 liters per minute. The SUMMA[®] canisters were stationed so that the sample would be collected from a height of approximately three (3) feet above ground surface. The initial pressures of the SUMMA[®] canisters were -29.4 inches of Hg in both canisters. The post-sampling pressures recorded for each SUMMA canister was 0 inches of Hg. The Canister Sampling Field Data Sheets are provided in Appendix B.

Once sample collection was complete, the indoor air SUMMA[®] canisters were labeled and transported via FedEx to Accutest under chain-of-custody protocols. The indoor air samples were analyzed via EPA Method TO-15 for Volatiles in Air and TO-15 SIM analysis for TCE, PCE and TCA to achieve NYSDEC required reporting limits of <0.25 µg/m³ for TCE, <3 µg/m³ for PCE, and <3 µg/m³ for 1,1,1-TCA.

2.2.3 Quality Assurance Quality Control (QA/QC)

In addition to collecting the soil vapor and indoor air samples, one trip blank was analyzed for the group of samples collected. The purpose of the trip blank was to assess the environmental conditions under which the samples were subject to upon storage and transport. The trip blank consisted of a laboratory-prepared closed and empty SUMMA[®] canister that traveled from the laboratory with the sample canisters, and then traveled back to the laboratory with the sample SUMMA[®] canisters following sampling. The trip blank was also analyzed for volatiles in air by EPA Method TO-15, in the same manner as the sub-slab vapor and indoor air samples.

3.0 Indoor Air and Sub-Slab Vapor Sampling Results

The following sections summarize the results of sub-slab vapor and indoor air sampling conducted on January 21, 2015. The analytical data are summarized in Table 2. The State of New York does not have any standards, criteria, or guidance values for concentrations of volatile organic compounds (VOCs) in soil vapor or sub-slab vapor. The sub-slab soil vapor samples and the indoor air samples are compared to the NYSDOH AGVs (Table 2). The laboratory analytical report for the samples is included in Appendix C.

VOCs and CVOCs were not detected in indoor air samples collected from either sampling point (IA-2 and IA-3) at concentrations above the NYSDOH AGVs contained in Table C.1 (NYSDOH 2003 Study of Volatiles in Air of Fuel Oil Heated Homes (90th Percentile Indoor Air Values) and Table C.2 (United States

Environmental Protection Agency [EPA] 2001 Building Assessment and Survey Evaluation [BASE] Background Level Ranges, Indoor Air for commercial buildings). Additionally, because this is a commercial building, the indoor air results were compared to the Occupational Safety & Health Administration (OSHA) Permissible Exposure Limit (PEL) time-weighted averages (TWA). OSHA defines the TWA for a substance as “the employee's average airborne exposure in any 8-hour work shift of a 40-hour work week which shall not be exceeded.” No VOCs or CVOCs were detected in indoor air samples collected from either sampling point (IA-2 and IA-3) at concentrations above the OSHA TWAs.

CVOCs were detected in sub-slab vapor samples collected from both sampling points SG-2 and SG-3. Because the State of New York does not have any standards, criteria, or guidance values for concentrations of VOCs in soil vapor or sub-slab vapor, NYSDOH AGVs (which only apply to indoor air) are used as a mechanism to flag elevated constituent concentrations present in sub-slab vapor and/or indoor air. These concentrations are subsequently evaluated through decision Matrix 1 and Matrix 2, provided in the NYSDOH *Guidance for Evaluating Vapor Intrusion in the State of New York* (October 2006).

At the recommendation of NYSDOH personnel, VOCs (with the exception of PCE, TCE and 1,1,1-TCA) were compared to the Table C.1, 2003 NYSDOH Study of Volatiles in Air in Fuel Oil Heated Homes (NYSDOH, October 2006) to evaluate sub-slab and indoor air sampling results. However, based on the commercial use of the building H2M has also assessed the remaining VOCs to the NYSDOH Table C.2 EPA 2001: BASE database, SUMMA® canister method for commercial buildings.

The results of the sub-slab vapor and indoor air sampling are discussed in the following sections.

3.1 Trichlorofluoromethane (TCFM)

Trichlorofluoromethane (also known as TCFM, Freon-11, CFC-11, or R-11) was detected in IA-2 (8.4 $\mu\text{g}/\text{m}^3$) and IA-3 (4.6 $\mu\text{g}/\text{m}^3$) at concentrations that are below the 2003 NYSDOH Study 90th percentile value of 17 $\mu\text{g}/\text{m}^3$, and within the EPA BASE background level ranges for indoor air (<1.7 to 1,015.3 $\mu\text{g}/\text{m}^3$).

Sub-slab vapor sample SG-2 and SG-3 contained TCFM at concentrations of 57.9 and 71.9 $\mu\text{g}/\text{m}^3$, respectively (Table 2). Both of the SG2 and SG-3 concentrations exceeds the 2003 NYSDOH Study 90th percentile value for indoor air of 17 $\mu\text{g}/\text{m}^3$; however, the TCFM concentration was within the EPA BASE background level range for indoor air of <1.7 to 1,015.3 $\mu\text{g}/\text{m}^3$.

The OSHA PEL for general industry for TCFM is 5,600,000 $\mu\text{g}/\text{m}^3$ as a maximum concentration at any point in time. Both the sub-slab vapor concentration in SG-2 and SG-3 and indoor air concentration in IA-2 and IA-3 are below the OSHA PEL and within the EPA 2001 BASE Background Level Ranges for this compound. Based on these data, no risks are present with respect to TCFM in sub-slab vapor or indoor air.

3.2 Carbon Tetrachloride

Carbon tetrachloride was not detected above the laboratory MDL in indoor air samples IA-2 or IA-3 or in sub-slab vapor sample SG-3 (Table 2).

Sub-slab vapor sample SG-2 contained carbon tetrachloride at a concentration of $2.8 \mu\text{g}/\text{m}^3$, which exceeds the NYSDOH (2003) Study 90th percentile value $0.8 \mu\text{g}/\text{m}^3$ but is within the EPA BASE background level range of 0.5 to $2.1 \mu\text{g}/\text{m}^3$ for indoor air (2001). Based on the lack of carbon tetrachloride in indoor air samples, no risk is present with respect to exposure to carbon tetrachloride.

3.3 Tetrachloroethene (PCE)

Tetrachloroethene (PCE) was detected in IA-2 ($0.2 \mu\text{g}/\text{m}^3$) and IA-3 ($0.16 \mu\text{g}/\text{m}^3$) at concentrations that are below 2003 NYSDOH Study 90th percentile value of $2.9 \mu\text{g}/\text{m}^3$, and the EPA BASE background level ranges for indoor air (<0.9 to $65.7 \mu\text{g}/\text{m}^3$).

PCE was detected in sub-slab vapor sample SG-2 and SG-3 at a concentration of $0.34 \mu\text{g}/\text{m}^3$ and $1,010 \mu\text{g}/\text{m}^3$, respectively (Table 2). The sub-slab concentration for SG-3 exceeds the NYSDOH (2003) Study 90th percentile value for homes of $2.9 \mu\text{g}/\text{m}^3$ and the AGV of $30 \mu\text{g}/\text{m}^3$; however, no PCE was detected in the corresponding indoor air samples (IA-2 and IA-3). PCE in sub-slab sample SG-3 is at the lowest concentration since sampling began in 2006 (Table 5). The concentration of $1,010 \mu\text{g}/\text{m}^3$ detected in sub-slab sample SG-2 is within the range of historic sample results, but is at the highest concentration it has been since the initial 2006 sampling event (Table 5).

There is no risk presented with respect to exposure to PCE based on the concentrations of PCE in indoor air samples because both indoor air samples were below the 2003 NYSDOH Study 90th percentile value of $2.9 \mu\text{g}/\text{m}^3$, and even below the EPA BASE background level ranges for indoor air (<0.9 to $65.7 \mu\text{g}/\text{m}^3$). No risk is presented with respect to exposure to PCE in either indoor air samples IA-2 and IA-3.

3.4 Trichloroethene (TCE)

TCE was detected in IA-2 ($0.11 \mu\text{g}/\text{m}^3$) and IA-3 ($0.047 \mu\text{g}/\text{m}^3$) at concentrations that are below the 2003 NYSDOH Study 90th percentile value of $0.5 \mu\text{g}/\text{m}^3$, and the EPA BASE background level range for indoor air of <0.6 to $88.5 \mu\text{g}/\text{m}^3$.

Both SG-2 ($6.4 \mu\text{g}/\text{m}^3$) and SG-3 ($0.86 \mu\text{g}/\text{m}^3$) contained TCE at concentrations that exceed the NYSDOH (2003) Study 90th percentile value of $0.5 \mu\text{g}/\text{m}^3$ (Table 2). The TCE concentration in both sub-slab vapor samples are within the EPA BASE background level ranges for indoor air (2001) and the concentrations are similar to or less than the concentrations detected in samples collected at these locations in the past several years. The TCE concentrations during this sampling event are similar to previous sampling events and do not reflect an increasing trend in the sub-slab vapor concentrations (Table 5).

There is no risk presented with respect to exposure to TCE based on the concentrations of TCE in indoor air samples since both indoor air samples were below the NYSDOH (2003) Study 90th percentile value, within the EPA BASE background level ranges for indoor air (2001) and below the AGV of $5 \mu\text{g}/\text{m}^3$.

3.5 1,1,1-Trichloroethane (1,1,1-TCA)

1,1,1-TCA was not detected above the laboratory MDL in indoor air samples IA-2 or IA-3 (Table 2).

1,1,1-TCA was detected in SG-2 and SG-3 at concentrations of 242 and 115 $\mu\text{g}/\text{m}^3$, respectively. Although 1,1,1-TCA does not have an AGV, it is evaluated through the same decision matrix as PCE and an AGV of 30 $\mu\text{g}/\text{m}^3$ was assumed for this compound. SG-2 and SG-3 both contain 1,1,1-TCA at concentrations that exceed the assumed AGV. These 1,1,1-TCA concentrations are similar to those present in sub-slab vapor for these locations for the past several years, and do not reflect an increasing trend in the sub-slab vapor concentrations (Table 5).

There is no risk presented with respect to exposure to 1,1,1-TCA based on the absence of 1,1,1-TCA in indoor air samples IA-2 and IA-3.

4.0 NYSDOH Soil Vapor/Indoor Air Matrices

The NYSDOH Soil Vapor/Indoor Air matrices were reviewed to determine the minimum actions that are recommended to address the current exposures related to sub-slab soil vapor intrusion based on the January 2015 sub-slab and indoor air results. Matrix 1 was used to evaluate TCE, and Matrix 2 was used for PCE and 1,1,1-TCA. These matrices, including the January 2015 indoor air and sub-slab vapor results, are presented on Tables 3 and 4.

The following recommendations are based on the January 21, 2015 sub-slab vapor and indoor air concentrations:

- No further action (NFA) is recommended for TCE at SG-2 and SG-3 based on the TCE concentrations detected in sub-slab vapor and indoor air (Table 3).
- NFA is recommended for PCE at SG-2 based on the PCE concentrations detected in sub-slab vapor and indoor air (Table 4).
- Continued monitoring is recommended at SG-3 based on the concentrations of PCE detected in sub-slab vapor (Table 4).
- Continued monitoring is recommended at SG-2 and SG-3 based on the concentrations of 1,1,1-TCA detected in sub-slab vapor (Table 4).

5.0 Conclusion and Recommendations

TCE, PCE, and 1,1,1-TCA were detected in sub-slab soil vapor points SG-2 and SG-3 during the January 2015 sampling event.

While 1,1,1-TCA was detected in sub-slab samples, it was not detected in the indoor air samples, and concentrations detected in sub-slab vapor samples were similar to or lower than concentrations detected over the past several years (Table 5). There is no workplace exposure and no risk is present to indoor air from sub-slab 1,1,1-TCA.

PCE was detected in both sub-slab (SG-2 and SG-3) and indoor air samples (IA-2 and at IA-3). PCE was detected in SG-3 at a concentration that exceeds the NYSDOH AGV; however, the indoor air samples contained PCE at concentrations that are below the range of background concentrations of <0.9 to 65.7

$\mu\text{g}/\text{m}^3$ published by EPA (2001). Additionally, both IA-2 and IA-3 are below the OSHA PEL (TWA) for PCE of 678,000 $\mu\text{g}/\text{m}^3$ and the NYSDOH AGV of 30 $\mu\text{g}/\text{m}^3$, indicating there is no risk presented with respect to exposure to PCE in the workplace.

TCE was detected in both sub-slab (SG-2 and SG-3) and indoor air (IA-2 and IA-3) samples. Only the concentration in SG-2 exceeds the NYSDOH AGV. TCE was detected in indoor air samples IA-2 and at IA-3 at concentrations that are below the range of background concentrations of <0.6 to 88.5 $\mu\text{g}/\text{m}^3$ published by EPA (2001). Additionally, both IA-2 and IA-3 are below the OSHA PEL (TWA) for TCE of 537,000 $\mu\text{g}/\text{m}^3$ and the NYSDOH AGV of 5 $\mu\text{g}/\text{m}^3$, indicating there is no risk presented with respect to exposure to PCE in the workplace.

Based on the results of the January 2015 vapor intrusion investigation, continued monitoring of PCE and 1,1,1-TCA will be conducted based on the current concentrations (Table 4). Although the concentrations of TCE detected in sub-slab at the SG-2 and SG-3 require no further action based on NYSDOH Decision Matrix 1 (Table 3), TCE is a degradation product of PCE and therefore will continue to be monitored.

The next annual vapor monitoring will be performed in conjunction with the quarterly groundwater sampling event in January 2016. An Indoor Air Quality Questionnaire and Building Inventory will be completed prior to sampling. Two sub-slab vapor samples will be collected from SG-2 and SG-3 as well as two indoor air samples adjacent to these points. In addition, one trip blank will be collected for this group of samples for QA/QC purposes. The samples will be analyzed for VOCs in air via EPA Method TO-15. The results of the January 2016 sampling event will be summarized in a report on completion of laboratory analysis and review of results. This report will be submitted to NYSDEC and NYSDOH upon completion.

6.0 References

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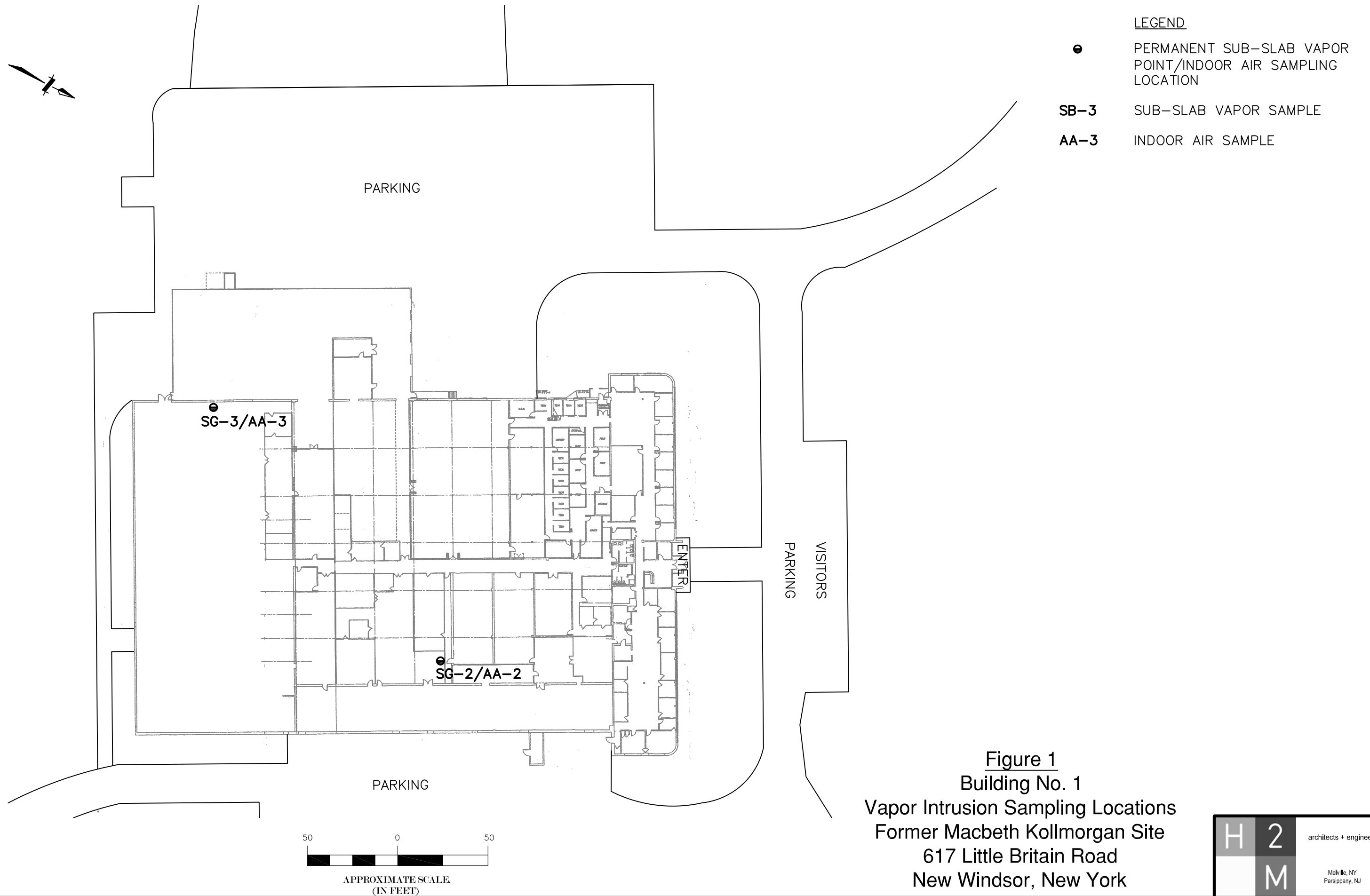
United States Environmental Protection Agency (EPA), 2001. Indoor Air Quality in Buildings, Building Assessment and Survey Evaluation (BASE) Study.

Occupational Safety & Health Administration (OSHA), 2006. Permissible Exposure Limit (PEL) 29 CFR 1910.1000 Table Z-1 & Z-2.

Bureau of Toxic Substance Assessment New York State Department of Health, September 2013 Fact Sheet Tetrachloroethene (PERC) in Indoor and Outdoor Air.

FIGURES

I:\ZMAC\Report 06-2009\FIG 01-Vapor Intrusion Samples Inside Building_R00.dwg Last Modified: Feb 28, 2012 - 9:16am Plotted on: Feb 28, 2012 - 9:21am By mwirth



TABLES

Table 1
Chemicals Present Near Sampling Points

CAS Registration Number	Chemical Name
4/9/5281	Lithol Rubine
101-68-8	4,4'-Diphenylmethane diisocyanate
106-97-8	Butane
1103-39-5	Calcium Lithol
1309-37-1	Iron Oxide
1324-76-1	C.I. Pigment Blue 61
1325-68-2	C.I. Pigment Violet 3
1328-53-5	C.I. Pigment Green 7
1333-86-4	Carbon Black
13463-67-7	Titanium Dioxide
138265-88-0	Zinc Borate
141-43-5	Ethanolamine
142-82-5	Heptane
147-14-8	Phthalocyanine Blue
21645-51-2	Aluminum Trihydrate
29911-27-1	Dipropylene Glycol N-Propyl Ether
471-34-1	Calcium Carbonate
5468-75-7	C.I. Pigment Yellow 14
5567-15-7	C.I. Pigment Yellow 83
56-81-5	Glycerin
574-93-6	29H, 31H – Phthal
57-55-6	Propylene Glycol
6041-94-7	C.I. Pigment Red 2
6358-30-1	C.I. Pigment Violet 23
64-02-8	Tetrasodium EDTA
6448-95-9	C.I. Pigment Red 22
64742-49-0	Heptane Isomers
64742-52-5	Petroleum Oil
64743-05-1	Purified Carbon
6505-28-8	C.I. Pigment Orange 16
6655-48-1	C.I. Pigment Red 17
67-64-1	Acetone
7320-34-5	Tetrapotassium Pyrophosphate
74-98-6	Propane
75-28-5	Isobutane
9016-45-9	Nonylphenoxypolyethoxyethanol
9016-87-9	Polymeric Diphenylmethane Diisocyanate
68476-86-8	Liquefied Petroleum Gas
64742-89-8	Aliphatic Hydrocarbon
108-88-3	Toluene
9032-32-4	Naphtha

Table 1
Chemicals Present Near Sampling Points

CAS Registration Number	Chemical Name
8052-41-3	Stoddard Solvents
1330-20-7	Pigment Black 7
64742-95-6	Aromatic Hydrocarbon
1332-58-7	Calcined Aluminum Silicate
95-63-6	1,2,4-Trimethylbenzene
100-41-4	Ethylbenzene
14808-60-7	Microcrystalline Silica
122-39-4	Diphenylamine
68649-42-3	Phosphorodithioic Acid
64-17-5	Ethyl Alcohol
67-56-1	Methanol
108-10-1	Methyl isobutyl ketone
5989-27-5	Limonene
64742-47-8	Synthetic Isoparaffinic Hydrocarbon
124-38-9	Carbon Dioxide
67-63-0	Isopropyl Alcohol
79-01-6	Trichloroethylene
141-78-6	ethyl acetate
14807-96-6	Talc
1314-13-2	Zinc oxide
1317-33-5	Molybdenum disulphide
75-37-6	1,1-Difluoroethane
540-84-1	2,2,4-Trimethylpentane
75-83-2	2,2-Dimethylbutane
107-83-5	2-Methylpentane
111-46-6	diethylene glycol
25322-68-3	polyethylene glycol
112-80-1	Aliphatic organic acid
112-62-9	Aliphatic organic ester

Table 2
Vapor Intrusion Sampling Results
January 21, 2015
Macbeth - Kollmorgen Corporate Site
New Windsor, New York

Sample ID: Location: Date: Lab Sample ID:	Table 3.1 NYSDOH Air Guideline Values (AGV)	29 CFR 1910.1000 Table Z-1 & Z-2 OSHA 8-hour TWAs	Table C.2 EPA 2001 Building Assessment and Survey Evaluation (BASE) Background Level Ranges (Indoor Air)	Table C.1 NYSDOH 2003 Study of Volatiles in Air of Fuel Oil Heated Homes (90th Percentile Indoor Air Values)	Indoor Air Samples			Sub-Slab Soil Vapor Samples			QA/QC						
					IA-2 Building 1 1/21/2015 MC27979-2	IA-3 Building 1 1/21/2015 MC27979-4	SG-2 Building 1 1/21/2015 MC27979-1	SG-3 Building 1 1/21/2015 MC27979-3	TRIP BLANK - 1/21/2015 MC27979-5								
					Units:	µg/m ³	µg/m ³	µg/m ³	µg/m ³	µg/m ³	µg/m ³	µg/m ³	µg/m ³				
Volatile Organic Compounds in Air (USEPA TO-15)					Conc	Q	MDL	Conc	Q	MDL	Conc	Q	MDL	Conc	Q	MDL	
1,1,1-Trichloroethane (1,1,1-TCA)	30*	1.90E+06	<0.5 - 833.2	3.1	ND	0.11	ND	0.11	242	0.11	115	0.01	ND	0.01			
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	-	7.60E+06	-	-	ND	1.00	ND	1.00	753	10.00	170	0.70	ND	1.00			
1,2,4-Trichlorobenzene	-	-	<0.8 - 8.2	3.4	ND	2.20	ND	2.20	ND	2.20	ND	2.20	ND	2.20			
1,2,4-Trimethylbenzene	-	-	<0.4 - 91.0	9.5	ND	1.10	ND	1.10	ND	1.10	ND	1.10	ND	1.10			
1,3-Hexachlorobutadiene	-	-	-	4.6	ND	5.20	ND	5.20	ND	5.20	ND	5.20	ND	5.20			
Acetone	-	2.40E+06	11.6 - 243.7	110	48	0.52	26.4	0.40	67.7	0.40	24	0.40	ND	0.40			
Benzene	-	3.19E+03	<0.8 - 63.0	15	2.4	0.42	2.3	0.42	0.99	J	0.42	ND	0.42	ND	0.42		
Carbon Disulfide	-	6.23E+04	<0.5 - 24.5	-	ND	0.44	ND	0.44	ND	0.44	ND	0.44	ND	0.44			
Carbon Tetrachloride	-	6.29E+04	<0.5 - 2.1	0.8	ND	0.82	ND	0.82	2.8	0.82	ND	0.82	ND	0.82			
Cyclohexane	-	1.05E+06	-	8.1	ND	0.48	ND	0.48	ND	0.48	ND	0.48	ND	0.48			
Chlorobenzene	-	3.50E+05	<0.4 - 1.2	<0.25	ND	0.92	ND	0.92	ND	0.92	ND	0.92	ND	0.92			
Chloroform	-	240,000 ^c	<0.3 - 12.1	1.4	ND	0.45	ND	0.45	ND	0.45	ND	0.45	ND	0.45			
Chloromethane (Methyl chloride)	-	2.07E+05	<0.7 - 21.8	3.3	ND	0.29	ND	0.29	0.5	0.29	ND	0.29	ND	0.29			
Dichlorodifluoromethane	-	4.95E+06	<4.8 - 942.3	15	ND	0.54	3.1	0.54	13	0.54	152.0	0.54	ND	0.54			
trans-1,2-Dichloroethylene	-	-	-	-	ND	0.52	ND	0.52	ND	0.52	ND	0.52	ND	0.52			
Total-1,2-Dichloroethylene	-	7.90E+05	-	-	ND	0.89	ND	0.89	ND	0.89	ND	0.89	ND	0.89			
Ethanol	-	1.90E+06	<1.2 - 110	-	31.4	0.38	ND	0.38	ND	0.38	ND	0.38	ND	0.38			
Ethylbenzene	-	4.35E+05	<0.9 - 73.6	7.3	ND	0.87	ND	0.87	ND	0.87	ND	0.87	ND	0.87			
Ethyl Acetate	-	1.40E+06	<0.6 - 64.2	-	ND	0.54	ND	0.54	ND	0.54	ND	0.54	ND	0.54			
Heptane	-	2.00E+06	-	90	ND	0.70	ND	0.70	ND	0.70	ND	0.70	ND	0.70			
Hexane	-	1.80E+06	<0.9 - 130	18	ND	0.46	ND	0.46	ND	0.46	ND	0.46	ND	0.46			
Isopropyl Alcohol	-	9.80E+05	-	-	5.9	0.39	ND	0.39	ND	0.39	ND	0.39	ND	0.39			
Methyl butyl ketone (2-Hexanone)	-	4.10E+05	-	-	ND	0.53	ND	0.53	1.3	J	0.53	ND	0.53	ND	0.53		
Methyl ethyl ketone (MEK; 2-Butanone)	-	5.90E+05	<1.4 - 55.4	16	5.0	0.50	ND	0.50	9.4	0.50	7.1	0.50	ND	0.50			
Methyl isobutyl ketone (Hexone)	-	4.10E+05	<0.7 - 72.5	2.2	1.5	J	0.82	ND	0.82	ND	J	0.82	ND	0.82			
Methylene chloride	60	4.34E+04	<1.1 - 1,496.9	22	ND	0.42	ND	0.42	ND	0.42	ND	0.42	ND	0.42			
Propylene	-	-	-	-	ND	0.19	ND	0.19	ND	0.19	8.4	0.19	ND	0.19			
Styrene	-	4.26E+05	<0.6 - 40.0	1.3	ND	0.72	ND	0.72	ND	0.72	ND	0.72	ND	0.72			
Tetrachloroethene (PCE)	30	6.78E+05	<0.9 - 65.7	2.9	0.2	0.028	0.16	0.028	0.34	0.66	1,010	0.028	ND	0.028			
Tetrahydrofuran	-	5.90E+05	-	3.3	ND	0.62	ND	0.62	ND	0.62	ND	0.62	ND	0.62			
Toluene	-	7.54E+05	3.5 - 390.3	58	9.0	0.68	3.6	0.68	4.9	0.68	ND	0.68	ND	0.68			
Trichloroethene (TCE)	5	5.37E+05	<0.6 - 88.5	0.5	0.11	0.012	0.047	J	0.012	6.4	0.012	0.86	0.012	ND	0.012		
Trichlorofluoromethane (TCFM)	-	5.60E+06	<1.7 - 1,015.3	17	8.4	0.79	4.6	0.79	57.9	0.79	71.9	0.79	ND	0.79			
Vinyl acetate	-	3.00E+04	-	-	ND	0.81	ND	0.81	ND	0.81	4.9	0.81	ND	0.81			
meta- and para-Xylenes	-	-	<1.5 - 260.8	12	ND	J	1.80	ND	1.80	ND	1.80	ND	1.80	ND	1.80		
ortho-Xylene	-	-	<0.7 - 90.5	7.6	ND	0.91	ND	0.91	ND	0.91	ND	0.91	ND	0.91			
Total Xylenes	-	4.35E+05	-	-	1.5	J	0.91	ND	0.91	ND	0.91	ND	0.91	ND	0.91		

Notes:

- 1) Table 3.1 - NYSDOH Air Guideline Values only apply to concentrations of volatile chemicals in indoor and outdoor air. Final NYSDOH CEH BEEI Soil Vapor Intrusion Guidance, October 2006
- 2) Table C.2 US EPA 2001 Building Assessment and Survey Evaluation (BASE) Background Level Ranges. Final NYSDOH CEH BEEI Soil Vapor Intrusion Guidance, October 2006
- 3) Table C.1 NYSDOH 2003: Study of volatile organic chemicals in air of fuel oil heated homes. Final NYSDOH CEH BEEI Soil Vapor Intrusion Guidance, October 2006
- 4) OSHA Permissible Exposure Limit (PEL) 29 CFR 1910.1000 Table Z-1 & Z-2 OSHA 8-hour Time-Weighted Averages (TWAs)
- 5) New York State does not have any standards, criteria or guidance values for concentrations of volatile chemicals in subsurface vapors.

- No value(s) published

Bold - Exceeds the NYSDOH Air Guideline Values

Underline - Above the C-1 90th percentile indoor air values given in NYSDOH 2003 Study of Volatile Organic Chemicals in Air of Fuel Oil Heated Homes (Indoor Air)

Italics - Above the C.2 EPA 2001 Building Assessment and Survey Evaluation (BASE) Background Levels (Indoor Air)

MDL - Method detection limit

ND - compound not detected above MDL

µg/m³ - micrograms per cubic meter

^c - Ceiling limit

* New York State does not have an AGV for 1,1,1-TCA but it is evaluated through the same decision matrix as PCE.

D - Results for dilution

c - Calibration acceptability criteria exceeded for this analyte

s - Recovery exceeded control limits for this analyte

J - Estimated value

a - Result is from run# 2

Table 3
Comparison of TCE Results to Soil Vapor/Indoor Air Matrix 1
January 21, 2015 Vapor Intrusion Sampling Results
Former Macbeth – Kollmorgen Corporate Site
New Windsor, New York

Matrix 1 (TCE)		Indoor Air Concentration Matrix ($\mu\text{g}/\text{m}^3$)			
Sub-Slab Vapor and Indoor Air Concentrations ($\mu\text{g}/\text{m}^3$)	Sub-Slab Vapor Concentration Matrix ($\mu\text{g}/\text{m}^3$)	<0.25	0.25 to < 1	1 to <5.0	5.0 and above
TCE: SG-3 = 0.86 IA-3 = 0.047 J	<5	No Further Action X	Take reasonable actions to identify source and exposures —	Take reasonable actions to identify source and exposures —	Take reasonable actions to identify source and exposures —
TCE: SG-2 = 6.4 IA-2 = 0.11	5 to <50	No Further Action X	Monitor —	Monitor —	Mitigate —

Notes:

ND – Not detected above MDL

Bold indicates recommended action

D – Results for dilution

U – Below Method Detection Limit

SG – Sub-slab vapor sample

AA – Indoor Air Sample

$\mu\text{g}/\text{m}^3$ – micrograms per cubic meter

No Further Action – Given that the compound was not detected in the indoor air sample and that the concentration in the sub-slab vapor sample is not expected to significantly affect indoor air quality, no additional actions are needed to address human exposures (Soil Vapor/Indoor Air Matrix 1, NYSDOH, October, 2006).

Source: NYSDOH Guidance for Evaluating Soil Vapor Intrusion in the State of New York, Soil Vapor/Indoor Air Matrix 1, October, 2006

Table 4
Comparison of PCE and 1,1,1-TCA Results to Soil Vapor/Indoor Air Matrix 2
January 21, 2015 Vapor Intrusion Sampling Results
Former Macbeth – Kollmorgen Corporate Site
New Windsor, New York

Matrix 2 (PCE and 1,1,1-TCA)		Indoor Air Concentration Matrix (µg/m ³)			
Sub-Slab Vapor and Indoor Air Concentrations (µg/m ³)	Sub-Slab Vapor Concentration Matrix (µg/m ³)	<3	3 to <30	30 to <100	100 and above
PCE: SG-2 = 0.34 IA-2 = 0.2	<100	No further action X	Take reasonable actions to identify source and exposures —	Take reasonable actions to identify source and exposures —	Take reasonable actions to identify source and exposures —
PCE: SG-3 = 1,010 IA-3 = 0.16	>1,000	Monitor X	Monitor/Mitigate —	Mitigate —	Mitigate —
1,1,1-TCA: SG-2 = 242 IA-2 = ND	100 to <1,000	Monitor X	Monitor/Mitigate —	Mitigate —	Mitigate —
1,1,1-TCA: SG-3 = 115 IA-3 = ND	100 to <1,000	Monitor X	Monitor/Mitigate —	Mitigate —	Mitigate —

Notes: SG = Sub-slab vapor sample µg/m³ = micrograms per cubic meter **Bold** = recommended action
AA = Indoor Air Sample U = Below Method Detection Limit D = Results for dilution

No Further Action – Given that the compound was not detected in the indoor air sample and that the concentration in the sub-slab vapor sample is not expected to significantly affect indoor air quality, no additional actions are needed to address human exposures.

Monitor - Monitoring, including sub-slab vapor, basement air, lowest occupied living space, and outdoor air sampling, is needed to determine whether concentrations in indoor air or sub-slab vapor have changed. Monitoring may also be needed to determine whether existing building conditions (e.g., positive pressure heating, ventilation and air-conditioning systems) are maintaining the desired mitigation endpoint and to determine whether changes are needed. The type & frequency of monitoring is determined on a site-specific and building-specific basis, taking into account applicable environmental data and building operating conditions. Monitoring is an interim measure required to evaluate exposures related to soil vapor intrusion until contaminated environmental media are remediated.

Monitor / Mitigate: Monitoring or mitigation may be recommended after considering the magnitude of sub-slab vapor and indoor air concentrations along with building- and site-specific conditions.

Take reasonable and practical actions to identify source(s) and reduce exposures - The concentration detected in the indoor air sample is likely due to indoor and/or outdoor sources rather than soil vapor intrusion given the concentration in the sub-slab vapor sample. Therefore, steps should be taken to identify potential source(s) and reduce exposures accordingly (e.g., capping containers tightly or by storing volatile organic compound-containing products in places where people do not spend much time, e.g., garage or outdoor shed). Resampling may be recommended to demonstrate the effectiveness of actions taken to reduce exposures.

Source: NYSDOH Guidance for Evaluating Soil Vapor Intrusion in the State of New York, Soil Vapor/Indoor Air Matrix 2, October 2006.

Table 5
Summary of CVOC Concentrations in Sub-Slab Vapor
2006 to 2015
Macbeth - Kollmorgen Corporate Site
New Windsor, New York



Sample ID	Compound	Table 3.1 NYSDOH Air Guideline Value	CVOC Concentration (December 2006)	CVOC Concentration (February 2008)	CVOC Concentration (February 2009)	CVOC Concentration (January 2010)	CVOC Concentration (January 2011)	CVOC Concentration (January 2012)
		µg/m ³	µg/m ³	µg/m ³	µg/m ³	µg/m ³	µg/m ³	µg/m ³
SG-2	TCE	5	860	8.17	5.27	2.74	8.6	6.45
	PCE	30	8.1	24.3	4.61	3.39	0.814	0.543
	1,1,1-TCA	30 *	93	29.2	175	131	309	309
	<i>Total Targeted CVOCs</i>	-	961.1	61.67	184.88	137.13	318.41	315.99
SG-3	TCE	5	5.4	< 2.69	3.01	<5.37	1.45	1.13
	PCE	30	6,000	501	448	454	830	558
	1,1,1-TCA	30 *	480	161	222	167	249	116
	<i>Total Targeted CVOCs</i>	-	6,485	662	673.01	621	1,080.45	675.13

Sample ID	Compound	Table 3.1 NYSDOH Air Guideline Value (AGV)	CVOC Concentration (January 2013)	CVOC Concentration (January 2014)	CVOC Concentration (January 2015)	Final Concentration / Initial Concentration	Percent (%) Reduction
		µg/m ³	µg/m ³	µg/m ³	µg/m ³		
SG-2	TCE	5	8.01	4.6	6.4	0.0074	99
	PCE	30	17.9	3.3	0.34	0.0420	96
	1,1,1-TCA	30 *	222	228	242	2.6022	-160
	<i>Total Targeted CVOCs</i>	-	247.91	235.90	248.74	0.2588	74
SG-3	TCE	5	1.02	0.59	0.86	0.1593	84
	PCE	30	525	540	1,010	0.1683	83
	1,1,1-TCA	30 *	140	190	115	0.2396	76
	<i>Total Targeted CVOCs</i>	-	666.02	730.59	1125.86	0.1736	83

Notes:

CVOC = Chlorinated volatile organic compounds

TCE = Trichloroethene

PCE = Tetrachloroethene

1,1,1-TCA = 1,1,1-Trichloroethane

µg/m³ - micrograms per cubic meter

Table 3.1 - NYSDOH Air Guideline Values only apply to concentrations of volatile chemicals in indoor and outdoor air. Final NYSDOH CEH BEEI Soil Vapor Intrusion

* New York State does not have an AGV for 1,1,1-TCA but it is evaluated through the same decision matrix as PCE.

APPENDIX A
Indoor Air Quality and Product Inventory Form & MSDS

NEW YORK STATE DEPARTMENT OF HEALTH
INDOOR AIR QUALITY QUESTIONNAIRE AND BUILDING INVENTORY
CENTER FOR ENVIRONMENTAL HEALTH

This form must be completed for each residence involved in indoor air testing.

Preparer's Name Joseph McNanna Date/Time Prepared 1/20/15 1400
Preparer's Affiliation H2M Phone No. 862-207-5900 x2243
Purpose of Investigation Annual VI & IA Sampling Event

1. OCCUPANT:

Interviewed: ☒ Y / ☐ N Pratt Quality Carton LLC

Last Name: McNamee First Name: Christopher
Address: 617 Little Britain Road - New Windsor
County: Orange
Home Phone: N/A Office Phone: 845-565-9300

Number of Occupants/persons at this location 45 Age of Occupants 18 and older
APPROXIMATE

2. OWNER OR LANDLORD: (Check if same as occupant ☐)

Interviewed: ☐ Y / ☒ N

Last Name: Baratte First Name: Jack
Address: 617 Little Britain Road New Windsor
County: Orange
Home Phone: N/A Office Phone: 845 565-9300

3. BUILDING CHARACTERISTICS

Type of Building: (Circle appropriate response)

Residential
Industrial

School
Church

Commercial/Multi-use
Other: _____

If the property is residential, type? (Circle appropriate response)

Ranch	2-Family	3-Family
Raised Ranch	Split Level	Colonial
Cape Cod	Contemporary	Mobile Home
Duplex	Apartment House	Townhouses/Condos
Modular	Log Home	Other: _____

NA

If multiple units, how many? *NA*

If the property is commercial, type?

Business Type(s) *Corrugated Manufacturing*

Does it include residences (i.e., multi-use)? Y ☒ N If yes, how many? _____

Other characteristics:

Number of floors *1*

Building age *80*

Is the building insulated? ☒ Y / N

How air tight? Tight / ☒ Average / Not Tight

4. AIRFLOW

Use air current tubes or tracer smoke to evaluate airflow patterns and qualitatively describe:

Airflow between floors

NA

Airflow near source

*Vacuum blowers on equipment in manufacturing Area
Create negative pressure / Constant air exchange
(Cyclone Blower on roof.)*

Outdoor air infiltration

negative Air Pressure

Infiltration into air ducts

NA

5. BASEMENT AND CONSTRUCTION CHARACTERISTICS (Circle all that apply)

- a. Above grade construction: wood frame concrete stone brick
- b. Basement type: full crawlspace slab other N/A
- c. Basement floor: concrete dirt stone other N/A
- d. Basement floor: uncovered covered covered with N/A
- e. Concrete floor: unsealed sealed sealed with urethane
- f. Foundation walls: poured block stone other _____
- g. Foundation walls: unsealed sealed sealed with Paint
- h. The basement is: wet damp dry moldy N/A
- i. The basement is: finished unfinished partially finished N/A
- j. Sump present? (Y)/N Pits are located next to machines
For cleaning equipment/machinery that PUMPS
To The sewer.
- k. Water in sump? Y/N/not applicable

Basement/Lowest level depth below grade: 0 (feet) Building on slab on grade

Identify potential soil vapor entry points and approximate size (e.g., cracks, utility ports, drains)

Some small cracks in concrete floor
Masons are scheduled later this week to fix holes-cracks and uneven locations

6. HEATING, VENTING and AIR CONDITIONING (Circle all that apply)

Type of heating system(s) used in this building: (circle all that apply – note primary)

Hot air circulation
Space Heaters
Electric baseboard

Heat pump
Stream radiation
Wood stove

Hot water baseboard
Radiant floor
Outdoor wood boiler

(In offices)
Other Gas Roof Units
For factory

The primary type of fuel used is:

Natural Gas
Electric
Wood

Fuel Oil
Propane
Coal

Kerosene
Solar

Domestic hot water tank fueled by: GAS

Boiler/furnace located in: Basement Outdoors Main Floor Other _____

Air conditioning: Central Air Window units Open Windows None

NO Air Conditioning in Factory

Are there air distribution ducts present?

☒ Y ☐ N

Describe the supply and cold air return ductwork, and its condition where visible, including whether there is a cold air return and the tightness of duct joints. Indicate the locations on the floor plan diagram.

Air distribution for MAKEUP Air on factory Floor
There is no A/C in Factory

7. OCCUPANCY

Is basement/lowest level occupied?

Full-time

Occasionally

Seldom

Almost Never

n/a

Level

General Use of Each Floor (e.g., familyroom, bedroom, laundry, workshop, storage)

Basement

n/a

1st Floor

Corrugated Manufacturing facility / office space

2nd Floor

n/a

3rd Floor

n/a

4th Floor

n/a

8. FACTORS THAT MAY INFLUENCE INDOOR AIR QUALITY

a. Is there an attached garage?

Y ☒ N

Trucks back up to loading docks

b. Does the garage have a separate heating unit?

Y / N ☒ NA

c. Are petroleum-powered machines or vehicles stored in the garage (e.g., lawnmower, atv, car)

Y / N / NA

Propane Powered forklift

Please specify _____

d. Has the building ever had a fire?

Y ☒ N

When? _____

e. Is a kerosene or unvented gas space heater present?

Y ☒ N

Where? _____

f. Is there a workshop or hobby/craft area?

☒ Y / N

Where & Type? *Work shop / Maintenance / Manufacturing*

g. Is there smoking in the building?

Y ☒ N

How frequently? _____

h. Have cleaning products been used recently?

☒ Y / N

When & Type? *Janitorial Cleaning Products*

i. Have cosmetic products been used recently?

Y ☒ N

When & Type? _____

j. Has painting/staining been done in the last 6 months? ☒ Y / ☐ N Where & When? Lives on Floor (varnish)

k. Is there new carpet, drapes or other textiles? ☒ Y / ☐ N Where & When? _____

l. Have air fresheners been used recently? ☒ Y / ☐ N When & Type? _____

m. Is there a kitchen exhaust fan? ☒ Y / ☐ N If yes, where vented? Kitchen

n. Is there a bathroom exhaust fan? ☒ Y / ☐ N If yes, where vented? _____

o. Is there a clothes dryer? ☒ Y / ☐ N If yes, is it vented outside? Y / N

p. Has there been a pesticide application? ☒ Y / ☐ N When & Type? Service for mice
Rodent traps

Are there odors in the building?

If yes, please describe: Hot glue melter (no noticeable odor)
Were able to smell the propane forklifts or trucks backed into docks.

Do any of the building occupants use solvents at work? ☒ Y / ☐ N

(e.g., chemical manufacturing or laboratory, auto mechanic or auto body shop, painting, fuel oil delivery, boiler mechanic, pesticide application, cosmetologist)

If yes, what types of solvents are used? water based inks used on cartons
Degreasers & grease in maintenance - Hot melt glue - soap to clean print plates

If yes, are their clothes washed at work?

☒ Y / ☐ N

Do any of the building occupants regularly use or work at a dry-cleaning service? (Circle appropriate response)

Yes, use dry-cleaning regularly (weekly)

Yes, use dry-cleaning infrequently (monthly or less)

Yes, work at a dry-cleaning service

No

Unknown

NA

Is there a radon mitigation system for the building/structure? ☒ Y / ☐ N Date of Installation: _____

Is the system active or passive? Active/Passive

9. WATER AND SEWAGE

Water Supply: ☒ Public Water Drilled Well Driven Well Dug Well Other: _____

Sewage Disposal: ☒ Public Sewer Septic Tank Leach Field Dry Well Other: _____

10. RELOCATION INFORMATION (for oil spill residential emergency) NA

a. Provide reasons why relocation is recommended: _____

b. Residents choose to: remain in home relocate to friends/family relocate to hotel/motel

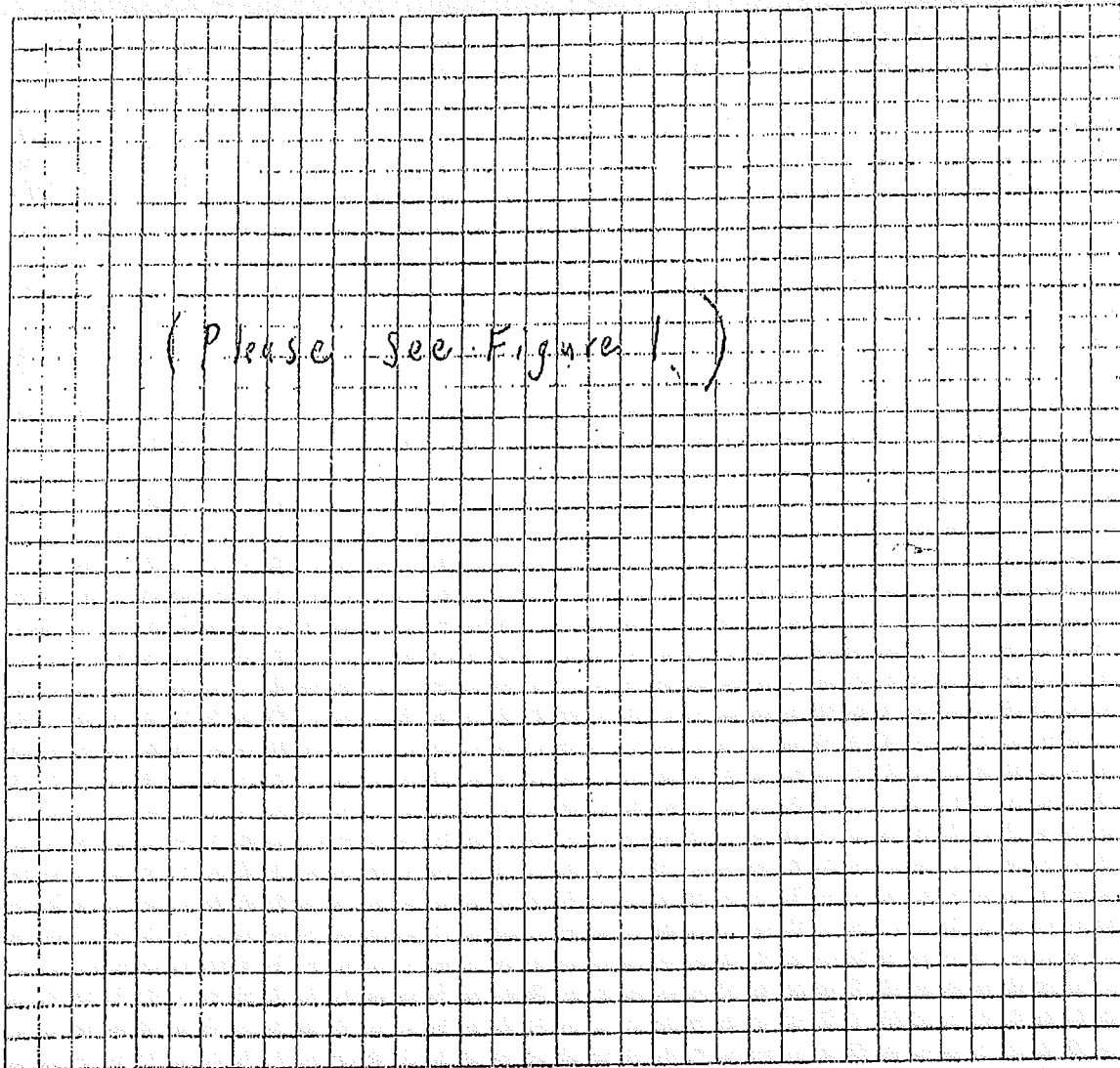
c. Responsibility for costs associated with reimbursement explained? Y / N

d. Relocation package provided and explained to residents? Y / N

12. OUTDOOR PLOT

Draw a sketch of the area surrounding the building being sampled. If applicable, provide information on spill locations, potential air contamination sources (industries, gas stations, repair shops, landfills, etc.), outdoor air sampling location(s) and PID meter readings.

Also indicate compass direction, wind direction and speed during sampling, the locations of the well and septic system, if applicable, and a qualifying statement to help locate the site on a topographic map.



13. PRODUCT INVENTORY FORM

Make & Model of field instrument used: Min Rae 3000

List specific products found in the residence that have the potential to affect indoor air quality.

Location	Product Description	Size (units)	Condition *	Chemical Ingredients	Field Instrument Reading (units)	Photo ** Y/N
Safety Cabinet	Rustoleum Stripping Paint	Spray Can	on shelf	See MSDS	0	Y
35' from SG-2	Hot Melt Glue 926-37801	Boxes	Pillows	↓	0	X
	CRC DRY MOY LUBE	SPRAY	on shelf		0	Y
Safety Cabinet	CRC QB Contact Cleaner	SPRAY	on shelf		0	Y
SG-2	Mineral Spirits / Paint Thinner	1 gal Cans	on shelf		0	Y
SG-2	LYSOL Bleach Spray	SPRAY	on shelf		0	Y
40' from SG-2	Insta PAR A AND B	Plastic Pail	In use		0	Y
	BARGE All Purpose CEMENT	Can	on shelf		0	Y
	WD-40	SPRAY	Several locations		0	Y
	Kleen Strip Denatured Alcohol	1 gal Can	on shelf		0	Y
SG-2	TAP MAGIC PRO	SPRAY	on shelf		0	Y
	GREEN STAMP INK	Roller PAD	on shelf	↓	0	Y
	CRC Anti Seize	Bottle	on shelf		0	Y
	ADVANCE Auto CARB Cleaner	SPRAY	on shelf		0	Y
	Assorted Colors GCM1103 Fry Flex	5 gal Can	on shelf In use			#
	GOJO hand Cleaner	Dispenser	In use			
	GMI 90 Black JM Fry	5 gal Can	In use			
SG-2 SG-3	Solar Flex PH Adjuster	5 GAL Can	sealed			

* Describe the condition of the product containers as **Unopened (UO)**, **Used (U)**, or **Deteriorated (D)**** Photographs of the **front and back** of product containers can replace the handwritten list of chemical ingredients. However, the photographs must be of good quality and ingredient labels must be legible.

FLUIDSTap Magic
Xtra-
Foamy Tap Magic
Xtra-Thick Tap Magic
with
EP-Xtra Tap Magic
Aluminum Tap Magic
ProTap Tap Magic
Formula 1
Aqueous Tap Magic
Formula 2
Eco-Oil **INFO**Where
To Buy Sizing
Chart 

This MSDS covers part numbers 30004P, 30016P, 30128P, 30640P, 33840P and 37040P for

Tap Magic ProTap Cutting Fluid. [Click for a printable PDF.](#)

MATERIAL SAFETY DATA SHEET

U.S. DEPARTMENT OF LABOR, OCCUPATIONAL SAFETY AND HEALTH
ADMINISTRATION, HAZARD COMMUNICATION STANDARD, 29 CFR 1910.1200

The Steco Corporation
2330 Cantrell Road
P.O. Box 2238
Little Rock, AR 72203

Emergency Response: (800) 255-3924
Information: (800) 643-8026
Fax #: (501) 374-4278
Date Reviewed: August 15, 2011

TRADE NAME: TAP MAGIC PROTAP Cutting Fluid
CHEMICAL NAME & SYNONYMS: Hydrocarbon Mixture
DOT SHIPPING NAME: Not a regulated material
IATA SHIPPING NAME: No hazard label required. No limit on quantity.
HMIS/NFPA CODE: Health 0; Fire 1; Reactivity 0.
MANUFACTURING CODE NO.: 8358
COMMODITY CODE NO.: 332-9150

I. HAZARDOUS INGREDIENTS

This product contains no toxic or hazardous ingredients by OSHA criteria; however, as with any chemical product, exposure to liquids, vapors, mists and fumes should be minimized.

II. INGREDIENTS

Aliphatic Organic Acid: CAS# 112-80-1 >75% mixture
Aliphatic Organic Ester: CAS# 112-62-9 <15% mixture
Organic Polyol: CAS# None Assigned <10% mixture

III. PHYSICAL DATA

BOILING RANGE, (760 mm Mercury): 680 to 1000° F
SPECIFIC GRAVITY (Water = 1) (lbs/gal): (0.894) 7.46 lbs/gal
VAPOR PRESSURE (mm of Mercury) @ 75° F: Less Than 1
VAPOR DENSITY (Air = 1): Greater Than 5
SOLUBILITY IN WATER, % by weight: Less Than 1 (Insoluble)
EVAPORATION RATE (Butyl Acetate = 1): Less Than 0.01
% VOLATILE BY VOLUME @ 75° F: Less Than 1
APPEARANCE: Yellow Liquid
ODOR: Pleasant
pH: Nonaqueous

IV. FIRE & EXPLOSION DATA

LOWER FLAMMABLE LIMIT IN AIR (% by Volume): 1.0
UPPER FLAMMABLE LIMIT IN AIR (% by Volume): 15
FLASH POINT, PMCC: 370° F
AUTOIGNITION TEMPERATURE: 685° F
EXTINGUISHING MEDIA: Foam, Carbon Dioxide, Dry Chemical

V. HEALTH HAZARD INFORMATION

ROUTES OF ENTRY: Ingestion is the primary method of possible entry.

EFFECTS OF ACUTE OVEREXPOSURE:

INHALATION – (Unlikely due to low vapor pressure). Mist may cause headache, nasal, respiratory and eye irritation.

INGESTION – Headache, drowsiness, nausea, fatigue.

EYE – May cause pain and irritation.

EFFECTS OF CHRONIC OVEREXPOSURE:

SKIN CONTACT – Prolonged or repeated exposure may cause irritation.

CARCINOGENICITY: Not a carcinogen or suspect carcinogen.

EMERGENCY AND FIRST AID PROCEDURES:

EYE – Flush eyes gently with water for at least 15 minutes. Supportive treatment is recommended.

SKIN – Wash with mild soap and water. Remove wetted clothing until dry.

INHALATION – Remove to fresh air.

INGESTION – Do not induce vomiting. Call a physician and/or transport to emergency medical facility.

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VI. REACTIVITY DATA

Materials such as sawdust or cloth rags which have been wetted with lubricant may be subject to spontaneous combustion during storage.

VII. DISPOSAL, SPILL OR LEAK PROCEDURES

AQUATIC TOXICITY – Aquatic toxicity is low: Product is not soluble in water. Biodegradable.

SPILL OR LEAK PROCEDURES – Absorb with inert materials. Remove to out of doors and incinerate.

WASTE DISPOSAL METHOD – Tap Magic ProTap contains no environmentally hazardous substances. Small amounts may be incinerated in compliance with local, state and federal regulations. The recommended method of disposal for large quantities is recycling by a reclaimer or incineration. "If inert absorbents are employed in spill containment or cleanup, these absorbents must be non-biodegradable materials if destined for landfill disposal. Suitable absorbents include natural minerals (clay), activated charcoal, man-made polymers (HD polyethylene)."

VIII. SPECIAL PROTECTION INFORMATION

EYE PROTECTION – Standard eye protection should be worn when using this product.

SKIN PROTECTION – No special protection is needed. However, good personal hygiene practices should be followed.

RESPIRATORY – If application to which this product is being applied generates excessive mist or fumes, then appropriate respiratory protective equipment should be used. No special requirements under ordinary condition and use and proper ventilation of work area.

VENTILATION – No special requirements under ordinary conditions of use and with adequate ventilation.

IX. SPECIAL PRECAUTIONS

Product is ignitable, keep away from open flames. Do not expose to ignition sources. Do not store with strong oxidizers such as nitrates or perchlorates or oxygen under pressure. May cause swelling of some plastics and synthetic rubbers.

X. ADDITIONAL INFORMATION

Tap Magic ProTap DOES NOT CONTAIN 1,1,1-trichloroethane or any ozone depleting substances. PROTAP does not contain chlorine, phosphorous, active sulfur, nitrates, nitrite derivatives, amines, polynuclear aromatic compounds either as ingredients or trace contaminants. Shelf life is indefinite at ambient temperatures and left in original containers. Tap Magic ProTap does not contain any chemical compound listed on the SARA list of 'Extremely Hazardous Chemicals', and is in compliance with all of the requirements of the TSCA at the time of shipment. Caution: Any cutting fluid can be "overworked" or "overheated", causing it to break down. This overuse is identified by the sight of or strong odor of vapors or fumes not normally present. The effects of these vapors or fumes on human health have not been fully determined. After use of this product, clean and lubricate metal surfaces to avoid staining and/or corrosion.

By : Asa L. Morton, Chief Chemist, American Interplex Corporation, Little Rock, AR 72204, (501) 224-5060

Tap Magic is a division of The Steco Corporation
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1-800-643-8026 • Fax 501-374-4278
[Contact](#) • [MSDSs](#) • [Part Numbers](#) • [Full Catalog](#)

Sanford Corporation
2740 Washington Blvd.
Bellwood, IL 60104

Telephone No: 1-800-323-0749
Initiated By: Jamie Paulin
Date of Last Revision: 2/26/96
Medical Emergency No: 1-800-228-5635

0330 A

Section 1 - Product Identification

Product Name: Roll-On Stamp Pad Ink
Colors: Black, Red, Green, Brown

Section 2 - Composition

Dye, water, glycerine (56-81-5), diethylene glycol (111-46-6), polyethylene glycol (25322-68-3)

Section 3 - Physical / Chemical Characteristics

For glycerine:
Boiling Point: Greater than 550 F at 760 mm Hg
Vapor Pressure (mm Hg): Less than 0.1 mm Hg at 72 F
Specific Gravity: 1.2 - 1.3 at 22 C
Solubility in Water: Complete
Appearance / Odor: Water white, clear liquid, bland odor
Evaporation Rate: Not available

Section 4 - Fire and Explosion Hazard Data

Flash Point (Method Used): Greater than 390 F (PMCC)
Flammability Limits (% by volume): Lower: Not available Upper: Not available
Extinguishing Medium: N/A
Special Fire Fighting Procedures: N/A
Unusual Fire and Explosion Hazards: N/A

Section 5 - Reactivity Data

Stability:	Stable
Conditions to Avoid:	Not available
Chemical Incompatibility:	Not available
Hazardous Decomposition:	Not available
Hazardous Polymerization:	Will not occur

Section 6 - Health Hazard Data

Chemical Listed as Carcinogen or Potential Carcinogen:

IARC Monographs:	No
National Toxicology Program:	No
OSHA Regulated:	No

This product is not considered toxic under Federal Hazardous Substances Act regulations, Title 16, Part 1500. The product is considered safe when used under normal use conditions.

Section 7 - Precautions for Safe Handling and Use

Steps to be Taken in Case Material is Released or Spilled:	Wipe up with absorbent material and discard in accordance with Federal, State, and Local Regulations.
Waste Disposal Method:	In accordance with Federal, State, and Local Regulations.
Precautions to be Taken in Handling and Storing:	Do not squeeze bottle. Keep cap on bottle when not in use.
Other Precautions:	None

Section 8 - Personal Protection and Exposure Control Measures

Eye Protection:	None under normal use conditions.
Skin Protection:	None under normal use conditions.
Respiratory Protection:	None under normal use conditions.
Ventilation:	None under normal use conditions.
Protective Clothing:	None under normal use conditions.

HMIS Code	
Health	1
Flammability	0
Reactivity	0
Personal Protection	B

0 = Minimal / 4 = Severe Hazard

Sanford Corporation has been advised by council that the OSHA Hazard Communication Standard does not apply to the Sanford Product described in this MSDS. The reason for the exemption is contained in 29 CFR, Part 1910.1200, (b) (6) (ix), as amended July 1, 1994 per Federal Registrar. The information contained in this MSDS is forwarded to you for your information but is not meant to imply that the product is covered by the Hazard Communication Standard nor is the MSDS meant to comply with all requirements of the Hazard Communication Standard.



SAFETY DATA SHEET

1. Identification

Product identifier	QD® Contact Cleaner
Other means of identification	
Product code	02130, 02130-6
Recommended use	Electronic cleaner
Recommended restrictions	None known.
Manufacturer/Importer/Supplier/Distributor information	
Manufactured or sold by:	
Company name	CRC Industries, Inc.
Address	885 Louis Dr. Warminster, PA 18974 US
Telephone	
General Information	215-674-4300
Technical Assistance	800-521-3168
Customer Service	800-272-4620
24-Hour Emergency (CHEMTREC)	800-424-9300 (US) 703-527-3887 (International)
Website	www.crcindustries.com

2. Hazard(s) identification

Physical hazards	Flammable aerosols	Category 1
	Gases under pressure	Liquefied gas
Health hazards	Reproductive toxicity (fertility)	Category 2
	Specific target organ toxicity, single exposure	Category 3 narcotic effects
	Specific target organ toxicity, repeated exposure	Category 2
	Aspiration hazard	Category 1
Environmental hazards	Hazardous to the aquatic environment, acute hazard	Category 2
	Hazardous to the aquatic environment, long-term hazard	Category 2
OSHA defined hazards	Not classified.	

Label elements



Signal word Danger

Hazard statement Extremely flammable aerosol. Contains gas under pressure; may explode if heated. May be fatal if swallowed and enters airways. May cause drowsiness or dizziness. Suspected of damaging fertility. May cause damage to organs (central nervous system, eyes, skin, upper respiratory tract) through prolonged or repeated exposure. Toxic to aquatic life. Toxic to aquatic life with long lasting effects.

Precautionary statement

Prevention

Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Keep away from heat/sparks/open flames/hot surfaces. - No smoking. Do not spray on an open flame or other ignition source. Do not apply while equipment is energized. Pressurized container: Do not pierce or burn, even after use. Extinguish all flames, pilot lights and heaters. Vapors will accumulate readily and may ignite. Use only with adequate ventilation; maintain ventilation during use and until all vapors are gone. Open doors and windows or use other means to ensure a fresh air supply during use and while product is drying. If you experience any symptoms listed on this label, increase ventilation or leave the area. Do not breathe gas. Do not breathe mist or vapor. Wear protective gloves/protective clothing/eye protection/face protection. Avoid release to the environment.

Response

If swallowed: Immediately call a poison center/doctor. Do NOT induce vomiting. If inhaled: Remove person to fresh air and keep comfortable for breathing. Call a poison center/doctor if you feel unwell. If exposed or concerned: Get medical attention. Collect spillage.

Storage

Store in a well-ventilated place. Store locked up. Protect from sunlight. Do not expose to temperatures exceeding 50°C/122°F. Exposure to high temperature may cause can to burst.

Disposal

Dispose of contents/container in accordance with local/regional/national regulations.

Hazard(s) not otherwise classified (HNOC)

Static accumulating flammable liquid can become electrostatically charged even in bonded and grounded equipment. Sparks may ignite liquid and vapor. May cause flash fire or explosion.

3. Composition/information on ingredients

Mixtures

Chemical name	Common name and synonyms	CAS number	%
Naphtha (petroleum), hydrotreated light		64742-49-0	60 - 70
1,1-Difluoroethane	HFC-152a	75-37-6	20 - 30
n-Hexane		110-54-3	3 - 5
2,2,4-Trimethylpentane		540-84-1	1 - 3
Isopropyl alcohol		67-63-0	1 - 3
2,2-Dimethylbutane		75-83-2	< 0.2
2-Methylpentane		107-83-5	< 0.2

Specific chemical identity and/or percentage of composition has been withheld as a trade secret.

4. First-aid measures

Inhalation

Remove victim to fresh air and keep at rest in a position comfortable for breathing. Call a POISON CENTER or doctor/physician if you feel unwell.

Skin contact

Rinse skin with water/shower. Get medical attention if irritation develops and persists.

Eye contact

Rinse with water. Get medical attention if irritation develops and persists.

Ingestion

Call a physician or poison control center immediately. Rinse mouth. Do not induce vomiting. If vomiting occurs, keep head low so that stomach content doesn't get into the lungs.

Most important symptoms/effects, acute and delayed

May cause drowsiness and dizziness. Headache. Nausea, vomiting. Aspiration may cause pulmonary edema and pneumonitis. Prolonged exposure may cause chronic effects.

Indication of immediate medical attention and special treatment needed

Provide general supportive measures and treat symptomatically. Keep victim under observation. Symptoms may be delayed.

General information

IF exposed or concerned: Get medical advice/attention. Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves. Show this safety data sheet to the doctor in attendance.

5. Fire-fighting measures

Suitable extinguishing media

Water fog. Foam. Carbon dioxide (CO2). Dry chemical powder, carbon dioxide, sand or earth may be used for small fires only.

Unsuitable extinguishing media

None known.

Specific hazards arising from the chemical	Contents under pressure. Pressurized container may rupture when exposed to heat or flame. This product is a poor conductor of electricity and can become electrostatically charged. If sufficient charge is accumulated, ignition of flammable mixtures can occur. Static electricity accumulation may be significantly increased by the presence of small quantities of water or other contaminants. Material will float and may ignite on surface of water. During fire, gases hazardous to health may be formed.
Special protective equipment and precautions for firefighters	Firefighters must use standard protective equipment including flame retardant coat, helmet with face shield, gloves, rubber boots, and in enclosed spaces, SCBA.
Fire-fighting equipment/instructions	In case of fire: Stop leak if safe to do so. Move containers from fire area if you can do so without risk. Containers should be cooled with water to prevent vapor pressure build up.
General fire hazards	Extremely flammable aerosol. Contents under pressure. Pressurized container may rupture when exposed to heat or flame.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures	Keep unnecessary personnel away. Keep people away from and upwind of spill/leak. Keep out of low areas. Remove all possible sources of ignition in the surrounding area. Many gases are heavier than air and will spread along ground and collect in low or confined areas (sewers, basements, tanks). Wear appropriate protective equipment and clothing during clean-up. Do not breathe mist or vapor. Do not breathe gas. Emergency personnel need self-contained breathing equipment. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Ventilate closed spaces before entering them. Use appropriate containment to avoid environmental contamination. Local authorities should be advised if significant spillages cannot be contained. For personal protection, see section 8 of the SDS.
Methods and materials for containment and cleaning up	Eliminate all ignition sources (no smoking, flares, sparks, or flames in immediate area). Keep combustibles (wood, paper, oil, etc.) away from spilled material. This material is classified as a water pollutant under the Clean Water Act and should be prevented from contaminating soil or from entering sewage and drainage systems which lead to waterways. Stop the flow of material, if this is without risk. Wipe up with absorbent material (e.g. cloth, fleece). Clean surface thoroughly to remove residual contamination. For waste disposal, see section 13 of the SDS.
Environmental precautions	Avoid release to the environment. Prevent further leakage or spillage if safe to do so. Avoid discharge into drains, water courses or onto the ground. Inform appropriate managerial or supervisory personnel of all environmental releases. Use appropriate containment to avoid environmental contamination.

7. Handling and storage

Precautions for safe handling	Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Minimize fire risks from flammable and combustible materials (including combustible dust and static accumulating liquids) or dangerous reactions with incompatible materials. Handling operations that can promote accumulation of static charges include but are not limited to: mixing, filtering, pumping at high flow rates, splash filling, creating mists or sprays, tank and container filling, tank cleaning, sampling, gauging, switch loading, vacuum truck operations. Pressurized container: Do not pierce or burn, even after use. Do not use if spray button is missing or defective. Do not spray on a naked flame or any other incandescent material. Do not smoke while using or until sprayed surface is thoroughly dry. Do not cut, weld, solder, drill, grind, or expose containers to heat, flame, sparks, or other sources of ignition. Use caution around energized equipment. The metal container will conduct electricity if it contacts a live source. This may result in injury to the user from electrical shock and/or flash fire. Do not breathe mist or vapor. Do not breathe gas. Avoid prolonged exposure. Pregnant or breastfeeding women must not handle this product. Should be handled in closed systems, if possible. Use only in well-ventilated areas. Wear appropriate personal protective equipment. Wash hands thoroughly after handling. Avoid release to the environment. Observe good industrial hygiene practices. For product usage instructions, please see the product label.
Conditions for safe storage, including any incompatibilities	Level 3 Aerosol. Pressurized container. Protect from sunlight and do not expose to temperatures exceeding 50°C/122 °F. Do not puncture, incinerate or crush. Do not handle or store near an open flame, heat or other sources of ignition. This material can accumulate static charge which may cause spark and become an ignition source. Avoid spark promoters. These alone may be insufficient to remove static electricity. Store in a well-ventilated place. Store away from incompatible materials (see Section 10 of the SDS).

8. Exposure controls/personal protection

Occupational exposure limits

US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000)

Components	Type	Value
2,2,4-Trimethylpentane (CAS 540-84-1)	PEL	2350 mg/m3
		500 ppm
Isopropyl alcohol (CAS 67-63-0)	PEL	980 mg/m3
		400 ppm
n-Hexane (CAS 110-54-3)	PEL	1800 mg/m3
		500 ppm

US. ACGIH Threshold Limit Values

Components	Type	Value
2,2-Dimethylbutane (CAS 75-83-2)	STEL	1000 ppm
	TWA	500 ppm
2-Methylpentane (CAS 107-83-5)	STEL	1000 ppm
	TWA	500 ppm
Isopropyl alcohol (CAS 67-63-0)	STEL	400 ppm
	TWA	200 ppm
n-Hexane (CAS 110-54-3)	TWA	50 ppm

US. NIOSH: Pocket Guide to Chemical Hazards

Components	Type	Value
2,2,4-Trimethylpentane (CAS 540-84-1)	Ceiling	1800 mg/m3
	TWA	385 ppm 350 mg/m3 75 ppm
2,2-Dimethylbutane (CAS 75-83-2)	Ceiling	1800 mg/m3
	TWA	510 ppm 350 mg/m3 100 ppm
2-Methylpentane (CAS 107-83-5)	Ceiling	1800 mg/m3
	TWA	510 ppm 350 mg/m3 100 ppm
Isopropyl alcohol (CAS 67-63-0)	STEL	1225 mg/m3
	TWA	500 ppm 980 mg/m3 400 ppm
n-Hexane (CAS 110-54-3)	TWA	180 mg/m3 50 ppm

US. AIHA Workplace Environmental Exposure Level (WEEL) Guides

Components	Type	Value
1,1-Difluoroethane (CAS 75-37-6)	TWA	2700 mg/m3
		1000 ppm

Biological limit values

ACGIH Biological Exposure Indices

Components	Value	Determinant	Specimen	Sampling Time
Isopropyl alcohol (CAS 67-63-0)	40 mg/l	Acetone	Urine	*

ACGIH Biological Exposure Indices

Components	Value	Determinant	Specimen	Sampling Time
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n-Hexane (CAS 110-54-3)	0.4 mg/l	2,5-Hexanedio n, without hydrolysis	Urine	*
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* - For sampling details, please see the source document.

Exposure guidelines**US - California OELs: Skin designation**

n-Hexane (CAS 110-54-3)

Can be absorbed through the skin.

US ACGIH Threshold Limit Values: Skin designation

n-Hexane (CAS 110-54-3)

Can be absorbed through the skin.

Appropriate engineering controls

Good general ventilation (typically 10 air changes per hour) should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level.

Individual protection measures, such as personal protective equipment**Eye/face protection**

Wear safety glasses with side shields (or goggles).

Skin protection**Hand protection**

Wear protective gloves such as: Nitrile. Polyvinyl chloride (PVC). Viton®.

Other

Wear suitable protective clothing. Use of an impervious apron is recommended.

Respiratory protection

If engineering controls are not feasible or if exposure exceeds the applicable exposure limits, use a NIOSH-approved cartridge respirator with an organic vapor cartridge. Use a self-contained breathing apparatus in confined spaces and for emergencies. Air monitoring is needed to determine actual employee exposure levels.

Thermal hazards

Wear appropriate thermal protective clothing, when necessary.

General hygiene considerations

When using, do not eat, drink or smoke. Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants.

9. Physical and chemical properties**Appearance****Physical state**

Liquid.

Form

Aerosol.

Color

Clear. Colorless.

Odor

Alcoholic.

Odor threshold

Not available.

pH

Not available.

Melting point/freezing point

-127.3 °F (-88.5 °C) estimated

Initial boiling point and boiling range

123 °F (50.6 °C) estimated

Flash point

< 0 °F (< -17.8 °C) Tag Closed Cup

Evaporation rate

Very fast.

Flammability (solid, gas)

Not available.

Upper/lower flammability or explosive limits**Flammability limit - lower (%)**

0.9 % estimated

Flammability limit - upper (%)

12 % estimated

Vapor pressure

2141.3 hPa estimated

Vapor density

> 1 (air = 1)

Relative density

0.72 estimated

Solubility (water)

Negligible.

Partition coefficient (n-octanol/water)	Not available.
Auto-ignition temperature	489.2 °F (254 °C) estimated
Decomposition temperature	Not available.
Viscosity (kinematic)	Not available.
Percent volatile	100 % estimated

10. Stability and reactivity

Reactivity	The product is stable and non-reactive under normal conditions of use, storage and transport.
Chemical stability	Material is stable under normal conditions.
Possibility of hazardous reactions	No dangerous reaction known under conditions of normal use.
Conditions to avoid	Heat, flames and sparks. Contact with incompatible materials.
Incompatible materials	Strong oxidizing agents. Strong acids.
Hazardous decomposition products	Carbon oxides.

11. Toxicological information

Information on likely routes of exposure

Ingestion	Droplets of the product aspirated into the lungs through ingestion or vomiting may cause a serious chemical pneumonia.
Inhalation	May cause damage to organs through prolonged or repeated exposure by inhalation. May cause drowsiness and dizziness. Headache. Nausea, vomiting. Prolonged inhalation may be harmful.
Skin contact	No adverse effects due to skin contact are expected.
Eye contact	Direct contact with eyes may cause temporary irritation.
Symptoms related to the physical, chemical and toxicological characteristics	May cause drowsiness and dizziness. Headache. Nausea, vomiting. Aspiration may cause pulmonary edema and pneumonitis.

Information on toxicological effects

Acute toxicity	May be fatal if swallowed and enters airways. Narcotic effects.
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Product	Species	Test Results
QD® Contact Cleaner		
Acute		
<i>Dermal</i>		
LD50	Rabbit	2807.0864 mg/kg estimated
<i>Inhalation</i>		
LC50	Rat	29004.0918 ppm, 4 hours estimated 29.3555 mg/l, 4 hours estimated
<i>Oral</i>		
LD50	Rat	21091.707 mg/kg estimated

* Estimates for product may be based on additional component data not shown.

Skin corrosion/irritation	Prolonged skin contact may cause temporary irritation.
Serious eye damage/eye irritation	Direct contact with eyes may cause temporary irritation.
Respiratory sensitization	Not available.
Skin sensitization	This product is not expected to cause skin sensitization.
Germ cell mutagenicity	No data available to indicate product or any components present at greater than 0.1% are mutagenic or genotoxic.
Carcinogenicity	This product is not considered to be a carcinogen by IARC, ACGIH, NTP, or OSHA.
Reproductive toxicity	Suspected of damaging fertility.
Specific target organ toxicity - single exposure	May cause drowsiness and dizziness.

Specific target organ toxicity - repeated exposure	May cause damage to organs through prolonged or repeated exposure: Central nervous system. Eyes. Skin. Upper respiratory tract.
Aspiration hazard	May be fatal if swallowed and enters airways. If aspirated into lungs during swallowing or vomiting, may cause chemical pneumonia, pulmonary injury or death.
Chronic effects	Prolonged inhalation may be harmful. May cause damage to organs through prolonged or repeated exposure.

12. Ecological information

Ecotoxicity	Toxic to aquatic life with long lasting effects.		
Product		Species	Test Results
QD® Contact Cleaner			
Aquatic			
Fish	LC50	Fish	1703.5929 mg/l, 96 hours estimated
Components		Species	Test Results
Isopropyl alcohol (CAS 67-63-0)			
Aquatic			
<i>Acute</i>			
Crustacea	EC50	Water flea (Daphnia magna)	7550 - 13299 mg/l, 48 hours
Fish	LC50	Fathead minnow (Pimephales promelas)	3200 mg/l, 96 hours
n-Hexane (CAS 110-54-3)			
Aquatic			
Fish	LC50	Fathead minnow (Pimephales promelas)	2.101 - 2.981 mg/l, 96 hours

* Estimates for product may be based on additional component data not shown.

Persistence and degradability No data is available on the degradability of this product.

Bioaccumulative potential No data available.

Partition coefficient n-octanol / water (log Kow)

1,1-Difluoroethane	0.75
2,2,4-Trimethylpentane	5.18
2,2-Dimethylbutane	3.82
2-Methylpentane	3.74
Isopropyl alcohol	0.05
n-Hexane	3.9

Mobility in soil No data available.

Other adverse effects No other adverse environmental effects (e.g. ozone depletion, photochemical ozone creation potential, endocrine disruption, global warming potential) are expected from this component.

13. Disposal considerations

Disposal of waste from residues / unused products	If discarded, this product is considered a RCRA ignitable waste, D001. Collect and reclaim or dispose in sealed containers at licensed waste disposal site. Contents under pressure. Do not puncture, incinerate or crush. Do not allow this material to drain into sewers/water supplies. Do not contaminate ponds, waterways or ditches with chemical or used container. Dispose in accordance with all applicable regulations.
Hazardous waste code	D001: Waste Flammable material with a flash point <140 F
Contaminated packaging	Empty containers should be taken to an approved waste handling site for recycling or disposal. Since emptied containers may retain product residue, follow label warnings even after container is emptied.

14. Transport information

DOT	
UN number	UN1950
UN proper shipping name	Aerosols, flammable, Limited Quantity
Transport hazard class(es)	
Class	2.1
Subsidiary risk	-
Label(s)	2.1
Packing group	Not applicable.

Special precautions for user	Read safety instructions, SDS and emergency procedures before handling.
Special provisions	N82
Packaging exceptions	306
Packaging non bulk	None
Packaging bulk	None

IATA

UN number	UN1950
UN proper shipping name	Aerosols, flammable, Limited Quantity
Transport hazard class(es)	
Class	2.1
Subsidiary risk	-
Packing group	Not applicable.
Environmental hazards	Yes
ERG Code	10L
Special precautions for user	Read safety instructions, SDS and emergency procedures before handling.

Other information

Passenger and cargo aircraft	Allowed.
Cargo aircraft only	Allowed.

IMDG

UN number	UN1950
UN proper shipping name	AEROSOLS, LIMITED QUANTITY, MARINE POLLUTANT
Transport hazard class(es)	
Class	2
Subsidiary risk	-
Packing group	Not applicable.
Environmental hazards	
Marine pollutant	Yes
EmS	F-D, S-U
Special precautions for user	Read safety instructions, SDS and emergency procedures before handling.

General information IMDG Regulated Marine Pollutant.

15. Regulatory information

US federal regulations This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.
All components are on the U.S. EPA TSCA Inventory List.

TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)

Not regulated.

SARA 304 Emergency release notification

Not regulated.

US. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

Not listed.

US EPCRA (SARA Title III) Section 313 - Toxic Chemical: Listed substance

n-Hexane (CAS 110-54-3)

CERCLA Hazardous Substance List (40 CFR 302.4)

2,2,4-Trimethylpentane (CAS 540-84-1)

n-Hexane (CAS 110-54-3)

CERCLA Hazardous Substances: Reportable quantity

2,2,4-Trimethylpentane (CAS 540-84-1) 1000 LBS

n-Hexane (CAS 110-54-3) 5000 LBS

Spills or releases resulting in the loss of any ingredient at or above its RQ require immediate notification to the National Response Center (800-424-8802) and to your Local Emergency Planning Committee.

Clean Air Act (CAA) Section 112 Hazardous Air Pollutants (HAPs) List

2,2,4-Trimethylpentane (CAS 540-84-1)

n-Hexane (CAS 110-54-3)

Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130)

1,1-Difluoroethane (CAS 75-37-6)

Safe Drinking Water Act (SDWA)	Not regulated.
Food and Drug Administration (FDA)	Not regulated.
Superfund Amendments and Reauthorization Act of 1986 (SARA)	
Section 311/312	Immediate Hazard - Yes
Hazard categories	Delayed Hazard - Yes
	Fire Hazard - Yes
	Pressure Hazard - Yes
	Reactivity Hazard - No
SARA 302 Extremely hazardous substance	No

US state regulations

US. California Controlled Substances. CA Department of Justice (California Health and Safety Code Section 11100)

Not listed.

US. New Jersey Worker and Community Right-to-Know Act

2,2,4-Trimethylpentane (CAS 540-84-1)
 2,2-Dimethylbutane (CAS 75-83-2)
 2-Methylpentane (CAS 107-83-5)
 1,1-Difluoroethane (CAS 75-37-6)
 Isopropyl alcohol (CAS 67-63-0)
 n-Hexane (CAS 110-54-3)

US. Massachusetts RTK - Substance List

1,1-Difluoroethane (CAS 75-37-6)
 2,2,4-Trimethylpentane (CAS 540-84-1)
 Isopropyl alcohol (CAS 67-63-0)
 n-Hexane (CAS 110-54-3)

US. Pennsylvania Worker and Community Right-to-Know Law

Isopropyl alcohol (CAS 67-63-0)
 2,2,4-Trimethylpentane (CAS 540-84-1)
 2,2-Dimethylbutane (CAS 75-83-2)
 2-Methylpentane (CAS 107-83-5)
 n-Hexane (CAS 110-54-3)

US. Rhode Island RTK

1,1-Difluoroethane (CAS 75-37-6)
 2,2,4-Trimethylpentane (CAS 540-84-1)
 n-Hexane (CAS 110-54-3)

US. California Proposition 65

California Safe Drinking Water and Toxic Enforcement Act of 1986 (Proposition 65): This material is not known to contain any chemicals currently listed as carcinogens or reproductive toxins.

Volatile organic compounds (VOC) regulations

EPA

VOC content (40 CFR 51.100(s)) 74.3 %

Consumer products (40 CFR 59, Subpt. C) Not regulated

State

Consumer products This product is regulated as an Electronic Cleaner. This product is compliant for use in all 50 states.

VOC content (CA) 74.3 %

VOC content (OTC) 74.3 %

International Inventories

Country(s) or region	Inventory name	On inventory (yes/no)*
Australia	Australian Inventory of Chemical Substances (AICS)	Yes
Canada	Domestic Substances List (DSL)	Yes
Canada	Non-Domestic Substances List (NDSL)	No
China	Inventory of Existing Chemical Substances in China (IECSC)	Yes

Country(s) or region	Inventory name	On inventory (yes/no)*
Europe	European Inventory of Existing Commercial Chemical Substances (EINECS)	Yes
Europe	European List of Notified Chemical Substances (ELINCS)	No
Japan	Inventory of Existing and New Chemical Substances (ENCS)	No
Korea	Existing Chemicals List (ECL)	Yes
New Zealand	New Zealand Inventory	Yes
Philippines	Philippine Inventory of Chemicals and Chemical Substances (PICCS)	Yes
United States & Puerto Rico	Toxic Substances Control Act (TSCA) Inventory	Yes

*A "Yes" indicates that all components of this product comply with the inventory requirements administered by the governing country(s)

A "No" indicates that one or more components of the product are not listed or exempt from listing on the inventory administered by the governing country(s).

16. Other information, including date of preparation or last revision

Issue date	09-29-2014
Prepared by	Allison Cho
Version #	01
Further information	CRC # 957
HMIS® ratings	Health: 1* Flammability: 4 Physical hazard: 0 Personal protection: B
NFPA ratings	Health: 1 Flammability: 4 Instability: 0

NFPA ratings



Disclaimer

CRC cannot anticipate all conditions under which this information and its product, or the products of other manufacturers in combination with its product, may be used. It is the user's responsibility to ensure safe conditions for handling, storage and disposal of the product, and to assume liability for loss, injury, damage or expense due to improper use. The information contained in this document applies to this specific material as supplied. It may not be valid for this material if it is used in combination with any other materials. This information is accurate to the best of CRC Industries' knowledge or obtained from sources believed by CRC to be accurate. Before using any product, read all warnings and directions on the label. For further clarification of any information contained on this (M)SDS consult your supervisor, a health & safety professional, or CRC Industries.




SAFETY DATA SHEET

1. Identification

Product identifier	Dry Moly Lube
Other means of identification	
Product code	03084
Recommended use	Dry film lubricant
Recommended restrictions	None known.
Manufacturer/Importer/Supplier/Distributor information	
Manufactured or sold by:	
Company name	CRC Industries, Inc.
Address	885 Louis Dr. Warminster, PA 18974 US
Telephone	
General Information	215-674-4300
Technical Assistance	800-521-3168
Customer Service	800-272-4620
24-Hour Emergency (CHEMTREC)	800-424-9300 (US) 703-527-3887 (International)
Website	www.crcindustries.com

2. Hazard(s) identification

Physical hazards	Flammable aerosols	Category 1
	Gases under pressure	Liquefied gas
Health hazards	Serious eye damage/eye irritation	Category 2
	Reproductive toxicity (the unborn child)	Category 2
	Specific target organ toxicity, single exposure	Category 3 respiratory tract irritation
	Specific target organ toxicity, single exposure	Category 3 narcotic effects
	Specific target organ toxicity, repeated exposure	Category 2
	Aspiration hazard	Category 1
Environmental hazards	Hazardous to the aquatic environment, acute hazard	Category 3
	Hazardous to the aquatic environment, long-term hazard	Category 3
OSHA defined hazards	Not classified.	
Label elements		
Signal word	Danger	
Hazard statement	Extremely flammable aerosol. Pressurized container: May burst if heated. Contains gas under pressure; may explode if heated. May be fatal if swallowed and enters airways. Causes serious eye irritation. May cause respiratory irritation. May cause drowsiness or dizziness. Suspected of damaging the unborn child. May cause damage to organs (brain, nervous system) through prolonged or repeated exposure. Harmful to aquatic life. Harmful to aquatic life with long lasting effects.	

Precautionary statement

Prevention

Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Keep away from heat/sparks/open flames/hot surfaces. - No smoking. Do not spray on an open flame or other ignition source. Do not apply while equipment is energized. Do not pierce or burn, even after use. Extinguish all flames, pilot lights and heaters. Vapors will accumulate readily and may ignite. Use only with adequate ventilation; maintain ventilation during use and until all vapors are gone. Open doors and windows or use other means to ensure a fresh air supply during use and while product is drying. If you experience any symptoms listed on this label, increase ventilation or leave the area. Do not breathe gas. Do not breathe mist or vapor. Wash thoroughly after handling. Wear protective gloves/protective clothing/eye protection/face protection. Avoid release to the environment.

Response

If swallowed: Immediately call a poison center/doctor. Do NOT induce vomiting. If inhaled: Remove person to fresh air and keep comfortable for breathing. Call a poison center/doctor if you feel unwell. If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical attention. If exposed or concerned: Get medical attention. Call a POISON CENTER or doctor/physician if you feel unwell.

Storage

Store in a well-ventilated place. Store locked up. Protect from sunlight. Do not expose to temperatures exceeding 50°C/122°F. Exposure to high temperature may cause can to burst.

Disposal

Dispose of contents/container in accordance with local/regional/national regulations.

Hazard(s) not otherwise classified (HNOC)

None known.

3. Composition/information on ingredients

Mixtures

Chemical name	Common name and synonyms	CAS number	%
Acetone		67-64-1	30 - 40
Isopropyl alcohol		67-63-0	20 - 30
n-Butane		106-97-8	20 - 30
Propane		74-98-6	5 - 10
Heptane, branched, cyclic and linear		426260-76-6	3 - 5
Molybdenum disulphide		1317-33-5	1 - 3
n-Heptane		142-82-5	1 - 3
Solvent Naphtha (petroleum), Medium Aliph.		64742-88-7	1 - 3

Specific chemical identity and/or percentage of composition has been withheld as a trade secret.

4. First-aid measures

Inhalation	Remove victim to fresh air and keep at rest in a position comfortable for breathing. Call a POISON CENTER or doctor/physician if you feel unwell.
Skin contact	Rinse skin with water/shower. Get medical attention if irritation develops and persists.
Eye contact	Immediately flush eyes with plenty of water for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Get medical attention if irritation develops and persists.
Ingestion	Call a physician or poison control center immediately. Rinse mouth. Do not induce vomiting. If vomiting occurs, keep head low so that stomach content doesn't get into the lungs.
Most important symptoms/effects, acute and delayed	May cause drowsiness and dizziness. Headache. Nausea, vomiting. Irritation of nose and throat. Aspiration may cause pulmonary edema and pneumonitis. Severe eye irritation. Symptoms may include stinging, tearing, redness, swelling, and blurred vision. May cause respiratory irritation. Prolonged exposure may cause chronic effects.
Indication of immediate medical attention and special treatment needed	Provide general supportive measures and treat symptomatically. Keep victim under observation. Symptoms may be delayed.
General information	IF exposed or concerned: Get medical advice/attention. Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves. Show this safety data sheet to the doctor in attendance.

5. Fire-fighting measures

Suitable extinguishing media	Alcohol resistant foam. Water fog. Dry chemical powder. Carbon dioxide (CO2).
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Unsuitable extinguishing media	None known.
Specific hazards arising from the chemical	Contents under pressure. Pressurized container may rupture when exposed to heat or flame. During fire, gases hazardous to health may be formed.
Special protective equipment and precautions for firefighters	Firefighters must use standard protective equipment including flame retardant coat, helmet with face shield, gloves, rubber boots, and in enclosed spaces, SCBA.
Fire-fighting equipment/instructions	In case of fire: Stop leak if safe to do so. Move containers from fire area if you can do so without risk. Containers should be cooled with water to prevent vapor pressure build up.
General fire hazards	Extremely flammable aerosol. Contents under pressure. Pressurized container may rupture when exposed to heat or flame.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures	Keep unnecessary personnel away. Keep people away from and upwind of spill/leak. Keep out of low areas. Many gases are heavier than air and will spread along ground and collect in low or confined areas (sewers, basements, tanks). Wear appropriate protective equipment and clothing during clean-up. Do not breathe mist or vapor. Do not breathe gas. Emergency personnel need self-contained breathing equipment. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Ventilate closed spaces before entering them. Local authorities should be advised if significant spillages cannot be contained. For personal protection, see section 8 of the SDS.
Methods and materials for containment and cleaning up	Eliminate all ignition sources (no smoking, flares, sparks, or flames in immediate area). Keep combustibles (wood, paper, oil, etc.) away from spilled material. Stop the flow of material, if this is without risk. Wipe up with absorbent material (e.g. cloth, fleece). Clean surface thoroughly to remove residual contamination. For waste disposal, see section 13 of the SDS. Prevent entry into waterways, sewer, basements or confined areas.
Environmental precautions	Avoid release to the environment. Prevent further leakage or spillage if safe to do so. Avoid discharge into drains, water courses or onto the ground. Inform appropriate managerial or supervisory personnel of all environmental releases.

7. Handling and storage

Precautions for safe handling	Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Pressurized container: Do not pierce or burn, even after use. Do not use if spray button is missing or defective. Do not spray on a naked flame or any other incandescent material. Do not smoke while using or until sprayed surface is thoroughly dry. Do not cut, weld, solder, drill, grind, or expose containers to heat, flame, sparks, or other sources of ignition. Use caution around energized equipment. The metal container will conduct electricity if it contacts a live source. This may result in injury to the user from electrical shock and/or flash fire. Do not breathe mist or vapor. Do not breathe gas. Avoid contact with eyes. Avoid prolonged exposure. Pregnant or breastfeeding women must not handle this product. Should be handled in closed systems, if possible. Use only in well-ventilated areas. Wear appropriate personal protective equipment. Wash hands thoroughly after handling. Avoid release to the environment. Observe good industrial hygiene practices. For product usage instructions, please see the product label.
Conditions for safe storage, including any incompatibilities	Level 3 Aerosol. Pressurized container. Protect from sunlight and do not expose to temperatures exceeding 50°C/122 °F. Do not puncture, incinerate or crush. Do not handle or store near an open flame, heat or other sources of ignition. This material can accumulate static charge which may cause spark and become an ignition source. Store in a well-ventilated place. Store away from incompatible materials (see Section 10 of the SDS).

8. Exposure controls/personal protection

Occupational exposure limits

US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000)

Components	Type	Value	Form
Acetone (CAS 67-64-1)	PEL	2400 mg/m3 1000 ppm	
Isopropyl alcohol (CAS 67-63-0)	PEL	980 mg/m3 400 ppm	
Molybdenum disulphide (CAS 1317-33-5)	PEL	15 mg/m3	Total dust.
n-Heptane (CAS 142-82-5)	PEL	2000 mg/m3 500 ppm	
Propane (CAS 74-98-6)	PEL	1800 mg/m3	

US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000)

Components	Type	Value	Form
		1000 ppm	

US. OSHA Table Z-2 (29 CFR 1910.1000)

Components	Type	Value
Toluene (CAS 108-88-3)	Ceiling	300 ppm
	TWA	200 ppm

US. ACGIH Threshold Limit Values

Components	Type	Value	Form
Acetone (CAS 67-64-1)	STEL	750 ppm	
	TWA	500 ppm	
Isopropyl alcohol (CAS 67-63-0)	STEL	400 ppm	
	TWA	200 ppm	
Molybdenum disulphide (CAS 1317-33-5)	TWA	3 mg/m3	Respirable fraction.
		10 mg/m3	Inhalable fraction.
n-Butane (CAS 106-97-8)	STEL	1000 ppm	
n-Heptane (CAS 142-82-5)	STEL	500 ppm	
	TWA	400 ppm	
Solvent Naphtha (petroleum), Medium Aliph. (CAS 64742-88-7)	TWA	200 mg/m3	Non-aerosol.
Toluene (CAS 108-88-3)	TWA	20 ppm	

US. NIOSH: Pocket Guide to Chemical Hazards

Components	Type	Value
Acetone (CAS 67-64-1)	TWA	590 mg/m3
		250 ppm
Isopropyl alcohol (CAS 67-63-0)	STEL	1225 mg/m3
		500 ppm
	TWA	980 mg/m3
		400 ppm
n-Butane (CAS 106-97-8)	TWA	1900 mg/m3
		800 ppm
n-Heptane (CAS 142-82-5)	Ceiling	1800 mg/m3
		440 ppm
	TWA	350 mg/m3
		85 ppm
Propane (CAS 74-98-6)	TWA	1800 mg/m3
		1000 ppm
Solvent Naphtha (petroleum), Medium Aliph. (CAS 64742-88-7)	TWA	100 mg/m3
Toluene (CAS 108-88-3)	STEL	560 mg/m3
		150 ppm
	TWA	375 mg/m3
		100 ppm

Biological limit values
ACGIH Biological Exposure Indices

Components	Value	Determinant	Specimen	Sampling Time
Acetone (CAS 67-64-1)	50 mg/l	Acetone	Urine	*
Isopropyl alcohol (CAS 67-63-0)	40 mg/l	Acetone	Urine	*
Toluene (CAS 108-88-3)	0.3 mg/g	o-Cresol, with hydrolysis	Creatinine in urine	*

ACGIH Biological Exposure Indices

Components	Value	Determinant	Specimen	Sampling Time
	0.03 mg/l	Toluene	Urine	*
	0.02 mg/l	Toluene	Blood	*

* - For sampling details, please see the source document.

Exposure guidelines**US - California OELs: Skin designation**

Toluene (CAS 108-88-3)

Can be absorbed through the skin.

US - Minnesota Haz Subs: Skin designation applies

Toluene (CAS 108-88-3)

Skin designation applies.

US ACGIH Threshold Limit Values: Skin designation

Solvent Naphtha (petroleum), Medium Aliph. (CAS 64742-88-7)

Can be absorbed through the skin.

Appropriate engineering controls

Good general ventilation (typically 10 air changes per hour) should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level. Provide eyewash station.

Individual protection measures, such as personal protective equipment**Eye/face protection**

Wear safety glasses with side shields (or goggles).

Skin protection**Hand protection**

Wear protective gloves such as: Nitrile. Neoprene.

Other

Wear suitable protective clothing. Use of an impervious apron is recommended.

Respiratory protection

If engineering controls are not feasible or if exposure exceeds the applicable exposure limits, use a NIOSH-approved cartridge respirator with an organic vapor cartridge. Use a self-contained breathing apparatus in confined spaces and for emergencies. Air monitoring is needed to determine actual employee exposure levels.

Thermal hazards

Wear appropriate thermal protective clothing, when necessary.

General hygiene considerations

When using, do not eat, drink or smoke. Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants.

9. Physical and chemical properties**Appearance****Physical state**

Liquid.

Form

Aerosol.

Color

Gray.

Odor

Solvent.

Odor threshold

Not available.

pH

Not available.

Melting point/freezing point

Not available.

Initial boiling point and boiling range

< 395 °F (< 201.7 °C)

Flash point

< 0 °F (< -17.8 °C) Tag Closed Cup

Evaporation rate

Not available.

Flammability (solid, gas)

Not available.

Upper/lower flammability or explosive limits**Flammability limit - lower (%)**

1 %

Flammability limit - upper (%)

12.8 %

Vapor pressure

1494.5 hPa estimated

Vapor density

> 1 (air = 1)

Relative density	0.71
Solubility (water)	Not available.
Partition coefficient (n-octanol/water)	Not available.
Auto-ignition temperature	410 °F (210 °C) estimated
Decomposition temperature	Not available.
Viscosity (kinematic)	Not available.
Percent volatile	98 %

10. Stability and reactivity

Reactivity	The product is stable and non-reactive under normal conditions of use, storage and transport.
Chemical stability	Material is stable under normal conditions.
Possibility of hazardous reactions	No dangerous reaction known under conditions of normal use.
Conditions to avoid	Heat, flames and sparks. Contact with incompatible materials.
Incompatible materials	Acids. Strong oxidizing agents. Nitrates. Isocyanates. Fluorine. Chlorine.
Hazardous decomposition products	Carbon oxides.

11. Toxicological information

Information on likely routes of exposure

Ingestion	Droplets of the product aspirated into the lungs through ingestion or vomiting may cause a serious chemical pneumonia.
Inhalation	May cause damage to organs through prolonged or repeated exposure by inhalation. May cause drowsiness and dizziness. Headache. Nausea, vomiting. May cause irritation to the respiratory system. Prolonged inhalation may be harmful.
Skin contact	Prolonged skin contact may cause temporary irritation.
Eye contact	Causes serious eye irritation.
Symptoms related to the physical, chemical and toxicological characteristics	May cause drowsiness and dizziness. Headache. Nausea, vomiting. Irritation of nose and throat. Aspiration may cause pulmonary edema and pneumonitis. Severe eye irritation. Symptoms may include stinging, tearing, redness, swelling, and blurred vision. May cause respiratory irritation.

Information on toxicological effects

Acute toxicity May be fatal if swallowed and enters airways. Narcotic effects. May cause respiratory irritation.

Product	Species	Test Results
Dry Moly Lube		
Acute		
<i>Dermal</i>		
LD50	Rabbit	9027.8184 mg/kg estimated
<i>Inhalation</i>		
LC50	Rat	25927.2324 ppm, 4 hours estimated 1108.0551 mg/l, 4 hours estimated
<i>Oral</i>		
LD50	Rat	8209.0645 mg/kg estimated

* Estimates for product may be based on additional component data not shown.

Skin corrosion/irritation	Prolonged skin contact may cause temporary irritation.
Serious eye damage/eye irritation	Causes serious eye irritation.
Respiratory sensitization	Not available.
Skin sensitization	This product is not expected to cause skin sensitization.
Germ cell mutagenicity	No data available to indicate product or any components present at greater than 0.1% are mutagenic or genotoxic.
Carcinogenicity	This product is not considered to be a carcinogen by IARC, ACGIH, NTP, or OSHA.
Reproductive toxicity	Suspected of damaging the unborn child.

Specific target organ toxicity - single exposure	May cause respiratory irritation. May cause drowsiness and dizziness.
Specific target organ toxicity - repeated exposure	May cause damage to organs through prolonged or repeated exposure: Brain. Nervous system.
Aspiration hazard	May be fatal if swallowed and enters airways. If aspirated into lungs during swallowing or vomiting, may cause chemical pneumonia, pulmonary injury or death.
Chronic effects	Prolonged inhalation may be harmful. May cause damage to organs through prolonged or repeated exposure.

12. Ecological information

Ecotoxicity	Harmful to aquatic life with long lasting effects.		
Product		Species	Test Results
Dry Moly Lube			
Aquatic			
Crustacea	EC50	Daphnia	3794.1357 mg/l, 48 hours estimated
<i>Acute</i>			
Fish	LC50	Fish	91.3044 mg/l, 96 hours estimated
Components		Species	Test Results
Acetone (CAS 67-64-1)			
Aquatic			
Crustacea	EC50	Water flea (Daphnia magna)	21.6 - 23.9 mg/l, 48 hours
Fish	LC50	Rainbow trout,donaldson trout (Oncorhynchus mykiss)	4740 - 6330 mg/l, 96 hours
Isopropyl alcohol (CAS 67-63-0)			
Aquatic			
Fish	LC50	Bluegill (Lepomis macrochirus)	> 1400 mg/l, 96 hours
n-Heptane (CAS 142-82-5)			
Aquatic			
<i>Acute</i>			
Fish	LC50	Fathead minnow (Pimephales promelas)	2.1 - 2.98 mg/l, 96 hours

* Estimates for product may be based on additional component data not shown.

Persistence and degradability No data is available on the degradability of this product.

Bioaccumulative potential No data available.

Partition coefficient n-octanol / water (log Kow)

Acetone	-0.24
Isopropyl alcohol	0.05
n-Butane	2.89
n-Heptane	4.66
Propane	2.36

Mobility in soil No data available.

Other adverse effects No other adverse environmental effects (e.g. ozone depletion, photochemical ozone creation potential, endocrine disruption, global warming potential) are expected from this component.

13. Disposal considerations

Disposal of waste from residues / unused products	If discarded, this product is considered a RCRA ignitable waste, D001. Collect and reclaim or dispose in sealed containers at licensed waste disposal site. Contents under pressure. Do not puncture, incinerate or crush. Do not allow this material to drain into sewers/water supplies. Do not contaminate ponds, waterways or ditches with chemical or used container. Dispose in accordance with all applicable regulations.
Hazardous waste code	D001: Waste Flammable material with a flash point <140 F
Contaminated packaging	Empty containers should be taken to an approved waste handling site for recycling or disposal. Since emptied containers may retain product residue, follow label warnings even after container is emptied.

14. Transport information

DOT

UN number	UN1950
UN proper shipping name	Aerosols, flammable, Limited Quantity
Transport hazard class(es)	
Class	2.1
Subsidiary risk	-
Label(s)	2.1
Packing group	Not applicable.
Special precautions for user	Read safety instructions, SDS and emergency procedures before handling.
Special provisions	N82
Packaging exceptions	306
Packaging non bulk	None
Packaging bulk	None

IATA

UN number	UN1950
UN proper shipping name	Aerosols, flammable, Limited Quantity
Transport hazard class(es)	
Class	2.1
Subsidiary risk	-
Packing group	Not applicable.
Environmental hazards	Yes
ERG Code	10L
Special precautions for user	Read safety instructions, SDS and emergency procedures before handling.
Other information	
Passenger and cargo aircraft	Allowed.
Cargo aircraft only	Allowed.

IMDG

UN number	UN1950
UN proper shipping name	AEROSOLS, LIMITED QUANTITY, MARINE POLLUTANT
Transport hazard class(es)	
Class	2
Subsidiary risk	-
Packing group	Not applicable.
Environmental hazards	
Marine pollutant	Yes
EmS	F-D, S-U
Special precautions for user	Read safety instructions, SDS and emergency procedures before handling.

15. Regulatory information

US federal regulations	This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200. All components are on the U.S. EPA TSCA Inventory List.
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TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)

Not regulated.

SARA 304 Emergency release notification

Not regulated.

US. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

Not listed.

US EPCRA (SARA Title III) Section 313 - Toxic Chemical: Listed substance

Not listed.

CERCLA Hazardous Substance List (40 CFR 302.4)

Acetone (CAS 67-64-1)

Isopropyl alcohol (CAS 67-63-0)

Toluene (CAS 108-88-3)

CERCLA Hazardous Substances: Reportable quantity

Acetone (CAS 67-64-1)

5000 LBS

Isopropyl alcohol (CAS 67-63-0)

100 LBS

Toluene (CAS 108-88-3) 1000 LBS

Spills or releases resulting in the loss of any ingredient at or above its RQ require immediate notification to the National Response Center (800-424-8802) and to your Local Emergency Planning Committee.

Clean Air Act (CAA) Section 112 Hazardous Air Pollutants (HAPs) List

Not regulated.

Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130)

n-Butane (CAS 106-97-8)

Propane (CAS 74-98-6)

Safe Drinking Water Act (SDWA) Not regulated.

Drug Enforcement Administration (DEA). List 2, Essential Chemicals (21 CFR 1310.02(b) and 1310.04(f)(2) and Chemical Code Number

Acetone (CAS 67-64-1) 6532

Toluene (CAS 108-88-3) 6594

Drug Enforcement Administration (DEA). List 1 & 2 Exempt Chemical Mixtures (21 CFR 1310.12(c))

Acetone (CAS 67-64-1) 35 %WV

Toluene (CAS 108-88-3) 35 %WV

DEA Exempt Chemical Mixtures Code Number

Acetone (CAS 67-64-1) 6532

Toluene (CAS 108-88-3) 594

Food and Drug Administration (FDA) Not regulated.

Superfund Amendments and Reauthorization Act of 1986 (SARA)

Section 311/312 Immediate Hazard - Yes

Hazard categories Delayed Hazard - Yes

Fire Hazard - Yes

Pressure Hazard - Yes

Reactivity Hazard - No

SARA 302 Extremely hazardous substance No

US state regulations

US. California Controlled Substances. CA Department of Justice (California Health and Safety Code Section 11100)

Not listed.

US. New Jersey Worker and Community Right-to-Know Act

Acetone (CAS 67-64-1)

n-Heptane (CAS 142-82-5)

Isopropyl alcohol (CAS 67-63-0)

n-Butane (CAS 106-97-8)

Propane (CAS 74-98-6)

Solvent Naphtha (petroleum), Medium Aliph. (CAS 64742-88-7)

Toluene (CAS 108-88-3)

US. Massachusetts RTK - Substance List

Acetone (CAS 67-64-1)

Isopropyl alcohol (CAS 67-63-0)

Molybdenum disulphide (CAS 1317-33-5)

n-Butane (CAS 106-97-8)

n-Heptane (CAS 142-82-5)

Propane (CAS 74-98-6)

Solvent Naphtha (petroleum), Medium Aliph. (CAS 64742-88-7)

US. Pennsylvania Worker and Community Right-to-Know Law

Acetone (CAS 67-64-1)

Isopropyl alcohol (CAS 67-63-0)

Toluene (CAS 108-88-3)

n-Butane (CAS 106-97-8)

n-Heptane (CAS 142-82-5)

Propane (CAS 74-98-6)

Solvent Naphtha (petroleum), Medium Aliph. (CAS 64742-88-7)

US. Rhode Island RTK

Acetone (CAS 67-64-1)

Isopropyl alcohol (CAS 67-63-0)

n-Butane (CAS 106-97-8)
Propane (CAS 74-98-6)
Toluene (CAS 108-88-3)

US. California Proposition 65

WARNING: This product contains a chemical known to the State of California to cause cancer and birth defects or other reproductive harm.

US - California Proposition 65 - CRT: Listed date/Carcinogenic substance

Benzene (CAS 71-43-2)	Listed: February 27, 1987
Ethanal (CAS 75-07-0)	Listed: April 1, 1988

US - California Proposition 65 - CRT: Listed date/Developmental toxin

Benzene (CAS 71-43-2)	Listed: December 26, 1997
Toluene (CAS 108-88-3)	Listed: January 1, 1991

US - California Proposition 65 - CRT: Listed date/Female reproductive toxin

Toluene (CAS 108-88-3)	Listed: August 7, 2009
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US - California Proposition 65 - CRT: Listed date/Male reproductive toxin

Benzene (CAS 71-43-2)	Listed: December 26, 1997
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Volatile organic compounds (VOC) regulations

EPA

VOC content (40 CFR 51.100(s)) 61.8 %

Consumer products (40 CFR 59, Subpt. C) Not regulated

State

Consumer products This product is regulated as a Dry Lubricant. This product is compliant for use in all 50 states.

VOC content (CA) 61.8 %

VOC content (OTC) 61.8 %

International Inventories

Country(s) or region	Inventory name	On inventory (yes/no)*
Australia	Australian Inventory of Chemical Substances (AICS)	No
Canada	Domestic Substances List (DSL)	Yes
Canada	Non-Domestic Substances List (NDSL)	No
China	Inventory of Existing Chemical Substances in China (IECSC)	No
Europe	European Inventory of Existing Commercial Chemical Substances (EINECS)	No
Europe	European List of Notified Chemical Substances (ELINCS)	No
Japan	Inventory of Existing and New Chemical Substances (ENCS)	No
Korea	Existing Chemicals List (ECL)	No
New Zealand	New Zealand Inventory	No
Philippines	Philippine Inventory of Chemicals and Chemical Substances (PICCS)	Yes
United States & Puerto Rico	Toxic Substances Control Act (TSCA) Inventory	Yes

*A "Yes" indicates that all components of this product comply with the inventory requirements administered by the governing country(s)

A "No" indicates that one or more components of the product are not listed or exempt from listing on the inventory administered by the governing country(s).

16. Other information, including date of preparation or last revision

Issue date	02-26-2015
Prepared by	Allison Cho
Version #	01
Further information	Not available.
HMIS® ratings	Health: 2* Flammability: 4 Physical hazard: 0 Personal protection: B
NFPA ratings	Health: 2 Flammability: 4 Instability: 0

NFPA ratings**Disclaimer**

CRC cannot anticipate all conditions under which this information and its product, or the products of other manufacturers in combination with its product, may be used. It is the user's responsibility to ensure safe conditions for handling, storage and disposal of the product, and to assume liability for loss, injury, damage or expense due to improper use. The information contained in this document applies to this specific material as supplied. It may not be valid for this material if it is used in combination with any other materials. This information is accurate to the best of CRC Industries' knowledge or obtained from sources believed by CRC to be accurate. Before using any product, read all warnings and directions on the label. For further clarification of any information contained on this (M)SDS consult your supervisor, a health & safety professional, or CRC Industries.



MATERIAL SAFETY DATA SHEET

Section 1: Product & Company Identification

Product Name: Food Grade Anti-Seize and Lubricating Compound

Product Number (s): SL35905, SL35906

Product Use: anti-seize compound

Manufacturer / Supplier Contact Information:

In United States:

CRC Industries, Inc.

885 Louis Drive

Warminster, PA 18974

www.crcindustries.com

1-215-674-4300 (General)

(800) 521-3168 (Technical)

(800) 272-4620 (Customer Service)

In Canada:

CRC Canada Co.

2-1246 Lorimar Drive

Mississauga, Ontario L5S 1R2

www.crc-canada.ca

1-905-670-2291

In Mexico:

CRC Industries Mexico

Av. Benito Juárez 4055 G

Colonia Orquídea

San Luís Potosí, SLP CP 78394

www.crc-mexico.com

52-444-824-1666

24-Hr Emergency – CHEMTREC: (800) 424-9300 or (703) 527-3887

Section 2: Hazards Identification

Emergency Overview

Appearance & Odor: Opaque off-white semi-solid paste, negligible odor

Potential Health Effects:

ACUTE EFFECTS:

EYE: May cause irritation

SKIN: For hypersensitive persons, may irritate the skin after prolonged periods of time.

INHALATION: Viscous nature may block breathing passages if inhaled.

INGESTION: May cause diarrhea

CHRONIC EFFECTS: None known

TARGET ORGANS: None known

Medical Conditions Aggravated by Exposure: Pre-existing skin sensitivities

See Section 11 for toxicology and carcinogenicity information on product ingredients.

Product Name: Food Grade Anti-Seize and Lubricating Compound

Product Number (s): SL35905, SL35906

Section 3: Composition/Information on Ingredients

COMPONENT	CAS NUMBER	% by Wt.
Non-hazardous blend	82980-54-9 / 8042-47-5 / 9003-29-6 / 9002-84-0 / 68037-01-4 / 471-34-1	85 - 95
Diphenylamine	122-39-4	< 0.1
Talc	14807-96-6	5 - 10
Zinc oxide	1314-13-2	1 - 2

Section 4: First Aid Measures

Eye Contact: Immediately flush with plenty of water for 15 minutes. Call a physician if irritation persists.

Skin Contact: Remove contaminated clothing and wash affected area with soap and water. Call a physician if irritation persists. Wash contaminated clothing prior to re-use.

Inhalation: Remove person to fresh air. Keep person calm. If not breathing, give artificial respiration. If breathing is difficult give oxygen. Call a physician.

Ingestion: Wash out mouth immediately. Contact a physician.

Note to Physicians: Treat symptomatically.

Section 5: Fire-Fighting Measures

Flammable Properties: As defined by OSHA, this product is nonflammable.

Flash Point:	> 400°F / 204°C	Upper Explosive Limit:	7.0
Autoignition Temperature:	> 500°F / 260°C	Lower Explosive Limit:	0.9

Fire and Explosion Data:

Suitable Extinguishing Media: Foam, dry powder, Halon®, carbon dioxide, sand, earth & water mist. Do NOT use water jet.

Products of Combustion: Smoke, soot, hydrocarbons and oxides of carbon

Explosion Hazards: Containers, when exposed to heat from fire, may build pressure and rupture.

Protection of Fire-Fighters: Firefighters should wear self-contained, NIOSH-approved breathing apparatus for protection against suffocation and possible toxic decomposition products. Proper eye and skin protection should be provided. Use water spray to keep fire-exposed containers cool and to knock down vapors which may result from product decomposition.

Section 6: Accidental Release Measures

Personal Precautions: Use personal protection recommended in Section 8.

Environmental Precautions: Take precautions to prevent contamination of ground and surface waters. Do not flush into sewers or storm drains.

Methods for Containment & Clean-up: Scrape up the bulk of the material. Wipe up the remainder with a cloth.

Product Name: Food Grade Anti-Seize and Lubricating Compound**Product Number (s): SL35905, SL35906**

Ventilate the area with fresh air. To prevent slipping hazard, clean up remaining residue with diatomaceous earth.

Section 7: Handling and Storage

Handling Procedures: Do not allow product to enter drains; it may clog the drain. For product use instructions, please see the product label.

Storage Procedures: Store in a cool dry area out of direct sunlight. Do not store at elevated temperatures.

Aerosol Storage Level: NA

Section 8: Exposure Controls/Personal Protection

Exposure Guidelines:

COMPONENT	OSHA		ACGIH		OTHER		UNIT
	TWA	STEL	TWA	STEL	TWA	SOURCE	
Non-hazardous blend	NE	NE	NE	NE	NE		
Diphenylamine	10 (v)	NE	10	NE	NE		mg/m ³
Talc	20*	NE	2	NE	NE		mg/m ³
Zinc oxide	5	NE	2	10	NE		mg/m ³
N.E. – Not Established (c) – ceiling (s) – skin (v) – vacated * - mppcf							

Controls and Protection:

Engineering Controls: Area should have ventilation to provide fresh air. Local exhaust ventilation is generally preferred because it can control the emissions of the contaminant at the source, preventing dispersion into the general work area. Use mechanical means if necessary to maintain vapor levels below the exposure guidelines. If working in a confined space, follow applicable OSHA regulations.

Respiratory Protection: None required for normal work where adequate ventilation is provided. If engineering controls are not feasible or if exposure exceeds the applicable exposure limits, use a NIOSH-approved cartridge respirator with organic vapor cartridge. Air monitoring is needed to determine actual employee exposure levels. Use a self-contained breathing apparatus in confined spaces and for emergencies.

Eye/face Protection: For normal conditions, wear safety glasses. Where there is reasonable probability of liquid contact, wear splash-proof goggles.

Skin Protection: Use protective gloves such as nitrile or PVC. Also, use full protective clothing if there is prolonged or repeated contact of liquid with skin.

Section 9: Physical and Chemical Properties

Physical State: semi-solid paste

Color: white / off-white

Odor: negligible

Odor Threshold: ND

Specific Gravity: 1.17

Initial Boiling Point: > 500°F / 260°C

Freezing Point: ND

Product Name: Food Grade Anti-Seize and Lubricating Compound**Product Number (s): SL35905, SL35906**

Vapor Pressure: < 0.01 kPa

Vapor Density: > 5 (air = 1)

Evaporation Rate: slow

Solubility: negligible in water

Coefficient of water/oil distribution: ND

pH: NA

Volatile Organic Compounds: wt %: 0 g/L: 0 lbs./gal: 0

Section 10: Stability and Reactivity

Stability: Stable

Conditions to Avoid: Sources of ignition, temperature extremes

Incompatible Materials: Strong inorganic and organic acids, oxidizing agents

Hazardous Decomposition Products: Smoke, airborne soot, hydrocarbons and oxides of carbon

Possibility of Hazardous Reactions: No

Section 11: Toxicological Information

Long-term toxicological studies have not been conducted for this product. The following information is available for components of this product.

Acute Toxicity:

Component	Oral LD50 (rat)	Dermal LD50 (rabbit)	Inhalation LC50 (rat)
Non-hazardous blend	no data	no data	no data
Diphenylamine	1120 mg/kg	no data	no data
Talc	no data	no data	no data
Zinc oxide	> 5000 mg/kg	no data	no data

Chronic Toxicity:

Component	OSHA Carcinogen	IARC Carcinogen	NTP Carcinogen	Irritant	Sensitizer
Non-hazardous blend	No	No	No	No	unknown
Diphenylamine	No	No	No	E (moderate) / S & R (mild)	unknown
Talc	No	No	No	No	No
Zinc oxide	No	No	No	R (mild)	unknown

E – Eye	S – Skin	R - Respiratory
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Reproductive Toxicity: No information available

Teratogenicity: No information available

Mutagenicity: No information available

Synergistic Effects: No information available

Section 12: Ecological Information

Ecological studies have not been conducted for this product. The following information is available for components of this product.

Ecotoxicity: No information available

Product Name: Food Grade Anti-Seize and Lubricating Compound**Product Number (s): SL35905, SL35906**

Persistence / Degradability:	No information available
Bioaccumulation / Accumulation:	Bioaccumulation potential nil
Mobility in Environment:	Highly unlikely to cause contamination

Section 13: Disposal Considerations

Waste Classification: This product is not a RCRA hazardous waste (See 40 CFR Part 261.20 – 261.33).
Empty containers may be recycled.

All disposal activities must comply with federal, state, provincial and local regulations. Local regulations may be more stringent than state, provincial or national requirements.

Section 14: Transport Information

US DOT (ground): Not regulated

ICAO/IATA (air): Not regulated

IMO/IMDG (water): Not regulated

Special Provisions: None

Section 15: Regulatory Information

U.S. Federal Regulations:**Toxic Substances Control Act (TSCA):**

All ingredients are either listed on the TSCA inventory or are exempt.

Comprehensive Environmental Response, Compensation and Liability Act (CERCLA):

Reportable Quantities (RQ's) exist for the following ingredients: None

Spills or releases resulting in the loss of any ingredient at or above its RQ require immediate notification to the National Response Center (800-424-8802) and to your Local Emergency Planning Committee.

Superfund Amendments Reauthorization Act (SARA) Title III:

Section 302 Extremely Hazardous Substances (EHS): None

Section 311/312 Hazard Categories:	Fire Hazard	No
	Reactive Hazard	No
	Release of Pressure	No
	Acute Health Hazard	Yes
	Chronic Health Hazard	No

Section 313 Toxic Chemicals: This product contains the following substances subject to the reporting requirements of Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 and 40 CFR Part 372:
zinc compounds (< 2%), diphenylamine (< 0.5%)

Clean Air Act:

Section 112 Hazardous Air Pollutants (HAPs): None

Occupational Safety and Health Administration:

This product is regulated by the Hazard Communications Standard.

Product Name: Food Grade Anti-Seize and Lubricating Compound**Product Number (s): SL35905, SL35906****U.S. State Regulations:****California Safe Drinking Water and Toxic Enforcement Act (Prop 65):**

This product may contain the following chemicals known to the state of California to cause cancer, birth defects or other reproductive harm: None

Consumer Products VOC Regulations: This product is not regulated.

State Right to Know:

New Jersey: 1314-13-2, 14807-96-6, 122-39-4

Pennsylvania: 1314-13-2, 14807-96-6, 122-39-4

Massachusetts: 1314-13-2, 14807-96-6, 122-39-4

Rhode Island : 1314-13-2, 14807-96-6, 122-39-4

Canadian Regulations:**Controlled Products Regulations:**

This product has been classified in accordance with the hazard criteria of the Controlled Product Regulation and the MSDS contains all the information required by the Controlled Products Regulations.

WHMIS Hazard Class: Not hazardous

Canadian DSL Inventory: All ingredients are either listed on the DSL Inventory or are exempt.

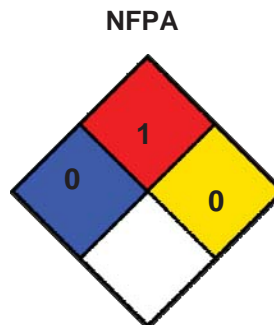
European Union Regulations:

RoHS Compliance: This product is compliant with Directive 2002/95/EC of the European Parliament and of the Council of 27 January 2003. This product does not contain any of the restricted substances as listed in Article 4(1) of the RoHS Directive.

Additional Regulatory Information: None

Section 16: Other Information

HMIS® (II)	
Health:	0
Flammability:	1
Reactivity:	0
PPE:	B



Ratings range from 0 (no hazard) to 4 (severe hazard)

Prepared By: Michelle Rudnick

CRC #: SL35905

Revision Date: 01/12/2015

Changes since last revision: Revision Date

The information contained in this document applies to this specific material as supplied. It may not be valid for this material if it is used in combination with any other materials. This information is accurate to the best of CRC Industries' knowledge or obtained from sources believed by CRC to be accurate. Before using any product, read all warnings and directions on the label. For further clarification of any information contained on this MSDS consult your supervisor, a health & safety professional, or CRC Industries.

Product Name: Food Grade Anti-Seize and Lubricating Compound

Product Number (s): SL35905, SL35906

ACGIH: American Conference of Governmental Industrial Hygienists
CAS: Chemical Abstract Service
CFR: Code of Federal Regulations
DOT: Department of Transportation
DSL: Domestic Substance List
g/L: grams per Liter
HMIS: Hazardous Materials Identification System
IARC: International Agency for Research on Cancer
IATA: International Air Transport Association
ICAO: International Civil Aviation Organization
IMDG: International Maritime Dangerous Goods
IMO: International Maritime Organization
lbs./gal: pounds per gallon
LC: Lethal Concentration
LD: Lethal Dose

NA: Not Applicable
ND: Not Determined
NIOSH: National Institute of Occupational Safety & Health
NFPA: National Fire Protection Association
NTP: National Toxicology Program
OSHA: Occupational Safety and Health Administration
PMCC: Pensky-Martens Closed Cup
PPE: Personal Protection Equipment
ppm: Parts per Million
RoHS: Restriction of Hazardous Substances
STEL: Short Term Exposure Limit
TCC: Tag Closed Cup
TWA: Time Weighted Average
WHMIS: Workplace Hazardous Materials Information System

SAFETY DATA SHEET

Barge AP (DC001, DC031, DC111, DC115)



Section 1. Identification

GHS product identifier : Barge AP (DC001, DC031, DC111, DC115)

Other means of identification : Not available.

Product type : Liquid.

Identified uses

Adhesive.

Supplier's details : Quabaug Corporation
18 School Street
North Brookfield MA 01535
Tel: 800-325-5022
Fax: 508-867-4600

Emergency telephone number (with hours of operation) : CHEMTREC, U.S. : 1-800-424-9300 International: +1-703-527-3887 (24/7)

Section 2. Hazards identification

OSHA/HCS status : This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).

Classification of the substance or mixture : FLAMMABLE LIQUIDS - Category 2
SKIN CORROSION/IRRITATION - Category 2
SERIOUS EYE DAMAGE/ EYE IRRITATION - Category 2
TOXIC TO REPRODUCTION (Unborn child) - Category 2
SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Narcotic effects) - Category 3
SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) - Category 2
AQUATIC HAZARD (ACUTE) - Category 1
AQUATIC HAZARD (LONG-TERM) - Category 1

GHS label elements

Hazard pictograms :



Signal word :

Danger

Hazard statements :

Highly flammable liquid and vapor.
Causes serious eye irritation.
Causes skin irritation.
Suspected of damaging the unborn child.
May cause drowsiness and dizziness.
May cause damage to organs through prolonged or repeated exposure.
Very toxic to aquatic life with long lasting effects.

Precautionary statements



Section 2. Hazards identification

- Prevention** : Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Use personal protective equipment as required. Wear protective gloves. Wear eye or face protection. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Use explosion-proof electrical, ventilating, lighting and all material-handling equipment. Use only non-sparking tools. Take precautionary measures against static discharge. Keep container tightly closed. Use only outdoors or in a well-ventilated area. Avoid release to the environment. Do not breathe vapor. Wash hands thoroughly after handling.
- Response** : Collect spillage. Get medical attention if you feel unwell. IF exposed or concerned: Get medical attention. IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Call a POISON CENTER or physician if you feel unwell. IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water or shower. IF ON SKIN: Wash with plenty of soap and water. Take off contaminated clothing. If skin irritation occurs: Get medical attention. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical attention.
- Storage** : Store locked up. Store in a well-ventilated place. Keep cool.
- Disposal** : Dispose of contents and container in accordance with all local, regional, national and international regulations.
- Hazards not otherwise classified** : None known.

Section 3. Composition/information on ingredients

- Substance/mixture** : Mixture
- Other means of identification** : Not available.

CAS number/other identifiers

- CAS number** : Not applicable.
- Product code** : Not available.

Ingredient name	%	CAS number
Toluene	35 - 60	108-88-3
Heptane	15 - 25	142-82-5
Ethyl acetate	5 - 15	141-78-6

Any concentration shown as a range is to protect confidentiality or is due to batch variation.

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section.

Occupational exposure limits, if available, are listed in Section 8.

Section 4. First aid measures

Description of necessary first aid measures

- Eye contact** : Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Continue to rinse for at least 20 minutes. Get medical attention.
- Inhalation** : Remove victim to fresh air and keep at rest in a position comfortable for breathing. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Get medical attention. If necessary, call a poison center or physician. If unconscious, place in recovery position and get medical attention immediately. Maintain an open

Section 4. First aid measures

- airway.
- Skin contact** : Flush contaminated skin with plenty of water. Continue to rinse for at least 20 minutes. Get medical attention. Wash clothing before reuse. Clean shoes thoroughly before reuse.
- Ingestion** : Wash out mouth with water. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Stop if the exposed person feels sick as vomiting may be dangerous. Do not induce vomiting unless directed to do so by medical personnel. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Get medical attention. If necessary, call a poison center or physician. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately.

Most important symptoms/effects, acute and delayed

Potential acute health effects

- Eye contact** : Causes serious eye irritation.
- Inhalation** : Can cause central nervous system (CNS) depression. May cause drowsiness and dizziness.
- Skin contact** : Causes skin irritation.
- Ingestion** : Can cause central nervous system (CNS) depression. Irritating to mouth, throat and stomach.

Over-exposure signs/symptoms

- Eye contact** : Adverse symptoms may include the following:
pain or irritation
watering
redness
- Inhalation** : Adverse symptoms may include the following:
nausea or vomiting
headache
drowsiness/fatigue
dizziness/vertigo
unconsciousness
reduced fetal weight
increase in fetal deaths
skeletal malformations
- Skin contact** : Adverse symptoms may include the following:
irritation
redness
reduced fetal weight
increase in fetal deaths
skeletal malformations
- Ingestion** : Adverse symptoms may include the following:
reduced fetal weight
increase in fetal deaths
skeletal malformations

Indication of immediate medical attention and special treatment needed, if necessary

- Notes to physician** : Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.
- Specific treatments** : No specific treatment.

Section 4. First aid measures

- Protection of first-aiders** : No action shall be taken involving any personal risk or without suitable training. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation.

See toxicological information (Section 11)

Section 5. Fire-fighting measures

Extinguishing media

- Suitable extinguishing media** : Use dry chemical, CO₂, water spray (fog) or foam.

- Unsuitable extinguishing media** : Do not use water jet or water-based fire extinguishers.

- Specific hazards arising from the chemical** : Highly flammable liquid and vapor. The vapor/gas is heavier than air and will spread along the ground. Vapors may accumulate in low or confined areas or travel a considerable distance to a source of ignition and flash back. This material is very toxic to aquatic life with long lasting effects. Fire water contaminated with this material must be contained and prevented from being discharged to any waterway, sewer or drain.

- Hazardous thermal decomposition products** : Decomposition products may include the following materials:
carbon dioxide
carbon monoxide

- Special protective actions for fire-fighters** : Move containers from fire area if this can be done without risk. Use water spray to keep fire-exposed containers cool.

- Special protective equipment for fire-fighters** : Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

Section 6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

- For non-emergency personnel** : No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Shut off all ignition sources. No flares, smoking or flames in hazard area. Avoid breathing vapor or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.

- For emergency responders** : If specialized clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".

- Environmental precautions** : Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air). Water polluting material. May be harmful to the environment if released in large quantities. Collect spillage.

Methods and materials for containment and cleaning up

Section 6. Accidental release measures

Spill

- Stop leak if without risk. Move containers from spill area. Use spark-proof tools and explosion-proof equipment. Approach release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Wash spillages into an effluent treatment plant or proceed as follows. Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations (see Section 13). Dispose of via a licensed waste disposal contractor. Contaminated absorbent material may pose the same hazard as the spilled product. Note: see Section 1 for emergency contact information and Section 13 for waste disposal.

Section 7. Handling and storage

Precautions for safe handling

Protective measures

- Put on appropriate personal protective equipment (see Section 8). Avoid exposure - obtain special instructions before use. Avoid exposure during pregnancy. Do not handle until all safety precautions have been read and understood. Do not get in eyes or on skin or clothing. Do not breathe vapor or mist. Do not ingest. Avoid release to the environment. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Do not enter storage areas and confined spaces unless adequately ventilated. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Store and use away from heat, sparks, open flame or any other ignition source. Use explosion-proof electrical (ventilating, lighting and material handling) equipment. Use only non-sparking tools. Take precautionary measures against electrostatic discharges. Empty containers retain product residue and can be hazardous. Do not reuse container.

Advice on general occupational hygiene

- Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. See also Section 8 for additional information on hygiene measures

Conditions for safe storage, including any incompatibilities

- : Store in accordance with local regulations. Store in a segregated and approved area. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Store locked up. Eliminate all ignition sources. Separate from oxidizing materials. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination.

Section 8. Exposure controls/personal protection

Control parameters

Occupational exposure limits

Ingredient name	Exposure limits
Toluene	<p>NIOSH REL (United States, 10/2013). STEL: 560 mg/m³ 15 minutes. STEL: 150 ppm 15 minutes. TWA: 375 mg/m³ 10 hours. TWA: 100 ppm 10 hours.</p> <p>OSHA PEL Z2 (United States, 2/2013). AMP: 500 ppm 10 minutes. CEIL: 300 ppm TWA: 200 ppm 8 hours.</p> <p>ACGIH TLV (United States, 4/2014). TWA: 20 ppm 8 hours.</p>
Heptane	<p>ACGIH TLV (United States, 4/2014). STEL: 2050 mg/m³ 15 minutes. STEL: 500 ppm 15 minutes. TWA: 1640 mg/m³ 8 hours.</p>

Section 8. Exposure controls/personal protection

Ethyl acetate

TWA: 400 ppm 8 hours.
NIOSH REL (United States, 10/2013).
 CEIL: 440 ppm 15 minutes.
 TWA: 350 mg/m³ 10 hours.
 TWA: 85 ppm 10 hours.
 CEIL: 1800 mg/m³ 15 minutes.
OSHA PEL (United States, 2/2013).
 TWA: 2000 mg/m³ 8 hours.
 TWA: 500 ppm 8 hours.
ACGIH TLV (United States, 4/2014).
 TWA: 1440 mg/m³ 8 hours.
 TWA: 400 ppm 8 hours.
NIOSH REL (United States, 10/2013).
 TWA: 1400 mg/m³ 10 hours.
 TWA: 400 ppm 10 hours.
OSHA PEL (United States, 2/2013).
 TWA: 1400 mg/m³ 8 hours.
 TWA: 400 ppm 8 hours.
OSHA PEL 1989 (United States, 3/1989).
 TWA: 400 ppm 8 hours.
 TWA: 1400 mg/m³ 8 hours.

Appropriate engineering controls

- : Use only with adequate ventilation. Use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits. The engineering controls also need to keep gas, vapor or dust concentrations below any lower explosive limits. Use explosion-proof ventilation equipment.

Environmental exposure controls

- : Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation.

Individual protection measures

Hygiene measures

- : Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

Eye/face protection

- : Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts. If contact is possible, the following protection should be worn, unless the assessment indicates a higher degree of protection: chemical splash goggles.

Skin protection

Hand protection

- : Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. Considering the parameters specified by the glove manufacturer, check during use that the gloves are still retaining their protective properties. It should be noted that the time to breakthrough for any glove material may be different for different glove manufacturers. In the case of mixtures, consisting of several substances, the protection time of the gloves cannot be accurately estimated.

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. When there is a risk of ignition from static electricity, wear anti-static protective clothing. For the greatest protection from static discharges, clothing should include anti-static overalls, boots and gloves.

Other skin protection

- : Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Section 8. Exposure controls/personal protection

- Respiratory protection** : Use a properly fitted, air-purifying or supplied air respirator complying with an approved standard if a risk assessment indicates this is necessary. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.

Section 9. Physical and chemical properties

Appearance

- Physical state** : Liquid.
- Color** : Yellow.
- Odor** : Solvent.
- Odor threshold** : Not available.
- pH** : Not available.
- Melting point** : Not available.
- Boiling point** : 77.78°C (172°F)
- Flash point** : Closed cup: -6.11°C (21°F) [Tagliabue.]
- Evaporation rate** : >1 (Butyl acetate = 1)
- Flammability (solid, gas)** : Not available.
- Lower and upper explosive (flammable) limits** : Lower: 1%
Upper: 11.6%
- Vapor pressure** : Not available.
- Vapor density** : >1 [Air = 1]
- Relative density** : 0.881
- Solubility** : Insoluble in water.
- Partition coefficient: n-octanol/water** : Not available.
- Auto-ignition temperature** : Not available.
- Decomposition temperature** : Not available.
- Viscosity** : Dynamic (room temperature): 4500 mPa·s (4500 cP)
Kinematic (40°C (104°F)): 51.08 cm²/s (5108 cSt)
- Volatility** : 75.3647% (w/w)

Section 10. Stability and reactivity

- Reactivity** : No specific test data related to reactivity available for this product or its ingredients.
- Chemical stability** : The product is stable.
- Possibility of hazardous reactions** : Under normal conditions of storage and use, hazardous reactions will not occur.
- Conditions to avoid** : Avoid all possible sources of ignition (spark or flame). Do not pressurize, cut, weld, braze, solder, drill, grind or expose containers to heat or sources of ignition. Do not allow vapor to accumulate in low or confined areas.
- Incompatible materials** : Reactive or incompatible with the following materials: oxidizing materials, acids and alkalis.



Section 10. Stability and reactivity

Hazardous decomposition products : Under normal conditions of storage and use, hazardous decomposition products should not be produced.

Section 11. Toxicological information

Information on toxicological effects

Acute toxicity

Product/ingredient name	Result	Species	Dose	Exposure
Toluene	LC50 Inhalation Vapor LD50 Oral	Rat Rat	49 g/m ³ 636 mg/kg	4 hours -
Heptane	LC50 Inhalation Gas. LC50 Inhalation Vapor	Rat Rat	48000 ppm 103 g/m ³	4 hours 4 hours
Ethyl acetate	LD50 Oral	Rat	5620 mg/kg	-

Irritation/Corrosion

Product/ingredient name	Result	Species	Score	Exposure	Observation
Toluene	Eyes - Mild irritant	Rabbit	-	0.5 minutes 100 mg	-
	Skin - Moderate irritant	Rabbit	-	24 hours 20 mg	-
	Eyes - Mild irritant	Rabbit	-	870 µg	-
	Eyes - Severe irritant	Rabbit	-	24 hours 2 mg	-
	Skin - Mild irritant	Pig	-	24 hours 250 µL	-
	Skin - Mild irritant	Rabbit	-	435 mg	-
	Skin - Moderate irritant	Rabbit	-	500 mg	-

Sensitization

There is no data available.

Carcinogenicity

Classification

Product/ingredient name	OSHA	IARC	NTP	ACGIH	EPA	NIOSH
Toluene	-	3	-	A4	-	-

Specific target organ toxicity (single exposure)

Name	Category	Route of exposure	Target organs
Toluene	Category 3	Not applicable.	Narcotic effects
Heptane	Category 3	Not applicable.	Narcotic effects
Ethyl acetate	Category 3	Not applicable.	Narcotic effects

Specific target organ toxicity (repeated exposure)

Name	Category	Route of exposure	Target organs
Toluene	Category 2	Not determined	Not determined

Aspiration hazard

Name	Result
Toluene	ASPIRATION HAZARD - Category 1
Heptane	ASPIRATION HAZARD - Category 1

Information on the likely routes of exposure : Routes of entry anticipated: Oral, Dermal, Inhalation.

Potential acute health effects

Eye contact : Causes serious eye irritation.

Section 11. Toxicological information

- Inhalation** : Can cause central nervous system (CNS) depression. May cause drowsiness and dizziness.
- Skin contact** : Causes skin irritation.
- Ingestion** : Can cause central nervous system (CNS) depression. Irritating to mouth, throat and stomach.

Symptoms related to the physical, chemical and toxicological characteristics

- Eye contact** : Adverse symptoms may include the following:
pain or irritation
watering
redness
- Inhalation** : Adverse symptoms may include the following:
nausea or vomiting
headache
drowsiness/fatigue
dizziness/vertigo
unconsciousness
reduced fetal weight
increase in fetal deaths
skeletal malformations
- Skin contact** : Adverse symptoms may include the following:
irritation
redness
reduced fetal weight
increase in fetal deaths
skeletal malformations
- Ingestion** : Adverse symptoms may include the following:
reduced fetal weight
increase in fetal deaths
skeletal malformations

Delayed and immediate effects and also chronic effects from short and long term exposure

Short term exposure

- Potential immediate effects** : No known significant effects or critical hazards.
- Potential delayed effects** : No known significant effects or critical hazards.

Long term exposure

- Potential immediate effects** : No known significant effects or critical hazards.
- Potential delayed effects** : No known significant effects or critical hazards.

Potential chronic health effects

- General** : May cause damage to organs through prolonged or repeated exposure.
- Carcinogenicity** : No known significant effects or critical hazards.
- Mutagenicity** : No known significant effects or critical hazards.
- Teratogenicity** : Suspected of damaging the unborn child.
- Developmental effects** : No known significant effects or critical hazards.
- Fertility effects** : No known significant effects or critical hazards.

Numerical measures of toxicity

Acute toxicity estimates



Section 11. Toxicological information

There is no data available.

Section 12. Ecological information

Toxicity

Product/ingredient name	Result	Species	Exposure
Toluene Heptane Ethyl acetate	Acute EC50 433 ppm Marine water	Algae - Skeletonema costatum	96 hours
	Acute EC50 12500 µg/L Fresh water	Algae - Pseudokirchneriella subcapitata	72 hours
	Acute EC50 11600 µg/L Fresh water	Crustaceans - Gammarus pseudolimnaeus - Adult	48 hours
	Acute EC50 6000 µg/L Fresh water	Daphnia - Daphnia magna - Juvenile (Fledgling, Hatchling, Weanling)	48 hours
	Acute LC50 5500 µg/L Fresh water	Fish - Oncorhynchus kisutch - Fry	96 hours
	Chronic NOEC 500000 µg/L Fresh water	Algae - Pseudokirchneriella subcapitata	96 hours
	Chronic NOEC 1000 µg/L Fresh water	Daphnia - Daphnia magna	21 days
	Acute LC50 375000 µg/L Fresh water	Fish - Oreochromis mossambicus	96 hours
	Acute EC50 2500000 µg/L Fresh water	Algae - Selenastrum sp.	96 hours
	Acute LC50 750000 µg/L Fresh water	Crustaceans - Gammarus pulex	48 hours
	Acute LC50 154000 µg/L Fresh water	Daphnia - Daphnia cucullata	48 hours
	Acute LC50 425300 µg/L Fresh water	Fish - Oncorhynchus mykiss - Juvenile (Fledgling, Hatchling, Weanling)	96 hours
	Chronic NOEC 2400 µg/L Fresh water	Daphnia - Daphnia magna	21 days
	Chronic NOEC 75.6 mg/L Fresh water	Fish - Pimephales promelas - Embryo	32 days

Persistence and degradability

There is no data available.

Bioaccumulative potential

Product/ingredient name	LogP _{ow}	BCF	Potential
Toluene	2.73	90	low
Heptane	4.66	552	high
Ethyl acetate	0.68	30	low

Mobility in soil

Soil/water partition coefficient (K_{oc}) : There is no data available.

Other adverse effects : No known significant effects or critical hazards.

Section 13. Disposal considerations

Disposal methods : The generation of waste should be avoided or minimized wherever possible. Disposal of this product, solutions and any by-products should comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Care should be taken when handling empty containers that have not been cleaned or rinsed out. Empty containers or liners may retain some product residues. Vapor from product residues may create a highly flammable or explosive atmosphere inside the container. Do not cut, weld or grind used containers unless they have been cleaned thoroughly internally. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.





United States - RCRA Toxic hazardous waste "U" List



Section 13. Disposal considerations

Ingredient	CAS #	Status	Reference number
Toluene	108-88-3	Listed	U220
Ethyl acetate	141-78-6	Listed	U112

Section 14. Transport information

	DOT Classification	IMDG	IATA
UN number	UN1133	UN1133	UN1133
UN proper shipping name	ADHESIVES RQ (Toluene, Ethyl Acetate)	ADHESIVES. Marine pollutant (Heptane)	ADHESIVES
Transport hazard class(es)	3 	3  	3 
Packing group	II	II	II
Environmental hazards	No.	Yes.	No.
Additional information	<p>Reportable quantity 1666.7 lbs / 756.67 kg [226.89 gal / 858.87 L] Package sizes shipped in quantities less than the product reportable quantity are not subject to the RQ (reportable quantity) transportation requirements.</p> <p>Remarks SMALL QUANTITY (1 gallon or less): ORM-D; CONSUMER COMMODITY</p>	<p>The marine pollutant mark is not required when transported in sizes of ≤5 L or ≤5 kg.</p> <p>Emergency schedules (EmS) F-E, S-D</p>	<p>The environmentally hazardous substance mark may appear if required by other transportation regulations.</p>

AERG : 128

DOT-RQ Details : Toluene 1000 lbs / 454 kg [137.86 gal / 521.84 L]
Ethyl acetate 5000 lbs / 2270 kg [670.36 gal / 2537.6 L]

Special precautions for user : **Transport within user's premises:** always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code : Not available.

Section 15. Regulatory information

U.S. Federal regulations : TSCA 8(a) PAIR: Heptane
TSCA 8(a) CDR Exempt/Partial exemption: Not determined
United States inventory (TSCA 8b): All components are listed or exempted.
Clean Water Act (CWA) 307: Toluene
Clean Water Act (CWA) 311: Toluene



Section 15. Regulatory information

Clean Air Act Section 112 : Listed

(b) Hazardous Air
Pollutants (HAPs)

Clean Air Act Section 602 : Not listed
Class I Substances

Clean Air Act Section 602 : Not listed
Class II Substances

DEA List I Chemicals : Not listed
(Precursor Chemicals)

DEA List II Chemicals : Listed
(Essential Chemicals)

SARA 302/304

Composition/information on ingredients

No products were found.

SARA 304 RQ : Not applicable.

SARA 311/312

Classification : Fire hazard
Immediate (acute) health hazard
Delayed (chronic) health hazard

Composition/information on ingredients

Name	%	Fire hazard	Sudden release of pressure	Reactive	Immediate (acute) health hazard	Delayed (chronic) health hazard
Toluene	35 - 60	Yes.	No.	No.	Yes.	Yes.
Heptane	15 - 25	Yes.	No.	No.	Yes.	No.
Ethyl acetate	5 - 15	Yes.	No.	No.	Yes.	No.

SARA 313

	Product name	CAS number	%
Form R - Reporting requirements	Toluene	108-88-3	35 - 60
Supplier notification	Toluene	108-88-3	35 - 60

SARA 313 notifications must not be detached from the SDS and any copying and redistribution of the SDS shall include copying and redistribution of the notice attached to copies of the SDS subsequently redistributed.

State regulations

Massachusetts : The following components are listed: Toluene; Heptane; Ethyl acetate

New York : The following components are listed: Toluene; Ethyl acetate

New Jersey : The following components are listed: Toluene; Heptane; Ethyl acetate

Pennsylvania : The following components are listed: Toluene; Heptane; Ethyl acetate

California Prop. 65

WARNING: This product contains a chemical known to the State of California to cause birth defects or other reproductive harm.

Ingredient name	Cancer	Reproductive	No significant risk level	Maximum acceptable dosage level
Toluene	No.	Yes.	No.	7000 µg/day (ingestion) 13000 µg/day (inhalation)

Section 16. Other information

History

Date of issue mm/dd/yyyy : 10/15/2014

Date of previous issue : 11/15/2012

Version : 2

Prepared by : KMK Regulatory Services Inc.

Key to abbreviations : ATE = Acute Toxicity Estimate
BCF = Bioconcentration Factor
GHS = Globally Harmonized System of Classification and Labelling of Chemicals
IATA = International Air Transport Association
IBC = Intermediate Bulk Container
IMDG = International Maritime Dangerous Goods
LogPow = logarithm of the octanol/water partition coefficient
MARPOL 73/78 = International Convention for the Prevention of Pollution From Ships, 1973 as modified by the Protocol of 1978. ("Marpol" = marine pollution)
UN = United Nations

Notice to reader

To the best of our knowledge, the information contained herein is accurate. However, neither the above-named supplier, nor any of its subsidiaries, assumes any liability whatsoever for the accuracy or completeness of the information contained herein.

Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist.

MATERIAL SAFETY DATA SHEET

This MSDS complies with OSHA'S Hazard Communication Standard 29 CFR 1910.1200 and OSHA Form 174

IDENTITY AND MANUFACTURER'S INFORMATION

NFPA Rating: Health-2; Flammability-3; Reactivity-0; Special--	HMIS Rating: Health-2; Flammability-3; Reactivity-0; Personal Protection-B
Manufactured For: Advance Auto Parts Advance Stores Company, Inc. Address: 5008 Airport Road Roanoke, VA 24012	DOT Hazard Classification: Consumer Commodity ORM-D, Limited Qty Identity (trade name as used on label): CARB + CHOKE CLEANER P/N A7000
Date Prepared: 01/24/11 Prepared By: IB	MSDS NUMBER: A00736 Revision: 14
Information Calls: (770)422-2071	NOTICE: JUDGEMENT BASED ON INDIRECT TEST DATA
DOT 24 HR EMERGENCY RESPONSE NUMBER: CHEMTREC (800) 424-9300	

SECTION 1 - MATERIAL IDENTIFICATION AND INFORMATION

COMPONENTS-CHEMICAL NAMES AND COMMON NAMES (Hazardous Components 1% or greater; Carcinogens 0.1% or greater)	CAS Number	SARA III LIST	OSHA PEL (ppm)	ACGIH TLV (ppm)	Carcinogen Ref. Source **
ACETONE	67-64-1	No	1000	500	d
HYDROTREATED LIGHT PETROLEUM DISTILLATES	64742-47-8	No	5 mg/m3 (mist)	5 mg/m3 (mist)	d
TOLUENE	108-88-3	Yes	200	50	d
CARBON DIOXIDE	124-38-9	No	5000	5000	d

WARNING: This product contains a chemical or chemicals known to the State of California to cause cancer, birth defects or other reproductive harm.

SECTION 2 - PHYSICAL/CHEMICAL CHARACTERISTICS

Boiling Point: N/A	Specific Gravity (H ₂ O=1): Concentrate Only = 0.8
Vapor Pressure: PSIG @ 70°F (Aerosols): max 65	Vapor Pressure (Non-Aerosols)(mm Hg and Temperature): N/A
Vapor Density (Air = 1): N/E	Evaporation Rate (= 1): N/E
Solubility in Water: Partial	Water Reactive: No
Appearance and Odor: Clear liquid with solvent odor.	VOC: (volatile organic compound per CARB & Federal) = 10% by weight

SECTION 3 - FIRE AND EXPLOSION HAZARD DATA

FLAMMABILITY as per USA FLAME PROJECTION TEST (aerosols): Projection: 50-60 inches with flashback: Categorized: EXTREMELY FLAMMABLE	Auto Ignition Temperature N/E	Flammability Limits in Air by % in Volume: % LEL: N/E % UEL: N/E
FLASH POINT AND METHOD USED (non-aerosols): N/A	EXTINGUISHER MEDIA: Foam, dry chemical, carbon dioxide, water.	
SPECIAL FIRE FIGHTING PROCEDURES: Self-contained breathing apparatus.		
Unusual Fire & Explosion Hazards: Do not expose aerosols to temperatures above 120°F or the container may rupture.		

SECTION 4 - REACTIVITY HAZARD DATA

STABILITY <input checked="" type="checkbox"/> STABLE <input type="checkbox"/> UNSTABLE	HAZARDOUS POLYMERIZATION <input type="checkbox"/> WILL <input checked="" type="checkbox"/> WILL NOT OCCUR
Incompatibility (Mat. to avoid): Acids and strong oxidizers.	Conditions to Avoid: Open flame, welding arcs, heat, sparks.
Hazardous Decomposition Products: CO, CO ₂ .	

SECTION 5 - HEALTH HAZARD DATA

PRIMARY ROUTES OF ENTRY: <input checked="" type="checkbox"/> INHALATION <input type="checkbox"/> INGESTION <input checked="" type="checkbox"/> SKIN ABSORPTION <input type="checkbox"/> EYE <input type="checkbox"/> NOT HAZARDOUS	
ACUTE EFFECTS:	
Inhalation: Excessive inhalation of vapors can be harmful & may cause headache, dizziness, asphyxia, anesthetic effects & possible unconsciousness.	
Eye Contact: Irritation	Skin Contact: Irritation
Ingestion: Harmful and possibly asphyxia complication from inhalation of volatilization of ingested solvent. Possible chemical pneumonitis if aspirated into lungs. Nausea.	
CHRONIC EFFECTS: (Effects due to excessive exposure to the raw materials of this mixture) Excessive inhalation may result in CNS effects. See section 1.	
Medical Conditions Generally Aggravated by Exposure: May aggravate existing eye, skin, or upper respiratory conditions.	

EMERGENCY FIRST AID PROCEDURES

Eye Contact: Flush with water for at least 15 minutes. If irritated, seek medical attention.
Skin Contact: Remove contaminated clothing. Launder before rewearing. Wash skin with soap and water. If irritated, seek medical attention.
Inhalation: Remove to fresh air. Resuscitate if necessary. Get medical attention.
Ingestion: DO NOT INDUCE VOMITING. Get immediate medical attention.

SECTION 6 - CONTROL AND PROTECTIVE MEASURES

Respiratory Protection (specify type): If vapor concentration exceeds TLV, use respirator approved by MSHA/NIOSH for organic vapor.	Eye Protection: Safety glasses recommended.
Protective Gloves: Rubber gloves.	
Ventilation Requirements: Adequate ventilation to keep vapor concentration below TLV.	
Other Protective Clothing & Equipment: None	
Hygienic Work Practices: Wash with soap and water before handling food. Remove contaminated clothing.	

SECTION 7 - PRECAUTIONS FOR SAFE HANDLING AND USE

Steps To Be Taken If Material Is Spilled Or Released: Absorb spilled liquid with suitable medium. Incinerate or landfill according to local, state or federal regulations. Prevent from entering drains or sewers.
Waste Disposal Methods: Aerosol cans when vented to atmospheric pressure through normal use, pose no disposal hazard.
Precautions To Be Taken In Handling & Storage: Do not puncture or incinerate containers. Do not store at temperatures above 120°F.
Other Precautions &/or Special Hazards: KEEP OUT OF REACH OF CHILDREN. Avoid food contamination. Avoid breathing vapors. Remove ignition sources.

We believe the statements, technical information and recommendations contained herein are reliable, but they are given without warranty or guarantee of any kind.

** Chemical Listed as Carcinogen or Potential Carcinogen. [a] NTP [b] IARC Monograph [c] OSHA [d] Not Listed [e] Animal Data Only

THIS MSDS IS CURRENT AS OF August 8, 2014. The DATE PREPARED section is the original date assembled and remains current until a change is necessary. This is tracked internally at the manufacturer by these date codes and therefore must remain as the originating date.

M A T E R I A L S A F E T Y D A T A S H E E T

Date Printed: 02/20/2014

Page: 1

Product Code: 90995F MSDS

Product Name: FF GCMI 90 BLACK ED VIII

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Product: FF GCMI 90 BLACK ED VIII

The J.M. Fry Company

4329 Eubank Road, Richmond, VA 23231

Information Phone: 804-236-8100

24-HR EMERGENCY PHONE: CHEMTREC 1-800-262-8200

2. COMPOSITION/INFORMATION ON HAZARDOUS INGREDIENTS

Component/Exposure Limits

CAS#

Weight %

N/A

3. HAZARDS IDENTIFICATION

Potential Health Effects

EYES: MAY CAUSE IRRITATION OR BURNING.

SKIN: MAY DRY AND DEFAT SKIN CAUSING IRRITATION AND DERMATITIS AFTER REPEATED EXPOSURE. OTHER AFFECTS OF ABSORPTION ARE UNKNOWN.

INGESTION: INGESTION CAN CAUSE GASTROINTESTINAL IRRITATION AND NAUSEA. THE EXACT NATURE AND INTENSITY OF TOXIC EFFECTS FOLLOWING INGESTION IS UNKNOWN. SEEK MEDICAL ATTENTION.

INHALATION: VAPORS MAY CAUSE HEADACHE OR NAUSEA IN SENSITIVE INDIVIDUALS.

4. FIRST AID MEASURES

EYES: FLUSH WITH WATER OR EYE WASH SOLUTION, INCLUDING UNDER THE EYELIDS, FOR AT LEAST 15 MINUTES. CONTACT A PHYSICIAN IMMEDIATELY.

SKIN: REMOVE CONTAMINATED CLOTHING. WASH THOROUGHLY WITH SOAP AND WATER. IF IRRITATION OCCURS, CONTACT A PHYSICIAN.

INGESTION: GIVE ONE TO TWO GLASSES OF WATER. DO NOT INDUCE VOMITING. CONSULT A PHYSICIAN OR POISON CONTROL CENTER IMMEDIATELY. TREAT SYMPTOMATICALLY.

INHALATION: REMOVE TO FRESH AIR. RESTORE OR SUPPORT BREATHING. CONTACT A PHYSICIAN IF BREATHING DIFFICULTIES OCCUR.

NOTE TO PHYSICIANS: THIS PRODUCT HAS A PH OF 8.5 TO 9.5.

5. FIRE FIGHTING MEASURES

FLAMMABLE PROPERTIES:

Flash Point: >200 DEG F

Method: PM CC

M A T E R I A L S A F E T Y D A T A S H E E T

Date Printed: 02/20/2014

Page: 2

Product Code: 90995F MSDS

Product Name: FF GCMI 90 BLACK ED VIII

FLAMMABLE LIMITS: (SOLVENT PORTION ONLY, IF APPLICABLE)

Lower flammable limit: N/A

Upper flammable limit: N/A

AUTOIGNITION TEMPERATURE: UNKNOWN

HAZARDOUS COMBUSTION PRODUCTS: MAY PRODUCE FUMES WHEN HEATED. FUMES WILL CONTAIN CARBON MONOXIDE, CARBON DIOXIDE AND VARIOUS OTHER DECOMPOSITION PRODUCTS. ALL DECOMPOSITION PRODUCTS ARE NOT KNOWN.

EXTINGUISHING MEDIA: FOAM, ALCOHOL FOAM, CO2, DRY CHEMICAL, WATER, WATER FOG.

FIREFIGHTING INSTRUCTIONS: SELF-CONTAINED BREATHING APPARATUS SHOULD BE WORN TO AVOID INHALATION OF CONCENTRATED VAPORS IN FIRE AREA. USE EXTINGUISHING MEDIA APPROPRIATE FOR SURROUNDING FIRE.

6. ACCIDENTAL RELEASE MEASURES

SMALL SPILL: DIKE TO PREVENT SPREAD USING ABSORBENT MATERIAL OR CHEMICAL DAMS. SCOOP OR PUMP MATERIAL INTO WATER PROOF CONTAINERS FOR DISPOSAL. STAINS MAY BE REMOVED WITH COMMERCIAL STRENGTH SOAP.

7. HANDLING AND STORAGE

HANDLING: HANDLE ACCORDING TO LABEL INSTRUCTIONS.

STORAGE: THIS PRODUCT HAS BEEN DESIGNED AND PACKAGED FOR INDUSTRIAL USE ONLY! STORE AWAY FROM EXCESSIVE HEAT, COLD OR FREEZING TEMPERATURES. DO NOT TRANSFER TO UNMARKED CONTAINERS. ROTATE STOCK. KEEP CONTAINERS CLOSED WHEN NOT IN USE.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

ENGINEERING CONTROLS: NONE NEEDED UNLESS TLV LIMITS ARE EXCEEDED.

RESPIRATORY PROTECTION: NOT NORMALLY REQUIRED WITH ADEQUATE VENTILATION. IF TLV IS EXCEEDED FOR AIRBORNE MISTS, USE NIOSH APPROVED RESPIRATOR OR SELF CONTAINED BREATHING APPARATUS.

SKIN PROTECTION: CHEMICAL-RESISTANT GLOVES, APRONS, AND COVERALLS RECOMMENDED WHEN MIXING, FILLING, POURING OR CLEANING EQUIPMENT.

EYE PROTECTION: PROTECTIVE GLASSES OR CHEMICAL-RESISTANT SPLASH GOGGLES RECOMMENDED WHEN HANDLING. MAINTAIN EYE WASH FACILITIES IN WORK AREA.

9. PHYSICAL AND CHEMICAL PROPERTIES

BOILING POINT: > 212 DEG F

MELTING POINT: NOT AVAILABLE.

FREEZING POINT: UNKNOWN

VAPOR PRESSURE: NOT AVAILABLE.

VAPOR DENSITY: HEAVIER THAN AIR

SOLUBILITY IN WATER: COMPLETE

M A T E R I A L S A F E T Y D A T A S H E E T

Date Printed: 02/20/2014

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Product Code: 90995F MSDS
Product Name: FF GCM1 90 BLACK ED VIII

SPECIFIC GRAVITY: 1.10
VOLATILE ORGANIC COMPOUNDS: 0.06 lb/gl
pH: 8.5-9.5
WEIGHT PER GALLON: 9.20 lb/gl
VOLATILE WEIGHT PERCENT: 78.00%
APPEARANCE: LIQUID, VARIOUS COLORS
ODOR: MILD ACRYLIC ODOR

10. STABILITY AND REACTIVITY

CHEMICAL STABILITY (CONDITIONS TO AVOID): STABLE UNDER NORMAL CONDITIONS OF USE. AVOID EXCESSIVE HEAT OR COLD. AVOID EXCESSIVE AGING BEYOND RECOMMENDED SHELF LIFE.

INCOMPATIBILITY: PRODUCT IS NORMALLY UNREACTIVE. STRONG ACIDS MAY CAUSE PRODUCT TO GEL.

HAZARDOUS DECOMPOSITION PRODUCTS: ~~MAY PRODUCE FUMES WHEN HEATED. FUMES WILL CONTAIN~~ CARBON MONOXIDE, CARBON DIOXIDE AND VARIOUS OTHER DECOMPOSITION PRODUCTS. ALL DECOMPOSITION PRODUCTS ARE NOT KNOWN.

HAZARDOUS POLYMERIZATION: WILL NOT OCCUR.

11. TOXICOLOGICAL INFORMATION

EYE: NO AVAILABLE INFORMATION.

SKIN: NO AVAILABLE INFORMATION.

ORAL: NO AVAILABLE INFORMATION

CHRONIC/CARCINOGENICITY: INFORMATION OBTAINED FROM OUR SUPPLIERS INDICATES THIS PRODUCT IS NOT RATED AS CARCINOGENIC UNDER NORMALLY EXPECTED CONDITIONS OF HANDLING AND USE.

12. ECOLOGICAL INFORMATION

ECOTOXICOLOGICAL INFORMATION: NO AVAILABLE INFORMATION.

13. DISPOSAL CONSIDERATIONS

DISPOSE OF IN ACCORDANCE WITH LOCAL, STATE, AND FEDERAL REGULATIONS.

14. TRANSPORT INFORMATION (Not all-inclusive)

NOT REGULATED PER U.S. DOT

15. REGULATORY INFORMATION (Not all-inclusive - Selected regulations represented)

SARA 312, SARA 313, and HAP Components:	CAS#	% BY WT.
ETHANOLAMINE (SKIN AND EYE IRRITANT)	141-43-5	0.60
AMMONIUM HYDROXIDE	1336-21-6	0.30

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Product Code: 90995F MSDS

Product Name: FF GCM1 90 BLACK ED VIII

WARNING: THIS PRODUCT CONTAINS CHEMICAL(S) KNOWN TO THE STATE OF CALIFORNIA TO CAUSE CANCER, BIRTH DEFECTS, OR OTHER REPRODUCTIVE HARM.

N/A

16. OTHER INFORMATION

HMIS CODES: H F R P
 1 1 0 B

THE INFORMATION CONTAINED HEREIN IS ACCURATE TO THE BEST OF OUR KNOWLEDGE AND BELIEF. HOWEVER, SINCE CONDITIONS OF USE AND HANDLING ARE BEYOND OUR CONTROL, WE MAKE NO GUARANTEE OF RESULTS AND ASSUME NO LIABILITY FOR DAMAGES INCURRED BY USE OF THIS MATERIAL. FINAL DETERMINATION FOR SAFE USE OF THIS PRODUCT IS THE SOLE RESPONSIBILITY OF THE USER. THE ABOVE DATA IS CONFIDENTIAL, PROPRIETARY INFORMATION OF THE J.M. FRY COMPANY AND IS BEING TRANSMITTED TO ASSIST IN IMPROVING EMPLOYEE OR PUBLIC SAFETY AND HEALTH OR FOR GOVERNMENTAL AGENCY DATA COLLECTION PURPOSES ONLY.

M A T E R I A L S A F E T Y D . A T A S H E E T

Date Printed: 04/16/2014

Page: 1

Product Code: 115109

Product Name: NF OVERPRINT VARNISH

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Product: NF OVERPRINT VARNISH

The J.M. Fry Company

4329 Eubank Road, Richmond, VA 23231

Information Phone: 804-236-8100

24-HR EMERGENCY PHONE: CHEMTREC 1-800-262-8200

2. COMPOSITION/INFORMATION ON HAZARDOUS INGREDIENTS

Component/Exposure Limits	CAS#	Weight %
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N/A

3. HAZARDS IDENTIFICATION

Potential Health Effects

EYES: MAY CAUSE IRRITATION OR BURNING.

SKIN: MAY DRY AND DEFAT SKIN CAUSING IRRITATION AND DERMATITIS AFTER REPEATED EXPOSURE. OTHER AFFECTS OF ABSORPTION ARE UNKNOWN.

INGESTION: INGESTION CAN CAUSE GASTROINTESTINAL IRRITATION AND NAUSEA. THE EXACT NATURE AND INTENSITY OF TOXIC EFFECTS FOLLOWING INGESTION IS UNKNOWN. SEEK MEDICAL ATTENTION.

INHALATION: VAPORS MAY CAUSE HEADACHE OR NAUSEA IN SENSITIVE INDIVIDUALS.

4. FIRST AID MEASURES

EYES: FLUSH WITH WATER OR EYE WASH SOLUTION, INCLUDING UNDER THE EYELIDS, FOR AT LEAST 15 MINUTES. CONTACT A PHYSICIAN IMMEDIATELY.

SKIN: REMOVE CONTAMINATED CLOTHING. WASH THOROUGHLY WITH SOAP AND WATER. IF IRRITATION OCCURS, CONTACT A PHYSICIAN.

INGESTION: GIVE ONE TO TWO GLASSES OF WATER. DO NOT INDUCE VOMITING. CONSULT A PHYSICIAN OR POISON CONTROL CENTER IMMEDIATELY. TREAT SYMPTOMATICALLY.

INHALATION: REMOVE TO FRESH AIR. RESTORE OR SUPPORT BREATHING. CONTACT A PHYSICIAN IF BREATHING DIFFICULTIES OCCUR.

NOTE TO PHYSICIANS:

5. FIRE FIGHTING MEASURES

FLAMMABLE PROPERTIES:

Flash Point: >200 DEG F

Method: PM CC

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Product Code: 115109

Product Name: NF OVERPRINT VARNISH

FLAMMABLE LIMITS: (SOLVENT PORTION ONLY, IF APPLICABLE)

Lower flammable limit: N/A

Upper flammable limit: N/A

AUTOIGNITION TEMPERATURE: UNKNOWN

HAZARDOUS COMBUSTION PRODUCTS: MAY PRODUCE FUMES WHEN HEATED. FUMES WILL CONTAIN CARBON MONOXIDE, CARBON DIOXIDE AND VARIOUS OTHER DECOMPOSITION PRODUCTS. ALL DECOMPOSITION PRODUCTS ARE NOT KNOWN.

EXTINGUISHING MEDIA: FOAM, ALCOHOL FOAM, CO2, DRY CHEMICAL, WATER, WATER FOG.

FIREFIGHTING INSTRUCTIONS: SELF-CONTAINED BREATHING APPARATUS SHOULD BE WORN TO AVOID INHALATION OF CONCENTRATED VAPORS IN FIRE AREA. USE EXTINGUISHING MEDIA APPROPRIATE FOR SURROUNDING FIRE.

6. ACCIDENTAL RELEASE MEASURES

SMALL SPILL: DIKE TO PREVENT SPREAD USING ABSORBENT MATERIAL OR CHEMICAL DAMS. SCOOP OR PUMP MATERIAL INTO WATER PROOF CONTAINERS FOR DISPOSAL. STAINS MAY BE REMOVED WITH COMMERCIAL STRENGTH SOAP.

7. HANDLING AND STORAGE

HANDLING: HANDLE ACCORDING TO LABEL INSTRUCTIONS.

STORAGE: THIS PRODUCT HAS BEEN DESIGNED AND PACKAGED FOR INDUSTRIAL USE ONLY! STORE AWAY FROM EXCESSIVE HEAT, COLD OR FREEZING TEMPERATURES. DO NOT TRANSFER TO UNMARKED CONTAINERS. ROTATE STOCK. KEEP CONTAINERS CLOSED WHEN NOT IN USE.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

ENGINEERING CONTROLS: NONE NEEDED UNLESS TLV LIMITS ARE EXCEEDED.

RESPIRATORY PROTECTION: NOT NORMALLY REQUIRED WITH ADEQUATE VENTILATION. IF TLV IS EXCEEDED FOR AIRBORNE MISTS, USE NIOSH APPROVED RESPIRATOR OR SELF CONTAINED BREATHING APPARATUS.

SKIN PROTECTION: CHEMICAL-RESISTANT GLOVES, APRONS, AND COVERALLS RECOMMENDED WHEN MIXING, FILLING, POURING OR CLEANING EQUIPMENT.

EYE PROTECTION: PROTECTIVE GLASSES OR CHEMICAL-RESISTANT SPLASH GOGGLES RECOMMENDED WHEN HANDLING. MAINTAIN EYE WASH FACILITIES IN WORK AREA.

9. PHYSICAL AND CHEMICAL PROPERTIES

BOILING POINT: > 212 DEG F

MELTING POINT: NOT AVAILABLE.

FREEZING POINT:

VAPOR PRESSURE: NOT AVAILABLE.

VAPOR DENSITY: HEAVIER THAN AIR

SOLUBILITY IN WATER: COMPLETE

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Product Code: 115109

Product Name: NF OVERPRINT VARNISH

SPECIFIC GRAVITY: 1.03

VOLATILE ORGANIC COMPOUNDS: 0.03 lb/gl

pH: 7.2-8.5

WEIGHT PER GALLON: 8.56 lb/gl

VOLATILE WEIGHT PERCENT: 63.68%

APPEARANCE: COLORLESS LIQUID

ODOR: MILD AMMONIA/ACRYLIC ODOR

10. STABILITY AND REACTIVITY

CHEMICAL STABILITY (CONDITIONS TO AVOID): STABLE UNDER NORMAL CONDITIONS OF USE. AVOID EXCESSIVE HEAT OR COLD. AVOID EXCESSIVE AGING BEYOND RECOMMENDED SHELF LIFE.

INCOMPATIBILITY: PRODUCT IS NORMALLY UNREACTIVE. STRONG ACIDS MAY CAUSE PRODUCT TO GEL.

HAZARDOUS DECOMPOSITION PRODUCTS: MAY PRODUCE FUMES WHEN HEATED. FUMES WILL CONTAIN CARBON MONOXIDE, CARBON DIOXIDE AND VARIOUS OTHER DECOMPOSITION PRODUCTS. ALL DECOMPOSITION PRODUCTS ARE NOT KNOWN.

HAZARDOUS POLYMERIZATION: WILL NOT OCCUR.

11. TOXICOLOGICAL INFORMATION

EYE: NO AVAILABLE INFORMATION.

SKIN: NO AVAILABLE INFORMATION.

ORAL: NO AVAILABLE INFORMATION

CHRONIC/CARCINOGENICITY: INFORMATION OBTAINED FROM OUR SUPPLIERS INDICATES THIS PRODUCT IS NOT RATED AS CARCINOGENIC UNDER NORMALLY EXPECTED CONDITIONS OF HANDLING AND USE.

12. ECOLOGICAL INFORMATION

ECOTOXICOLOGICAL INFORMATION: NO AVAILABLE INFORMATION.

13. DISPOSAL CONSIDERATIONS

DISPOSE OF IN ACCORDANCE WITH LOCAL, STATE, AND FEDERAL REGULATIONS.

14. TRANSPORT INFORMATION (Not all-inclusive)

NOT REGULATED PER U.S. DOT

15. REGULATORY INFORMATION (Not all-inclusive - Selected regulations represented)

SARA 312, SARA 313, and HAP Components:

CAS#

% BY WT.

N/A

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Product Code: 115109

Product Name: NF OVERPRINT VARNISH

WARNING: THIS PRODUCT CONTAINS CHEMICAL(S) KNOWN TO THE STATE OF CALIFORNIA TO CAUSE CANCER, BIRTH DEFECTS, OR OTHER REPRODUCTIVE HARM.

N/A

16. OTHER INFORMATION

HMIS CODES: H F R P
 1 1 0 B

THE INFORMATION CONTAINED HEREIN IS ACCURATE TO THE BEST OF OUR KNOWLEDGE AND BELIEF. HOWEVER, SINCE CONDITIONS OF USE AND HANDLING ARE BEYOND OUR CONTROL, WE MAKE NO GUARANTEE OF RESULTS AND ASSUME NO LIABILITY FOR DAMAGES INCURRED BY USE OF THIS MATERIAL. FINAL DETERMINATION FOR SAFE USE OF THIS PRODUCT IS THE SOLE RESPONSIBILITY OF THE USER. THE ABOVE DATA IS CONFIDENTIAL, PROPRIETARY INFORMATION OF THE J.M. FRY COMPANY AND IS BEING TRANSMITTED TO ASSIST IN IMPROVING EMPLOYEE OR PUBLIC SAFETY AND HEALTH OR FOR GOVERNMENTAL AGENCY DATA COLLECTION PURPOSES ONLY.

M A T E R I A L S A F E T Y D A T A S H E E T

Date Printed: 04/16/2014

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Product Code: M-000028

Product Name: SF PH ADJUSTER(#1000 SOLUTION)

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Product: SF PH ADJUSTER(#1000 SOLUTION)

The J.M. Fry Company

4329 Eubank Road, Richmond, VA 23231

Information Phone: 804-236-8100

24-HR EMERGENCY PHONE: CHEMTREC 1-800-262-8200

2. COMPOSITION/INFORMATION ON HAZARDOUS INGREDIENTS

Component/Exposure Limits	CAS#	Weight %
ETHANOLAMINE (SKIN AND EYE IRRITANT)	141-43-5	50.00
OSHA PEL: 3 PPM, ACGIH TLV: 3 PPM, OTHER: N/A		

3. HAZARDS IDENTIFICATION

Potential Health Effects

EYES: CAN CAUSE PERMANENT EYE INJURY. SYMPTOMS INCLUDE STINGING, TEARING, REDNESS, AND SWELLING OF EYE. CAN INJURE CORNEA AND CAUSE BLINDNESS.

SKIN: CAN CAUSE PERMANENT SKIN DAMAGE. SYMPTOMS MAY INCLUDE REDNESS, BURNING, AND SWELLING OF THE SKIN, BURNS AND OTHER SKIN DAMAGE. PASSAGE OF THIS MATERIAL INTO THE BODY THROUGH THE SKIN IS POSSIBLE, AND SKIN CONTACT MAY BE HARMFUL.

INGESTION: SWALLOWING THIS MATERIAL MAY BE HARMFUL OR FATAL. SYMPTOMS MAY INCLUDE SEVERE STOMACH AND INTESTINAL IRRITATION, ABDOMINAL PAIN, AND VOMITING OF BLOOD. SWALLOWING THIS MATERIAL MAY CAUSE BURNS AND DESTROY TISSUE IN MOUTH, THROAT, AND DIGESTIVE TRACT. LOW BLOOD PRESSURE AND SHOCK MAY OCCUR AS RESULT OF SEVERE TISSUE INJURY. THIS MATERIAL CAN GET INTO LUNGS DURING SWALLOWING OR VOMITING. THIS RESULTS IN LUNG INFLAMMATION AND OTHER LUNG INJURY.

INHALATION: BREATHING OF VAPOR OR MIST IS POSSIBLE. BREATHING THIS MATERIAL MAY BE HARMFUL OR FATAL. SYMPTOMS MAY INCLUDE SEVERE IRRITATION AND BURNS TO THE NOSE, THROAT, AND RESPIRATORY TRACT. SYMPTOMS USUALLY OCCUR AT AIR CONCENTRATIONS HIGHER THAN THE RECOMMENDED EXPOSURE LIMITS.

4. FIRST AID MEASURES

EYES: FLUSH WITH WATER OR EYE WASH SOLUTION, INCLUDING UNDER THE EYELIDS, FOR AT LEAST 15 MINUTES. CONTACT A PHYSICIAN IMMEDIATELY.

SKIN: REMOVE CONTAMINATED CLOTHING. WASH THOROUGHLY WITH SOAP AND WATER. IF IRRITATION OCCURS, CONTACT A PHYSICIAN.

INGESTION: IF SWALLOWED, DO NOT INDUCE VOMITING. GIVE LARGE QUANTITIES OF WATER. NEVER GIVE ANYTHING BY MOUTH TO AN UNCONSCIOUS PERSON. GET MEDICAL ATTENTION IMMEDIATELY.

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Product Name: SF PH ADJUSTER(#1000 SOLUTION)

INHALATION: REMOVE TO FRESH AIR. RESTORE OR SUPPORT BREATHING. CONTACT A PHYSICIAN IF BREATHING DIFFICULTIES OCCUR.

NOTE TO PHYSICIANS: THIS MATERIAL IS AN ASPIRATION HAZARD. POTENTIAL DANGER FROM ASPIRATION MUST BE WEIGHED AGAINST POSSIBLE ORAL TOXICITY WHEN DECIDING WHETHER TO INDUCE VOMITING. PREEXISTING DISORDERS OF THE FOLLOWING ORGANS MAY BE AGGRAVATED BY EXPOSURE TO THIS MATERIAL: SKIN, LUNG(FOR EXAMPLE, ASTHMA-LIKE CONDITIONS), LIVER, KIDNEY.

5. FIRE FIGHTING MEASURES

FLAMMABLE PROPERTIES:

Flash Point: 185 DEGREES F Method: TCC

FLAMMABLE LIMITS: (SOLVENT PORTION ONLY, IF APPLICABLE)

Lower flammable limit: 5.5

Upper flammable limit: 17

AUTOIGNITION TEMPERATURE: 770 DEGREES F

HAZARDOUS COMBUSTION PRODUCTS: BURNING MAY PRODUCE AMMONIA, NITROGEN OXIDES, CARBON MONOXIDE, AND CARBON DIOXIDE.

EXTINGUISHING MEDIA: FOAM, ALCOHOL FOAM, CO2, DRY CHEMICAL

FIREFIGHTING INSTRUCTIONS: WEAR A SELF-CONTAINED BREATHING APPARATUS WITH A FULL FACEPIECE OPERATED IN THE POSITIVE PRESSURE DEMAND MODE WITH APPROPRIATE TURN OUT GEAR AND CHEMICAL RESISTANT PERSONAL PROTECTIVE EQUIPMENT. WATER MUST NOT BE USED ON FIRE.

6. ACCIDENTAL RELEASE MEASURES

SMALL SPILL: ELIMINATE ALL SOURCES OF IGNITION SUCH AS FLARES, FLAMES, ELECTRICAL SPARKS. ABSORB LIQUID ON VERMICULITE, FLOOR ABSORBENT OR OTHER ABSORBENT MATERIAL. PERSONS NOT WEARING PROPER PERSONAL PROTECTIVE EQUIPMENT SHOULD BE EXCLUDED FROM AREA OF SPILL. SCOOP OR SCRAPE UP. PUT IN CONTAINER FOR RECOVERY OR DISPOSAL.

7. HANDLING AND STORAGE

HANDLING: CONTAINERS OF THIS MATERIAL MAY BE HAZARDOUS WHEN EMPTIED. SINCE EMPTIED CONTAINERS RETAIN PRODUCT RESIDUES (VAPOR, LIQUID, AND/OR SOLID), ALL HAZARD PRECAUTIONS GIVEN IN DATA SHEET MUST BE OBSERVED. ALL FIVE-GALLON PAILS AND LARGER CONTAINERS SHOULD BE GROUNDED WHEN MATERIAL IS TRANSFERRED.

STORAGE: THIS PRODUCT HAS BEEN DESIGNED AND PACKAGED FOR INDUSTRIAL USE ONLY! STORE AWAY FROM EXCESSIVE HEAT, COLD OR FREEZING TEMPERATURES. DO NOT TRANSFER TO UNMARKED CONTAINERS. DO NOT STORE IN ALUMINUM CONTAINERS. ROTATE STOCK. KEEP CONTAINERS CLOSED WHEN NOT IN USE.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

ENGINEERING CONTROLS: A SYSTEM OF LOCAL AND/OR GENERAL EXHAUST IS RECOMMENDED TO KEEP EMPLOYEE EXPOSURES BELOW THE AIRBORNE EXPOSURE LIMITS. LOCAL EXHAUST VENTILATION IS GENERALLY PREFERRED BECAUSE IT CAN CONTROL THE EMISSIONS OF CONTAMINANT AT ITS SOURCE,

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Product Code: M-000028

Product Name: SF PH ADJUSTER(#1000 SOLUTION)

PREVENTING DISPERSION OF IT INTO GENERAL WORK AREA.

RESPIRATORY PROTECTION: NOT NORMALLY REQUIRED WITH ADEQUATE VENTILATION. IF TLV IS EXCEEDED FOR AIRBORNE MISTS, USE NIOSH APPROVED RESPIRATOR OR SELF CONTAINED BREATHING APPARATUS.

SKIN PROTECTION: CHEMICAL-RESISTANT GLOVES, APRONS, AND COVERALLS RECOMMENDED WHEN MIXING, FILLING, POURING OR CLEANING EQUIPMENT.

EYE PROTECTION: PROTECTIVE GLASSES OR CHEMICAL-RESISTANT SPLASH GOGGLES RECOMMENDED WHEN HANDLING. MAINTAIN EYE WASH FACILITIES IN WORK AREA.

9. PHYSICAL AND CHEMICAL PROPERTIES

BOILING POINT: 340 DEGREES F
MELTING POINT: 50.5 DEGREES F
FREEZING POINT: 50.5 DEGREES F
VAPOR PRESSURE: < 1.000 mmHG@ 70 DEGREES F
VAPOR DENSITY: HEAVIER THAN AIR
SOLUBILITY IN WATER: COMPLETE
SPECIFIC GRAVITY: 1.01
VOLATILE ORGANIC COMPOUNDS: 4.20 lb/gal
pH: 10.5-12.2
WEIGHT PER GALLON: 8.40 lb/gal
VOLATILE WEIGHT PERCENT: 100.00%
APPEARANCE: COLORLESS LIQUID
ODOR: AMMONIA ODOR

10. STABILITY AND REACTIVITY

CHEMICAL STABILITY (CONDITIONS TO AVOID): STABLE UNDER NORMAL CONDITIONS OF USE

INCOMPATIBILITY: AVOID CONTACT WITH: ALDEHYDES, KETONES, ORGANIC ANHYDRIDES, ORGANIC HALIDES, STRONG ACIDS, STRONG ALKALIES, STRONG OXIDIZING AGENTS.

HAZARDOUS DECOMPOSITION PRODUCTS: BURNING MAY PRODUCE AMMONIA, NITROGEN OXIDES, CARBON DIOXIDE AND CARBON MONOXIDE.

HAZARDOUS POLYMERIZATION: WILL NOT OCCUR.

11. TOXICOLOGICAL INFORMATION

EYE: NO AVAILABLE INFORMATION.

SKIN: DERMAL LD50 (RABBIT): 1000mg/kg

ORAL: NO AVAILABLE INFORMATION

CHRONIC/CARCINOGENICITY: INFORMATION OBTAINED FROM OUR SUPPLIERS INDICATES THIS PRODUCT IS NOT RATED AS CARCINOGENIC UNDER NORMALLY EXPECTED CONDITIONS OF HANDLING AND USE.

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Product Code: M-000028

Product Name: SF PH ADJUSTER(#1000 SOLUTION)

12. ECOLOGICAL INFORMATION

ECOTOXICOLOGICAL INFORMATION: NO AVAILABLE INFORMATION.

13. DISPOSAL CONSIDERATIONS

DISPOSE OF IN ACCORDANCE WITH CURRENT LOCAL, STATE, AND FEDERAL REGULATIONS.

14. TRANSPORT INFORMATION (Not all-inclusive)

DOT INFORMATION- 49 CFR 172.101, DOT DESCRIPTION: ETHANOLAMINE,8,UN2491,III.

15. REGULATORY INFORMATION (Not all-inclusive - Selected regulations represented)

SARA 312, SARA 313, and HAP Components:

CAS#

% BY WT.

~~ETHANOLAMINE (SKIN AND EYE IRRITANT) 141-43-5 50.00~~

N/A

16. OTHER INFORMATION

HMIS CODES: H F R P
 2 1 0 B

THE INFORMATION CONTAINED HEREIN IS ACCURATE TO THE BEST OF OUR KNOWLEDGE AND BELIEF. HOWEVER, SINCE CONDITIONS OF USE AND HANDLING ARE BEYOND OUR CONTROL, WE MAKE NO GUARANTEE OF RESULTS AND ASSUME NO LIABILITY FOR DAMAGES INCURRED BY USE OF THIS MATERIAL. FINAL DETERMINATION FOR SAFE USE OF THIS PRODUCT IS THE SOLE RESPONSIBILITY OF THE USER. THE ABOVE DATA IS CONFIDENTIAL, PROPRIETARY INFORMATION OF THE J.M. FRY COMPANY AND IS BEING TRANSMITTED TO ASSIST IN IMPROVING EMPLOYEE OR PUBLIC SAFETY AND HEALTH OR FOR GOVERNMENTAL AGENCY DATA COLLECTION PURPOSES ONLY.

M A T E R I A L S A F E T Y D A T A S H E E T

Date Printed: 04/16/2014

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Product Code: M-007508

Product Name: FF PREM PLUS GCMI 103 YELLOW (ED.X)

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Product: FF PREM PLUS GCMI 103 YELLOW (ED.X)

The J.M. Fry Company
4329 Eubank Road, Richmond, VA 23231
Information Phone: 804-236-8100

24-HR EMERGENCY PHONE: CHEMTREC 1-800-262-8200

2. COMPOSITION/INFORMATION ON HAZARDOUS INGREDIENTS

Component/Exposure Limits	CAS#	Weight %
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N/A

3. HAZARDS IDENTIFICATION

Potential Health Effects

EYES: MAY CAUSE IRRITATION OR BURNING.

SKIN: MAY DRY AND DEFAT SKIN CAUSING IRRITATION AND DERMATITIS AFTER REPEATED EXPOSURE. OTHER AFFECTS OF ABSORPTION ARE UNKNOWN.

INGESTION: INGESTION CAN CAUSE GASTROINTESTINAL IRRITATION AND NAUSEA. THE EXACT NATURE AND INTENSITY OF TOXIC EFFECTS FOLLOWING INGESTION IS UNKNOWN. SEEK MEDICAL ATTENTION.

INHALATION: VAPORS MAY CAUSE HEADACHE OR NAUSEA IN SENSITIVE INDIVIDUALS.

4. FIRST AID MEASURES

EYES: FLUSH WITH WATER OR EYE WASH SOLUTION, INCLUDING UNDER THE EYELIDS, FOR AT LEAST 15 MINUTES. CONTACT A PHYSICIAN IMMEDIATELY.

SKIN: REMOVE CONTAMINATED CLOTHING. WASH THOROUGHLY WITH SOAP AND WATER. IF IRRITATION OCCURS, CONTACT A PHYSICIAN.

INGESTION: GIVE ONE TO TWO GLASSES OF WATER. DO NOT INDUCE VOMITING. CONSULT A PHYSICIAN OR POISON CONTROL CENTER IMMEDIATELY. TREAT SYMPTOMATICALLY.

INHALATION: REMOVE TO FRESH AIR. RESTORE OR SUPPORT BREATHING. CONTACT A PHYSICIAN IF BREATHING DIFFICULTIES OCCUR.

NOTE TO PHYSICIANS: THIS PRODUCT HAS A PH OF 8.5 TO 9.5.

5. FIRE FIGHTING MEASURES

FLAMMABLE PROPERTIES:

Flash Point: >200 DEG F

Method: PM CC

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Product Code: M-007508

Product Name: FF PREM PLUS GCMI 103 YELLOW (ED.X)

FLAMMABLE LIMITS: (SOLVENT PORTION ONLY, IF APPLICABLE)

Lower flammable limit: N/A

Upper flammable limit: N/A

AUTOIGNITION TEMPERATURE: UNKNOWN

HAZARDOUS COMBUSTION PRODUCTS: MAY PRODUCE FUMES WHEN HEATED. FUMES WILL CONTAIN CARBON MONOXIDE, CARBON DIOXIDE AND VARIOUS OTHER DECOMPOSITION PRODUCTS. ALL DECOMPOSITION PRODUCTS ARE NOT KNOWN.

EXTINGUISHING MEDIA: FOAM, ALCOHOL FOAM, CO2, DRY CHEMICAL, WATER, WATER FOG.

FIREFIGHTING INSTRUCTIONS: SELF-CONTAINED BREATHING APPARATUS SHOULD BE WORN TO AVOID INHALATION OF CONCENTRATED VAPORS IN FIRE AREA. USE EXTINGUISHING MEDIA APPROPRIATE FOR SURROUNDING FIRE.

6. ACCIDENTAL RELEASE MEASURES

SMALL SPILL: DIKE TO PREVENT SPREAD USING ABSORBENT MATERIAL OR CHEMICAL DAMS. SCOOP OR PUMP MATERIAL INTO WATER PROOF CONTAINERS FOR DISPOSAL. STAINS MAY BE REMOVED WITH COMMERCIAL STRENGTH SOAP.

7. HANDLING AND STORAGE

HANDLING: HANDLE ACCORDING TO LABEL INSTRUCTIONS.

STORAGE: THIS PRODUCT HAS BEEN DESIGNED AND PACKAGED FOR INDUSTRIAL USE ONLY! STORE AWAY FROM EXCESSIVE HEAT, COLD OR FREEZING TEMPERATURES. DO NOT TRANSFER TO UNMARKED CONTAINERS. ROTATE STOCK. KEEP CONTAINERS CLOSED WHEN NOT IN USE.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

ENGINEERING CONTROLS: NONE NEEDED UNLESS TLV LIMITS ARE EXCEEDED.

RESPIRATORY PROTECTION: NOT NORMALLY REQUIRED WITH ADEQUATE VENTILATION. IF TLV IS EXCEEDED FOR AIRBORNE MISTS, USE NIOSH APPROVED RESPIRATOR OR SELF CONTAINED BREATHING APPARATUS.

SKIN PROTECTION: CHEMICAL-RESISTANT GLOVES, APRONS, AND COVERALLS RECOMMENDED WHEN MIXING, FILLING, POURING OR CLEANING EQUIPMENT.

EYE PROTECTION: PROTECTIVE GLASSES OR CHEMICAL-RESISTANT SPLASH GOGGLES RECOMMENDED WHEN HANDLING. MAINTAIN EYE WASH FACILITIES IN WORK AREA.

9. PHYSICAL AND CHEMICAL PROPERTIES

BOILING POINT: > 212 DEG F

MELTING POINT: NOT AVAILABLE.

FREEZING POINT: UNKNOWN

VAPOR PRESSURE: NOT AVAILABLE.

VAPOR DENSITY: HEAVIER THAN AIR

SOLUBILITY IN WATER: COMPLETE

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Product Code: M-007508

Product Name: FF PREM PLUS GCM1 103 YELLOW (ED.X)

SPECIFIC GRAVITY: 1.20

VOLATILE ORGANIC COMPOUNDS: 0.06 lb/gl

pH: 8.5-9.5

WEIGHT PER GALLON: 9.97 lb/gl

VOLATILE WEIGHT PERCENT: 52.71%

APPEARANCE: LIQUID, VARIOUS COLORS

ODOR: MILD ACRYLIC ODOR

10. STABILITY AND REACTIVITY

CHEMICAL STABILITY (CONDITIONS TO AVOID): STABLE UNDER NORMAL CONDITIONS OF USE. AVOID EXCESSIVE HEAT OR COLD. AVOID EXCESSIVE AGING BEYOND RECOMMENDED SHELF LIFE.

INCOMPATIBILITY: PRODUCT IS NORMALLY UNREACTIVE. STRONG ACIDS MAY CAUSE PRODUCT TO GEL.

HAZARDOUS DECOMPOSITION PRODUCTS:- MAY PRODUCE FUMES WHEN HEATED. FUMES WILL CONTAIN CARBON MONOXIDE, CARBON DIOXIDE AND VARIOUS OTHER DECOMPOSITION PRODUCTS. ALL DECOMPOSITION PRODUCTS ARE NOT KNOWN.

HAZARDOUS POLYMERIZATION: WILL NOT OCCUR.

11. TOXICOLOGICAL INFORMATION

EYE: NO AVAILABLE INFORMATION.

SKIN: NO AVAILABLE INFORMATION.

ORAL: NO AVAILABLE INFORMATION

CHRONIC/CARCINOGENICITY: INFORMATION OBTAINED FROM OUR SUPPLIERS INDICATES THIS PRODUCT IS NOT RATED AS CARCINOGENIC UNDER NORMALLY EXPECTED CONDITIONS OF HANDLING AND USE.

12. ECOLOGICAL INFORMATION

ECOTOXICOLOGICAL INFORMATION: NO AVAILABLE INFORMATION.

13. DISPOSAL CONSIDERATIONS

DISPOSE OF IN ACCORDANCE WITH LOCAL, STATE, AND FEDERAL REGULATIONS.

14. TRANSPORT INFORMATION (Not all-inclusive)

NOT REGULATED PER U.S. DOT

15. REGULATORY INFORMATION (Not all-inclusive - Selected regulations represented)

SARA 312, SARA 313, and HAP Components:	CAS#	% BY WT.
AMMONIUM HYDROXIDE	1336-21-6	0.68
2-BUTOXYETHANOL (GLYCOL ETHER EB)	111-76-2	0.21

M A T E R I A L S A F E T Y D A T A S H E E T

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Product Code: M-007508

Product Name: FF PREM PLUS GCM1 103 YELLOW (ED.X)

2-(2-ETHOXYETHOXY)-ETHANOL

111-90-0

0.20

ETHANOLAMINE (SKIN AND EYE IRRITANT)

141-43-5

0.01

WARNING: THIS PRODUCT CONTAINS CHEMICAL(S) KNOWN TO THE STATE OF CALIFORNIA TO CAUSE CANCER, BIRTH DEFECTS, OR OTHER REPRODUCTIVE HARM.

N/A

16. OTHER INFORMATION

HMIS CODES: H F R P

1 1 0 B

~~THE INFORMATION CONTAINED HEREIN IS ACCURATE TO THE BEST OF OUR KNOWLEDGE AND BELIEF.~~
HOWEVER, SINCE CONDITIONS OF USE AND HANDLING ARE BEYOND OUR CONTROL, WE MAKE NO GUARANTEE OF RESULTS AND ASSUME NO LIABILITY FOR DAMAGES INCURRED BY USE OF THIS MATERIAL. FINAL DETERMINATION FOR SAFE USE OF THIS PRODUCT IS THE SOLE RESPONSIBILITY OF THE USER. THE ABOVE DATA IS CONFIDENTIAL, PROPRIETARY INFORMATION OF THE J.M. FRY COMPANY AND IS BEING TRANSMITTED TO ASSIST IN IMPROVING EMPLOYEE OR PUBLIC SAFETY AND HEALTH OR FOR GOVERNMENTAL AGENCY DATA COLLECTION PURPOSES ONLY.

M A T E R I A L S A F E T Y D A T A S H E E T

Date Printed: 04/16/2014

Page: 1

Product Code: M-009022

Product Name: SF ST. PATRICK'S GREEN

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Product: SF ST. PATRICK'S GREEN

The J.M. Fry Company

4329 Eubank Road, Richmond, VA 23231

Information Phone: 804-236-8100

24-HR EMERGENCY PHONE: CHEMTREC 1-800-262-8200

2. COMPOSITION/INFORMATION ON HAZARDOUS INGREDIENTS

Component/Exposure Limits	CAS#	Weight %
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N/A

3. HAZARDS IDENTIFICATION

Potential Health Effects

EYES: MAY CAUSE IRRITATION OR BURNING.

SKIN: MAY DRY AND DEFAT SKIN CAUSING IRRITATION AND DERMATITIS AFTER REPEATED EXPOSURE. OTHER AFFECTS OF ABSORPTION ARE UNKNOWN.

INGESTION: INGESTION CAN CAUSE GASTROINTESTINAL IRRITATION AND NAUSEA. THE EXACT NATURE AND INTENSITY OF TOXIC EFFECTS FOLLOWING INGESTION IS UNKNOWN. SEEK MEDICAL ATTENTION.

INHALATION: VAPORS MAY CAUSE HEADACHE OR NAUSEA IN SENSITIVE INDIVIDUALS.

4. FIRST AID MEASURES

EYES: FLUSH WITH WATER OR EYE WASH SOLUTION, INCLUDING UNDER THE EYELIDS, FOR AT LEAST 15 MINUTES. CONTACT A PHYSICIAN IMMEDIATELY.

SKIN: REMOVE CONTAMINATED CLOTHING. WASH THOROUGHLY WITH SOAP AND WATER. IF IRRITATION OCCURS, CONTACT A PHYSICIAN.

INGESTION: GIVE ONE TO TWO GLASSES OF WATER. DO NOT INDUCE VOMITING. CONSULT A PHYSICIAN OR POISON CONTROL CENTER IMMEDIATELY. TREAT SYMPTOMATICALLY.

INHALATION: REMOVE TO FRESH AIR. RESTORE OR SUPPORT BREATHING. CONTACT A PHYSICIAN IF BREATHING DIFFICULTIES OCCUR.

NOTE TO PHYSICIANS: THIS PRODUCT HAS A PH OF 8.5 TO 9.5.

5. FIRE FIGHTING MEASURES

FLAMMABLE PROPERTIES:

Flash Point: >200 DEG F

Method: PM CC

M A T E R I A L S A F E T Y D A T A S H E E T

Date Printed: 04/16/2014

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Product Code: M-009022

Product Name: SF ST. PATRICK'S GREEN

FLAMMABLE LIMITS: (SOLVENT PORTION ONLY, IF APPLICABLE)

Lower flammable limit: N/A

Upper flammable limit: N/A

AUTOIGNITION TEMPERATURE: UNKNOWN

HAZARDOUS COMBUSTION PRODUCTS: MAY PRODUCE FUMES WHEN HEATED. FUMES WILL CONTAIN CARBON MONOXIDE, CARBON DIOXIDE AND VARIOUS OTHER DECOMPOSITION PRODUCTS. ALL DECOMPOSITION PRODUCTS ARE NOT KNOWN.

EXTINGUISHING MEDIA: FOAM, ALCOHOL FOAM, CO2, DRY CHEMICAL, WATER, WATER FOG.

FIREFIGHTING INSTRUCTIONS: SELF-CONTAINED BREATHING APPARATUS SHOULD BE WORN TO AVOID INHALATION OF CONCENTRATED VAPORS IN FIRE AREA. USE EXTINGUISHING MEDIA APPROPRIATE FOR SURROUNDING FIRE.

6. ACCIDENTAL RELEASE MEASURES

SMALL SPILL: DIKE TO PREVENT SPREAD USING ABSORBENT MATERIAL OR CHEMICAL DAMS. SCOOP OR PUMP MATERIAL INTO WATER PROOF CONTAINERS FOR DISPOSAL. STAINS MAY BE REMOVED WITH COMMERCIAL STRENGTH SOAP.

7. HANDLING AND STORAGE

HANDLING: HANDLE ACCORDING TO LABEL INSTRUCTIONS.

STORAGE: THIS PRODUCT HAS BEEN DESIGNED AND PACKAGED FOR INDUSTRIAL USE ONLY! STORE AWAY FROM EXCESSIVE HEAT, COLD OR FREEZING TEMPERATURES. DO NOT TRANSFER TO UNMARKED CONTAINERS. ROTATE STOCK. KEEP CONTAINERS CLOSED WHEN NOT IN USE.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

ENGINEERING CONTROLS: NONE NEEDED UNLESS TLV LIMITS ARE EXCEEDED.

RESPIRATORY PROTECTION: NOT NORMALLY REQUIRED WITH ADEQUATE VENTILATION. IF TLV IS EXCEEDED FOR AIRBORNE MISTS, USE NIOSH APPROVED RESPIRATOR OR SELF CONTAINED BREATHING APPARATUS.

SKIN PROTECTION: CHEMICAL-RESISTANT GLOVES, APRONS, AND COVERALLS RECOMMENDED WHEN MIXING, FILLING, POURING OR CLEANING EQUIPMENT.

EYE PROTECTION: PROTECTIVE GLASSES OR CHEMICAL-RESISTANT SPLASH GOGGLES RECOMMENDED WHEN HANDLING. MAINTAIN EYE WASH FACILITIES IN WORK AREA.

9. PHYSICAL AND CHEMICAL PROPERTIES

BOILING POINT: > 212 DEG F

MELTING POINT: NOT AVAILABLE.

FREEZING POINT: UNKNOWN

VAPOR PRESSURE: NOT AVAILABLE.

VAPOR DENSITY: HEAVIER THAN AIR

SOLUBILITY IN WATER: COMPLETE

M A T E R I A L S A F E T Y D A T A S H E E T

Date Printed: 04/16/2014

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Product Code: M-009022

Product Name: SF ST. PATRICK'S GREEN

SPECIFIC GRAVITY: 1.37

VOLATILE ORGANIC COMPOUNDS: 0.08 lb/gl

pH: 8.5-9.5

WEIGHT PER GALLON: 11.41 lb/gl

VOLATILE WEIGHT PERCENT: 44.79%

APPEARANCE: LIQUID, VARIOUS COLORS

ODOR: MILD ACRYLIC ODOR

10. STABILITY AND REACTIVITY

CHEMICAL STABILITY (CONDITIONS TO AVOID): STABLE UNDER NORMAL CONDITIONS OF USE. AVOID EXCESSIVE HEAT OR COLD. AVOID EXCESSIVE AGING BEYOND RECOMMENDED SHELF LIFE.

INCOMPATIBILITY: PRODUCT IS NORMALLY UNREACTIVE. STRONG ACIDS MAY CAUSE PRODUCT TO GEL.

HAZARDOUS DECOMPOSITION PRODUCTS: MAY PRODUCE FUMES WHEN HEATED. FUMES WILL CONTAIN CARBON MONOXIDE, CARBON DIOXIDE AND VARIOUS OTHER DECOMPOSITION PRODUCTS. ALL DECOMPOSITION PRODUCTS ARE NOT KNOWN.

HAZARDOUS POLYMERIZATION: WILL NOT OCCUR.

11. TOXICOLOGICAL INFORMATION

EYE: NO AVAILABLE INFORMATION.

SKIN: NO AVAILABLE INFORMATION.

ORAL: NO AVAILABLE INFORMATION

CHRONIC/CARCINOGENICITY: INFORMATION OBTAINED FROM OUR SUPPLIERS INDICATES THIS PRODUCT IS NOT RATED AS CARCINOGENIC UNDER NORMALLY EXPECTED CONDITIONS OF HANDLING AND USE.

12. ECOLOGICAL INFORMATION

ECOTOXICOLOGICAL INFORMATION: NO AVAILABLE INFORMATION.

13. DISPOSAL CONSIDERATIONS

DISPOSE OF IN ACCORDANCE WITH LOCAL, STATE, AND FEDERAL REGULATIONS.

14. TRANSPORT INFORMATION (Not all-inclusive)

NOT REGULATED PER U.S. DOT

15. REGULATORY INFORMATION (Not all-inclusive - Selected regulations represented)

SARA 312, SARA 313, and HAP Components:	CAS#	% BY WT.
AMMONIUM HYDROXIDE	1336-21-6	0.42
ETHANOLAMINE (SKIN AND EYE IRRITANT)	141-43-5	0.28

M A T E R I A L S A F E T Y D A T A S H E E T

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Product Code: M-009022

Product Name: SF ST. PATRICK'S GREEN

2-BUTOXYETHANOL (GLYCOL ETHER EB)	111-76-2	0.20
2-(2-ETHOXYETHOXY)-ETHANOL	111-90-0	0.12

WARNING: THIS PRODUCT CONTAINS CHEMICAL(S) KNOWN TO THE STATE OF CALIFORNIA TO CAUSE CANCER, BIRTH DEFECTS, OR OTHER REPRODUCTIVE HARM.

N/A

16. OTHER INFORMATION

HMIS CODES: H F R P
1 1 0 B

~~THE INFORMATION CONTAINED HEREIN IS ACCURATE TO THE BEST OF OUR KNOWLEDGE AND BELIEF.~~
HOWEVER, SINCE CONDITIONS OF USE AND HANDLING ARE BEYOND OUR CONTROL, WE MAKE NO GUARANTEE OF RESULTS AND ASSUME NO LIABILITY FOR DAMAGES INCURRED BY USE OF THIS MATERIAL. FINAL DETERMINATION FOR SAFE USE OF THIS PRODUCT IS THE SOLE RESPONSIBILITY OF THE USER. THE ABOVE DATA IS CONFIDENTIAL, PROPRIETARY INFORMATION OF THE J.M. FRY COMPANY AND IS BEING TRANSMITTED TO ASSIST IN IMPROVING EMPLOYEE OR PUBLIC SAFETY AND HEALTH OR FOR GOVERNMENTAL AGENCY DATA COLLECTION PURPOSES ONLY.

M A T E R I A L S A F E T Y D A T A S H E E T

Date Printed: 04/16/2014

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Product Code: M-007506

Product Name: FF PREM PLUS GCMI 21 GREEN (ED.X)

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Product: FF PREM PLUS GCMI 21 GREEN (ED.X)

The J.M. Fry Company
4329 Eubank Road, Richmond, VA 23231
Information Phone: 804-236-8100

24-HR EMERGENCY PHONE: CHEMTREC 1-800-262-8200

2. COMPOSITION/INFORMATION ON HAZARDOUS INGREDIENTS

Component/Exposure Limits	CAS#	Weight %
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N/A

3. HAZARDS IDENTIFICATION

Potential Health Effects

EYES: MAY CAUSE IRRITATION OR BURNING.

SKIN: MAY DRY AND DEFAT SKIN CAUSING IRRITATION AND DERMATITIS AFTER REPEATED EXPOSURE. OTHER AFFECTS OF ABSORPTION ARE UNKNOWN.

INGESTION: INGESTION CAN CAUSE GASTROINTESTINAL IRRITATION AND NAUSEA. THE EXACT NATURE AND INTENSITY OF TOXIC EFFECTS FOLLOWING INGESTION IS UNKNOWN. SEEK MEDICAL ATTENTION.

INHALATION: VAPORS MAY CAUSE HEADACHE OR NAUSEA IN SENSITIVE INDIVIDUALS.

4. FIRST AID MEASURES

EYES: FLUSH WITH WATER OR EYE WASH SOLUTION, INCLUDING UNDER THE EYELIDS, FOR AT LEAST 15 MINUTES. CONTACT A PHYSICIAN IMMEDIATELY.

SKIN: REMOVE CONTAMINATED CLOTHING. WASH THOROUGHLY WITH SOAP AND WATER. IF IRRITATION OCCURS, CONTACT A PHYSICIAN.

INGESTION: GIVE ONE TO TWO GLASSES OF WATER. DO NOT INDUCE VOMITING. CONSULT A PHYSICIAN OR POISON CONTROL CENTER IMMEDIATELY. TREAT SYMPTOMATICALLY.

INHALATION: REMOVE TO FRESH AIR. RESTORE OR SUPPORT BREATHING. CONTACT A PHYSICIAN IF BREATHING DIFFICULTIES OCCUR.

NOTE TO PHYSICIANS: THIS PRODUCT HAS A PH OF 8.5 TO 9.5.

5. FIRE FIGHTING MEASURES

FLAMMABLE PROPERTIES:

Flash Point: >200 DEG F

Method: PM CC

M A T E R I A L S A F E T Y D A T A S H E E T

Date Printed: 04/16/2014

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Product Code: M-007506

Product Name: FF PREM PLUS GCM1 21 GREEN (ED.X)

FLAMMABLE LIMITS: (SOLVENT PORTION ONLY, IF APPLICABLE)

Lower flammable limit: N/A

Upper flammable limit: N/A

AUTOIGNITION TEMPERATURE: UNKNOWN

HAZARDOUS COMBUSTION PRODUCTS: MAY PRODUCE FUMES WHEN HEATED. FUMES WILL CONTAIN CARBON MONOXIDE, CARBON DIOXIDE AND VARIOUS OTHER DECOMPOSITION PRODUCTS. ALL DECOMPOSITION PRODUCTS ARE NOT KNOWN.

EXTINGUISHING MEDIA: FOAM, ALCOHOL FOAM, CO2, DRY CHEMICAL, WATER, WATER FOG.

FIREFIGHTING INSTRUCTIONS: SELF-CONTAINED BREATHING APPARATUS SHOULD BE WORN TO AVOID INHALATION OF CONCENTRATED VAPORS IN FIRE AREA. USE EXTINGUISHING MEDIA APPROPRIATE FOR SURROUNDING FIRE.

6. ACCIDENTAL RELEASE MEASURES

SMALL SPILL: DIKE TO PREVENT SPREAD USING ABSORBENT MATERIAL OR CHEMICAL DAMS. SCOOP OR PUMP MATERIAL INTO WATER PROOF CONTAINERS FOR DISPOSAL. STAINS MAY BE REMOVED WITH COMMERCIAL STRENGTH SOAP.

7. HANDLING AND STORAGE

HANDLING: HANDLE ACCORDING TO LABEL INSTRUCTIONS.

STORAGE: THIS PRODUCT HAS BEEN DESIGNED AND PACKAGED FOR INDUSTRIAL USE ONLY! STORE AWAY FROM EXCESSIVE HEAT, COLD OR FREEZING TEMPERATURES. DO NOT TRANSFER TO UNMARKED CONTAINERS. ROTATE STOCK. KEEP CONTAINERS CLOSED WHEN NOT IN USE.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

ENGINEERING CONTROLS: NONE NEEDED UNLESS TLV LIMITS ARE EXCEEDED.

RESPIRATORY PROTECTION: NOT NORMALLY REQUIRED WITH ADEQUATE VENTILATION. IF TLV IS EXCEEDED FOR AIRBORNE MISTS, USE NIOSH APPROVED RESPIRATOR OR SELF CONTAINED BREATHING APPARATUS.

SKIN PROTECTION: CHEMICAL-RESISTANT GLOVES, APRONS, AND COVERALLS RECOMMENDED WHEN MIXING, FILLING, POURING OR CLEANING EQUIPMENT.

EYE PROTECTION: PROTECTIVE GLASSES OR CHEMICAL-RESISTANT SPLASH GOGGLES RECOMMENDED WHEN HANDLING. MAINTAIN EYE WASH FACILITIES IN WORK AREA.

9. PHYSICAL AND CHEMICAL PROPERTIES

BOILING POINT: > 212 DEG F

MELTING POINT: NOT AVAILABLE.

FREEZING POINT: UNKNOWN

VAPOR PRESSURE: NOT AVAILABLE.

VAPOR DENSITY: HEAVIER THAN AIR

SOLUBILITY IN WATER: COMPLETE

M A T E R I A L S A F E T Y D A T A S H E E T

Date Printed: 04/16/2014

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Product Code: M-007506

Product Name: FF PREM PLUS GCMI 21 GREEN (ED.X)

SPECIFIC GRAVITY: 1.21

VOLATILE ORGANIC COMPOUNDS: 0.06 lb/gal

pH: 8.5-9.5

WEIGHT PER GALLON: 10.05 lb/gal

VOLATILE WEIGHT PERCENT: 51.39%

APPEARANCE: LIQUID, VARIOUS COLORS

ODOR: MILD ACRYLIC ODOR

10. STABILITY AND REACTIVITY

CHEMICAL STABILITY (CONDITIONS TO AVOID): STABLE UNDER NORMAL CONDITIONS OF USE. AVOID EXCESSIVE HEAT OR COLD. AVOID EXCESSIVE AGING BEYOND RECOMMENDED SHELF LIFE.

INCOMPATIBILITY: PRODUCT IS NORMALLY UNREACTIVE. STRONG ACIDS MAY CAUSE PRODUCT TO GEL.

~~HAZARDOUS DECOMPOSITION PRODUCTS: MAY PRODUCE FUMES WHEN HEATED. FUMES WILL CONTAIN~~
CARBON MONOXIDE, CARBON DIOXIDE AND VARIOUS OTHER DECOMPOSITION PRODUCTS. ALL DECOMPOSITION PRODUCTS ARE NOT KNOWN.

HAZARDOUS POLYMERIZATION: WILL NOT OCCUR.

11. TOXICOLOGICAL INFORMATION

EYE: NO AVAILABLE INFORMATION.

SKIN: NO AVAILABLE INFORMATION.

ORAL: NO AVAILABLE INFORMATION

CHRONIC/CARCINOGENICITY: INFORMATION OBTAINED FROM OUR SUPPLIERS INDICATES THIS PRODUCT IS NOT RATED AS CARCINOGENIC UNDER NORMALLY EXPECTED CONDITIONS OF HANDLING AND USE.

12. ECOLOGICAL INFORMATION

ECOTOXICOLOGICAL INFORMATION: NO AVAILABLE INFORMATION.

13. DISPOSAL CONSIDERATIONS

DISPOSE OF IN ACCORDANCE WITH LOCAL, STATE, AND FEDERAL REGULATIONS.

14. TRANSPORT INFORMATION (Not all-inclusive)

NOT REGULATED PER U.S. DOT

15. REGULATORY INFORMATION (Not all-inclusive - Selected regulations represented)

SARA 312, SARA 313, and HAP Components:	CAS#	% BY WT.
AMMONIUM HYDROXIDE	1336-21-6	0.68
2-BUTOXYETHANOL (GLYCOL ETHER EB)	111-76-2	0.23

M A T E R I A L S A F E T Y D A T A S H E E T

Date Printed: 04/16/2014

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Product Code: M-007506

Product Name: FF PREM PLUS GCMI 21 GREEN (ED.X)

2-(2-ETHOXYETHOXY)-ETHANOL

111-90-0

0.20

ETHANOLAMINE (SKIN AND EYE IRRITANT)

141-43-5

0.01

WARNING: THIS PRODUCT CONTAINS CHEMICAL(S) KNOWN TO THE STATE OF CALIFORNIA TO CAUSE CANCER, BIRTH DEFECTS, OR OTHER REPRODUCTIVE HARM.

N/A

16. OTHER INFORMATION

HMIS CODES: H F R P

1 1 0 B

~~THE INFORMATION CONTAINED HEREIN IS ACCURATE TO THE BEST OF OUR KNOWLEDGE AND BELIEF.~~
HOWEVER, SINCE CONDITIONS OF USE AND HANDLING ARE BEYOND OUR CONTROL, WE MAKE NO GUARANTEE OF RESULTS AND ASSUME NO LIABILITY FOR DAMAGES INCURRED BY USE OF THIS MATERIAL. FINAL DETERMINATION FOR SAFE USE OF THIS PRODUCT IS THE SOLE RESPONSIBILITY OF THE USER. THE ABOVE DATA IS CONFIDENTIAL, PROPRIETARY INFORMATION OF THE J.M. FRY COMPANY AND IS BEING TRANSMITTED TO ASSIST IN IMPROVING EMPLOYEE OR PUBLIC SAFETY AND HEALTH OR FOR GOVERNMENTAL AGENCY DATA COLLECTION PURPOSES ONLY.

M A T E R I A L S A F E T Y D A T A S H E E T

Date Printed: 04/16/2014

Page: 1

Product Code: M-009025

Product Name: SF PHILLIPS BLUE

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Product: SF PHILLIPS BLUE

The J.M. Fry Company
4329 Eubank Road, Richmond, VA 23231
Information Phone: 804-236-8100

24-HR EMERGENCY PHONE: CHEMTREC 1-800-262-8200

2. COMPOSITION/INFORMATION ON HAZARDOUS INGREDIENTS

Component/Exposure Limits	CAS#	Weight %
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N/A

3. HAZARDS IDENTIFICATION

Potential Health Effects

EYES: MAY CAUSE IRRITATION OR BURNING.

SKIN: MAY DRY AND DEFAT SKIN CAUSING IRRITATION AND DERMATITIS AFTER REPEATED EXPOSURE. OTHER AFFECTS OF ABSORPTION ARE UNKNOWN.

INGESTION: INGESTION CAN CAUSE GASTROINTESTINAL IRRITATION AND NAUSEA. THE EXACT NATURE AND INTENSITY OF TOXIC EFFECTS FOLLOWING INGESTION IS UNKNOWN. SEEK MEDICAL ATTENTION.

INHALATION: VAPORS MAY CAUSE HEADACHE OR NAUSEA IN SENSITIVE INDIVIDUALS.

4. FIRST AID MEASURES

EYES: FLUSH WITH WATER OR EYE WASH SOLUTION, INCLUDING UNDER THE EYELIDS, FOR AT LEAST 15 MINUTES. CONTACT A PHYSICIAN IMMEDIATELY.

SKIN: REMOVE CONTAMINATED CLOTHING. WASH THOROUGHLY WITH SOAP AND WATER. IF IRRITATION OCCURS, CONTACT A PHYSICIAN.

INGESTION: GIVE ONE TO TWO GLASSES OF WATER. DO NOT INDUCE VOMITING. CONSULT A PHYSICIAN OR POISON CONTROL CENTER IMMEDIATELY. TREAT SYMPTOMATICALLY.

INHALATION: REMOVE TO FRESH AIR. RESTORE OR SUPPORT BREATHING. CONTACT A PHYSICIAN IF BREATHING DIFFICULTIES OCCUR.

NOTE TO PHYSICIANS: THIS PRODUCT HAS A PH OF 8.5 TO 9.5.

5. FIRE FIGHTING MEASURES

FLAMMABLE PROPERTIES:

Flash Point: >200 DEG F

Method: PM CC

M A T E R I A L S A F E T Y D A T A S H E E T

Date Printed: 04/16/2014

Page: 2

Product Code: M-009025
Product Name: SF PHILLIPS BLUE

FLAMMABLE LIMITS: (SOLVENT PORTION ONLY, IF APPLICABLE)

Lower flammable limit: N/A

Upper flammable limit: N/A

AUTOIGNITION TEMPERATURE: UNKNOWN

HAZARDOUS COMBUSTION PRODUCTS: MAY PRODUCE FUMES WHEN HEATED. FUMES WILL CONTAIN CARBON MONOXIDE, CARBON DIOXIDE AND VARIOUS OTHER DECOMPOSITION PRODUCTS. ALL DECOMPOSITION PRODUCTS ARE NOT KNOWN.

EXTINGUISHING MEDIA: FOAM, ALCOHOL FOAM, CO2, DRY CHEMICAL, WATER, WATER FOG.

FIREFIGHTING INSTRUCTIONS: SELF-CONTAINED BREATHING APPARATUS SHOULD BE WORN TO AVOID INHALATION OF CONCENTRATED VAPORS IN FIRE AREA. USE EXTINGUISHING MEDIA APPROPRIATE FOR SURROUNDING FIRE.

6. ACCIDENTAL RELEASE MEASURES

SMALL SPILL: DIKE TO PREVENT SPREAD USING ABSORBENT MATERIAL OR CHEMICAL DAMS. SCOOP OR PUMP MATERIAL INTO WATER PROOF CONTAINERS FOR DISPOSAL. STAINS MAY BE REMOVED WITH COMMERCIAL STRENGTH SOAP.

7. HANDLING AND STORAGE

HANDLING: HANDLE ACCORDING TO LABEL INSTRUCTIONS.

STORAGE: THIS PRODUCT HAS BEEN DESIGNED AND PACKAGED FOR INDUSTRIAL USE ONLY! STORE AWAY FROM EXCESSIVE HEAT, COLD OR FREEZING TEMPERATURES. DO NOT TRANSFER TO UNMARKED CONTAINERS. ROTATE STOCK. KEEP CONTAINERS CLOSED WHEN NOT IN USE.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

ENGINEERING CONTROLS: NONE NEEDED UNLESS TLV LIMITS ARE EXCEEDED.

RESPIRATORY PROTECTION: NOT NORMALLY REQUIRED WITH ADEQUATE VENTILATION. IF TLV IS EXCEEDED FOR AIRBORNE MISTS, USE NIOSH APPROVED RESPIRATOR OR SELF CONTAINED BREATHING APPARATUS.

SKIN PROTECTION: CHEMICAL-RESISTANT GLOVES, APRONS, AND COVERALLS RECOMMENDED WHEN MIXING, FILLING, POURING OR CLEANING EQUIPMENT.

EYE PROTECTION: PROTECTIVE GLASSES OR CHEMICAL-RESISTANT SPLASH GOGGLES RECOMMENDED WHEN HANDLING. MAINTAIN EYE WASH FACILITIES IN WORK AREA.

9. PHYSICAL AND CHEMICAL PROPERTIES

BOILING POINT: > 212 DEG F
MELTING POINT: NOT AVAILABLE.
FREEZING POINT: UNKNOWN
VAPOR PRESSURE: NOT AVAILABLE.
VAPOR DENSITY: HEAVIER THAN AIR
SOLUBILITY IN WATER: COMPLETE

M A T E R I A L S A F E T Y D A T A S H E E T

Date Printed: 04/16/2014

Page: 3

Product Code: M-009025
Product Name: SF PHILLIPS BLUE

SPECIFIC GRAVITY: 1.34
VOLATILE ORGANIC COMPOUNDS: 0.09 lb/gl
pH: 8.5-9.5
WEIGHT PER GALLON: 11.16 lb/gl
VOLATILE WEIGHT PERCENT: 45.10%
APPEARANCE: LIQUID, VARIOUS COLORS
ODOR: MILD ACRYLIC ODOR

10. STABILITY AND REACTIVITY

CHEMICAL STABILITY (CONDITIONS TO AVOID): STABLE UNDER NORMAL CONDITIONS OF USE. AVOID EXCESSIVE HEAT OR COLD. AVOID EXCESSIVE AGING BEYOND RECOMMENDED SHELF LIFE.

INCOMPATIBILITY: PRODUCT IS NORMALLY UNREACTIVE. STRONG ACIDS MAY CAUSE PRODUCT TO GEL.

HAZARDOUS DECOMPOSITION PRODUCTS: MAY PRODUCE FUMES WHEN HEATED. FUMES WILL CONTAIN CARBON MONOXIDE, CARBON DIOXIDE AND VARIOUS OTHER DECOMPOSITION PRODUCTS. ALL DECOMPOSITION PRODUCTS ARE NOT KNOWN.

HAZARDOUS POLYMERIZATION: WILL NOT OCCUR.

11. TOXICOLOGICAL INFORMATION

EYE: NO AVAILABLE INFORMATION.

SKIN: NO AVAILABLE INFORMATION.

ORAL: NO AVAILABLE INFORMATION

CHRONIC/CARCINOGENICITY: INFORMATION OBTAINED FROM OUR SUPPLIERS INDICATES THIS PRODUCT IS NOT RATED AS CARCINOGENIC UNDER NORMALLY EXPECTED CONDITIONS OF HANDLING AND USE.

12. ECOLOGICAL INFORMATION

ECOTOXICOLOGICAL INFORMATION: NO AVAILABLE INFORMATION.

13. DISPOSAL CONSIDERATIONS

DISPOSE OF IN ACCORDANCE WITH LOCAL, STATE, AND FEDERAL REGULATIONS.

14. TRANSPORT INFORMATION (Not all-inclusive)

NOT REGULATED PER U.S. DOT

15. REGULATORY INFORMATION (Not all-inclusive - Selected regulations represented)

SARA 312, SARA 313, and HAP Components:	CAS#	% BY WT.
AMMONIUM HYDROXIDE	1336-21-6	0.39
ETHANOLAMINE (SKIN AND EYE IRRITANT)	141-43-5	0.31

M A T E R I A L S A F E T Y D A T A S H E E T

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Product Code: M-009025

Product Name: SF PHILLIPS BLUE

2-BUTOXYETHANOL (GLYCOL ETHER EB)	111-76-2	0.23
2-(2-ETHOXYETHOXY)-ETHANOL	111-90-0	0.12

WARNING: THIS PRODUCT CONTAINS CHEMICAL(S) KNOWN TO THE STATE OF CALIFORNIA TO CAUSE CANCER, BIRTH DEFECTS, OR OTHER REPRODUCTIVE HARM.

N/A

16. OTHER INFORMATION

HMIS CODES: H F R P

1 1 0 B

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Specialty Adhesives & Coatings, Inc.

P.O. BOX 18445, Memphis, TN 38181 – 3777 Air Park, Memphis, TN 38118

TELEPHONE: 901-794-8556

24-HOUR EMERGENCY CONTACT NUMBER: 1-800-728-9171

MATERIAL SAFETY DATA SHEET HOT MELT ADHESIVES

SECTION I

PRODUCT CLASS: Hot Melt Adhesives
MANUFACTURER'S CODES: HM 962

SECTION II - HAZARDOUS INGREDIENTS

NONE
NON-HAZARDOUS INGREDIENTS – 0 – 100%

SECTION III - PHYSICAL DATA

BOILING POINT - N/A	SPECIFIC GRAVITY – 0.92
VAPOR PRESSURE - N/A	MELTING POINT - 190 – 230
VAPOR DENSITY - N/A	EVAPORATION RATE - N/A
SOLUBILITY IN WATER - INSOLUBLE	
APPEARANCE AND ODOR - AMBER AND LOW ODOR	

SECTION IV - FIRE AND EXPLOSION HAZARD DATA

DOT CATEGORY - NON FLAMMABLE FLASH POINT - 450F
EXTINGUISHING MEDIA - CO₂

SPECIAL FIRE FIGHTING PROCEDURES - NONE
UNUSUAL FIRE AND EXPLOSION HAZARDS - NONE

(901) 794-8556 ~ 800-728-9171 ~ Fax (901) 794-9175
Memphis, TN 38118 ~ P. O. Box 18445 ~ Memphis, TN 38181-0445
3334 North Pitcher ~ Kalamazoo, MI 49004
1116 N. Great SW Parkway B ~ Grand Prairie, TX 75050
117 Industrial Dr. ~ St. Mary's, GA 31558

SECTION V - HEALTH HAZARD DATA

MAIN ROUTE OF ENTRY - INHALATION

TARGET ORGANS - SKIN COULD BE SEVERELY DAMAGED FROM CONTACT WITH
MOLTEN MATERIAL.

HEALTH HAZARDS (ACUTE AND CHRONIC) - NONE

FIRST AID:

**COOL AFFECTED AREA IMMEDIATELY, OBTAIN MEDICAL ASSISTANCE. DO
NOT ATTEMPT TO REMOVE COOLED ADHESIVE FROM AFFECTED SKIN AS
SEVERE DAMAGE COULD RESULT.**

SECTION VI - REACTIVITY DATA

STABILITY - STABLE

HAZARDOUS DECOMPOSITION OR BY-PRODUCTS - CARBON MONOXIDE
CONDITIONS TO AVOID - TEMPERATURES OVER 400F MAY CAUSE RESIN
DEGRADATION

HAZARDOUS POLYMERIZATION - CANNOT OCCUR

SECTION VII - SPILL OR LEAK PROCEDURES

SPILL - SWEEP UP MATERIAL, ALLOW MOLTEN SPILLS TO COOL BEFORE
SCRAPING UP AND DISPOSING.

WASTE DISPOSAL METHOD - IN ACCORDANCE WITH LOCAL
REGULATIONS

SECTION VIII - PROTECTIVE EQUIPMENT TO BE USED

VENTILATION - YES. DO NOT USE IN CONFINED SPACES.

PROTECTIVE GLOVES - YES

EYE PROTECTION - YES

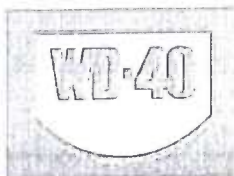
SECTION IX - PRECAUTIONS OR OTHER COMMENTS

STORAGE AND HANDLING - STORE IN COOL DRY PLACE, OPTIMUM
TEMPERATURE 70 F.

SECTION X - OTHER COMMENTS

NFPA Hazard Classification

Health: 1 Flammability: 1 Reactivity: 0 Special Hazards: None



Material Safety Data Sheet

1 - Chemical Product and Company Identification

Manufacturer: WD-40 Company Address: 1061 Cudahy Place (92110) P.O. Box 80607 San Diego, California, USA 92138 -0607 Telephone: Emergency only: 1-888-324-7596 (PROSAR) Information: 1-888-324-7596 Chemical Spills: 1-800-424-9300 (Chemtrec) 1-703-527-3887 (International Calls)	Chemical Name: Organic Mixture Trade Name: WD-40 Aerosol Product Use: Lubricant, Penetrant, Drives Out Moisture, Removes and Protects Surfaces From Corrosion MSDS Date Of Preparation: 6/8/12
--	---

2 - Hazards Identification

Emergency Overview:

DANGER! Flammable aerosol. Contents under pressure. Harmful or fatal if swallowed. If swallowed, may be aspirated and cause lung damage. May cause eye irritation. Avoid eye contact. Use with adequate ventilation. Keep away from heat, sparks and all other sources of ignition.

Symptoms of Overexposure:

Inhalation: High concentrations may cause nasal and respiratory irritation and central nervous system effects such as headache, dizziness and nausea. Intentional abuse may be harmful or fatal.

Skin Contact: Prolonged and/or repeated contact may produce mild irritation and defatting with possible dermatitis.

Eye Contact: Contact may be irritating to eyes. May cause redness and tearing.

Ingestion: This product has low oral toxicity. Swallowing may cause gastrointestinal irritation, nausea, vomiting and diarrhea. This product is an aspiration hazard. If swallowed, can enter the lungs and may cause chemical pneumonitis, severe lung damage and death.

Chronic Effects: None expected.

Medical Conditions Aggravated by Exposure: Preexisting eye, skin and respiratory conditions may be aggravated by exposure.

Suspected Cancer Agent:

Yes No X

3 - Composition/Information on Ingredients

Ingredient	CAS #	Weight Percent
Aliphatic Hydrocarbon	64742-47-8	45-50
Petroleum Base Oil	64742-58-1 64742-53-6 64742-56-9 64742-65-0	<25
LVP Aliphatic Hydrocarbon	64742-47-8	12-18
Carbon Dioxide	124-38-9	2-3
Non-Hazardous Ingredients	Mixture	<10

4 - First Aid Measures

Ingestion (Swallowed): Aspiration Hazard. DO NOT induce vomiting. Call physician, poison control center or the WD-40 Safety Hotline at 1-888-324-7596 immediately.

Eye Contact: Flush thoroughly with water. Remove contact lenses if present after the first 5 minutes and continue flushing for several more minutes. Get medical attention if irritation persists.

Skin Contact: Wash with soap and water. If irritation develops and persists, get medical attention.

Inhalation (Breathing): If irritation is experienced, move to fresh air. Get medical attention if irritation or other symptoms develop and persist.

5 – Fire Fighting Measures

Extinguishing Media: Use water fog, dry chemical, carbon dioxide or foam. Do not use water jet or flooding amounts of water. Burning product will float on the surface and spread fire.

Special Fire Fighting Procedures: Firefighters should always wear positive pressure self-contained breathing apparatus and full protective clothing. Cool fire-exposed containers with water. Use shielding to protect against bursting containers.

Unusual Fire and Explosion Hazards: Contents under pressure. Keep away from ignition sources and open flames. Exposure of containers to extreme heat and flames can cause them to rupture often with violent force. Vapors are heavier than air and may travel along surfaces to remote ignition sources and flash back.

6 – Accidental Release Measures

Wear appropriate protective clothing (see Section 8). Eliminate all sources of ignition and ventilate area. Leaking cans should be placed in a plastic bag or open pail until the pressure has dissipated. Contain and collect liquid with an inert absorbent and place in a container for disposal. Clean spill area thoroughly. Report spills to authorities as required.

7 – Handling and Storage

Handling: Avoid contact with eyes. Avoid prolonged contact with skin. Avoid breathing vapors or aerosols. Use only with adequate ventilation. Keep away from heat, sparks, pilot lights, hot surfaces and open flames. Unplug electrical tools, motors and appliances before spraying or bringing the can near any source of electricity. Electricity can burn a hole in the can and cause contents to burst into flames. To avoid serious burn injury, do not let the can touch battery terminals, electrical connections on motors or appliances or any other source of electricity. Wash thoroughly with soap and water after handling. Keep containers closed when not in use. Keep out of the reach of children. Do not puncture, crush or incinerate containers, even when empty.

Storage: Store in a cool, well-ventilated area, away from incompatible materials. Do not store above 120°F or in direct sunlight. U.F.C (NFPA 30B) Level 3 Aerosol.

8 – Exposure Controls/Personal Protection

Chemical	Occupational Exposure Limits
Aliphatic Hydrocarbon	1200 mg/m3 TWA (manufacturer recommended)
Petroleum Base Oil	5 mg/m3 TWA, 10 mg/m3 STEL ACGIH TLV 5 mg/m3 TWA OSHA PEL
LVP Aliphatic Hydrocarbon	1200 mg/m3 TWA (manufacturer recommended)
Carbon Dioxide	5000 ppm TWA (OSHA/ACGIH), 30,000 ppm STEL (ACGIH)
Non-Hazardous Ingredients	None Established

The Following Controls are Recommended for Normal Consumer Use of this Product

Engineering Controls: Use in a well-ventilated area.

Personal Protection:

Eye Protection: Avoid eye contact. Always spray away from your face.

Skin Protection: Avoid prolonged skin contact. Chemical resistant gloves recommended for operations where skin contact is likely.

Respiratory Protection: None needed for normal use with adequate ventilation.

For Bulk Processing or Workplace Use the Following Controls are Recommended

Engineering Controls: Use adequate general and local exhaust ventilation to maintain exposure levels below that occupational exposure limits.

Personal Protection:

Eye Protection: Safety goggles recommended where eye contact is possible.

Skin Protection: Wear chemical resistant gloves.

Respiratory Protection: None required if ventilation is adequate. If the occupational exposure limits are exceeded, wear a NIOSH approved respirator. Respirator selection and use should be based on contaminant type, form and concentration. Follow OSHA 1910.134, ANSI Z88.2 and good Industrial Hygiene practice.

Work/Hygiene Practices: Wash with soap and water after handling.

9 – Physical and Chemical Properties

Boiling Point:	361 - 369°F (183 - 187°C)	Specific Gravity:	0.8 – 0.82 @ 60°F
Solubility in Water:	Insoluble	pH:	Not Applicable
Vapor Pressure:	95-115 PSI @ 70°F	Vapor Density:	Greater than 1
Percent Volatile:	70-75%	VOC:	412 grams/liter (49.5%)
Coefficient of Water/Oil Distribution:	Not Determined	Appearance/Odor	Light amber liquid/mild odor
Flash Point:	122°F (49°C) Tag Open Cup (concentrate)	Flammable Limits: (Solvent Portion)	LEL: 0.6% UEL: 8.0%
Pour Point:	-63°C (-81.4°F) ASTM D-97	Kinematic Viscosity:	2.79-2.96cSt @ 100°F

10 – Stability and Reactivity

Stability: Stable

Hazardous Polymerization: Will not occur.

Conditions to Avoid: Avoid heat, sparks, flames and other sources of ignition. Do not puncture or incinerate containers.

Incompatibilities: Strong oxidizing agents.

Hazardous Decomposition Products: Carbon monoxide and carbon dioxide.

11 – Toxicological Information

The oral toxicity of this product is estimated to be greater than 5,000 mg/kg based on an assessment of the ingredients. This product is not classified as toxic by established criteria. It is an aspiration hazard. None of the components of this product is listed as a carcinogen or suspected carcinogen or is considered a reproductive hazard.

12 – Ecological Information

No data is currently available.

13 - Disposal Considerations

If this product becomes a waste, it would be expected to meet the criteria of a RCRA ignitable hazardous waste (D001). However, it is the responsibility of the generator to determine at the time of disposal the proper classification and method of disposal. Dispose in accordance with federal, state, and local regulations.

14 – Transportation Information

DOT Surface Shipping Description: Consumer Commodity, ORM-D

After 1/1/2014 UN1950, Aerosols, 2.1 Ltd. Qty (Note: Shipping Papers are not required for Limited Quantities unless transported by air or vessel – each package must be marked with the Limited Quantity Mark)

IMDG Shipping Description: UN1950, Aerosols, 2.1, LTD QTY

ICAO Shipping Description: UN1950, Aerosols, flammable, 2.1 NOTE: WD-40 does not test aerosol cans to assure that they meet the pressure and other requirements for transport by air. We do not recommend that our aerosol products be transported by air.

15 – Regulatory Information

U.S. Federal Regulations:

CERCLA 103 Reportable Quantity: This product is not subject to CERCLA reporting requirements, however, oil spills are reportable to the National Response Center under the Clean Water Act and many states have more stringent release reporting requirements. Report spills required under federal, state and local regulations.

SARA TITLE III:

Hazard Category For Section 311/312: Acute Health, Fire Hazard, Sudden Release of Pressure

Section 313 Toxic Chemicals: This product contains the following chemicals subject to SARA Title III

Section 313 Reporting requirements: None

Section 302 Extremely Hazardous Substances (TPQ): None

EPA Toxic Substances Control Act (TSCA) Status: All of the components of this product are listed on the TSCA inventory.

California Safe Drinking Water and Toxic Enforcement Act (Proposition 65): This product does not contain chemicals regulated under California Proposition 65.

VOC Regulations: This product complies with the consumer product VOC limits of CARB, the US EPA and states adopting the OTC VOC rules.

Canadian Environmental Protection Act: One of the components is listed on the NDSL. All of the other ingredients are listed on the Canadian Domestic Substances List or exempt from notification.

Canadian WHMIS Classification: Class B-5 (Flammable Aerosol)

This MSDS has been prepared according to the criteria of the Controlled Products Regulation (CPR) and the MSDS contains all of the information required by the CPR.

16 – Other Information:

HMIS Hazard Rating:

Health – 1 (slight hazard), Fire Hazard – 4 (severe hazard), Reactivity – 0 (minimal hazard)

SIGNATURE:  _____

TITLE: Adm. Scientific Manager

REVISION DATE: June 2012

SUPERSEDES: March 2010




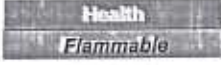

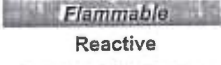

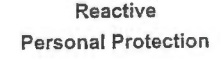
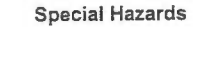

GAF
Safety Data Sheet
SDS # 1049
SDS Date: September 2013

SECTION 1: PRODUCT AND COMPANY INFORMATION

PRODUCT NAME: TOPCOAT® MB Plus
TRADE NAME: N/A
**CHEMICAL NAME /
SYNONYM:** N/A
CHEMICAL FAMILY: N/A
MANUFACTURER: GAF
ADDRESS: 1361 Alps Road, Wayne, NJ 07470
**24-HOUR EMERGENCY
PHONE (CHEMTREC):** 800 – 424 – 9300
INFORMATION ONLY: 800 – 766 – 3411
PREPARED BY: Corporate EHS
APPROVED BY: Corporate EHS

SECTION 2: HAZARDS IDENTIFICATION

NFPA and HMIS RATINGS:

NFPA Hazard Rating		HMIS Hazard Rating	
	2		2
	0		0
	0		0
	-		X

GHS LABEL ELEMENTS:**GHS CLASSIFICATION:**

Eye Irritant - Category 2A
Skin Irritant - Category 2
Carcinogenicity - Category 2
Target Organ (SE) - Category 3
Target Organ (RE) - Category 1
Hazardous to the Aquatic Environment (chronic) - Category 4

GHS PICTOGRAMS:



SIGNAL WORD:

Danger

HAZARD
STATEMENTS:

Flammable liquid and vapor
Harmful if inhaled
May cause respiratory irritation
May cause damage to organs through prolonged or repeated exposure
Causes skin irritation
Causes severe eye irritation
Suspected of causing cancer
May be toxic to aquatic life with long lasting effects

ADDITIONAL HAZARD IDENTIFICATION INFORMATION:

PRIMARY ROUTE OF EXPOSURE: Inhalation, Skin Contact, Eye Contact

SIGNS & SYMPTOMS OF EXPOSURE

EYES:

Exposure to vapors can cause irritation to the eyes.

SKIN:

Slight irritation of the skin. Prolonged contact can cause reddening of the skin.

INGESTION:

Not expected to be ingested.

INHALATION:

Vapors or mists can cause mental sluggishness, irritation of nasal passages, throat and lungs. Can cause headaches.

ACUTE HEALTH HAZARDS:

Excessive exposure can cause pulmonary edema.

CHRONIC HEALTH HAZARDS:

None known.

CARCINOGENICITY:

IARC has determined that occupational exposure to Titanium Dioxide is possibly carcinogenic to humans (Group 2B). IARC concluded lung tumors were observed in rats following high dose exposure by inhalation and in female rats exposed by intra-tracheal instillation. Other studies have shown no tumors in rats following inhalation exposure and no tumors in mice or rats following oral exposure.

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

			OCCUPATIONAL EXPOSURE LIMITS		
CHEMICAL NAME	CAS #	% (BY WT)	OSHA	ACGIH	OTHER
Aluminum Trihydrate	21645-51-2	25 – 35	5 mg/m ³ – resp. 15 mg/m ³ – total	3 mg/m ³ – resp. 10 mg/m ³ – total	REL: 5 mg/m ³ – resp., 10 mg/m ³ – total

Titanium Dioxide	13463-67-7	2 – 10	15 mg/m3 – total	10 mg/m3 – total	REL: lowest feasible concentration
Zinc Borate	138265-88-0	2 – 10	5 mg/m3 – resp. 15 mg/m3 – total	3 mg/m3 – resp. 10 mg/m3 – total	REL: 5 mg/m3 – resp., 10 mg/m3 – total
Non-hazardous ingredients	-	50 – 60			

NE = Not Established

SECTION 4: FIRST AID MEASURES

FIRST AID PROCEDURES

- EYES:** Flush eyes with water for 15 minutes. If irritation persists, call a physician.
- SKIN:** Wash contaminated skin with soap and water.
- INHALATION:** Remove patient to an area that has fresh air. If breathing has stopped, administer artificial respiration. Contact physician immediately.
- INGESTION:** If patient is awake, induce vomiting by giving 2 glasses of water and pressing down at back of throat. Call physician immediately. Never give anything by mouth to an unconscious person.

NOTES TO PHYSICIANS OR FIRST AID PROVIDERS: None known.

SECTION 5: FIRE FIGHTING PROCEDURES

- SUITABLE EXTINGUISHING MEDIA:** Water spray, CO₂, dry chemical or foam.
- HAZARDOUS COMBUSTION PRODUCTS:** Carbon dioxide and carbon monoxide.
- RECOMMENDED FIRE FIGHTING PROCEDURES:** Self-contained breathing apparatus recommended.
- UNUSUAL FIRE & EXPLOSION HAZARDS:** None known.

SECTION 6: ACCIDENTAL RELEASE MEASURES

- ACCIDENTAL RELEASE MEASURES:** Dam up area to prevent spreading. Caution – area will be slippery. Use absorbent material to dry up the compound. Provide ventilation in closed areas.

SECTION 7: HANDLING AND STORAGE

HANDLING AND STORAGE: Store in a well ventilated area at 50 – 80 °F.

OTHER PRECAUTIONS: Protect from freezing.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

ENGINEERING CONTROLS / VENTILATION: Provide sufficient mechanical (general and/or local exhaust) ventilation to maintain exposure below exposure limits.

RESPIRATORY PROTECTION: Use NIOSH-approved respirator.

EYE PROTECTION: Safety goggles or safety glasses with side shields.

SKIN PROTECTION: Wear appropriate impermeable gloves and protective clothing as necessary to prevent skin contact.

OTHER PROTECTIVE EQUIPMENT: N/A

WORK HYGIENIC PRACTICES: Wash exposed skin prior to eating, drinking, or smoking and at the end of each shift.

EXPOSURE GUIDELINES: N/A

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE & ODOR:	Heavy white liquid with ammonia odor.		
FLASH POINT:	> 240 °F	LOWER EXPLOSIVE LIMIT:	No data
METHOD USED:	TCC	UPPER EXPLOSIVE LIMIT:	No data
EVAPORATION RATE:	1.0	BOILING POINT:	212 °F
pH (undiluted product):	No data	MELTING POINT:	No data
SOLUBILITY IN WATER:	Dilutable in water	SPECIFIC GRAVITY:	1.32
VAPOR DENSITY:	No data	PERCENT VOLATILE:	No data
VAPOR PRESSURE:	No data	MOLECULAR WEIGHT:	No data
VOC WITH WATER (LBS/GAL):	No data	WITHOUT WATER (LBS/GAL):	No data

GAF

SDS # 1049

SECTION 10: STABILITY AND REACTIVITY

THERMAL STABILITY:

STABLE X

UNSTABLE ☐

CONDITIONS TO AVOID (STABILITY):

None known.

INCOMPATIBILITY (MATERIAL TO AVOID):

Strong oxidizing agents.

HAZARDOUS DECOMPOSITION OR BY-PRODUCTS:

Carbon monoxide and carbon dioxide.

HAZARDOUS POLYMERIZATION:

Will not occur.

SECTION 11: TOXICOLOGICAL INFORMATION

TOXICOLOGICAL INFORMATION: No information available.

SECTION 12: ECOLOGICAL INFORMATION

ECOLOGICAL INFORMATION: No information available.

SECTION 13: DISPOSAL CONSIDERATIONS

WASTE DISPOSAL METHOD: This product, as supplied, is not regulated as a hazardous waste by the U.S. Environmental Protection Agency (EPA) under Resource Conservation and Recovery Act (RCRA) regulations. Comply with state and local regulations for disposal.

RCRA HAZARD CLASS: None

SECTION 14: TRANSPORTATION INFORMATION

U.S. DOT TRANSPORTATION

PROPER SHIPPING NAME: This product is not classified as a hazardous material for transport.

HAZARD CLASS: N/A
ID NUMBER: N/A
PACKING GROUP: N/A
LABEL STATEMENT: N/A
OTHER: N/A

SECTION 15: REGULATORY INFORMATION

U.S. FEDERAL REGULATIONS

TSCA: This product and its components are listed on the TSCA 8(b) inventory.

CERCLA: None

SARA

311/312 HAZARD CATEGORIES: Acute Health Hazard

313 REPORTABLE INGREDIENTS: None

CALIFORNIA PROPOSITION 65: None

Other state regulations may apply. Check individual state requirements. The following components appear on one or more of the following state hazardous substances lists:

Chemical Name	CAS #	CA	MA	MN	NJ	PA	RI
Aluminum Trihydrate	21645-51-2	No	No	No	No	No	No
Titanium Dioxide	13463-67-7	No	No	Yes	Yes	Yes	Yes
Zinc Borate	138265-88-0	Yes	Yes	Yes	Yes	No	No

SECTION 16: OTHER INFORMATION

ADDITIONAL COMMENTS: None

DATE OF PREVIOUS SDS: December 2008

CHANGES SINCE PREVIOUS SDS: GHS formatting changes.

This information relates to the specific material designated and may not be valid for such material used on combination with any other materials or in any process. Such information is to the best of our knowledge and belief accurate and reliable as of the date compiled. However, no representation, warranty or guarantee, expressed or implied, is made as to its accuracy, reliability, or completeness. It is the user's responsibility to satisfy himself as to the suitability and completeness of such information for his particular use. We do not accept liability for any loss or damage that may occur from the use of this information. Nothing herein shall be construed as a recommendation for uses which infringe valid patents or as extending a license of valid patents.

1. Chemical Product and Company Identification

Chemical Name: SLIP Plate Chain & Cable Aerosol

Manufacturer: Superior Graphite

Address: 10 S. Riverside Plaza

Chicago IL 60606

Information Number: (312) 559-2999

2. Composition/Information on Ingredients

Hazardous Components	CAS#	OSHA PEL	ACGIH TLV	Other Limits	%
Petroleum Oil (mist)	64742-52-5	5 mg/m ³	5 mg/m ³	None	<70
Purified Carbon (as total dust)	64743-05-1	15 mg/m ³	10 mg/m ³	None	<10
(as respirable dust)		5 mg/m ³	3 mg/m ³		
Heptane	142-82-5	500 ppm	400 ppm	None	<20
Acetone	67-64-1	750 ppm	750 ppm	None	<10
Butane	106-97-8	800 ppm	800 ppm	None	<6
Propane	74-98-6	1000 ppm	1000 ppm	None	<6

Notes:

3. Hazards Identification

Route (s) of Entry:	Inhalation	Skin	Ingestion
	Yes	Yes	Yes

Health Hazards (acute and chronic): Eye, skin and respiratory system irritant. Reports have associated repeated and prolonged occupational exposure to solvents with permanent brain, peripheral nervous system, and other internal organ damage. There is no reported human evidence that these effects occur when exposure is maintained below OSHA and ACGIH limits.

Carcinogenicity:	NTP	IARC Monographs	OSHA Regulated
	No	No	No

Notes:

Signs and Symptoms of Exposure:

Inhalation: Respiratory irritation, dizziness, headache, nausea, fatigue, drowsiness, impaired coordination, central nervous system depression or heart arrhythmia.

Skin: Contact may dry the skin prolonged contact may cause irritation. Can not be easily absorbed through the skin. Solvent action can dry and de-fat the skin causing skin to crack, leading to dermatitis.

Eyes: Liquid or vapor can cause moderate to severe irritation.

Ingestion: Not a likely route of exposure.

Medical Conditions Generally Aggravated by Exposure: None known.

4. First Aid Measures

Eyes: Flush thoroughly with water for 15 minutes. Get medical attention.

Skin: Wash exposed skin with soap and water. If irritation persists get medical attention.

Launder severely contaminated clothing before reuse.

Ingestion: Do not induce vomiting. Get medical attention.

Inhalation: Remove to fresh air. Administer oxygen if needed. Apply artificial respiration if breathing has stopped. Get medical attention.

5. Fire Fighting Measures

Flash Point: (method) N/A

Flammable Limits:

LEL:

UEL:

N/D

N/D

Extinguishing Media: Dry chemical, foam, CO2 and water fog.

Special Fire Fighting Procedures: Use water to cool containers exposed to flames. Do not enter enclosed or a confined work space without proper protective equipment. Fire fighting personnel should wear respiratory protection (positive pressure if available).

Unusual Fire and Explosion Hazards: Closed containers may explode from internal pressure build-up when exposed to extreme heat and discharge contents. Vapor accumulation can travel along the ground to a distant source of ignition and flash back or explode if ignited. Overexposure to decomposition products may cause a health hazard. Symptoms may not be immediately apparent.

NFPA Hazard Rating:

Health

1

Flammability

4

Reactivity

0

NFPA Notes:

6. Accidental Release Measures

Spill/Leak Procedures: Avoid breathing vapors. Ventilate area, remove all sources of ignition. Clean up area with absorbent material and place in closed containers for disposal. Wash floor with soap and water.

Dispose of in accordance with local, state and federal regulations.

7. Handling and Storage

Handling and Storage Precautions: Store and use in cool, dry, well-ventilated areas. Do not store above 120 F. Do not puncture or incinerate (burn) cans. Do not stick a pin, nail or any other sharp object into opening on top of can. Small pressurized containers of flammable products may be stored in areas suitable for ordinary combustibles except that they should not be stored in basements. See product label for additional information. Work/Hygienic Practices: Wash exposed skin with soap and water after handling this product. Do not spray in eyes. Do not take internally.

8. Exposure Controls/Personal Protection

Respiratory Protection (specify type): Use NIOSH/MSHA approved mask for chemical products if ACGIH, OSHA and/or TWA limits will be exceeded.

Local Exhaust	Mechanical (general)	Special	Other
Recommended	Recommended	None	None

Eye/Face Protection: Safety glasses, goggles or face shield. Eye wash station should be available.

Skin Protection: Use Rubber, Nitrile (NBR), Butyl or Polyethylene gloves. Safety shower should be available.

9. Physical/Chemical Characteristics

Physical State:Liquid	Boiling Point:N/A
Appearance:Aerosol	Melting Point:N/A
Odor:N/A	Vapor Pressure (mm Hg):N/A
Specific Gravity (H2O=1):N/A	Vapor Density (air=1):N/A
Water Solubility:Negligible	Evaporation Rate: N/A (Butyl Acetate = 1)

10. Stability and Reactivity

Stability: Material is stable.

Incompatibility (materials to avoid): Strong oxidizing agents, acids and alkalis.

Hazardous Decomposition Products: On burning, may release carbon dioxide and carbon monoxide.

Hazardous Polymerization: Will not occur.

11. Transportation Information

Air: "UN1950, Aerosols, flammable, 2.1"

Highway: "Consumer Commodity, ORM-D"

Ocean: "UN1950, Aerosols, 2.1, Ltd Qty"

12. Other Information

Disclaimer: The information contained herein is based on data available. However, no warranty is expressed or implied regarding the accuracy of the data or the results obtained from the use thereof. Because the information

contained herein may be applied under conditions beyond our control, we assume no responsibility for its use.

All components of this product are on the TSCA inventory.

Unk. = Unknown

N/A = Not applicable

Nav = Not available

N/D = Not determined

N/E = Not established

Prop. = Proprietary

Prepared: Date 08/11/93

Revised: Date 01/20/2014



Material Safety Data Sheet

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SECTION 1: PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME: 3M(TM) Spray-Mount(TM) Artist's Adhesive 6064, 6065

MANUFACTURER: 3M

DIVISION: Stationery Products

ADDRESS: 3M Center
St. Paul, MN 55144-1000

EMERGENCY PHONE: 1-800-364-3577 or (651) 737-6501 (24 hours)

Issue Date: 09/16/2008

Supersedes Date: 02/08/2008

Document Group: 22-0411-3

Product Use:

Intended Use: Adhesive

SECTION 2: INGREDIENTS

<u>Ingredient</u>	<u>C.A.S. No.</u>	<u>% by Wt</u>
ACETONE	67-64-1	30 - 40
HEPTANE ISOMERS	64742-49-0	20 - 30
ISOBUTANE	75-28-5	20 - 30
NON-VOLATILE COMPONENTS - N.J. TRADE SECRET REGISTRY NO. 04499600-6201P++	Trade Secret	7 - 13
PROPANE	74-98-6	7 - 13

SECTION 3: HAZARDS IDENTIFICATION

3.1 EMERGENCY OVERVIEW

Specific Physical Form: Aerosol

Odor, Color, Grade: Mild Solvent Odor/Clear-light yellow

General Physical Form: Liquid

Immediate health, physical, and environmental hazards: Aerosol container contains flammable gas under pressure. Closed containers exposed to heat from fire may build pressure and explode. Extremely flammable liquid and vapor. Vapors may travel long distances along the ground or floor to an ignition source and flash back. Aerosol container contains flammable material under pressure. May cause target organ effects.

3.2 POTENTIAL HEALTH EFFECTS

Eye Contact:

Moderate Eye Irritation: Signs/symptoms may include redness, swelling, pain, tearing, and blurred or hazy vision.

Skin Contact:

Moderate Skin Irritation: Signs/symptoms may include localized redness, swelling, itching, and dryness.

Inhalation:

Intentional concentration and inhalation may be harmful or fatal.

Respiratory Tract Irritation: Signs/symptoms may include cough, sneezing, nasal discharge, headache, hoarseness, and nose and throat pain.

May be absorbed following inhalation and cause target organ effects.

Ingestion:

Gastrointestinal Irritation: Signs/symptoms may include abdominal pain, stomach upset, nausea, vomiting and diarrhea.

May be absorbed following ingestion and cause target organ effects.

Target Organ Effects:

Central Nervous System (CNS) Depression: Signs/symptoms may include headache, dizziness, drowsiness, incoordination, nausea, slowed reaction time, slurred speech, giddiness, and unconsciousness.

SECTION 4: FIRST AID MEASURES

4.1 FIRST AID PROCEDURES

The following first aid recommendations are based on an assumption that appropriate personal and industrial hygiene practices are followed.

Eye Contact: Flush eyes with large amounts of water. If signs/symptoms persist, get medical attention.

Skin Contact: Remove contaminated clothing and shoes. Immediately flush skin with large amounts of water. Get medical attention. Wash contaminated clothing and clean shoes before reuse.

Inhalation: Remove person to fresh air. If signs/symptoms develop, get medical attention.

If Swallowed: Do not induce vomiting unless instructed to do so by medical personnel. Give victim two glasses of water. Never give anything by mouth to an unconscious person. Get medical attention.

SECTION 5: FIRE FIGHTING MEASURES

5.1 FLAMMABLE PROPERTIES

Autoignition temperature

No Data Available

Flash Point

-50.00 °F [Test Method: Tagliabue Closed Cup] [Details:

Flammable Limits - LEL

CONDITIONS: Propellant]

Flammable Limits - UEL

Approximately 1.85 % volume

Approximately 9.9 % volume

5.2 EXTINGUISHING MEDIA

Use fire extinguishers with class B extinguishing agents (e.g., dry chemical, carbon dioxide).

5.3 PROTECTION OF FIRE FIGHTERS

Special Fire Fighting Procedures: Water may not effectively extinguish fire; however, it should be used to keep fire-exposed containers and surfaces cool and prevent explosive rupture. Wear full protective equipment (Bunker Gear) and a self-contained breathing apparatus (SCBA).

Unusual Fire and Explosion Hazards: Closed containers exposed to heat from fire may build pressure and explode. Extremely flammable liquid and vapor. Vapors may travel long distances along the ground or floor to an ignition source and flash back. Aerosol container contains flammable material under pressure.

Note: See STABILITY AND REACTIVITY (SECTION 10) for hazardous combustion and thermal decomposition information.

SECTION 6: ACCIDENTAL RELEASE MEASURES

Accidental Release Measures: Refer to other sections of this MSDS for information regarding physical and health hazards, respiratory protection, ventilation, and personal protective equipment. Call 3M-HELPS line (1-800-364-3577) for more information on handling and managing the spill. Evacuate unprotected and untrained personnel from hazard area. The spill should be cleaned up by qualified personnel. Remove all ignition sources such as flames, smoking materials, and electrical spark sources. Use only non-sparking tools. Ventilate the area with fresh air. For large spill, or spills in confined spaces, provide mechanical ventilation to disperse or exhaust vapors, in accordance with good industrial hygiene practice. Warning! A motor could be an ignition source and could cause flammable gases or vapors in the spill area to burn or explode. Contain spill. For larger spills, cover drains and build dikes to prevent entry into sewer systems or bodies of water. Cover spill area with a fire-extinguishing foam. An aqueous film forming foam (AFFF) is recommended. Working from around the edges of the spill inward, cover with bentonite, vermiculite, or commercially available inorganic absorbent material. Mix in sufficient absorbent until it appears dry. Remember, adding an absorbent material does not remove a toxic, corrosivity or flammability hazard. Collect as much of the spilled material as possible using non-sparking tools. Clean up residue with an appropriate solvent selected by a qualified and authorized person. Ventilate the area with fresh air. Read and follow safety precautions on the solvent label and MSDS. Collect the resulting residue containing solution. Place in a metal container approved for transportation by appropriate authorities. Seal the container. Dispose of collected material as soon as possible.

In the event of a release of this material, the user should determine if the release qualifies as reportable according to local, state, and federal regulations.

SECTION 7: HANDLING AND STORAGE

7.1 HANDLING

Do not eat, drink or smoke when using this product. Wash exposed areas thoroughly with soap and water. Keep away from heat, sparks, open flame, pilot lights and other sources of ignition. Do not pierce or burn container, even after use. No smoking while handling this material. Do not spray near flames or sources of ignition. Avoid breathing of vapors, mists or spray. Aerosol container contains flammable gas under pressure. Avoid static discharge. Avoid eye contact with vapors, mists, or spray. Keep out of the reach of children. Avoid contact with oxidizing agents.

7.2 STORAGE

Store away from acids. Store away from heat. Store out of direct sunlight. Keep container tightly closed. Do not store containers on their sides. Store away from oxidizing agents.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 ENGINEERING CONTROLS

Do not use in a confined area or areas with little or no air movement. Use general dilution ventilation and/or local exhaust ventilation to control airborne exposures to below Occupational Exposure Limits and/or control mist, vapor, or spray. If ventilation is not adequate, use respiratory protection equipment.

8.2 PERSONAL PROTECTIVE EQUIPMENT (PPE)

8.2.1 Eye/Face Protection

Avoid eye contact with vapors, mists, or spray.

The following eye protection(s) are recommended: Indirect Vented Goggles.

8.2.2 Skin Protection

Avoid skin contact. Select and use gloves and/or protective clothing to prevent skin contact based on the results of an exposure assessment. Consult with your glove and/or protective clothing manufacturer for selection of appropriate compatible materials.

Select and use gloves and/or protective clothing to prevent skin contact based on the results of an exposure assessment. Consult with your glove and/or protective clothing manufacturer for selection of appropriate compatible materials.

Gloves made from the following material(s) are recommended: Polyvinyl Alcohol (PVA), Polyethylene/Ethylene Vinyl Alcohol.

8.2.3 Respiratory Protection

Avoid breathing of vapors, mists or spray.

Select one of the following NIOSH approved respirators based on airborne concentration of contaminants and in accordance with OSHA regulations: Half facepiece or fullface air-purifying respirator with organic vapor cartridges, Half facepiece or fullface pressure demand self-contained breathing apparatus. Consult the current 3M Respiratory Selection Guide for additional information or call 1-800-243-4630 for 3M technical assistance.

8.2.4 Prevention of Swallowing

Do not eat, drink or smoke when using this product. Wash exposed areas thoroughly with soap and water.

8.3 EXPOSURE GUIDELINES

<u>Ingredient</u>	<u>Authority</u>	<u>Type</u>	<u>Limit</u>	<u>Additional Information</u>
ACETONE	ACGIH	TWA	500 ppm	Table A4
ACETONE	ACGIH	STEL	750 ppm	Table A4
ACETONE	OSHA	TWA, Vacated	750 ppm	
ACETONE	OSHA	TWA	1000 ppm	Table Z-1
ACETONE	OSHA	STEL, Vacated	1000 ppm	
HEPTANE ISOMERS	CMRG	TWA	50 ppm	
ISOBUTANE	ACGIH	TWA	1000 ppm	
PROPANE	ACGIH	TWA	1000 ppm	
PROPANE	OSHA	TWA	1000 ppm	Table Z-1

VAC Vacated PEL: Vacated Permissible Exposure Limits [PEL] are enforced as the OSHA PEL in some states. Check with your local regulatory agency.

SOURCE OF EXPOSURE LIMIT DATA:

ACGIH: American Conference of Governmental Industrial Hygienists

CMRG: Chemical Manufacturer Recommended Guideline

OSHA: Occupational Safety and Health Administration

AIHA: American Industrial Hygiene Association Workplace Environmental Exposure Level (WEEL)

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

Specific Physical Form:	Aerosol
Odor, Color, Grade:	Mild Solvent Odor/Clear-light yellow
General Physical Form:	Liquid
Autoignition temperature	<i>No Data Available</i>
Flash Point	-50.00 °F [<i>Test Method:</i> Tagliabue Closed Cup] [<i>Details:</i> CONDITIONS: Propellant]
Flammable Limits - LEL	Approximately 1.85 % volume
Flammable Limits - UEL	Approximately 9.9 % volume
Boiling point	<i>Not Applicable</i>
Density	0.673 g/ml
Vapor Density	<i>No Data Available</i>
Specific Gravity	0.673 [<i>Ref. Std:</i> WATER=1]
pH	<i>Not Applicable</i>
Melting point	<i>Not Applicable</i>
Solubility in Water	Negligible
Evaporation rate	<i>No Data Available</i>
Hazardous Air Pollutants	0 % weight [<i>Test Method:</i> Calculated]
Volatile Organic Compounds	Approximately 58 % weight
Percent volatile	Approximately 91 % weight
VOC Less H2O & Exempt Solvents	Approximately 538 g/l [<i>Test Method:</i> calculated SCAQMD rule 443.1]
Viscosity	<i>Not Applicable</i>

SECTION 10: STABILITY AND REACTIVITY

Stability: Stable.

Materials and Conditions to Avoid: Heat; Sparks and/or flames

Hazardous Polymerization: Hazardous polymerization will not occur.

Hazardous Decomposition or By-Products

<u>Substance</u>	<u>Condition</u>
Aldehydes	During Combustion
Carbon monoxide	During Combustion
Carbon dioxide	During Combustion

SECTION 11: TOXICOLOGICAL INFORMATION

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Material Safety Data Sheet

24 Hour Assistance:
1-847-367-7700
Rust-Oleum Corp.
www.rustoleum.com

Section 1 - Chemical Product / Company Information

Product Name: Rust-Oleum High Performance Industrial Enamel Aerosol - Inverted Striping
Revision Date: 08/14/2007
Identification Number: 2326838, 2348838, 2364838, 2378838, 2391838
Product Use/Class: Inverted Striping Paint/Aerosol
Supplier: Rust-Oleum Corporation
11 Hawthorn Parkway
Vernon Hills, IL 60061
USA
Manufacturer: Rust-Oleum Corporation
11 Hawthorn Parkway
Vernon Hills, IL 60061
USA
Preparer: Regulatory Department

Section 2 - Composition / Information On Ingredients

Chemical Name	CAS Number	Weight % Less Than	ACGIH TLV-TWA	ACGIH TLV-STEL	OSHA PEL-TWA	OSHA PEL-CEILING
Liquefied Petroleum Gas	68476-86-8	25.0	1000 PPM	N.E.	1000 PPM	N.E.
Titanium Dioxide	13463-67-7	15.0	10 mg/m3	N.E.	10 mg/m3	N.E.
Aliphatic Hydrocarbon	64742-89-8	10.0	300 PPM	N.E.	300 PPM	N.E.
Toluene	108-88-3	10.0	50 PPM	150 PPM	200 PPM	300 PPM
Naphtha	8032-32-4	10.0	300 PPM	N.E.	N.E.	N.E.
Acetone	67-64-1	5.0	500 PPM	750 PPM	750 PPM	N.E.
Stoddard Solvents	8052-41-3	5.0	100 PPM	N.E.	500 PPM	N.E.
Xylene	1330-20-7	5.0	100 PPM	150 PPM	100 PPM	N.E.
Pigment Black 7	1333-86-4	5.0	3.5 mg/m3	N.E.	3.5 mg/m3	N.E.
Aromatic Hydrocarbon	64742-95-6	5.0	N.E.	N.E.	N.E.	N.E.
Calcined Aluminum Silicate	1332-58-7	5.0	2 mg/m3	N.E.	5 mg/m3	N.E.
1,2,4-Trimethylbenzene	95-63-6	5.0	25 PPM	N.E.	N.E.	N.E.
Ethylbenzene	100-41-4	1.0	100 PPM	125 PPM	100 PPM	N.E.
Microcrystalline Silica	14808-60-7	1.0	0.025 mg/m3	N.E.	0.10 mg/m3	N.E.

Section 3 - Hazards Identification

*** Emergency Overview ***: Contents Under Pressure. Harmful if inhaled. May affect the brain or nervous system causing dizziness, headache or nausea. Vapors may cause flash fire or explosion. Extremely flammable liquid and vapor. Harmful if swallowed.

Effects Of Overexposure - Eye Contact: Causes eye irritation.

Effects Of Overexposure - Skin Contact: Prolonged or repeated contact may cause skin irritation. Substance may cause slight skin irritation.

Effects Of Overexposure - Inhalation: High vapor concentrations are irritating to the eyes, nose, throat and lungs. Avoid breathing vapors or mists. High gas, vapor, mist or dust concentrations may be harmful if inhaled. Harmful if inhaled.

Effects Of Overexposure - Ingestion: Aspiration hazard if swallowed; can enter lungs and cause damage.

Substance may be harmful if swallowed.

Effects Of Overexposure - Chronic Hazards: IARC lists Ethylbenzene as a possible human carcinogen (group 2B). May cause central nervous system disorder (e.g., narcosis involving a loss of coordination, weakness, fatigue, mental confusion, and blurred vision) and/or damage. Reports have associated repeated and prolonged occupational overexposure to solvents with permanent brain and nervous system damage. Overexposure to xylene in laboratory animals has been associated with liver abnormalities, kidney, lung, spleen, eye and blood damage as well as reproductive disorders. Effects in humans, due to chronic overexposure, have included liver, cardiac abnormalities and nervous system damage. Overexposure to toluene in laboratory animals has been associated with liver abnormalities, kidney, lung and spleen damage. Effects in humans have included liver and cardiac abnormalities.

Contains carbon black. Chronic inflammation, lung fibrosis, and lung tumors have been observed in some rats experimentally exposed for long periods of time to excessive concentrations of carbon black and several insoluble fine dust particles. Tumors have not been observed in other animal species (i.e., mouse and hamster) under similar circumstances and study conditions. Epidemiological studies of North American workers show no evidence of clinically significant adverse health effects due to occupational exposure to carbon black.

Carbon black is listed as a Group 2B-"Possibly carcinogenic to humans" by IARC and is proposed to be listed as A4- "not classified as a human carcinogen" by the American Conference of Governmental Industrial Hygienists. Significant exposure is not anticipated during brush application or drying. Risk of overexposure depends on duration and level of exposure to dust from repeated sanding of surfaces or spray mist and the actual concentration of carbon black in the formula. Contains crystalline silica as silicon dioxide. Excessive inhalation of respirable crystalline silica dust may cause lung disease, silicosis or lung cancer. Significant exposure is not anticipated during brush or trowel application or drying. Risk of overexposure depends on the duration and level of exposure to dust from repeated sanding of surfaces, mechanical abrasion or spray mist and actual concentration of crystalline silica in the formula. Crystalline silica is listed as Group 1 "carcinogenic to humans" by the International Agency for Research on Cancer (IARC,) and Group 2, "reasonably anticipated to be a carcinogen" by the National Toxicology Program (NTP)

Primary Route(s) Of Entry: Skin Contact, Skin Absorption, Inhalation, Eye Contact

Section 4 - First Aid Measures

First Aid - Eye Contact: Hold eyelids apart and flush with plenty of water for at least 15 minutes. Get medical attention.

First Aid - Skin Contact: Wash with soap and water. Get medical attention if irritation develops or persists.

First Aid - Inhalation: If you experience difficulty in breathing, leave the area to obtain fresh air. If continued difficulty is experienced, get medical assistance immediately.

First Aid - Ingestion: Aspiration hazard: Do not induce vomiting or give anything by mouth because this material can enter the lungs and cause severe lung damage. Get immediate medical attention.

Section 5 - Fire Fighting Measures

Flash Point: -156 F
(Setaflash)

LOWER EXPLOSIVE LIMIT: 0.7 %
UPPER EXPLOSIVE LIMIT : 12.8 %

Extinguishing Media: Dry Chemical, Foam, Water Fog

Unusual Fire And Explosion Hazards: FLASH POINT IS LESS THAN 20 °. F. - EXTREMELY FLAMMABLE LIQUID AND VAPOR! Water spray may be ineffective. Closed containers may explode when exposed to extreme heat. Vapors may form explosive mixtures with air. Vapors can travel to a source of ignition and flash back. Perforation of the pressurized container may cause bursting of the can. Keep containers tightly closed. Isolate from heat, electrical equipment, sparks and open flame.

Special Firefighting Procedures: Evacuate area and fight fire from a safe distance.

Section 6 - Accidental Release Measures

Steps To Be Taken If Material Is Released Or Spilled: Remove all sources of ignition, ventilate area and remove with inert absorbent and non-sparking tools. Contain spilled liquid with sand or earth. DO NOT use combustible materials such as sawdust. Dispose of according to local, state (provincial) and federal regulations. Do not incinerate closed containers.

Section 7 - Handling And Storage

Handling: Wash hands before eating. Wash thoroughly after handling. Avoid breathing vapor or mist. Use only in a well-ventilated area. Follow all MSDS/label precautions even after container is emptied because it may retain product residues.

Storage: Contents under pressure. Do not expose to heat or store above 120 ° F. Do not store above 120 ° F. Store large quantities in buildings designed and protected for storage of NFPA Class I flammable liquids. Keep containers tightly closed. Isolate from heat, electrical equipment, sparks and open flame.

Section 8 - Exposure Controls / Personal Protection

Engineering Controls: Prevent build-up of vapors by opening all doors and windows to achieve cross-ventilation. Use process enclosures, local exhaust ventilation, or other engineering controls to control airborne levels below recommended exposure limits. Use explosion-proof ventilation equipment.

Respiratory Protection: A respiratory protection program that meets OSHA 1910.134 and ANSI Z88.2 requirements must be followed whenever workplace conditions warrant a respirator's use. A NIOSH/MSHA approved air purifying respirator with an organic vapor cartridge or canister may be permissible under certain circumstances where airborne concentrations are expected to exceed exposure limits.

Protection provided by air purifying respirators is limited. Use a positive pressure air supplied respirator if there is any potential for an uncontrolled release, exposure levels are not known, or any other circumstances where air purifying respirators may not provide adequate protection.

Skin Protection: Nitrile or Neoprene gloves may afford adequate skin protection. Use impervious gloves to prevent skin contact and absorption of this material through the skin.

Eye Protection: Use safety eyewear designed to protect against splash of liquids.

Other protective equipment: Refer to safety supervisor or industrial hygienist for further information regarding personal protective equipment and its application.

Hygienic Practices: Wash thoroughly with soap and water before eating, drinking or smoking.

Section 9 - Physical And Chemical Properties

Boiling Range:	-34 - 900 F	Vapor Density:	Heavier than air
Odor:	Solvent Like	Odor Threshold:	ND
Appearance:	Liquid	Evaporation Rate:	Faster than Ether
Solubility in H2O:	Slight		
Freeze Point:	ND	Specific Gravity:	0.9700
Vapor Pressure:	ND	PH:	NE

Physical State: Liquid

(See section 16 for abbreviation legend)

Section 10 - Stability And Reactivity

Conditions To Avoid: Avoid temperatures above 120 ° F. Avoid all possible sources of ignition.

Incompatibility: Incompatible with strong oxidizing agents, strong acids and strong alkalies.

Hazardous Decomposition: When heated to decomposition, it emits acrid smoke and irritating fumes. By open flame, carbon monoxide and carbon dioxide.

Hazardous Polymerization: Will not occur under normal conditions.

Stability: This product is stable under normal storage conditions.

Section 11 - Toxicological Information

Product LD50: ND

Product LC50: ND

Chemical Name

Liquefied Petroleum Gas

Titanium Dioxide

Aliphatic Hydrocarbon

Toluene

Naphtha

Acetone

Stoddard Solvents

Xylene

Pigment Black 7

Aromatic Hydrocarbon

Calcined Aluminum Silicate

1,2,4-Trimethylbenzene

Ethylbenzene

Microcrystalline Silica

LD50

N.D.

>7500 mg/kg (ORAL, RAT)

N.D.

636 mg/kg (Oral, Rat)

>5000 mg/kg (ORAL, RAT)

N.D.

N.D.

4300, mg/kg (Oral Rat)

>8000 mg/kg (ORAL, RAT)

N.D.

5000 mg/kg (ORAL RAT)

N.D.

3500 mg/kg (ORAL, RAT)

N.D.

LC50

N.D.

N.D.

N.D.

49 gm/M3 (Inhalation, Rat)

N.D.

N.D.

N.D.

5000 ppm/4hr (Inhalation, Rat)

N.D.

N.D.

18000 mg/m3 (RAT, 4 HR)

N.D.

N.D.

Section 12 - Ecological Information

Ecological Information: Product is a mixture of listed components.

Section 13 - Disposal Information

Disposal Information: Dispose of material in accordance to local, state and federal regulations and ordinances. Do not allow to enter storm drains or sewer systems.

Section 14 - Transportation Information

DOT Proper Shipping Name: Aerosol
DOT Technical Name: —

Packing Group: —
Hazard Subclass: —

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Product Name: MOBIL DTE OIL LIGHT

Revision Date: 13 Nov 2009

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MATERIAL SAFETY DATA SHEET

SECTION 1

PRODUCT AND COMPANY IDENTIFICATION

PRODUCT

Product Name: MOBIL DTE OIL LIGHT
Product Description: Base Oil and Additives
Product Code: 600148-00, 970294
Intended Use: Turbine oil

COMPANY IDENTIFICATION

Supplier: EXXON MOBIL CORPORATION
3225 GALLOWES RD.
FAIRFAX, VA. 22037 USA
24 Hour Health Emergency 609-737-4411
Transportation Emergency Phone 800-424-9300
ExxonMobil Transportation No. 281-834-3296
Product Technical Information 800-662-4525, 800-947-9147
MSDS Internet Address <http://www.exxon.com>, <http://www.mobil.com>

SECTION 2

COMPOSITION / INFORMATION ON INGREDIENTS

No Reportable Hazardous Substance(s) or Complex Substance(s).

SECTION 3

HAZARDS IDENTIFICATION

This material is not considered to be hazardous according to regulatory guidelines (see (M)SDS Section 15).

POTENTIAL HEALTH EFFECTS

Low order of toxicity. Excessive exposure may result in eye, skin, or respiratory irritation. High-pressure injection under skin may cause serious damage.

NFPA Hazard ID:	Health: 0	Flammability: 1	Reactivity: 0
HMIS Hazard ID:	Health: 0	Flammability: 1	Reactivity: 0

NOTE: This material should not be used for any other purpose than the intended use in Section 1 without expert advice. Health studies have shown that chemical exposure may cause potential human health risks which may vary from person to person.

SECTION 4

FIRST AID MEASURES

Inhalation

Remove from further exposure. For those providing assistance, avoid exposure to yourself or others. Use adequate respiratory protection. If respiratory irritation, dizziness, nausea, or unconsciousness occurs, seek immediate medical assistance. If breathing has stopped, assist ventilation with a mechanical device or use



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mouth-to-mouth resuscitation.

SKIN CONTACT

Wash contact areas with soap and water. If product is injected into or under the skin, or into any part of the body, regardless of the appearance of the wound or its size, the individual should be evaluated immediately by a physician as a surgical emergency. Even though initial symptoms from high pressure injection may be minimal or absent, early surgical treatment within the first few hours may significantly reduce the ultimate extent of injury.

EYE CONTACT

Flush thoroughly with water. If irritation occurs, get medical assistance.

Ingestion

First aid is normally not required. Seek medical attention if discomfort occurs.

SECTION 5

FIRE FIGHTING MEASURES

EXTINGUISHING MEDIA

Appropriate Extinguishing Media: Use water fog, foam, dry chemical or carbon dioxide (CO₂) to extinguish flames.

Inappropriate Extinguishing Media: Straight Streams of Water

FIRE FIGHTING

Fire Fighting Instructions: Evacuate area. Prevent runoff from fire control or dilution from entering streams, sewers, or drinking water supply. Firefighters should use standard protective equipment and in enclosed spaces, self-contained breathing apparatus (SCBA). Use water spray to cool fire exposed surfaces and to protect personnel.

Hazardous Combustion Products: Smoke, Fume, Aldehydes, Sulfur Oxides, Incomplete combustion products, Oxides of carbon

FLAMMABILITY PROPERTIES

Flash Point [Method]: >200C (392F) [ASTM D-92]

Flammable Limits (Approximate volume % in air): LEL: 0.9 UEL: 7.0

Autoignition Temperature: N/D

SECTION 6

ACCIDENTAL RELEASE MEASURES

Notification Procedures

In the event of a spill or accidental release, notify relevant authorities in accordance with all applicable regulations. US regulations require reporting releases of this material to the environment which exceed the applicable reportable quantity or oil spills which could reach any waterway including intermittent dry creeks. The National Response Center can be reached at (800)424-8802.

SPILL MANAGEMENT



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Land Spill: Stop leak if you can do it without risk. Recover by pumping or with suitable absorbent.

Water Spill: Stop leak if you can do it without risk. Confine the spill immediately with booms. Warn other shipping. Remove from the surface by skimming or with suitable absorbents. Seek the advice of a specialist before using dispersants.

Water spill and land spill recommendations are based on the most likely spill scenario for this material; however, geographic conditions, wind, temperature, (and in the case of a water spill) wave and current direction and speed may greatly influence the appropriate action to be taken. For this reason, local experts should be consulted. Note: Local regulations may prescribe or limit action to be taken.

ENVIRONMENTAL PRECAUTIONS

Large Spills: Dike far ahead of liquid spill for later recovery and disposal. Prevent entry into waterways, sewers, basements or confined areas.

SECTION 7

HANDLING AND STORAGE

HANDLING

Prevent small spills and leakage to avoid slip hazard.

Static Accumulator: This material is a static accumulator.

STORAGE

Do not store in open or unlabelled containers. Keep away from incompatible materials.

SECTION 8

EXPOSURE CONTROLS / PERSONAL PROTECTION

Exposure limits/standards for materials that can be formed when handling this product: When mists / aerosols can occur, the following are recommended: 5 mg/m³ - ACGIH TLV, 10 mg/m³ - ACGIH STEL, 5 mg/m³ - OSHA PEL.

NOTE: Limits/standards shown for guidance only. Follow applicable regulations.

ENGINEERING CONTROLS

The level of protection and types of controls necessary will vary depending upon potential exposure conditions. Control measures to consider:

No special requirements under ordinary conditions of use and with adequate ventilation.

Personal Protection

Personal protective equipment selections vary based on potential exposure conditions such as applications, handling practices, concentration and ventilation. Information on the selection of protective equipment for use with this material, as provided below, is based upon intended, normal usage.

Respiratory Protection: If engineering controls do not maintain airborne contaminant concentrations at a level which is adequate to protect worker health, an approved respirator may be appropriate. Respirator



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selection, use, and maintenance must be in accordance with regulatory requirements, if applicable. Types of respirators to be considered for this material include:

No special requirements under ordinary conditions of use and with adequate ventilation.

For high airborne concentrations, use an approved supplied-air respirator, operated in positive pressure mode. Supplied air respirators with an escape bottle may be appropriate when oxygen levels are inadequate, gas/vapor warning properties are poor, or if air purifying filter capacity/rating may be exceeded.

Hand Protection: Any specific glove information provided is based on published literature and glove manufacturer data. Glove suitability and breakthrough time will differ depending on the specific use conditions. Contact the glove manufacturer for specific advice on glove selection and breakthrough times for your use conditions. Inspect and replace worn or damaged gloves. The types of gloves to be considered for this material include:

No protection is ordinarily required under normal conditions of use.

Eye Protection: If contact is likely, safety glasses with side shields are recommended.

Skin and Body Protection: Any specific clothing information provided is based on published literature or manufacturer data. The types of clothing to be considered for this material include:

No skin protection is ordinarily required under normal conditions of use. In accordance with good industrial hygiene practices, precautions should be taken to avoid skin contact.

Specific Hygiene Measures: Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants. Discard contaminated clothing and footwear that cannot be cleaned. Practice good housekeeping.

ENVIRONMENTAL CONTROLS

See Sections 6, 7, 12, 13.

SECTION 9

PHYSICAL AND CHEMICAL PROPERTIES

Typical physical and chemical properties are given below. Consult the Supplier in Section 1 for additional data.

GENERAL INFORMATION

Physical State: Liquid
Color: Amber
Odor: Characteristic
Odor Threshold: N/D

IMPORTANT HEALTH, SAFETY, AND ENVIRONMENTAL INFORMATION

Relative Density (at 15 C): 0.869
Flash Point [Method]: >200C (392F) [ASTM D-92]
Flammable Limits (Approximate volume % in air): LEL: 0.9 UEL: 7.0
Autoignition Temperature: N/D
Boiling Point / Range: > 316C (600F)
Vapor Density (Air = 1): > 2 at 101 kPa
Vapor Pressure: < 0.013 kPa (0.1 mm Hg) at 20 C
Evaporation Rate (N-Butyl Acetate = 1): N/D
pH: N/A



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Log Pow (n-Octanol/Water Partition Coefficient): > 3.5
 Solubility in Water: Negligible
 Viscosity: 31 cSt (31 mm²/sec) at 40 C | 5.5 cSt (5.5 mm²/sec) at 100C
 Oxidizing Properties: See Sections 3, 15, 16.

OTHER INFORMATION

Freezing Point: N/D
 Melting Point: N/A
 Pour Point: -18°C (0°F)
 DMSO Extract (mineral oil only), IP-346: < 3 %wt

SECTION 10	STABILITY AND REACTIVITY
-------------------	---------------------------------

STABILITY: Material is stable under normal conditions.

CONDITIONS TO AVOID: Excessive heat. High energy sources of ignition.

MATERIALS TO AVOID: Strong oxidizers

HAZARDOUS DECOMPOSITION PRODUCTS: Material does not decompose at ambient temperatures.

HAZARDOUS POLYMERIZATION: Will not occur.

SECTION 11	TOXICOLOGICAL INFORMATION
-------------------	----------------------------------

ACUTE TOXICITY

<u>Route of Exposure</u>	<u>Conclusion / Remarks</u>
Inhalation	
Toxicity (Rat): LC50 > 5000 mg/m ³	Minimally Toxic. Based on test data for structurally similar materials.
Irritation: No end point data.	Negligible hazard at ambient/normal handling temperatures. Based on assessment of the components.
Ingestion	
Toxicity (Rat): LD50 > 5000 mg/kg	Minimally Toxic. Based on test data for structurally similar materials.
Skin	
Toxicity (Rabbit): LD50 > 5000 mg/kg	Minimally Toxic. Based on test data for structurally similar materials.
Irritation (Rabbit): Data available.	Negligible Irritation to skin at ambient temperatures. Based on test data for structurally similar materials.
Eye	
Irritation (Rabbit): Data available.	May cause mild, short-lasting discomfort to eyes. Based on test data for structurally similar materials.

CHRONIC/OTHER EFFECTS**Contains:**

Base oil severely refined: Not carcinogenic in animal studies. Representative material passes IP-346, Modified Ames test, and/or other screening tests. Dermal and inhalation studies showed minimal effects; lung non-specific infiltration of immune cells, oil deposition and minimal granuloma formation. Not sensitizing in test animals.



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Additional information is available by request.

The following ingredients are cited on the lists below: None.

--REGULATORY LISTS SEARCHED--

1 = NTP CARC
2 = NTP SUS

3 = IARC 1
4 = IARC 2A

5 = IARC 2B
6 = OSHA CARC

SECTION 12	ECOLOGICAL INFORMATION
-------------------	-------------------------------

The information given is based on data available for the material, the components of the material, and similar materials.

ECOTOXICITY

Material -- Not expected to be harmful to aquatic organisms.

MOBILITY

Base oil component -- Low solubility and floats and is expected to migrate from water to the land.
Expected to partition to sediment and wastewater solids.

PERSISTENCE AND DEGRADABILITY

Biodegradation:

Base oil component -- Expected to be inherently biodegradable

BIOACCUMULATION POTENTIAL

Base oil component -- Has the potential to bioaccumulate, however metabolism or physical properties may reduce the bioconcentration or limit bioavailability.

SECTION 13	DISPOSAL CONSIDERATIONS
-------------------	--------------------------------

Disposal recommendations based on material as supplied. Disposal must be in accordance with current applicable laws and regulations, and material characteristics at time of disposal.

DISPOSAL RECOMMENDATIONS

Product is suitable for burning in an enclosed controlled burner for fuel value or disposal by supervised incineration at very high temperatures to prevent formation of undesirable combustion products.

REGULATORY DISPOSAL INFORMATION

RCRA Information: The unused product, in our opinion, is not specifically listed by the EPA as a hazardous waste (40 CFR, Part 261D), nor is it formulated to contain materials which are listed as hazardous wastes. It does not exhibit the hazardous characteristics of ignitability, corrosivity or reactivity and is not formulated with contaminants as determined by the Toxicity Characteristic Leaching Procedure (TCLP). However, used product may be regulated.

Empty Container Warning Empty Container Warning (where applicable): Empty containers may contain residue and can be dangerous. Do not attempt to refill or clean containers without proper instructions. Empty drums should be



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completely drained and safely stored until appropriately reconditioned or disposed. Empty containers should be taken for recycling, recovery, or disposal through suitably qualified or licensed contractor and in accordance with governmental regulations. DO NOT PRESSURISE, CUT, WELD, BRAZE, SOLDER, DRILL, GRIND, OR EXPOSE SUCH CONTAINERS TO HEAT, FLAME, SPARKS, STATIC ELECTRICITY, OR OTHER SOURCES OF IGNITION. THEY MAY EXPLODE AND CAUSE INJURY OR DEATH.

SECTION 14	TRANSPORT INFORMATION
-------------------	------------------------------

LAND (DOT) : Not Regulated for Land Transport

LAND (TDG) : Not Regulated for Land Transport

SEA (IMDG) : Not Regulated for Sea Transport according to IMDG-Code

AIR (IATA) : Not Regulated for Air Transport

SECTION 15	REGULATORY INFORMATION
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OSHA HAZARD COMMUNICATION STANDARD: When used for its intended purposes, this material is not classified as hazardous in accordance with OSHA 29 CFR 1910.1200.

NATIONAL CHEMICAL INVENTORY LISTING: AICS, IECSC, DSL, EINECS, PICCS, TSCA

EPCRA: This material contains no extremely hazardous substances.

SARA (311/312) REPORTABLE HAZARD CATEGORIES: None.

SARA (313) TOXIC RELEASE INVENTORY: This material contains no chemicals subject to the supplier notification requirements of the SARA 313 Toxic Release Program.

The following ingredients are cited on the lists below:

Chemical Name	CAS Number	List Citations
DIPHENYLAMINE	122-39-4	5
PHOSPHORODITHOIC ACID, O,O-DI C1-14-ALKYL ESTERS, ZINC SALTS (2:1) (ZDDP)	68649-42-3	15

--REGULATORY LISTS SEARCHED--

1 = ACGIH ALL	6 = TSCA 5a2	11 = CA P65 REPRO	16 = MN RTK
2 = ACGIH A1	7 = TSCA 5e	12 = CA RTK	17 = NJ RTK
3 = ACGIH A2	8 = TSCA 6	13 = IL RTK	18 = PA RTK
4 = OSHA Z	9 = TSCA 12b	14 = LA RTK	19 = RI RTK
5 = TSCA 4	10 = CA P65 CARC	15 = MI 293	



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Code key: CARC=Carcinogen; REPRO=Reproductive

SECTION 16	OTHER INFORMATION
-------------------	--------------------------

N/D = Not determined, N/A = Not applicable

THIS SAFETY DATA SHEET CONTAINS THE FOLLOWING REVISIONS:

Revision Changes:

Section 04: First Aid Inhalation - Header was modified.
Section 04: First Aid Ingestion - Header was modified.
Section 06: Notification Procedures - Header was modified.
Section 10 Stability and Reactivity - Header was modified.
Section 13: Disposal Recommendations - Note was modified.
Section 09: Evaporation Rate - Header was modified.
Section 08: Personal Protection - Header was modified.
Section 08: Personal Protection was modified.
Section 07: Handling and Storage - Handling was modified.
Section 07: Handling and Storage - Storage Phrases was modified.
Section 11: Dermal Lethality Test Data was modified.
Section 11: Oral Lethality Test Data was modified.
Section 11: Inhalation Lethality Test Data was modified.
Section 05: Hazardous Combustion Products was modified.
Section 06: Accidental Release - Spill Management - Water was modified.
Section 09: Relative Density - Header was modified.
Section 09: Viscosity was modified.
Section 09: Viscosity was modified.
Section 15: List Citations Table was modified.
Section 15: List Citation Table - Header was modified.
Section 15: National Chemical Inventory Listing was modified.
Section 16: Code to MHCs was modified.
Section 08: Exposure limits/standards was modified.
Hazard Identification: OSHA - May be Hazardous Statement was modified.
Section 06: Notification Procedures was modified.
Section 01: Company Contact Methods Sorted by Priority was modified.
Section 12: Ecological Information - Acute Aquatic Toxicity was added.
Section 12: Ecological Information - Acute Aquatic Toxicity was added.
Hazard Identification: Environmental Hazard was deleted.
Hazard Identification: Environmental Hazard - Header was deleted.
Section 12: Ecological Information - Acute Aquatic Toxicity was deleted.
Section 12: Ecological Information - Acute Aquatic Toxicity was deleted.

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affiliates in which they directly or indirectly hold any interest.

Internal Use Only

MHC: 0B, 0B, 0, 0, 0, 0

PPEC: A

DGN: 2007057XUS (538877)

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MATERIAL SAFETY DATA SHEET

Klean-Strip Paint Thinner

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	0
PPE	G



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Revision: 10/03/2005

Date Created: 10/03/2005

1. Product and Company Identification

Product Code: GKPT94002
Product Name: Klean-Strip Paint Thinner
Reference #: 1677.1
Manufacturer Information
Company Name: W. M. Barr
2105 Channel Avenue
Memphis, TN 38113
Phone Number: (901)775-0100
Emergency Contact: 3E 24 Hour Emergency Contact (800)451-8346
Information: W.M. Barr Customer Service (800)398-3892
Web site address: www.wmbarr.com
Preparer Name: W.M. Barr and Company, Inc. (901)775-0100

2. Composition/Information on Ingredients

Hazardous Components (Chemical Name)	CAS #	Percentage	OSHA TWA	ACGIH TWA	Other Limits
1. Stoddard solvent	8052-41-3	95.0 -100.0 %	500 ppm	100 ppm	No data.
2. 1,2,4-Trimethylbenzene	95-63-6	1.0 -2.0 %	200 ppm	50 ppm	No data.
3. Raffinates (petroleum), sorption process	64741-85-1	95.0 -100.0 %	1000 ppm	500 ppm	No data.
Hazardous Components (Chemical Name)	RTECS #	OSHA STEL	OSHA CEIL	ACGIH STEL	ACGIH CEIL
1. Stoddard solvent	WJ8925000	No data.	No data.	250 ppm	No data.
2. 1,2,4-Trimethylbenzene	DC3325000	500 ppm/(10min)	300 ppm	No data.	No data.
3. Raffinates (petroleum), sorption process	NA	No data.	No data.	750 ppm	No data.

3. Hazards Identification

Emergency Overview

Caution! Combustible. Keep away from heat, sparks, flame and all other sources of ignition. Vapors may cause fire. Vapors may travel long distances to other areas and rooms away from work site. Do not smoke. Extinguish all flames and pilot lights, and turn off stoves, heaters, electric motors and all other sources of ignition anywhere in the structure, dwelling or building during use and until all vapors are gone from work site and all areas away from work site. Keep away from electrical outlets and switches. Beware of static electricity that may be generated by synthetic clothing and other sources.

OSHA Regulatory Status: This material is classified as hazardous under OSHA regulations.

Potential Health Effects (Acute and Chronic)

Inhalation Acute Exposure Effects:

May cause dizziness; headache; watering of eyes; eye irritation; weakness; nausea; muscle twitches, and depression of central nervous system. Severe overexposure may cause convulsions; unconsciousness; and death. Intentional misuse of this product by deliberately concentrating and inhaling can be harmful or fatal.

Skin Contact Acute Exposure Effects:

May cause irritation; numbness in the fingers and arms; drying of skin; and dermatitis. May cause increased severity of symptoms listed under inhalation.

Eye Contact Acute Exposure Effects:

This material is an eye irritant. May cause irritation; burns; conjunctivitis of eyes; and corneal ulcerations of the eye. Vapors may irritate eyes.

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Ingestion Acute Exposure Effects:

Harmful or fatal if swallowed. May cause nausea; weakness; muscle twitches; gastrointestinal irritation; and diarrhea. Severe overexposure may cause convulsions; unconsciousness; and death.

Chronic Exposure Effects:

Reports have associated repeated and prolonged overexposure to solvents with neurological and other physiological damage. Prolonged or repeated contact may cause dermatitis. May cause jaundice; bone marrow damage; liver damage; anemia; and skin irritation.

Signs and Symptoms Of Exposure

Inhalation, ingestion, and dermal are possible routes of exposure.

Medical Conditions Generally Aggravated By Exposure

Diseases of the skin, eyes, liver, kidneys, central nervous system and respiratory system.

OSHA Hazard Classes:

HEALTH HAZARDS : N/E

PHYSICAL HAZARDS : N/E

TARGET ORGANS & EFFECTS: N/E

4. First Aid Measures

Emergency and First Aid Procedures

Inhalation:

If user experiences breathing difficulty, move to air free of vapors. Administer oxygen or artificial medical assistance can be rendered.

Skin Contact:

Wash with soap and large quantities of water and seek medical attention if irritation from contact persists.

Eye Contact:

Flush with large quantities of water for at least 15 minutes and seek immediate medical attention.

Ingestion:

Do not induce vomiting. Call your local poison control center, hospital emergency room or physician immediately for instructions to induce vomiting.

Note to Physician

Call your local poison control center for further information.

5. Fire Fighting Measures

Flammability Classification:	Class II
Flash Pt:	105.00 F Method Used: SCC
Explosive Limits:	LEL: 1.00 UEL: No data.
Autoignition Pt:	No data.

Fire Fighting Instructions

Self-contained respiratory protection should be provided for fire fighters fighting fires in buildings or confined areas. Storage containers exposed to fire should be kept cool with water spray to prevent pressure build-up. Stay away from heads of containers that have been exposed to intense heat or flame.

Flammable Properties and Hazards

No data available.

Extinguishing Media

Use carbon dioxide, dry powder, or foam.

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Unsuitable Extinguishing Media

No data available.

6. Accidental Release Measures

Steps To Be Taken In Case Material is Released Or Spilled

Clean up:

Keep unnecessary people away; isolate hazard area and deny entry. Stay upwind, out of low areas, and ventilate closed spaces before entering. Shut off ignition sources; keep flares, smoking or flames out of hazard area.

Small spills:

Take up with sand, earth or other noncombustible absorbent material and place in a plastic container where applicable.

Large spills:

Dike far ahead of spill for later disposal.

Waste Disposal:

Dispose in accordance with applicable local, state and federal regulations.

7. Handling and Storage

Precautions To Be Taken in Handling

Read carefully all cautions and directions on product label before use. Since empty container retains residue, follow all label warnings even after container is empty. Dispose of empty container according to all regulations. Do not reuse this container.

Precautions To Be Taken in Storing

Keep container tightly closed when not in use. Store in a cool, dry place. Do not store near flames or at elevated temperatures.

8. Exposure Controls/Personal Protection

Respiratory Equipment (Specify Type)

For OSHA controlled work place and other regular users. Use only with adequate ventilation under engineered air control systems designed to prevent exceeding appropriate TLV. For occasional use, where engineered air control is not feasible, use properly maintained and properly fitted NIOSH approved respirator for organic solvent vapors. A dust mask does not provide protection against vapors.

Eye Protection

Safety glasses, goggles or face shields are recommended to safeguard against potential eye contact, irritation, or injury. Contact lenses should not be worn while working with chemicals.

Protective Gloves

Wear impermeable gloves. Gloves contaminated with product should be discarded. Promptly remove clothing that becomes soiled with product.

Other Protective Clothing

Various application methods can dictate use of additional protective safety equipment, such as impermeable aprons, etc., to minimize exposure. A source of clean water should be available in the work area for flushing eyes and skin. Do not eat, drink, or smoke in the work area. Wash hands thoroughly after use. Before reuse, thoroughly clean any clothing or protective equipment that has been contaminated by prior use. Discard any clothing or other protective equipment that cannot be decontaminated, such as gloves or shoes.

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Engineering Controls (Ventilation etc.)

Use only with adequate ventilation to prevent build-up of vapors. Open all windows and doors. Use only with a cross ventilation of moving fresh air across the work area. If strong odor is noticed or you experience slight dizziness, headache, nausea, or eye-watering - Stop - ventilation is inadequate. Leave area immediately.

9. Physical and Chemical Properties

Physical States:	<input type="checkbox"/> Gas <input checked="" type="checkbox"/> Liquid <input type="checkbox"/> Solid
Melting Point:	No data.
Boiling Point:	> 310.00 F
Autoignition Pt:	No data.
Flash Pt:	105.00 F Method: SCC
Explosive Limits:	LEL: 1.00 UEL: No data.
Specific Gravity (Water = 1):	No data.
Bulk Density:	6.659 LB/GA
Vapor Pressure (vs. Air or mm Hg):	No data.
Vapor Density (vs. Air = 1):	No data.
Evaporation Rate (vs Butyl Acetate=1):	No data.
Solubility in Water:	No data.
Percent Volatile:	100.0 % by weight.
VOC / Volume:	800.0000 G/L
Corrosion Rate:	No data.
pH:	No data.
Appearance and Odor	
Water White / Free and Clear	

10. Stability and Reactivity

Stability:	Unstable <input type="checkbox"/> Stable <input checked="" type="checkbox"/>
Conditions To Avoid - Instability	No data available.
Incompatibility - Materials To Avoid	Incompatible with strong oxidizing agents.
Hazardous Decomposition Or Byproducts	Decomposition may produce carbon monoxide and carbon dioxide.
Hazardous Polymerization:	Will occur <input type="checkbox"/> Will not occur <input checked="" type="checkbox"/>
Conditions To Avoid - Hazardous Polymerization	No data available.

11. Toxicological Information

Toxicological Information			
No data available.			
Carcinogenicity/Other Information			
No data available.			
Carcinogenicity:	NTP? No	IARC Monographs? No	OSHA Regulated? No

12. Ecological Information

Ecological Information
No data available.

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13. Disposal Considerations

Waste Disposal Method

Dispose in accordance with federal, state, and local regulations.

14. Transport Information

LAND TRANSPORT (US DOT)

DOT Proper Shipping Name

No data available.

15. Regulatory Information

US EPA SARA Title III

Hazardous Components (Chemical Name)	CAS #	Sec.302 (EHS)	Sec.304 RQ	Sec.313 (TRI)	Sec.110
1. Stoddard solvent	8052-41-3	No	No	No	No
2. 1,2,4-Trimethylbenzene	95-63-6	No	No	Yes	No
3. Raffinates (petroleum), sorption process	64741-85-1	No	No	No	No

US EPA CAA, CWA, TSCA

Hazardous Components (Chemical Name)	CAS #	EPA CAA	EPA CWA NPDES	EPA TSCA	CA PROP 65
1. Stoddard solvent	8052-41-3	No	No	No	No
2. 1,2,4-Trimethylbenzene	95-63-6	No	No	No	No
3. Raffinates (petroleum), sorption process	64741-85-1	No	No	No	No

SARA (Superfund Amendments and Reauthorization Act of 1986) Lists:

Sec.302:	EPA SARA Title III Section 302 Extremely Hazardous Chemical with TPQ. * indicates 10000 LB TPQ if not volatile.
Sec.304:	EPA SARA Title III Section 304: CERCLA Reportable + Sec.302 with Reportable Quantity. ** indicates statutory RQ.
Sec.313:	EPA SARA Title III Section 313 Toxic Release Inventory. Note: -Cat indicates a member of a chemical category.
Sec.110:	EPA SARA 110 Superfund Site Priority Contaminant List

TSCA (Toxic Substances Control Act) Lists:

5A(2):	Chemical Subject to Significant New Rules (SNURS)
6A:	Commercial Chemical Control Rules
8A:	Toxic Substances Subject To Information Rules on Production
8A CAIR:	Comprehensive Assessment Information Rules - (CAIR)
8A PAIR:	Preliminary Assessment Information Rules - (PAIR)
9C:	Records of Allegations of Significant Adverse Reactions
8D:	Health and Safety Data Reporting Rules
8D TERM:	Health and Safety Data Reporting Rule Terminations

Other Important Lists:

CWA NPDES:	EPA Clean Water Act NPDES Permit Chemical
CAA HAP:	EPA Clean Air Act Hazardous Air Pollutant
CAA ODC:	EPA Clean Air Act Ozone Depleting Chemical (1=CFC, 2=HCFC)
CA PROP 65:	California Proposition 65

EPA Hazard Categories:

This material meets the EPA 'Hazard Categories' defined for SARA Title III Sections 311/312 as indicated:

- ☐ Yes ☒ No Acute (immediate) Health Hazard
- ☐ Yes ☒ No Chronic (delayed) Health Hazard
- ☐ Yes ☒ No Fire Hazard
- ☐ Yes ☒ No Reactive Hazard

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[] Yes [X] No Sudden Release of Pressure Hazard

16. Other Information

Company Policy or Disclaimer

The information contained herein is presented in good faith and believed to be accurate as of the effective date shown above. This information is furnished without warranty of any kind. Employers should use this information only as a supplement to other information gathered by them and must make independent determination of suitability and completeness of information from all sources to assure proper use of these materials and the safety and health of employees. Any use of this data and information must be determined by the user to be in accordance with applicable federal, state and local laws and regulations.

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Klean-Strip Denatured Alcohol

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FLAMMABILITY	3	0
PPE	G	



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Revision: 06/13/2005

Date Created: 06/13/2005

1. Product and Company Identification

Product Code: QSL26
 Product Name: Klean-Strip Denatured Alcohol
 Reference #: 1625.5
 Manufacturer Information
 Company Name: W. M. Barr
 2105 Channel Avenue
 Memphis, TN 38113
 Phone Number: (901)775-0100
 Emergency Contact: 3E 24 Hour Emergency Contact (800)451-8346
 Information: W.M. Barr Customer Service (800)398-3892
 Web site address: www.wmbarr.com
 Preparer Name: W.M. Barr EHS Department (901)775-0100

2. Composition/Information on Ingredients

Hazardous Components (Chemical Name)	CAS #	Percentage	OSHA PEL	ACGIH TWA	Other Limits
1. Ethyl alcohol	64-17-5	45.0 -50.0 %	1000 ppm	1000 ppm	No data.
2. Methanol	67-56-1	45.0 -50.0 %	200 ppm	200 ppm	No data.
3. Methyl isobutyl ketone	108-10-1	1.0 -4.0 %	100 ppm	50 ppm	No data.
Hazardous Components (Chemical Name)	RTECS #	OSHA STEL	OSHA CEIL	ACGIH STEL	ACGIH CEIL
1. Ethyl alcohol	KQ6300000	No data.	No data.	No data.	No data.
2. Methanol	PC1400000	No data.	No data.	250 ppm	No data.
3. Methyl isobutyl ketone	SA9275000	No data.	No data.	75 ppm	No data.

3. Hazards Identification

Emergency Overview

Danger! Flammable! Keep away from heat, sparks, flame, and all other sources of ignition. Do not smoke. Extinguish all flames and pilot lights, and turn off stoves, heaters, electric motors and all other sources of ignition during use and until all vapors are gone. Beware of static electricity that may be generated by synthetic clothing and other sources.

OSHA Regulatory Status: This material is classified as hazardous under OSHA regulations.

Health Hazards (Acute and Chronic)

Inhalation Acute Exposure Effects:

Vapor harmful. May cause dizziness, headache, watering of eyes, irritation of respiratory tract, irritation to the eyes, drowsiness, nausea, other central nervous system effects, spotted vision, dilation of pupils, and convulsions.

Skin Contact Acute Exposure Effects:

May cause irritation, drying of skin, redness, and dermatitis. May cause symptoms listed under inhalation. May be absorbed through damaged skin.

Eye Contact Acute Exposure Effects:

May cause irritation.

Ingestion Acute Exposure Effects:

Poison. Cannot be made non-poisonous. May be fatal or cause blindness. May produce fluid in the lungs and pulmonary edema. May cause dizziness, headache, nausea, drowsiness, loss of coordination, stupor, reddening of face and or neck, liver, kidney and heart damage, coma, and death. May produce symptoms listed under

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inhalation.

Chronic Exposure Effects:

May cause symptoms listed under inhalation, dizziness, fatigue, tremors, permanent central nervous system changes, blindness, pancreatic damage, and death.

Signs and Symptoms Of Exposure

No data available.

Medical Conditions Generally Aggravated By Exposure

Diseases of the liver.

OSHA Hazard Classes:

HEALTH HAZARDS : N/E

PHYSICAL HAZARDS : N/E

TARGET ORGANS & EFFECTS: N/E

4. First Aid Measures

Emergency and First Aid Procedures

Inhalation:

If user experiences breathing difficulty, move to air free of vapors. Administer oxygen or artificial respiration until medical assistance can be rendered.

Skin Contact:

Wash with soap and water.

Eye Contact:

Flush with large quantities of water for at least 15 minutes. If irritation from contact persists, get medical attention.

Ingestion:

Call your poison control center, hospital emergency room or physician immediately for instructions to induce vomiting.

Note to Physician

Poison. This product contains methanol. Methanol is metabolized to formaldehyde and formic acid. These metabolites may cause metabolic acidosis, visual disturbances and blindness. Since metabolism is required for these toxic symptoms, their onset may be delayed from 6 to 30 hours following ingestion. Ethanol competes for the same metabolic pathway and has been used as an antidote. Methanol is effectively removed by hemodialysis. Call your local poison control center for further instructions.

5. Fire Fighting Measures

Flammability Classification:	OSHA Class IB
Flash Pt:	45.00 F Method Used: SCC
Explosive Limits:	LEL: 1.00 UEL: No data.
Autoignition Pt:	No data.

Special Fire Fighting Procedures

Self-contained respiratory protection should be provided for fire fighters fighting fires in buildings or confined area. Storage containers exposed to fire should be kept cool with water spray to prevent pressure build-up. Stay away from heads of containers that have been exposed to intense heat or flame.

Unusual Fire and Explosion Hazards

No data available.

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Extinguishing Media

Use carbon dioxide, dry powder, or foam.

Unsuitable Extinguishing Media

No data available.

6. Accidental Release Measures

Steps To Be Taken In Case Material Is Released Or Spilled

Clean-up:

Keep unnecessary people away; isolate hazard area and deny entry. Stay upwind, out of low areas, and ventilate closed spaces before entering. Shut off ignition sources, keep flares, smoking or flames out of hazard area.

Small spills:

Take up liquid with sand, earth or other noncombustible absorbent material and place in a plastic container where applicable.

Large spills:

Dike far ahead of spill for later disposal.

7. Handling and Storage

Precautions To Be Taken in Handling

Read carefully all cautions and directions on product label before use. Since empty container retains residue, follow all label warnings even after container is empty. Dispose of empty container according to all regulations. Do not reuse this container.

Precautions To Be Taken in Storing

Keep container tightly closed when not in use. Store in a cool, dry place. Do not store near flames or at elevated temperatures.

8. Exposure Controls/Personal Protection

Respiratory Equipment (Specify Type)

For OSHA controlled work place and other regular users. Use only with adequate ventilation under engineered air control systems designed to prevent exceeding appropriate TLV. For occasional use, where engineered air control is not feasible, use properly maintained and properly fitted NIOSH approved respirator for organic solvent vapors. A dust mask does not provide protection against vapors.

Eye Protection

Safety glasses, chemical goggles or face shields are recommended to safeguard against potential eye contact, irritation, or injury. Contact lenses should not be worn while working with chemicals.

Protective Gloves

Wear impermeable gloves. Gloves contaminated with product should be discarded. Promptly remove clothing that becomes soiled with product.

Other Protective Clothing

Various application methods can dictate the use of additional protective safety equipment, such as impermeable aprons, etc., to minimize exposure. A source of clean water should be available in the work area for flushing eyes and skin. Do not eat, drink, or smoke in the work area. Wash hands thoroughly after use. Before reuse, thoroughly clean any clothing or protective equipment that has been contaminated by prior use. Discard any clothing or other protective equipment that cannot be decontaminated, such as gloves or shoes.

Ventilation

Use only with adequate ventilation to prevent build-up of vapors. Open all windows and doors. Use only with a cross ventilation of moving fresh air across the work area. If strong odor is noticed or you experience slight dizziness, headache, nausea, or eye-watering -- Stop -- ventilation is inadequate. Leave area immediately.

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Klean-Strip Denatured Alcohol

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9. Physical and Chemical Properties

Physical States: ☐ Gas ☒ Liquid ☐ Solid
Melting Point: No data.
Boiling Point: 147.00 F
Autoignition Pt: No data.
Flash Pt: 45.00 F Method: SCC
Explosive Limits: LEL: 1.00 UEL: No data.
Specific Gravity: No data.
Bulk Density: 6.61 LB/GA
Vapor Pressure: No data.
Vapor Density: No data.
Evaporation Rate: No data.
Solubility in Water: No data.
Percent Volatile: 100.0 % by weight.
VOC / Volume: 792.0000 G/L
Corrosion Rate: No data.
pH: No data.

Appearance and Odor:

No data available.

10. Stability and Reactivity

Stability: Unstable ☐ Stable ☒

Conditions To Avoid - Instability

No data available.

Incompatibility - Materials To Avoid

Incompatible with strong oxidizing agents.

Hazardous Decomposition Or Byproducts

Decomposition may produce carbon monoxide and carbon dioxide.

Hazardous Polymerization: Will occur ☐ Will not occur ☒

Conditions To Avoid - Hazardous Polymerization

No data available.

11. Toxicological Information

Toxicological Information

No data available.

Carcinogenicity/Other Information

No data available.

Carcinogenicity: NTP? No IARC Monographs? No OSHA Regulated? No

12. Ecological Information

Ecological Information

No data available.

13. Disposal Considerations

Waste Disposal Method

Dispose in accordance with applicable local, state, and federal regulations.

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Klean-Strip Denatured Alcohol

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14. Transport Information

LAND TRANSPORT (US DOT)

DOT Proper Shipping Name

No data available.

15. Regulatory Information

US EPA SARA Title III

Hazardous Components (Chemical Name)	CAS #	Sec.302 (EHS)	Sec.304 RQ	Sec.313 (TRI)	Sec.110
1. Ethyl alcohol	64-17-5	No	No	No	No
2. Methanol	67-56-1	No	Yes 5000 LB	Yes	No
3. Methyl isobutyl ketone	108-10-1	No	Yes 5000 LB	Yes	Yes

US EPA CAA, CWA, TSCA

Hazardous Components (Chemical Name)	CAS #	EPA CAA	EPA CWA NPDES	EPA TSCA	CA PROP 65
1. Ethyl alcohol	64-17-5	No	No	No	No
2. Methanol	67-56-1	HAP	No	No	No
3. Methyl isobutyl ketone	108-10-1	HAP	No	No	No

SARA (Superfund Amendments and
Reauthorization Act of 1986) Lists:

Sec.302:	EPA SARA Title III Section 302 Extremely Hazardous Chemical with TPQ. * indicates 10000 LB TPQ if not volatile.
Sec.304:	EPA SARA Title III Section 304: CERCLA Reportable + Sec.302 with Reportable Quantity. ** indicates statutory RQ.
Sec.313:	EPA SARA Title III Section 313 Toxic Release Inventory. Note: -Cat indicates a member of a chemical category.
Sec.110:	EPA SARA 110 Superfund Site Priority Contaminant List

TSCA (Toxic Substances Control
Act) Lists:

5A(2):	Chemical Subject to Significant New Rules (SNURS)
6A:	Commercial Chemical Control Rules
8A:	Toxic Substances Subject To Information Rules on Production
6A CAIR:	Comprehensive Assessment Information Rules - (CAIR)
6A PAIR:	Preliminary Assessment Information Rules - (PAIR)
8C:	Records of Allegations of Significant Adverse Reactions
8D:	Health and Safety Data Reporting Rules
8D TERM:	Health and Safety Data Reporting Rule Terminations

Other Important Lists:

CWA NPDES:	EPA Clean Water Act NPDES Permit Chemical
CAA HAP:	EPA Clean Air Act Hazardous Air Pollutant
CAA ODC:	EPA Clean Air Act Ozone Depleting Chemical (1=CFC, 2=HCFC)
CA PROP 65:	California Proposition 65

EPA Hazard Categories:

This material meets the EPA 'Hazard Categories' defined for SARA Title III Sections 311/312 as indicated:

<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Acute (immediate) Health Hazard
<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Chronic (delayed) Health Hazard
<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Fire Hazard
<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Reactive Hazard
<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Sudden Release of Pressure Hazard

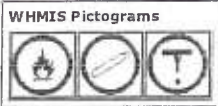
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16. Other Information

Company Policy or Disclaimer

The information contained herein is presented in good faith and believed to be accurate as of the effective date shown above. This information is furnished without warranty of any kind. Employers should use this information only as a supplement to other information gathered by them and must make independent determination of suitability and completeness of information from all sources to assure proper use of these materials and the safety and health of employees. Any use of this data and information must be determined by the user to be in accordance with applicable federal, state and local laws and regulations.

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SECTION 1: CHEMICAL PRODUCT and COMPANY IDENTIFICATION

(N/A)

Product Name: **I-Chem White Lithium Grease (#ICA725)**
 Distributor Name: Amrep, Inc.
 Distributor Address: 990 Industrial Park Drive
 Marietta, GA 30062

D.O.T. Emergency Phone:
 CHEM TEL (800) 255-3924
 INTERNATIONAL: +01-813-248-0584

Distributor Telephone: (770) 422-2071
 Hours Of Operation: (Mon - Fri / 8am - 5pm ET)
 Revision Date: October 24, 2007
 Revision #: 1.0

Expiry Date: October 24, 2010
 Manufacturer Name: Amrep, Inc.
 Address: 990 Industrial Park Drive
 Marietta, GA 30062

D.O.T. Emergency Phone:
 CHEM TEL (800) 255-3924
 INTERNATIONAL: +01-813-248-0584

General Use: Product Use: Lubricant.
 Business Phone: (770) 422-2071
 Hazard Rating: 0 = Minimal
 1 = Slight
 2 = Moderate
 3 = Severe
 4 = Extreme

Product Codes: A00725

NFPA



HMIS

HEALTH	2
FIRE	3
REACTIVITY	0
PPE	B

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SECTION 2 : COMPOSITION, INFORMATION ON INGREDIENTS

(N/A)

Ingredient Name	CAS#	Ingredient Percent
Acetone	67-64-1	10 - 30% by Weight
EC Index Number: 1		
Heptane	142-82-5	10 - 30% by Weight
EC Index Number: 1		
Isobutane	75-28-5	10 - 30% by Weight
EC Index Number: 1		
Propane	74-98-6	7 - 13% by Weight
EC Index Number: 1		
Distillates (petroleum), hydrotreated light	64742-47-8	1 - 5% by Weight
EC Index Number: 1		

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SECTION 3 : HAZARDS IDENTIFICATION

(N/A)

Emergency Overview: DANGER

EXTREMELY FLAMMABLE. HARMFUL BY INHALATION.
 MAY CAUSE EYE IRRITATION. MAY CAUSE SKIN IRRITATION.
 CONTENTS UNDER PRESSURE. CONTAINER MAY EXPLODE IF HEATED.

Environment Hazards:	May cause long-term adverse effects in the aquatic environment. See Section 12 for more information.
Potential Health Effects:	See Section 11 for more information. HMIS: See Section 15

Advice to First Responders

Route of Exposure:	Skin contact, eye contact, inhalation, and ingestion.
Potential Health Effects:	
Eye Contact:	May cause eye irritation.
Skin Contact:	May cause skin irritation.
Inhalation:	Harmful by inhalation. May cause respiratory tract irritation. May cause asphyxiation. This product may be aspirated into the lungs and cause chemical pneumonitis.
Ingestion:	Not a normal route of exposure. Harmful: may cause lung damage if swallowed.
Chronic Health Effects:	Prolonged or repeated contact may dry skin and cause irritation.
Target Organs:	Skin, eyes, gastrointestinal tract, respiratory system.
Signs/Symptoms:	Symptoms may include discomfort or pain, excess blinking and tear production, with marked redness and swelling of the conjunctiva. Handling can cause dry skin. Vapours may cause drowsiness and dizziness.
Aggravation of Pre-Existing Conditions:	Asthma. Allergies.

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SECTION 4 : FIRST AID MEASURES

: (N/A)

Eye Contact:	In case of contact, immediately flush eyes with plenty of water. If easy to do, remove contact lenses, if worn.
Skin Contact:	In case of contact, immediately flush skin with plenty of water. Remove contaminated clothing and shoes. Wash clothing before reuse. Call a physician if irritation develops and persists.
Inhalation:	If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen.
Ingestion:	If swallowed, do NOT induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person.
Note to Physicians:	Symptoms may not appear immediately.
Other First Aid:	General Advice: In case of accident or if you feel unwell, seek medical advice immediately (show the label or MSDS where possible).

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SECTION 5 : FIRE FIGHTING MEASURES

: (N/A)

Fire:	Flammability: Flammable by WHMIS/OSHA criteria.
Flash Point:	Not available.
Upper Flammable or Explosive Limit:	Not available.
Lower Flammable or Explosive Limit:	Not available.
Auto Ignition Temperature:	Not available.
Extinguishing Media:	Suitable Extinguishing Media: Powder, foam, carbon dioxide.
Unsuitable Media:	Unsuitable Extinguishing Media: Water.
Hazardous Combustion Byproducts:	May include, and are not limited to: oxides of carbon.
Fire Fighting Instructions:	Containers may explode when heated. Keep upwind of fire. Wear full fire fighting turn-out gear (full Bunker gear) and respiratory protection (SCBA).
Sensitivity to Impact:	Sensitivity to Mechanical Impact: Not available.
Static Discharge Effects:	Sensitivity to Static Discharge: Not available.

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SECTION 6 : ACCIDENTAL RELEASE MEASURES

: (N/A)

Personal Precautions:	Use personal protection recommended in Section 8. Isolate the hazard area and deny entry to unnecessary and unprotected personnel. Eliminate sources of ignition. Ruptured cylinders may rocket.
Spill Cleanup Measures:	Methods for Containment: Contain and/or absorb spill with inert material (e.g. sand, vermiculite), then place in a suitable container. Do not flush to sewer or allow to enter waterways. Use appropriate Personal Protective Equipment (PPE).
Environmental Precautions:	Methods for Clean-Up: Vacuum or sweep material and place in a disposal container. Allow gas to dissipate harmlessly into the atmosphere. Many gases are heavier than air and will spread along ground and collect in low or confined areas (sewers, basements, tanks). This material is a water pollutant. Keep out of drains, sewers, ditches, and waterways. Minimize use of water to prevent environmental contamination.
Other Precautions:	Not available.

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SECTION 7 : HANDLING and STORAGE

: (N/A)

Handling:	Keep away from sources of ignition. - No smoking. Avoid contact with skin and eyes. Do not swallow. Do not breathe gas/fumes/vapor/spray. Use only in well-ventilated areas. Handle and open container with care. When using, do not eat or drink. Wash hands before eating, drinking, or smoking.
Storage:	Keep out of the reach of children. Keep container in a well-ventilated place. Do not store at temperatures above 49 deg C/120 deg F.

Hygiene Practices:

General Hygiene Considerations: Handle according to established industrial hygiene and safety practices.

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SECTION 8 : EXPOSURE CONTROLS, PERSONAL PROTECTION

: (N/A)

Engineering Controls:	Use ventilation adequate to keep exposures (airborne levels of dust, fume, vapor, etc.) below recommended exposure limits.
Skin Protection Description:	Wear suitable protective clothing.
Hand Protection Description:	Wear suitable gloves.
Eye/Face Protection:	Wear eye/face protection.
Protective Clothing/Body Protection:	Wear suitable protective clothing.
Respiratory Protection:	In case of insufficient ventilation, wear suitable respiratory equipment. General Hygiene Considerations: Handle according to established industrial hygiene and safety practices.
HMIS: See Section 15	

Ingredient Guidelines

Ingredient: Acetone

Guideline Type:	OSHA PEL-TWA
Guideline Information:	1000 ppm
Guideline Type:	ACGIH TLV-TWA
Guideline Information:	500 ppm

Ingredient: Distillates (petroleum), hydrotreated light

Guideline Type:	OSHA PEL-TWA
Guideline Information:	100 ppm
Guideline Type:	ACGIH TLV-TWA
Guideline Information:	200 mg/m3

Ingredient: Heptane

Guideline Type:	OSHA PEL-TWA
Guideline Information:	400 ppm
Guideline Type:	ACGIH TLV-TWA
Guideline Information:	400 ppm

Ingredient: Isobutane

Guideline Type:	OSHA PEL-TWA
Guideline Information:	Not available.
Guideline Type:	ACGIH TLV-TWA
Guideline Information:	Not available.

Ingredient: Propane

Guideline Type:	OSHA PEL-TWA
Guideline Information:	1000 ppm
Guideline Type:	ACGIH TLV-TWA
Guideline Information:	1000 ppm

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SECTION 9 : PHYSICAL and CHEMICAL PROPERTIES

: (N/A)

Physical State/Appearance:	Opaque.
Color:	White.
Odor:	Characteristic.
Physical State:	Gas/Pressurized Liquid.
pH:	Not applicable.
Vapor Pressure:	Not available.
Vapor Density:	Not available.
Flash Point:	Not available.
Auto Ignition Temperature:	Not available.
Upper Explosive Limit:	Not available.
Lower Explosive Limit:	Not available.
Boiling Point:	Not available.
Freezing Point:	Not available.
Solubility:	In Water: Partial.
Specific Gravity:	0.77 (Concentrate only)
Evaporation Point:	Not available.
Percent Volatile:	wt. %: Not available.
Volatile Organic Compound Content:	wt. %: 50% (US federal/CARB/OTC/LADCO)
Viscosity:	Not available.
Odor Threshold:	Not available.
Coefficient of Water/Oil Distribution:	Not available.

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SECTION 10 : STABILITY and REACTIVITY

: (N/A)

Chemical Stability:	Stable under normal storage conditions. Contents under pressure. Container may explode if heated. Do not puncture. Do not burn. Keep in a cool place.
Incompatibilities with Other Materials:	Oxidizers.
Reactivity:	Conditions of Reactivity: Heat. Incompatible materials. Possibility of Hazardous Reactions: No dangerous reaction known under conditions of normal use.

Hazardous Decomposition
Products:

May include, and are not limited to: oxides of carbon.

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SECTION 11 : TOXICOLOGICAL INFORMATION

: (N/A)

[Applies to All Ingredients :](#)

Eye Effects:	ACUTE: May cause eye irritation. Symptoms may include discomfort or pain, excess blinking and tear production, with marked redness and swelling of the conjunctiva.
Skin Effects:	ACUTE: May cause skin irritation. Handling can cause dry skin.
Ingestion Effects:	ACUTE: Not a normal route of exposure. Harmful: may cause lung damage if swallowed.
Inhalation Effects:	ACUTE: Harmful by inhalation. May cause respiratory tract irritation. May cause asphyxiation. This product may be aspirated into the lungs and cause chemical pneumonitis. Vapours may cause drowsiness and dizziness.
Chronic Effects:	Not hazardous by WHMIS/OSHA criteria.
Carcinogenicity:	Not hazardous by WHMIS/OSHA criteria.
Mutagenicity:	Not hazardous by WHMIS/OSHA criteria.
Teratogenicity:	Not hazardous by WHMIS/OSHA criteria.
Embryo Toxicity:	Not hazardous by WHMIS/OSHA criteria.
Sensitization:	Respiratory Sensitization: Not hazardous by WHMIS/OSHA criteria.
Reproductive Toxicity:	Skin Sensitization: Not hazardous by WHMIS/OSHA criteria.
Other Toxicological Information:	Not hazardous by WHMIS/OSHA criteria. Target Organs: Not available. Toxicologically Synergistic Materials: Not available.

[Acetone :](#)

Ingestion Effects:	LD50 (oral): 5800 mg/kg, rat
Inhalation Effects:	LC50: Not available.
Carcinogenicity:	Chemical Listed as Carcinogen or Potential Carcinogen *: Not listed.

[Heptane :](#)

Ingestion Effects:	LD50 (oral): Not available.
Inhalation Effects:	LC50: 103 g/m3 4hrs, rat
Carcinogenicity:	Chemical Listed as Carcinogen or Potential Carcinogen *: Not listed.

[Isobutane :](#)

Ingestion Effects:	LD50 (oral): Not available.
Inhalation Effects:	LC50: Not available.
Carcinogenicity:	Chemical Listed as Carcinogen or Potential Carcinogen *: Not listed.

[Propane :](#)

Ingestion Effects:	LD50 (oral): Not available.
Inhalation Effects:	LC50: Not available.
Carcinogenicity:	Chemical Listed as Carcinogen or Potential Carcinogen *: Not listed.

[Distillates \(petroleum\), hydrotreated light :](#)

Ingestion Effects:	LD50 (oral): > 5000 mg/kg, rat
Inhalation Effects:	LC50: Not available.
Carcinogenicity:	Chemical Listed as Carcinogen or Potential Carcinogen *: I -3, G-A3
Comments:	* See Section 15 for more information.

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SECTION 12 : ECOLOGICAL INFORMATION

: (N/A)

Ecotoxicity:	May cause long-term adverse effects in the aquatic environment
Bioaccumulation:	Bioaccumulation / Accumulation: Not available.
Biodegradation:	Persistence / Degradability: Not available. Mobility In Environment: Not available.

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SECTION 13 : DISPOSAL CONSIDERATIONS

: (N/A)

Waste Disposal:	This material must be disposed of in accordance with all local, state, provincial, and federal regulations.
-----------------	---

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SECTION 14 : TRANSPORT INFORMATION

: (N/A)

DOT Hazard Class:	ORM-D
Canadian Hazard Class:	Limited Quantity

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SECTION 15 : REGULATORY INFORMATION

: (N/A)

[Applies to All Ingredients :](#)

OSHA 29 CFR 1200:	US: MSDS prepared pursuant to the Hazard Communication Standard (29 CFR 1910.1200).
-------------------	---

State:	California Proposition 65: This product does not contain a chemical known to the State of California to cause cancer, birth defects or other reproductive harm.
--------	---

Canada WHMIS:

Canadian: This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations and the MSDS contains all the information required by the Controlled Products Regulations.

WHMIS Classification(s):
Class A - Compressed Gas
Class B5 - Flammable Aerosol
Class D2B - Skin/Eye Irritant

HMIS - Hazardous Materials Identification System:
Health - 2
Flammability - 3
Physical Hazard - 0
PPE - B

NFPA - National Fire Protection Association:
Health - 2
Fire - 3
Reactivity - 0

Hazard Rating: 0 = minimal, 1 = slight, 2 = moderate, 3 = severe, 4 = extreme

Acetone:

TSCA 8(b): Inventory Status (Yes/No): Yes
Section 302 Extremely Hazardous Substances (TPQ): (lbs.): Not listed.
Section 304 EHS RQ: (lbs.): Not listed.
Section 304 CERCLA RQ: 5,000 lbs.
Section 313 Toxic Release Form: Section 313: Not listed.

Canada DSL: Yes

Heptane:

TSCA 8(b): Inventory Status (Yes/No): Yes
Section 302 Extremely Hazardous Substances (TPQ): (lbs.): Not listed.
Section 304 EHS RQ: (lbs.): Not listed.
Section 304 CERCLA RQ: (lbs.): Not listed.
Section 313 Toxic Release Form: Section 313: Not listed.

Canada DSL: Yes

Isobutane:

TSCA 8(b): Inventory Status (Yes/No): Yes
Section 302 Extremely Hazardous Substances (TPQ): (lbs.): Not listed.
Section 304 EHS RQ: (lbs.): Not listed.
Section 304 CERCLA RQ: (lbs.): Not listed.
Section 313 Toxic Release Form: Section 313: Not listed.

Canada DSL: Yes

Propane:

TSCA 8(b): Inventory Status (Yes/No): Yes
Section 302 Extremely Hazardous Substances (TPQ): (lbs.): Not listed.
Section 304 EHS RQ: (lbs.): Not listed.
Section 304 CERCLA RQ: (lbs.): Not listed.
Section 313 Toxic Release Form: Section 313: Not listed.

Canada DSL: Yes

Distillates (petroleum), hydrotreated light:

TSCA 8(b): Inventory Status (Yes/No): Yes
Section 302 Extremely Hazardous Substances (TPQ): (lbs.): Not listed.
Section 304 EHS RQ: (lbs.): Not listed.
Section 304 CERCLA RQ: (lbs.): Not listed.
Section 313 Toxic Release Form: Section 313: Not listed.

Canada DSL: Yes

SOURCE AGENCY CARCINOGEN CLASSIFICATIONS:
OSHA (O): Occupational Safety and Health Administration.

ACGIH (G): American Conference of Governmental Industrial Hygienists.
A1 - Confirmed human carcinogen.
A2 - Suspected human carcinogen.
A3 - Animal carcinogen.
A4 - Not classifiable as a human carcinogen.
A5 - Not suspected as a human carcinogen.

IARC (I): International Agency for Research on Cancer.
1 - The agent (mixture) is carcinogenic to humans.
2A - The agent (mixture) is probably carcinogenic to humans; there is limited evidence of carcinogenicity in humans and sufficient evidence of carcinogenicity in experimental animals.
2B - The agent (mixture) is possibly carcinogenic to humans; there is limited evidence of carcinogenicity in humans in the absence of sufficient evidence of carcinogenicity in experimental animals.
3 - The agent (mixture, exposure circumstance) is not classifiable as to its carcinogenicity to humans.
4 - The agent (mixture, exposure circumstance) is probably not carcinogenic to humans.

NTP (N): National Toxicology Program.
1 - Known to be carcinogens.

2 - Reasonably anticipated to be carcinogens.

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SECTION 16 : ADDITIONAL INFORMATION

: (N/A)

HMIS:

Health Hazard:	2 = Moderate
Fire Hazard:	3 = Severe
Reactivity:	0 = Minimal
Personal Protection:	B

NRPA:

Health:	2 = Moderate
Fire Hazard:	3 = Severe
Reactivity:	0 = Minimal

MSDS Revision Date: October 24, 2007
Revision ##: 1.0

Expiry Date: October 24, 2010

MSDS Author:

Prepared by: Nexreg Compliance Inc.
Prepared for: Amrep, Inc.
Phone: (770) 422-2071 (Mon - Fri / 8am - 5pm ET)

Disclaimer:

We believe the statements, technical information and recommendations contained herein are reliable, but they are given without warranty or guarantee of any kind. The information contained in this document applies to this specific material as supplied. It may not be valid for this material if it is used in combination with any other materials. It is the user's responsibility to satisfy oneself as to the suitability and completeness of this information for the user's own particular use.

Hazard Rating:

0 = Minimal
1 = Slight
2 = Moderate
3 = Severe
4 = Extreme

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Date:
Supersedes:

23 July 2009
25 July 2006

MATERIAL SAFETY DATA SHEET

IN CASE OF EMERGENCY CALL CHEMTREC AT 1-800-424-9300

1. PRODUCT IDENTIFICATION AND COMPANY IDENTIFICATION:

Product Name: **GOJO® NATURAL * ORANGE™ PUMICE HAND CLEANER**

Company Name & Address: GOJO Industries, Inc.
One GOJO Plaza, Suite 500
Akron, OH 44311

Emergency Phone: **1-800-424-9300 CHEMTREC**

Non-Emergency Phone: (330) 255-6000

MSDS Request Phone: (330) 255-6000 x8804

2. INFORMATION ON INGREDIENTS:

HAZARDOUS INGREDIENTS	CAS NUMBER	OSHA PEL	ACGIH TLV	% RANGE
None				

Other ingredient(s) with notification requirements:	CAS NUMBER	List
Limonene	5989-27-5	NJ; CN 1

3. HAZARDS IDENTIFICATION:

EMERGENCY OVERVIEW

When used according to instructions, the product applicable to this MSDS is safe and presents no immediate or long-term health hazard. However, abnormal entry routes, such as gross ingestion, may require immediate medical attention.

Potential Health Effects:

HMIS: Health 0 Flammability 1 Reactivity 0 Personal Protection None

Eye Contact: May cause eye irritation.

Skin Contact: No irritation or reaction expected.

Inhalation: Not applicable.

Ingestion: May cause upset stomach, nausea (Abnormal entry route).

Carcinogenicity: Not listed as a carcinogen by NTP, IARC, OSHA or ACGIH.

4. FIRST AID MEASURES:

Eye Contact: Do not rub eyes. Flush eyes thoroughly with water for 15 minutes. If condition worsens or irritation persists, contact physician.

Skin Contact: Not applicable.

Inhalation: Not applicable.

Ingestion: Do not induce vomiting. Contact a physician or Poison Control Center.

5. FIRE FIGHTING MEASURES:

NFPA: Health 0 Fire 1 Reactivity 0
Flashpoint °F/°C (PMCC method): Not determined.
Unusual Fire and Explosion Hazards: None known.
Special Fire Fighting Procedures: None known.
Extinguishing Media: X Water Fog X Alcohol Foam X CO₂ X Dry Chemical Other

6. ACCIDENTAL RELEASE MEASURES:

No special requirements. Water clean up and rinse. CAUTION – WILL CAUSE SLIPPERY SURFACES.

7. HANDLING AND STORAGE:

Store at normal room temperature away from reach of small children. Keep containers sealed. Use older containers first. Avoid freezing conditions.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION:

Eye Protection: None required under normal conditions.
Skin Protection: None required under normal conditions.
Respiratory Protection: None required under normal conditions.
Ventilation: None required under normal conditions.
Protective Equipment or Clothing: None required under normal conditions.

9. PHYSICAL AND CHEMICAL PROPERTIES:

Appearance and Odor Creamy opaque viscous gel, orange fragrance.
pH (undiluted): 5.0-8.0
VOC, %: 7%

10. STABILITY AND REACTIVITY:

Stable/Non reactive product.

11. TOXICOLOGICAL INFORMATION:

No acute or chronic toxic effects expected when used according to directions.

12. ECOLOGICAL CONSIDERATIONS:

No ecological or special considerations when used according to directions. Not considered environmentally harmful from normal dilution, expected usage and typical drainage to sewers, septic systems and treatment plants.

13. DISPOSAL CONSIDERATIONS:

No special considerations when disposed according to local, state and Federal regulations.

14. TRANSPORT INFORMATION:

Not classified as a hazardous material.

15. REGULATORY AND OTHER INFORMATION:

TSCA: All ingredients are listed or exempt per reference 15 USC 2602 (2)(B)(iv).

Complies with current FDA regulations for cosmetic and/or over-the-counter drug products.

WHMIS: Not Controlled

Notice: The information herein is based on data considered to be accurate as of the date of preparation of this material safety data sheet. However, no warranty or representation, expressed or implied, is made as to the accuracy or completeness of the foregoing data and safety information. The user assumes all liability for any damage or injury resulting from abnormal use, from any failure to adhere to recommended practices or from any hazards inherent in the nature of the product.

MATERIAL SAFETY DATA SHEET

Specialty Adhesives, Inc.
3777 Air Park
Memphis, TN 38118

Date: 2014
Prepared by: Tim Myrick/ V. Lauria
Telephone number: (901) 794-8556

Emergency Medical Telephone Number: (901)794-8556

PRODUCT IDENTIFICATION

Specialty Adhesives Name: 3006
Product Class: SYNTHETIC RESIN based product in water
DOT Proper Shipping name: none DOT regulated

WARNING STATEMENTS:

No specific warnings under normal use.

PRECAUTIONARY MEASURES

Avoid temperature extremes during storage

EMERGENCY AND FIRST AID PROCEDURES

First Aid:

If in eye:	Flush immediately with water for 15 minutes. Consult a physician if irritation persists.
If on skin:	No hazard under normal use.
If vapors inhaled:	No hazard under normal use.
In case of fire:	Product non-flammable in liquid state. Use water spray, foam, dry chemical or carbon dioxide on dried product.
Spill or Leak:	Contain and remove with inert absorbent. Keep spill out of sewers.

HAZARDOUS INGREDIENTS

Material Name / CAS #	Level in product	OSHA PEL	ACGIH TLV (1994)
None hazardous.			

This MSDS is prepared to comply with the OSHA Hazard Communication Standard (29 CFR 1919.1200). Unlisted ingredients are not "Hazardous" per this OSHA Standard and are considered to be trade secrets of Specialty Adhesives, INC.

NE -not established
NA -not applicable

OCCUPATIONAL CONTROL PROCEDURES

Eye Protection:	Wear safety glasses to reduce the potential for eye contact; chemical safety goggles are appropriate if splashing is likely. Have eye washes available where eye contact can occur.
Skin Protection:	No hazard under normal use.
Respiratory Protection:	not normally required.
Ventilation:	Standard industrial ventilation.

FIRE PROTECTION

Flash Point/Method:	Non-flammable
Appropriate Extinguishers:	Non-flammable in liquid state; use water spray, foam, dry chemical or carbon dioxide on dried product.
Special Fire Fighting Procedures:	Persons exposed to products of combustion should wear self-contained breathing apparatus and full protective equipment.
Unusual Fire and Explosion Hazards:	There is the possibility of pressure buildup in closed containers when heated. Water spray may be used to cool the containers.

REACTIVITY DATA

Stability:	Stable
Incompatibility:	not established
Hazardous Decomposed Products:	Incomplete combustion can yield low molecular wt. hydrocarbons, carbon monoxide
Hazardous Polymerization:	will not occur.

EFFECTS OF OVEREXPOSURE

Eyes:	Direct eye contact with the product may cause irritation.
Skin:	Prolonged or repeated contact with liquid product may cause irritations.
Inhalation:	No hazard under normal use.
Chronic:	No hazard under normal use.
Existing Health Conditions	Affected by exposure: No known effects on other illnesses.

NA - not applicable

NE- not established

PHYSICAL DATA

Physical State:	White Liquid
Weight per Gallon:	9.1
PH:	4.0- 6.0
Boiling Range:	> 200 F
Soluble in Water:	Miscible

SPILL, LEAK & DISPOSAL INFORMATION

Spill or Leak	Dike if necessary, contain spill with inert absorbent and transfer to containers for disposal. Keep spilled product out of sewers, watersheds or water systems.
Procedures:	
Waste Disposal:	To the best of our knowledge, this product Does not meet the definition of hazardous waste under EPA Regulations 40 CFR 261. It does not contain any added raw materials with known levels of TCLP constituents as identified in section 261.24 of the above mentioned regulation. State or local regulations may apply if they are different from federal regulations. Check with local officials before disposal. Solidify and dispose of in an approved landfill.

STORAGE

Protect from freezing - product stability may be affected.

ADDITIONAL INFORMATION:

In storage, monomer vapors will migrate from the emulsion and establish an equilibrium between the headspace in the storage container and the liquid emulsion. Levels in excess of acceptable exposures can accumulate in non-vented headspaces above the emulsion. All procedures appropriate for a confined space entry should be completed prior to performing any work in a bulk storage tank.

REGULATORY INFORMATION

TSCA

All components of this product are registered under the regulations of the Toxic Substances Control Act.

SARA TITLE III

Section 313: This product contains the following toxic chemical(s) subject to the reporting requirements of section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA) and 40 CFR part 372.

None Contained

This information must be included in all MSDS that are copied and distributed for this material.

NA- not applicable

NE- not established



MATERIAL SAFETY DATA SHEET

1. Product and Company Identification

Product number 0766_005
Material name Jet Force Wasp & Hornet Killer
Revision date 07-29-2013
Company information Claire Manufacturing Co.
1005 S. Westgate Drive
Addison, IL 60101 United States
Company phone General Assistance 1-630-543-7600
Emergency telephone US 1-866-836-8855
Emergency telephone outside US 1-952-852-4646
Version # 02
Supersedes date 07-29-2013

2. Hazards Identification

Emergency overview DANGER

CONTENTS UNDER PRESSURE.

Aerosol. Pressurized container may explode when exposed to heat or flame. May cause flash fire or explosion.

Will be easily ignited by heat, spark or flames. Harmful in contact with eyes. Irritating to skin. Irritating to respiratory system. Prolonged exposure may cause chronic effects.

This product is considered hazardous under 29 CFR 1910.1200 (Hazard Communication).

OSHA regulatory status

Potential health effects

Routes of exposure

Inhalation. Ingestion. Skin contact. Eye contact.

Eyes

Eye contact may result in corneal injury. Contact with eyes may cause irritation. Moderately irritating to the eyes.

Skin

Irritating to skin. Frequent or prolonged contact may defat and dry the skin, leading to discomfort and dermatitis. Harmful if absorbed through the skin.

Inhalation

Intentional misuse by concentrating and inhaling the product can be harmful or fatal. Irritating to respiratory system. Prolonged inhalation may be harmful.

Ingestion

Exposure by ingestion of an aerosol is unlikely. Components of the product may be absorbed into the body by ingestion. May cause delayed lung damage.

Target organs

Blood. Cardiac. Central nervous system. Lungs. Respiratory system.

Chronic effects

Unconsciousness. Shortness of breath. Conjunctiva. Cyanosis (blue tissue condition, nails, lips, and/or skin). May cause central nervous system disorder (e.g., narcosis involving a loss of coordination, weakness, fatigue, mental confusion and blurred vision) and/or damage. Frequent or prolonged contact may defat and dry the skin, leading to discomfort and dermatitis. May cause delayed lung injury.

Signs and symptoms

Unconsciousness. Discomfort in the chest. Shortness of breath. Corneal damage. Narcosis. Cyanosis (blue tissue condition, nails, lips, and/or skin). Decrease in motor functions. Behavioral changes. Coughing. Conjunctivitis. Irritating to mouth, throat, and stomach. Skin irritation. Defatting of the skin. Rash.

3. Composition / Information on Ingredients

Hazardous components	CAS #	Percent
Synthetic Isoparaffinic Hydrocarbon	64742-47-8	80 - 90
Carbon Dioxide	124-38-9	2.5 - 10
Isopropyl Alcohol	67-63-0	2.5 - 10

Non-hazardous components	CAS #	Percent
d-Phenothrin	26002-80-2	0.1 - 1
Tetramethrin	7696-12-0	0.1 - 1
Other components below reportable levels		1 - 2.5

4. First Aid Measures

First aid procedures

Eye contact	Immediately flush eyes with plenty of water for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Get medical attention immediately.
Skin contact	Get medical attention if irritation develops and persists. Remove and isolate contaminated clothing and shoes. Wash off immediately with plenty of water for at least 15 minutes.
Inhalation	If inhalation of gas/fume/vapor/dust/mist from the material is excessive (air concentration is greater than the TLV or health effects are noticed), immediately remove the affected person(s) to fresh air. Oxygen or artificial respiration if needed. Do not use mouth-to-mouth method if victim inhaled the substance. Induce artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device. Get medical attention immediately.
Ingestion	In the unlikely event of swallowing contact a physician or poison control center. Rinse mouth thoroughly. Do not induce vomiting without advice from poison control center. If vomiting occurs, keep head low so that stomach content doesn't get into the lungs. If material is ingested, immediately contact a poison control center. If vomiting occurs naturally, have victim lean forward to reduce risk of aspiration. Do not use mouth-to-mouth method if victim ingested the substance. Induce artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device.

Notes to physician

Symptoms may be delayed.

General advice

Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves. If you feel unwell, seek medical advice (show the label where possible).

5. Fire Fighting Measures

Flammable properties

Flammable by OSHA criteria. Heat may cause the containers to explode. Vapors may travel considerable distance to a source of ignition and flash back. Runoff to sewer may cause fire or explosion hazard.

Extinguishing media

Suitable extinguishing media

Powder. Alcohol resistant foam. Dry chemicals. Carbon dioxide (CO₂).

Unsuitable extinguishing media

Do not use water jet as an extinguisher, as this will spread the fire.

Protection of firefighters

Specific hazards arising from the chemical

Fire may produce irritating, corrosive and/or toxic gases.

Protective equipment and precautions for firefighters

Firefighters must use standard protective equipment including flame retardant coat, helmet with face shield, gloves, rubber boots, and in enclosed spaces, SCBA. Structural firefighters protective clothing will only provide limited protection.

Fire fighting equipment/instructions

In case of fire and/or explosion do not breathe fumes. Move containers from fire area if you can do so without risk. Cool containers exposed to heat with water spray and remove container, if no risk is involved. Containers should be cooled with water to prevent vapor pressure build up. For massive fire in cargo area, use unmanned hose holder or monitor nozzles, if possible. If not, withdraw and let fire burn out.

Specific methods

Use standard firefighting procedures and consider the hazards of other involved materials. Move container from fire area if it can be done without risk. In the event of fire and/or explosion do not breathe fumes. Self-contained breathing apparatus and full protective clothing must be worn in case of fire.

6. Accidental Release Measures

Personal precautions

Keep unnecessary personnel away. Keep people away from and upwind of spill/leak. Keep out of low areas. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Ventilate closed spaces before entering them. For personal protection, see section 8 of the MSDS.

Environmental precautions

Do not contaminate water.

Methods for containment

Eliminate all ignition sources (no smoking, flares, sparks, or flames in immediate area). Stop leak if you can do so without risk. Move the cylinder to a safe and open area if the leak is irreparable. Use water spray to reduce vapors or divert vapor cloud drift. Prevent entry into waterways, sewer, basements or confined areas.

Methods for cleaning up

Should not be released into the environment. Stop the flow of material, if this is without risk. Use a non-combustible material like vermiculite, sand or earth to soak up the product and place into a container for later disposal. Isolate area until gas has dispersed. Following product recovery, flush area with water. Scrub the area with detergent and water.

Small Spills: Wipe up with absorbent material (e.g. cloth, fleece). Clean surface thoroughly to remove residual contamination. For waste disposal, see section 13 of the MSDS. After removal flush contaminated area thoroughly with water.

7. Handling and Storage**Handling**

Will ignite if exposed to intensive heat or open air. Vapors may form explosive mixtures with air. Pressurized container: Do not pierce or burn, even after use. Do not use if spray button is missing or defective. Do not spray on a naked flame or any other incandescent material. Do not smoke while using or until sprayed surface is thoroughly dry. Do not cut, weld, solder, drill, grind, or expose containers to heat, flame, sparks, or other sources of ignition. All equipment used when handling the product must be grounded. Do not re-use empty containers. Do not breathe dust/fume/gas/mist/vapors/spray. Do not get this material in contact with eyes. Avoid contact with skin. Avoid prolonged or repeated contact with skin. Avoid prolonged exposure. Use only in area provided with appropriate exhaust ventilation.

Storage

Contents under pressure. The pressure in sealed containers can increase under the influence of heat. Do not expose to heat or store at temperatures above 120°F/49°C as can may burst. Do not puncture, incinerate or crush. Do not handle or store near an open flame, heat or other sources of ignition. This material can accumulate static charge which may cause spark and become an ignition source. Store in a well-ventilated place. Keep away from food, drink and animal feedingstuffs. Keep in an area equipped with sprinklers. Use care in handling/storage. Store away from incompatible materials (see Section 10 of the MSDS). Level 3 Aerosol.

8. Exposure Controls / Personal Protection**Occupational exposure limits****ACGIH Biological Exposure Indices Components**

Components	Type	Value
Isopropyl Alcohol (CAS 67-63-0)	BEI	40 mg/l

US. ACGIH Threshold Limit Values Components

Components	Type	Value
Carbon Dioxide (CAS 124-38-9)	STEL	30000 ppm
Isopropyl Alcohol (CAS 67-63-0)	TWA	5000 ppm
	STEL	400 ppm
	TWA	200 ppm

US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000) Components

Components	Type	Value
Carbon Dioxide (CAS 124-38-9)	PEL	9000 mg/m3
Isopropyl Alcohol (CAS 67-63-0)	PEL	5000 ppm
		980 mg/m3
		400 ppm

Engineering controls

Good general ventilation (typically 10 air changes per hour) should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level.

Personal protective equipment**Eye / face protection**

Do not get in eyes. Face-shield. Wear safety glasses; chemical goggles (if splashing is possible).

Skin protection

Avoid contact with the skin. Wear appropriate chemical resistant clothing. Chemical resistant gloves. The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

Respiratory protection	If permissible levels are exceeded use NIOSH mechanical filter / organic vapor cartridge or an air-supplied respirator.
General hygiene considerations	When using do not smoke. Do not get in eyes. Keep away from food and drink. Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants.

9. Physical & Chemical Properties

Appearance	Compressed liquefied gas.
Auto-ignition temperature	450.44 °F (232.47 °C) estimated
Boiling point	438.64 °F (225.91 °C) estimated
Color	Colorless.
Flammability limits in air, upper, % by volume	12 % estimated
Flammability limits in air, lower, % by volume	0.7 % estimated
Flash point	212.16 °F (100.09 °C) estimated
Form	Aerosol.
Odor	Solvent.
Odor threshold	Not available.
pH	Not applicable estimated
Physical state	Gas.
Solubility (water)	Not available.
Specific gravity	0.829 estimated
Vapor pressure	90 - 110 psig @70F estimated
Other data	
Heat of combustion	38.77 kJ/g estimated

10. Chemical Stability & Reactivity Information

Chemical stability	Risk of ignition.
Conditions to avoid	Exposure to air. Heat, flames and sparks. Avoid temperatures exceeding the flash point.
Hazardous decomposition products	No hazardous decomposition products are known.
Possibility of hazardous reactions	Hazardous polymerization does not occur.

11. Toxicological Information

Toxicological data

Product	Species	Test Results
Jet Force Wasp & Hornet Killer (CAS Mixture)		
Acute		
<i>Dermal</i>		
LD50	Rat	2237 mg/kg
<i>Inhalation</i>		
LC50	Rat	1371.2346 mg/l, 3 Hours, estimated 6 mg/l/4h
<i>Oral</i>		
LD50	Dog	56453.8906 mg/kg, estimated
	Mouse	35447.2422 mg/kg, estimated
	Rabbit	59.196 g/kg, estimated
	Rat	53.8251 g/kg, estimated

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ZEP MANUFACTURING COMPANY

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ISSUE DATE: 02/14/00 AEROSOLVE II AEROSOL
SUPERSEDES: 04/21/00 PRODUCT NUMBER: 0181
Aerosol Solvent Degreaser

SECTION I - E M E R G E N C Y C O N T A C T S

MEDICAL EMERGENCY: TOLL FREE 1-877-541-2016 ALL CALLS RECORDED

TRANSPORTATION EMERGENCY: CHEMTREC: TOLL FREE 1-800-424-9300 ALL CALLS RECORDED

SECTION II - H A Z A R D O U S I N G R E D I E N T S

DESIGNATIONS	TLV (PPM)	EFFECTS (SEE REVERSE)	% IN PROD.
@** TRICHLOROETHYLENE ** acetylene trichloride; 1-chloro-2,2-dichloroethylene; CAS# 79-01-6; RTECS# KX4550000	50	CAR CNS IRR	> 90

@ IDENTIFIES CHEMICALS LISTED UNDER SARA-SECTION 313 FOR RELEASE REPORTING.

SECTION III - H E A L T H H A Z A R D D A T A

SPECIAL NOTE: MSDS data pertains to the product as dispensed from the container. Adverse health effects would not be expected under recommended conditions of use (diluted) so long as prescribed safety precautions are practiced.

ACUTE EFFECTS OF OVEREXPOSURE:

Inhalation of vapor can produce central nervous system depression, characterized by dizziness, headache, nausea, cardiac and/or respiratory depression, and stupor. In extreme cases unconsciousness or death could result in poorly ventilated or confined spaces. Exposure to high concentrations of vapor can be irritating to mucous membranes, such as eyes and upper respiratory tract. Severe eye exposure to liquid can cause reversible eye damage. Skin contact may cause a burning sensation and reddening of the skin. Introduction of solvent to the lungs, as in aspiration of vomitus fluids, may cause chemical pneumonia. Exposure to this product may aggravate existing respiratory or cardiac conditions. Inhalation of aerosol mist may produce chemical pneumonia.

CHRONIC EFFECTS OF OVEREXPOSURE:

Repeated or prolonged contact by inhalation or skin absorption may produce liver or kidney damage or damage to the central nervous system, characterized by tingling or numbness in the extremities, blurred vision or confusion. Skin, which is defatted by repeated exposure to solvents, is more susceptible to irritation, infection, and dermatitis.

Trichloroethylene has been listed as a liver carcinogen. The results were observed when trichloroethylene was given orally to mice, but were not observed in rats or hamsters. Human relevance is questionable since the metabolic mechanism in mice does not apply in humans.

EST'D PEL/TLV: Not established PRIMARY ROUTES OF ENTRY: Inh, Skin.

HMIS CODES: HEALTH 2; FLAM. 0; REACT. 0; PERS. PROTECT. B ; CHRONIC HAZ. YES

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Aerosol Solvent Degreaser

SECTION III - H E A L T H H A Z A R D D A T A (CONTINUED)

FIRST AID PROCEDURES:

SKIN : Wash contaminated skin thoroughly with soap or a mild detergent. Apply a skin cream with lanolin. Get medical attention if irritation persists.
EYES : Immediately flush eyes with plenty of water for at least 15 minutes, occasionally lifting upper and lower lids. Get medical attention at once.
INHALE: Move exposed person to fresh air at once. If breathing has stopped, perform artificial respiration. Get medical attention immediately.
INGEST: This route of exposure is not likely due to product nature.

SECTION IV - S P E C I A L P R O T E C T I O N I N F O R M A T I O N

PROTECTIVE CLOTHING : Wear viton gloves or use gloves with demonstrated resistance to the ingredients in this product.
EYE PROTECTION : Use tight-fitting safety glasses. Contact lenses should not be worn when working with this material.
RESPIRATORY PROTECTION: When exposure levels exceed the PEL/TLV, use a self-contained or supplied air respirator.
VENTILATION : Provide local exhaust/ventilation as needed to keep concentration of vapors below exposure limits (PEL/TLV).

SECTION V - P H Y S I C A L D A T A (FOR FILL MATERIAL ONLY)

BOILING POINT (F) : 189	SPECIFIC GRAVITY : 1.455
VAPOR PRESSURE(MMHG): ~60	EVAPORATION RATE(ETHER =1): 3.1
VAPOR DENSITY(AIR=1): N/D	PH(CONCENTRATE) : N/A
SOLUBILITY IN WATER : NEGLIGIBLE	PH(USE DILUTION OF N/A) : N/A
VOC CONTENT (CONCENTRATE) 96.9%	
APPEARANCE AND ODOR : A CLEAR, COLORLESS LIQUID WITH A MILD SOLVENT ODOR.	

SECTION VI - F I R E A N D E X P L O S I O N D A T A

FLASH POINT(F) (METHOD USED): NOT FLAMMABLE (CSMA)
FLAMMABLE LIMITS LEL 8.0 UEL 10.5
EXTINGUISHING MEDIA : Carbon dioxide, dry chemical, and water fog.
SPECIAL FIRE FIGHTING: Wear self-contained positive pres. breathing apparatus.
UNUSUAL FIRE HAZARDS : None

SECTION VII - R E A C T I V I T Y D A T A

STABILITY : Stable
INCOMPATIBILITY(AVOID) : Strong alkalis, oxidizers, and active metals.
POLYMERIZATION : Will not occur.
HAZARDOUS DECOMPOSITION: Carbon dioxide, carbon monoxide, hydrogen chloride, and

small amounts of phosgene & chlorine gas.

SECTION VIII - S P I L L A N D D I S P O S A L P R O C E D U R E S

STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED:

Observe safety precautions in sections 4 & 9 during spill clean-up. Large spills are unlikely due to packaging. Spill may be absorbed on an inert absorbent material, and placed in a suitable container for disposal. Wash area thoroughly with a detergent solution and rinse well with water.

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Aerosol Solvent Degreaser

SECTION VIII - S P I L L A N D D I S P O S A L P R O C E D U R E S
(CONTINUED)

WASTE DISPOSAL METHOD:

Product is consumed in use. Do not crush, puncture or incinerate spent containers. Large numbers of aerosol containers may require handling as a hazardous waste, but in most states total hazardous waste quantities less than 220 lbs per month may allow disposal in a chemical or industrial waste landfill. Consult local, state and federal agencies for the proper disposal method in your area.

RCRA HAZ. WASTE NOS.: Unused product - U228

SECTION IX - S P E C I A L P R E C A U T I O N S

PRECAUTIONS TO BE TAKEN WHEN HANDLING AND STORING:

Do not store at temperatures above 120F (39C) or in direct sunlight. Do not puncture or incinerate container.

Do not breathe spray mists or vapors.

Vapors are heavier than air and will accumulate at low points. Ventilation should include floor level exhausting.

Keep out of the reach of children.

Clothing or shoes which become contaminated with substance should be removed promptly and not reworn until thoroughly cleaned.

SECTION X - R E G U L A T O R Y I N F O R M A T I O N

DOT PROPER SHIP NAME: CONSUMER COMMODITY,

NOTE: DOT information applies to larger package sizes of affected products.

For some products, DOT may require alternate names and labeling in accordance with packaging group requirements.

DOT HAZARD CLASS: ORM-D

DOT PACKING GROUP:

DOT I.D. NUMBER : N/A

DOT LABEL/PLACARD: ORM-D

EPA TSCA CHEMICAL INVENTORY - ALL INGREDIENTS ARE LISTED

EPA CWA 40CFR PART 117 SUBSTANCE(RQ IN A SINGLE CONTAINER): TRICHLOROETHYLENE - 100#

Date Last Reviewed by Compliance Services : 09/26/00

NOTICE

MATERIAL SAFETY DATA SHEET

This MSDS complies with OSHA'S Hazard Communication Standard 29 CFR 1910.1200 and OSHA Form 174

IDENTITY AND MANUFACTURER'S INFORMATION

NFPA Rating: Health-2; Flammability-3; Reactivity-0; Special--	HMIS Rating: Health-2; Flammability-3; Reactivity-0; Personal Protection-B
Manufactured For: Advance Auto Parts Advance Stores Company, Inc. Address: 5008 Airport Road Roanoke, VA 24012	DOT Hazard Classification: Consumer Commodity ORM-D, Limited Qty Identity (trade name as used on label): CARB + CHOKE CLEANER P/N A7000
Date Prepared: 01/24/11 Prepared By: IB	MSDS NUMBER: A00736 Revision: 14
Information Calls: (770)422-2071	NOTICE: JUDGEMENT BASED ON INDIRECT TEST DATA
DOT 24 HR EMERGENCY RESPONSE NUMBER: CHEMTREC (800) 424-9300	

SECTION 1 - MATERIAL IDENTIFICATION AND INFORMATION

COMPONENTS-CHEMICAL NAMES AND COMMON NAMES (Hazardous Components 1% or greater; Carcinogens 0.1% or greater)	CAS Number	SARA III LIST	OSHA PEL (ppm)	ACGIH TLV (ppm)	Carcinogen Ref. Source **
ACETONE	67-64-1	No	1000	500	d
HYDROTREATED LIGHT PETROLEUM DISTILLATES	64742-47-8	No	5 mg/m3 (mist)	5 mg/m3 (mist)	d
TOLUENE	108-88-3	Yes	200	50	d
CARBON DIOXIDE	124-38-9	No	5000	5000	d

WARNING: This product contains a chemical or chemicals known to the State of California to cause cancer, birth defects or other reproductive harm.

SECTION 2 - PHYSICAL/CHEMICAL CHARACTERISTICS

Boiling Point: N/A	Specific Gravity (H ₂ O=1): Concentrate Only = 0.8
Vapor Pressure: PSIG @ 70°F (Aerosols): max 65	Vapor Pressure (Non-Aerosols)(mm Hg and Temperature): N/A
Vapor Density (Air = 1): N/E	Evaporation Rate (= 1): N/E
Solubility in Water: Partial	Water Reactive: No
Appearance and Odor: Clear liquid with solvent odor.	VOC: (volatile organic compound per CARB & Federal) = 10% by weight

SECTION 3 - FIRE AND EXPLOSION HAZARD DATA

FLAMMABILITY as per USA FLAME PROJECTION TEST (aerosols): Projection: 50-60 inches with flashback: Categorized: EXTREMELY FLAMMABLE	Auto Ignition Temperature N/E	Flammability Limits in Air by % in Volume: % LEL: N/E % UEL: N/E
FLASH POINT AND METHOD USED (non-aerosols): N/A	EXTINGUISHER MEDIA: Foam, dry chemical, carbon dioxide, water.	
SPECIAL FIRE FIGHTING PROCEDURES: Self-contained breathing apparatus.		
Unusual Fire & Explosion Hazards: Do not expose aerosols to temperatures above 120°F or the container may rupture.		

SECTION 4 - REACTIVITY HAZARD DATA

STABILITY [X] STABLE [] UNSTABLE	HAZARDOUS POLYMERIZATION [] WILL [X] WILL NOT OCCUR
Incompatibility (Mat. to avoid): Acids and strong oxidizers.	Conditions to Avoid: Open flame, welding arcs, heat, sparks.
Hazardous Decomposition Products: CO, CO ₂ .	

SECTION 5 - HEALTH HAZARD DATA

PRIMARY ROUTES OF ENTRY: [X] INHALATION [] INGESTION [X] SKIN ABSORPTION [] EYE [] NOT HAZARDOUS	
ACUTE EFFECTS:	
Inhalation: Excessive inhalation of vapors can be harmful & may cause headache, dizziness, asphyxia, anesthetic effects & possible unconsciousness.	
Eye Contact: Irritation	Skin Contact: Irritation
Ingestion: Harmful and possibly asphyxia complication from inhalation of volatilization of ingested solvent. Possible chemical pneumonitis if aspirated into lungs. Nausea.	
CHRONIC EFFECTS: (Effects due to excessive exposure to the raw materials of this mixture) Excessive inhalation may result in CNS effects. See section 1.	
Medical Conditions Generally Aggravated by Exposure: May aggravate existing eye, skin, or upper respiratory conditions.	

EMERGENCY FIRST AID PROCEDURES

Eye Contact: Flush with water for at least 15 minutes. If irritated, seek medical attention.
Skin Contact: Remove contaminated clothing. Launder before rewearing. Wash skin with soap and water. If irritated, seek medical attention.
Inhalation: Remove to fresh air. Resuscitate if necessary. Get medical attention.
Ingestion: DO NOT INDUCE VOMITING. Get immediate medical attention.

SECTION 6 - CONTROL AND PROTECTIVE MEASURES

Respiratory Protection (specify type): If vapor concentration exceeds TLV, use respirator approved by MSHA/NIOSH for organic vapor.	
Protective Gloves: Rubber gloves.	Eye Protection: Safety glasses recommended.
Ventilation Requirements: Adequate ventilation to keep vapor concentration below TLV.	
Other Protective Clothing & Equipment: None	
Hygienic Work Practices: Wash with soap and water before handling food. Remove contaminated clothing.	

SECTION 7 - PRECAUTIONS FOR SAFE HANDLING AND USE

Steps To Be Taken If Material Is Spilled Or Released: Absorb spilled liquid with suitable medium. Incinerate or landfill according to local, state or federal regulations. Prevent from entering drains or sewers.
Waste Disposal Methods: Aerosol cans when vented to atmospheric pressure through normal use, pose no disposal hazard.
Precautions To Be Taken In Handling & Storage: Do not puncture or incinerate containers. Do not store at temperatures above 120°F.
Other Precautions &/or Special Hazards: KEEP OUT OF REACH OF CHILDREN. Avoid food contamination. Avoid breathing vapors. Remove ignition sources.

We believe the statements, technical information and recommendations contained herein are reliable, but they are given without warranty or guarantee of any kind.

** Chemical Listed as Carcinogen or Potential Carcinogen. [a] NTP [b] IARC Monograph [c] OSHA [d] Not Listed [e] Animal Data Only

THIS MSDS IS CURRENT AS OF August 8, 2014. The DATE PREPARED section is the original date assembled and remains current until a change is necessary. This is tracked internally at the manufacturer by these date codes and therefore must remain as the originating date.

SAFETY DATA SHEET

Barge AP (DC001, DC031, DC111, DC115)



Section 1. Identification

GHS product identifier : Barge AP (DC001, DC031, DC111, DC115)

Other means of identification : Not available.

Product type : Liquid.

Identified uses

Adhesive.

Supplier's details : Quabaug Corporation
18 School Street
North Brookfield MA 01535
Tel: 800-325-5022
Fax: 508-867-4600

Emergency telephone number (with hours of operation) : CHEMTREC, U.S. : 1-800-424-9300 International: +1-703-527-3887 (24/7)

Section 2. Hazards identification

OSHA/HCS status : This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).

Classification of the substance or mixture : FLAMMABLE LIQUIDS - Category 2
SKIN CORROSION/IRRITATION - Category 2
SERIOUS EYE DAMAGE/ EYE IRRITATION - Category 2
TOXIC TO REPRODUCTION (Unborn child) - Category 2
SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Narcotic effects) - Category 3
SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) - Category 2
AQUATIC HAZARD (ACUTE) - Category 1
AQUATIC HAZARD (LONG-TERM) - Category 1

GHS label elements

Hazard pictograms :



Signal word :

Danger

Hazard statements :

Highly flammable liquid and vapor.
Causes serious eye irritation.
Causes skin irritation.
Suspected of damaging the unborn child.
May cause drowsiness and dizziness.
May cause damage to organs through prolonged or repeated exposure.
Very toxic to aquatic life with long lasting effects.

Precautionary statements



Section 2. Hazards identification

- Prevention** : Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Use personal protective equipment as required. Wear protective gloves. Wear eye or face protection. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Use explosion-proof electrical, ventilating, lighting and all material-handling equipment. Use only non-sparking tools. Take precautionary measures against static discharge. Keep container tightly closed. Use only outdoors or in a well-ventilated area. Avoid release to the environment. Do not breathe vapor. Wash hands thoroughly after handling.
- Response** : Collect spillage. Get medical attention if you feel unwell. IF exposed or concerned: Get medical attention. IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Call a POISON CENTER or physician if you feel unwell. IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water or shower. IF ON SKIN: Wash with plenty of soap and water. Take off contaminated clothing. If skin irritation occurs: Get medical attention. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical attention.
- Storage** : Store locked up. Store in a well-ventilated place. Keep cool.
- Disposal** : Dispose of contents and container in accordance with all local, regional, national and international regulations.
- Hazards not otherwise classified** : None known.

Section 3. Composition/information on ingredients

- Substance/mixture** : Mixture
- Other means of identification** : Not available.

CAS number/other identifiers

- CAS number** : Not applicable.
- Product code** : Not available.

Ingredient name	%	CAS number
Toluene	35 - 60	108-88-3
Heptane	15 - 25	142-82-5
Ethyl acetate	5 - 15	141-78-6

Any concentration shown as a range is to protect confidentiality or is due to batch variation.

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section.

Occupational exposure limits, if available, are listed in Section 8.

Section 4. First aid measures

Description of necessary first aid measures

- Eye contact** : Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Continue to rinse for at least 20 minutes. Get medical attention.
- Inhalation** : Remove victim to fresh air and keep at rest in a position comfortable for breathing. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Get medical attention. If necessary, call a poison center or physician. If unconscious, place in recovery position and get medical attention immediately. Maintain an open

Section 4. First aid measures

- airway.
- Skin contact** : Flush contaminated skin with plenty of water. Continue to rinse for at least 20 minutes. Get medical attention. Wash clothing before reuse. Clean shoes thoroughly before reuse.
- Ingestion** : Wash out mouth with water. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Stop if the exposed person feels sick as vomiting may be dangerous. Do not induce vomiting unless directed to do so by medical personnel. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Get medical attention. If necessary, call a poison center or physician. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately.

Most important symptoms/effects, acute and delayed

Potential acute health effects

- Eye contact** : Causes serious eye irritation.
- Inhalation** : Can cause central nervous system (CNS) depression. May cause drowsiness and dizziness.
- Skin contact** : Causes skin irritation.
- Ingestion** : Can cause central nervous system (CNS) depression. Irritating to mouth, throat and stomach.

Over-exposure signs/symptoms

- Eye contact** : Adverse symptoms may include the following:
pain or irritation
watering
redness
- Inhalation** : Adverse symptoms may include the following:
nausea or vomiting
headache
drowsiness/fatigue
dizziness/vertigo
unconsciousness
reduced fetal weight
increase in fetal deaths
skeletal malformations
- Skin contact** : Adverse symptoms may include the following:
irritation
redness
reduced fetal weight
increase in fetal deaths
skeletal malformations
- Ingestion** : Adverse symptoms may include the following:
reduced fetal weight
increase in fetal deaths
skeletal malformations

Indication of immediate medical attention and special treatment needed, if necessary

- Notes to physician** : Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.
- Specific treatments** : No specific treatment.

Section 4. First aid measures

- Protection of first-aiders** : No action shall be taken involving any personal risk or without suitable training. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation.

See toxicological information (Section 11)

Section 5. Fire-fighting measures

Extinguishing media

- Suitable extinguishing media** : Use dry chemical, CO₂, water spray (fog) or foam.

- Unsuitable extinguishing media** : Do not use water jet or water-based fire extinguishers.

- Specific hazards arising from the chemical** : Highly flammable liquid and vapor. The vapor/gas is heavier than air and will spread along the ground. Vapors may accumulate in low or confined areas or travel a considerable distance to a source of ignition and flash back. This material is very toxic to aquatic life with long lasting effects. Fire water contaminated with this material must be contained and prevented from being discharged to any waterway, sewer or drain.

- Hazardous thermal decomposition products** : Decomposition products may include the following materials:
carbon dioxide
carbon monoxide

- Special protective actions for fire-fighters** : Move containers from fire area if this can be done without risk. Use water spray to keep fire-exposed containers cool.

- Special protective equipment for fire-fighters** : Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

Section 6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

- For non-emergency personnel** : No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Shut off all ignition sources. No flares, smoking or flames in hazard area. Avoid breathing vapor or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.

- For emergency responders** : If specialized clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".

- Environmental precautions** : Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air). Water polluting material. May be harmful to the environment if released in large quantities. Collect spillage.

Methods and materials for containment and cleaning up

Section 6. Accidental release measures

- Spill** : Stop leak if without risk. Move containers from spill area. Use spark-proof tools and explosion-proof equipment. Approach release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Wash spillages into an effluent treatment plant or proceed as follows. Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations (see Section 13). Dispose of via a licensed waste disposal contractor. Contaminated absorbent material may pose the same hazard as the spilled product. Note: see Section 1 for emergency contact information and Section 13 for waste disposal.

Section 7. Handling and storage

Precautions for safe handling

- Protective measures** : Put on appropriate personal protective equipment (see Section 8). Avoid exposure - obtain special instructions before use. Avoid exposure during pregnancy. Do not handle until all safety precautions have been read and understood. Do not get in eyes or on skin or clothing. Do not breathe vapor or mist. Do not ingest. Avoid release to the environment. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Do not enter storage areas and confined spaces unless adequately ventilated. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Store and use away from heat, sparks, open flame or any other ignition source. Use explosion-proof electrical (ventilating, lighting and material handling) equipment. Use only non-sparking tools. Take precautionary measures against electrostatic discharges. Empty containers retain product residue and can be hazardous. Do not reuse container.

- Advice on general occupational hygiene** : Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. See also Section 8 for additional information on hygiene measures.

- Conditions for safe storage, including any incompatibilities** : Store in accordance with local regulations. Store in a segregated and approved area. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Store locked up. Eliminate all ignition sources. Separate from oxidizing materials. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination.

Section 8. Exposure controls/personal protection

Control parameters

Occupational exposure limits

Ingredient name	Exposure limits
Toluene	<p>NIOSH REL (United States, 10/2013). STEL: 560 mg/m³ 15 minutes. STEL: 150 ppm 15 minutes. TWA: 375 mg/m³ 10 hours. TWA: 100 ppm 10 hours.</p> <p>OSHA PEL Z2 (United States, 2/2013). AMP: 500 ppm 10 minutes. CEIL: 300 ppm TWA: 200 ppm 8 hours.</p> <p>ACGIH TLV (United States, 4/2014). TWA: 20 ppm 8 hours.</p> <p>ACGIH TLV (United States, 4/2014). STEL: 2050 mg/m³ 15 minutes. STEL: 500 ppm 15 minutes. TWA: 1640 mg/m³ 8 hours.</p>
Heptane	

Section 8. Exposure controls/personal protection

Ethyl acetate

TWA: 400 ppm 8 hours.
NIOSH REL (United States, 10/2013).
 CEIL: 440 ppm 15 minutes.
 TWA: 350 mg/m³ 10 hours.
 TWA: 85 ppm 10 hours.
 CEIL: 1800 mg/m³ 15 minutes.
OSHA PEL (United States, 2/2013).
 TWA: 2000 mg/m³ 8 hours.
 TWA: 500 ppm 8 hours.
ACGIH TLV (United States, 4/2014).
 TWA: 1440 mg/m³ 8 hours.
 TWA: 400 ppm 8 hours.
NIOSH REL (United States, 10/2013).
 TWA: 1400 mg/m³ 10 hours.
 TWA: 400 ppm 10 hours.
OSHA PEL (United States, 2/2013).
 TWA: 1400 mg/m³ 8 hours.
 TWA: 400 ppm 8 hours.
OSHA PEL 1989 (United States, 3/1989).
 TWA: 400 ppm 8 hours.
 TWA: 1400 mg/m³ 8 hours.

Appropriate engineering controls

- : Use only with adequate ventilation. Use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits. The engineering controls also need to keep gas, vapor or dust concentrations below any lower explosive limits. Use explosion-proof ventilation equipment.

Environmental exposure controls

- : Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation.

Individual protection measures

Hygiene measures

- : Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

Eye/face protection

- : Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts. If contact is possible, the following protection should be worn, unless the assessment indicates a higher degree of protection: chemical splash goggles.

Skin protection

Hand protection

- : Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. Considering the parameters specified by the glove manufacturer, check during use that the gloves are still retaining their protective properties. It should be noted that the time to breakthrough for any glove material may be different for different glove manufacturers. In the case of mixtures, consisting of several substances, the protection time of the gloves cannot be accurately estimated.

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. When there is a risk of ignition from static electricity, wear anti-static protective clothing. For the greatest protection from static discharges, clothing should include anti-static overalls, boots and gloves.

Other skin protection

- : Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Section 8. Exposure controls/personal protection

- Respiratory protection** : Use a properly fitted, air-purifying or supplied air respirator complying with an approved standard if a risk assessment indicates this is necessary. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.

Section 9. Physical and chemical properties

Appearance

- Physical state** : Liquid.
- Color** : Yellow.
- Odor** : Solvent.
- Odor threshold** : Not available.
- pH** : Not available.
- Melting point** : Not available.
- Boiling point** : 77.78°C (172°F)
- Flash point** : Closed cup: -6.11°C (21°F) [Tagliabue.]
- Evaporation rate** : >1 (Butyl acetate = 1)
- Flammability (solid, gas)** : Not available.
- Lower and upper explosive (flammable) limits** : Lower: 1%
Upper: 11.6%
- Vapor pressure** : Not available.
- Vapor density** : >1 [Air = 1]
- Relative density** : 0.881
- Solubility** : Insoluble in water.
- Partition coefficient: n-octanol/water** : Not available.
- Auto-ignition temperature** : Not available.
- Decomposition temperature** : Not available.
- Viscosity** : Dynamic (room temperature): 4500 mPa·s (4500 cP)
Kinematic (40°C (104°F)): 51.08 cm²/s (5108 cSt)
- Volatility** : 75.3647% (w/w)

Section 10. Stability and reactivity

- Reactivity** : No specific test data related to reactivity available for this product or its ingredients.
- Chemical stability** : The product is stable.
- Possibility of hazardous reactions** : Under normal conditions of storage and use, hazardous reactions will not occur.
- Conditions to avoid** : Avoid all possible sources of ignition (spark or flame). Do not pressurize, cut, weld, braze, solder, drill, grind or expose containers to heat or sources of ignition. Do not allow vapor to accumulate in low or confined areas.
- Incompatible materials** : Reactive or incompatible with the following materials: oxidizing materials, acids and alkalis.



Section 10. Stability and reactivity

Hazardous decomposition products : Under normal conditions of storage and use, hazardous decomposition products should not be produced.

Section 11. Toxicological information

Information on toxicological effects

Acute toxicity

Product/ingredient name	Result	Species	Dose	Exposure
Toluene	LC50 Inhalation Vapor LD50 Oral	Rat Rat	49 g/m ³ 636 mg/kg	4 hours -
Heptane	LC50 Inhalation Gas. LC50 Inhalation Vapor	Rat Rat	48000 ppm 103 g/m ³	4 hours 4 hours
Ethyl acetate	LD50 Oral	Rat	5620 mg/kg	-

Irritation/Corrosion

Product/ingredient name	Result	Species	Score	Exposure	Observation
Toluene	Eyes - Mild irritant	Rabbit	-	0.5 minutes 100 mg	-
	Skin - Moderate irritant	Rabbit	-	24 hours 20 mg	-
	Eyes - Mild irritant	Rabbit	-	870 µg	-
	Eyes - Severe irritant	Rabbit	-	24 hours 2 mg	-
	Skin - Mild irritant	Pig	-	24 hours 250 µL	-
	Skin - Mild irritant	Rabbit	-	435 mg	-
	Skin - Moderate irritant	Rabbit	-	500 mg	-

Sensitization

There is no data available.

Carcinogenicity

Classification

Product/ingredient name	OSHA	IARC	NTP	ACGIH	EPA	NIOSH
Toluene	-	3	-	A4	-	-

Specific target organ toxicity (single exposure)

Name	Category	Route of exposure	Target organs
Toluene	Category 3	Not applicable.	Narcotic effects
Heptane	Category 3	Not applicable.	Narcotic effects
Ethyl acetate	Category 3	Not applicable.	Narcotic effects

Specific target organ toxicity (repeated exposure)

Name	Category	Route of exposure	Target organs
Toluene	Category 2	Not determined	Not determined

Aspiration hazard

Name	Result
Toluene	ASPIRATION HAZARD - Category 1
Heptane	ASPIRATION HAZARD - Category 1

Information on the likely routes of exposure : Routes of entry anticipated: Oral, Dermal, Inhalation.

Potential acute health effects

Eye contact : Causes serious eye irritation.

Section 11. Toxicological information

- Inhalation** : Can cause central nervous system (CNS) depression. May cause drowsiness and dizziness.
- Skin contact** : Causes skin irritation.
- Ingestion** : Can cause central nervous system (CNS) depression. Irritating to mouth, throat and stomach.

Symptoms related to the physical, chemical and toxicological characteristics

- Eye contact** : Adverse symptoms may include the following:
pain or irritation
watering
redness
- Inhalation** : Adverse symptoms may include the following:
nausea or vomiting
headache
drowsiness/fatigue
dizziness/vertigo
unconsciousness
reduced fetal weight
increase in fetal deaths
skeletal malformations
- Skin contact** : Adverse symptoms may include the following:
irritation
redness
reduced fetal weight
increase in fetal deaths
skeletal malformations
- Ingestion** : Adverse symptoms may include the following:
reduced fetal weight
increase in fetal deaths
skeletal malformations

Delayed and immediate effects and also chronic effects from short and long term exposure

Short term exposure

- Potential immediate effects** : No known significant effects or critical hazards.
- Potential delayed effects** : No known significant effects or critical hazards.

Long term exposure

- Potential immediate effects** : No known significant effects or critical hazards.
- Potential delayed effects** : No known significant effects or critical hazards.

Potential chronic health effects

- General** : May cause damage to organs through prolonged or repeated exposure.
- Carcinogenicity** : No known significant effects or critical hazards.
- Mutagenicity** : No known significant effects or critical hazards.
- Teratogenicity** : Suspected of damaging the unborn child.
- Developmental effects** : No known significant effects or critical hazards.
- Fertility effects** : No known significant effects or critical hazards.

Numerical measures of toxicity

Acute toxicity estimates



Section 11. Toxicological information

There is no data available.

Section 12. Ecological information

Toxicity

Product/ingredient name	Result	Species	Exposure
Toluene Heptane Ethyl acetate	Acute EC50 433 ppm Marine water	Algae - Skeletonema costatum	96 hours
	Acute EC50 12500 µg/L Fresh water	Algae - Pseudokirchneriella subcapitata	72 hours
	Acute EC50 11600 µg/L Fresh water	Crustaceans - Gammarus pseudolimnaeus - Adult	48 hours
	Acute EC50 6000 µg/L Fresh water	Daphnia - Daphnia magna - Juvenile (Fledgling, Hatchling, Weanling)	48 hours
	Acute LC50 5500 µg/L Fresh water	Fish - Oncorhynchus kisutch - Fry	96 hours
	Chronic NOEC 500000 µg/L Fresh water	Algae - Pseudokirchneriella subcapitata	96 hours
	Chronic NOEC 1000 µg/L Fresh water	Daphnia - Daphnia magna	21 days
	Acute LC50 375000 µg/L Fresh water	Fish - Oreochromis mossambicus	96 hours
	Acute EC50 2500000 µg/L Fresh water	Algae - Selenastrum sp.	96 hours
	Acute LC50 750000 µg/L Fresh water	Crustaceans - Gammarus pulex	48 hours
	Acute LC50 154000 µg/L Fresh water	Daphnia - Daphnia cucullata	48 hours
	Acute LC50 425300 µg/L Fresh water	Fish - Oncorhynchus mykiss - Juvenile (Fledgling, Hatchling, Weanling)	96 hours
	Chronic NOEC 2400 µg/L Fresh water	Daphnia - Daphnia magna	21 days
	Chronic NOEC 75.6 mg/L Fresh water	Fish - Pimephales promelas - Embryo	32 days

Persistence and degradability

There is no data available.

Bioaccumulative potential

Product/ingredient name	LogP _{ow}	BCF	Potential
Toluene	2.73	90	low
Heptane	4.66	552	high
Ethyl acetate	0.68	30	low

Mobility in soil

Soil/water partition coefficient (K_{oc}) : There is no data available.

Other adverse effects : No known significant effects or critical hazards.

Section 13. Disposal considerations

Disposal methods : The generation of waste should be avoided or minimized wherever possible. Disposal of this product, solutions and any by-products should comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Care should be taken when handling empty containers that have not been cleaned or rinsed out. Empty containers or liners may retain some product residues. Vapor from product residues may create a highly flammable or explosive atmosphere inside the container. Do not cut, weld or grind used containers unless they have been cleaned thoroughly internally. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.





United States - RCRA Toxic hazardous waste "U" List



Section 13. Disposal considerations

Ingredient	CAS #	Status	Reference number
Toluene	108-88-3	Listed	U220
Ethyl acetate	141-78-6	Listed	U112

Section 14. Transport information

	DOT Classification	IMDG	IATA
UN number	UN1133	UN1133	UN1133
UN proper shipping name	ADHESIVES RQ (Toluene, Ethyl Acetate)	ADHESIVES. Marine pollutant (Heptane)	ADHESIVES
Transport hazard class(es)	3 	3  	3 
Packing group	II	II	II
Environmental hazards	No.	Yes.	No.
Additional information	<p>Reportable quantity 1666.7 lbs / 756.67 kg [226.89 gal / 858.87 L] Package sizes shipped in quantities less than the product reportable quantity are not subject to the RQ (reportable quantity) transportation requirements.</p> <p>Remarks SMALL QUANTITY (1 gallon or less): ORM-D; CONSUMER COMMODITY</p>	<p>The marine pollutant mark is not required when transported in sizes of ≤5 L or ≤5 kg.</p> <p>Emergency schedules (EmS) F-E, S-D</p>	<p>The environmentally hazardous substance mark may appear if required by other transportation regulations.</p>

AERG : 128

DOT-RQ Details : Toluene 1000 lbs / 454 kg [137.86 gal / 521.84 L]
Ethyl acetate 5000 lbs / 2270 kg [670.36 gal / 2537.6 L]

Special precautions for user : **Transport within user's premises:** always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code : Not available.

Section 15. Regulatory information

U.S. Federal regulations : TSCA 8(a) PAIR: Heptane
TSCA 8(a) CDR Exempt/Partial exemption: Not determined
United States inventory (TSCA 8b): All components are listed or exempted.
Clean Water Act (CWA) 307: Toluene
Clean Water Act (CWA) 311: Toluene



Section 15. Regulatory information

Clean Air Act Section 112 : Listed

(b) Hazardous Air
Pollutants (HAPs)

Clean Air Act Section 602 : Not listed
Class I Substances

Clean Air Act Section 602 : Not listed
Class II Substances

DEA List I Chemicals : Not listed
(Precursor Chemicals)

DEA List II Chemicals : Listed
(Essential Chemicals)

SARA 302/304

Composition/information on ingredients

No products were found.

SARA 304 RQ : Not applicable.

SARA 311/312

Classification : Fire hazard
Immediate (acute) health hazard
Delayed (chronic) health hazard

Composition/information on ingredients

Name	%	Fire hazard	Sudden release of pressure	Reactive	Immediate (acute) health hazard	Delayed (chronic) health hazard
Toluene	35 - 60	Yes.	No.	No.	Yes.	Yes.
Heptane	15 - 25	Yes.	No.	No.	Yes.	No.
Ethyl acetate	5 - 15	Yes.	No.	No.	Yes.	No.

SARA 313

	Product name	CAS number	%
Form R - Reporting requirements	Toluene	108-88-3	35 - 60
Supplier notification	Toluene	108-88-3	35 - 60

SARA 313 notifications must not be detached from the SDS and any copying and redistribution of the SDS shall include copying and redistribution of the notice attached to copies of the SDS subsequently redistributed.

State regulations

Massachusetts : The following components are listed: Toluene; Heptane; Ethyl acetate

New York : The following components are listed: Toluene; Ethyl acetate

New Jersey : The following components are listed: Toluene; Heptane; Ethyl acetate

Pennsylvania : The following components are listed: Toluene; Heptane; Ethyl acetate

California Prop. 65

WARNING: This product contains a chemical known to the State of California to cause birth defects or other reproductive harm.

Ingredient name	Cancer	Reproductive	No significant risk level	Maximum acceptable dosage level
Toluene	No.	Yes.	No.	7000 µg/day (ingestion) 13000 µg/day (inhalation)

Section 16. Other information

History

Date of issue mm/dd/yyyy : 10/15/2014

Date of previous issue : 11/15/2012

Version : 2

Prepared by : KMK Regulatory Services Inc.

Key to abbreviations : ATE = Acute Toxicity Estimate
BCF = Bioconcentration Factor
GHS = Globally Harmonized System of Classification and Labelling of Chemicals
IATA = International Air Transport Association
IBC = Intermediate Bulk Container
IMDG = International Maritime Dangerous Goods
LogPow = logarithm of the octanol/water partition coefficient
MARPOL 73/78 = International Convention for the Prevention of Pollution From Ships, 1973 as modified by the Protocol of 1978. ("Marpol" = marine pollution)
UN = United Nations

Notice to reader

To the best of our knowledge, the information contained herein is accurate. However, neither the above-named supplier, nor any of its subsidiaries, assumes any liability whatsoever for the accuracy or completeness of the information contained herein.

Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist.



MATERIAL SAFETY DATA SHEET

Section 1: Product & Company Identification

Product Name: Food Grade Anti-Seize and Lubricating Compound

Product Number (s): SL35905, SL35906

Product Use: anti-seize compound

Manufacturer / Supplier Contact Information:

In United States:

CRC Industries, Inc.

885 Louis Drive

Warminster, PA 18974

www.crcindustries.com

1-215-674-4300 (General)

(800) 521-3168 (Technical)

(800) 272-4620 (Customer Service)

In Canada:

CRC Canada Co.

2-1246 Lorimar Drive

Mississauga, Ontario L5S 1R2

www.crc-canada.ca

1-905-670-2291

In Mexico:

CRC Industries Mexico

Av. Benito Juárez 4055 G

Colonia Orquídea

San Luís Potosí, SLP CP 78394

www.crc-mexico.com

52-444-824-1666

24-Hr Emergency – CHEMTREC: (800) 424-9300 or (703) 527-3887

Section 2: Hazards Identification

Emergency Overview

Appearance & Odor: Opaque off-white semi-solid paste, negligible odor

Potential Health Effects:

ACUTE EFFECTS:

EYE: May cause irritation

SKIN: For hypersensitive persons, may irritate the skin after prolonged periods of time.

INHALATION: Viscous nature may block breathing passages if inhaled.

INGESTION: May cause diarrhea

CHRONIC EFFECTS: None known

TARGET ORGANS: None known

Medical Conditions Aggravated by Exposure: Pre-existing skin sensitivities

See Section 11 for toxicology and carcinogenicity information on product ingredients.

Product Name: Food Grade Anti-Seize and Lubricating Compound

Product Number (s): SL35905, SL35906

Section 3: Composition/Information on Ingredients

COMPONENT	CAS NUMBER	% by Wt.
Non-hazardous blend	82980-54-9 / 8042-47-5 / 9003-29-6 / 9002-84-0 / 68037-01-4 / 471-34-1	85 - 95
Diphenylamine	122-39-4	< 0.1
Talc	14807-96-6	5 - 10
Zinc oxide	1314-13-2	1 - 2

Section 4: First Aid Measures

Eye Contact: Immediately flush with plenty of water for 15 minutes. Call a physician if irritation persists.

Skin Contact: Remove contaminated clothing and wash affected area with soap and water. Call a physician if irritation persists. Wash contaminated clothing prior to re-use.

Inhalation: Remove person to fresh air. Keep person calm. If not breathing, give artificial respiration. If breathing is difficult give oxygen. Call a physician.

Ingestion: Wash out mouth immediately. Contact a physician.

Note to Physicians: Treat symptomatically.

Section 5: Fire-Fighting Measures

Flammable Properties: As defined by OSHA, this product is nonflammable.

Flash Point:	> 400°F / 204°C	Upper Explosive Limit:	7.0
Autoignition Temperature:	> 500°F / 260°C	Lower Explosive Limit:	0.9

Fire and Explosion Data:

Suitable Extinguishing Media: Foam, dry powder, Halon®, carbon dioxide, sand, earth & water mist. Do NOT use water jet.

Products of Combustion: Smoke, soot, hydrocarbons and oxides of carbon

Explosion Hazards: Containers, when exposed to heat from fire, may build pressure and rupture.

Protection of Fire-Fighters: Firefighters should wear self-contained, NIOSH-approved breathing apparatus for protection against suffocation and possible toxic decomposition products. Proper eye and skin protection should be provided. Use water spray to keep fire-exposed containers cool and to knock down vapors which may result from product decomposition.

Section 6: Accidental Release Measures

Personal Precautions: Use personal protection recommended in Section 8.

Environmental Precautions: Take precautions to prevent contamination of ground and surface waters. Do not flush into sewers or storm drains.

Methods for Containment & Clean-up: Scrape up the bulk of the material. Wipe up the remainder with a cloth.

Product Name: Food Grade Anti-Seize and Lubricating Compound**Product Number (s): SL35905, SL35906**

Ventilate the area with fresh air. To prevent slipping hazard, clean up remaining residue with diatomaceous earth.

Section 7: Handling and Storage

Handling Procedures: Do not allow product to enter drains; it may clog the drain. For product use instructions, please see the product label.

Storage Procedures: Store in a cool dry area out of direct sunlight. Do not store at elevated temperatures.

Aerosol Storage Level: NA

Section 8: Exposure Controls/Personal Protection

Exposure Guidelines:

COMPONENT	OSHA		ACGIH		OTHER		UNIT
	TWA	STEL	TWA	STEL	TWA	SOURCE	
Non-hazardous blend	NE	NE	NE	NE	NE		
Diphenylamine	10 (v)	NE	10	NE	NE		mg/m ³
Talc	20*	NE	2	NE	NE		mg/m ³
Zinc oxide	5	NE	2	10	NE		mg/m ³
N.E. – Not Established (c) – ceiling (s) – skin (v) – vacated * - mppcf							

Controls and Protection:

Engineering Controls: Area should have ventilation to provide fresh air. Local exhaust ventilation is generally preferred because it can control the emissions of the contaminant at the source, preventing dispersion into the general work area. Use mechanical means if necessary to maintain vapor levels below the exposure guidelines. If working in a confined space, follow applicable OSHA regulations.

Respiratory Protection: None required for normal work where adequate ventilation is provided. If engineering controls are not feasible or if exposure exceeds the applicable exposure limits, use a NIOSH-approved cartridge respirator with organic vapor cartridge. Air monitoring is needed to determine actual employee exposure levels. Use a self-contained breathing apparatus in confined spaces and for emergencies.

Eye/face Protection: For normal conditions, wear safety glasses. Where there is reasonable probability of liquid contact, wear splash-proof goggles.

Skin Protection: Use protective gloves such as nitrile or PVC. Also, use full protective clothing if there is prolonged or repeated contact of liquid with skin.

Section 9: Physical and Chemical Properties

Physical State: semi-solid paste

Color: white / off-white

Odor: negligible

Odor Threshold: ND

Specific Gravity: 1.17

Initial Boiling Point: > 500°F / 260°C

Freezing Point: ND

Product Name: Food Grade Anti-Seize and Lubricating Compound**Product Number (s): SL35905, SL35906**

Vapor Pressure: < 0.01 kPa

Vapor Density: > 5 (air = 1)

Evaporation Rate: slow

Solubility: negligible in water

Coefficient of water/oil distribution: ND

pH: NA

Volatile Organic Compounds: wt %: 0 g/L: 0 lbs./gal: 0

Section 10: Stability and Reactivity

Stability: Stable

Conditions to Avoid: Sources of ignition, temperature extremes

Incompatible Materials: Strong inorganic and organic acids, oxidizing agents

Hazardous Decomposition Products: Smoke, airborne soot, hydrocarbons and oxides of carbon

Possibility of Hazardous Reactions: No

Section 11: Toxicological Information

Long-term toxicological studies have not been conducted for this product. The following information is available for components of this product.

Acute Toxicity:

Component	Oral LD50 (rat)	Dermal LD50 (rabbit)	Inhalation LC50 (rat)
Non-hazardous blend	no data	no data	no data
Diphenylamine	1120 mg/kg	no data	no data
Talc	no data	no data	no data
Zinc oxide	> 5000 mg/kg	no data	no data

Chronic Toxicity:

Component	OSHA Carcinogen	IARC Carcinogen	NTP Carcinogen	Irritant	Sensitizer
Non-hazardous blend	No	No	No	No	unknown
Diphenylamine	No	No	No	E (moderate) / S & R (mild)	unknown
Talc	No	No	No	No	No
Zinc oxide	No	No	No	R (mild)	unknown

E – Eye	S – Skin	R - Respiratory
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Reproductive Toxicity: No information available

Teratogenicity: No information available

Mutagenicity: No information available

Synergistic Effects: No information available

Section 12: Ecological Information

Ecological studies have not been conducted for this product. The following information is available for components of this product.

Ecotoxicity: No information available

Product Name: Food Grade Anti-Seize and Lubricating Compound**Product Number (s): SL35905, SL35906**

Persistence / Degradability:	No information available
Bioaccumulation / Accumulation:	Bioaccumulation potential nil
Mobility in Environment:	Highly unlikely to cause contamination

Section 13: Disposal Considerations

Waste Classification: This product is not a RCRA hazardous waste (See 40 CFR Part 261.20 – 261.33).
Empty containers may be recycled.

All disposal activities must comply with federal, state, provincial and local regulations. Local regulations may be more stringent than state, provincial or national requirements.

Section 14: Transport Information

US DOT (ground): Not regulated

ICAO/IATA (air): Not regulated

IMO/IMDG (water): Not regulated

Special Provisions: None

Section 15: Regulatory Information

U.S. Federal Regulations:**Toxic Substances Control Act (TSCA):**

All ingredients are either listed on the TSCA inventory or are exempt.

Comprehensive Environmental Response, Compensation and Liability Act (CERCLA):

Reportable Quantities (RQ's) exist for the following ingredients: None

Spills or releases resulting in the loss of any ingredient at or above its RQ require immediate notification to the National Response Center (800-424-8802) and to your Local Emergency Planning Committee.

Superfund Amendments Reauthorization Act (SARA) Title III:

Section 302 Extremely Hazardous Substances (EHS): None

Section 311/312 Hazard Categories:	Fire Hazard	No
	Reactive Hazard	No
	Release of Pressure	No
	Acute Health Hazard	Yes
	Chronic Health Hazard	No

Section 313 Toxic Chemicals: This product contains the following substances subject to the reporting requirements of Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 and 40 CFR Part 372:
zinc compounds (< 2%), diphenylamine (< 0.5%)

Clean Air Act:

Section 112 Hazardous Air Pollutants (HAPs): None

Occupational Safety and Health Administration:

This product is regulated by the Hazard Communications Standard.

Product Name: Food Grade Anti-Seize and Lubricating Compound**Product Number (s): SL35905, SL35906****U.S. State Regulations:****California Safe Drinking Water and Toxic Enforcement Act (Prop 65):**

This product may contain the following chemicals known to the state of California to cause cancer, birth defects or other reproductive harm: None

Consumer Products VOC Regulations: This product is not regulated.

State Right to Know:

New Jersey: 1314-13-2, 14807-96-6, 122-39-4

Pennsylvania: 1314-13-2, 14807-96-6, 122-39-4

Massachusetts: 1314-13-2, 14807-96-6, 122-39-4

Rhode Island : 1314-13-2, 14807-96-6, 122-39-4

Canadian Regulations:**Controlled Products Regulations:**

This product has been classified in accordance with the hazard criteria of the Controlled Product Regulation and the MSDS contains all the information required by the Controlled Products Regulations.

WHMIS Hazard Class: Not hazardous

Canadian DSL Inventory: All ingredients are either listed on the DSL Inventory or are exempt.

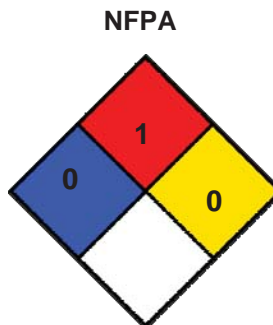
European Union Regulations:

RoHS Compliance: This product is compliant with Directive 2002/95/EC of the European Parliament and of the Council of 27 January 2003. This product does not contain any of the restricted substances as listed in Article 4(1) of the RoHS Directive.

Additional Regulatory Information: None

Section 16: Other Information

HMIS® (II)	
Health:	0
Flammability:	1
Reactivity:	0
PPE:	B



Ratings range from 0 (no hazard) to 4 (severe hazard)

Prepared By: Michelle Rudnick

CRC #: SL35905

Revision Date: 01/12/2015

Changes since last revision: Revision Date

The information contained in this document applies to this specific material as supplied. It may not be valid for this material if it is used in combination with any other materials. This information is accurate to the best of CRC Industries' knowledge or obtained from sources believed by CRC to be accurate. Before using any product, read all warnings and directions on the label. For further clarification of any information contained on this MSDS consult your supervisor, a health & safety professional, or CRC Industries.

Product Name: Food Grade Anti-Seize and Lubricating Compound

Product Number (s): SL35905, SL35906

ACGIH: American Conference of Governmental Industrial Hygienists

CAS: Chemical Abstract Service

CFR: Code of Federal Regulations

DOT: Department of Transportation

DSL: Domestic Substance List

g/L: grams per Liter

HMIS: Hazardous Materials Identification System

IARC: International Agency for Research on Cancer

IATA: International Air Transport Association

ICAO: International Civil Aviation Organization

IMDG: International Maritime Dangerous Goods

IMO: International Maritime Organization

lbs./gal: pounds per gallon

LC: Lethal Concentration

LD: Lethal Dose

NA: Not Applicable

ND: Not Determined

NIOSH: National Institute of Occupational Safety & Health

NFPA: National Fire Protection Association

NTP: National Toxicology Program

OSHA: Occupational Safety and Health Administration

PMCC: Pensky-Martens Closed Cup

PPE: Personal Protection Equipment

ppm: Parts per Million

RoHS: Restriction of Hazardous Substances

STEL: Short Term Exposure Limit

TCC: Tag Closed Cup

TWA: Time Weighted Average

WHMIS: Workplace Hazardous Materials Information System




SAFETY DATA SHEET

1. Identification

Product identifier	Dry Moly Lube
Other means of identification	
Product code	03084
Recommended use	Dry film lubricant
Recommended restrictions	None known.
Manufacturer/Importer/Supplier/Distributor information	
Manufactured or sold by:	
Company name	CRC Industries, Inc.
Address	885 Louis Dr. Warminster, PA 18974 US
Telephone	
General Information	215-674-4300
Technical Assistance	800-521-3168
Customer Service	800-272-4620
24-Hour Emergency (CHEMTREC)	800-424-9300 (US) 703-527-3887 (International)
Website	www.crcindustries.com

2. Hazard(s) identification

Physical hazards	Flammable aerosols	Category 1
	Gases under pressure	Liquefied gas
Health hazards	Serious eye damage/eye irritation	Category 2
	Reproductive toxicity (the unborn child)	Category 2
	Specific target organ toxicity, single exposure	Category 3 respiratory tract irritation
	Specific target organ toxicity, single exposure	Category 3 narcotic effects
	Specific target organ toxicity, repeated exposure	Category 2
	Aspiration hazard	Category 1
Environmental hazards	Hazardous to the aquatic environment, acute hazard	Category 3
	Hazardous to the aquatic environment, long-term hazard	Category 3
OSHA defined hazards	Not classified.	
Label elements		
Signal word	Danger	
Hazard statement	Extremely flammable aerosol. Pressurized container: May burst if heated. Contains gas under pressure; may explode if heated. May be fatal if swallowed and enters airways. Causes serious eye irritation. May cause respiratory irritation. May cause drowsiness or dizziness. Suspected of damaging the unborn child. May cause damage to organs (brain, nervous system) through prolonged or repeated exposure. Harmful to aquatic life. Harmful to aquatic life with long lasting effects.	

Precautionary statement

Prevention

Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Keep away from heat/sparks/open flames/hot surfaces. - No smoking. Do not spray on an open flame or other ignition source. Do not apply while equipment is energized. Do not pierce or burn, even after use. Extinguish all flames, pilot lights and heaters. Vapors will accumulate readily and may ignite. Use only with adequate ventilation; maintain ventilation during use and until all vapors are gone. Open doors and windows or use other means to ensure a fresh air supply during use and while product is drying. If you experience any symptoms listed on this label, increase ventilation or leave the area. Do not breathe gas. Do not breathe mist or vapor. Wash thoroughly after handling. Wear protective gloves/protective clothing/eye protection/face protection. Avoid release to the environment.

Response

If swallowed: Immediately call a poison center/doctor. Do NOT induce vomiting. If inhaled: Remove person to fresh air and keep comfortable for breathing. Call a poison center/doctor if you feel unwell. If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical attention. If exposed or concerned: Get medical attention. Call a POISON CENTER or doctor/physician if you feel unwell.

Storage

Store in a well-ventilated place. Store locked up. Protect from sunlight. Do not expose to temperatures exceeding 50°C/122°F. Exposure to high temperature may cause can to burst.

Disposal

Dispose of contents/container in accordance with local/regional/national regulations.

Hazard(s) not otherwise classified (HNOC)

None known.

3. Composition/information on ingredients

Mixtures

Chemical name	Common name and synonyms	CAS number	%
Acetone		67-64-1	30 - 40
Isopropyl alcohol		67-63-0	20 - 30
n-Butane		106-97-8	20 - 30
Propane		74-98-6	5 - 10
Heptane, branched, cyclic and linear		426260-76-6	3 - 5
Molybdenum disulphide		1317-33-5	1 - 3
n-Heptane		142-82-5	1 - 3
Solvent Naphtha (petroleum), Medium Aliph.		64742-88-7	1 - 3

Specific chemical identity and/or percentage of composition has been withheld as a trade secret.

4. First-aid measures

Inhalation	Remove victim to fresh air and keep at rest in a position comfortable for breathing. Call a POISON CENTER or doctor/physician if you feel unwell.
Skin contact	Rinse skin with water/shower. Get medical attention if irritation develops and persists.
Eye contact	Immediately flush eyes with plenty of water for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Get medical attention if irritation develops and persists.
Ingestion	Call a physician or poison control center immediately. Rinse mouth. Do not induce vomiting. If vomiting occurs, keep head low so that stomach content doesn't get into the lungs.
Most important symptoms/effects, acute and delayed	May cause drowsiness and dizziness. Headache. Nausea, vomiting. Irritation of nose and throat. Aspiration may cause pulmonary edema and pneumonitis. Severe eye irritation. Symptoms may include stinging, tearing, redness, swelling, and blurred vision. May cause respiratory irritation. Prolonged exposure may cause chronic effects.
Indication of immediate medical attention and special treatment needed	Provide general supportive measures and treat symptomatically. Keep victim under observation. Symptoms may be delayed.
General information	IF exposed or concerned: Get medical advice/attention. Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves. Show this safety data sheet to the doctor in attendance.

5. Fire-fighting measures

Suitable extinguishing media	Alcohol resistant foam. Water fog. Dry chemical powder. Carbon dioxide (CO2).
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Unsuitable extinguishing media	None known.
Specific hazards arising from the chemical	Contents under pressure. Pressurized container may rupture when exposed to heat or flame. During fire, gases hazardous to health may be formed.
Special protective equipment and precautions for firefighters	Firefighters must use standard protective equipment including flame retardant coat, helmet with face shield, gloves, rubber boots, and in enclosed spaces, SCBA.
Fire-fighting equipment/instructions	In case of fire: Stop leak if safe to do so. Move containers from fire area if you can do so without risk. Containers should be cooled with water to prevent vapor pressure build up.
General fire hazards	Extremely flammable aerosol. Contents under pressure. Pressurized container may rupture when exposed to heat or flame.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures	Keep unnecessary personnel away. Keep people away from and upwind of spill/leak. Keep out of low areas. Many gases are heavier than air and will spread along ground and collect in low or confined areas (sewers, basements, tanks). Wear appropriate protective equipment and clothing during clean-up. Do not breathe mist or vapor. Do not breathe gas. Emergency personnel need self-contained breathing equipment. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Ventilate closed spaces before entering them. Local authorities should be advised if significant spillages cannot be contained. For personal protection, see section 8 of the SDS.
Methods and materials for containment and cleaning up	Eliminate all ignition sources (no smoking, flares, sparks, or flames in immediate area). Keep combustibles (wood, paper, oil, etc.) away from spilled material. Stop the flow of material, if this is without risk. Wipe up with absorbent material (e.g. cloth, fleece). Clean surface thoroughly to remove residual contamination. For waste disposal, see section 13 of the SDS. Prevent entry into waterways, sewer, basements or confined areas.
Environmental precautions	Avoid release to the environment. Prevent further leakage or spillage if safe to do so. Avoid discharge into drains, water courses or onto the ground. Inform appropriate managerial or supervisory personnel of all environmental releases.

7. Handling and storage

Precautions for safe handling	Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Pressurized container: Do not pierce or burn, even after use. Do not use if spray button is missing or defective. Do not spray on a naked flame or any other incandescent material. Do not smoke while using or until sprayed surface is thoroughly dry. Do not cut, weld, solder, drill, grind, or expose containers to heat, flame, sparks, or other sources of ignition. Use caution around energized equipment. The metal container will conduct electricity if it contacts a live source. This may result in injury to the user from electrical shock and/or flash fire. Do not breathe mist or vapor. Do not breathe gas. Avoid contact with eyes. Avoid prolonged exposure. Pregnant or breastfeeding women must not handle this product. Should be handled in closed systems, if possible. Use only in well-ventilated areas. Wear appropriate personal protective equipment. Wash hands thoroughly after handling. Avoid release to the environment. Observe good industrial hygiene practices. For product usage instructions, please see the product label.
Conditions for safe storage, including any incompatibilities	Level 3 Aerosol. Pressurized container. Protect from sunlight and do not expose to temperatures exceeding 50°C/122 °F. Do not puncture, incinerate or crush. Do not handle or store near an open flame, heat or other sources of ignition. This material can accumulate static charge which may cause spark and become an ignition source. Store in a well-ventilated place. Store away from incompatible materials (see Section 10 of the SDS).

8. Exposure controls/personal protection

Occupational exposure limits

US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000)

Components	Type	Value	Form
Acetone (CAS 67-64-1)	PEL	2400 mg/m3 1000 ppm	
Isopropyl alcohol (CAS 67-63-0)	PEL	980 mg/m3 400 ppm	
Molybdenum disulphide (CAS 1317-33-5)	PEL	15 mg/m3	Total dust.
n-Heptane (CAS 142-82-5)	PEL	2000 mg/m3 500 ppm	
Propane (CAS 74-98-6)	PEL	1800 mg/m3	

US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000)

Components	Type	Value	Form
		1000 ppm	

US. OSHA Table Z-2 (29 CFR 1910.1000)

Components	Type	Value
Toluene (CAS 108-88-3)	Ceiling	300 ppm
	TWA	200 ppm

US. ACGIH Threshold Limit Values

Components	Type	Value	Form
Acetone (CAS 67-64-1)	STEL	750 ppm	
	TWA	500 ppm	
Isopropyl alcohol (CAS 67-63-0)	STEL	400 ppm	
	TWA	200 ppm	
Molybdenum disulphide (CAS 1317-33-5)	TWA	3 mg/m3	Respirable fraction.
		10 mg/m3	Inhalable fraction.
n-Butane (CAS 106-97-8)	STEL	1000 ppm	
n-Heptane (CAS 142-82-5)	STEL	500 ppm	
	TWA	400 ppm	
Solvent Naphtha (petroleum), Medium Aliph. (CAS 64742-88-7)	TWA	200 mg/m3	Non-aerosol.
Toluene (CAS 108-88-3)	TWA	20 ppm	

US. NIOSH: Pocket Guide to Chemical Hazards

Components	Type	Value
Acetone (CAS 67-64-1)	TWA	590 mg/m3
		250 ppm
Isopropyl alcohol (CAS 67-63-0)	STEL	1225 mg/m3
		500 ppm
	TWA	980 mg/m3
		400 ppm
n-Butane (CAS 106-97-8)	TWA	1900 mg/m3
		800 ppm
n-Heptane (CAS 142-82-5)	Ceiling	1800 mg/m3
		440 ppm
	TWA	350 mg/m3
		85 ppm
Propane (CAS 74-98-6)	TWA	1800 mg/m3
		1000 ppm
Solvent Naphtha (petroleum), Medium Aliph. (CAS 64742-88-7)	TWA	100 mg/m3
Toluene (CAS 108-88-3)	STEL	560 mg/m3
		150 ppm
	TWA	375 mg/m3
		100 ppm

Biological limit values
ACGIH Biological Exposure Indices

Components	Value	Determinant	Specimen	Sampling Time
Acetone (CAS 67-64-1)	50 mg/l	Acetone	Urine	*
Isopropyl alcohol (CAS 67-63-0)	40 mg/l	Acetone	Urine	*
Toluene (CAS 108-88-3)	0.3 mg/g	o-Cresol, with hydrolysis	Creatinine in urine	*

ACGIH Biological Exposure Indices

Components	Value	Determinant	Specimen	Sampling Time
	0.03 mg/l	Toluene	Urine	*
	0.02 mg/l	Toluene	Blood	*

* - For sampling details, please see the source document.

Exposure guidelines**US - California OELs: Skin designation**

Toluene (CAS 108-88-3)

Can be absorbed through the skin.

US - Minnesota Haz Subs: Skin designation applies

Toluene (CAS 108-88-3)

Skin designation applies.

US ACGIH Threshold Limit Values: Skin designation

Solvent Naphtha (petroleum), Medium Aliph. (CAS 64742-88-7)

Can be absorbed through the skin.

Appropriate engineering controls

Good general ventilation (typically 10 air changes per hour) should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level. Provide eyewash station.

Individual protection measures, such as personal protective equipment**Eye/face protection**

Wear safety glasses with side shields (or goggles).

Skin protection**Hand protection**

Wear protective gloves such as: Nitrile. Neoprene.

Other

Wear suitable protective clothing. Use of an impervious apron is recommended.

Respiratory protection

If engineering controls are not feasible or if exposure exceeds the applicable exposure limits, use a NIOSH-approved cartridge respirator with an organic vapor cartridge. Use a self-contained breathing apparatus in confined spaces and for emergencies. Air monitoring is needed to determine actual employee exposure levels.

Thermal hazards

Wear appropriate thermal protective clothing, when necessary.

General hygiene considerations

When using, do not eat, drink or smoke. Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants.

9. Physical and chemical properties**Appearance****Physical state**

Liquid.

Form

Aerosol.

Color

Gray.

Odor

Solvent.

Odor threshold

Not available.

pH

Not available.

Melting point/freezing point

Not available.

Initial boiling point and boiling range

< 395 °F (< 201.7 °C)

Flash point

< 0 °F (< -17.8 °C) Tag Closed Cup

Evaporation rate

Not available.

Flammability (solid, gas)

Not available.

Upper/lower flammability or explosive limits**Flammability limit - lower (%)**

1 %

Flammability limit - upper (%)

12.8 %

Vapor pressure

1494.5 hPa estimated

Vapor density

> 1 (air = 1)

Relative density	0.71
Solubility (water)	Not available.
Partition coefficient (n-octanol/water)	Not available.
Auto-ignition temperature	410 °F (210 °C) estimated
Decomposition temperature	Not available.
Viscosity (kinematic)	Not available.
Percent volatile	98 %

10. Stability and reactivity

Reactivity	The product is stable and non-reactive under normal conditions of use, storage and transport.
Chemical stability	Material is stable under normal conditions.
Possibility of hazardous reactions	No dangerous reaction known under conditions of normal use.
Conditions to avoid	Heat, flames and sparks. Contact with incompatible materials.
Incompatible materials	Acids. Strong oxidizing agents. Nitrates. Isocyanates. Fluorine. Chlorine.
Hazardous decomposition products	Carbon oxides.

11. Toxicological information

Information on likely routes of exposure

Ingestion	Droplets of the product aspirated into the lungs through ingestion or vomiting may cause a serious chemical pneumonia.
Inhalation	May cause damage to organs through prolonged or repeated exposure by inhalation. May cause drowsiness and dizziness. Headache. Nausea, vomiting. May cause irritation to the respiratory system. Prolonged inhalation may be harmful.
Skin contact	Prolonged skin contact may cause temporary irritation.
Eye contact	Causes serious eye irritation.
Symptoms related to the physical, chemical and toxicological characteristics	May cause drowsiness and dizziness. Headache. Nausea, vomiting. Irritation of nose and throat. Aspiration may cause pulmonary edema and pneumonitis. Severe eye irritation. Symptoms may include stinging, tearing, redness, swelling, and blurred vision. May cause respiratory irritation.

Information on toxicological effects

Acute toxicity May be fatal if swallowed and enters airways. Narcotic effects. May cause respiratory irritation.

Product	Species	Test Results
Dry Moly Lube		
Acute		
<i>Dermal</i>		
LD50	Rabbit	9027.8184 mg/kg estimated
<i>Inhalation</i>		
LC50	Rat	25927.2324 ppm, 4 hours estimated 1108.0551 mg/l, 4 hours estimated
<i>Oral</i>		
LD50	Rat	8209.0645 mg/kg estimated

* Estimates for product may be based on additional component data not shown.

Skin corrosion/irritation	Prolonged skin contact may cause temporary irritation.
Serious eye damage/eye irritation	Causes serious eye irritation.
Respiratory sensitization	Not available.
Skin sensitization	This product is not expected to cause skin sensitization.
Germ cell mutagenicity	No data available to indicate product or any components present at greater than 0.1% are mutagenic or genotoxic.
Carcinogenicity	This product is not considered to be a carcinogen by IARC, ACGIH, NTP, or OSHA.
Reproductive toxicity	Suspected of damaging the unborn child.

Specific target organ toxicity - single exposure	May cause respiratory irritation. May cause drowsiness and dizziness.
Specific target organ toxicity - repeated exposure	May cause damage to organs through prolonged or repeated exposure: Brain. Nervous system.
Aspiration hazard	May be fatal if swallowed and enters airways. If aspirated into lungs during swallowing or vomiting, may cause chemical pneumonia, pulmonary injury or death.
Chronic effects	Prolonged inhalation may be harmful. May cause damage to organs through prolonged or repeated exposure.

12. Ecological information

Ecotoxicity	Harmful to aquatic life with long lasting effects.		
Product		Species	Test Results
Dry Moly Lube			
Aquatic			
Crustacea	EC50	Daphnia	3794.1357 mg/l, 48 hours estimated
<i>Acute</i>			
Fish	LC50	Fish	91.3044 mg/l, 96 hours estimated
Components		Species	Test Results
Acetone (CAS 67-64-1)			
Aquatic			
Crustacea	EC50	Water flea (Daphnia magna)	21.6 - 23.9 mg/l, 48 hours
Fish	LC50	Rainbow trout,donaldson trout (Oncorhynchus mykiss)	4740 - 6330 mg/l, 96 hours
Isopropyl alcohol (CAS 67-63-0)			
Aquatic			
Fish	LC50	Bluegill (Lepomis macrochirus)	> 1400 mg/l, 96 hours
n-Heptane (CAS 142-82-5)			
Aquatic			
<i>Acute</i>			
Fish	LC50	Fathead minnow (Pimephales promelas)	2.1 - 2.98 mg/l, 96 hours

* Estimates for product may be based on additional component data not shown.

Persistence and degradability No data is available on the degradability of this product.

Bioaccumulative potential No data available.

Partition coefficient n-octanol / water (log Kow)

Acetone	-0.24
Isopropyl alcohol	0.05
n-Butane	2.89
n-Heptane	4.66
Propane	2.36

Mobility in soil No data available.

Other adverse effects No other adverse environmental effects (e.g. ozone depletion, photochemical ozone creation potential, endocrine disruption, global warming potential) are expected from this component.

13. Disposal considerations

Disposal of waste from residues / unused products	If discarded, this product is considered a RCRA ignitable waste, D001. Collect and reclaim or dispose in sealed containers at licensed waste disposal site. Contents under pressure. Do not puncture, incinerate or crush. Do not allow this material to drain into sewers/water supplies. Do not contaminate ponds, waterways or ditches with chemical or used container. Dispose in accordance with all applicable regulations.
Hazardous waste code	D001: Waste Flammable material with a flash point <140 F
Contaminated packaging	Empty containers should be taken to an approved waste handling site for recycling or disposal. Since emptied containers may retain product residue, follow label warnings even after container is emptied.

14. Transport information

DOT

UN number	UN1950
UN proper shipping name	Aerosols, flammable, Limited Quantity
Transport hazard class(es)	
Class	2.1
Subsidiary risk	-
Label(s)	2.1
Packing group	Not applicable.
Special precautions for user	Read safety instructions, SDS and emergency procedures before handling.
Special provisions	N82
Packaging exceptions	306
Packaging non bulk	None
Packaging bulk	None

IATA

UN number	UN1950
UN proper shipping name	Aerosols, flammable, Limited Quantity
Transport hazard class(es)	
Class	2.1
Subsidiary risk	-
Packing group	Not applicable.
Environmental hazards	Yes
ERG Code	10L
Special precautions for user	Read safety instructions, SDS and emergency procedures before handling.
Other information	
Passenger and cargo aircraft	Allowed.
Cargo aircraft only	Allowed.

IMDG

UN number	UN1950
UN proper shipping name	AEROSOLS, LIMITED QUANTITY, MARINE POLLUTANT
Transport hazard class(es)	
Class	2
Subsidiary risk	-
Packing group	Not applicable.
Environmental hazards	
Marine pollutant	Yes
EmS	F-D, S-U
Special precautions for user	Read safety instructions, SDS and emergency procedures before handling.

15. Regulatory information

US federal regulations	This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200. All components are on the U.S. EPA TSCA Inventory List.
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TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)

Not regulated.

SARA 304 Emergency release notification

Not regulated.

US. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

Not listed.

US EPCRA (SARA Title III) Section 313 - Toxic Chemical: Listed substance

Not listed.

CERCLA Hazardous Substance List (40 CFR 302.4)

Acetone (CAS 67-64-1)

Isopropyl alcohol (CAS 67-63-0)

Toluene (CAS 108-88-3)

CERCLA Hazardous Substances: Reportable quantity

Acetone (CAS 67-64-1)

5000 LBS

Isopropyl alcohol (CAS 67-63-0)

100 LBS

Toluene (CAS 108-88-3) 1000 LBS

Spills or releases resulting in the loss of any ingredient at or above its RQ require immediate notification to the National Response Center (800-424-8802) and to your Local Emergency Planning Committee.

Clean Air Act (CAA) Section 112 Hazardous Air Pollutants (HAPs) List

Not regulated.

Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130)

n-Butane (CAS 106-97-8)

Propane (CAS 74-98-6)

Safe Drinking Water Act (SDWA) Not regulated.

Drug Enforcement Administration (DEA). List 2, Essential Chemicals (21 CFR 1310.02(b) and 1310.04(f)(2) and Chemical Code Number

Acetone (CAS 67-64-1) 6532

Toluene (CAS 108-88-3) 6594

Drug Enforcement Administration (DEA). List 1 & 2 Exempt Chemical Mixtures (21 CFR 1310.12(c))

Acetone (CAS 67-64-1) 35 %WV

Toluene (CAS 108-88-3) 35 %WV

DEA Exempt Chemical Mixtures Code Number

Acetone (CAS 67-64-1) 6532

Toluene (CAS 108-88-3) 594

Food and Drug Administration (FDA) Not regulated.

Superfund Amendments and Reauthorization Act of 1986 (SARA)

Section 311/312 Immediate Hazard - Yes

Hazard categories Delayed Hazard - Yes

Fire Hazard - Yes

Pressure Hazard - Yes

Reactivity Hazard - No

SARA 302 Extremely hazardous substance No

US state regulations

US. California Controlled Substances. CA Department of Justice (California Health and Safety Code Section 11100)

Not listed.

US. New Jersey Worker and Community Right-to-Know Act

Acetone (CAS 67-64-1)

n-Heptane (CAS 142-82-5)

Isopropyl alcohol (CAS 67-63-0)

n-Butane (CAS 106-97-8)

Propane (CAS 74-98-6)

Solvent Naphtha (petroleum), Medium Aliph. (CAS 64742-88-7)

Toluene (CAS 108-88-3)

US. Massachusetts RTK - Substance List

Acetone (CAS 67-64-1)

Isopropyl alcohol (CAS 67-63-0)

Molybdenum disulphide (CAS 1317-33-5)

n-Butane (CAS 106-97-8)

n-Heptane (CAS 142-82-5)

Propane (CAS 74-98-6)

Solvent Naphtha (petroleum), Medium Aliph. (CAS 64742-88-7)

US. Pennsylvania Worker and Community Right-to-Know Law

Acetone (CAS 67-64-1)

Isopropyl alcohol (CAS 67-63-0)

Toluene (CAS 108-88-3)

n-Butane (CAS 106-97-8)

n-Heptane (CAS 142-82-5)

Propane (CAS 74-98-6)

Solvent Naphtha (petroleum), Medium Aliph. (CAS 64742-88-7)

US. Rhode Island RTK

Acetone (CAS 67-64-1)

Isopropyl alcohol (CAS 67-63-0)

n-Butane (CAS 106-97-8)
Propane (CAS 74-98-6)
Toluene (CAS 108-88-3)

US. California Proposition 65

WARNING: This product contains a chemical known to the State of California to cause cancer and birth defects or other reproductive harm.

US - California Proposition 65 - CRT: Listed date/Carcinogenic substance

Benzene (CAS 71-43-2)	Listed: February 27, 1987
Ethanal (CAS 75-07-0)	Listed: April 1, 1988

US - California Proposition 65 - CRT: Listed date/Developmental toxin

Benzene (CAS 71-43-2)	Listed: December 26, 1997
Toluene (CAS 108-88-3)	Listed: January 1, 1991

US - California Proposition 65 - CRT: Listed date/Female reproductive toxin

Toluene (CAS 108-88-3)	Listed: August 7, 2009
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US - California Proposition 65 - CRT: Listed date/Male reproductive toxin

Benzene (CAS 71-43-2)	Listed: December 26, 1997
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Volatile organic compounds (VOC) regulations

EPA

VOC content (40 CFR 51.100(s)) 61.8 %

Consumer products (40 CFR 59, Subpt. C) Not regulated

State

Consumer products This product is regulated as a Dry Lubricant. This product is compliant for use in all 50 states.

VOC content (CA) 61.8 %

VOC content (OTC) 61.8 %

International Inventories

Country(s) or region	Inventory name	On inventory (yes/no)*
Australia	Australian Inventory of Chemical Substances (AICS)	No
Canada	Domestic Substances List (DSL)	Yes
Canada	Non-Domestic Substances List (NDSL)	No
China	Inventory of Existing Chemical Substances in China (IECSC)	No
Europe	European Inventory of Existing Commercial Chemical Substances (EINECS)	No
Europe	European List of Notified Chemical Substances (ELINCS)	No
Japan	Inventory of Existing and New Chemical Substances (ENCS)	No
Korea	Existing Chemicals List (ECL)	No
New Zealand	New Zealand Inventory	No
Philippines	Philippine Inventory of Chemicals and Chemical Substances (PICCS)	Yes
United States & Puerto Rico	Toxic Substances Control Act (TSCA) Inventory	Yes

*A "Yes" indicates that all components of this product comply with the inventory requirements administered by the governing country(s)

A "No" indicates that one or more components of the product are not listed or exempt from listing on the inventory administered by the governing country(s).

16. Other information, including date of preparation or last revision

Issue date	02-26-2015
Prepared by	Allison Cho
Version #	01
Further information	Not available.
HMIS® ratings	Health: 2* Flammability: 4 Physical hazard: 0 Personal protection: B
NFPA ratings	Health: 2 Flammability: 4 Instability: 0

NFPA ratings**Disclaimer**

CRC cannot anticipate all conditions under which this information and its product, or the products of other manufacturers in combination with its product, may be used. It is the user's responsibility to ensure safe conditions for handling, storage and disposal of the product, and to assume liability for loss, injury, damage or expense due to improper use. The information contained in this document applies to this specific material as supplied. It may not be valid for this material if it is used in combination with any other materials. This information is accurate to the best of CRC Industries' knowledge or obtained from sources believed by CRC to be accurate. Before using any product, read all warnings and directions on the label. For further clarification of any information contained on this (M)SDS consult your supervisor, a health & safety professional, or CRC Industries.



SAFETY DATA SHEET

1. Identification

Product identifier	QD® Contact Cleaner
Other means of identification	
Product code	02130, 02130-6
Recommended use	Electronic cleaner
Recommended restrictions	None known.
Manufacturer/Importer/Supplier/Distributor information	
Manufactured or sold by:	
Company name	CRC Industries, Inc.
Address	885 Louis Dr. Warminster, PA 18974 US
Telephone	
General Information	215-674-4300
Technical Assistance	800-521-3168
Customer Service	800-272-4620
24-Hour Emergency (CHEMTREC)	800-424-9300 (US) 703-527-3887 (International)
Website	www.crcindustries.com

2. Hazard(s) identification

Physical hazards	Flammable aerosols	Category 1
	Gases under pressure	Liquefied gas
Health hazards	Reproductive toxicity (fertility)	Category 2
	Specific target organ toxicity, single exposure	Category 3 narcotic effects
	Specific target organ toxicity, repeated exposure	Category 2
	Aspiration hazard	Category 1
Environmental hazards	Hazardous to the aquatic environment, acute hazard	Category 2
	Hazardous to the aquatic environment, long-term hazard	Category 2
OSHA defined hazards	Not classified.	

Label elements



Signal word Danger

Hazard statement Extremely flammable aerosol. Contains gas under pressure; may explode if heated. May be fatal if swallowed and enters airways. May cause drowsiness or dizziness. Suspected of damaging fertility. May cause damage to organs (central nervous system, eyes, skin, upper respiratory tract) through prolonged or repeated exposure. Toxic to aquatic life. Toxic to aquatic life with long lasting effects.

Precautionary statement

Prevention

Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Keep away from heat/sparks/open flames/hot surfaces. - No smoking. Do not spray on an open flame or other ignition source. Do not apply while equipment is energized. Pressurized container: Do not pierce or burn, even after use. Extinguish all flames, pilot lights and heaters. Vapors will accumulate readily and may ignite. Use only with adequate ventilation; maintain ventilation during use and until all vapors are gone. Open doors and windows or use other means to ensure a fresh air supply during use and while product is drying. If you experience any symptoms listed on this label, increase ventilation or leave the area. Do not breathe gas. Do not breathe mist or vapor. Wear protective gloves/protective clothing/eye protection/face protection. Avoid release to the environment.

Response

If swallowed: Immediately call a poison center/doctor. Do NOT induce vomiting. If inhaled: Remove person to fresh air and keep comfortable for breathing. Call a poison center/doctor if you feel unwell. If exposed or concerned: Get medical attention. Collect spillage.

Storage

Store in a well-ventilated place. Store locked up. Protect from sunlight. Do not expose to temperatures exceeding 50°C/122°F. Exposure to high temperature may cause can to burst.

Disposal

Dispose of contents/container in accordance with local/regional/national regulations.

Hazard(s) not otherwise classified (HNOC)

Static accumulating flammable liquid can become electrostatically charged even in bonded and grounded equipment. Sparks may ignite liquid and vapor. May cause flash fire or explosion.

3. Composition/information on ingredients

Mixtures

Chemical name	Common name and synonyms	CAS number	%
Naphtha (petroleum), hydrotreated light		64742-49-0	60 - 70
1,1-Difluoroethane	HFC-152a	75-37-6	20 - 30
n-Hexane		110-54-3	3 - 5
2,2,4-Trimethylpentane		540-84-1	1 - 3
Isopropyl alcohol		67-63-0	1 - 3
2,2-Dimethylbutane		75-83-2	< 0.2
2-Methylpentane		107-83-5	< 0.2

Specific chemical identity and/or percentage of composition has been withheld as a trade secret.

4. First-aid measures

Inhalation

Remove victim to fresh air and keep at rest in a position comfortable for breathing. Call a POISON CENTER or doctor/physician if you feel unwell.

Skin contact

Rinse skin with water/shower. Get medical attention if irritation develops and persists.

Eye contact

Rinse with water. Get medical attention if irritation develops and persists.

Ingestion

Call a physician or poison control center immediately. Rinse mouth. Do not induce vomiting. If vomiting occurs, keep head low so that stomach content doesn't get into the lungs.

Most important symptoms/effects, acute and delayed

May cause drowsiness and dizziness. Headache. Nausea, vomiting. Aspiration may cause pulmonary edema and pneumonitis. Prolonged exposure may cause chronic effects.

Indication of immediate medical attention and special treatment needed

Provide general supportive measures and treat symptomatically. Keep victim under observation. Symptoms may be delayed.

General information

IF exposed or concerned: Get medical advice/attention. Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves. Show this safety data sheet to the doctor in attendance.

5. Fire-fighting measures

Suitable extinguishing media

Water fog. Foam. Carbon dioxide (CO2). Dry chemical powder, carbon dioxide, sand or earth may be used for small fires only.

Unsuitable extinguishing media

None known.

Specific hazards arising from the chemical	Contents under pressure. Pressurized container may rupture when exposed to heat or flame. This product is a poor conductor of electricity and can become electrostatically charged. If sufficient charge is accumulated, ignition of flammable mixtures can occur. Static electricity accumulation may be significantly increased by the presence of small quantities of water or other contaminants. Material will float and may ignite on surface of water. During fire, gases hazardous to health may be formed.
Special protective equipment and precautions for firefighters	Firefighters must use standard protective equipment including flame retardant coat, helmet with face shield, gloves, rubber boots, and in enclosed spaces, SCBA.
Fire-fighting equipment/instructions	In case of fire: Stop leak if safe to do so. Move containers from fire area if you can do so without risk. Containers should be cooled with water to prevent vapor pressure build up.
General fire hazards	Extremely flammable aerosol. Contents under pressure. Pressurized container may rupture when exposed to heat or flame.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures	Keep unnecessary personnel away. Keep people away from and upwind of spill/leak. Keep out of low areas. Remove all possible sources of ignition in the surrounding area. Many gases are heavier than air and will spread along ground and collect in low or confined areas (sewers, basements, tanks). Wear appropriate protective equipment and clothing during clean-up. Do not breathe mist or vapor. Do not breathe gas. Emergency personnel need self-contained breathing equipment. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Ventilate closed spaces before entering them. Use appropriate containment to avoid environmental contamination. Local authorities should be advised if significant spillages cannot be contained. For personal protection, see section 8 of the SDS.
Methods and materials for containment and cleaning up	Eliminate all ignition sources (no smoking, flares, sparks, or flames in immediate area). Keep combustibles (wood, paper, oil, etc.) away from spilled material. This material is classified as a water pollutant under the Clean Water Act and should be prevented from contaminating soil or from entering sewage and drainage systems which lead to waterways. Stop the flow of material, if this is without risk. Wipe up with absorbent material (e.g. cloth, fleece). Clean surface thoroughly to remove residual contamination. For waste disposal, see section 13 of the SDS.
Environmental precautions	Avoid release to the environment. Prevent further leakage or spillage if safe to do so. Avoid discharge into drains, water courses or onto the ground. Inform appropriate managerial or supervisory personnel of all environmental releases. Use appropriate containment to avoid environmental contamination.

7. Handling and storage

Precautions for safe handling	Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Minimize fire risks from flammable and combustible materials (including combustible dust and static accumulating liquids) or dangerous reactions with incompatible materials. Handling operations that can promote accumulation of static charges include but are not limited to: mixing, filtering, pumping at high flow rates, splash filling, creating mists or sprays, tank and container filling, tank cleaning, sampling, gauging, switch loading, vacuum truck operations. Pressurized container: Do not pierce or burn, even after use. Do not use if spray button is missing or defective. Do not spray on a naked flame or any other incandescent material. Do not smoke while using or until sprayed surface is thoroughly dry. Do not cut, weld, solder, drill, grind, or expose containers to heat, flame, sparks, or other sources of ignition. Use caution around energized equipment. The metal container will conduct electricity if it contacts a live source. This may result in injury to the user from electrical shock and/or flash fire. Do not breathe mist or vapor. Do not breathe gas. Avoid prolonged exposure. Pregnant or breastfeeding women must not handle this product. Should be handled in closed systems, if possible. Use only in well-ventilated areas. Wear appropriate personal protective equipment. Wash hands thoroughly after handling. Avoid release to the environment. Observe good industrial hygiene practices. For product usage instructions, please see the product label.
Conditions for safe storage, including any incompatibilities	Level 3 Aerosol. Pressurized container. Protect from sunlight and do not expose to temperatures exceeding 50°C/122 °F. Do not puncture, incinerate or crush. Do not handle or store near an open flame, heat or other sources of ignition. This material can accumulate static charge which may cause spark and become an ignition source. Avoid spark promoters. These alone may be insufficient to remove static electricity. Store in a well-ventilated place. Store away from incompatible materials (see Section 10 of the SDS).

8. Exposure controls/personal protection

Occupational exposure limits

US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000)

Components	Type	Value
2,2,4-Trimethylpentane (CAS 540-84-1)	PEL	2350 mg/m3
		500 ppm
Isopropyl alcohol (CAS 67-63-0)	PEL	980 mg/m3
		400 ppm
n-Hexane (CAS 110-54-3)	PEL	1800 mg/m3
		500 ppm

US. ACGIH Threshold Limit Values

Components	Type	Value
2,2-Dimethylbutane (CAS 75-83-2)	STEL	1000 ppm
	TWA	500 ppm
2-Methylpentane (CAS 107-83-5)	STEL	1000 ppm
	TWA	500 ppm
Isopropyl alcohol (CAS 67-63-0)	STEL	400 ppm
	TWA	200 ppm
n-Hexane (CAS 110-54-3)	TWA	50 ppm

US. NIOSH: Pocket Guide to Chemical Hazards

Components	Type	Value
2,2,4-Trimethylpentane (CAS 540-84-1)	Ceiling	1800 mg/m3
	TWA	385 ppm 350 mg/m3 75 ppm
2,2-Dimethylbutane (CAS 75-83-2)	Ceiling	1800 mg/m3
	TWA	510 ppm 350 mg/m3 100 ppm
2-Methylpentane (CAS 107-83-5)	Ceiling	1800 mg/m3
	TWA	510 ppm 350 mg/m3 100 ppm
Isopropyl alcohol (CAS 67-63-0)	STEL	1225 mg/m3
	TWA	500 ppm 980 mg/m3 400 ppm
n-Hexane (CAS 110-54-3)	TWA	180 mg/m3 50 ppm

US. AIHA Workplace Environmental Exposure Level (WEEL) Guides

Components	Type	Value
1,1-Difluoroethane (CAS 75-37-6)	TWA	2700 mg/m3
		1000 ppm

Biological limit values

ACGIH Biological Exposure Indices

Components	Value	Determinant	Specimen	Sampling Time
Isopropyl alcohol (CAS 67-63-0)	40 mg/l	Acetone	Urine	*

**ACGIH Biological Exposure Indices
Components****Value****Determinant****Specimen****Sampling Time**

n-Hexane (CAS 110-54-3) 0.4 mg/l

2,5-Hexanedio
n, without
hydrolysis

Urine

*

* - For sampling details, please see the source document.

Exposure guidelines**US - California OELs: Skin designation**

n-Hexane (CAS 110-54-3)

Can be absorbed through the skin.

US ACGIH Threshold Limit Values: Skin designation

n-Hexane (CAS 110-54-3)

Can be absorbed through the skin.

**Appropriate engineering
controls**

Good general ventilation (typically 10 air changes per hour) should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level.

Individual protection measures, such as personal protective equipment**Eye/face protection**

Wear safety glasses with side shields (or goggles).

Skin protection**Hand protection**

Wear protective gloves such as: Nitrile. Polyvinyl chloride (PVC). Viton®.

Other

Wear suitable protective clothing. Use of an impervious apron is recommended.

Respiratory protection

If engineering controls are not feasible or if exposure exceeds the applicable exposure limits, use a NIOSH-approved cartridge respirator with an organic vapor cartridge. Use a self-contained breathing apparatus in confined spaces and for emergencies. Air monitoring is needed to determine actual employee exposure levels.

Thermal hazards

Wear appropriate thermal protective clothing, when necessary.

**General hygiene
considerations**

When using, do not eat, drink or smoke. Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants.

9. Physical and chemical properties

Appearance**Physical state**

Liquid.

Form

Aerosol.

Color

Clear. Colorless.

Odor

Alcoholic.

Odor threshold

Not available.

pH

Not available.

Melting point/freezing point

-127.3 °F (-88.5 °C) estimated

**Initial boiling point and boiling
range**

123 °F (50.6 °C) estimated

Flash point

< 0 °F (< -17.8 °C) Tag Closed Cup

Evaporation rate

Very fast.

Flammability (solid, gas)

Not available.

Upper/lower flammability or explosive limits**Flammability limit - lower
(%)**

0.9 % estimated

**Flammability limit - upper
(%)**

12 % estimated

Vapor pressure

2141.3 hPa estimated

Vapor density

> 1 (air = 1)

Relative density

0.72 estimated

Solubility (water)

Negligible.

Partition coefficient (n-octanol/water)	Not available.
Auto-ignition temperature	489.2 °F (254 °C) estimated
Decomposition temperature	Not available.
Viscosity (kinematic)	Not available.
Percent volatile	100 % estimated

10. Stability and reactivity

Reactivity	The product is stable and non-reactive under normal conditions of use, storage and transport.
Chemical stability	Material is stable under normal conditions.
Possibility of hazardous reactions	No dangerous reaction known under conditions of normal use.
Conditions to avoid	Heat, flames and sparks. Contact with incompatible materials.
Incompatible materials	Strong oxidizing agents. Strong acids.
Hazardous decomposition products	Carbon oxides.

11. Toxicological information

Information on likely routes of exposure

Ingestion	Droplets of the product aspirated into the lungs through ingestion or vomiting may cause a serious chemical pneumonia.
Inhalation	May cause damage to organs through prolonged or repeated exposure by inhalation. May cause drowsiness and dizziness. Headache. Nausea, vomiting. Prolonged inhalation may be harmful.
Skin contact	No adverse effects due to skin contact are expected.
Eye contact	Direct contact with eyes may cause temporary irritation.
Symptoms related to the physical, chemical and toxicological characteristics	May cause drowsiness and dizziness. Headache. Nausea, vomiting. Aspiration may cause pulmonary edema and pneumonitis.

Information on toxicological effects

Acute toxicity	May be fatal if swallowed and enters airways. Narcotic effects.
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Product	Species	Test Results
QD® Contact Cleaner		
Acute		
<i>Dermal</i>		
LD50	Rabbit	2807.0864 mg/kg estimated
<i>Inhalation</i>		
LC50	Rat	29004.0918 ppm, 4 hours estimated 29.3555 mg/l, 4 hours estimated
<i>Oral</i>		
LD50	Rat	21091.707 mg/kg estimated

* Estimates for product may be based on additional component data not shown.

Skin corrosion/irritation	Prolonged skin contact may cause temporary irritation.
Serious eye damage/eye irritation	Direct contact with eyes may cause temporary irritation.
Respiratory sensitization	Not available.
Skin sensitization	This product is not expected to cause skin sensitization.
Germ cell mutagenicity	No data available to indicate product or any components present at greater than 0.1% are mutagenic or genotoxic.
Carcinogenicity	This product is not considered to be a carcinogen by IARC, ACGIH, NTP, or OSHA.
Reproductive toxicity	Suspected of damaging fertility.
Specific target organ toxicity - single exposure	May cause drowsiness and dizziness.

Specific target organ toxicity - repeated exposure	May cause damage to organs through prolonged or repeated exposure: Central nervous system. Eyes. Skin. Upper respiratory tract.
Aspiration hazard	May be fatal if swallowed and enters airways. If aspirated into lungs during swallowing or vomiting, may cause chemical pneumonia, pulmonary injury or death.
Chronic effects	Prolonged inhalation may be harmful. May cause damage to organs through prolonged or repeated exposure.

12. Ecological information

Ecotoxicity	Toxic to aquatic life with long lasting effects.		
Product		Species	Test Results
QD® Contact Cleaner			
Aquatic			
Fish	LC50	Fish	1703.5929 mg/l, 96 hours estimated
Components		Species	Test Results
Isopropyl alcohol (CAS 67-63-0)			
Aquatic			
<i>Acute</i>			
Crustacea	EC50	Water flea (Daphnia magna)	7550 - 13299 mg/l, 48 hours
Fish	LC50	Fathead minnow (Pimephales promelas)	3200 mg/l, 96 hours
n-Hexane (CAS 110-54-3)			
Aquatic			
Fish	LC50	Fathead minnow (Pimephales promelas)	2.101 - 2.981 mg/l, 96 hours

* Estimates for product may be based on additional component data not shown.

Persistence and degradability No data is available on the degradability of this product.

Bioaccumulative potential No data available.

Partition coefficient n-octanol / water (log Kow)

1,1-Difluoroethane	0.75
2,2,4-Trimethylpentane	5.18
2,2-Dimethylbutane	3.82
2-Methylpentane	3.74
Isopropyl alcohol	0.05
n-Hexane	3.9

Mobility in soil No data available.

Other adverse effects No other adverse environmental effects (e.g. ozone depletion, photochemical ozone creation potential, endocrine disruption, global warming potential) are expected from this component.

13. Disposal considerations

Disposal of waste from residues / unused products	If discarded, this product is considered a RCRA ignitable waste, D001. Collect and reclaim or dispose in sealed containers at licensed waste disposal site. Contents under pressure. Do not puncture, incinerate or crush. Do not allow this material to drain into sewers/water supplies. Do not contaminate ponds, waterways or ditches with chemical or used container. Dispose in accordance with all applicable regulations.
Hazardous waste code	D001: Waste Flammable material with a flash point <140 F
Contaminated packaging	Empty containers should be taken to an approved waste handling site for recycling or disposal. Since emptied containers may retain product residue, follow label warnings even after container is emptied.

14. Transport information

DOT	
UN number	UN1950
UN proper shipping name	Aerosols, flammable, Limited Quantity
Transport hazard class(es)	
Class	2.1
Subsidiary risk	-
Label(s)	2.1
Packing group	Not applicable.

Special precautions for user	Read safety instructions, SDS and emergency procedures before handling.
Special provisions	N82
Packaging exceptions	306
Packaging non bulk	None
Packaging bulk	None

IATA

UN number	UN1950
UN proper shipping name	Aerosols, flammable, Limited Quantity
Transport hazard class(es)	
Class	2.1
Subsidiary risk	-
Packing group	Not applicable.
Environmental hazards	Yes
ERG Code	10L
Special precautions for user	Read safety instructions, SDS and emergency procedures before handling.

Other information

Passenger and cargo aircraft	Allowed.
Cargo aircraft only	Allowed.

IMDG

UN number	UN1950
UN proper shipping name	AEROSOLS, LIMITED QUANTITY, MARINE POLLUTANT
Transport hazard class(es)	
Class	2
Subsidiary risk	-
Packing group	Not applicable.
Environmental hazards	
Marine pollutant	Yes
EmS	F-D, S-U
Special precautions for user	Read safety instructions, SDS and emergency procedures before handling.

General information IMDG Regulated Marine Pollutant.

15. Regulatory information

US federal regulations This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.
All components are on the U.S. EPA TSCA Inventory List.

TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)

Not regulated.

SARA 304 Emergency release notification

Not regulated.

US. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

Not listed.

US EPCRA (SARA Title III) Section 313 - Toxic Chemical: Listed substance

n-Hexane (CAS 110-54-3)

CERCLA Hazardous Substance List (40 CFR 302.4)

2,2,4-Trimethylpentane (CAS 540-84-1)

n-Hexane (CAS 110-54-3)

CERCLA Hazardous Substances: Reportable quantity

2,2,4-Trimethylpentane (CAS 540-84-1) 1000 LBS

n-Hexane (CAS 110-54-3) 5000 LBS

Spills or releases resulting in the loss of any ingredient at or above its RQ require immediate notification to the National Response Center (800-424-8802) and to your Local Emergency Planning Committee.

Clean Air Act (CAA) Section 112 Hazardous Air Pollutants (HAPs) List

2,2,4-Trimethylpentane (CAS 540-84-1)

n-Hexane (CAS 110-54-3)

Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130)

1,1-Difluoroethane (CAS 75-37-6)

Safe Drinking Water Act (SDWA)	Not regulated.
Food and Drug Administration (FDA)	Not regulated.
Superfund Amendments and Reauthorization Act of 1986 (SARA)	
Section 311/312	Immediate Hazard - Yes
Hazard categories	Delayed Hazard - Yes
	Fire Hazard - Yes
	Pressure Hazard - Yes
	Reactivity Hazard - No
SARA 302 Extremely hazardous substance	No

US state regulations

US. California Controlled Substances. CA Department of Justice (California Health and Safety Code Section 11100)

Not listed.

US. New Jersey Worker and Community Right-to-Know Act

2,2,4-Trimethylpentane (CAS 540-84-1)
 2,2-Dimethylbutane (CAS 75-83-2)
 2-Methylpentane (CAS 107-83-5)
 1,1-Difluoroethane (CAS 75-37-6)
 Isopropyl alcohol (CAS 67-63-0)
 n-Hexane (CAS 110-54-3)

US. Massachusetts RTK - Substance List

1,1-Difluoroethane (CAS 75-37-6)
 2,2,4-Trimethylpentane (CAS 540-84-1)
 Isopropyl alcohol (CAS 67-63-0)
 n-Hexane (CAS 110-54-3)

US. Pennsylvania Worker and Community Right-to-Know Law

Isopropyl alcohol (CAS 67-63-0)
 2,2,4-Trimethylpentane (CAS 540-84-1)
 2,2-Dimethylbutane (CAS 75-83-2)
 2-Methylpentane (CAS 107-83-5)
 n-Hexane (CAS 110-54-3)

US. Rhode Island RTK

1,1-Difluoroethane (CAS 75-37-6)
 2,2,4-Trimethylpentane (CAS 540-84-1)
 n-Hexane (CAS 110-54-3)

US. California Proposition 65

California Safe Drinking Water and Toxic Enforcement Act of 1986 (Proposition 65): This material is not known to contain any chemicals currently listed as carcinogens or reproductive toxins.

Volatile organic compounds (VOC) regulations

EPA

VOC content (40 CFR 51.100(s)) 74.3 %

Consumer products (40 CFR 59, Subpt. C) Not regulated

State

Consumer products This product is regulated as an Electronic Cleaner. This product is compliant for use in all 50 states.

VOC content (CA) 74.3 %

VOC content (OTC) 74.3 %

International Inventories

Country(s) or region	Inventory name	On inventory (yes/no)*
Australia	Australian Inventory of Chemical Substances (AICS)	Yes
Canada	Domestic Substances List (DSL)	Yes
Canada	Non-Domestic Substances List (NDSL)	No
China	Inventory of Existing Chemical Substances in China (IECSC)	Yes

Country(s) or region	Inventory name	On inventory (yes/no)*
Europe	European Inventory of Existing Commercial Chemical Substances (EINECS)	Yes
Europe	European List of Notified Chemical Substances (ELINCS)	No
Japan	Inventory of Existing and New Chemical Substances (ENCS)	No
Korea	Existing Chemicals List (ECL)	Yes
New Zealand	New Zealand Inventory	Yes
Philippines	Philippine Inventory of Chemicals and Chemical Substances (PICCS)	Yes
United States & Puerto Rico	Toxic Substances Control Act (TSCA) Inventory	Yes

*A "Yes" indicates that all components of this product comply with the inventory requirements administered by the governing country(s)

A "No" indicates that one or more components of the product are not listed or exempt from listing on the inventory administered by the governing country(s).

16. Other information, including date of preparation or last revision

Issue date	09-29-2014
Prepared by	Allison Cho
Version #	01
Further information	CRC # 957
HMIS® ratings	Health: 1* Flammability: 4 Physical hazard: 0 Personal protection: B
NFPA ratings	Health: 1 Flammability: 4 Instability: 0

NFPA ratings



Disclaimer

CRC cannot anticipate all conditions under which this information and its product, or the products of other manufacturers in combination with its product, may be used. It is the user's responsibility to ensure safe conditions for handling, storage and disposal of the product, and to assume liability for loss, injury, damage or expense due to improper use. The information contained in this document applies to this specific material as supplied. It may not be valid for this material if it is used in combination with any other materials. This information is accurate to the best of CRC Industries' knowledge or obtained from sources believed by CRC to be accurate. Before using any product, read all warnings and directions on the label. For further clarification of any information contained on this (M)SDS consult your supervisor, a health & safety professional, or CRC Industries.

Sanford Corporation
2740 Washington Blvd.
Bellwood, IL 60104

Telephone No: 1-800-323-0749
Initiated By: Jamie Paulin
Date of Last Revision: 2/26/96
Medical Emergency No: 1-800-228-5635

0330 A

Section 1 - Product Identification

Product Name: Roll-On Stamp Pad Ink
Colors: Black, Red, Green, Brown

Section 2 - Composition

Dye, water, glycerine (56-81-5), diethylene glycol (111-46-6), polyethylene glycol (25322-68-3)

Section 3 - Physical / Chemical Characteristics

For glycerine:
Boiling Point: Greater than 550 F at 760 mm Hg
Vapor Pressure (mm Hg): Less than 0.1 mm Hg at 72 F
Specific Gravity: 1.2 - 1.3 at 22 C
Solubility in Water: Complete
Appearance / Odor: Water white, clear liquid, bland odor
Evaporation Rate: Not available

Section 4 - Fire and Explosion Hazard Data

Flash Point (Method Used): Greater than 390 F (PMCC)
Flammability Limits (% by volume): Lower: Not available Upper: Not available
Extinguishing Medium: N/A
Special Fire Fighting Procedures: N/A
Unusual Fire and Explosion Hazards: N/A

Section 5 - Reactivity Data

Stability:	Stable
Conditions to Avoid:	Not available
Chemical Incompatibility:	Not available
Hazardous Decomposition:	Not available
Hazardous Polymerization:	Will not occur

Section 6 - Health Hazard Data

Chemical Listed as Carcinogen or Potential Carcinogen:

IARC Monographs:	No
National Toxicology Program:	No
OSHA Regulated:	No

This product is not considered toxic under Federal Hazardous Substances Act regulations, Title 16, Part 1500. The product is considered safe when used under normal use conditions.

Section 7 - Precautions for Safe Handling and Use

Steps to be Taken in Case Material is Released or Spilled:	Wipe up with absorbent material and discard in accordance with Federal, State, and Local Regulations.
Waste Disposal Method:	In accordance with Federal, State, and Local Regulations.
Precautions to be Taken in Handling and Storing:	Do not squeeze bottle. Keep cap on bottle when not in use.
Other Precautions:	None

Section 8 - Personal Protection and Exposure Control Measures

Eye Protection:	None under normal use conditions.
Skin Protection:	None under normal use conditions.
Respiratory Protection:	None under normal use conditions.
Ventilation:	None under normal use conditions.
Protective Clothing:	None under normal use conditions.

HMIS Code	
Health	1
Flammability	0
Reactivity	0
Personal Protection	B

0 = Minimal / 4 = Severe Hazard

Sanford Corporation has been advised by council that the OSHA Hazard Communication Standard does not apply to the Sanford Product described in this MSDS. The reason for the exemption is contained in 29 CFR, Part 1910.1200, (b) (6) (ix), as amended July 1, 1994 per Federal Registrar. The information contained in this MSDS is forwarded to you for your information but is not meant to imply that the product is covered by the Hazard Communication Standard nor is the MSDS meant to comply with all requirements of the Hazard Communication Standard.

FLUIDSTap Magic
Xtra-
FoamyTap Magic
Xtra-ThickTap Magic
with
EP-XtraTap Magic
AluminumTap Magic
ProTapTap Magic
Formula 1
AqueousTap Magic
Formula 2
Eco-Oil**INFO**Where
To BuySizing
Chart

This MSDS covers part numbers 30004P, 30016P, 30128P, 30640P, 33840P and 37040P for

Tap Magic ProTap Cutting Fluid. [Click for a printable PDF.](#)

MATERIAL SAFETY DATA SHEET

U.S. DEPARTMENT OF LABOR, OCCUPATIONAL SAFETY AND HEALTH
ADMINISTRATION, HAZARD COMMUNICATION STANDARD, 29 CFR 1910.1200

The Steco Corporation
2330 Cantrell Road
P.O. Box 2238
Little Rock, AR 72203

Emergency Response: (800) 255-3924
Information: (800) 643-8026
Fax #: (501) 374-4278
Date Reviewed: August 15, 2011

TRADE NAME: TAP MAGIC PROTAP Cutting Fluid
CHEMICAL NAME & SYNONYMS: Hydrocarbon Mixture
DOT SHIPPING NAME: Not a regulated material
IATA SHIPPING NAME: No hazard label required. No limit on quantity.
HMIS/NFPA CODE: Health 0; Fire 1; Reactivity 0.
MANUFACTURING CODE NO.: 8358
COMMODITY CODE NO.: 332-9150

I. HAZARDOUS INGREDIENTS

This product contains no toxic or hazardous ingredients by OSHA criteria; however, as with any chemical product, exposure to liquids, vapors, mists and fumes should be minimized.

II. INGREDIENTS

Aliphatic Organic Acid: CAS# 112-80-1 >75% mixture
Aliphatic Organic Ester: CAS# 112-62-9 <15% mixture
Organic Polyol: CAS# None Assigned <10% mixture

III. PHYSICAL DATA

BOILING RANGE, (760 mm Mercury): 680 to 1000° F
SPECIFIC GRAVITY (Water = 1) (lbs/gal): (0.894) 7.46 lbs/gal
VAPOR PRESSURE (mm of Mercury) @ 75° F: Less Than 1
VAPOR DENSITY (Air = 1): Greater Than 5
SOLUBILITY IN WATER, % by weight: Less Than 1 (Insoluble)
EVAPORATION RATE (Butyl Acetate = 1): Less Than 0.01
% VOLATILE BY VOLUME @ 75° F: Less Than 1
APPEARANCE: Yellow Liquid
ODOR: Pleasant
pH: Nonaqueous

IV. FIRE & EXPLOSION DATA

LOWER FLAMMABLE LIMIT IN AIR (% by Volume): 1.0
UPPER FLAMMABLE LIMIT IN AIR (% by Volume): 15
FLASH POINT, PMCC: 370° F
AUTOIGNITION TEMPERATURE: 685° F
EXTINGUISHING MEDIA: Foam, Carbon Dioxide, Dry Chemical

V. HEALTH HAZARD INFORMATION

ROUTES OF ENTRY: Ingestion is the primary method of possible entry.

EFFECTS OF ACUTE OVEREXPOSURE:

INHALATION – (Unlikely due to low vapor pressure). Mist may cause headache, nasal, respiratory and eye irritation.

INGESTION – Headache, drowsiness, nausea, fatigue.

EYE – May cause pain and irritation.

EFFECTS OF CHRONIC OVEREXPOSURE:

SKIN CONTACT – Prolonged or repeated exposure may cause irritation.

CARCINOGENICITY: Not a carcinogen or suspect carcinogen.

EMERGENCY AND FIRST AID PROCEDURES:

EYE – Flush eyes gently with water for at least 15 minutes. Supportive treatment is recommended.

SKIN – Wash with mild soap and water. Remove wetted clothing until dry.

INHALATION – Remove to fresh air.

INGESTION – Do not induce vomiting. Call a physician and/or transport to emergency medical facility.

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VI. REACTIVITY DATA

Materials such as sawdust or cloth rags which have been wetted with lubricant may be subject to spontaneous combustion during storage.

VII. DISPOSAL, SPILL OR LEAK PROCEDURES

AQUATIC TOXICITY – Aquatic toxicity is low: Product is not soluble in water. Biodegradable.

SPILL OR LEAK PROCEDURES – Absorb with inert materials. Remove to out of doors and incinerate.

WASTE DISPOSAL METHOD – Tap Magic ProTap contains no environmentally hazardous substances. Small amounts may be incinerated in compliance with local, state and federal regulations. The recommended method of disposal for large quantities is recycling by a reclaimer or incineration. "If inert absorbents are employed in spill containment or cleanup, these absorbents must be non-biodegradable materials if destined for landfill disposal. Suitable absorbents include natural minerals (clay), activated charcoal, man-made polymers (HD polyethylene)."

VIII. SPECIAL PROTECTION INFORMATION

EYE PROTECTION – Standard eye protection should be worn when using this product.

SKIN PROTECTION – No special protection is needed. However, good personal hygiene practices should be followed.

RESPIRATORY – If application to which this product is being applied generates excessive mist or fumes, then appropriate respiratory protective equipment should be used. No special requirements under ordinary condition and use and proper ventilation of work area.

VENTILATION – No special requirements under ordinary conditions of use and with adequate ventilation.

IX. SPECIAL PRECAUTIONS

Product is ignitable, keep away from open flames. Do not expose to ignition sources. Do not store with strong oxidizers such as nitrates or perchlorates or oxygen under pressure. May cause swelling of some plastics and synthetic rubbers.

X. ADDITIONAL INFORMATION

Tap Magic ProTap DOES NOT CONTAIN 1,1,1-trichloroethane or any ozone depleting substances. PROTAP does not contain chlorine, phosphorous, active sulfur, nitrates, nitrite derivatives, amines, polynuclear aromatic compounds either as ingredients or trace contaminants. Shelf life is indefinite at ambient temperatures and left in original containers. Tap Magic ProTap does not contain any chemical compound listed on the SARA list of 'Extremely Hazardous Chemicals', and is in compliance with all of the requirements of the TSCA at the time of shipment. Caution: Any cutting fluid can be "overworked" or "overheated", causing it to break down. This overuse is identified by the sight of or strong odor of vapors or fumes not normally present. The effects of these vapors or fumes on human health have not been fully determined. After use of this product, clean and lubricate metal surfaces to avoid staining and/or corrosion.

By : Asa L. Morton, Chief Chemist, American Interplex Corporation, Little Rock, AR 72204, (501) 224-5060

Tap Magic is a division of The Steco Corporation
P.O. Box 2238 • Little Rock, Arkansas 72203 • USA
1-800-643-8026 • Fax 501-374-4278
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M A T E R I A L S A F E T Y D A T A S H E E T

Date Printed: 02/20/2014

Page: 1

Product Code: 90995F MSDS

Product Name: FF GCMI 90 BLACK ED VIII

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Product: FF GCMI 90 BLACK ED VIII

The J.M. Fry Company

4329 Eubank Road, Richmond, VA 23231

Information Phone: 804-236-8100

24-HR EMERGENCY PHONE: CHEMTREC 1-800-262-8200

2. COMPOSITION/INFORMATION ON HAZARDOUS INGREDIENTS

Component/Exposure Limits	CAS#	Weight %
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N/A

3. HAZARDS IDENTIFICATION

Potential Health Effects

EYES: MAY CAUSE IRRITATION OR BURNING.

SKIN: MAY DRY AND DEFAT SKIN CAUSING IRRITATION AND DERMATITIS AFTER REPEATED EXPOSURE. OTHER AFFECTS OF ABSORPTION ARE UNKNOWN.

INGESTION: INGESTION CAN CAUSE GASTROINTESTINAL IRRITATION AND NAUSEA. THE EXACT NATURE AND INTENSITY OF TOXIC EFFECTS FOLLOWING INGESTION IS UNKNOWN. SEEK MEDICAL ATTENTION.

INHALATION: VAPORS MAY CAUSE HEADACHE OR NAUSEA IN SENSITIVE INDIVIDUALS.

4. FIRST AID MEASURES

EYES: FLUSH WITH WATER OR EYE WASH SOLUTION, INCLUDING UNDER THE EYELIDS, FOR AT LEAST 15 MINUTES. CONTACT A PHYSICIAN IMMEDIATELY.

SKIN: REMOVE CONTAMINATED CLOTHING. WASH THOROUGHLY WITH SOAP AND WATER. IF IRRITATION OCCURS, CONTACT A PHYSICIAN.

INGESTION: GIVE ONE TO TWO GLASSES OF WATER. DO NOT INDUCE VOMITING. CONSULT A PHYSICIAN OR POISON CONTROL CENTER IMMEDIATELY. TREAT SYMPTOMATICALLY.

INHALATION: REMOVE TO FRESH AIR. RESTORE OR SUPPORT BREATHING. CONTACT A PHYSICIAN IF BREATHING DIFFICULTIES OCCUR.

NOTE TO PHYSICIANS: THIS PRODUCT HAS A PH OF 8.5 TO 9.5.

5. FIRE FIGHTING MEASURES

FLAMMABLE PROPERTIES:

Flash Point: >200 DEG F

Method: PM CC

M A T E R I A L S A F E T Y D A T A S H E E T

Date Printed: 02/20/2014

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Product Code: 90995F MSDS

Product Name: FF GCM1 90 BLACK ED VIII

FLAMMABLE LIMITS: (SOLVENT PORTION ONLY, IF APPLICABLE)

Lower flammable limit: N/A

Upper flammable limit: N/A

AUTOIGNITION TEMPERATURE: UNKNOWN

HAZARDOUS COMBUSTION PRODUCTS: MAY PRODUCE FUMES WHEN HEATED. FUMES WILL CONTAIN CARBON MONOXIDE, CARBON DIOXIDE AND VARIOUS OTHER DECOMPOSITION PRODUCTS. ALL DECOMPOSITION PRODUCTS ARE NOT KNOWN.

EXTINGUISHING MEDIA: FOAM, ALCOHOL FOAM, CO2, DRY CHEMICAL, WATER, WATER FOG.

FIREFIGHTING INSTRUCTIONS: SELF-CONTAINED BREATHING APPARATUS SHOULD BE WORN TO AVOID INHALATION OF CONCENTRATED VAPORS IN FIRE AREA. USE EXTINGUISHING MEDIA APPROPRIATE FOR SURROUNDING FIRE.

6. ACCIDENTAL RELEASE MEASURES

SMALL SPILL: DIKE TO PREVENT SPREAD USING ABSORBENT MATERIAL OR CHEMICAL DAMS. SCOOP OR PUMP MATERIAL INTO WATER PROOF CONTAINERS FOR DISPOSAL. STAINS MAY BE REMOVED WITH COMMERCIAL STRENGTH SOAP.

7. HANDLING AND STORAGE

HANDLING: HANDLE ACCORDING TO LABEL INSTRUCTIONS.

STORAGE: THIS PRODUCT HAS BEEN DESIGNED AND PACKAGED FOR INDUSTRIAL USE ONLY! STORE AWAY FROM EXCESSIVE HEAT, COLD OR FREEZING TEMPERATURES. DO NOT TRANSFER TO UNMARKED CONTAINERS. ROTATE STOCK. KEEP CONTAINERS CLOSED WHEN NOT IN USE.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

ENGINEERING CONTROLS: NONE NEEDED UNLESS TLV LIMITS ARE EXCEEDED.

RESPIRATORY PROTECTION: NOT NORMALLY REQUIRED WITH ADEQUATE VENTILATION. IF TLV IS EXCEEDED FOR AIRBORNE MISTS, USE NIOSH APPROVED RESPIRATOR OR SELF CONTAINED BREATHING APPARATUS.

SKIN PROTECTION: CHEMICAL-RESISTANT GLOVES, APRONS, AND COVERALLS RECOMMENDED WHEN MIXING, FILLING, POURING OR CLEANING EQUIPMENT.

EYE PROTECTION: PROTECTIVE GLASSES OR CHEMICAL-RESISTANT SPLASH GOGGLES RECOMMENDED WHEN HANDLING. MAINTAIN EYE WASH FACILITIES IN WORK AREA.

9. PHYSICAL AND CHEMICAL PROPERTIES

BOILING POINT: > 212 DEG F

MELTING POINT: NOT AVAILABLE.

FREEZING POINT: UNKNOWN

VAPOR PRESSURE: NOT AVAILABLE.

VAPOR DENSITY: HEAVIER THAN AIR

SOLUBILITY IN WATER: COMPLETE

M A T E R I A L S A F E T Y D A T A S H E E T

Date Printed: 02/20/2014

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Product Code: 90995F MSDS
Product Name: FF GCM1 90 BLACK ED VIII

SPECIFIC GRAVITY: 1.10
VOLATILE ORGANIC COMPOUNDS: 0.06 lb/gl
pH: 8.5-9.5
WEIGHT PER GALLON: 9.20 lb/gl
VOLATILE WEIGHT PERCENT: 78.00%
APPEARANCE: LIQUID, VARIOUS COLORS
ODOR: MILD ACRYLIC ODOR

10. STABILITY AND REACTIVITY

CHEMICAL STABILITY (CONDITIONS TO AVOID): STABLE UNDER NORMAL CONDITIONS OF USE. AVOID EXCESSIVE HEAT OR COLD. AVOID EXCESSIVE AGING BEYOND RECOMMENDED SHELF LIFE.

INCOMPATIBILITY: PRODUCT IS NORMALLY UNREACTIVE. STRONG ACIDS MAY CAUSE PRODUCT TO GEL.

HAZARDOUS DECOMPOSITION PRODUCTS: MAY PRODUCE FUMES WHEN HEATED. FUMES WILL CONTAIN CARBON MONOXIDE, CARBON DIOXIDE AND VARIOUS OTHER DECOMPOSITION PRODUCTS. ALL DECOMPOSITION PRODUCTS ARE NOT KNOWN.

HAZARDOUS POLYMERIZATION: WILL NOT OCCUR.

11. TOXICOLOGICAL INFORMATION

EYE: NO AVAILABLE INFORMATION.

SKIN: NO AVAILABLE INFORMATION.

ORAL: NO AVAILABLE INFORMATION

CHRONIC/CARCINOGENICITY: INFORMATION OBTAINED FROM OUR SUPPLIERS INDICATES THIS PRODUCT IS NOT RATED AS CARCINOGENIC UNDER NORMALLY EXPECTED CONDITIONS OF HANDLING AND USE.

12. ECOLOGICAL INFORMATION

ECOTOXICOLOGICAL INFORMATION: NO AVAILABLE INFORMATION.

13. DISPOSAL CONSIDERATIONS

DISPOSE OF IN ACCORDANCE WITH LOCAL, STATE, AND FEDERAL REGULATIONS.

14. TRANSPORT INFORMATION (Not all-inclusive)

NOT REGULATED PER U.S. DOT

15. REGULATORY INFORMATION (Not all-inclusive - Selected regulations represented)

SARA 312, SARA 313, and HAP Components:	CAS#	% BY WT.
ETHANOLAMINE (SKIN AND EYE IRRITANT)	141-43-5	0.60
AMMONIUM HYDROXIDE	1336-21-6	0.30

M A T E R I A L S A F E T Y D A T A S H E E T

Date Printed: 02/20/2014

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Product Code: 90995F MSDS

Product Name: FF GCM1 90 BLACK ED VIII

WARNING: THIS PRODUCT CONTAINS CHEMICAL(S) KNOWN TO THE STATE OF CALIFORNIA TO CAUSE CANCER, BIRTH DEFECTS, OR OTHER REPRODUCTIVE HARM.

N/A

16. OTHER INFORMATION

HMIS CODES: H F R P

1 1 0 B

THE INFORMATION CONTAINED HEREIN IS ACCURATE TO THE BEST OF OUR KNOWLEDGE AND BELIEF. HOWEVER, SINCE CONDITIONS OF USE AND HANDLING ARE BEYOND OUR CONTROL, WE MAKE NO GUARANTEE ~~OF RESULTS AND ASSUME NO LIABILITY FOR DAMAGES INCURRED BY USE OF THIS MATERIAL. FINAL~~ DETERMINATION FOR SAFE USE OF THIS PRODUCT IS THE SOLE RESPONSIBILITY OF THE USER. THE ABOVE DATA IS CONFIDENTIAL, PROPRIETARY INFORMATION OF THE J.M. FRY COMPANY AND IS BEING TRANSMITTED TO ASSIST IN IMPROVING EMPLOYEE OR PUBLIC SAFETY AND HEALTH OR FOR GOVERNMENTAL AGENCY DATA COLLECTION PURPOSES ONLY.

M A T E R I A L S A F E T Y D A T A S H E E T

Date Printed: 04/16/2014

Page: 1

Product Code: 115109

Product Name: NF OVERPRINT VARNISH

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Product: NF OVERPRINT VARNISH

The J.M. Fry Company
4329 Eubank Road, Richmond, VA 23231
Information Phone: 804-236-8100

24-HR EMERGENCY PHONE: CHEMTREC 1-800-262-8200

2. COMPOSITION/INFORMATION ON HAZARDOUS INGREDIENTS

Component/Exposure Limits	CAS#	Weight %
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N/A

3. HAZARDS IDENTIFICATION

Potential Health Effects

EYES: MAY CAUSE IRRITATION OR BURNING.

SKIN: MAY DRY AND DEFAT SKIN CAUSING IRRITATION AND DERMATITIS AFTER REPEATED EXPOSURE. OTHER AFFECTS OF ABSORPTION ARE UNKNOWN.

INGESTION: INGESTION CAN CAUSE GASTROINTESTINAL IRRITATION AND NAUSEA. THE EXACT NATURE AND INTENSITY OF TOXIC EFFECTS FOLLOWING INGESTION IS UNKNOWN. SEEK MEDICAL ATTENTION.

INHALATION: VAPORS MAY CAUSE HEADACHE OR NAUSEA IN SENSITIVE INDIVIDUALS.

4. FIRST AID MEASURES

EYES: FLUSH WITH WATER OR EYE WASH SOLUTION, INCLUDING UNDER THE EYELIDS, FOR AT LEAST 15 MINUTES. CONTACT A PHYSICIAN IMMEDIATELY.

SKIN: REMOVE CONTAMINATED CLOTHING. WASH THOROUGHLY WITH SOAP AND WATER. IF IRRITATION OCCURS, CONTACT A PHYSICIAN.

INGESTION: GIVE ONE TO TWO GLASSES OF WATER. DO NOT INDUCE VOMITING. CONSULT A PHYSICIAN OR POISON CONTROL CENTER IMMEDIATELY. TREAT SYMPTOMATICALLY.

INHALATION: REMOVE TO FRESH AIR. RESTORE OR SUPPORT BREATHING. CONTACT A PHYSICIAN IF BREATHING DIFFICULTIES OCCUR.

NOTE TO PHYSICIANS:

5. FIRE FIGHTING MEASURES

FLAMMABLE PROPERTIES:

Flash Point: >200 DEG F

Method: PM CC

M A T E R I A L S A F E T Y D A T A S H E E T

Date Printed: 04/16/2014

Page: 2

Product Code: 115109

Product Name: NF OVERPRINT VARNISH

FLAMMABLE LIMITS: (SOLVENT PORTION ONLY, IF APPLICABLE)

Lower flammable limit: N/A

Upper flammable limit: N/A

AUTOIGNITION TEMPERATURE: UNKNOWN

HAZARDOUS COMBUSTION PRODUCTS: MAY PRODUCE FUMES WHEN HEATED. FUMES WILL CONTAIN CARBON MONOXIDE, CARBON DIOXIDE AND VARIOUS OTHER DECOMPOSITION PRODUCTS. ALL DECOMPOSITION PRODUCTS ARE NOT KNOWN.

EXTINGUISHING MEDIA: FOAM, ALCOHOL FOAM, CO2, DRY CHEMICAL, WATER, WATER FOG.

FIREFIGHTING INSTRUCTIONS: SELF-CONTAINED BREATHING APPARATUS SHOULD BE WORN TO AVOID INHALATION OF CONCENTRATED VAPORS IN FIRE AREA. USE EXTINGUISHING MEDIA APPROPRIATE FOR SURROUNDING FIRE.

6. ACCIDENTAL RELEASE MEASURES

SMALL SPILL: DIKE TO PREVENT SPREAD USING ABSORBENT MATERIAL OR CHEMICAL DAMS. SCOOP OR PUMP MATERIAL INTO WATER PROOF CONTAINERS FOR DISPOSAL. STAINS MAY BE REMOVED WITH COMMERCIAL STRENGTH SOAP.

7. HANDLING AND STORAGE

HANDLING: HANDLE ACCORDING TO LABEL INSTRUCTIONS.

STORAGE: THIS PRODUCT HAS BEEN DESIGNED AND PACKAGED FOR INDUSTRIAL USE ONLY! STORE AWAY FROM EXCESSIVE HEAT, COLD OR FREEZING TEMPERATURES. DO NOT TRANSFER TO UNMARKED CONTAINERS. ROTATE STOCK. KEEP CONTAINERS CLOSED WHEN NOT IN USE.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

ENGINEERING CONTROLS: NONE NEEDED UNLESS TLV LIMITS ARE EXCEEDED.

RESPIRATORY PROTECTION: NOT NORMALLY REQUIRED WITH ADEQUATE VENTILATION. IF TLV IS EXCEEDED FOR AIRBORNE MISTS, USE NIOSH APPROVED RESPIRATOR OR SELF CONTAINED BREATHING APPARATUS.

SKIN PROTECTION: CHEMICAL-RESISTANT GLOVES, APRONS, AND COVERALLS RECOMMENDED WHEN MIXING, FILLING, POURING OR CLEANING EQUIPMENT.

EYE PROTECTION: PROTECTIVE GLASSES OR CHEMICAL-RESISTANT SPLASH GOGGLES RECOMMENDED WHEN HANDLING. MAINTAIN EYE WASH FACILITIES IN WORK AREA.

9. PHYSICAL AND CHEMICAL PROPERTIES

BOILING POINT: > 212 DEG F

MELTING POINT: NOT AVAILABLE.

FREEZING POINT:

VAPOR PRESSURE: NOT AVAILABLE.

VAPOR DENSITY: HEAVIER THAN AIR

SOLUBILITY IN WATER: COMPLETE

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Product Code: 115109
Product Name: NF OVERPRINT VARNISH

SPECIFIC GRAVITY: 1.03
VOLATILE ORGANIC COMPOUNDS: 0.03 lb/gl
pH: 7.2-8.5
WEIGHT PER GALLON: 8.56 lb/gl
VOLATILE WEIGHT PERCENT: 63.68%
APPEARANCE: COLORLESS LIQUID
ODOR: MILD AMMONIA/ACRYLIC ODOR

10. STABILITY AND REACTIVITY

CHEMICAL STABILITY (CONDITIONS TO AVOID): STABLE UNDER NORMAL CONDITIONS OF USE. AVOID EXCESSIVE HEAT OR COLD. AVOID EXCESSIVE AGING BEYOND RECOMMENDED SHELF LIFE.

INCOMPATIBILITY: PRODUCT IS NORMALLY UNREACTIVE. STRONG ACIDS MAY CAUSE PRODUCT TO GEL.

HAZARDOUS DECOMPOSITION PRODUCTS: MAY PRODUCE FUMES WHEN HEATED. FUMES WILL CONTAIN CARBON MONOXIDE, CARBON DIOXIDE AND VARIOUS OTHER DECOMPOSITION PRODUCTS. ALL DECOMPOSITION PRODUCTS ARE NOT KNOWN.

HAZARDOUS POLYMERIZATION: WILL NOT OCCUR.

11. TOXICOLOGICAL INFORMATION

EYE: NO AVAILABLE INFORMATION.

SKIN: NO AVAILABLE INFORMATION.

ORAL: NO AVAILABLE INFORMATION

CHRONIC/CARCINOGENICITY: INFORMATION OBTAINED FROM OUR SUPPLIERS INDICATES THIS PRODUCT IS NOT RATED AS CARCINOGENIC UNDER NORMALLY EXPECTED CONDITIONS OF HANDLING AND USE.

12. ECOLOGICAL INFORMATION

ECOTOXICOLOGICAL INFORMATION: NO AVAILABLE INFORMATION.

13. DISPOSAL CONSIDERATIONS

DISPOSE OF IN ACCORDANCE WITH LOCAL, STATE, AND FEDERAL REGULATIONS.

14. TRANSPORT INFORMATION (Not all-inclusive)

NOT REGULATED PER U.S. DOT

15. REGULATORY INFORMATION (Not all-inclusive - Selected regulations represented)

SARA 312, SARA 313, and HAP Components:

CAS#

% BY WT.

N/A

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Product Code: 115109

Product Name: NF OVERPRINT VARNISH

WARNING: THIS PRODUCT CONTAINS CHEMICAL(S) KNOWN TO THE STATE OF CALIFORNIA TO CAUSE CANCER, BIRTH DEFECTS, OR OTHER REPRODUCTIVE HARM.

N/A

16. OTHER INFORMATION

HMIS CODES: H F R P
 1 1 0 B

THE INFORMATION CONTAINED HEREIN IS ACCURATE TO THE BEST OF OUR KNOWLEDGE AND BELIEF. HOWEVER, SINCE CONDITIONS OF USE AND HANDLING ARE BEYOND OUR CONTROL, WE MAKE NO GUARANTEE OF RESULTS AND ASSUME NO LIABILITY FOR DAMAGES INCURRED BY USE OF THIS MATERIAL. FINAL DETERMINATION FOR SAFE USE OF THIS PRODUCT IS THE SOLE RESPONSIBILITY OF THE USER. THE ABOVE DATA IS CONFIDENTIAL, PROPRIETARY INFORMATION OF THE J.M. FRY COMPANY AND IS BEING TRANSMITTED TO ASSIST IN IMPROVING EMPLOYEE OR PUBLIC SAFETY AND HEALTH OR FOR GOVERNMENTAL AGENCY DATA COLLECTION PURPOSES ONLY.

M A T E R I A L S A F E T Y D A T A S H E E T

Date Printed: 04/16/2014

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Product Code: M-000028

Product Name: SF PH ADJUSTER(#1000 SOLUTION)

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Product: SF PH ADJUSTER(#1000 SOLUTION)

The J.M. Fry Company

4329 Eubank Road, Richmond, VA 23231

Information Phone: 804-236-8100

24-HR EMERGENCY PHONE: CHEMTREC 1-800-262-8200

2. COMPOSITION/INFORMATION ON HAZARDOUS INGREDIENTS

Component/Exposure Limits	CAS#	Weight %
ETHANOLAMINE (SKIN AND EYE IRRITANT)	141-43-5	50.00
OSHA PEL: 3 PPM, ACGIH TLV: 3 PPM, OTHER: N/A		

3. HAZARDS IDENTIFICATION

Potential Health Effects

EYES: CAN CAUSE PERMANENT EYE INJURY. SYMPTOMS INCLUDE STINGING, TEARING, REDNESS, AND SWELLING OF EYE. CAN INJURE CORNEA AND CAUSE BLINDNESS.

SKIN: CAN CAUSE PERMANENT SKIN DAMAGE. SYMPTOMS MAY INCLUDE REDNESS, BURNING, AND SWELLING OF THE SKIN, BURNS AND OTHER SKIN DAMAGE. PASSAGE OF THIS MATERIAL INTO THE BODY THROUGH THE SKIN IS POSSIBLE, AND SKIN CONTACT MAY BE HARMFUL.

INGESTION: SWALLOWING THIS MATERIAL MAY BE HARMFUL OR FATAL. SYMPTOMS MAY INCLUDE SEVERE STOMACH AND INTESTINAL IRRITATION, ABDOMINAL PAIN, AND VOMITING OF BLOOD. SWALLOWING THIS MATERIAL MAY CAUSE BURNS AND DESTROY TISSUE IN MOUTH, THROAT, AND DIGESTIVE TRACT. LOW BLOOD PRESSURE AND SHOCK MAY OCCUR AS RESULT OF SEVERE TISSUE INJURY. THIS MATERIAL CAN GET INTO LUNGS DURING SWALLOWING OR VOMITING. THIS RESULTS IN LUNG INFLAMMATION AND OTHER LUNG INJURY.

INHALATION: BREATHING OF VAPOR OR MIST IS POSSIBLE. BREATHING THIS MATERIAL MAY BE HARMFUL OR FATAL. SYMPTOMS MAY INCLUDE SEVERE IRRITATION AND BURNS TO THE NOSE, THROAT, AND RESPIRATORY TRACT. SYMPTOMS USUALLY OCCUR AT AIR CONCENTRATIONS HIGHER THAN THE RECOMMENDED EXPOSURE LIMITS.

4. FIRST AID MEASURES

EYES: FLUSH WITH WATER OR EYE WASH SOLUTION, INCLUDING UNDER THE EYELIDS, FOR AT LEAST 15 MINUTES. CONTACT A PHYSICIAN IMMEDIATELY.

SKIN: REMOVE CONTAMINATED CLOTHING. WASH THOROUGHLY WITH SOAP AND WATER. IF IRRITATION OCCURS, CONTACT A PHYSICIAN.

INGESTION: IF SWALLOWED, DO NOT INDUCE VOMITING. GIVE LARGE QUANTITIES OF WATER. NEVER GIVE ANYTHING BY MOUTH TO AN UNCONSCIOUS PERSON. GET MEDICAL ATTENTION IMMEDIATELY.

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Product Name: SF PH ADJUSTER(#1000 SOLUTION)

INHALATION: REMOVE TO FRESH AIR. RESTORE OR SUPPORT BREATHING. CONTACT A PHYSICIAN IF BREATHING DIFFICULTIES OCCUR.

NOTE TO PHYSICIANS: THIS MATERIAL IS AN ASPIRATION HAZARD. POTENTIAL DANGER FROM ASPIRATION MUST BE WEIGHED AGAINST POSSIBLE ORAL TOXICITY WHEN DECIDING WHETHER TO INDUCE VOMITING. PREEXISTING DISORDERS OF THE FOLLOWING ORGANS MAY BE AGGRAVATED BY EXPOSURE TO THIS MATERIAL: SKIN, LUNG(FOR EXAMPLE, ASTHMA-LIKE CONDITIONS), LIVER, KIDNEY.

5. FIRE FIGHTING MEASURES

FLAMMABLE PROPERTIES:

Flash Point: 185 DEGREES F Method: TCC

FLAMMABLE LIMITS:(SOLVENT PORTION ONLY, IF APPLICABLE)

Lower flammable limit: 5.5

Upper flammable limit: 17

AUTOIGNITION TEMPERATURE: 770 DEGREES F

HAZARDOUS COMBUSTION PRODUCTS: BURNING MAY PRODUCE AMMONIA, NITROGEN OXIDES, CARBON MONOXIDE, AND CARBON DIOXIDE.

EXTINGUISHING MEDIA: FOAM, ALCOHOL FOAM, CO2, DRY CHEMICAL

FIREFIGHTING INSTRUCTIONS: WEAR A SELF-CONTAINED BREATHING APPARATUS WITH A FULL FACEPIECE OPERATED IN THE POSITIVE PRESSURE DEMAND MODE WITH APPROPRIATE TURN OUT GEAR AND CHEMICAL RESISTANT PERSONAL PROTECTIVE EQUIPMENT. WATER MUST NOT BE USED ON FIRE.

6. ACCIDENTAL RELEASE MEASURES

SMALL SPILL: ELIMINATE ALL SOURCES OF IGNITION SUCH AS FLARES, FLAMES, ELECTRICAL SPARKS. ABSORB LIQUID ON VERMICULITE, FLOOR ABSORBENT OR OTHER ABSORBENT MATERIAL. PERSONS NOT WEARING PROPER PERSONAL PROTECTIVE EQUIPMENT SHOULD BE EXCLUDED FROM AREA OF SPILL. SCOOP OR SCRAPE UP. PUT IN CONTAINER FOR RECOVERY OR DISPOSAL.

7. HANDLING AND STORAGE

HANDLING: CONTAINERS OF THIS MATERIAL MAY BE HAZARDOUS WHEN EMPTIED. SINCE EMPTIED CONTAINERS RETAIN PRODUCT RESIDUES(VAPOR, LIQUID, AND/OR SOLID), ALL HAZARD PRECAUTIONS GIVEN IN DATA SHEET MUST BE OBSERVED. ALL FIVE-GALLON PAILS AND LARGER CONTAINERS SHOULD BE GROUNDED WHEN MATERIAL IS TRANSFERRED.

STORAGE: THIS PRODUCT HAS BEEN DESIGNED AND PACKAGED FOR INDUSTRIAL USE ONLY! STORE AWAY FROM EXCESSIVE HEAT, COLD OR FREEZING TEMPERATURES. DO NOT TRANSFER TO UNMARKED CONTAINERS. DO NOT STORE IN ALUMINUM CONTAINERS. ROTATE STOCK. KEEP CONTAINERS CLOSED WHEN NOT IN USE.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

ENGINEERING CONTROLS: A SYSTEM OF LOCAL AND/OR GENERAL EXHAUST IS RECOMMENDED TO KEEP EMPLOYEE EXPOSURES BELOW THE AIRBORNE EXPOSURE LIMITS. LOCAL EXHAUST VENTILATION IS GENERALLY PREFERRED BECAUSE IT CAN CONTROL THE EMISSIONS OF CONTAMINANT AT ITS SOURCE,

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Product Code: M-000028

Product Name: SF PH ADJUSTER(#1000 SOLUTION)

PREVENTING DISPERSION OF IT INTO GENERAL WORK AREA.

RESPIRATORY PROTECTION: NOT NORMALLY REQUIRED WITH ADEQUATE VENTILATION. IF TLV IS EXCEEDED FOR AIRBORNE MISTS, USE NIOSH APPROVED RESPIRATOR OR SELF CONTAINED BREATHING APPARATUS.

SKIN PROTECTION: CHEMICAL-RESISTANT GLOVES, APRONS, AND COVERALLS RECOMMENDED WHEN MIXING, FILLING, POURING OR CLEANING EQUIPMENT.

EYE PROTECTION: PROTECTIVE GLASSES OR CHEMICAL-RESISTANT SPLASH GOGGLES RECOMMENDED WHEN HANDLING. MAINTAIN EYE WASH FACILITIES IN WORK AREA.

9. PHYSICAL AND CHEMICAL PROPERTIES

BOILING POINT: 340 DEGREES F
MELTING POINT: 50.5 DEGREES F
FREEZING POINT: 50.5 DEGREES F
VAPOR PRESSURE: < 1.000 mmHG@ 70 DEGREES F
VAPOR DENSITY: HEAVIER THAN AIR
SOLUBILITY IN WATER: COMPLETE
SPECIFIC GRAVITY: 1.01
VOLATILE ORGANIC COMPOUNDS: 4.20 lb/gal
pH: 10.5-12.2
WEIGHT PER GALLON: 8.40 lb/gal
VOLATILE WEIGHT PERCENT: 100.00%
APPEARANCE: COLORLESS LIQUID
ODOR: AMMONIA ODOR

10. STABILITY AND REACTIVITY

CHEMICAL STABILITY (CONDITIONS TO AVOID): STABLE UNDER NORMAL CONDITIONS OF USE

INCOMPATIBILITY: AVOID CONTACT WITH: ALDEHYDES, KETONES, ORGANIC ANHYDRIDES, ORGANIC HALIDES, STRONG ACIDS, STRONG ALKALIES, STRONG OXIDIZING AGENTS.

HAZARDOUS DECOMPOSITION PRODUCTS: BURNING MAY PRODUCE AMMONIA, NITROGEN OXIDES, CARBON DIOXIDE AND CARBON MONOXIDE.

HAZARDOUS POLYMERIZATION: WILL NOT OCCUR.

11. TOXICOLOGICAL INFORMATION

EYE: NO AVAILABLE INFORMATION.

SKIN: DERMAL LD50 (RABBIT): 1000mg/kg

ORAL: NO AVAILABLE INFORMATION

CHRONIC/CARCINOGENICITY: INFORMATION OBTAINED FROM OUR SUPPLIERS INDICATES THIS PRODUCT IS NOT RATED AS CARCINOGENIC UNDER NORMALLY EXPECTED CONDITIONS OF HANDLING AND USE.

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Product Code: M-000028

Product Name: SF PH ADJUSTER(#1000 SOLUTION)

12. ECOLOGICAL INFORMATION

ECOTOXICOLOGICAL INFORMATION: NO AVAILABLE INFORMATION.

13. DISPOSAL CONSIDERATIONS

DISPOSE OF IN ACCORDANCE WITH CURRENT LOCAL, STATE, AND FEDERAL REGULATIONS.

14. TRANSPORT INFORMATION (Not all-inclusive)

DOT INFORMATION- 49 CFR 172.101, DOT DESCRIPTION: ETHANOLAMINE,8,UN2491,III.

15. REGULATORY INFORMATION (Not all-inclusive - Selected regulations represented)

SARA 312, SARA 313, and HAP Components:

CAS#

% BY WT.

ETHANOLAMINE (SKIN AND EYE IRRITANT)

141-43-5 50.00

N/A

16. OTHER INFORMATION

HMIS CODES: H F R P
2 1 0 B

THE INFORMATION CONTAINED HEREIN IS ACCURATE TO THE BEST OF OUR KNOWLEDGE AND BELIEF. HOWEVER, SINCE CONDITIONS OF USE AND HANDLING ARE BEYOND OUR CONTROL, WE MAKE NO GUARANTEE OF RESULTS AND ASSUME NO LIABILITY FOR DAMAGES INCURRED BY USE OF THIS MATERIAL. FINAL DETERMINATION FOR SAFE USE OF THIS PRODUCT IS THE SOLE RESPONSIBILITY OF THE USER. THE ABOVE DATA IS CONFIDENTIAL, PROPRIETARY INFORMATION OF THE J.M. FRY COMPANY AND IS BEING TRANSMITTED TO ASSIST IN IMPROVING EMPLOYEE OR PUBLIC SAFETY AND HEALTH OR FOR GOVERNMENTAL AGENCY DATA COLLECTION PURPOSES ONLY.

M A T E R I A L S A F E T Y D A T A S H E E T

Date Printed: 04/16/2014

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Product Code: M-007508

Product Name: FF PREM PLUS GCMI 103 YELLOW (ED.X)

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Product: FF PREM PLUS GCMI 103 YELLOW (ED.X)

The J.M. Fry Company
4329 Eubank Road, Richmond, VA 23231
Information Phone: 804-236-8100

24-HR EMERGENCY PHONE: CHEMTREC 1-800-262-8200

2. COMPOSITION/INFORMATION ON HAZARDOUS INGREDIENTS

Component/Exposure Limits	CAS#	Weight %
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N/A

3. HAZARDS IDENTIFICATION

Potential Health Effects

EYES: MAY CAUSE IRRITATION OR BURNING.

SKIN: MAY DRY AND DEFAT SKIN CAUSING IRRITATION AND DERMATITIS AFTER REPEATED EXPOSURE. OTHER AFFECTS OF ABSORPTION ARE UNKNOWN.

INGESTION: INGESTION CAN CAUSE GASTROINTESTINAL IRRITATION AND NAUSEA. THE EXACT NATURE AND INTENSITY OF TOXIC EFFECTS FOLLOWING INGESTION IS UNKNOWN. SEEK MEDICAL ATTENTION.

INHALATION: VAPORS MAY CAUSE HEADACHE OR NAUSEA IN SENSITIVE INDIVIDUALS.

4. FIRST AID MEASURES

EYES: FLUSH WITH WATER OR EYE WASH SOLUTION, INCLUDING UNDER THE EYELIDS, FOR AT LEAST 15 MINUTES. CONTACT A PHYSICIAN IMMEDIATELY.

SKIN: REMOVE CONTAMINATED CLOTHING. WASH THOROUGHLY WITH SOAP AND WATER. IF IRRITATION OCCURS, CONTACT A PHYSICIAN.

INGESTION: GIVE ONE TO TWO GLASSES OF WATER. DO NOT INDUCE VOMITING. CONSULT A PHYSICIAN OR POISON CONTROL CENTER IMMEDIATELY. TREAT SYMPTOMATICALLY.

INHALATION: REMOVE TO FRESH AIR. RESTORE OR SUPPORT BREATHING. CONTACT A PHYSICIAN IF BREATHING DIFFICULTIES OCCUR.

NOTE TO PHYSICIANS: THIS PRODUCT HAS A PH OF 8.5 TO 9.5.

5. FIRE FIGHTING MEASURES

FLAMMABLE PROPERTIES:

Flash Point: >200 DEG F

Method: PM CC

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Product Code: M-007508

Product Name: FF PREM PLUS GCMI 103 YELLOW (ED.X)

FLAMMABLE LIMITS: (SOLVENT PORTION ONLY, IF APPLICABLE)

Lower flammable limit: N/A

Upper flammable limit: N/A

AUTOIGNITION TEMPERATURE: UNKNOWN

HAZARDOUS COMBUSTION PRODUCTS: MAY PRODUCE FUMES WHEN HEATED. FUMES WILL CONTAIN CARBON MONOXIDE, CARBON DIOXIDE AND VARIOUS OTHER DECOMPOSITION PRODUCTS. ALL DECOMPOSITION PRODUCTS ARE NOT KNOWN.

EXTINGUISHING MEDIA: FOAM, ALCOHOL FOAM, CO2, DRY CHEMICAL, WATER, WATER FOG.

FIREFIGHTING INSTRUCTIONS: SELF-CONTAINED BREATHING APPARATUS SHOULD BE WORN TO AVOID INHALATION OF CONCENTRATED VAPORS IN FIRE AREA. USE EXTINGUISHING MEDIA APPROPRIATE FOR SURROUNDING FIRE.

6. ACCIDENTAL RELEASE MEASURES

SMALL SPILL: DIKE TO PREVENT SPREAD USING ABSORBENT MATERIAL OR CHEMICAL DAMS. SCOOP OR PUMP MATERIAL INTO WATER PROOF CONTAINERS FOR DISPOSAL. STAINS MAY BE REMOVED WITH COMMERCIAL STRENGTH SOAP.

7. HANDLING AND STORAGE

HANDLING: HANDLE ACCORDING TO LABEL INSTRUCTIONS.

STORAGE: THIS PRODUCT HAS BEEN DESIGNED AND PACKAGED FOR INDUSTRIAL USE ONLY! STORE AWAY FROM EXCESSIVE HEAT, COLD OR FREEZING TEMPERATURES. DO NOT TRANSFER TO UNMARKED CONTAINERS. ROTATE STOCK. KEEP CONTAINERS CLOSED WHEN NOT IN USE.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

ENGINEERING CONTROLS: NONE NEEDED UNLESS TLV LIMITS ARE EXCEEDED.

RESPIRATORY PROTECTION: NOT NORMALLY REQUIRED WITH ADEQUATE VENTILATION. IF TLV IS EXCEEDED FOR AIRBORNE MISTS, USE NIOSH APPROVED RESPIRATOR OR SELF CONTAINED BREATHING APPARATUS.

SKIN PROTECTION: CHEMICAL-RESISTANT GLOVES, APRONS, AND COVERALLS RECOMMENDED WHEN MIXING, FILLING, POURING OR CLEANING EQUIPMENT.

EYE PROTECTION: PROTECTIVE GLASSES OR CHEMICAL-RESISTANT SPLASH GOGGLES RECOMMENDED WHEN HANDLING. MAINTAIN EYE WASH FACILITIES IN WORK AREA.

9. PHYSICAL AND CHEMICAL PROPERTIES

BOILING POINT: > 212 DEG F

MELTING POINT: NOT AVAILABLE.

FREEZING POINT: UNKNOWN

VAPOR PRESSURE: NOT AVAILABLE.

VAPOR DENSITY: HEAVIER THAN AIR

SOLUBILITY IN WATER: COMPLETE

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Product Code: M-007508

Product Name: FF PREM PLUS GCM1 103 YELLOW (ED.X)

SPECIFIC GRAVITY: 1.20

VOLATILE ORGANIC COMPOUNDS: 0.06 lb/gl

pH: 8.5-9.5

WEIGHT PER GALLON: 9.97 lb/gl

VOLATILE WEIGHT PERCENT: 52.71%

APPEARANCE: LIQUID, VARIOUS COLORS

ODOR: MILD ACRYLIC ODOR

10. STABILITY AND REACTIVITY

CHEMICAL STABILITY (CONDITIONS TO AVOID): STABLE UNDER NORMAL CONDITIONS OF USE. AVOID EXCESSIVE HEAT OR COLD. AVOID EXCESSIVE AGING BEYOND RECOMMENDED SHELF LIFE.

INCOMPATIBILITY: PRODUCT IS NORMALLY UNREACTIVE. STRONG ACIDS MAY CAUSE PRODUCT TO GEL.

HAZARDOUS DECOMPOSITION PRODUCTS: MAY PRODUCE FUMES WHEN HEATED. FUMES WILL CONTAIN CARBON MONOXIDE, CARBON DIOXIDE AND VARIOUS OTHER DECOMPOSITION PRODUCTS. ALL DECOMPOSITION PRODUCTS ARE NOT KNOWN.

HAZARDOUS POLYMERIZATION: WILL NOT OCCUR.

11. TOXICOLOGICAL INFORMATION

EYE: NO AVAILABLE INFORMATION.

SKIN: NO AVAILABLE INFORMATION.

ORAL: NO AVAILABLE INFORMATION

CHRONIC/CARCINOGENICITY: INFORMATION OBTAINED FROM OUR SUPPLIERS INDICATES THIS PRODUCT IS NOT RATED AS CARCINOGENIC UNDER NORMALLY EXPECTED CONDITIONS OF HANDLING AND USE.

12. ECOLOGICAL INFORMATION

ECOTOXICOLOGICAL INFORMATION: NO AVAILABLE INFORMATION.

13. DISPOSAL CONSIDERATIONS

DISPOSE OF IN ACCORDANCE WITH LOCAL, STATE, AND FEDERAL REGULATIONS.

14. TRANSPORT INFORMATION (Not all-inclusive)

NOT REGULATED PER U.S. DOT

15. REGULATORY INFORMATION (Not all-inclusive - Selected regulations represented)

SARA 312, SARA 313, and HAP Components:	CAS#	% BY WT.
AMMONIUM HYDROXIDE	1336-21-6	0.68
2-BUTOXYETHANOL (GLYCOL ETHER EB)	111-76-2	0.21

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Product Code: M-007508

Product Name: FF PREM PLUS GCMI 103 YELLOW (ED.X)

2-(2-ETHOXYETHOXY)-ETHANOL

111-90-0

0.20

ETHANOLAMINE (SKIN AND EYE IRRITANT)

141-43-5

0.01

WARNING: THIS PRODUCT CONTAINS CHEMICAL(S) KNOWN TO THE STATE OF CALIFORNIA TO CAUSE CANCER, BIRTH DEFECTS, OR OTHER REPRODUCTIVE HARM.

N/A

16. OTHER INFORMATION

HMIS CODES: H F R P

1 1 0 B

~~THE INFORMATION CONTAINED HEREIN IS ACCURATE TO THE BEST OF OUR KNOWLEDGE AND BELIEF.~~
HOWEVER, SINCE CONDITIONS OF USE AND HANDLING ARE BEYOND OUR CONTROL, WE MAKE NO GUARANTEE OF RESULTS AND ASSUME NO LIABILITY FOR DAMAGES INCURRED BY USE OF THIS MATERIAL. FINAL DETERMINATION FOR SAFE USE OF THIS PRODUCT IS THE SOLE RESPONSIBILITY OF THE USER. THE ABOVE DATA IS CONFIDENTIAL, PROPRIETARY INFORMATION OF THE J.M. FRY COMPANY AND IS BEING TRANSMITTED TO ASSIST IN IMPROVING EMPLOYEE OR PUBLIC SAFETY AND HEALTH OR FOR GOVERNMENTAL AGENCY DATA COLLECTION PURPOSES ONLY.

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Product Code: M-009022

Product Name: SF ST. PATRICK'S GREEN

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Product: SF ST. PATRICK'S GREEN

The J.M. Fry Company

4329 Eubank Road, Richmond, VA 23231

Information Phone: 804-236-8100

24-HR EMERGENCY PHONE: CHEMTREC 1-800-262-8200

2. COMPOSITION/INFORMATION ON HAZARDOUS INGREDIENTS

Component/Exposure Limits	CAS#	Weight %
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N/A

3. HAZARDS IDENTIFICATION

Potential Health Effects

EYES: MAY CAUSE IRRITATION OR BURNING.

SKIN: MAY DRY AND DEFAT SKIN CAUSING IRRITATION AND DERMATITIS AFTER REPEATED EXPOSURE. OTHER AFFECTS OF ABSORPTION ARE UNKNOWN.

INGESTION: INGESTION CAN CAUSE GASTROINTESTINAL IRRITATION AND NAUSEA. THE EXACT NATURE AND INTENSITY OF TOXIC EFFECTS FOLLOWING INGESTION IS UNKNOWN. SEEK MEDICAL ATTENTION.

INHALATION: VAPORS MAY CAUSE HEADACHE OR NAUSEA IN SENSITIVE INDIVIDUALS.

4. FIRST AID MEASURES

EYES: FLUSH WITH WATER OR EYE WASH SOLUTION, INCLUDING UNDER THE EYELIDS, FOR AT LEAST 15 MINUTES. CONTACT A PHYSICIAN IMMEDIATELY.

SKIN: REMOVE CONTAMINATED CLOTHING. WASH THOROUGHLY WITH SOAP AND WATER. IF IRRITATION OCCURS, CONTACT A PHYSICIAN.

INGESTION: GIVE ONE TO TWO GLASSES OF WATER. DO NOT INDUCE VOMITING. CONSULT A PHYSICIAN OR POISON CONTROL CENTER IMMEDIATELY. TREAT SYMPTOMATICALLY.

INHALATION: REMOVE TO FRESH AIR. RESTORE OR SUPPORT BREATHING. CONTACT A PHYSICIAN IF BREATHING DIFFICULTIES OCCUR.

NOTE TO PHYSICIANS: THIS PRODUCT HAS A PH OF 8.5 TO 9.5.

5. FIRE FIGHTING MEASURES

FLAMMABLE PROPERTIES:

Flash Point: >200 DEG F

Method: PM CC

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Product Code: M-009022

Product Name: SF ST. PATRICK'S GREEN

FLAMMABLE LIMITS: (SOLVENT PORTION ONLY, IF APPLICABLE)

Lower flammable limit: N/A

Upper flammable limit: N/A

AUTOIGNITION TEMPERATURE: UNKNOWN

HAZARDOUS COMBUSTION PRODUCTS: MAY PRODUCE FUMES WHEN HEATED. FUMES WILL CONTAIN CARBON MONOXIDE, CARBON DIOXIDE AND VARIOUS OTHER DECOMPOSITION PRODUCTS. ALL DECOMPOSITION PRODUCTS ARE NOT KNOWN.

EXTINGUISHING MEDIA: FOAM, ALCOHOL FOAM, CO2, DRY CHEMICAL, WATER, WATER FOG.

FIREFIGHTING INSTRUCTIONS: SELF-CONTAINED BREATHING APPARATUS SHOULD BE WORN TO AVOID INHALATION OF CONCENTRATED VAPORS IN FIRE AREA. USE EXTINGUISHING MEDIA APPROPRIATE FOR SURROUNDING FIRE.

6. ACCIDENTAL RELEASE MEASURES

SMALL SPILL: DIKE TO PREVENT SPREAD USING ABSORBENT MATERIAL OR CHEMICAL DAMS. SCOOP OR PUMP MATERIAL INTO WATER PROOF CONTAINERS FOR DISPOSAL. STAINS MAY BE REMOVED WITH COMMERCIAL STRENGTH SOAP.

7. HANDLING AND STORAGE

HANDLING: HANDLE ACCORDING TO LABEL INSTRUCTIONS.

STORAGE: THIS PRODUCT HAS BEEN DESIGNED AND PACKAGED FOR INDUSTRIAL USE ONLY! STORE AWAY FROM EXCESSIVE HEAT, COLD OR FREEZING TEMPERATURES. DO NOT TRANSFER TO UNMARKED CONTAINERS. ROTATE STOCK. KEEP CONTAINERS CLOSED WHEN NOT IN USE.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

ENGINEERING CONTROLS: NONE NEEDED UNLESS TLV LIMITS ARE EXCEEDED.

RESPIRATORY PROTECTION: NOT NORMALLY REQUIRED WITH ADEQUATE VENTILATION. IF TLV IS EXCEEDED FOR AIRBORNE MISTS, USE NIOSH APPROVED RESPIRATOR OR SELF CONTAINED BREATHING APPARATUS.

SKIN PROTECTION: CHEMICAL-RESISTANT GLOVES, APRONS, AND COVERALLS RECOMMENDED WHEN MIXING, FILLING, POURING OR CLEANING EQUIPMENT.

EYE PROTECTION: PROTECTIVE GLASSES OR CHEMICAL-RESISTANT SPLASH GOGGLES RECOMMENDED WHEN HANDLING. MAINTAIN EYE WASH FACILITIES IN WORK AREA.

9. PHYSICAL AND CHEMICAL PROPERTIES

BOILING POINT: > 212 DEG F

MELTING POINT: NOT AVAILABLE.

FREEZING POINT: UNKNOWN

VAPOR PRESSURE: NOT AVAILABLE.

VAPOR DENSITY: HEAVIER THAN AIR

SOLUBILITY IN WATER: COMPLETE

M A T E R I A L S A F E T Y D A T A S H E E T

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Product Code: M-009022

Product Name: SF ST. PATRICK'S GREEN

SPECIFIC GRAVITY: 1.37

VOLATILE ORGANIC COMPOUNDS: 0.08 lb/gl

pH: 8.5-9.5

WEIGHT PER GALLON: 11.41 lb/gl

VOLATILE WEIGHT PERCENT: 44.79%

APPEARANCE: LIQUID, VARIOUS COLORS

ODOR: MILD ACRYLIC ODOR

10. STABILITY AND REACTIVITY

CHEMICAL STABILITY (CONDITIONS TO AVOID): STABLE UNDER NORMAL CONDITIONS OF USE. AVOID EXCESSIVE HEAT OR COLD. AVOID EXCESSIVE AGING BEYOND RECOMMENDED SHELF LIFE.

INCOMPATIBILITY: PRODUCT IS NORMALLY UNREACTIVE. STRONG ACIDS MAY CAUSE PRODUCT TO GEL.

HAZARDOUS DECOMPOSITION PRODUCTS: MAY PRODUCE FUMES WHEN HEATED. FUMES WILL CONTAIN CARBON MONOXIDE, CARBON DIOXIDE AND VARIOUS OTHER DECOMPOSITION PRODUCTS. ALL DECOMPOSITION PRODUCTS ARE NOT KNOWN.

HAZARDOUS POLYMERIZATION: WILL NOT OCCUR.

11. TOXICOLOGICAL INFORMATION

EYE: NO AVAILABLE INFORMATION.

SKIN: NO AVAILABLE INFORMATION.

ORAL: NO AVAILABLE INFORMATION

CHRONIC/CARCINOGENICITY: INFORMATION OBTAINED FROM OUR SUPPLIERS INDICATES THIS PRODUCT IS NOT RATED AS CARCINOGENIC UNDER NORMALLY EXPECTED CONDITIONS OF HANDLING AND USE.

12. ECOLOGICAL INFORMATION

ECOTOXICOLOGICAL INFORMATION: NO AVAILABLE INFORMATION.

13. DISPOSAL CONSIDERATIONS

DISPOSE OF IN ACCORDANCE WITH LOCAL, STATE, AND FEDERAL REGULATIONS.

14. TRANSPORT INFORMATION (Not all-inclusive)

NOT REGULATED PER U.S. DOT

15. REGULATORY INFORMATION (Not all-inclusive - Selected regulations represented)

SARA 312, SARA 313, and HAP Components:	CAS#	% BY WT.
AMMONIUM HYDROXIDE	1336-21-6	0.42
ETHANOLAMINE (SKIN AND EYE IRRITANT)	141-43-5	0.28

M A T E R I A L S A F E T Y D A T A S H E E T

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Product Code: M-009022

Product Name: SF ST. PATRICK'S GREEN

2-BUTOXYETHANOL (GLYCOL ETHER EB)

111-76-2

0.20

2-(2-ETHOXYETHOXY)-ETHANOL

111-90-0

0.12

WARNING: THIS PRODUCT CONTAINS CHEMICAL(S) KNOWN TO THE STATE OF CALIFORNIA TO CAUSE CANCER, BIRTH DEFECTS, OR OTHER REPRODUCTIVE HARM.

N/A

16. OTHER INFORMATION

HMIS CODES: H F R P

1 1 0 B

~~THE INFORMATION CONTAINED HEREIN IS ACCURATE TO THE BEST OF OUR KNOWLEDGE AND BELIEF.~~
HOWEVER, SINCE CONDITIONS OF USE AND HANDLING ARE BEYOND OUR CONTROL, WE MAKE NO GUARANTEE OF RESULTS AND ASSUME NO LIABILITY FOR DAMAGES INCURRED BY USE OF THIS MATERIAL. FINAL DETERMINATION FOR SAFE USE OF THIS PRODUCT IS THE SOLE RESPONSIBILITY OF THE USER. THE ABOVE DATA IS CONFIDENTIAL, PROPRIETARY INFORMATION OF THE J.M. FRY COMPANY AND IS BEING TRANSMITTED TO ASSIST IN IMPROVING EMPLOYEE OR PUBLIC SAFETY AND HEALTH OR FOR GOVERNMENTAL AGENCY DATA COLLECTION PURPOSES ONLY.

M A T E R I A L S A F E T Y D A T A S H E E T

Date Printed: 04/16/2014

Page: 1

Product Code: M-007506

Product Name: FF PREM PLUS GCMI 21 GREEN (ED.X)

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Product: FF PREM PLUS GCMI 21 GREEN (ED.X)

The J.M. Fry Company

4329 Eubank Road, Richmond, VA 23231

Information Phone: 804-236-8100

24-HR EMERGENCY PHONE: CHEMTREC 1-800-262-8200

2. COMPOSITION/INFORMATION ON HAZARDOUS INGREDIENTS

Component/Exposure Limits	CAS#	Weight %
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N/A

3. HAZARDS IDENTIFICATION

Potential Health Effects

EYES: MAY CAUSE IRRITATION OR BURNING.

SKIN: MAY DRY AND DEFAT SKIN CAUSING IRRITATION AND DERMATITIS AFTER REPEATED EXPOSURE. OTHER AFFECTS OF ABSORPTION ARE UNKNOWN.

INGESTION: INGESTION CAN CAUSE GASTROINTESTINAL IRRITATION AND NAUSEA. THE EXACT NATURE AND INTENSITY OF TOXIC EFFECTS FOLLOWING INGESTION IS UNKNOWN. SEEK MEDICAL ATTENTION.

INHALATION: VAPORS MAY CAUSE HEADACHE OR NAUSEA IN SENSITIVE INDIVIDUALS.

4. FIRST AID MEASURES

EYES: FLUSH WITH WATER OR EYE WASH SOLUTION, INCLUDING UNDER THE EYELIDS, FOR AT LEAST 15 MINUTES. CONTACT A PHYSICIAN IMMEDIATELY.

SKIN: REMOVE CONTAMINATED CLOTHING. WASH THOROUGHLY WITH SOAP AND WATER. IF IRRITATION OCCURS, CONTACT A PHYSICIAN.

INGESTION: GIVE ONE TO TWO GLASSES OF WATER. DO NOT INDUCE VOMITING. CONSULT A PHYSICIAN OR POISON CONTROL CENTER IMMEDIATELY. TREAT SYMPTOMATICALLY.

INHALATION: REMOVE TO FRESH AIR. RESTORE OR SUPPORT BREATHING. CONTACT A PHYSICIAN IF BREATHING DIFFICULTIES OCCUR.

NOTE TO PHYSICIANS: THIS PRODUCT HAS A PH OF 8.5 TO 9.5.

5. FIRE FIGHTING MEASURES

FLAMMABLE PROPERTIES:

Flash Point: >200 DEG F

Method: PM CC

M A T E R I A L S A F E T Y D A T A S H E E T

Date Printed: 04/16/2014

Page: 2

Product Code: M-007506

Product Name: FF PREM PLUS GCM1 21 GREEN (ED.X)

FLAMMABLE LIMITS: (SOLVENT PORTION ONLY, IF APPLICABLE)

Lower flammable limit: N/A

Upper flammable limit: N/A

AUTOIGNITION TEMPERATURE: UNKNOWN

HAZARDOUS COMBUSTION PRODUCTS: MAY PRODUCE FUMES WHEN HEATED. FUMES WILL CONTAIN CARBON MONOXIDE, CARBON DIOXIDE AND VARIOUS OTHER DECOMPOSITION PRODUCTS. ALL DECOMPOSITION PRODUCTS ARE NOT KNOWN.

EXTINGUISHING MEDIA: FOAM, ALCOHOL FOAM, CO2, DRY CHEMICAL, WATER, WATER FOG.

FIREFIGHTING INSTRUCTIONS: SELF-CONTAINED BREATHING APPARATUS SHOULD BE WORN TO AVOID INHALATION OF CONCENTRATED VAPORS IN FIRE AREA. USE EXTINGUISHING MEDIA APPROPRIATE FOR SURROUNDING FIRE.

6. ACCIDENTAL RELEASE MEASURES

SMALL SPILL: DIKE TO PREVENT SPREAD USING ABSORBENT MATERIAL OR CHEMICAL DAMS. SCOOP OR PUMP MATERIAL INTO WATER PROOF CONTAINERS FOR DISPOSAL. STAINS MAY BE REMOVED WITH COMMERCIAL STRENGTH SOAP.

7. HANDLING AND STORAGE

HANDLING: HANDLE ACCORDING TO LABEL INSTRUCTIONS.

STORAGE: THIS PRODUCT HAS BEEN DESIGNED AND PACKAGED FOR INDUSTRIAL USE ONLY! STORE AWAY FROM EXCESSIVE HEAT, COLD OR FREEZING TEMPERATURES. DO NOT TRANSFER TO UNMARKED CONTAINERS. ROTATE STOCK. KEEP CONTAINERS CLOSED WHEN NOT IN USE.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

ENGINEERING CONTROLS: NONE NEEDED UNLESS TLV LIMITS ARE EXCEEDED.

RESPIRATORY PROTECTION: NOT NORMALLY REQUIRED WITH ADEQUATE VENTILATION. IF TLV IS EXCEEDED FOR AIRBORNE MISTS, USE NIOSH APPROVED RESPIRATOR OR SELF CONTAINED BREATHING APPARATUS.

SKIN PROTECTION: CHEMICAL-RESISTANT GLOVES, APRONS, AND COVERALLS RECOMMENDED WHEN MIXING, FILLING, POURING OR CLEANING EQUIPMENT.

EYE PROTECTION: PROTECTIVE GLASSES OR CHEMICAL-RESISTANT SPLASH GOGGLES RECOMMENDED WHEN HANDLING. MAINTAIN EYE WASH FACILITIES IN WORK AREA.

9. PHYSICAL AND CHEMICAL PROPERTIES

BOILING POINT: > 212 DEG F

MELTING POINT: NOT AVAILABLE.

FREEZING POINT: UNKNOWN

VAPOR PRESSURE: NOT AVAILABLE.

VAPOR DENSITY: HEAVIER THAN AIR

SOLUBILITY IN WATER: COMPLETE

M A T E R I A L S A F E T Y D A T A S H E E T

Date Printed: 04/16/2014

Page: 3

Product Code: M-007506

Product Name: FF PREM PLUS GCMI 21 GREEN (ED.X)

SPECIFIC GRAVITY: 1.21

VOLATILE ORGANIC COMPOUNDS: 0.06 lb/gl

pH: 8.5-9.5

WEIGHT PER GALLON: 10.05 lb/gl

VOLATILE WEIGHT PERCENT: 51.39%

APPEARANCE: LIQUID, VARIOUS COLORS

ODOR: MILD ACRYLIC ODOR

10. STABILITY AND REACTIVITY

CHEMICAL STABILITY (CONDITIONS TO AVOID): STABLE UNDER NORMAL CONDITIONS OF USE. AVOID EXCESSIVE HEAT OR COLD. AVOID EXCESSIVE AGING BEYOND RECOMMENDED SHELF LIFE.

INCOMPATIBILITY: PRODUCT IS NORMALLY UNREACTIVE. STRONG ACIDS MAY CAUSE PRODUCT TO GEL.

HAZARDOUS DECOMPOSITION PRODUCTS: MAY PRODUCE FUMES WHEN HEATED. FUMES WILL CONTAIN CARBON MONOXIDE, CARBON DIOXIDE AND VARIOUS OTHER DECOMPOSITION PRODUCTS. ALL DECOMPOSITION PRODUCTS ARE NOT KNOWN.

HAZARDOUS POLYMERIZATION: WILL NOT OCCUR.

11. TOXICOLOGICAL INFORMATION

EYE: NO AVAILABLE INFORMATION.

SKIN: NO AVAILABLE INFORMATION.

ORAL: NO AVAILABLE INFORMATION

CHRONIC/CARCINOGENICITY: INFORMATION OBTAINED FROM OUR SUPPLIERS INDICATES THIS PRODUCT IS NOT RATED AS CARCINOGENIC UNDER NORMALLY EXPECTED CONDITIONS OF HANDLING AND USE.

12. ECOLOGICAL INFORMATION

ECOTOXICOLOGICAL INFORMATION: NO AVAILABLE INFORMATION.

13. DISPOSAL CONSIDERATIONS

DISPOSE OF IN ACCORDANCE WITH LOCAL, STATE, AND FEDERAL REGULATIONS.

14. TRANSPORT INFORMATION (Not all-inclusive)

NOT REGULATED PER U.S. DOT

15. REGULATORY INFORMATION (Not all-inclusive - Selected regulations represented)

SARA 312, SARA 313, and HAP Components:

CAS#

% BY WT.

AMMONIUM HYDROXIDE

1336-21-6

0.68

2-BUTOXYETHANOL (GLYCOL ETHER EB)

111-76-2

0.23

M A T E R I A L S A F E T Y D A T A S H E E T

Date Printed: 04/16/2014

Page: 4

Product Code: M-007506

Product Name: FF PREM PLUS GCMI 21 GREEN (ED.X)

2-(2-ETHOXYETHOXY)-ETHANOL

111-90-0

0.20

ETHANOLAMINE (SKIN AND EYE IRRITANT)

141-43-5

0.01

WARNING: THIS PRODUCT CONTAINS CHEMICAL(S) KNOWN TO THE STATE OF CALIFORNIA TO CAUSE CANCER, BIRTH DEFECTS, OR OTHER REPRODUCTIVE HARM.

N/A

16. OTHER INFORMATION

HMIS CODES: H F R P

1 1 0 B

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M A T E R I A L S A F E T Y D A T A S H E E T

Date Printed: 04/16/2014

Page: 1

Product Code: M-009025

Product Name: SF PHILLIPS BLUE

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Product: SF PHILLIPS BLUE

The J.M. Fry Company
4329 Eubank Road, Richmond, VA 23231
Information Phone: 804-236-8100

24-HR EMERGENCY PHONE: CHEMTREC 1-800-262-8200

2. COMPOSITION/INFORMATION ON HAZARDOUS INGREDIENTS

Component/Exposure Limits	CAS#	Weight %
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N/A

3. HAZARDS IDENTIFICATION

Potential Health Effects

EYES: MAY CAUSE IRRITATION OR BURNING.

SKIN: MAY DRY AND DEFAT SKIN CAUSING IRRITATION AND DERMATITIS AFTER REPEATED EXPOSURE. OTHER AFFECTS OF ABSORPTION ARE UNKNOWN.

INGESTION: INGESTION CAN CAUSE GASTROINTESTINAL IRRITATION AND NAUSEA. THE EXACT NATURE AND INTENSITY OF TOXIC EFFECTS FOLLOWING INGESTION IS UNKNOWN. SEEK MEDICAL ATTENTION.

INHALATION: VAPORS MAY CAUSE HEADACHE OR NAUSEA IN SENSITIVE INDIVIDUALS.

4. FIRST AID MEASURES

EYES: FLUSH WITH WATER OR EYE WASH SOLUTION, INCLUDING UNDER THE EYELIDS, FOR AT LEAST 15 MINUTES. CONTACT A PHYSICIAN IMMEDIATELY.

SKIN: REMOVE CONTAMINATED CLOTHING. WASH THOROUGHLY WITH SOAP AND WATER. IF IRRITATION OCCURS, CONTACT A PHYSICIAN.

INGESTION: GIVE ONE TO TWO GLASSES OF WATER. DO NOT INDUCE VOMITING. CONSULT A PHYSICIAN OR POISON CONTROL CENTER IMMEDIATELY. TREAT SYMPTOMATICALLY.

INHALATION: REMOVE TO FRESH AIR. RESTORE OR SUPPORT BREATHING. CONTACT A PHYSICIAN IF BREATHING DIFFICULTIES OCCUR.

NOTE TO PHYSICIANS: THIS PRODUCT HAS A PH OF 8.5 TO 9.5.

5. FIRE FIGHTING MEASURES

FLAMMABLE PROPERTIES:

Flash Point: >200 DEG F

Method: PM CC

M A T E R I A L S A F E T Y D A T A S H E E T

Date Printed: 04/16/2014

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Product Code: M-009025
Product Name: SF PHILLIPS BLUE

FLAMMABLE LIMITS: (SOLVENT PORTION ONLY, IF APPLICABLE)

Lower flammable limit: N/A

Upper flammable limit: N/A

AUTOIGNITION TEMPERATURE: UNKNOWN

HAZARDOUS COMBUSTION PRODUCTS: MAY PRODUCE FUMES WHEN HEATED. FUMES WILL CONTAIN CARBON MONOXIDE, CARBON DIOXIDE AND VARIOUS OTHER DECOMPOSITION PRODUCTS. ALL DECOMPOSITION PRODUCTS ARE NOT KNOWN.

EXTINGUISHING MEDIA: FOAM, ALCOHOL FOAM, CO2, DRY CHEMICAL, WATER, WATER FOG.

FIREFIGHTING INSTRUCTIONS: SELF-CONTAINED BREATHING APPARATUS SHOULD BE WORN TO AVOID INHALATION OF CONCENTRATED VAPORS IN FIRE AREA. USE EXTINGUISHING MEDIA APPROPRIATE FOR SURROUNDING FIRE.

6. ACCIDENTAL RELEASE MEASURES

SMALL SPILL: DIKE TO PREVENT SPREAD USING ABSORBENT MATERIAL OR CHEMICAL DAMS. SCOOP OR PUMP MATERIAL INTO WATER PROOF CONTAINERS FOR DISPOSAL. STAINS MAY BE REMOVED WITH COMMERCIAL STRENGTH SOAP.

7. HANDLING AND STORAGE

HANDLING: HANDLE ACCORDING TO LABEL INSTRUCTIONS.

STORAGE: THIS PRODUCT HAS BEEN DESIGNED AND PACKAGED FOR INDUSTRIAL USE ONLY! STORE AWAY FROM EXCESSIVE HEAT, COLD OR FREEZING TEMPERATURES. DO NOT TRANSFER TO UNMARKED CONTAINERS. ROTATE STOCK. KEEP CONTAINERS CLOSED WHEN NOT IN USE.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

ENGINEERING CONTROLS: NONE NEEDED UNLESS TLV LIMITS ARE EXCEEDED.

RESPIRATORY PROTECTION: NOT NORMALLY REQUIRED WITH ADEQUATE VENTILATION. IF TLV IS EXCEEDED FOR AIRBORNE MISTS, USE NIOSH APPROVED RESPIRATOR OR SELF CONTAINED BREATHING APPARATUS.

SKIN PROTECTION: CHEMICAL-RESISTANT GLOVES, APRONS, AND COVERALLS RECOMMENDED WHEN MIXING, FILLING, POURING OR CLEANING EQUIPMENT.

EYE PROTECTION: PROTECTIVE GLASSES OR CHEMICAL-RESISTANT SPLASH GOGGLES RECOMMENDED WHEN HANDLING. MAINTAIN EYE WASH FACILITIES IN WORK AREA.

9. PHYSICAL AND CHEMICAL PROPERTIES

BOILING POINT: > 212 DEG F
MELTING POINT: NOT AVAILABLE.
FREEZING POINT: UNKNOWN
VAPOR PRESSURE: NOT AVAILABLE.
VAPOR DENSITY: HEAVIER THAN AIR
SOLUBILITY IN WATER: COMPLETE

M A T E R I A L S A F E T Y D A T A S H E E T

Date Printed: 04/16/2014

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Product Code: M-009025
Product Name: SF PHILLIPS BLUE

SPECIFIC GRAVITY: 1.34
VOLATILE ORGANIC COMPOUNDS: 0.09 lb/gl
pH: 8.5-9.5
WEIGHT PER GALLON: 11.16 lb/gal
VOLATILE WEIGHT PERCENT: 45.10%
APPEARANCE: LIQUID, VARIOUS COLORS
ODOR: MILD ACRYLIC ODOR

10. STABILITY AND REACTIVITY

CHEMICAL STABILITY (CONDITIONS TO AVOID): STABLE UNDER NORMAL CONDITIONS OF USE. AVOID EXCESSIVE HEAT OR COLD. AVOID EXCESSIVE AGING BEYOND RECOMMENDED SHELF LIFE.

INCOMPATIBILITY: PRODUCT IS NORMALLY UNREACTIVE. STRONG ACIDS MAY CAUSE PRODUCT TO GEL.

HAZARDOUS DECOMPOSITION PRODUCTS: MAY PRODUCE FUMES WHEN HEATED. FUMES WILL CONTAIN CARBON MONOXIDE, CARBON DIOXIDE AND VARIOUS OTHER DECOMPOSITION PRODUCTS. ALL DECOMPOSITION PRODUCTS ARE NOT KNOWN.

HAZARDOUS POLYMERIZATION: WILL NOT OCCUR.

11. TOXICOLOGICAL INFORMATION

EYE: NO AVAILABLE INFORMATION.

SKIN: NO AVAILABLE INFORMATION.

ORAL: NO AVAILABLE INFORMATION

CHRONIC/CARCINOGENICITY: INFORMATION OBTAINED FROM OUR SUPPLIERS INDICATES THIS PRODUCT IS NOT RATED AS CARCINOGENIC UNDER NORMALLY EXPECTED CONDITIONS OF HANDLING AND USE.

12. ECOLOGICAL INFORMATION

ECOTOXICOLOGICAL INFORMATION: NO AVAILABLE INFORMATION.

13. DISPOSAL CONSIDERATIONS

DISPOSE OF IN ACCORDANCE WITH LOCAL, STATE, AND FEDERAL REGULATIONS.

14. TRANSPORT INFORMATION (Not all-inclusive)

NOT REGULATED PER U.S. DOT

15. REGULATORY INFORMATION (Not all-inclusive - Selected regulations represented)

SARA 312, SARA 313, and HAP Components:	CAS#	% BY WT.
AMMONIUM HYDROXIDE	1336-21-6	0.39
ETHANOLAMINE (SKIN AND EYE IRRITANT)	141-43-5	0.31

M A T E R I A L S A F E T Y D A T A S H E E T

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Product Code: M-009025

Product Name: SF PHILLIPS BLUE

2-BUTOXYETHANOL (GLYCOL ETHER EB)

111-76-2

0.23

2-(2-ETHOXYETHOXY)-ETHANOL

111-90-0

0.12

WARNING: THIS PRODUCT CONTAINS CHEMICAL(S) KNOWN TO THE STATE OF CALIFORNIA TO CAUSE CANCER, BIRTH DEFECTS, OR OTHER REPRODUCTIVE HARM.

N/A

16. OTHER INFORMATION

HMIS CODES: H F R P

1 1 0 B

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Specialty Adhesives & Coatings, Inc.

P.O. BOX 18445, Memphis, TN 38181 – 3777 Air Park, Memphis, TN 38118

TELEPHONE: 901-794-8556

24-HOUR EMERGENCY CONTACT NUMBER: 1-800-728-9171

MATERIAL SAFETY DATA SHEET HOT MELT ADHESIVES

SECTION I

PRODUCT CLASS: Hot Melt Adhesives
MANUFACTURER'S CODES: HM 962

SECTION II - HAZARDOUS INGREDIENTS

NONE

NON-HAZARDOUS INGREDIENTS – 0 – 100%

SECTION III - PHYSICAL DATA

BOILING POINT - N/A	SPECIFIC GRAVITY – 0.92
VAPOR PRESSURE - N/A	MELTING POINT - 190 – 230
VAPOR DENSITY - N/A	EVAPORATION RATE - N/A
SOLUBILITY IN WATER - INSOLUBLE	
APPEARANCE AND ODOR - AMBER AND LOW ODOR	

SECTION IV - FIRE AND EXPLOSION HAZARD DATA

DOT CATEGORY - NON FLAMMABLE FLASH POINT - 450F
EXTINGUISHING MEDIA - CO₂

SPECIAL FIRE FIGHTING PROCEDURES - NONE
UNUSUAL FIRE AND EXPLOSION HAZARDS - NONE

(901) 794-8556 ~ 800-728-9171 ~ Fax (901) 794-9175
Memphis, TN 38118 ~ P. O. Box 18445 ~ Memphis, TN 38181-0445
3334 North Pitcher ~ Kalamazoo, MI 49004
1116 N. Great SW Parkway B ~ Grand Prairie, TX 75050
117 Industrial Dr. ~ St. Mary's, GA 31558

SECTION V - HEALTH HAZARD DATA

MAIN ROUTE OF ENTRY - INHALATION

TARGET ORGANS - SKIN COULD BE SEVERELY DAMAGED FROM CONTACT WITH
MOLTEN MATERIAL.

HEALTH HAZARDS (ACUTE AND CHRONIC) - NONE

FIRST AID:

**COOL AFFECTED AREA IMMEDIATELY, OBTAIN MEDICAL ASSISTANCE. DO
NOT ATTEMPT TO REMOVE COOLED ADHESIVE FROM AFFECTED SKIN AS
SEVERE DAMAGE COULD RESULT.**

SECTION VI - REACTIVITY DATA

STABILITY - STABLE

HAZARDOUS DECOMPOSITION OR BY-PRODUCTS - CARBON MONOXIDE

CONDITIONS TO AVOID - TEMPERATURES OVER 400F MAY CAUSE RESIN
DEGRADATION

HAZARDOUS POLYMERIZATION - CANNOT OCCUR

SECTION VII - SPILL OR LEAK PROCEDURES

SPILL - SWEEP UP MATERIAL, ALLOW MOLTEN SPILLS TO COOL BEFORE
SCRAPING UP AND DISPOSING.

WASTE DISPOSAL METHOD - IN ACCORDANCE WITH LOCAL
REGULATIONS

SECTION VIII - PROTECTIVE EQUIPMENT TO BE USED

VENTILATION - YES. DO NOT USE IN CONFINED SPACES.

PROTECTIVE GLOVES - YES

EYE PROTECTION - YES

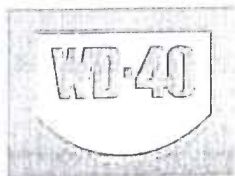
SECTION IX - PRECAUTIONS OR OTHER COMMENTS

STORAGE AND HANDLING - STORE IN COOL DRY PLACE, OPTIMUM
TEMPERATURE 70 F.

SECTION X - OTHER COMMENTS

NFPA Hazard Classification

Health: 1 Flammability: 1 Reactivity: 0 Special Hazards: None



Material Safety Data Sheet

1 - Chemical Product and Company Identification

Manufacturer: WD-40 Company Address: 1061 Cudahy Place (92110) P.O. Box 80607 San Diego, California, USA 92138 -0607 Telephone: Emergency only: 1-888-324-7596 (PROSAR) Information: 1-888-324-7596 Chemical Spills: 1-800-424-9300 (Chemtrec) 1-703-527-3887 (International Calls)	Chemical Name: Organic Mixture Trade Name: WD-40 Aerosol Product Use: Lubricant, Penetrant, Drives Out Moisture, Removes and Protects Surfaces From Corrosion MSDS Date Of Preparation: 6/8/12
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2 - Hazards Identification

Emergency Overview: DANGER! Flammable aerosol. Contents under pressure. Harmful or fatal if swallowed. If swallowed, may be aspirated and cause lung damage. May cause eye irritation. Avoid eye contact. Use with adequate ventilation. Keep away from heat, sparks and all other sources of ignition.
Symptoms of Overexposure: Inhalation: High concentrations may cause nasal and respiratory irritation and central nervous system effects such as headache, dizziness and nausea. Intentional abuse may be harmful or fatal. Skin Contact: Prolonged and/or repeated contact may produce mild irritation and defatting with possible dermatitis. Eye Contact: Contact may be irritating to eyes. May cause redness and tearing. Ingestion: This product has low oral toxicity. Swallowing may cause gastrointestinal irritation, nausea, vomiting and diarrhea. This product is an aspiration hazard. If swallowed, can enter the lungs and may cause chemical pneumonitis, severe lung damage and death. Chronic Effects: None expected. Medical Conditions Aggravated by Exposure: Preexisting eye, skin and respiratory conditions may be aggravated by exposure.
Suspected Cancer Agent: Yes No <input checked="" type="checkbox"/>

3 - Composition/Information on Ingredients

Ingredient	CAS #	Weight Percent
Aliphatic Hydrocarbon	64742-47-8	45-50
Petroleum Base Oil	64742-58-1 64742-53-6 64742-56-9 64742-65-0	<25
LVP Aliphatic Hydrocarbon	64742-47-8	12-18
Carbon Dioxide	124-38-9	2-3
Non-Hazardous Ingredients	Mixture	<10

4 - First Aid Measures

Ingestion (Swallowed): Aspiration Hazard. DO NOT induce vomiting. Call physician, poison control center or the WD-40 Safety Hotline at 1-888-324-7596 immediately.
Eye Contact: Flush thoroughly with water. Remove contact lenses if present after the first 5 minutes and continue flushing for several more minutes. Get medical attention if irritation persists.
Skin Contact: Wash with soap and water. If irritation develops and persists, get medical attention.

Inhalation (Breathing): If irritation is experienced, move to fresh air. Get medical attention if irritation or other symptoms develop and persist.

5 – Fire Fighting Measures

Extinguishing Media: Use water fog, dry chemical, carbon dioxide or foam. Do not use water jet or flooding amounts of water. Burning product will float on the surface and spread fire.

Special Fire Fighting Procedures: Firefighters should always wear positive pressure self-contained breathing apparatus and full protective clothing. Cool fire-exposed containers with water. Use shielding to protect against bursting containers.

Unusual Fire and Explosion Hazards: Contents under pressure. Keep away from ignition sources and open flames. Exposure of containers to extreme heat and flames can cause them to rupture often with violent force. Vapors are heavier than air and may travel along surfaces to remote ignition sources and flash back.

6 – Accidental Release Measures

Wear appropriate protective clothing (see Section 8). Eliminate all sources of ignition and ventilate area. Leaking cans should be placed in a plastic bag or open pail until the pressure has dissipated. Contain and collect liquid with an inert absorbent and place in a container for disposal. Clean spill area thoroughly. Report spills to authorities as required.

7 – Handling and Storage

Handling: Avoid contact with eyes. Avoid prolonged contact with skin. Avoid breathing vapors or aerosols. Use only with adequate ventilation. Keep away from heat, sparks, pilot lights, hot surfaces and open flames. Unplug electrical tools, motors and appliances before spraying or bringing the can near any source of electricity. Electricity can burn a hole in the can and cause contents to burst into flames. To avoid serious burn injury, do not let the can touch battery terminals, electrical connections on motors or appliances or any other source of electricity. Wash thoroughly with soap and water after handling. Keep containers closed when not in use. Keep out of the reach of children. Do not puncture, crush or incinerate containers, even when empty.

Storage: Store in a cool, well-ventilated area, away from incompatible materials. Do not store above 120°F or in direct sunlight. U.F.C (NFPA 30B) Level 3 Aerosol.

8 – Exposure Controls/Personal Protection

Chemical	Occupational Exposure Limits
Aliphatic Hydrocarbon	1200 mg/m3 TWA (manufacturer recommended)
Petroleum Base Oil	5 mg/m3 TWA, 10 mg/m3 STEL ACGIH TLV 5 mg/m3 TWA OSHA PEL
LVP Aliphatic Hydrocarbon	1200 mg/m3 TWA (manufacturer recommended)
Carbon Dioxide	5000 ppm TWA (OSHA/ACGIH), 30,000 ppm STEL (ACGIH)
Non-Hazardous Ingredients	None Established

The Following Controls are Recommended for Normal Consumer Use of this Product

Engineering Controls: Use in a well-ventilated area.

Personal Protection:

Eye Protection: Avoid eye contact. Always spray away from your face.

Skin Protection: Avoid prolonged skin contact. Chemical resistant gloves recommended for operations where skin contact is likely.

Respiratory Protection: None needed for normal use with adequate ventilation.

For Bulk Processing or Workplace Use the Following Controls are Recommended

Engineering Controls: Use adequate general and local exhaust ventilation to maintain exposure levels below that occupational exposure limits.

Personal Protection:

Eye Protection: Safety goggles recommended where eye contact is possible.

Skin Protection: Wear chemical resistant gloves.

Respiratory Protection: None required if ventilation is adequate. If the occupational exposure limits are exceeded, wear a NIOSH approved respirator. Respirator selection and use should be based on contaminant type, form and concentration. Follow OSHA 1910.134, ANSI Z88.2 and good Industrial Hygiene practice.

Work/Hygiene Practices: Wash with soap and water after handling.

9 – Physical and Chemical Properties

Boiling Point:	361 - 369°F (183 - 187°C)	Specific Gravity:	0.8 – 0.82 @ 60°F
Solubility in Water:	Insoluble	pH:	Not Applicable
Vapor Pressure:	95-115 PSI @ 70°F	Vapor Density:	Greater than 1
Percent Volatile:	70-75%	VOC:	412 grams/liter (49.5%)
Coefficient of Water/Oil Distribution:	Not Determined	Appearance/Odor	Light amber liquid/mild odor
Flash Point:	122°F (49°C) Tag Open Cup (concentrate)	Flammable Limits: (Solvent Portion)	LEL: 0.6% UEL: 8.0%
Pour Point:	-63°C (-81.4°F) ASTM D-97	Kinematic Viscosity:	2.79-2.96cSt @ 100°F

10 – Stability and Reactivity

Stability: Stable

Hazardous Polymerization: Will not occur.

Conditions to Avoid: Avoid heat, sparks, flames and other sources of ignition. Do not puncture or incinerate containers.

Incompatibilities: Strong oxidizing agents.

Hazardous Decomposition Products: Carbon monoxide and carbon dioxide.

11 – Toxicological Information

The oral toxicity of this product is estimated to be greater than 5,000 mg/kg based on an assessment of the ingredients. This product is not classified as toxic by established criteria. It is an aspiration hazard. None of the components of this product is listed as a carcinogen or suspected carcinogen or is considered a reproductive hazard.

12 – Ecological Information

No data is currently available.

13 - Disposal Considerations

If this product becomes a waste, it would be expected to meet the criteria of a RCRA ignitable hazardous waste (D001). However, it is the responsibility of the generator to determine at the time of disposal the proper classification and method of disposal. Dispose in accordance with federal, state, and local regulations.

14 – Transportation Information

DOT Surface Shipping Description: Consumer Commodity, ORM-D

After 1/1/2014 UN1950, Aerosols, 2.1 Ltd. Qty (Note: Shipping Papers are not required for Limited Quantities unless transported by air or vessel – each package must be marked with the Limited Quantity Mark)

IMDG Shipping Description: UN1950, Aerosols, 2.1, LTD QTY

ICAO Shipping Description: UN1950, Aerosols, flammable, 2.1 NOTE: WD-40 does not test aerosol cans to assure that they meet the pressure and other requirements for transport by air. We do not recommend that our aerosol products be transported by air.

15 – Regulatory Information

U.S. Federal Regulations:

CERCLA 103 Reportable Quantity: This product is not subject to CERCLA reporting requirements, however, oil spills are reportable to the National Response Center under the Clean Water Act and many states have more stringent release reporting requirements. Report spills required under federal, state and local regulations.

SARA TITLE III:

Hazard Category For Section 311/312: Acute Health, Fire Hazard, Sudden Release of Pressure

Section 313 Toxic Chemicals: This product contains the following chemicals subject to SARA Title III

Section 313 Reporting requirements: None

Section 302 Extremely Hazardous Substances (TPQ): None

EPA Toxic Substances Control Act (TSCA) Status: All of the components of this product are listed on the TSCA inventory.

California Safe Drinking Water and Toxic Enforcement Act (Proposition 65): This product does not contain chemicals regulated under California Proposition 65.

VOC Regulations: This product complies with the consumer product VOC limits of CARB, the US EPA and states adopting the OTC VOC rules.

Canadian Environmental Protection Act: One of the components is listed on the NDSL. All of the other ingredients are listed on the Canadian Domestic Substances List or exempt from notification.


Canadian WHMIS Classification: Class B-5 (Flammable Aerosol)

This MSDS has been prepared according to the criteria of the Controlled Products Regulation (CPR) and the MSDS contains all of the information required by the CPR.

16 – Other Information:

HMIS Hazard Rating:

Health – 1 (slight hazard), Fire Hazard – 4 (severe hazard), Reactivity – 0 (minimal hazard)

SIGNATURE:  _____

TITLE: Adm. Scientific Manager

REVISION DATE: June 2012

SUPERSEDES: March 2010

1. Chemical Product and Company Identification

Chemical Name: SLIP Plate Chain & Cable Aerosol

Manufacturer: Superior Graphite

Address: 10 S. Riverside Plaza

Chicago IL 60606

Information Number: (312) 559-2999

2. Composition/Information on Ingredients

Hazardous Components	CAS#	OSHA PEL	ACGIH TLV	Other Limits	%
Petroleum Oil (mist)	64742-52-5	5 mg/m ³	5 mg/m ³	None	<70
Purified Carbon (as total dust)	64743-05-1	15 mg/m ³	10 mg/m ³	None	<10
(as respirable dust)		5 mg/m ³	3 mg/m ³		
Heptane	142-82-5	500 ppm	400 ppm	None	<20
Acetone	67-64-1	750 ppm	750 ppm	None	<10
Butane	106-97-8	800 ppm	800 ppm	None	<6
Propane	74-98-6	1000 ppm	1000 ppm	None	<6

Notes:

3. Hazards Identification

Route (s) of Entry:	Inhalation	Skin	Ingestion
	Yes	Yes	Yes

Health Hazards (acute and chronic): Eye, skin and respiratory system irritant. Reports have associated repeated and prolonged occupational exposure to solvents with permanent brain, peripheral nervous system, and other internal organ damage. There is no reported human evidence that these effects occur when exposure is maintained below OSHA and ACGIH limits.

Carcinogenicity:	NTP	IARC Monographs	OSHA Regulated
	No	No	No

Notes:

Signs and Symptoms of Exposure:

Inhalation: Respiratory irritation, dizziness, headache, nausea, fatigue, drowsiness, impaired coordination, central nervous system depression or heart arrhythmia.

Skin: Contact may dry the skin prolonged contact may cause irritation. Can not be easily absorbed through the skin. Solvent action can dry and de-fat the skin causing skin to crack, leading to dermatitis.

Eyes: Liquid or vapor can cause moderate to severe irritation.

Ingestion: Not a likely route of exposure.

Medical Conditions Generally Aggravated by Exposure: None known.

4. First Aid Measures

Eyes: Flush thoroughly with water for 15 minutes. Get medical attention.

Skin: Wash exposed skin with soap and water. If irritation persists get medical attention.

Launder severely contaminated clothing before reuse.

Ingestion: Do not induce vomiting. Get medical attention.

Inhalation: Remove to fresh air. Administer oxygen if needed. Apply artificial respiration if breathing has stopped. Get medical attention.

5. Fire Fighting Measures

Flash Point: (method) N/A

Flammable Limits:

LEL:

UEL:

N/D

N/D

Extinguishing Media: Dry chemical, foam, CO2 and water fog.

Special Fire Fighting Procedures: Use water to cool containers exposed to flames. Do not enter enclosed or a confined work space without proper protective equipment. Fire fighting personnel should wear respiratory protection (positive pressure if available).

Unusual Fire and Explosion Hazards: Closed containers may explode from internal pressure build-up when exposed to extreme heat and discharge contents. Vapor accumulation can travel along the ground to a distant source of ignition and flash back or explode if ignited. Overexposure to decomposition products may cause a health hazard. Symptoms may not be immediately apparent.

NFPA Hazard Rating:

Health

1

Flammability

4

Reactivity

0

NFPA Notes:

6. Accidental Release Measures

Spill/Leak Procedures: Avoid breathing vapors. Ventilate area, remove all sources of ignition. Clean up area with absorbent material and place in closed containers for disposal. Wash floor with soap and water.

Dispose of in accordance with local, state and federal regulations.

7. Handling and Storage

Handling and Storage Precautions: Store and use in cool, dry, well-ventilated areas. Do not store above 120 F. Do not puncture or incinerate (burn) cans. Do not stick a pin, nail or any other sharp object into opening on top of can. Small pressurized containers of flammable products may be stored in areas suitable for ordinary combustibles except that they should not be stored in basements. See product label for additional information. Work/Hygienic Practices: Wash exposed skin with soap and water after handling this product. Do not spray in eyes. Do not take internally.

8. Exposure Controls/Personal Protection

Respiratory Protection (specify type): Use NIOSH/MSHA approved mask for chemical products if ACGIH, OSHA and/or TWA limits will be exceeded.

Local Exhaust	Mechanical (general)	Special	Other
Recommended	Recommended	None	None

Eye/Face Protection: Safety glasses, goggles or face shield. Eye wash station should be available.

Skin Protection: Use Rubber, Nitrile (NBR), Butyl or Polyethylene gloves. Safety shower should be available.

9. Physical/Chemical Characteristics

Physical State:Liquid	Boiling Point:N/A
Appearance:Aerosol	Melting Point:N/A
Odor:N/A	Vapor Pressure (mm Hg):N/A
Specific Gravity (H2O=1):N/A	Vapor Density (air=1):N/A
Water Solubility:Negligible	Evaporation Rate: N/A (Butyl Acetate = 1)

10. Stability and Reactivity

Stability: Material is stable.

Incompatibility (materials to avoid): Strong oxidizing agents, acids and alkalis.

Hazardous Decomposition Products: On burning, may release carbon dioxide and carbon monoxide.

Hazardous Polymerization: Will not occur.

11. Transportation Information

Air: "UN1950, Aerosols, flammable, 2.1"

Highway: "Consumer Commodity, ORM-D"

Ocean: "UN1950, Aerosols, 2.1, Ltd Qty"

12. Other Information

Disclaimer: The information contained herein is based on data available. However, no warranty is expressed or implied regarding the accuracy of the data or the results obtained from the use thereof. Because the information

contained herein may be applied under conditions beyond our control, we assume no responsibility for its use.

All components of this product are on the TSCA inventory.

Unk. = Unknown

N/A = Not applicable

Nav = Not available

N/D = Not determined

N/E = Not established

Prop. = Proprietary

Prepared: Date 08/11/93

Revised: Date 01/20/2014



Material Safety Data Sheet

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SECTION 1: PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME: 3M(TM) Spray-Mount(TM) Artist's Adhesive 6064, 6065

MANUFACTURER: 3M

DIVISION: Stationery Products

ADDRESS: 3M Center
St. Paul, MN 55144-1000

EMERGENCY PHONE: 1-800-364-3577 or (651) 737-6501 (24 hours)

Issue Date: 09/16/2008

Supersedes Date: 02/08/2008

Document Group: 22-0411-3

Product Use:

Intended Use: Adhesive

SECTION 2: INGREDIENTS

<u>Ingredient</u>	<u>C.A.S. No.</u>	<u>% by Wt</u>
ACETONE	67-64-1	30 - 40
HEPTANE ISOMERS	64742-49-0	20 - 30
ISOBUTANE	75-28-5	20 - 30
NON-VOLATILE COMPONENTS - N.J. TRADE SECRET REGISTRY NO. 04499600-6201P++	Trade Secret	7 - 13
PROPANE	74-98-6	7 - 13

SECTION 3: HAZARDS IDENTIFICATION

3.1 EMERGENCY OVERVIEW

Specific Physical Form: Aerosol

Odor, Color, Grade: Mild Solvent Odor/Clear-light yellow

General Physical Form: Liquid

Immediate health, physical, and environmental hazards: Aerosol container contains flammable gas under pressure. Closed containers exposed to heat from fire may build pressure and explode. Extremely flammable liquid and vapor. Vapors may travel long distances along the ground or floor to an ignition source and flash back. Aerosol container contains flammable material under pressure. May cause target organ effects.

3.2 POTENTIAL HEALTH EFFECTS

Eye Contact:

Moderate Eye Irritation: Signs/symptoms may include redness, swelling, pain, tearing, and blurred or hazy vision.

Skin Contact:

Moderate Skin Irritation: Signs/symptoms may include localized redness, swelling, itching, and dryness.

Inhalation:

Intentional concentration and inhalation may be harmful or fatal.

Respiratory Tract Irritation: Signs/symptoms may include cough, sneezing, nasal discharge, headache, hoarseness, and nose and throat pain.

May be absorbed following inhalation and cause target organ effects.

Ingestion:

Gastrointestinal Irritation: Signs/symptoms may include abdominal pain, stomach upset, nausea, vomiting and diarrhea.

May be absorbed following ingestion and cause target organ effects.

Target Organ Effects:

Central Nervous System (CNS) Depression: Signs/symptoms may include headache, dizziness, drowsiness, incoordination, nausea, slowed reaction time, slurred speech, giddiness, and unconsciousness.

SECTION 4: FIRST AID MEASURES

4.1 FIRST AID PROCEDURES

The following first aid recommendations are based on an assumption that appropriate personal and industrial hygiene practices are followed.

Eye Contact: Flush eyes with large amounts of water. If signs/symptoms persist, get medical attention.

Skin Contact: Remove contaminated clothing and shoes. Immediately flush skin with large amounts of water. Get medical attention. Wash contaminated clothing and clean shoes before reuse.

Inhalation: Remove person to fresh air. If signs/symptoms develop, get medical attention.

If Swallowed: Do not induce vomiting unless instructed to do so by medical personnel. Give victim two glasses of water. Never give anything by mouth to an unconscious person. Get medical attention.

SECTION 5: FIRE FIGHTING MEASURES

5.1 FLAMMABLE PROPERTIES

Autoignition temperature

No Data Available

Flash Point

-50.00 °F [Test Method: Tagliabue Closed Cup] [Details:

Flammable Limits - LEL

CONDITIONS: Propellant]

Flammable Limits - UEL

Approximately 1.85 % volume

Approximately 9.9 % volume

5.2 EXTINGUISHING MEDIA

Use fire extinguishers with class B extinguishing agents (e.g., dry chemical, carbon dioxide).

5.3 PROTECTION OF FIRE FIGHTERS

Special Fire Fighting Procedures: Water may not effectively extinguish fire; however, it should be used to keep fire-exposed containers and surfaces cool and prevent explosive rupture. Wear full protective equipment (Bunker Gear) and a self-contained breathing apparatus (SCBA).

Unusual Fire and Explosion Hazards: Closed containers exposed to heat from fire may build pressure and explode. Extremely flammable liquid and vapor. Vapors may travel long distances along the ground or floor to an ignition source and flash back. Aerosol container contains flammable material under pressure.

Note: See STABILITY AND REACTIVITY (SECTION 10) for hazardous combustion and thermal decomposition information.

SECTION 6: ACCIDENTAL RELEASE MEASURES

Accidental Release Measures: Refer to other sections of this MSDS for information regarding physical and health hazards, respiratory protection, ventilation, and personal protective equipment. Call 3M-HELPS line (1-800-364-3577) for more information on handling and managing the spill. Evacuate unprotected and untrained personnel from hazard area. The spill should be cleaned up by qualified personnel. Remove all ignition sources such as flames, smoking materials, and electrical spark sources. Use only non-sparking tools. Ventilate the area with fresh air. For large spill, or spills in confined spaces, provide mechanical ventilation to disperse or exhaust vapors, in accordance with good industrial hygiene practice. Warning! A motor could be an ignition source and could cause flammable gases or vapors in the spill area to burn or explode. Contain spill. For larger spills, cover drains and build dikes to prevent entry into sewer systems or bodies of water. Cover spill area with a fire-extinguishing foam. An aqueous film forming foam (AFFF) is recommended. Working from around the edges of the spill inward, cover with bentonite, vermiculite, or commercially available inorganic absorbent material. Mix in sufficient absorbent until it appears dry. Remember, adding an absorbent material does not remove a toxic, corrosivity or flammability hazard. Collect as much of the spilled material as possible using non-sparking tools. Clean up residue with an appropriate solvent selected by a qualified and authorized person. Ventilate the area with fresh air. Read and follow safety precautions on the solvent label and MSDS. Collect the resulting residue containing solution. Place in a metal container approved for transportation by appropriate authorities. Seal the container. Dispose of collected material as soon as possible.

In the event of a release of this material, the user should determine if the release qualifies as reportable according to local, state, and federal regulations.

SECTION 7: HANDLING AND STORAGE

7.1 HANDLING

Do not eat, drink or smoke when using this product. Wash exposed areas thoroughly with soap and water. Keep away from heat, sparks, open flame, pilot lights and other sources of ignition. Do not pierce or burn container, even after use. No smoking while handling this material. Do not spray near flames or sources of ignition. Avoid breathing of vapors, mists or spray. Aerosol container contains flammable gas under pressure. Avoid static discharge. Avoid eye contact with vapors, mists, or spray. Keep out of the reach of children. Avoid contact with oxidizing agents.

7.2 STORAGE

Store away from acids. Store away from heat. Store out of direct sunlight. Keep container tightly closed. Do not store containers on their sides. Store away from oxidizing agents.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 ENGINEERING CONTROLS

Do not use in a confined area or areas with little or no air movement. Use general dilution ventilation and/or local exhaust ventilation to control airborne exposures to below Occupational Exposure Limits and/or control mist, vapor, or spray. If ventilation is not adequate, use respiratory protection equipment.

8.2 PERSONAL PROTECTIVE EQUIPMENT (PPE)

8.2.1 Eye/Face Protection

Avoid eye contact with vapors, mists, or spray.

The following eye protection(s) are recommended: Indirect Vented Goggles.

8.2.2 Skin Protection

Avoid skin contact. Select and use gloves and/or protective clothing to prevent skin contact based on the results of an exposure assessment. Consult with your glove and/or protective clothing manufacturer for selection of appropriate compatible materials.

Select and use gloves and/or protective clothing to prevent skin contact based on the results of an exposure assessment. Consult with your glove and/or protective clothing manufacturer for selection of appropriate compatible materials.

Gloves made from the following material(s) are recommended: Polyvinyl Alcohol (PVA), Polyethylene/Ethylene Vinyl Alcohol.

8.2.3 Respiratory Protection

Avoid breathing of vapors, mists or spray.

Select one of the following NIOSH approved respirators based on airborne concentration of contaminants and in accordance with OSHA regulations: Half facepiece or fullface air-purifying respirator with organic vapor cartridges, Half facepiece or fullface pressure demand self-contained breathing apparatus. Consult the current 3M Respiratory Selection Guide for additional information or call 1-800-243-4630 for 3M technical assistance.

8.2.4 Prevention of Swallowing

Do not eat, drink or smoke when using this product. Wash exposed areas thoroughly with soap and water.

8.3 EXPOSURE GUIDELINES

<u>Ingredient</u>	<u>Authority</u>	<u>Type</u>	<u>Limit</u>	<u>Additional Information</u>
ACETONE	ACGIH	TWA	500 ppm	Table A4
ACETONE	ACGIH	STEL	750 ppm	Table A4
ACETONE	OSHA	TWA, Vacated	750 ppm	
ACETONE	OSHA	TWA	1000 ppm	Table Z-1
ACETONE	OSHA	STEL, Vacated	1000 ppm	
HEPTANE ISOMERS	CMRG	TWA	50 ppm	
ISOBUTANE	ACGIH	TWA	1000 ppm	
PROPANE	ACGIH	TWA	1000 ppm	
PROPANE	OSHA	TWA	1000 ppm	Table Z-1

VAC Vacated PEL: Vacated Permissible Exposure Limits [PEL] are enforced as the OSHA PEL in some states. Check with your local regulatory agency.

SOURCE OF EXPOSURE LIMIT DATA:

ACGIH: American Conference of Governmental Industrial Hygienists

CMRG: Chemical Manufacturer Recommended Guideline

OSHA: Occupational Safety and Health Administration

AIHA: American Industrial Hygiene Association Workplace Environmental Exposure Level (WEEL)

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

Specific Physical Form:	Aerosol
Odor, Color, Grade:	Mild Solvent Odor/Clear-light yellow
General Physical Form:	Liquid
Autoignition temperature	No Data Available
Flash Point	-50.00 °F [Test Method: Tagliabue Closed Cup] [Details: CONDITIONS: Propellant]
Flammable Limits - LEL	Approximately 1.85 % volume
Flammable Limits - UEL	Approximately 9.9 % volume
Boiling point	Not Applicable
Density	0.673 g/ml
Vapor Density	No Data Available
Specific Gravity	0.673 [Ref.Sid: WATER=1]
pH	Not Applicable
Melting point	Not Applicable
Solubility in Water	Negligible
Evaporation rate	No Data Available
Hazardous Air Pollutants	0 % weight [Test Method: Calculated]
Volatile Organic Compounds	Approximately 58 % weight
Percent volatile	Approximately 91 % weight
VOC Less H2O & Exempt Solvents	Approximately 538 g/l [Test Method: calculated SCAQMD rule 443.1]
Viscosity	Not Applicable

SECTION 10: STABILITY AND REACTIVITY

Stability: Stable.

Materials and Conditions to Avoid: Heat; Sparks and/or flames

Hazardous Polymerization: Hazardous polymerization will not occur.

Hazardous Decomposition or By-Products

<u>Substance</u>	<u>Condition</u>
Aldehydes	During Combustion
Carbon monoxide	During Combustion
Carbon dioxide	During Combustion

SECTION 11: TOXICOLOGICAL INFORMATION

XPS Print Error

Job name: (none)
Document name: (none)
Page number: 6
Error: XPS format error (19,4,330)

Material Safety Data Sheet

24 Hour Assistance:
1-847-367-7700
Rust-Oleum Corp.
www.rustoleum.com

Section 1 - Chemical Product / Company Information

Product Name: Rust-Oleum High Performance Industrial Enamel Aerosol - Inverted Striping
Revision Date: 08/14/2007
Identification Number: 2326838, 2348838, 2364838, 2378838, 2391838
Product Use/Class: Inverted Striping Paint/Aerosol
Supplier: Rust-Oleum Corporation
11 Hawthorn Parkway
Vernon Hills, IL 60061
USA
Manufacturer: Rust-Oleum Corporation
11 Hawthorn Parkway
Vernon Hills, IL 60061
USA
Preparer: Regulatory Department

Section 2 - Composition / Information On Ingredients

Chemical Name	CAS Number	Weight %	Less Than ACGIH TLV-TWA	ACGIH TLV-STEL	OSHA PEL-TWA	OSHA PEL-CEILING
Liquefied Petroleum Gas	68476-86-8	25.0	1000 PPM	N.E.	1000 PPM	N.E.
Titanium Dioxide	13463-67-7	15.0	10 mg/m3	N.E.	10 mg/m3	N.E.
Aliphatic Hydrocarbon	64742-89-8	10.0	300 PPM	N.E.	300 PPM	N.E.
Toluene	108-88-3	10.0	50 PPM	150 PPM	200 PPM	300 PPM
Naphtha	8032-32-4	10.0	300 PPM	N.E.	N.E.	N.E.
Acetone	67-64-1	5.0	500 PPM	750 PPM	750 PPM	N.E.
Stoddard Solvents	8052-41-3	5.0	100 PPM	N.E.	500 PPM	N.E.
Xylene	1330-20-7	5.0	100 PPM	150 PPM	100 PPM	N.E.
Pigment Black 7	1333-86-4	5.0	3.5 mg/m3	N.E.	3.5 mg/m3	N.E.
Aromatic Hydrocarbon	64742-95-6	5.0	N.E.	N.E.	N.E.	N.E.
Calcined Aluminum Silicate	1332-58-7	5.0	2 mg/m3	N.E.	5 mg/m3	N.E.
1,2,4-Trimethylbenzene	95-63-6	5.0	25 PPM	N.E.	N.E.	N.E.
Ethylbenzene	100-41-4	1.0	100 PPM	125 PPM	100 PPM	N.E.
Microcrystalline Silica	14808-60-7	1.0	0.025 mg/m3	N.E.	0.10 mg/m3	N.E.

Section 3 - Hazards Identification

*** Emergency Overview ***: Contents Under Pressure. Harmful if inhaled. May affect the brain or nervous system causing dizziness, headache or nausea. Vapors may cause flash fire or explosion. Extremely flammable liquid and vapor. Harmful if swallowed.

Effects Of Overexposure - Eye Contact: Causes eye irritation.

Effects Of Overexposure - Skin Contact: Prolonged or repeated contact may cause skin irritation. Substance may cause slight skin irritation.

Effects Of Overexposure - Inhalation: High vapor concentrations are irritating to the eyes, nose, throat and lungs. Avoid breathing vapors or mists. High gas, vapor, mist or dust concentrations may be harmful if inhaled. Harmful if inhaled.

Effects Of Overexposure - Ingestion: Aspiration hazard if swallowed; can enter lungs and cause damage.

Substance may be harmful if swallowed.

Effects Of Overexposure - Chronic Hazards: IARC lists Ethylbenzene as a possible human carcinogen (group 2B). May cause central nervous system disorder (e.g., narcosis involving a loss of coordination, weakness, fatigue, mental confusion, and blurred vision) and/or damage. Reports have associated repeated and prolonged occupational overexposure to solvents with permanent brain and nervous system damage. Overexposure to xylene in laboratory animals has been associated with liver abnormalities, kidney, lung, spleen, eye and blood damage as well as reproductive disorders. Effects in humans, due to chronic overexposure, have included liver, cardiac abnormalities and nervous system damage. Overexposure to toluene in laboratory animals has been associated with liver abnormalities, kidney, lung and spleen damage. Effects in humans have included liver and cardiac abnormalities.

Contains carbon black. Chronic inflammation, lung fibrosis, and lung tumors have been observed in some rats experimentally exposed for long periods of time to excessive concentrations of carbon black and several insoluble fine dust particles. Tumors have not been observed in other animal species (i.e., mouse and hamster) under similar circumstances and study conditions. Epidemiological studies of North American workers show no evidence of clinically significant adverse health effects due to occupational exposure to carbon black.

Carbon black is listed as a Group 2B-"Possibly carcinogenic to humans" by IARC and is proposed to be listed as A4- "not classified as a human carcinogen" by the American Conference of Governmental Industrial Hygienists. Significant exposure is not anticipated during brush application or drying. Risk of overexposure depends on duration and level of exposure to dust from repeated sanding of surfaces or spray mist and the actual concentration of carbon black in the formula. Contains crystalline silica as silicon dioxide. Excessive inhalation of respirable crystalline silica dust may cause lung disease, silicosis or lung cancer. Significant exposure is not anticipated during brush or trowel application or drying. Risk of overexposure depends on the duration and level of exposure to dust from repeated sanding of surfaces, mechanical abrasion or spray mist and actual concentration of crystalline silica in the formula. Crystalline silica is listed as Group 1 "carcinogenic to humans" by the International Agency for Research on Cancer (IARC,) and Group 2, "reasonably anticipated to be a carcinogen" by the National Toxicology Program (NTP)

Primary Route(s) Of Entry: Skin Contact, Skin Absorption, Inhalation, Eye Contact

Section 4 - First Aid Measures

First Aid - Eye Contact: Hold eyelids apart and flush with plenty of water for at least 15 minutes. Get medical attention.

First Aid - Skin Contact: Wash with soap and water. Get medical attention if irritation develops or persists.

First Aid - Inhalation: If you experience difficulty in breathing, leave the area to obtain fresh air. If continued difficulty is experienced, get medical assistance immediately.

First Aid - Ingestion: Aspiration hazard: Do not induce vomiting or give anything by mouth because this material can enter the lungs and cause severe lung damage. Get immediate medical attention.

Section 5 - Fire Fighting Measures

Flash Point: -156 F
(Setaflash)

LOWER EXPLOSIVE LIMIT: 0.7 %
UPPER EXPLOSIVE LIMIT : 12.8 %

Extinguishing Media: Dry Chemical, Foam, Water Fog

Unusual Fire And Explosion Hazards: FLASH POINT IS LESS THAN 20 °. F. - EXTREMELY FLAMMABLE LIQUID AND VAPOR! Water spray may be ineffective. Closed containers may explode when exposed to extreme heat. Vapors may form explosive mixtures with air. Vapors can travel to a source of ignition and flash back. Perforation of the pressurized container may cause bursting of the can. Keep containers tightly closed. Isolate from heat, electrical equipment, sparks and open flame.

Special Firefighting Procedures: Evacuate area and fight fire from a safe distance.

Section 6 - Accidental Release Measures

Steps To Be Taken If Material Is Released Or Spilled: Remove all sources of ignition, ventilate area and remove with inert absorbent and non-sparking tools. Contain spilled liquid with sand or earth. DO NOT use combustible materials such as sawdust. Dispose of according to local, state (provincial) and federal regulations. Do not incinerate closed containers.

Section 7 - Handling And Storage

Handling: Wash hands before eating. Wash thoroughly after handling. Avoid breathing vapor or mist. Use only in a well-ventilated area. Follow all MSDS/label precautions even after container is emptied because it may retain product residues.

Storage: Contents under pressure. Do not expose to heat or store above 120 ° F. Do not store above 120 ° F. Store large quantities in buildings designed and protected for storage of NFPA Class I flammable liquids. Keep containers tightly closed. Isolate from heat, electrical equipment, sparks and open flame.

Section 8 - Exposure Controls / Personal Protection

Engineering Controls: Prevent build-up of vapors by opening all doors and windows to achieve cross-ventilation. Use process enclosures, local exhaust ventilation, or other engineering controls to control airborne levels below recommended exposure limits. Use explosion-proof ventilation equipment.

Respiratory Protection: A respiratory protection program that meets OSHA 1910.134 and ANSI Z88.2 requirements must be followed whenever workplace conditions warrant a respirator's use. A NIOSH/MSHA approved air purifying respirator with an organic vapor cartridge or canister may be permissible under certain circumstances where airborne concentrations are expected to exceed exposure limits.

Protection provided by air purifying respirators is limited. Use a positive pressure air supplied respirator if there is any potential for an uncontrolled release, exposure levels are not known, or any other circumstances where air purifying respirators may not provide adequate protection.

Skin Protection: Nitrile or Neoprene gloves may afford adequate skin protection. Use impervious gloves to prevent skin contact and absorption of this material through the skin.

Eye Protection: Use safety eyewear designed to protect against splash of liquids.

Other protective equipment: Refer to safety supervisor or industrial hygienist for further information regarding personal protective equipment and its application.

Hygienic Practices: Wash thoroughly with soap and water before eating, drinking or smoking.

Section 9 - Physical And Chemical Properties

Boiling Range:	-34 - 900 F	Vapor Density:	Heavier than air
Odor:	Solvent Like	Odor Threshold:	ND
Appearance:	Liquid	Evaporation Rate:	Faster than Ether
Solubility in H ₂ O:	Slight		
Freeze Point:	ND	Specific Gravity:	0.9700
Vapor Pressure:	ND	PH:	NE

Physical State: Liquid

(See section 16 for abbreviation legend)

Section 10 - Stability And Reactivity

Conditions To Avoid: Avoid temperatures above 120 ° F. Avoid all possible sources of ignition.

Incompatibility: Incompatible with strong oxidizing agents, strong acids and strong alkalies.

Hazardous Decomposition: When heated to decomposition, it emits acrid smoke and irritating fumes. By open flame, carbon monoxide and carbon dioxide.

Hazardous Polymerization: Will not occur under normal conditions.

Stability: This product is stable under normal storage conditions.

Section 11 - Toxicological Information

Product LD50: ND

Product LC50: ND

Chemical Name

	LD50	LC50
Liquefied Petroleum Gas	N.D.	N.D.
Titanium Dioxide	>7500 mg/kg (ORAL, RAT)	N.D.
Aliphatic Hydrocarbon	N.D.	N.D.
Toluene	636 mg/kg (Oral, Rat)	49 gm/M3 (Inhalation, Rat)
Naphtha	>5000 mg/kg (ORAL, RAT)	N.D.
Acetone	N.D.	N.D.
Stoddard Solvents	N.D.	N.D.
Xylene	4300, mg/kg (Oral Rat)	5000 ppm/4hr (Inhalation, Rat)
Pigment Black 7	>8000 mg/kg (ORAL, RAT)	N.D.
Aromatic Hydrocarbon	N.D.	N.D.
Calcined Aluminum Silicate	5000 mg/kg (ORAL RAT)	N.D.
1,2,4-Trimethylbenzene	N.D.	18000 mg/m3 (RAT, 4 HR)
Ethylbenzene	3500 mg/kg (ORAL, RAT)	N.D.
Microcrystalline Silica	N.D.	N.D.

Section 12 - Ecological Information

Ecological Information: Product is a mixture of listed components.

Section 13 - Disposal Information

Disposal Information: Dispose of material in accordance to local, state and federal regulations and ordinances. Do not allow to enter storm drains or sewer systems.

Section 14 - Transportation Information

DOT Proper Shipping Name: Aerosol
DOT Technical Name: —

Packing Group: —
Hazard Subclass: —

XPS Print Error

Job name: (none)
Document name: (none)
Page number: 5
Error: memory allocation failure (514,10,72)



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MATERIAL SAFETY DATA SHEET

SECTION 1 PRODUCT AND COMPANY IDENTIFICATION

PRODUCT

Product Name: MOBIL DTE OIL LIGHT
Product Description: Base Oil and Additives
Product Code: 600148-00, 970294
Intended Use: Turbine oil

COMPANY IDENTIFICATION

Supplier: EXXON MOBIL CORPORATION
3225 GALLOWS RD.
FAIRFAX, VA. 22037 USA
24 Hour Health Emergency 609-737-4411
Transportation Emergency Phone 800-424-9300
ExxonMobil Transportation No. 281-834-3296
Product Technical Information 800-662-4525, 800-947-9147
MSDS Internet Address <http://www.exxon.com>, <http://www.mobil.com>

SECTION 2 COMPOSITION / INFORMATION ON INGREDIENTS

No Reportable Hazardous Substance(s) or Complex Substance(s).

SECTION 3 HAZARDS IDENTIFICATION

This material is not considered to be hazardous according to regulatory guidelines (see (M)SDS Section 15).

POTENTIAL HEALTH EFFECTS

Low order of toxicity. Excessive exposure may result in eye, skin, or respiratory irritation. High-pressure injection under skin may cause serious damage.

NFPA Hazard ID:	Health: 0	Flammability: 1	Reactivity: 0
HMIS Hazard ID:	Health: 0	Flammability: 1	Reactivity: 0

NOTE: This material should not be used for any other purpose than the intended use in Section 1 without expert advice. Health studies have shown that chemical exposure may cause potential human health risks which may vary from person to person.

SECTION 4 FIRST AID MEASURES

Inhalation

Remove from further exposure. For those providing assistance, avoid exposure to yourself or others. Use adequate respiratory protection. If respiratory irritation, dizziness, nausea, or unconsciousness occurs, seek immediate medical assistance. If breathing has stopped, assist ventilation with a mechanical device or use



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mouth-to-mouth resuscitation.

SKIN CONTACT

Wash contact areas with soap and water. If product is injected into or under the skin, or into any part of the body, regardless of the appearance of the wound or its size, the individual should be evaluated immediately by a physician as a surgical emergency. Even though initial symptoms from high pressure injection may be minimal or absent, early surgical treatment within the first few hours may significantly reduce the ultimate extent of injury.

EYE CONTACT

Flush thoroughly with water. If irritation occurs, get medical assistance.

Ingestion

First aid is normally not required. Seek medical attention if discomfort occurs.

SECTION 5

FIRE FIGHTING MEASURES

EXTINGUISHING MEDIA

Appropriate Extinguishing Media: Use water fog, foam, dry chemical or carbon dioxide (CO₂) to extinguish flames.

Inappropriate Extinguishing Media: Straight Streams of Water

FIRE FIGHTING

Fire Fighting Instructions: Evacuate area. Prevent runoff from fire control or dilution from entering streams, sewers, or drinking water supply. Firefighters should use standard protective equipment and in enclosed spaces, self-contained breathing apparatus (SCBA). Use water spray to cool fire exposed surfaces and to protect personnel.

Hazardous Combustion Products: Smoke, Fume, Aldehydes, Sulfur Oxides, Incomplete combustion products, Oxides of carbon

FLAMMABILITY PROPERTIES

Flash Point [Method]: >200C (392F) [ASTM D-92]

Flammable Limits (Approximate volume % in air): LEL: 0.9 UEL: 7.0

Autoignition Temperature: N/D

SECTION 6

ACCIDENTAL RELEASE MEASURES

Notification Procedures

In the event of a spill or accidental release, notify relevant authorities in accordance with all applicable regulations. US regulations require reporting releases of this material to the environment which exceed the applicable reportable quantity or oil spills which could reach any waterway including intermittent dry creeks. The National Response Center can be reached at (800)424-8802.

SPILL MANAGEMENT



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Land Spill: Stop leak if you can do it without risk. Recover by pumping or with suitable absorbent.

Water Spill: Stop leak if you can do it without risk. Confine the spill immediately with booms. Warn other shipping. Remove from the surface by skimming or with suitable absorbents. Seek the advice of a specialist before using dispersants.

Water spill and land spill recommendations are based on the most likely spill scenario for this material; however, geographic conditions, wind, temperature, (and in the case of a water spill) wave and current direction and speed may greatly influence the appropriate action to be taken. For this reason, local experts should be consulted. Note: Local regulations may prescribe or limit action to be taken.

ENVIRONMENTAL PRECAUTIONS

Large Spills: Dike far ahead of liquid spill for later recovery and disposal. Prevent entry into waterways, sewers, basements or confined areas.

SECTION 7

HANDLING AND STORAGE

HANDLING

Prevent small spills and leakage to avoid slip hazard.

Static Accumulator: This material is a static accumulator.

STORAGE

Do not store in open or unlabelled containers. Keep away from incompatible materials.

SECTION 8

EXPOSURE CONTROLS / PERSONAL PROTECTION

Exposure limits/standards for materials that can be formed when handling this product: When mists / aerosols can occur, the following are recommended: 5 mg/m³ - ACGIH TLV, 10 mg/m³ - ACGIH STEL, 5 mg/m³ - OSHA PEL.

NOTE: Limits/standards shown for guidance only. Follow applicable regulations.

ENGINEERING CONTROLS

The level of protection and types of controls necessary will vary depending upon potential exposure conditions. Control measures to consider:

No special requirements under ordinary conditions of use and with adequate ventilation.

Personal Protection

Personal protective equipment selections vary based on potential exposure conditions such as applications, handling practices, concentration and ventilation. Information on the selection of protective equipment for use with this material, as provided below, is based upon intended, normal usage.

Respiratory Protection: If engineering controls do not maintain airborne contaminant concentrations at a level which is adequate to protect worker health, an approved respirator may be appropriate. Respirator



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selection, use, and maintenance must be in accordance with regulatory requirements, if applicable. Types of respirators to be considered for this material include:

No special requirements under ordinary conditions of use and with adequate ventilation.

For high airborne concentrations, use an approved supplied-air respirator, operated in positive pressure mode. Supplied air respirators with an escape bottle may be appropriate when oxygen levels are inadequate, gas/vapor warning properties are poor, or if air purifying filter capacity/rating may be exceeded.

Hand Protection: Any specific glove information provided is based on published literature and glove manufacturer data. Glove suitability and breakthrough time will differ depending on the specific use conditions. Contact the glove manufacturer for specific advice on glove selection and breakthrough times for your use conditions. Inspect and replace worn or damaged gloves. The types of gloves to be considered for this material include:

No protection is ordinarily required under normal conditions of use.

Eye Protection: If contact is likely, safety glasses with side shields are recommended.

Skin and Body Protection: Any specific clothing information provided is based on published literature or manufacturer data. The types of clothing to be considered for this material include:

No skin protection is ordinarily required under normal conditions of use. In accordance with good industrial hygiene practices, precautions should be taken to avoid skin contact.

Specific Hygiene Measures: Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants. Discard contaminated clothing and footwear that cannot be cleaned. Practice good housekeeping.

ENVIRONMENTAL CONTROLS

See Sections 6, 7, 12, 13.

SECTION 9

PHYSICAL AND CHEMICAL PROPERTIES

Typical physical and chemical properties are given below. Consult the Supplier in Section 1 for additional data.

GENERAL INFORMATION

Physical State: Liquid
Color: Amber
Odor: Characteristic
Odor Threshold: N/D

IMPORTANT HEALTH, SAFETY, AND ENVIRONMENTAL INFORMATION

Relative Density (at 15 C): 0.869
Flash Point [Method]: >200C (392F) [ASTM D-92]
Flammable Limits (Approximate volume % in air): LEL: 0.9 UEL: 7.0
Autoignition Temperature: N/D
Boiling Point / Range: > 316C (600F)
Vapor Density (Air = 1): > 2 at 101 kPa
Vapor Pressure: < 0.013 kPa (0.1 mm Hg) at 20 C
Evaporation Rate (N-Butyl Acetate = 1): N/D
pH: N/A



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Log Pow (n-Octanol/Water Partition Coefficient): > 3.5
 Solubility in Water: Negligible
 Viscosity: 31 cSt (31 mm²/sec) at 40 C | 5.5 cSt (5.5 mm²/sec) at 100C
 Oxidizing Properties: See Sections 3, 15, 16.

OTHER INFORMATION

Freezing Point: N/D
 Melting Point: N/A
 Pour Point: -18°C (0°F)
 DMSO Extract (mineral oil only), IP-346: < 3 %wt

SECTION 10	STABILITY AND REACTIVITY
-------------------	---------------------------------

STABILITY: Material is stable under normal conditions.

CONDITIONS TO AVOID: Excessive heat. High energy sources of ignition.

MATERIALS TO AVOID: Strong oxidizers

HAZARDOUS DECOMPOSITION PRODUCTS: Material does not decompose at ambient temperatures.

HAZARDOUS POLYMERIZATION: Will not occur.

SECTION 11	TOXICOLOGICAL INFORMATION
-------------------	----------------------------------

ACUTE TOXICITY

<u>Route of Exposure</u>	<u>Conclusion / Remarks</u>
Inhalation	
Toxicity (Rat): LC50 > 5000 mg/m ³	Minimally Toxic. Based on test data for structurally similar materials.
Irritation: No end point data.	Negligible hazard at ambient/normal handling temperatures. Based on assessment of the components.
Ingestion	
Toxicity (Rat): LD50 > 5000 mg/kg	Minimally Toxic. Based on test data for structurally similar materials.
Skin	
Toxicity (Rabbit): LD50 > 5000 mg/kg	Minimally Toxic. Based on test data for structurally similar materials.
Irritation (Rabbit): Data available.	Negligible irritation to skin at ambient temperatures. Based on test data for structurally similar materials.
Eye	
Irritation (Rabbit): Data available.	May cause mild, short-lasting discomfort to eyes. Based on test data for structurally similar materials.

CHRONIC/OTHER EFFECTS**Contains:**

Base oil severely refined: Not carcinogenic in animal studies. Representative material passes IP-346, Modified Ames test, and/or other screening tests. Dermal and inhalation studies showed minimal effects; lung non-specific infiltration of immune cells, oil deposition and minimal granuloma formation. Not sensitizing in test animals.



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Additional information is available by request.

The following ingredients are cited on the lists below: None.

--REGULATORY LISTS SEARCHED--

1 = NTP CARC
2 = NTP SUS

3 = IARC 1
4 = IARC 2A

5 = IARC 2B
6 = OSHA CARC

SECTION 12	ECOLOGICAL INFORMATION
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The information given is based on data available for the material, the components of the material, and similar materials.

ECOTOXICITY

Material -- Not expected to be harmful to aquatic organisms.

MOBILITY

Base oil component -- Low solubility and floats and is expected to migrate from water to the land.
Expected to partition to sediment and wastewater solids.

PERSISTENCE AND DEGRADABILITY

Biodegradation:

Base oil component -- Expected to be inherently biodegradable

BIOACCUMULATION POTENTIAL

Base oil component -- Has the potential to bioaccumulate, however metabolism or physical properties may reduce the bioconcentration or limit bioavailability.

SECTION 13	DISPOSAL CONSIDERATIONS
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Disposal recommendations based on material as supplied. Disposal must be in accordance with current applicable laws and regulations, and material characteristics at time of disposal.

DISPOSAL RECOMMENDATIONS

Product is suitable for burning in an enclosed controlled burner for fuel value or disposal by supervised incineration at very high temperatures to prevent formation of undesirable combustion products.

REGULATORY DISPOSAL INFORMATION

RCRA Information: The unused product, in our opinion, is not specifically listed by the EPA as a hazardous waste (40 CFR, Part 261D), nor is it formulated to contain materials which are listed as hazardous wastes. It does not exhibit the hazardous characteristics of ignitability, corrosivity or reactivity and is not formulated with contaminants as determined by the Toxicity Characteristic Leaching Procedure (TCLP). However, used product may be regulated.

Empty Container Warning Empty Container Warning (where applicable): Empty containers may contain residue and can be dangerous. Do not attempt to refill or clean containers without proper instructions. Empty drums should be



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completely drained and safely stored until appropriately reconditioned or disposed. Empty containers should be taken for recycling, recovery, or disposal through suitably qualified or licensed contractor and in accordance with governmental regulations. DO NOT PRESSURISE, CUT, WELD, BRAZE, SOLDER, DRILL, GRIND, OR EXPOSE SUCH CONTAINERS TO HEAT, FLAME, SPARKS, STATIC ELECTRICITY, OR OTHER SOURCES OF IGNITION. THEY MAY EXPLODE AND CAUSE INJURY OR DEATH.

SECTION 14	TRANSPORT INFORMATION
-------------------	------------------------------

LAND (DOT) : Not Regulated for Land Transport

LAND (TDG) : Not Regulated for Land Transport

SEA (IMDG) : Not Regulated for Sea Transport according to IMDG-Code

AIR (IATA) : Not Regulated for Air Transport

SECTION 15	REGULATORY INFORMATION
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OSHA HAZARD COMMUNICATION STANDARD: When used for its intended purposes, this material is not classified as hazardous in accordance with OSHA 29 CFR 1910.1200.

NATIONAL CHEMICAL INVENTORY LISTING: AICS, IECSC, DSL, EINECS, PICCS, TSCA

EPCRA: This material contains no extremely hazardous substances.

SARA (311/312) REPORTABLE HAZARD CATEGORIES: None.

SARA (313) TOXIC RELEASE INVENTORY: This material contains no chemicals subject to the supplier notification requirements of the SARA 313 Toxic Release Program.

The following ingredients are cited on the lists below:

Chemical Name	CAS Number	List Citations
DIPHENYLAMINE	122-39-4	5
PHOSPHORODITHOIC ACID, O,O-DI C1-14-ALKYL ESTERS, ZINC SALTS (2:1) (ZDDP)	68649-42-3	15

--REGULATORY LISTS SEARCHED--

1 = ACGIH ALL	6 = TSCA 5a2	11 = CA P65 REPRO	16 = MN RTK
2 = ACGIH A1	7 = TSCA 5e	12 = CA RTK	17 = NJ RTK
3 = ACGIH A2	8 = TSCA 6	13 = IL RTK	18 = PA RTK
4 = OSHA Z	9 = TSCA 12b	14 = LA RTK	19 = RI RTK
5 = TSCA 4	10 = CA P65 CARC	15 = MI 293	



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Code key: CARC=Carcinogen; REPRO=Reproductive

SECTION 16	OTHER INFORMATION
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N/D = Not determined, N/A = Not applicable

THIS SAFETY DATA SHEET CONTAINS THE FOLLOWING REVISIONS:

Revision Changes:

Section 04: First Aid Inhalation - Header was modified.
Section 04: First Aid Ingestion - Header was modified.
Section 06: Notification Procedures - Header was modified.
Section 10 Stability and Reactivity - Header was modified.
Section 13: Disposal Recommendations - Note was modified.
Section 09: Evaporation Rate - Header was modified.
Section 08: Personal Protection - Header was modified.
Section 08: Personal Protection was modified.
Section 07: Handling and Storage - Handling was modified.
Section 07: Handling and Storage - Storage Phrases was modified.
Section 11: Dermal Lethality Test Data was modified.
Section 11: Oral Lethality Test Data was modified.
Section 11: Inhalation Lethality Test Data was modified.
Section 05: Hazardous Combustion Products was modified.
Section 06: Accidental Release - Spill Management - Water was modified.
Section 09: Relative Density - Header was modified.
Section 09: Viscosity was modified.
Section 09: Viscosity was modified.
Section 15: List Citations Table was modified.
Section 15: List Citation Table - Header was modified.
Section 15: National Chemical Inventory Listing was modified.
Section 16: Code to MHCs was modified.
Section 08: Exposure limits/standards was modified.
Hazard Identification: OSHA - May be Hazardous Statement was modified.
Section 06: Notification Procedures was modified.
Section 01: Company Contact Methods Sorted by Priority was modified.
Section 12: Ecological Information - Acute Aquatic Toxicity was added.
Section 12: Ecological Information - Acute Aquatic Toxicity was added.
Hazard Identification: Environmental Hazard was deleted.
Hazard Identification: Environmental Hazard - Header was deleted.
Section 12: Ecological Information - Acute Aquatic Toxicity was deleted.
Section 12: Ecological Information - Acute Aquatic Toxicity was deleted.

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affiliates in which they directly or indirectly hold any interest.

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MHC: 0B, 0B, 0, 0, 0, 0

PPEC: A

DGN: 2007057XUS (538877)

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MATERIAL SAFETY DATA SHEET

Klean-Strip Paint Thinner

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HEALTH	2
FLAMMABILITY	2
	0
PPE	G



Printed: 12/14/2005

Revision: 10/03/2005

Date Created: 10/03/2005

1. Product and Company Identification

Product Code: GKPT94002
Product Name: Klean-Strip Paint Thinner
Reference #: 1677.1
Manufacturer Information
Company Name: W. M. Barr
2105 Channel Avenue
Memphis, TN 38113
Phone Number: (901)775-0100
Emergency Contact: 3E 24 Hour Emergency Contact (800)451-8346
Information: W.M. Barr Customer Service (800)398-3892
Web site address: www.wmbarr.com
Preparer Name: W.M. Barr and Company, Inc. (901)775-0100

2. Composition/Information on Ingredients

Hazardous Components (Chemical Name)	CAS #	Percentage	OSHA TWA	ACGIH TWA	Other Limits
1. Stoddard solvent	8052-41-3	95.0 -100.0 %	500 ppm	100 ppm	No data.
2. 1,2,4-Trimethylbenzene	95-63-6	1.0 -2.0 %	200 ppm	50 ppm	No data.
3. Raffinates (petroleum), sorption process	64741-85-1	95.0 -100.0 %	1000 ppm	500 ppm	No data.
Hazardous Components (Chemical Name)	RTECS #	OSHA STEL	OSHA CEIL	ACGIH STEL	ACGIH CEIL
1. Stoddard solvent	WJ8925000	No data.	No data.	250 ppm	No data.
2. 1,2,4-Trimethylbenzene	DC3325000	500 ppm/(10min)	300 ppm	No data.	No data.
3. Raffinates (petroleum), sorption process	NA	No data.	No data.	750 ppm	No data.

3. Hazards Identification

Emergency Overview

Caution! Combustible. Keep away from heat, sparks, flame and all other sources of ignition. Vapors may cause fire. Vapors may travel long distances to other areas and rooms away from work site. Do not smoke. Extinguish all flames and pilot lights, and turn off stoves, heaters, electric motors and all other sources of ignition anywhere in the structure, dwelling or building during use and until all vapors are gone from work site and all areas away from work site. Keep away from electrical outlets and switches. Beware of static electricity that may be generated by synthetic clothing and other sources.

OSHA Regulatory Status: This material is classified as hazardous under OSHA regulations.

Potential Health Effects (Acute and Chronic)

Inhalation Acute Exposure Effects:

May cause dizziness; headache; watering of eyes; eye irritation; weakness; nausea; muscle twitches, and depression of central nervous system. Severe overexposure may cause convulsions; unconsciousness; and death. Intentional misuse of this product by deliberately concentrating and inhaling can be harmful or fatal.

Skin Contact Acute Exposure Effects:

May cause irritation; numbness in the fingers and arms; drying of skin; and dermatitis. May cause increased severity of symptoms listed under inhalation.

Eye Contact Acute Exposure Effects:

This material is an eye irritant. May cause irritation; burns; conjunctivitis of eyes; and corneal ulcerations of the eye. Vapors may irritate eyes.

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Ingestion Acute Exposure Effects:

Harmful or fatal if swallowed. May cause nausea; weakness; muscle twitches; gastrointestinal irritation; and diarrhea. Severe overexposure may cause convulsions; unconsciousness; and death.

Chronic Exposure Effects:

Reports have associated repeated and prolonged overexposure to solvents with neurological and other physiological damage. Prolonged or repeated contact may cause dermatitis. May cause jaundice; bone marrow damage; liver damage; anemia; and skin irritation.

Signs and Symptoms Of Exposure

Inhalation, ingestion, and dermal are possible routes of exposure.

Medical Conditions Generally Aggravated By Exposure

Diseases of the skin, eyes, liver, kidneys, central nervous system and respiratory system.

OSHA Hazard Classes:

HEALTH HAZARDS : N/E

PHYSICAL HAZARDS : N/E

TARGET ORGANS & EFFECTS: N/E

4. First Aid Measures

Emergency and First Aid Procedures

Inhalation:

If user experiences breathing difficulty, move to air free of vapors. Administer oxygen or artificial medical assistance can be rendered.

Skin Contact:

Wash with soap and large quantities of water and seek medical attention if irritation from contact persists.

Eye Contact:

Flush with large quantities of water for at least 15 minutes and seek immediate medical attention.

Ingestion:

Do not induce vomiting. Call your local poison control center, hospital emergency room or physician immediately for instructions to induce vomiting.

Note to Physician

Call your local poison control center for further information.

5. Fire Fighting Measures

Flammability Classification:	Class II
Flash Pt:	105.00 F Method Used: SCC
Explosive Limits:	LEL: 1.00 UEL: No data.
Autoignition Pt:	No data.

Fire Fighting Instructions

Self-contained respiratory protection should be provided for fire fighters fighting fires in buildings or confined areas. Storage containers exposed to fire should be kept cool with water spray to prevent pressure build-up. Stay away from heads of containers that have been exposed to intense heat or flame.

Flammable Properties and Hazards

No data available.

Extinguishing Media

Use carbon dioxide, dry powder, or foam.

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Unsuitable Extinguishing Media

No data available.

6. Accidental Release Measures

Steps To Be Taken In Case Material is Released Or Spilled

Clean up:

Keep unnecessary people away; isolate hazard area and deny entry. Stay upwind, out of low areas, and ventilate closed spaces before entering. Shut off ignition sources; keep flares, smoking or flames out of hazard area.

Small spills:

Take up with sand, earth or other noncombustible absorbent material and place in a plastic container where applicable.

Large spills:

Dike far ahead of spill for later disposal.

Waste Disposal:

Dispose in accordance with applicable local, state and federal regulations.

7. Handling and Storage

Precautions To Be Taken in Handling

Read carefully all cautions and directions on product label before use. Since empty container retains residue, follow all label warnings even after container is empty. Dispose of empty container according to all regulations. Do not reuse this container.

Precautions To Be Taken in Storing

Keep container tightly closed when not in use. Store in a cool, dry place. Do not store near flames or at elevated temperatures.

8. Exposure Controls/Personal Protection

Respiratory Equipment (Specify Type)

For OSHA controlled work place and other regular users. Use only with adequate ventilation under engineered air control systems designed to prevent exceeding appropriate TLV. For occasional use, where engineered air control is not feasible, use properly maintained and properly fitted NIOSH approved respirator for organic solvent vapors. A dust mask does not provide protection against vapors.

Eye Protection

Safety glasses, goggles or face shields are recommended to safeguard against potential eye contact, irritation, or injury. Contact lenses should not be worn while working with chemicals.

Protective Gloves

Wear impermeable gloves. Gloves contaminated with product should be discarded. Promptly remove clothing that becomes soiled with product.

Other Protective Clothing

Various application methods can dictate use of additional protective safety equipment, such as impermeable aprons, etc., to minimize exposure. A source of clean water should be available in the work area for flushing eyes and skin. Do not eat, drink, or smoke in the work area. Wash hands thoroughly after use. Before reuse, thoroughly clean any clothing or protective equipment that has been contaminated by prior use. Discard any clothing or other protective equipment that cannot be decontaminated, such as gloves or shoes.

MATERIAL SAFETY DATA SHEET

Klean-Strip Paint Thinner

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Engineering Controls (Ventilation etc.)

Use only with adequate ventilation to prevent build-up of vapors. Open all windows and doors. Use only with a cross ventilation of moving fresh air across the work area. If strong odor is noticed or you experience slight dizziness, headache, nausea, or eye-watering - Stop - ventilation is inadequate. Leave area immediately.

9. Physical and Chemical Properties

Physical States:	<input type="checkbox"/> Gas <input checked="" type="checkbox"/> Liquid <input type="checkbox"/> Solid
Melting Point:	No data.
Boiling Point:	> 310.00 F
Autoignition Pt:	No data.
Flash Pt:	105.00 F Method: SCC
Explosive Limits:	LEL: 1.00 UEL: No data.
Specific Gravity (Water = 1):	No data.
Bulk Density:	6.659 LB/GA
Vapor Pressure (vs. Air or mm Hg):	No data.
Vapor Density (vs. Air = 1):	No data.
Evaporation Rate (vs Butyl Acetate=1):	No data.
Solubility in Water:	No data.
Percent Volatile:	100.0 % by weight.
VOC / Volume:	800.0000 G/L
Corrosion Rate:	No data.
pH:	No data.
Appearance and Odor	

Water White / Free and Clear

10. Stability and Reactivity

Stability:	Unstable <input type="checkbox"/> Stable <input checked="" type="checkbox"/>
Conditions To Avoid - Instability	No data available.
Incompatibility - Materials To Avoid	Incompatible with strong oxidizing agents.
Hazardous Decomposition Or Byproducts	Decomposition may produce carbon monoxide and carbon dioxide.
Hazardous Polymerization:	Will occur <input type="checkbox"/> Will not occur <input checked="" type="checkbox"/>
Conditions To Avoid - Hazardous Polymerization	No data available.

11. Toxicological Information

Toxicological Information	No data available.
Carcinogenicity/Other Information	No data available.
Carcinogenicity:	NTP? No IARC Monographs? No OSHA Regulated? No

12. Ecological Information

Ecological Information	No data available.
------------------------	--------------------

MATERIAL SAFETY DATA SHEET

Klean-Strip Paint Thinner

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13. Disposal Considerations

Waste Disposal Method

Dispose in accordance with federal, state, and local regulations.

14. Transport Information

LAND TRANSPORT (US DOT)

DOT Proper Shipping Name

No data available.

15. Regulatory Information

US EPA SARA Title III

Hazardous Components (Chemical Name)	CAS #	Sec.302 (EHS)	Sec.304 RQ	Sec.313 (TRI)	Sec.110
1. Stoddard solvent	8052-41-3	No	No	No	No
2. 1,2,4-Trimethylbenzene	95-63-6	No	No	Yes	No
3. Raffinates (petroleum), sorption process	64741-85-1	No	No	No	No

US EPA CAA, CWA, TSCA

Hazardous Components (Chemical Name)	CAS #	EPA CAA	EPA CWA NPDES	EPA TSCA	CA PROP 65
1. Stoddard solvent	8052-41-3	No	No	No	No
2. 1,2,4-Trimethylbenzene	95-63-6	No	No	No	No
3. Raffinates (petroleum), sorption process	64741-85-1	No	No	No	No

SARA (Superfund Amendments and Reauthorization Act of 1986) Lists:

Sec.302:	EPA SARA Title III Section 302 Extremely Hazardous Chemical with TPQ. * indicates 10000 LB TPQ if not volatile.
Sec.304:	EPA SARA Title III Section 304: CERCLA Reportable + Sec.302 with Reportable Quantity. ** indicates statutory RQ.
Sec.313:	EPA SARA Title III Section 313 Toxic Release Inventory. Note: -Cat indicates a member of a chemical category.
Sec.110:	EPA SARA 110 Superfund Site Priority Contaminant List

TSCA (Toxic Substances Control Act) Lists:

5A(2):	Chemical Subject to Significant New Rules (SNURS)
6A:	Commercial Chemical Control Rules
8A:	Toxic Substances Subject To Information Rules on Production
8A CAIR:	Comprehensive Assessment Information Rules - (CAIR)
8A PAIR:	Preliminary Assessment Information Rules - (PAIR)
8C:	Records of Allegations of Significant Adverse Reactions
8D:	Health and Safety Data Reporting Rules
8D TERM:	Health and Safety Data Reporting Rule Terminations

Other Important Lists:

CWA NPDES:	EPA Clean Water Act NPDES Permit Chemical
CAA HAP:	EPA Clean Air Act Hazardous Air Pollutant
CAA ODC:	EPA Clean Air Act Ozone Depleting Chemical (1=CFC, 2=HCFC)
CA PROP 65:	California Proposition 65

EPA Hazard Categories:

This material meets the EPA 'Hazard Categories' defined for SARA Title III Sections 311/312 as indicated:

- ☐ Yes ☒ No Acute (immediate) Health Hazard
- ☐ Yes ☒ No Chronic (delayed) Health Hazard
- ☐ Yes ☒ No Fire Hazard
- ☐ Yes ☒ No Reactive Hazard

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[] Yes [X] No Sudden Release of Pressure Hazard

16. Other Information

Company Policy or Disclaimer

The information contained herein is presented in good faith and believed to be accurate as of the effective date shown above. This information is furnished without warranty of any kind. Employers should use this information only as a supplement to other information gathered by them and must make independent determination of suitability and completeness of information from all sources to assure proper use of these materials and the safety and health of employees. Any use of this data and information must be determined by the user to be in accordance with applicable federal, state and local laws and regulations.

MATERIAL SAFETY DATA SHEET

Klean-Strip Denatured Alcohol

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PPE	G



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Date Created: 06/13/2005

1. Product and Company Identification

Product Code: QSL26
 Product Name: Klean-Strip Denatured Alcohol
 Reference #: 1625.5
 Manufacturer Information
 Company Name: W. M. Barr
 2105 Channel Avenue
 Memphis, TN 38113
 Phone Number: (901)775-0100
 Emergency Contact: 3E 24 Hour Emergency Contact (800)451-8346
 Information: W.M. Barr Customer Service (800)398-3892
 Web site address: www.wmbarr.com
 Preparer Name: W.M. Barr EHS Department (901)775-0100

2. Composition/Information on Ingredients

Hazardous Components (Chemical Name)	CAS #	Percentage	OSHA PEL	ACGIH TWA	Other Limits
1. Ethyl alcohol	64-17-5	45.0 -50.0 %	1000 ppm	1000 ppm	No data.
2. Methanol	67-56-1	45.0 -50.0 %	200 ppm	200 ppm	No data.
3. Methyl isobutyl ketone	108-10-1	1.0 -4.0 %	100 ppm	50 ppm	No data.
Hazardous Components (Chemical Name)	RTECS #	OSHA STEL	OSHA CEIL	ACGIH STEL	ACGIH CEIL
1. Ethyl alcohol	KQ6300000	No data.	No data.	No data.	No data.
2. Methanol	PC1400000	No data.	No data.	250 ppm	No data.
3. Methyl isobutyl ketone	SA9275000	No data.	No data.	75 ppm	No data.

3. Hazards Identification

Emergency Overview

Danger! Flammable! Keep away from heat, sparks, flame, and all other sources of ignition. Do not smoke. Extinguish all flames and pilot lights, and turn off stoves, heaters, electric motors and all other sources of ignition during use and until all vapors are gone. Beware of static electricity that may be generated by synthetic clothing and other sources.

OSHA Regulatory Status: This material is classified as hazardous under OSHA regulations.

Health Hazards (Acute and Chronic)

Inhalation Acute Exposure Effects:

Vapor harmful. May cause dizziness, headache, watering of eyes, irritation of respiratory tract, irritation to the eyes, drowsiness, nausea, other central nervous system effects, spotted vision, dilation of pupils, and convulsions.

Skin Contact Acute Exposure Effects:

May cause irritation, drying of skin, redness, and dermatitis. May cause symptoms listed under inhalation. May be absorbed through damaged skin.

Eye Contact Acute Exposure Effects:

May cause irritation.

Ingestion Acute Exposure Effects:

Poison. Cannot be made non-poisonous. May be fatal or cause blindness. May produce fluid in the lungs and pulmonary edema. May cause dizziness, headache, nausea, drowsiness, loss of coordination, stupor, reddening of face and or neck, liver, kidney and heart damage, coma, and death. May produce symptoms listed under

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inhalation.

Chronic Exposure Effects:

May cause symptoms listed under inhalation, dizziness, fatigue, tremors, permanent central nervous system changes, blindness, pancreatic damage, and death.

Signs and Symptoms Of Exposure

No data available.

Medical Conditions Generally Aggravated By Exposure

Diseases of the liver.

OSHA Hazard Classes:

HEALTH HAZARDS : N/E

PHYSICAL HAZARDS : N/E

TARGET ORGANS & EFFECTS: N/E

4. First Aid Measures

Emergency and First Aid Procedures

Inhalation:

If user experiences breathing difficulty, move to air free of vapors. Administer oxygen or artificial respiration until medical assistance can be rendered.

Skin Contact:

Wash with soap and water.

Eye Contact:

Flush with large quantities of water for at least 15 minutes. If irritation from contact persists, get medical attention.

Ingestion:

Call your poison control center, hospital emergency room or physician immediately for instructions to induce vomiting.

Note to Physician

Poison. This product contains methanol. Methanol is metabolized to formaldehyde and formic acid. These metabolites may cause metabolic acidosis, visual disturbances and blindness. Since metabolism is required for these toxic symptoms, their onset may be delayed from 6 to 30 hours following ingestion. Ethanol competes for the same metabolic pathway and has been used as an antidote. Methanol is effectively removed by hemodialysis. Call your local poison control center for further instructions.

5. Fire Fighting Measures

Flammability Classification:

OSHA Class IB

Flash Pt:

45.00 F Method Used: SCC

Explosive Limits:

LEL: 1.00 UEL: No data.

Autoignition Pt:

No data.

Special Fire Fighting Procedures

Self-contained respiratory protection should be provided for fire fighters fighting fires in buildings or confined area. Storage containers exposed to fire should be kept cool with water spray to prevent pressure build-up. Stay away from heads of containers that have been exposed to intense heat or flame.

Unusual Fire and Explosion Hazards

No data available.

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Extinguishing Media

Use carbon dioxide, dry powder, or foam.

Unsuitable Extinguishing Media

No data available.

6. Accidental Release Measures

Steps To Be Taken In Case Material Is Released Or Spilled

Clean-up:

Keep unnecessary people away; isolate hazard area and deny entry. Stay upwind, out of low areas, and ventilate closed spaces before entering. Shut off ignition sources, keep flares, smoking or flames out of hazard area.

Small spills:

Take up liquid with sand, earth or other noncombustible absorbent material and place in a plastic container where applicable.

Large spills:

Dike far ahead of spill for later disposal.

7. Handling and Storage

Precautions To Be Taken in Handling

Read carefully all cautions and directions on product label before use. Since empty container retains residue, follow all label warnings even after container is empty. Dispose of empty container according to all regulations. Do not reuse this container.

Precautions To Be Taken in Storing

Keep container tightly closed when not in use. Store in a cool, dry place. Do not store near flames or at elevated temperatures.

8. Exposure Controls/Personal Protection

Respiratory Equipment (Specify Type)

For OSHA controlled work place and other regular users. Use only with adequate ventilation under engineered air control systems designed to prevent exceeding appropriate TLV. For occasional use, where engineered air control is not feasible, use properly maintained and properly fitted NIOSH approved respirator for organic solvent vapors. A dust mask does not provide protection against vapors.

Eye Protection

Safety glasses, chemical goggles or face shields are recommended to safeguard against potential eye contact, irritation, or injury. Contact lenses should not be worn while working with chemicals.

Protective Gloves

Wear impermeable gloves. Gloves contaminated with product should be discarded. Promptly remove clothing that becomes soiled with product.

Other Protective Clothing

Various application methods can dictate the use of additional protective safety equipment, such as impermeable aprons, etc., to minimize exposure. A source of clean water should be available in the work area for flushing eyes and skin. Do not eat, drink, or smoke in the work area. Wash hands thoroughly after use. Before reuse, thoroughly clean any clothing or protective equipment that has been contaminated by prior use. Discard any clothing or other protective equipment that cannot be decontaminated, such as gloves or shoes.

Ventilation

Use only with adequate ventilation to prevent build-up of vapors. Open all windows and doors. Use only with a cross ventilation of moving fresh air across the work area. If strong odor is noticed or you experience slight dizziness, headache, nausea, or eye-watering -- Stop -- ventilation is inadequate. Leave area immediately.

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9. Physical and Chemical Properties

Physical States: ☐ Gas ☒ Liquid ☐ Solid
Melting Point: No data.
Boiling Point: 147.00 F
Autoignition Pt: No data.
Flash Pt: 45.00 F Method: SCC
Explosive Limits: LEL: 1.00 UEL: No data.
Specific Gravity: No data.
Bulk Density: 6.61 LB/GA
Vapor Pressure: No data.
Vapor Density: No data.
Evaporation Rate: No data.
Solubility in Water: No data.
Percent Volatile: 100.0 % by weight.
VOC / Volume: 792.0000 G/L
Corrosion Rate: No data.
pH: No data.

Appearance and Odor:

No data available.

10. Stability and Reactivity

Stability: Unstable ☐ Stable ☒

Conditions To Avoid - Instability

No data available.

Incompatibility - Materials To Avoid

Incompatible with strong oxidizing agents.

Hazardous Decomposition Or Byproducts

Decomposition may produce carbon monoxide and carbon dioxide.

Hazardous Polymerization: Will occur ☐ Will not occur ☒

Conditions To Avoid - Hazardous Polymerization

No data available.

11. Toxicological Information

Toxicological Information

No data available.

Carcinogenicity/Other Information

No data available.

Carcinogenicity: NTP? No IARC Monographs? No OSHA Regulated? No

12. Ecological Information

Ecological Information

No data available.

13. Disposal Considerations

Waste Disposal Method

Dispose in accordance with applicable local, state, and federal regulations.

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14. Transport Information

LAND TRANSPORT (US DOT)

DOT Proper Shipping Name

No data available.

15. Regulatory Information

US EPA SARA Title III

Hazardous Components (Chemical Name)	CAS #	Sec.302 (EHS)	Sec.304 RQ	Sec.313 (TRI)	Sec.110
1. Ethyl alcohol	64-17-5	No	No	No	No
2. Methanol	67-56-1	No	Yes 5000 LB	Yes	No
3. Methyl isobutyl ketone	108-10-1	No	Yes 5000 LB	Yes	Yes

US EPA CAA, CWA, TSCA

Hazardous Components (Chemical Name)	CAS #	EPA CAA	EPA CWA NPDES	EPA TSCA	CA PROP 65
1. Ethyl alcohol	64-17-5	No	No	No	No
2. Methanol	67-56-1	HAP	No	No	No
3. Methyl isobutyl ketone	108-10-1	HAP	No	No	No

SARA (Superfund Amendments and Reauthorization Act of 1986) Lists:

Sec.302:	EPA SARA Title III Section 302 Extremely Hazardous Chemical with TPQ. * indicates 10000 LB TPQ if not volatile.
Sec.304:	EPA SARA Title III Section 304: CERCLA Reportable + Sec.302 with Reportable Quantity. ** indicates statutory RQ.
Sec.313:	EPA SARA Title III Section 313 Toxic Release Inventory. Note: -Cat indicates a member of a chemical category.
Sec.110:	EPA SARA 110 Superfund Site Priority Contaminant List

TSCA (Toxic Substances Control Act) Lists:

5A(2):	Chemical Subject to Significant New Rules (SNURS)
6A:	Commercial Chemical Control Rules
8A:	Toxic Substances Subject To Information Rules on Production
6A CAIR:	Comprehensive Assessment Information Rules - (CAIR)
8A PAIR:	Preliminary Assessment Information Rules - (PAIR)
8C:	Records of Allegations of Significant Adverse Reactions
8D:	Health and Safety Data Reporting Rules
8D TERM:	Health and Safety Data Reporting Rule Terminations

Other Important Lists:

CWA NPDES:	EPA Clean Water Act NPDES Permit Chemical
CAA HAP:	EPA Clean Air Act Hazardous Air Pollutant
CAA ODC:	EPA Clean Air Act Ozone Depleting Chemical (1=CFC, 2=HCFC)
CA PROP 65:	California Proposition 65

EPA Hazard Categories:

This material meets the EPA 'Hazard Categories' defined for SARA Title III Sections 311/312 as indicated:

<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Acute (immediate) Health Hazard
<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Chronic (delayed) Health Hazard
<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Fire Hazard
<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Reactive Hazard
<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Sudden Release of Pressure Hazard

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Klean-Strip Denatured Alcohol

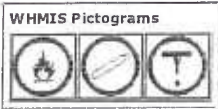
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16. Other Information

Company Policy or Disclaimer

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SECTION 1: CHEMICAL PRODUCT and COMPANY IDENTIFICATION

(N/A)

Product Name: **I-Chem White Lithium Grease (#ICA725)**
 Distributor Name: Amrep, Inc.
 Distributor Address: 990 Industrial Park Drive
 Marietta, GA 30062

D.O.T. Emergency Phone:
 CHEM TEL (800) 255-3924
 INTERNATIONAL: +01-813-248-0584

Distributor Telephone: (770) 422-2071
 Hours Of Operation: (Mon - Fri / 8am - 5pm ET)
 Revision Date: October 24, 2007
 Revision #: 1.0

Expiry Date: October 24, 2010
 Manufacturer Name: Amrep, Inc.
 Address: 990 Industrial Park Drive
 Marietta, GA 30062

D.O.T. Emergency Phone:
 CHEM TEL (800) 255-3924
 INTERNATIONAL: +01-813-248-0584

General Use: Product Use: Lubricant.
 Business Phone: (770) 422-2071
 Hazard Rating:
 0 = Minimal
 1 = Slight
 2 = Moderate
 3 = Severe
 4 = Extreme

Product Codes: A00725

NFPA



HMIS

HEALTH	2
FIRE	3
REACTIVITY	0
PPE	B

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SECTION 2 : COMPOSITION, INFORMATION ON INGREDIENTS

(N/A)

Ingredient Name	CAS#	Ingredient Percent
Acetone	67-64-1	10 - 30% by Weight
EC Index Number:	1	
Heptane	142-82-5	10 - 30% by Weight
EC Index Number:	1	
Isobutane	75-28-5	10 - 30% by Weight
EC Index Number:	1	
Propane	74-98-6	7 - 13% by Weight
EC Index Number:	1	
Distillates (petroleum), hydrotreated light	64742-47-8	1 - 5% by Weight
EC Index Number:	1	

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SECTION 3 : HAZARDS IDENTIFICATION

(N/A)

Emergency Overview:

DANGER

EXTREMELY FLAMMABLE. HARMFUL BY INHALATION.
 MAY CAUSE EYE IRRITATION. MAY CAUSE SKIN IRRITATION.
 CONTENTS UNDER PRESSURE. CONTAINER MAY EXPLODE IF HEATED.

Environment Hazards:	May cause long-term adverse effects in the aquatic environment. See Section 12 for more information.
Potential Health Effects:	See Section 11 for more information. HMIS: See Section 15

Section 4 : First Aid Measures

Route of Exposure:	Skin contact, eye contact, inhalation, and ingestion.
Potential Health Effects:	
Eye Contact:	May cause eye irritation.
Skin Contact:	May cause skin irritation.
Inhalation:	Harmful by inhalation. May cause respiratory tract irritation. May cause asphyxiation. This product may be aspirated into the lungs and cause chemical pneumonitis.
Ingestion:	Not a normal route of exposure. Harmful: may cause lung damage if swallowed.
Chronic Health Effects:	Prolonged or repeated contact may dry skin and cause irritation.
Target Organs:	Skin, eyes, gastrointestinal tract, respiratory system.
Signs/Symptoms:	Symptoms may include discomfort or pain, excess blinking and tear production, with marked redness and swelling of the conjunctiva. Handling can cause dry skin. Vapours may cause drowsiness and dizziness.
Aggravation of Pre-Existing Conditions:	Asthma. Allergies.

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SECTION 4 : FIRST AID MEASURES

: (N/A)

Eye Contact:	In case of contact, immediately flush eyes with plenty of water. If easy to do, remove contact lenses, if worn.
Skin Contact:	In case of contact, immediately flush skin with plenty of water. Remove contaminated clothing and shoes. Wash clothing before reuse. Call a physician if irritation develops and persists.
Inhalation:	If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen.
Ingestion:	If swallowed, do NOT induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person.
Note to Physicians:	Symptoms may not appear immediately.
Other First Aid:	General Advice: In case of accident or if you feel unwell, seek medical advice immediately (show the label or MSDS where possible).

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SECTION 5 : FIRE FIGHTING MEASURES

: (N/A)

Fire:	Flammability: Flammable by WHMIS/OSHA criteria.
Flash Point:	Not available.
Upper Flammable or Explosive Limit:	Not available.
Lower Flammable or Explosive Limit:	Not available.
Auto Ignition Temperature:	Not available.
Extinguishing Media:	Suitable Extinguishing Media: Powder, foam, carbon dioxide.
Unsuitable Media:	Unsuitable Extinguishing Media: Water.
Hazardous Combustion Byproducts:	May include, and are not limited to: oxides of carbon.
Fire Fighting Instructions:	Containers may explode when heated. Keep upwind of fire. Wear full fire fighting turn-out gear (full Bunker gear) and respiratory protection (SCBA).
Sensitivity to Impact:	Sensitivity to Mechanical Impact: Not available.
Static Discharge Effects:	Sensitivity to Static Discharge: Not available.

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SECTION 6 : ACCIDENTAL RELEASE MEASURES

: (N/A)

Personal Precautions:	Use personal protection recommended in Section 8. Isolate the hazard area and deny entry to unnecessary and unprotected personnel. Eliminate sources of ignition. Ruptured cylinders may rocket.
Spill Cleanup Measures:	Methods for Containment: Contain and/or absorb spill with inert material (e.g. sand, vermiculite), then place in a suitable container. Do not flush to sewer or allow to enter waterways. Use appropriate Personal Protective Equipment (PPE).
Environmental Precautions:	Methods for Clean-Up: Vacuum or sweep material and place in a disposal container. Allow gas to dissipate harmlessly into the atmosphere. Many gases are heavier than air and will spread along ground and collect in low or confined areas (sewers, basements, tanks). This material is a water pollutant. Keep out of drains, sewers, ditches, and waterways. Minimize use of water to prevent environmental contamination.
Other Precautions:	Not available.

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SECTION 7 : HANDLING and STORAGE

: (N/A)

Handling:	Keep away from sources of ignition. - No smoking. Avoid contact with skin and eyes. Do not swallow. Do not breathe gas/fumes/vapor/spray. Use only in well-ventilated areas. Handle and open container with care. When using, do not eat or drink. Wash hands before eating, drinking, or smoking.
Storage:	Keep out of the reach of children. Keep container in a well-ventilated place. Do not store at temperatures above 49 deg C/120 deg F.

Hygiene Practices:

General Hygiene Considerations: Handle according to established industrial hygiene and safety practices.

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SECTION 8 : EXPOSURE CONTROLS, PERSONAL PROTECTION

: (N/A)

Engineering Controls:	Use ventilation adequate to keep exposures (airborne levels of dust, fume, vapor, etc.) below recommended exposure limits.
Skin Protection Description:	Wear suitable protective clothing.
Hand Protection Description:	Wear suitable gloves.
Eye/Face Protection:	Wear eye/face protection.
Protective Clothing/Body Protection:	Wear suitable protective clothing.
Respiratory Protection:	In case of insufficient ventilation, wear suitable respiratory equipment.
	General Hygiene Considerations: Handle according to established industrial hygiene and safety practices.
	HMIS: See Section 15

Ingredient Guidelines

Ingredient: Acetone

Guideline Type:	OSHA PEL-TWA
Guideline Information:	1000 ppm
Guideline Type:	ACGIH TLV-TWA
Guideline Information:	500 ppm

Ingredient: Distillates (petroleum), hydrotreated light

Guideline Type:	OSHA PEL-TWA
Guideline Information:	100 ppm
Guideline Type:	ACGIH TLV-TWA
Guideline Information:	200 mg/m3

Ingredient: Heptane

Guideline Type:	OSHA PEL-TWA
Guideline Information:	400 ppm
Guideline Type:	ACGIH TLV-TWA
Guideline Information:	400 ppm

Ingredient: Isobutane

Guideline Type:	OSHA PEL-TWA
Guideline Information:	Not available.
Guideline Type:	ACGIH TLV-TWA
Guideline Information:	Not available.

Ingredient: Propane

Guideline Type:	OSHA PEL-TWA
Guideline Information:	1000 ppm
Guideline Type:	ACGIH TLV-TWA
Guideline Information:	1000 ppm

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SECTION 9 : PHYSICAL and CHEMICAL PROPERTIES

: (N/A)

Physical State/Appearance:	Opaque.
Color:	White.
Odor:	Characteristic.
Physical State:	Gas/Pressurized Liquid.
pH:	Not applicable.
Vapor Pressure:	Not available.
Vapor Density:	Not available.
Flash Point:	Not available.
Auto Ignition Temperature:	Not available.
Upper Explosive Limit:	Not available.
Lower Explosive Limit:	Not available.
Boiling Point:	Not available.
Freezing Point:	Not available.
Solubility:	In Water: Partial.
Specific Gravity:	0.77 (Concentrate only)
Evaporation Point:	Not available.
Percent Volatile:	wt. %: Not available.
Volatile Organic Compound Content:	wt. %: 50% (US federal/CARB/OTC/LADCO)
Viscosity:	Not available.
Odor Threshold:	Not available.
Coefficient of Water/Oil Distribution:	Not available.

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SECTION 10 : STABILITY and REACTIVITY

: (N/A)

Chemical Stability:	Stable under normal storage conditions. Contents under pressure. Container may explode if heated. Do not puncture. Do not burn. Keep in a cool place.
Incompatibilities with Other Materials:	Oxidizers.
Reactivity:	Conditions of Reactivity: Heat. Incompatible materials.
	Possibility of Hazardous Reactions: No dangerous reaction known under conditions of normal use.

Hazardous Decomposition
Products:

May include, and are not limited to: oxides of carbon.

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SECTION 11 : TOXICOLOGICAL INFORMATION

: (N/A)

[Applies to All Ingredients :](#)

Eye Effects:	ACUTE: May cause eye irritation. Symptoms may include discomfort or pain, excess blinking and tear production, with marked redness and swelling of the conjunctiva.
Skin Effects:	ACUTE: May cause skin irritation. Handling can cause dry skin.
Ingestion Effects:	ACUTE: Not a normal route of exposure. Harmful: may cause lung damage if swallowed.
Inhalation Effects:	ACUTE: Harmful by inhalation. May cause respiratory tract irritation. May cause asphyxiation. This product may be aspirated into the lungs and cause chemical pneumonitis. Vapours may cause drowsiness and dizziness.
Chronic Effects:	Not hazardous by WHMIS/OSHA criteria.
Carcinogenicity:	Not hazardous by WHMIS/OSHA criteria.
Mutagenicity:	Not hazardous by WHMIS/OSHA criteria.
Teratogenicity:	Not hazardous by WHMIS/OSHA criteria.
Embryo Toxicity:	Not hazardous by WHMIS/OSHA criteria.
Sensitization:	Respiratory Sensitization: Not hazardous by WHMIS/OSHA criteria.
Reproductive Toxicity:	Skin Sensitization: Not hazardous by WHMIS/OSHA criteria.
Other Toxicological Information:	Not hazardous by WHMIS/OSHA criteria. Target Organs: Not available. Toxicologically Synergistic Materials: Not available.

[Acetone :](#)

Ingestion Effects:	LD50 (oral): 5800 mg/kg, rat
Inhalation Effects:	LC50: Not available.
Carcinogenicity:	Chemical Listed as Carcinogen or Potential Carcinogen *: Not listed.

[Heptane :](#)

Ingestion Effects:	LD50 (oral): Not available.
Inhalation Effects:	LC50: 103 g/m3 4hrs, rat
Carcinogenicity:	Chemical Listed as Carcinogen or Potential Carcinogen *: Not listed.

[Isobutane :](#)

Ingestion Effects:	LD50 (oral): Not available.
Inhalation Effects:	LC50: Not available.
Carcinogenicity:	Chemical Listed as Carcinogen or Potential Carcinogen *: Not listed.

[Propene :](#)

Ingestion Effects:	LD50 (oral): Not available.
Inhalation Effects:	LC50: Not available.
Carcinogenicity:	Chemical Listed as Carcinogen or Potential Carcinogen *: Not listed.

[Distillates \(petroleum\), hydrotreated light :](#)

Ingestion Effects:	LD50 (oral): > 5000 mg/kg, rat
Inhalation Effects:	LC50: Not available.
Carcinogenicity:	Chemical Listed as Carcinogen or Potential Carcinogen *: I -3, G-A3
Comments:	* See Section 15 for more information.

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SECTION 12 : ECOLOGICAL INFORMATION

: (N/A)

Ecotoxicity:	May cause long-term adverse effects in the aquatic environment
Bioaccumulation:	Bioaccumulation / Accumulation: Not available.
Biodegradation:	Persistence / Degradability: Not available. Mobility in Environment: Not available.

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SECTION 13 : DISPOSAL CONSIDERATIONS

: (N/A)

Waste Disposal:	This material must be disposed of in accordance with all local, state, provincial, and federal regulations.
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SECTION 14 : TRANSPORT INFORMATION

: (N/A)

DOT Hazard Class:	ORM-D
Canadian Hazard Class:	Limited Quantity

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SECTION 15 : REGULATORY INFORMATION

: (N/A)

[Applies to All Ingredients :](#)

OSHA 29 CFR 1200:	US: MSDS prepared pursuant to the Hazard Communication Standard (29 CFR 1910.1200).
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State:	California Proposition 65: This product does not contain a chemical known to the State of California to cause cancer, birth defects or other reproductive harm.
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Canada WHMIS:

Canadian: This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations and the MSDS contains all the information required by the Controlled Products Regulations.

WHMIS Classification(s):
Class A - Compressed Gas
Class B5 - Flammable Aerosol
Class D2B - Skin/Eye Irritant

HMIS - Hazardous Materials Identification System:
Health - 2
Flammability - 3
Physical Hazard - 0
PPE - B

NFPA - National Fire Protection Association:
Health - 2
Fire - 3
Reactivity - 0

Hazard Rating: 0 = minimal, 1 = slight, 2 = moderate, 3 = severe, 4 = extreme

Acetone:

TSCA 8(b): Inventory Status (Yes/No): Yes
Section 302 Extremely Hazardous Substances (TPQ): (lbs.): Not listed.
Section 304 EHS RQ: (lbs.): Not listed.
Section 304 CERCLA RQ: 5,000 lbs.
Section 313 Toxic Release Form: Section 313: Not listed.

Canada DSL: Yes

Heptane:

TSCA 8(b): Inventory Status (Yes/No): Yes
Section 302 Extremely Hazardous Substances (TPQ): (lbs.): Not listed.
Section 304 EHS RQ: (lbs.): Not listed.
Section 304 CERCLA RQ: (lbs.): Not listed.
Section 313 Toxic Release Form: Section 313: Not listed.

Canada DSL: Yes

Isobutane:

TSCA 8(b): Inventory Status (Yes/No): Yes
Section 302 Extremely Hazardous Substances (TPQ): (lbs.): Not listed.
Section 304 EHS RQ: (lbs.): Not listed.
Section 304 CERCLA RQ: (lbs.): Not listed.
Section 313 Toxic Release Form: Section 313: Not listed.

Canada DSL: Yes

Propane:

TSCA 8(b): Inventory Status (Yes/No): Yes
Section 302 Extremely Hazardous Substances (TPQ): (lbs.): Not listed.
Section 304 EHS RQ: (lbs.): Not listed.
Section 304 CERCLA RQ: (lbs.): Not listed.
Section 313 Toxic Release Form: Section 313: Not listed.

Canada DSL: Yes

Distillates (petroleum), hydrotreated light:

TSCA 8(b): Inventory Status (Yes/No): Yes
Section 302 Extremely Hazardous Substances (TPQ): (lbs.): Not listed.
Section 304 EHS RQ: (lbs.): Not listed.
Section 304 CERCLA RQ: (lbs.): Not listed.
Section 313 Toxic Release Form: Section 313: Not listed.

Canada DSL: Yes

SOURCE AGENCY CARCINOGEN CLASSIFICATIONS:
OSHA (O): Occupational Safety and Health Administration.

ACGIH (G): American Conference of Governmental Industrial Hygienists.
A1 - Confirmed human carcinogen.
A2 - Suspected human carcinogen.
A3 - Animal carcinogen.
A4 - Not classifiable as a human carcinogen.
A5 - Not suspected as a human carcinogen.

IARC (I): International Agency for Research on Cancer.
1 - The agent (mixture) is carcinogenic to humans.
2A - The agent (mixture) is probably carcinogenic to humans; there is limited evidence of carcinogenicity in humans and sufficient evidence of carcinogenicity in experimental animals.
2B - The agent (mixture) is possibly carcinogenic to humans; there is limited evidence of carcinogenicity in humans in the absence of sufficient evidence of carcinogenicity in experimental animals.
3 - The agent (mixture, exposure circumstance) is not classifiable as to its carcinogenicity to humans.
4 - The agent (mixture, exposure circumstance) is probably not carcinogenic to humans.

NTP (N): National Toxicology Program.
1 - Known to be carcinogens.

2 - Reasonably anticipated to be carcinogens.

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SECTION 16 : ADDITIONAL INFORMATION

: (N/A)

HMIS:

Health Hazard:	2 = Moderate
Fire Hazard:	3 = Severe
Reactivity:	0 = Minimal
Personal Protection:	B

NFPA:

Health:	2 = Moderate
Fire Hazard:	3 = Severe
Reactivity:	0 = Minimal

MSDS Revision Date: October 24, 2007
Revision ##: 1.0

Expiry Date: October 24, 2010

MSDS Author:

Prepared by: Nexreg Compliance Inc.
Prepared for: Amrep, Inc.
Phone: (770) 422-2071 (Mon - Fri / 8am - 5pm ET)

Disclaimer:

We believe the statements, technical information and recommendations contained herein are reliable, but they are given without warranty or guarantee of any kind. The information contained in this document applies to this specific material as supplied. It may not be valid for this material if it is used in combination with any other materials. It is the user's responsibility to satisfy oneself as to the suitability and completeness of this information for the user's own particular use.

Hazard Rating:

0 = Minimal
1 = Slight
2 = Moderate
3 = Severe
4 = Extreme

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Date:
Supersedes:

23 July 2009
25 July 2006

MATERIAL SAFETY DATA SHEET

IN CASE OF EMERGENCY CALL CHEMTREC AT 1-800-424-9300

1. PRODUCT IDENTIFICATION AND COMPANY IDENTIFICATION:

Product Name: **GOJO® NATURAL * ORANGE™ PUMICE HAND CLEANER**

Company Name & Address: GOJO Industries, Inc.
One GOJO Plaza, Suite 500
Akron, OH 44311

Emergency Phone: **1-800-424-9300 CHEMTREC**

Non-Emergency Phone: (330) 255-6000

MSDS Request Phone: (330) 255-6000 x8804

2. INFORMATION ON INGREDIENTS:

HAZARDOUS INGREDIENTS	CAS NUMBER	OSHA PEL	ACGIH TLV	% RANGE
None				

Other ingredient(s) with notification requirements:	CAS NUMBER	List
Limonene	5989-27-5	NJ; CN 1

3. HAZARDS IDENTIFICATION:

EMERGENCY OVERVIEW

When used according to instructions, the product applicable to this MSDS is safe and presents no immediate or long-term health hazard. However, abnormal entry routes, such as gross ingestion, may require immediate medical attention.

Potential Health Effects:

HMIS: Health 0 Flammability 1 Reactivity 0 Personal Protection None

Eye Contact: May cause eye irritation.

Skin Contact: No irritation or reaction expected.

Inhalation: Not applicable.

Ingestion: May cause upset stomach, nausea (Abnormal entry route).

Carcinogenicity: Not listed as a carcinogen by NTP, IARC, OSHA or ACGIH.

4. FIRST AID MEASURES:

Eye Contact: Do not rub eyes. Flush eyes thoroughly with water for 15 minutes. If condition worsens or irritation persists, contact physician.

Skin Contact: Not applicable.

Inhalation: Not applicable.

Ingestion: Do not induce vomiting. Contact a physician or Poison Control Center.

5. FIRE FIGHTING MEASURES:

NFPA: Health 0 Fire 1 Reactivity 0
Flashpoint °F/°C (PMCC method): Not determined.
Unusual Fire and Explosion Hazards: None known.
Special Fire Fighting Procedures: None known.
Extinguishing Media: X Water Fog X Alcohol Foam X CO₂ X Dry Chemical Other

6. ACCIDENTAL RELEASE MEASURES:

No special requirements. Water clean up and rinse. CAUTION – WILL CAUSE SLIPPERY SURFACES.

7. HANDLING AND STORAGE:

Store at normal room temperature away from reach of small children. Keep containers sealed. Use older containers first. Avoid freezing conditions.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION:

Eye Protection: None required under normal conditions.
Skin Protection: None required under normal conditions.
Respiratory Protection: None required under normal conditions.
Ventilation: None required under normal conditions.
Protective Equipment or Clothing: None required under normal conditions.

9. PHYSICAL AND CHEMICAL PROPERTIES:

Appearance and Odor Creamy opaque viscous gel, orange fragrance.
pH (undiluted): 5.0-8.0
VOC, %: 7%

10. STABILITY AND REACTIVITY:

Stable/Non reactive product.

11. TOXICOLOGICAL INFORMATION:

No acute or chronic toxic effects expected when used according to directions.

12. ECOLOGICAL CONSIDERATIONS:

No ecological or special considerations when used according to directions. Not considered environmentally harmful from normal dilution, expected usage and typical drainage to sewers, septic systems and treatment plants.

13. DISPOSAL CONSIDERATIONS:

No special considerations when disposed according to local, state and Federal regulations.

14. TRANSPORT INFORMATION:

Not classified as a hazardous material.

15. REGULATORY AND OTHER INFORMATION:

TSCA: All ingredients are listed or exempt per reference 15 USC 2602 (2)(B)(iv).

Complies with current FDA regulations for cosmetic and/or over-the-counter drug products.

WHMIS: Not Controlled

Notice: The information herein is based on data considered to be accurate as of the date of preparation of this material safety data sheet. However, no warranty or representation, expressed or implied, is made as to the accuracy or completeness of the foregoing data and safety information. The user assumes all liability for any damage or injury resulting from abnormal use, from any failure to adhere to recommended practices or from any hazards inherent in the nature of the product.

MATERIAL SAFETY DATA SHEET

Specialty Adhesives, Inc.
3777 Air Park
Memphis, TN 38118

Date: 2014
Prepared by: Tim Myrick/ V. Lauria
Telephone number: (901) 794-8556

Emergency Medical Telephone Number: (901)794-8556

PRODUCT IDENTIFICATION

Specialty Adhesives Name: 3006
Product Class: SYNTHETIC RESIN based product in water
DOT Proper Shipping name: none DOT regulated

WARNING STATEMENTS:

No specific warnings under normal use.

PRECAUTIONARY MEASURES

Avoid temperature extremes during storage

EMERGENCY AND FIRST AID PROCEDURES

First Aid:

If in eye:	Flush immediately with water for 15 minutes. Consult a physician if irritation persists.
If on skin:	No hazard under normal use.
If vapors inhaled:	No hazard under normal use.
In case of fire:	Product non-flammable in liquid state. Use water spray, foam, dry chemical or carbon dioxide on dried product.
Spill or Leak:	Contain and remove with inert absorbent. Keep spill out of sewers.

HAZARDOUS INGREDIENTS

Material Name / CAS #	Level in product	OSHA PEL	ACGIH TLV (1994)
None hazardous.			

This MSDS is prepared to comply with the OSHA Hazard Communication Standard (29 CFR 1919.1200). Unlisted ingredients are not "Hazardous" per this OSHA Standard and are considered to be trade secrets of Specialty Adhesives, INC.

NE -not established
NA -not applicable

OCCUPATIONAL CONTROL PROCEDURES

Eye Protection:	Wear safety glasses to reduce the potential for eye contact; chemical safety goggles are appropriate if splashing is likely. Have eye washes available where eye contact can occur.
Skin Protection:	No hazard under normal use.
Respiratory Protection:	not normally required.
Ventilation:	Standard industrial ventilation.

FIRE PROTECTION

Flash Point/Method:	Non-flammable
Appropriate Extinguishers:	Non-flammable in liquid state; use water spray, foam, dry chemical or carbon dioxide on dried product.
Special Fire Fighting Procedures:	Persons exposed to products of combustion should wear self-contained breathing apparatus and full protective equipment.
Unusual Fire and Explosion Hazards:	There is the possibility of pressure buildup in closed containers when heated. Water spray may be used to cool the containers.

REACTIVITY DATA

Stability:	Stable
Incompatibility:	not established
Hazardous Decomposed Products:	Incomplete combustion can yield low molecular wt. hydrocarbons, carbon monoxide
Hazardous Polymerization:	will not occur.

EFFECTS OF OVEREXPOSURE

Eyes:	Direct eye contact with the product may cause irritation.
Skin:	Prolonged or repeated contact with liquid product may cause irritations.
Inhalation:	No hazard under normal use.
Chronic:	No hazard under normal use.
Existing Health Conditions	Affected by exposure: No known effects on other illnesses.

NA - not applicable

NE- not established

PHYSICAL DATA

Physical State:	White Liquid
Weight per Gallon:	9.1
PH:	4.0- 6.0
Boiling Range:	> 200 F
Soluble in Water:	Miscible

SPILL, LEAK & DISPOSAL INFORMATION

Spill or Leak	Dike if necessary, contain spill with inert absorbent and transfer to containers for disposal. Keep spilled product out of sewers, watersheds or water systems.
Procedures:	
Waste Disposal:	To the best of our knowledge, this product Does not meet the definition of hazardous waste under EPA Regulations 40 CFR 261. It does not contain any added raw materials with known levels of TCLP constituents as identified in section 261.24 of the above mentioned regulation. State or local regulations may apply if they are different from federal regulations. Check with local officials before disposal. Solidify and dispose of in an approved landfill.

STORAGE

Protect from freezing - product stability may be affected.

ADDITIONAL INFORMATION:

In storage, monomer vapors will migrate from the emulsion and establish an equilibrium between the headspace in the storage container and the liquid emulsion. Levels in excess of acceptable exposures can accumulate in non-vented headspaces above the emulsion. All procedures appropriate for a confined space entry should be completed prior to performing any work in a bulk storage tank.

REGULATORY INFORMATION

TSCA

All components of this product are registered under the regulations of the Toxic Substances Control Act.

SARA TITLE III

Section 313: This product contains the following toxic chemical(s) subject to the reporting requirements of section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA) and 40 CFR part 372.

None Contained

This information must be included in all MSDS that are copied and distributed for this material.

NA- not applicable

NE- not established



MATERIAL SAFETY DATA SHEET

1. Product and Company Identification

Product number 0766_005
Material name Jet Force Wasp & Hornet Killer
Revision date 07-29-2013
Company information Claire Manufacturing Co.
1005 S. Westgate Drive
Addison, IL 60101 United States
Company phone General Assistance 1-630-543-7600
Emergency telephone US 1-866-836-8855
Emergency telephone outside US 1-952-852-4646
Version # 02
Supersedes date 07-29-2013

2. Hazards Identification

Emergency overview DANGER

CONTENTS UNDER PRESSURE.

Aerosol. Pressurized container may explode when exposed to heat or flame. May cause flash fire or explosion.

Will be easily ignited by heat, spark or flames. Harmful in contact with eyes. Irritating to skin. Irritating to respiratory system. Prolonged exposure may cause chronic effects.

OSHA regulatory status

This product is considered hazardous under 29 CFR 1910.1200 (Hazard Communication).

Potential health effects

Routes of exposure

Inhalation. Ingestion. Skin contact. Eye contact.

Eyes

Eye contact may result in corneal injury. Contact with eyes may cause irritation. Moderately irritating to the eyes.

Skin

Irritating to skin. Frequent or prolonged contact may defat and dry the skin, leading to discomfort and dermatitis. Harmful if absorbed through the skin.

Inhalation

Intentional misuse by concentrating and inhaling the product can be harmful or fatal. Irritating to respiratory system. Prolonged inhalation may be harmful.

Ingestion

Exposure by ingestion of an aerosol is unlikely. Components of the product may be absorbed into the body by ingestion. May cause delayed lung damage.

Target organs

Blood. Cardiac. Central nervous system. Lungs. Respiratory system.

Chronic effects

Unconsciousness. Shortness of breath. Conjunctiva. Cyanosis (blue tissue condition, nails, lips, and/or skin). May cause central nervous system disorder (e.g., narcosis involving a loss of coordination, weakness, fatigue, mental confusion and blurred vision) and/or damage. Frequent or prolonged contact may defat and dry the skin, leading to discomfort and dermatitis. May cause delayed lung injury.

Signs and symptoms

Unconsciousness. Discomfort in the chest. Shortness of breath. Corneal damage. Narcosis. Cyanosis (blue tissue condition, nails, lips, and/or skin). Decrease in motor functions. Behavioral changes. Coughing. Conjunctivitis. Irritating to mouth, throat, and stomach. Skin irritation. Defatting of the skin. Rash.

3. Composition / Information on Ingredients

Hazardous components	CAS #	Percent
Synthetic Isoparaffinic Hydrocarbon	64742-47-8	80 - 90
Carbon Dioxide	124-38-9	2.5 - 10
Isopropyl Alcohol	67-63-0	2.5 - 10

Non-hazardous components	CAS #	Percent
d-Phenothrin	26002-80-2	0.1 - 1
Tetramethrin	7696-12-0	0.1 - 1
Other components below reportable levels		1 - 2.5

4. First Aid Measures

First aid procedures

Eye contact	Immediately flush eyes with plenty of water for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Get medical attention immediately.
Skin contact	Get medical attention if irritation develops and persists. Remove and isolate contaminated clothing and shoes. Wash off immediately with plenty of water for at least 15 minutes.
Inhalation	If inhalation of gas/fume/vapor/dust/mist from the material is excessive (air concentration is greater than the TLV or health effects are noticed), immediately remove the affected person(s) to fresh air. Oxygen or artificial respiration if needed. Do not use mouth-to-mouth method if victim inhaled the substance. Induce artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device. Get medical attention immediately.
Ingestion	In the unlikely event of swallowing contact a physician or poison control center. Rinse mouth thoroughly. Do not induce vomiting without advice from poison control center. If vomiting occurs, keep head low so that stomach content doesn't get into the lungs. If material is ingested, immediately contact a poison control center. If vomiting occurs naturally, have victim lean forward to reduce risk of aspiration. Do not use mouth-to-mouth method if victim ingested the substance. Induce artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device.

Notes to physician

Symptoms may be delayed.

General advice

Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves. If you feel unwell, seek medical advice (show the label where possible).

5. Fire Fighting Measures

Flammable properties

Flammable by OSHA criteria. Heat may cause the containers to explode. Vapors may travel considerable distance to a source of ignition and flash back. Runoff to sewer may cause fire or explosion hazard.

Extinguishing media

Suitable extinguishing media Powder. Alcohol resistant foam. Dry chemicals. Carbon dioxide (CO₂).

Unsuitable extinguishing media Do not use water jet as an extinguisher, as this will spread the fire.

Protection of firefighters

Specific hazards arising from the chemical Fire may produce irritating, corrosive and/or toxic gases.

Protective equipment and precautions for firefighters Firefighters must use standard protective equipment including flame retardant coat, helmet with face shield, gloves, rubber boots, and in enclosed spaces, SCBA. Structural firefighters protective clothing will only provide limited protection.

Fire fighting equipment/instructions

In case of fire and/or explosion do not breathe fumes. Move containers from fire area if you can do so without risk. Cool containers exposed to heat with water spray and remove container, if no risk is involved. Containers should be cooled with water to prevent vapor pressure build up. For massive fire in cargo area, use unmanned hose holder or monitor nozzles, if possible. If not, withdraw and let fire burn out.

Specific methods

Use standard firefighting procedures and consider the hazards of other involved materials. Move container from fire area if it can be done without risk. In the event of fire and/or explosion do not breathe fumes. Self-contained breathing apparatus and full protective clothing must be worn in case of fire.

6. Accidental Release Measures

Personal precautions

Keep unnecessary personnel away. Keep people away from and upwind of spill/leak. Keep out of low areas. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Ventilate closed spaces before entering them. For personal protection, see section 8 of the MSDS.

Environmental precautions

Do not contaminate water.

Methods for containment

Eliminate all ignition sources (no smoking, flares, sparks, or flames in immediate area). Stop leak if you can do so without risk. Move the cylinder to a safe and open area if the leak is irreparable. Use water spray to reduce vapors or divert vapor cloud drift. Prevent entry into waterways, sewer, basements or confined areas.

Methods for cleaning up

Should not be released into the environment. Stop the flow of material, if this is without risk. Use a non-combustible material like vermiculite, sand or earth to soak up the product and place into a container for later disposal. Isolate area until gas has dispersed. Following product recovery, flush area with water. Scrub the area with detergent and water.

Small Spills: Wipe up with absorbent material (e.g. cloth, fleece). Clean surface thoroughly to remove residual contamination. For waste disposal, see section 13 of the MSDS. After removal flush contaminated area thoroughly with water.

7. Handling and Storage**Handling**

Will ignite if exposed to intensive heat or open air. Vapors may form explosive mixtures with air. Pressurized container: Do not pierce or burn, even after use. Do not use if spray button is missing or defective. Do not spray on a naked flame or any other incandescent material. Do not smoke while using or until sprayed surface is thoroughly dry. Do not cut, weld, solder, drill, grind, or expose containers to heat, flame, sparks, or other sources of ignition. All equipment used when handling the product must be grounded. Do not re-use empty containers. Do not breathe dust/fume/gas/mist/vapors/spray. Do not get this material in contact with eyes. Avoid contact with skin. Avoid prolonged or repeated contact with skin. Avoid prolonged exposure. Use only in area provided with appropriate exhaust ventilation.

Storage

Contents under pressure. The pressure in sealed containers can increase under the influence of heat. Do not expose to heat or store at temperatures above 120°F/49°C as can may burst. Do not puncture, incinerate or crush. Do not handle or store near an open flame, heat or other sources of ignition. This material can accumulate static charge which may cause spark and become an ignition source. Store in a well-ventilated place. Keep away from food, drink and animal feedingstuffs. Keep in an area equipped with sprinklers. Use care in handling/storage. Store away from incompatible materials (see Section 10 of the MSDS). Level 3 Aerosol.

8. Exposure Controls / Personal Protection**Occupational exposure limits****ACGIH Biological Exposure Indices Components**

Components	Type	Value
Isopropyl Alcohol (CAS 67-63-0)	BEI	40 mg/l

US. ACGIH Threshold Limit Values Components

Components	Type	Value
Carbon Dioxide (CAS 124-38-9)	STEL	30000 ppm
Isopropyl Alcohol (CAS 67-63-0)	TWA	5000 ppm
	STEL	400 ppm
	TWA	200 ppm

US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000) Components

Components	Type	Value
Carbon Dioxide (CAS 124-38-9)	PEL	9000 mg/m3
Isopropyl Alcohol (CAS 67-63-0)	PEL	5000 ppm
		980 mg/m3
		400 ppm

Engineering controls

Good general ventilation (typically 10 air changes per hour) should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level.

Personal protective equipment**Eye / face protection**

Do not get in eyes. Face-shield. Wear safety glasses; chemical goggles (if splashing is possible).

Skin protection

Avoid contact with the skin. Wear appropriate chemical resistant clothing. Chemical resistant gloves. The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

Respiratory protection	If permissible levels are exceeded use NIOSH mechanical filter / organic vapor cartridge or an air-supplied respirator.
General hygiene considerations	When using do not smoke. Do not get in eyes. Keep away from food and drink. Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants.

9. Physical & Chemical Properties

Appearance	Compressed liquefied gas.
Auto-ignition temperature	450.44 °F (232.47 °C) estimated
Boiling point	438.64 °F (225.91 °C) estimated
Color	Colorless.
Flammability limits in air, upper, % by volume	12 % estimated
Flammability limits in air, lower, % by volume	0.7 % estimated
Flash point	212.16 °F (100.09 °C) estimated
Form	Aerosol.
Odor	Solvent.
Odor threshold	Not available.
pH	Not applicable estimated
Physical state	Gas.
Solubility (water)	Not available.
Specific gravity	0.829 estimated
Vapor pressure	90 - 110 psig @70F estimated
Other data	
Heat of combustion	38.77 kJ/g estimated

10. Chemical Stability & Reactivity Information

Chemical stability	Risk of ignition.
Conditions to avoid	Exposure to air. Heat, flames and sparks. Avoid temperatures exceeding the flash point.
Hazardous decomposition products	No hazardous decomposition products are known.
Possibility of hazardous reactions	Hazardous polymerization does not occur.

11. Toxicological Information

Toxicological data

Product	Species	Test Results
Jet Force Wasp & Hornet Killer (CAS Mixture)		
Acute		
<i>Dermal</i>		
LD50	Rat	2237 mg/kg
<i>Inhalation</i>		
LC50	Rat	1371.2346 mg/l, 3 Hours, estimated 6 mg/l/4h
<i>Oral</i>		
LD50	Dog	56453.8906 mg/kg, estimated
	Mouse	35447.2422 mg/kg, estimated
	Rabbit	59.196 g/kg, estimated
	Rat	53.8251 g/kg, estimated

XPS Print Error

Job name: (none)
Document name: (none)
Page number: 5
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ZEP MANUFACTURING COMPANY

07/19/01

PAGE 1

ISSUE DATE: 02/14/00 AEROSOLVE II AEROSOL
SUPERSEDES: 04/21/00 PRODUCT NUMBER: 0181
Aerosol Solvent Degreaser

SECTION I - E M E R G E N C Y C O N T A C T S

MEDICAL EMERGENCY: TOLL FREE 1-877-541-2016 ALL CALLS RECORDED

TRANSPORTATION EMERGENCY: CHEMTREC: TOLL FREE 1-800-424-9300 ALL CALLS RECORDED

SECTION II - H A Z A R D O U S I N G R E D I E N T S

DESIGNATIONS	TLV (PPM)	EFFECTS (SEE REVERSE)	% IN PROD.
@** TRICHLOROETHYLENE ** acetylene trichloride; 1-chloro-2,2-dichloroethylene; CAS# 79-01-6; RTECS# KX4550000	50	CAR CNS IRR	> 90

@ IDENTIFIES CHEMICALS LISTED UNDER SARA-SECTION 313 FOR RELEASE REPORTING.

SECTION III - H E A L T H H A Z A R D D A T A

SPECIAL NOTE: MSDS data pertains to the product as dispensed from the container. Adverse health effects would not be expected under recommended conditions of use (diluted) so long as prescribed safety precautions are practiced.

ACUTE EFFECTS OF OVEREXPOSURE:

Inhalation of vapor can produce central nervous system depression, characterized by dizziness, headache, nausea, cardiac and/or respiratory depression, and stupor. In extreme cases unconsciousness or death could result in poorly ventilated or confined spaces. Exposure to high concentrations of vapor can be irritating to mucous membranes, such as eyes and upper respiratory tract. Severe eye exposure to liquid can cause reversible eye damage. Skin contact may cause a burning sensation and reddening of the skin. Introduction of solvent to the lungs, as in aspiration of vomitus fluids, may cause chemical pneumonia. Exposure to this product may aggravate existing respiratory or cardiac conditions. Inhalation of aerosol mist may produce chemical pneumonia.

CHRONIC EFFECTS OF OVEREXPOSURE:

Repeated or prolonged contact by inhalation or skin absorption may produce liver or kidney damage or damage to the central nervous system, characterized by tingling or numbness in the extremities, blurred vision or confusion. Skin, which is defatted by repeated exposure to solvents, is more susceptible to irritation, infection, and dermatitis.

Trichloroethylene has been listed as a liver carcinogen. The results were observed when trichloroethylene was given orally to mice, but were not observed in rats or hamsters. Human relevance is questionable since the metabolic mechanism in mice does not apply in humans.

EST'D PEL/TLV: Not established PRIMARY ROUTES OF ENTRY: Inh, Skin.

HMIS CODES: HEALTH 2; FLAM. 0; REACT. 0; PERS. PROTECT. B ; CHRONIC HAZ. YES

PAGE 2

ISSUE DATE: 02/14/00 AEROSOLVE II AEROSOL
SUPERSEDES: 04/21/00 PRODUCT NUMBER: 0181
Aerosol Solvent Degreaser

SECTION III - H E A L T H H A Z A R D D A T A (CONTINUED)

FIRST AID PROCEDURES:

SKIN : Wash contaminated skin thoroughly with soap or a mild detergent. Apply a skin cream with lanolin. Get medical attention if irritation persists.
EYES : Immediately flush eyes with plenty of water for at least 15 minutes, occasionally lifting upper and lower lids. Get medical attention at once.
INHALE: Move exposed person to fresh air at once. If breathing has stopped, perform artificial respiration. Get medical attention immediately.
INGEST: This route of exposure is not likely due to product nature.

SECTION IV - S P E C I A L P R O T E C T I O N I N F O R M A T I O N

PROTECTIVE CLOTHING : Wear viton gloves or use gloves with demonstrated resistance to the ingredients in this product.
EYE PROTECTION : Use tight-fitting safety glasses. Contact lenses should not be worn when working with this material.
RESPIRATORY PROTECTION: When exposure levels exceed the PEL/TLV, use a self-contained or supplied air respirator.
VENTILATION : Provide local exhaust/ventilation as needed to keep concentration of vapors below exposure limits (PEL/TLV).

SECTION V - P H Y S I C A L D A T A (FOR FILL MATERIAL ONLY)

BOILING POINT (F) : 189	SPECIFIC GRAVITY : 1.455
VAPOR PRESSURE (MMHG): ~60	EVAPORATION RATE (ETHER =1): 3.1
VAPOR DENSITY (AIR=1): N/D	PH (CONCENTRATE) : N/A
SOLUBILITY IN WATER : NEGLIGIBLE	PH (USE DILUTION OF N/A) : N/A
VOC CONTENT (CONCENTRATE) 96.9%	
APPEARANCE AND ODOR : A CLEAR, COLORLESS LIQUID WITH A MILD SOLVENT ODOR.	

SECTION VI - F I R E A N D E X P L O S I O N D A T A

FLASH POINT (F) (METHOD USED): NOT FLAMMABLE (CSMA)
FLAMMABLE LIMITS LEL 8.0 UEL 10.5
EXTINGUISHING MEDIA : Carbon dioxide, dry chemical, and water fog.
SPECIAL FIRE FIGHTING: Wear self-contained positive pres. breathing apparatus.
UNUSUAL FIRE HAZARDS : None

SECTION VII - R E A C T I V I T Y D A T A

STABILITY : Stable
INCOMPATIBILITY (AVOID) : Strong alkalis, oxidizers, and active metals.
POLYMERIZATION : Will not occur.
HAZARDOUS DECOMPOSITION: Carbon dioxide, carbon monoxide, hydrogen chloride, and

small amounts of phosgene & chlorine gas.

SECTION VIII - S P I L L A N D D I S P O S A L P R O C E D U R E S

STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED:

Observe safety precautions in sections 4 & 9 during spill clean-up. Large spills are unlikely due to packaging. Spill may be absorbed on an inert absorbent material, and placed in a suitable container for disposal. Wash area thoroughly with a detergent solution and rinse well with water.

PAGE 3

ISSUE DATE: 02/14/00 AEROSOLVE II AEROSOL

SUPERSEDES: 04/21/00 PRODUCT NUMBER: 0181

Aerosol Solvent Degreaser

SECTION VIII - S P I L L A N D D I S P O S A L P R O C E D U R E S
(CONTINUED)

WASTE DISPOSAL METHOD:

Product is consumed in use. Do not crush, puncture or incinerate spent containers. Large numbers of aerosol containers may require handling as a hazardous waste, but in most states total hazardous waste quantities less than 220 lbs per month may allow disposal in a chemical or industrial waste landfill. Consult local, state and federal agencies for the proper disposal method in your area.

RCRA HAZ. WASTE NOS.: Unused product - U228

SECTION IX - S P E C I A L P R E C A U T I O N S

PRECAUTIONS TO BE TAKEN WHEN HANDLING AND STORING:

Do not store at temperatures above 120F (39C) or in direct sunlight. Do not puncture or incinerate container.

Do not breathe spray mists or vapors.

Vapors are heavier than air and will accumulate at low points. Ventilation should include floor level exhausting.

Keep out of the reach of children.

Clothing or shoes which become contaminated with substance should be removed promptly and not reworn until thoroughly cleaned.

SECTION X - R E G U L A T O R Y I N F O R M A T I O N

DOT PROPER SHIP NAME: CONSUMER COMMODITY,

NOTE: DOT information applies to larger package sizes of affected products.

For some products, DOT may require alternate names and labeling in accordance with packaging group requirements.

DOT HAZARD CLASS: ORM-D

DOT PACKING GROUP:

DOT I.D. NUMBER : N/A DOT LABEL/PLACARD: ORM-D

EPA TSCA CHEMICAL INVENTORY - ALL INGREDIENTS ARE LISTED

EPA CWA 40CFR PART 117 SUBSTANCE(RQ IN A SINGLE CONTAINER): TRICHLOROETHYLENE - 100#

Date Last Reviewed by Compliance Services : 09/26/00

NOTICE

APPENDIX B
Canister Sampling Field Data Sheet

Canister Sampling Field Data Sheet

Page 1 of 1

SUMMA AIR SAMPLING WORK SHEET

 Site: MACbeth
 Samplers: JRM/JWP
 Date: 1/20/2015

 Site#: ZMAC0101
 Work Assignment Manager: SYW
 Project Leader: JRM

Sample #	SG-2	IA-2	SG-3	IA-3	trip Blank
Location	Outside INK ROOM	Outside INK ROOM	NEAR SHIPPING	Near SHIPPING	
SUMMA ID	M001	M275	M283	M160	M238
Orifice Used	MC229	MC194	MC185	MC228	MC230
Analysis/Method	TO-15 TO-15 SIMS				→
Time (Start) 1/20/15	11:45	11:50	1303	12:53	—
Time (Stop) 1/21/15	1101	1102	1250	1135	—
Total Time	23.26 hours	23.2 hours	23.8 hours	22.3 hours	
SUMMA WENT TO AMBIENT	YES/NO	YES/NO	YES/NO	YES/NO	YES/NO
Pressure Gauge	-29.4	-29.4	-30	-29.4	
Pressure Gauge	0	0	-2	0	

General Comments: INK ROOM AREA 75 F
 SHIPPING AREA 73 F
 Helium Tests on both SG-2 & SG-3 (Helium detected 0)
 Shroud Interior Filled with 71% Helium during each Test
 Outside Temperature 28 F

APPENDIX C
Laboratory Analytical Data (January 2015)



02/13/15

Technical Report for

H2M Associates, Inc

Macbeth, 617 Little Britain, New Windsor, NY

2MAC0101

Accutest Job Number: MC36556

Sampling Date: 01/21/15

Report to:

**H2M Associates, Inc
119 Cherry Hill Rd Suite 200
Parsippany, NJ 07054
jmcnanna@h2m.com**

ATTN: Joe McNanna

Total number of pages in report: 286



Test results contained within this data package meet the requirements of the National Environmental Laboratory Accreditation Program and/or state specific certification programs as applicable.

Reza Fand
**Reza Fand
Lab Director**

Client Service contact: Matthew Morrell 508-481-6200

Certifications: MA (M-MA136,SW846 NELAC) CT (PH-0109) NH (250210) RI (00071) ME (MA00136) FL (E87579) NY (11791) NJ (MA926) PA (6801121) ND (R-188) CO MN (11546AA) NC (653) IL (002337) WI (399080220) DoD ELAP (L-A-B L2235)

This report shall not be reproduced, except in its entirety, without the written approval of Accutest Laboratories.
Test results relate only to samples analyzed.

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Sample Summary

H2M Associates, Inc

Job No: MC36556

Macbeth, 617 Little Britain, New Windsor, NY

Project No: 2MAC0101

Sample Number	Collected Date	Time By	Received	Matrix Code	Type	Client Sample ID
MC36556-1	01/21/15	11:01 JMJP	01/22/15	AIR	Soil Vapor Comp.	SG-2
MC36556-1A	01/21/15	11:01 JMJP	01/22/15	AIR	Soil Vapor Comp.	SG-2
MC36556-2	01/21/15	11:02 JMJP	01/22/15	AIR	Ambient Air Comp.	IA-2
MC36556-2A	01/21/15	11:02 JMJP	01/22/15	AIR	Ambient Air Comp.	IA-2
MC36556-3	01/21/15	12:50 JMJP	01/22/15	AIR	Soil Vapor Comp.	SG-3
MC36556-3A	01/21/15	12:50 JMJP	01/22/15	AIR	Soil Vapor Comp.	SG-3
MC36556-4	01/21/15	11:35 JMJP	01/22/15	AIR	Ambient Air Comp.	IA-3
MC36556-4A	01/21/15	11:35 JMJP	01/22/15	AIR	Ambient Air Comp.	IA-3
MC36556-5	01/21/15	00:00 JMJP	01/22/15	AIR	Trip Blank Air	TRIP BLANK
MC36556-5A	01/21/15	00:00 JMJP	01/22/15	AIR	Trip Blank Air	TRIP BLANK



SAMPLE DELIVERY GROUP CASE NARRATIVE

Client: H2M Associates, Inc

Job No MC36556

Site: Macbeth, 617 Little Britain, New Windsor, NY

Report Date 2/13/2015 11:50:10 AM

4 Sample(s) and 1 Trip Blank were collected on 01/21/2015 and were received at Accutest on 01/22/2015, at AMB and intact. These Samples received an Accutest job number of MC36556. A listing of the Laboratory Sample ID, Client Sample ID and dates of collection are presented in the Results Summary Section of this report.

Except as noted below, all method specified calibrations and quality control performance criteria were met for this job. For more information, please refer to QC summary pages.

Volatiles by GCMS By Method TO-15

Matrix AIR

Batch ID: MSJ1520

- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) MC36556-4DUP were used as the QC samples indicated.

Volatiles by GCMS By Method TO-15 BY SIM

Matrix AIR

Batch ID: MSQ1286

- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) MC36556-2ADUP were used as the QC samples indicated.
- RPD(s) for Duplicate for Tetrachloroethylene are outside control limits for sample MC36556-2ADUP. High RPD due to possible matrix interference and/or sample non-homogeneity.

The Accutest Laboratories of New England certifies that all analysis were performed within method specification. It is further recommended that this report to be used in its entirety. The Accutest Laboratories of NE, Laboratory Director or assignee as verified by the signature on the cover page has authorized the release of this report (MC36556).

Summary of Hits

Job Number: MC36556
Account: H2M Associates, Inc
Project: Macbeth, 617 Little Britain, New Windsor, NY
Collected: 01/21/15



Lab Sample ID	Client Sample ID	Result/ Qual	RL	MDL	Units	Method
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MC36556-1 SG-2

Acetone	28.5	0.50	0.22	ppbv	TO-15
Benzene	0.31 J	0.50	0.13	ppbv	TO-15
Carbon tetrachloride	0.44	0.20	0.13	ppbv	TO-15
Dichlorodifluoromethane	2.6	0.50	0.11	ppbv	TO-15
Freon 113	98.3	5.0	1.3	ppbv	TO-15
2-Hexanone	0.32 J	0.50	0.13	ppbv	TO-15
Methyl ethyl ketone	3.2	0.50	0.17	ppbv	TO-15
Toluene	1.3	0.50	0.18	ppbv	TO-15
Trichlorofluoromethane	10.3	0.50	0.14	ppbv	TO-15
Acetone	67.7	1.2	0.52	ug/m3	TO-15
Benzene	0.99 J	1.6	0.42	ug/m3	TO-15
Carbon tetrachloride	2.8	1.3	0.82	ug/m3	TO-15
Dichlorodifluoromethane	13	2.5	0.54	ug/m3	TO-15
Freon 113	753	38	10	ug/m3	TO-15
2-Hexanone	1.3 J	2.0	0.53	ug/m3	TO-15
Methyl ethyl ketone	9.4	1.5	0.50	ug/m3	TO-15
Toluene	4.9	1.9	0.68	ug/m3	TO-15
Trichlorofluoromethane	57.9	2.8	0.79	ug/m3	TO-15

MC36556-1A SG-2

1,1,1-Trichloroethane	44.3	0.20	0.20	ppbv	TO-15 BY SIM
Tetrachloroethylene	0.050	0.040	0.0082	ppbv	TO-15 BY SIM
Trichloroethylene	1.2	0.040	0.0044	ppbv	TO-15 BY SIM
1,1,1-Trichloroethane	242	1.1	1.1	ug/m3	TO-15 BY SIM
Tetrachloroethylene	0.34	0.27	0.056	ug/m3	TO-15 BY SIM
Trichloroethylene	6.4	0.21	0.024	ug/m3	TO-15 BY SIM

MC36556-2 IA-2

Acetone	20.2	0.50	0.22	ppbv	TO-15
Benzene	0.76	0.50	0.13	ppbv	TO-15
Ethanol	16.7	0.50	0.20	ppbv	TO-15
Isopropyl Alcohol	2.4	0.50	0.16	ppbv	TO-15
Methyl ethyl ketone	1.7	0.50	0.17	ppbv	TO-15
Methyl Isobutyl Ketone	0.37 J	0.50	0.20	ppbv	TO-15
Tertiary Butyl Alcohol	2.7	0.50	0.38	ppbv	TO-15
Toluene	2.4	0.50	0.18	ppbv	TO-15
Trichlorofluoromethane	1.5	0.50	0.14	ppbv	TO-15
Xylenes (total)	0.34 J	0.50	0.21	ppbv	TO-15
Acetone	48.0	1.2	0.52	ug/m3	TO-15
Benzene	2.4	1.6	0.42	ug/m3	TO-15
Ethanol	31.4	0.94	0.38	ug/m3	TO-15

Summary of Hits

Job Number: MC36556
Account: H2M Associates, Inc
Project: Macbeth, 617 Little Britain, New Windsor, NY
Collected: 01/21/15

Lab Sample ID Analyte	Client Sample ID	Result/ Qual	RL	MDL	Units	Method
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Isopropyl Alcohol		5.9	1.2	0.39	ug/m3	TO-15
Methyl ethyl ketone		5.0	1.5	0.50	ug/m3	TO-15
Methyl Isobutyl Ketone		1.5 J	2.0	0.82	ug/m3	TO-15
Tertiary Butyl Alcohol		8.2	1.5	1.2	ug/m3	TO-15
Toluene		9.0	1.9	0.68	ug/m3	TO-15
Trichlorofluoromethane		8.4	2.8	0.79	ug/m3	TO-15
Xylenes (total)		1.5 J	2.2	0.91	ug/m3	TO-15

MC36556-2A IA-2

Tetrachloroethylene		0.029	0.020	0.0041	ppbv	TO-15 BY SIM
Trichloroethylene		0.020	0.020	0.0022	ppbv	TO-15 BY SIM
Tetrachloroethylene		0.20	0.14	0.028	ug/m3	TO-15 BY SIM
Trichloroethylene		0.11	0.11	0.012	ug/m3	TO-15 BY SIM

MC36556-3 SG-3

Acetone		9.9	0.50	0.22	ppbv	TO-15
Dichlorodifluoromethane		30.8	0.50	0.11	ppbv	TO-15
Freon 113		22.2	0.50	0.13	ppbv	TO-15
Methyl ethyl ketone		2.4	0.50	0.17	ppbv	TO-15
Propylene		4.9	0.50	0.11	ppbv	TO-15
Tetrachloroethylene		149	1.0	0.82	ppbv	TO-15
Trichlorofluoromethane		12.8	0.50	0.14	ppbv	TO-15
Vinyl Acetate		1.4	0.50	0.23	ppbv	TO-15
Acetone		24	1.2	0.52	ug/m3	TO-15
Dichlorodifluoromethane		152	2.5	0.54	ug/m3	TO-15
Freon 113		170	3.8	1.0	ug/m3	TO-15
Methyl ethyl ketone		7.1	1.5	0.50	ug/m3	TO-15
Propylene		8.4	0.86	0.19	ug/m3	TO-15
Tetrachloroethylene		1010	6.8	5.6	ug/m3	TO-15
Trichlorofluoromethane		71.9	2.8	0.79	ug/m3	TO-15
Vinyl Acetate		4.9	1.8	0.81	ug/m3	TO-15

MC36556-3A SG-3

1,1,1-Trichloroethane		21.0	0.20	0.20	ppbv	TO-15 BY SIM
Trichloroethylene		0.16	0.020	0.0022	ppbv	TO-15 BY SIM
1,1,1-Trichloroethane		115	1.1	1.1	ug/m3	TO-15 BY SIM
Trichloroethylene		0.86	0.11	0.012	ug/m3	TO-15 BY SIM

MC36556-4 IA-3

Acetone		11.1	0.50	0.22	ppbv	TO-15
Benzene		0.72	0.50	0.13	ppbv	TO-15

Summary of Hits

Job Number: MC36556
Account: H2M Associates, Inc
Project: Macbeth, 617 Little Britain, New Windsor, NY
Collected: 01/21/15



Lab Sample ID	Client Sample ID	Result/ Qual	RL	MDL	Units	Method
Analyte						
Dichlorodifluoromethane		0.62	0.50	0.11	ppbv	TO-15
Toluene		0.95	0.50	0.18	ppbv	TO-15
Trichlorofluoromethane		0.81	0.50	0.14	ppbv	TO-15
Acetone		26.4	1.2	0.52	ug/m3	TO-15
Benzene		2.3	1.6	0.42	ug/m3	TO-15
Dichlorodifluoromethane		3.1	2.5	0.54	ug/m3	TO-15
Toluene		3.6	1.9	0.68	ug/m3	TO-15
Trichlorofluoromethane		4.6	2.8	0.79	ug/m3	TO-15

MC36556-4A IA-3

Tetrachloroethylene	0.024	0.020	0.0041	ppbv	TO-15 BY SIM
Trichloroethylene	0.0088 J	0.020	0.0022	ppbv	TO-15 BY SIM
Tetrachloroethylene	0.16	0.14	0.028	ug/m3	TO-15 BY SIM
Trichloroethylene	0.047 J	0.11	0.012	ug/m3	TO-15 BY SIM

MC36556-5 TRIP BLANK

No hits reported in this sample.

MC36556-5A TRIP BLANK

No hits reported in this sample.

Sample Results

Report of Analysis

Accutest Laboratories

Report of Analysis

Page 1 of 2

Client Sample ID:	SG-2		
Lab Sample ID:	MC36556-1	Date Sampled:	01/21/15
Matrix:	AIR - Soil Vapor Comp.	Date Received:	01/22/15
Method:	TO-15	Percent Solids:	n/a
Project:	Macbeth, 617 Little Britain, New Windsor, NY		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	J29952.D	1	02/10/15	AA	n/a	n/a	MSJ1520
Run #2	J29954.D	10	02/10/15	AA	n/a	n/a	MSJ1520

	Initial Volume
Run #1	400 ml
Run #2	400 ml

CAS No.	MW	Compound	Result	RL	MDL	Units	Q	Result	RL	MDL	Units
67-64-1	58.08	Acetone	28.5	0.50	0.22	ppbv		67.7	1.2	0.52	ug/m3
106-99-0	54.09	1,3-Butadiene	ND	0.50	0.15	ppbv		ND	1.1	0.33	ug/m3
71-43-2	78.11	Benzene	0.31	0.50	0.13	ppbv	J	0.99	1.6	0.42	ug/m3
75-27-4	163.8	Bromodichloromethane	ND	0.50	0.13	ppbv		ND	3.3	0.87	ug/m3
75-25-2	252.8	Bromoform	ND	0.50	0.19	ppbv		ND	5.2	2.0	ug/m3
74-83-9	94.94	Bromomethane	ND	0.50	0.14	ppbv		ND	1.9	0.54	ug/m3
593-60-2	106.9	Bromoethene	ND	0.50	0.14	ppbv		ND	2.2	0.61	ug/m3
100-44-7	126	Benzyl Chloride	ND	0.50	0.14	ppbv		ND	2.6	0.72	ug/m3
75-15-0	76.14	Carbon disulfide	ND	0.50	0.14	ppbv		ND	1.6	0.44	ug/m3
108-90-7	112.6	Chlorobenzene	ND	0.50	0.20	ppbv		ND	2.3	0.92	ug/m3
75-00-3	64.52	Chloroethane	ND	0.20	0.14	ppbv		ND	0.53	0.37	ug/m3
67-66-3	119.4	Chloroform	ND	0.50	0.092	ppbv		ND	2.4	0.45	ug/m3
74-87-3	50.49	Chloromethane	ND	0.50	0.14	ppbv		ND	1.0	0.29	ug/m3
107-05-1	76.53	3-Chloropropene	ND	0.50	0.13	ppbv		ND	1.6	0.41	ug/m3
95-49-8	126.6	2-Chlorotoluene	ND	0.50	0.23	ppbv		ND	2.6	1.2	ug/m3
56-23-5	153.8	Carbon tetrachloride	0.44	0.20	0.13	ppbv		2.8	1.3	0.82	ug/m3
110-82-7	84.16	Cyclohexane	ND	0.50	0.14	ppbv		ND	1.7	0.48	ug/m3
75-34-3	98.96	1,1-Dichloroethane	ND	0.20	0.078	ppbv		ND	0.81	0.32	ug/m3
75-35-4	96.94	1,1-Dichloroethylene	ND	0.20	0.14	ppbv		ND	0.79	0.56	ug/m3
106-93-4	187.9	1,2-Dibromoethane	ND	0.50	0.18	ppbv		ND	3.8	1.4	ug/m3
107-06-2	98.96	1,2-Dichloroethane	ND	0.20	0.16	ppbv		ND	0.81	0.65	ug/m3
78-87-5	113	1,2-Dichloropropane	ND	0.50	0.17	ppbv		ND	2.3	0.79	ug/m3
123-91-1	88	1,4-Dioxane	ND	0.50	0.13	ppbv		ND	1.8	0.47	ug/m3
75-71-8	120.9	Dichlorodifluoromethane	2.6	0.50	0.11	ppbv		13	2.5	0.54	ug/m3
124-48-1	208.3	Dibromochloromethane	ND	0.50	0.16	ppbv		ND	4.3	1.4	ug/m3
156-60-5	96.94	trans-1,2-Dichloroethylene	ND	0.20	0.13	ppbv		ND	0.79	0.52	ug/m3
156-59-2	96.94	cis-1,2-Dichloroethylene	ND	0.20	0.093	ppbv		ND	0.79	0.37	ug/m3
10061-01-5	111	cis-1,3-Dichloropropene	ND	0.50	0.17	ppbv		ND	2.3	0.77	ug/m3
541-73-1	147	m-Dichlorobenzene	ND	0.50	0.25	ppbv		ND	3.0	1.5	ug/m3
95-50-1	147	o-Dichlorobenzene	ND	0.50	0.32	ppbv		ND	3.0	1.9	ug/m3
106-46-7	147	p-Dichlorobenzene	ND	0.50	0.26	ppbv		ND	3.0	1.6	ug/m3
10061-02-6	111	trans-1,3-Dichloropropene	ND	0.50	0.19	ppbv		ND	2.3	0.86	ug/m3

ND = Not detected MDL = Method Detection Limit

J = Indicates an estimated value

RL = Reporting Limit

B = Indicates analyte found in associated method blank

E = Indicates value exceeds calibration range

N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: SG-2
Lab Sample ID: MC36556-1
Matrix: AIR - Soil Vapor Comp. Summa ID: M001
Method: TO-15
Project: Macbeth, 617 Little Britain, New Windsor, NY

Date Sampled: 01/21/15

Date Received: 01/22/15

Percent Solids: n/a

CAS No.	MW	Compound	Result	RL	MDL	Units	Q	Result	RL	MDL	Units
64-17-5	46	Ethanol	ND	0.50	0.20	ppbv		ND	0.94	0.38	ug/m3
100-41-4	106.2	Ethylbenzene	ND	0.50	0.20	ppbv		ND	2.2	0.87	ug/m3
141-78-6	88	Ethyl Acetate	ND	0.50	0.15	ppbv		ND	1.8	0.54	ug/m3
622-96-8	120.2	4-Ethyltoluene	ND	0.50	0.20	ppbv		ND	2.5	0.98	ug/m3
76-13-1	187.4	Freon 113	98.3 ^a	5.0	1.3	ppbv		753 ^a	38	10	ug/m3
76-14-2	170.9	Freon 114	ND	0.50	0.16	ppbv		ND	3.5	1.1	ug/m3
142-82-5	100.2	Heptane	ND	0.50	0.17	ppbv		ND	2.0	0.70	ug/m3
87-68-3	260.8	Hexachlorobutadiene	ND	0.50	0.49	ppbv		ND	5.3	5.2	ug/m3
110-54-3	86.17	Hexane	ND	0.50	0.13	ppbv		ND	1.8	0.46	ug/m3
591-78-6	100	2-Hexanone	0.32	0.50	0.13	ppbv	J	1.3	2.0	0.53	ug/m3
67-63-0	60	Isopropyl Alcohol	ND	0.50	0.16	ppbv		ND	1.2	0.39	ug/m3
75-09-2	84.94	Methylene chloride	ND	0.50	0.12	ppbv		ND	1.7	0.42	ug/m3
78-93-3	72.11	Methyl ethyl ketone	3.2	0.50	0.17	ppbv		9.4	1.5	0.50	ug/m3
108-10-1	100.2	Methyl Isobutyl Ketone	ND	0.50	0.20	ppbv		ND	2.0	0.82	ug/m3
1634-04-4	88.15	Methyl Tert Butyl Ether	ND	0.50	0.20	ppbv		ND	1.8	0.72	ug/m3
115-07-1	42	Propylene	ND	0.50	0.11	ppbv		ND	0.86	0.19	ug/m3
100-42-5	104.1	Styrene	ND	0.50	0.17	ppbv		ND	2.1	0.72	ug/m3
79-34-5	167.9	1,1,2,2-Tetrachloroethane	ND	0.20	0.18	ppbv		ND	1.4	1.2	ug/m3
79-00-5	133.4	1,1,2-Trichloroethane	ND	0.20	0.16	ppbv		ND	1.1	0.87	ug/m3
120-82-1	181.5	1,2,4-Trichlorobenzene	ND	0.50	0.30	ppbv		ND	3.7	2.2	ug/m3
95-63-6	120.2	1,2,4-Trimethylbenzene	ND	0.50	0.23	ppbv		ND	2.5	1.1	ug/m3
108-67-8	120.2	1,3,5-Trimethylbenzene	ND	0.50	0.21	ppbv		ND	2.5	1.0	ug/m3
540-84-1	114.2	2,2,4-Trimethylpentane	ND	0.50	0.15	ppbv		ND	2.3	0.70	ug/m3
75-65-0	74.12	Tertiary Butyl Alcohol	ND	0.50	0.38	ppbv		ND	1.5	1.2	ug/m3
109-99-9	72	Tetrahydrofuran	ND	0.50	0.21	ppbv		ND	1.5	0.62	ug/m3
108-88-3	92.14	Toluene	1.3	0.50	0.18	ppbv		4.9	1.9	0.68	ug/m3
75-69-4	137.4	Trichlorofluoromethane	10.3	0.50	0.14	ppbv		57.9	2.8	0.79	ug/m3
75-01-4	62.5	Vinyl chloride	ND	0.20	0.13	ppbv		ND	0.51	0.33	ug/m3
108-05-4	86	Vinyl Acetate	ND	0.50	0.23	ppbv		ND	1.8	0.81	ug/m3
	106.2	m,p-Xylene	ND	0.50	0.41	ppbv		ND	2.2	1.8	ug/m3
95-47-6	106.2	o-Xylene	ND	0.50	0.21	ppbv		ND	2.2	0.91	ug/m3
1330-20-7	106.2	Xylenes (total)	ND	0.50	0.21	ppbv		ND	2.2	0.91	ug/m3

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
460-00-4	4-Bromofluorobenzene	125%	95%	50-129%

(a) Result is from Run# 2

ND = Not detected MDL = Method Detection Limit
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

Accutest Laboratories

Report of Analysis

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Client Sample ID:	SG-2	Date Sampled:	01/21/15
Lab Sample ID:	MC36556-1A	Date Received:	01/22/15
Matrix:	AIR - Soil Vapor Comp. Summa ID: M001	Percent Solids:	n/a
Method:	TO-15 BY SIM		
Project:	Macbeth, 617 Little Britain, New Windsor, NY		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	Q29648.D	2	02/11/15	AA	n/a	n/a	MSQ1286
Run #2	Q29654.D	10	02/11/15	AA	n/a	n/a	MSQ1286

	Initial Volume
Run #1	400 ml
Run #2	400 ml

CAS No.	MW	Compound	Result	RL	MDL	Units	Q	Result	RL	MDL	Units
71-55-6	133.4	1,1,1-Trichloroethane	44.3 ^a	0.20	0.20	ppbv		242 ^a	1.1	1.1	ug/m3
127-18-4	165.8	Tetrachloroethylene	0.050	0.040	0.0082	ppbv		0.34	0.27	0.056	ug/m3
79-01-6	131.4	Trichloroethylene	1.2	0.040	0.0044	ppbv		6.4	0.21	0.024	ug/m3

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
460-00-4	4-Bromofluorobenzene	101%	95%	57-139%

(a) Result is from Run# 2

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J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

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Report of Analysis

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Client Sample ID:	IA-2	Date Sampled:	01/21/15
Lab Sample ID:	MC36556-2	Date Received:	01/22/15
Matrix:	AIR - Ambient Air Comp. Summa ID: M275	Percent Solids:	n/a
Method:	TO-15		
Project:	Macbeth, 617 Little Britain, New Windsor, NY		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	J29951.D	1	02/10/15	AA	n/a	n/a	MSJ1520
Run #2							

Run #	Initial Volume
Run #1	400 ml
Run #2	

CAS No.	MW	Compound	Result	RL	MDL	Units	Q	Result	RL	MDL	Units
67-64-1	58.08	Acetone	20.2	0.50	0.22	ppbv		48.0	1.2	0.52	ug/m3
106-99-0	54.09	1,3-Butadiene	ND	0.50	0.15	ppbv		ND	1.1	0.33	ug/m3
71-43-2	78.11	Benzene	0.76	0.50	0.13	ppbv		2.4	1.6	0.42	ug/m3
75-27-4	163.8	Bromodichloromethane	ND	0.50	0.13	ppbv		ND	3.3	0.87	ug/m3
75-25-2	252.8	Bromoform	ND	0.50	0.19	ppbv		ND	5.2	2.0	ug/m3
74-83-9	94.94	Bromomethane	ND	0.50	0.14	ppbv		ND	1.9	0.54	ug/m3
593-60-2	106.9	Bromoethene	ND	0.50	0.14	ppbv		ND	2.2	0.61	ug/m3
100-44-7	126	Benzyl Chloride	ND	0.50	0.14	ppbv		ND	2.6	0.72	ug/m3
75-15-0	76.14	Carbon disulfide	ND	0.50	0.14	ppbv		ND	1.6	0.44	ug/m3
108-90-7	112.6	Chlorobenzene	ND	0.50	0.20	ppbv		ND	2.3	0.92	ug/m3
75-00-3	64.52	Chloroethane	ND	0.20	0.14	ppbv		ND	0.53	0.37	ug/m3
67-66-3	119.4	Chloroform	ND	0.50	0.092	ppbv		ND	2.4	0.45	ug/m3
74-87-3	50.49	Chloromethane	ND	0.50	0.14	ppbv		ND	1.0	0.29	ug/m3
107-05-1	76.53	3-Chloropropene	ND	0.50	0.13	ppbv		ND	1.6	0.41	ug/m3
95-49-8	126.6	2-Chlorotoluene	ND	0.50	0.23	ppbv		ND	2.6	1.2	ug/m3
56-23-5	153.8	Carbon tetrachloride	ND	0.20	0.13	ppbv		ND	1.3	0.82	ug/m3
110-82-7	84.16	Cyclohexane	ND	0.50	0.14	ppbv		ND	1.7	0.48	ug/m3
75-34-3	98.96	1,1-Dichloroethane	ND	0.20	0.078	ppbv		ND	0.81	0.32	ug/m3
75-35-4	96.94	1,1-Dichloroethylene	ND	0.20	0.14	ppbv		ND	0.79	0.56	ug/m3
106-93-4	187.9	1,2-Dibromoethane	ND	0.50	0.18	ppbv		ND	3.8	1.4	ug/m3
107-06-2	98.96	1,2-Dichloroethane	ND	0.20	0.16	ppbv		ND	0.81	0.65	ug/m3
78-87-5	113	1,2-Dichloropropane	ND	0.50	0.17	ppbv		ND	2.3	0.79	ug/m3
123-91-1	88	1,4-Dioxane	ND	0.50	0.13	ppbv		ND	1.8	0.47	ug/m3
75-71-8	120.9	Dichlorodifluoromethane	ND	0.50	0.11	ppbv		ND	2.5	0.54	ug/m3
124-48-1	208.3	Dibromochloromethane	ND	0.50	0.16	ppbv		ND	4.3	1.4	ug/m3
156-60-5	96.94	trans-1,2-Dichloroethylene	ND	0.20	0.13	ppbv		ND	0.79	0.52	ug/m3
156-59-2	96.94	cis-1,2-Dichloroethylene	ND	0.20	0.093	ppbv		ND	0.79	0.37	ug/m3
10061-01-5	111	cis-1,3-Dichloropropene	ND	0.50	0.17	ppbv		ND	2.3	0.77	ug/m3
541-73-1	147	m-Dichlorobenzene	ND	0.50	0.25	ppbv		ND	3.0	1.5	ug/m3
95-50-1	147	o-Dichlorobenzene	ND	0.50	0.32	ppbv		ND	3.0	1.9	ug/m3
106-46-7	147	p-Dichlorobenzene	ND	0.50	0.26	ppbv		ND	3.0	1.6	ug/m3
10061-02-6	111	trans-1,3-Dichloropropene	ND	0.50	0.19	ppbv		ND	2.3	0.86	ug/m3

ND = Not detected MDL = Method Detection Limit

J = Indicates an estimated value

RL = Reporting Limit

B = Indicates analyte found in associated method blank

E = Indicates value exceeds calibration range

N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	IA-2		
Lab Sample ID:	MC36556-2		
Matrix:	AIR - Ambient Air Comp.	Summa ID: M275	Date Sampled: 01/21/15
Method:	TO-15		Date Received: 01/22/15
Project:	Macbeth, 617 Little Britain, New Windsor, NY		Percent Solids: n/a

CAS No.	MW	Compound	Result	RL	MDL	Units	Q	Result	RL	MDL	Units
64-17-5	46	Ethanol	16.7	0.50	0.20	ppbv		31.4	0.94	0.38	ug/m3
100-41-4	106.2	Ethylbenzene	ND	0.50	0.20	ppbv		ND	2.2	0.87	ug/m3
141-78-6	88	Ethyl Acetate	ND	0.50	0.15	ppbv		ND	1.8	0.54	ug/m3
622-96-8	120.2	4-Ethyltoluene	ND	0.50	0.20	ppbv		ND	2.5	0.98	ug/m3
76-13-1	187.4	Freon 113	ND	0.50	0.13	ppbv		ND	3.8	1.0	ug/m3
76-14-2	170.9	Freon 114	ND	0.50	0.16	ppbv		ND	3.5	1.1	ug/m3
142-82-5	100.2	Heptane	ND	0.50	0.17	ppbv		ND	2.0	0.70	ug/m3
87-68-3	260.8	Hexachlorobutadiene	ND	0.50	0.49	ppbv		ND	5.3	5.2	ug/m3
110-54-3	86.17	Hexane	ND	0.50	0.13	ppbv		ND	1.8	0.46	ug/m3
591-78-6	100	2-Hexanone	ND	0.50	0.13	ppbv		ND	2.0	0.53	ug/m3
67-63-0	60	Isopropyl Alcohol	2.4	0.50	0.16	ppbv		5.9	1.2	0.39	ug/m3
75-09-2	84.94	Methylene chloride	ND	0.50	0.12	ppbv		ND	1.7	0.42	ug/m3
78-93-3	72.11	Methyl ethyl ketone	1.7	0.50	0.17	ppbv		5.0	1.5	0.50	ug/m3
108-10-1	100.2	Methyl Isobutyl Ketone	0.37	0.50	0.20	ppbv	J	1.5	2.0	0.82	ug/m3
1634-04-4	88.15	Methyl Tert Butyl Ether	ND	0.50	0.20	ppbv		ND	1.8	0.72	ug/m3
115-07-1	42	Propylene	ND	0.50	0.11	ppbv		ND	0.86	0.19	ug/m3
100-42-5	104.1	Styrene	ND	0.50	0.17	ppbv		ND	2.1	0.72	ug/m3
79-34-5	167.9	1,1,2,2-Tetrachloroethane	ND	0.20	0.18	ppbv		ND	1.4	1.2	ug/m3
79-00-5	133.4	1,1,2-Trichloroethane	ND	0.20	0.16	ppbv		ND	1.1	0.87	ug/m3
120-82-1	181.5	1,2,4-Trichlorobenzene	ND	0.50	0.30	ppbv		ND	3.7	2.2	ug/m3
95-63-6	120.2	1,2,4-Trimethylbenzene	ND	0.50	0.23	ppbv		ND	2.5	1.1	ug/m3
108-67-8	120.2	1,3,5-Trimethylbenzene	ND	0.50	0.21	ppbv		ND	2.5	1.0	ug/m3
540-84-1	114.2	2,2,4-Trimethylpentane	ND	0.50	0.15	ppbv		ND	2.3	0.70	ug/m3
75-65-0	74.12	Tertiary Butyl Alcohol	2.7	0.50	0.38	ppbv		8.2	1.5	1.2	ug/m3
109-99-9	72	Tetrahydrofuran	ND	0.50	0.21	ppbv		ND	1.5	0.62	ug/m3
108-88-3	92.14	Toluene	2.4	0.50	0.18	ppbv		9.0	1.9	0.68	ug/m3
75-69-4	137.4	Trichlorofluoromethane	1.5	0.50	0.14	ppbv		8.4	2.8	0.79	ug/m3
75-01-4	62.5	Vinyl chloride	ND	0.20	0.13	ppbv		ND	0.51	0.33	ug/m3
108-05-4	86	Vinyl Acetate	ND	0.50	0.23	ppbv		ND	1.8	0.81	ug/m3
	106.2	m,p-Xylene	ND	0.50	0.41	ppbv		ND	2.2	1.8	ug/m3
95-47-6	106.2	o-Xylene	ND	0.50	0.21	ppbv		ND	2.2	0.91	ug/m3
1330-20-7	106.2	Xylenes (total)	0.34	0.50	0.21	ppbv	J	1.5	2.2	0.91	ug/m3

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
460-00-4	4-Bromofluorobenzene	84%		50-129%

ND = Not detected MDL = Method Detection Limit
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

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Report of Analysis

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Client Sample ID:	IA-2		
Lab Sample ID:	MC36556-2A	Date Sampled:	01/21/15
Matrix:	AIR - Ambient Air Comp.	Date Received:	01/22/15
Method:	TO-15 BY SIM	Percent Solids:	n/a
Project:	Macbeth, 617 Little Britain, New Windsor, NY		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	Q29650.D	1	02/11/15	AA	n/a	n/a	MSQ1286
Run #2							

	Initial Volume
Run #1	400 ml
Run #2	

CAS No.	MW	Compound	Result	RL	MDL	Units	Q	Result	RL	MDL	Units
71-55-6	133.4	1,1,1-Trichloroethane	ND	0.020	0.020	ppbv		ND	0.11	0.11	ug/m3
127-18-4	165.8	Tetrachloroethylene	0.029	0.020	0.0041	ppbv		0.20	0.14	0.028	ug/m3
79-01-6	131.4	Trichloroethylene	0.020	0.020	0.0022	ppbv		0.11	0.11	0.012	ug/m3

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
460-00-4	4-Bromofluorobenzene	100%		57-139%

ND = Not detected MDL = Method Detection Limit
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

Accutest Laboratories

Report of Analysis

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Client Sample ID:	SG-3		
Lab Sample ID:	MC36556-3		
Matrix:	AIR - Soil Vapor Comp.	Summa ID: M283	Date Sampled: 01/21/15
Method:	TO-15		Date Received: 01/22/15
Project:	Macbeth, 617 Little Britain, New Windsor, NY		Percent Solids: n/a

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	J29950.D	1	02/10/15	AA	n/a	n/a	MSJ1520
Run #2	J29957.D	5	02/10/15	AA	n/a	n/a	MSJ1520

	Initial Volume
Run #1	400 ml
Run #2	400 ml

CAS No.	MW	Compound	Result	RL	MDL	Units	Q	Result	RL	MDL	Units
67-64-1	58.08	Acetone	9.9	0.50	0.22	ppbv	24	1.2	0.52	ug/m3	
106-99-0	54.09	1,3-Butadiene	ND	0.50	0.15	ppbv	ND	1.1	0.33	ug/m3	
71-43-2	78.11	Benzene	ND	0.50	0.13	ppbv	ND	1.6	0.42	ug/m3	
75-27-4	163.8	Bromodichloromethane	ND	0.50	0.13	ppbv	ND	3.3	0.87	ug/m3	
75-25-2	252.8	Bromoform	ND	0.50	0.19	ppbv	ND	5.2	2.0	ug/m3	
74-83-9	94.94	Bromomethane	ND	0.50	0.14	ppbv	ND	1.9	0.54	ug/m3	
593-60-2	106.9	Bromoethene	ND	0.50	0.14	ppbv	ND	2.2	0.61	ug/m3	
100-44-7	126	Benzyl Chloride	ND	0.50	0.14	ppbv	ND	2.6	0.72	ug/m3	
75-15-0	76.14	Carbon disulfide	ND	0.50	0.14	ppbv	ND	1.6	0.44	ug/m3	
108-90-7	112.6	Chlorobenzene	ND	0.50	0.20	ppbv	ND	2.3	0.92	ug/m3	
75-00-3	64.52	Chloroethane	ND	0.20	0.14	ppbv	ND	0.53	0.37	ug/m3	
67-66-3	119.4	Chloroform	ND	0.50	0.092	ppbv	ND	2.4	0.45	ug/m3	
74-87-3	50.49	Chloromethane	ND	0.50	0.14	ppbv	ND	1.0	0.29	ug/m3	
107-05-1	76.53	3-Chloropropene	ND	0.50	0.13	ppbv	ND	1.6	0.41	ug/m3	
95-49-8	126.6	2-Chlorotoluene	ND	0.50	0.23	ppbv	ND	2.6	1.2	ug/m3	
56-23-5	153.8	Carbon tetrachloride	ND	0.20	0.13	ppbv	ND	1.3	0.82	ug/m3	
110-82-7	84.16	Cyclohexane	ND	0.50	0.14	ppbv	ND	1.7	0.48	ug/m3	
75-34-3	98.96	1,1-Dichloroethane	ND	0.20	0.078	ppbv	ND	0.81	0.32	ug/m3	
75-35-4	96.94	1,1-Dichloroethylene	ND	0.20	0.14	ppbv	ND	0.79	0.56	ug/m3	
106-93-4	187.9	1,2-Dibromoethane	ND	0.50	0.18	ppbv	ND	3.8	1.4	ug/m3	
107-06-2	98.96	1,2-Dichloroethane	ND	0.20	0.16	ppbv	ND	0.81	0.65	ug/m3	
78-87-5	113	1,2-Dichloropropane	ND	0.50	0.17	ppbv	ND	2.3	0.79	ug/m3	
123-91-1	88	1,4-Dioxane	ND	0.50	0.13	ppbv	ND	1.8	0.47	ug/m3	
75-71-8	120.9	Dichlorodifluoromethane	30.8	0.50	0.11	ppbv	152	2.5	0.54	ug/m3	
124-48-1	208.3	Dibromochloromethane	ND	0.50	0.16	ppbv	ND	4.3	1.4	ug/m3	
156-60-5	96.94	trans-1,2-Dichloroethylene	ND	0.20	0.13	ppbv	ND	0.79	0.52	ug/m3	
156-59-2	96.94	cis-1,2-Dichloroethylene	ND	0.20	0.093	ppbv	ND	0.79	0.37	ug/m3	
10061-01-5	111	cis-1,3-Dichloropropene	ND	0.50	0.17	ppbv	ND	2.3	0.77	ug/m3	
541-73-1	147	m-Dichlorobenzene	ND	0.50	0.25	ppbv	ND	3.0	1.5	ug/m3	
95-50-1	147	o-Dichlorobenzene	ND	0.50	0.32	ppbv	ND	3.0	1.9	ug/m3	
106-46-7	147	p-Dichlorobenzene	ND	0.50	0.26	ppbv	ND	3.0	1.6	ug/m3	
10061-02-6	111	trans-1,3-Dichloropropene	ND	0.50	0.19	ppbv	ND	2.3	0.86	ug/m3	

ND = Not detected MDL = Method Detection Limit

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	SG-3		
Lab Sample ID:	MC36556-3		
Matrix:	AIR - Soil Vapor Comp.	Summa ID: M283	Date Sampled: 01/21/15
Method:	TO-15		Date Received: 01/22/15
Project:	Macbeth, 617 Little Britain, New Windsor, NY		Percent Solids: n/a

CAS No.	MW	Compound	Result	RL	MDL	Units	Q	Result	RL	MDL	Units
64-17-5	46	Ethanol	ND	0.50	0.20	ppbv		ND	0.94	0.38	ug/m3
100-41-4	106.2	Ethylbenzene	ND	0.50	0.20	ppbv		ND	2.2	0.87	ug/m3
141-78-6	88	Ethyl Acetate	ND	0.50	0.15	ppbv		ND	1.8	0.54	ug/m3
622-96-8	120.2	4-Ethyltoluene	ND	0.50	0.20	ppbv		ND	2.5	0.98	ug/m3
76-13-1	187.4	Freon 113	22.2	0.50	0.13	ppbv		170	3.8	1.0	ug/m3
76-14-2	170.9	Freon 114	ND	0.50	0.16	ppbv		ND	3.5	1.1	ug/m3
142-82-5	100.2	Heptane	ND	0.50	0.17	ppbv		ND	2.0	0.70	ug/m3
87-68-3	260.8	Hexachlorobutadiene	ND	0.50	0.49	ppbv		ND	5.3	5.2	ug/m3
110-54-3	86.17	Hexane	ND	0.50	0.13	ppbv		ND	1.8	0.46	ug/m3
591-78-6	100	2-Hexanone	ND	0.50	0.13	ppbv		ND	2.0	0.53	ug/m3
67-63-0	60	Isopropyl Alcohol	ND	0.50	0.16	ppbv		ND	1.2	0.39	ug/m3
75-09-2	84.94	Methylene chloride	ND	0.50	0.12	ppbv		ND	1.7	0.42	ug/m3
78-93-3	72.11	Methyl ethyl ketone	2.4	0.50	0.17	ppbv		7.1	1.5	0.50	ug/m3
108-10-1	100.2	Methyl Isobutyl Ketone	ND	0.50	0.20	ppbv		ND	2.0	0.82	ug/m3
1634-04-4	88.15	Methyl Tert Butyl Ether	ND	0.50	0.20	ppbv		ND	1.8	0.72	ug/m3
115-07-1	42	Propylene	4.9	0.50	0.11	ppbv		8.4	0.86	0.19	ug/m3
100-42-5	104.1	Styrene	ND	0.50	0.17	ppbv		ND	2.1	0.72	ug/m3
79-34-5	167.9	1,1,2,2-Tetrachloroethane	ND	0.20	0.18	ppbv		ND	1.4	1.2	ug/m3
79-00-5	133.4	1,1,2-Trichloroethane	ND	0.20	0.16	ppbv		ND	1.1	0.87	ug/m3
120-82-1	181.5	1,2,4-Trichlorobenzene	ND	0.50	0.30	ppbv		ND	3.7	2.2	ug/m3
95-63-6	120.2	1,2,4-Trimethylbenzene	ND	0.50	0.23	ppbv		ND	2.5	1.1	ug/m3
108-67-8	120.2	1,3,5-Trimethylbenzene	ND	0.50	0.21	ppbv		ND	2.5	1.0	ug/m3
540-84-1	114.2	2,2,4-Trimethylpentane	ND	0.50	0.15	ppbv		ND	2.3	0.70	ug/m3
75-65-0	74.12	Tertiary Butyl Alcohol	ND	0.50	0.38	ppbv		ND	1.5	1.2	ug/m3
127-18-4	165.8	Tetrachloroethylene	149 ^a	1.0	0.82	ppbv		1010 ^a	6.8	5.6	ug/m3
109-99-9	72	Tetrahydrofuran	ND	0.50	0.21	ppbv		ND	1.5	0.62	ug/m3
108-88-3	92.14	Toluene	ND	0.50	0.18	ppbv		ND	1.9	0.68	ug/m3
75-69-4	137.4	Trichlorofluoromethane	12.8	0.50	0.14	ppbv		71.9	2.8	0.79	ug/m3
75-01-4	62.5	Vinyl chloride	ND	0.20	0.13	ppbv		ND	0.51	0.33	ug/m3
108-05-4	86	Vinyl Acetate	1.4	0.50	0.23	ppbv		4.9	1.8	0.81	ug/m3
	106.2	m,p-Xylene	ND	0.50	0.41	ppbv		ND	2.2	1.8	ug/m3
95-47-6	106.2	o-Xylene	ND	0.50	0.21	ppbv		ND	2.2	0.91	ug/m3
1330-20-7	106.2	Xylenes (total)	ND	0.50	0.21	ppbv		ND	2.2	0.91	ug/m3

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
460-00-4	4-Bromofluorobenzene	123%	102%	50-129%

(a) Result is from Run# 2

ND = Not detected MDL = Method Detection Limit
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

Accutest Laboratories

Report of Analysis

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Client Sample ID:	SG-3	Date Sampled:	01/21/15
Lab Sample ID:	MC36556-3A	Date Received:	01/22/15
Matrix:	AIR - Soil Vapor Comp. Summa ID: M283	Percent Solids:	n/a
Method:	TO-15 BY SIM		
Project:	Macbeth, 617 Little Britain, New Windsor, NY		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	Q29655.D	1	02/11/15	AA	n/a	n/a	MSQ1286
Run #2	Q29649.D	10	02/11/15	AA	n/a	n/a	MSQ1286

	Initial Volume
Run #1	400 ml
Run #2	400 ml

CAS No.	MW	Compound	Result	RL	MDL	Units	Q	Result	RL	MDL	Units
71-55-6	133.4	1,1,1-Trichloroethane	21.0 ^a	0.20	0.20	ppbv		115 ^a	1.1	1.1	ug/m3
79-01-6	131.4	Trichloroethylene	0.16	0.020	0.0022	ppbv		0.86	0.11	0.012	ug/m3

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
460-00-4	4-Bromofluorobenzene	101%	94%	57-139%

(a) Result is from Run# 2

ND = Not detected MDL = Method Detection Limit
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J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

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Report of Analysis

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Client Sample ID:	IA-3	Date Sampled:	01/21/15
Lab Sample ID:	MC36556-4	Date Received:	01/22/15
Matrix:	AIR - Ambient Air Comp. Summa ID: M160	Percent Solids:	n/a
Method:	TO-15		
Project:	Macbeth, 617 Little Britain, New Windsor, NY		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	J29949.D	1	02/10/15	AA	n/a	n/a	MSJ1520
Run #2							

Run #	Initial Volume
Run #1	400 ml
Run #2	

CAS No.	MW	Compound	Result	RL	MDL	Units	Q	Result	RL	MDL	Units
67-64-1	58.08	Acetone	11.1	0.50	0.22	ppbv		26.4	1.2	0.52	ug/m3
106-99-0	54.09	1,3-Butadiene	ND	0.50	0.15	ppbv		ND	1.1	0.33	ug/m3
71-43-2	78.11	Benzene	0.72	0.50	0.13	ppbv		2.3	1.6	0.42	ug/m3
75-27-4	163.8	Bromodichloromethane	ND	0.50	0.13	ppbv		ND	3.3	0.87	ug/m3
75-25-2	252.8	Bromoform	ND	0.50	0.19	ppbv		ND	5.2	2.0	ug/m3
74-83-9	94.94	Bromomethane	ND	0.50	0.14	ppbv		ND	1.9	0.54	ug/m3
593-60-2	106.9	Bromoethene	ND	0.50	0.14	ppbv		ND	2.2	0.61	ug/m3
100-44-7	126	Benzyl Chloride	ND	0.50	0.14	ppbv		ND	2.6	0.72	ug/m3
75-15-0	76.14	Carbon disulfide	ND	0.50	0.14	ppbv		ND	1.6	0.44	ug/m3
108-90-7	112.6	Chlorobenzene	ND	0.50	0.20	ppbv		ND	2.3	0.92	ug/m3
75-00-3	64.52	Chloroethane	ND	0.20	0.14	ppbv		ND	0.53	0.37	ug/m3
67-66-3	119.4	Chloroform	ND	0.50	0.092	ppbv		ND	2.4	0.45	ug/m3
74-87-3	50.49	Chloromethane	ND	0.50	0.14	ppbv		ND	1.0	0.29	ug/m3
107-05-1	76.53	3-Chloropropene	ND	0.50	0.13	ppbv		ND	1.6	0.41	ug/m3
95-49-8	126.6	2-Chlorotoluene	ND	0.50	0.23	ppbv		ND	2.6	1.2	ug/m3
56-23-5	153.8	Carbon tetrachloride	ND	0.20	0.13	ppbv		ND	1.3	0.82	ug/m3
110-82-7	84.16	Cyclohexane	ND	0.50	0.14	ppbv		ND	1.7	0.48	ug/m3
75-34-3	98.96	1,1-Dichloroethane	ND	0.20	0.078	ppbv		ND	0.81	0.32	ug/m3
75-35-4	96.94	1,1-Dichloroethylene	ND	0.20	0.14	ppbv		ND	0.79	0.56	ug/m3
106-93-4	187.9	1,2-Dibromoethane	ND	0.50	0.18	ppbv		ND	3.8	1.4	ug/m3
107-06-2	98.96	1,2-Dichloroethane	ND	0.20	0.16	ppbv		ND	0.81	0.65	ug/m3
78-87-5	113	1,2-Dichloropropane	ND	0.50	0.17	ppbv		ND	2.3	0.79	ug/m3
123-91-1	88	1,4-Dioxane	ND	0.50	0.13	ppbv		ND	1.8	0.47	ug/m3
75-71-8	120.9	Dichlorodifluoromethane	0.62	0.50	0.11	ppbv		3.1	2.5	0.54	ug/m3
124-48-1	208.3	Dibromochloromethane	ND	0.50	0.16	ppbv		ND	4.3	1.4	ug/m3
156-60-5	96.94	trans-1,2-Dichloroethylene	ND	0.20	0.13	ppbv		ND	0.79	0.52	ug/m3
156-59-2	96.94	cis-1,2-Dichloroethylene	ND	0.20	0.093	ppbv		ND	0.79	0.37	ug/m3
10061-01-5	111	cis-1,3-Dichloropropene	ND	0.50	0.17	ppbv		ND	2.3	0.77	ug/m3
541-73-1	147	m-Dichlorobenzene	ND	0.50	0.25	ppbv		ND	3.0	1.5	ug/m3
95-50-1	147	o-Dichlorobenzene	ND	0.50	0.32	ppbv		ND	3.0	1.9	ug/m3
106-46-7	147	p-Dichlorobenzene	ND	0.50	0.26	ppbv		ND	3.0	1.6	ug/m3
10061-02-6	111	trans-1,3-Dichloropropene	ND	0.50	0.19	ppbv		ND	2.3	0.86	ug/m3

ND = Not detected MDL = Method Detection Limit

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	IA-3	Date Sampled:	01/21/15
Lab Sample ID:	MC36556-4	Date Received:	01/22/15
Matrix:	AIR - Ambient Air Comp. Summa ID: M160	Percent Solids:	n/a
Method:	TO-15		
Project:	Macbeth, 617 Little Britain, New Windsor, NY		

CAS No.	MW	Compound	Result	RL	MDL	Units	Q	Result	RL	MDL	Units
64-17-5	46	Ethanol	ND	0.50	0.20	ppbv		ND	0.94	0.38	ug/m3
100-41-4	106.2	Ethylbenzene	ND	0.50	0.20	ppbv		ND	2.2	0.87	ug/m3
141-78-6	88	Ethyl Acetate	ND	0.50	0.15	ppbv		ND	1.8	0.54	ug/m3
622-96-8	120.2	4-Ethyltoluene	ND	0.50	0.20	ppbv		ND	2.5	0.98	ug/m3
76-13-1	187.4	Freon 113	ND	0.50	0.13	ppbv		ND	3.8	1.0	ug/m3
76-14-2	170.9	Freon 114	ND	0.50	0.16	ppbv		ND	3.5	1.1	ug/m3
142-82-5	100.2	Heptane	ND	0.50	0.17	ppbv		ND	2.0	0.70	ug/m3
87-68-3	260.8	Hexachlorobutadiene	ND	0.50	0.49	ppbv		ND	5.3	5.2	ug/m3
110-54-3	86.17	Hexane	ND	0.50	0.13	ppbv		ND	1.8	0.46	ug/m3
591-78-6	100	2-Hexanone	ND	0.50	0.13	ppbv		ND	2.0	0.53	ug/m3
67-63-0	60	Isopropyl Alcohol	ND	0.50	0.16	ppbv		ND	1.2	0.39	ug/m3
75-09-2	84.94	Methylene chloride	ND	0.50	0.12	ppbv		ND	1.7	0.42	ug/m3
78-93-3	72.11	Methyl ethyl ketone	ND	0.50	0.17	ppbv		ND	1.5	0.50	ug/m3
108-10-1	100.2	Methyl Isobutyl Ketone	ND	0.50	0.20	ppbv		ND	2.0	0.82	ug/m3
1634-04-4	88.15	Methyl Tert Butyl Ether	ND	0.50	0.20	ppbv		ND	1.8	0.72	ug/m3
115-07-1	42	Propylene	ND	0.50	0.11	ppbv		ND	0.86	0.19	ug/m3
100-42-5	104.1	Styrene	ND	0.50	0.17	ppbv		ND	2.1	0.72	ug/m3
79-34-5	167.9	1,1,2,2-Tetrachloroethane	ND	0.20	0.18	ppbv		ND	1.4	1.2	ug/m3
79-00-5	133.4	1,1,2-Trichloroethane	ND	0.20	0.16	ppbv		ND	1.1	0.87	ug/m3
120-82-1	181.5	1,2,4-Trichlorobenzene	ND	0.50	0.30	ppbv		ND	3.7	2.2	ug/m3
95-63-6	120.2	1,2,4-Trimethylbenzene	ND	0.50	0.23	ppbv		ND	2.5	1.1	ug/m3
108-67-8	120.2	1,3,5-Trimethylbenzene	ND	0.50	0.21	ppbv		ND	2.5	1.0	ug/m3
540-84-1	114.2	2,2,4-Trimethylpentane	ND	0.50	0.15	ppbv		ND	2.3	0.70	ug/m3
75-65-0	74.12	Tertiary Butyl Alcohol	ND	0.50	0.38	ppbv		ND	1.5	1.2	ug/m3
109-99-9	72	Tetrahydrofuran	ND	0.50	0.21	ppbv		ND	1.5	0.62	ug/m3
108-88-3	92.14	Toluene	0.95	0.50	0.18	ppbv		3.6	1.9	0.68	ug/m3
75-69-4	137.4	Trichlorofluoromethane	0.81	0.50	0.14	ppbv		4.6	2.8	0.79	ug/m3
75-01-4	62.5	Vinyl chloride	ND	0.20	0.13	ppbv		ND	0.51	0.33	ug/m3
108-05-4	86	Vinyl Acetate	ND	0.50	0.23	ppbv		ND	1.8	0.81	ug/m3
	106.2	m,p-Xylene	ND	0.50	0.41	ppbv		ND	2.2	1.8	ug/m3
95-47-6	106.2	o-Xylene	ND	0.50	0.21	ppbv		ND	2.2	0.91	ug/m3
1330-20-7	106.2	Xylenes (total)	ND	0.50	0.21	ppbv		ND	2.2	0.91	ug/m3

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
460-00-4	4-Bromofluorobenzene	81%		50-129%

ND = Not detected MDL = Method Detection Limit
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

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Report of Analysis

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Client Sample ID:	IA-3		
Lab Sample ID:	MC36556-4A	Date Sampled:	01/21/15
Matrix:	AIR - Ambient Air Comp. Summa ID: M160	Date Received:	01/22/15
Method:	TO-15 BY SIM	Percent Solids:	n/a
Project:	Macbeth, 617 Little Britain, New Windsor, NY		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	Q29651.D	1	02/11/15	AA	n/a	n/a	MSQ1286
Run #2							

	Initial Volume
Run #1	400 ml
Run #2	

CAS No.	MW	Compound	Result	RL	MDL	Units	Q	Result	RL	MDL	Units
71-55-6	133.4	1,1,1-Trichloroethane	ND	0.020	0.020	ppbv		ND	0.11	0.11	ug/m3
127-18-4	165.8	Tetrachloroethylene	0.024	0.020	0.0041	ppbv		0.16	0.14	0.028	ug/m3
79-01-6	131.4	Trichloroethylene	0.0088	0.020	0.0022	ppbv	J	0.047	0.11	0.012	ug/m3

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
460-00-4	4-Bromofluorobenzene	102%		57-139%

ND = Not detected MDL = Method Detection Limit
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

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Report of Analysis

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Client Sample ID:	TRIP BLANK	Date Sampled:	01/21/15
Lab Sample ID:	MC36556-5	Date Received:	01/22/15
Matrix:	AIR - Trip Blank Air Summa ID: M238	Percent Solids:	n/a
Method:	TO-15		
Project:	Macbeth, 617 Little Britain, New Windsor, NY		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	J29948.D	1	02/10/15	AA	n/a	n/a	MSJ1520
Run #2							

Run #	Initial Volume
Run #1	400 ml
Run #2	

CAS No.	MW	Compound	Result	RL	MDL	Units	Q	Result	RL	MDL	Units
67-64-1	58.08	Acetone	ND	0.50	0.22	ppbv		ND	1.2	0.52	ug/m3
106-99-0	54.09	1,3-Butadiene	ND	0.50	0.15	ppbv		ND	1.1	0.33	ug/m3
71-43-2	78.11	Benzene	ND	0.50	0.13	ppbv		ND	1.6	0.42	ug/m3
75-27-4	163.8	Bromodichloromethane	ND	0.50	0.13	ppbv		ND	3.3	0.87	ug/m3
75-25-2	252.8	Bromoform	ND	0.50	0.19	ppbv		ND	5.2	2.0	ug/m3
74-83-9	94.94	Bromomethane	ND	0.50	0.14	ppbv		ND	1.9	0.54	ug/m3
593-60-2	106.9	Bromoethene	ND	0.50	0.14	ppbv		ND	2.2	0.61	ug/m3
100-44-7	126	Benzyl Chloride	ND	0.50	0.14	ppbv		ND	2.6	0.72	ug/m3
75-15-0	76.14	Carbon disulfide	ND	0.50	0.14	ppbv		ND	1.6	0.44	ug/m3
108-90-7	112.6	Chlorobenzene	ND	0.50	0.20	ppbv		ND	2.3	0.92	ug/m3
75-00-3	64.52	Chloroethane	ND	0.20	0.14	ppbv		ND	0.53	0.37	ug/m3
67-66-3	119.4	Chloroform	ND	0.50	0.092	ppbv		ND	2.4	0.45	ug/m3
74-87-3	50.49	Chloromethane	ND	0.50	0.14	ppbv		ND	1.0	0.29	ug/m3
107-05-1	76.53	3-Chloropropene	ND	0.50	0.13	ppbv		ND	1.6	0.41	ug/m3
95-49-8	126.6	2-Chlorotoluene	ND	0.50	0.23	ppbv		ND	2.6	1.2	ug/m3
56-23-5	153.8	Carbon tetrachloride	ND	0.20	0.13	ppbv		ND	1.3	0.82	ug/m3
110-82-7	84.16	Cyclohexane	ND	0.50	0.14	ppbv		ND	1.7	0.48	ug/m3
75-34-3	98.96	1,1-Dichloroethane	ND	0.20	0.078	ppbv		ND	0.81	0.32	ug/m3
75-35-4	96.94	1,1-Dichloroethylene	ND	0.20	0.14	ppbv		ND	0.79	0.56	ug/m3
106-93-4	187.9	1,2-Dibromoethane	ND	0.50	0.18	ppbv		ND	3.8	1.4	ug/m3
107-06-2	98.96	1,2-Dichloroethane	ND	0.20	0.16	ppbv		ND	0.81	0.65	ug/m3
78-87-5	113	1,2-Dichloropropane	ND	0.50	0.17	ppbv		ND	2.3	0.79	ug/m3
123-91-1	88	1,4-Dioxane	ND	0.50	0.13	ppbv		ND	1.8	0.47	ug/m3
75-71-8	120.9	Dichlorodifluoromethane	ND	0.50	0.11	ppbv		ND	2.5	0.54	ug/m3
124-48-1	208.3	Dibromochloromethane	ND	0.50	0.16	ppbv		ND	4.3	1.4	ug/m3
156-60-5	96.94	trans-1,2-Dichloroethylene	ND	0.20	0.13	ppbv		ND	0.79	0.52	ug/m3
156-59-2	96.94	cis-1,2-Dichloroethylene	ND	0.20	0.093	ppbv		ND	0.79	0.37	ug/m3
10061-01-5	111	cis-1,3-Dichloropropene	ND	0.50	0.17	ppbv		ND	2.3	0.77	ug/m3
541-73-1	147	m-Dichlorobenzene	ND	0.50	0.25	ppbv		ND	3.0	1.5	ug/m3
95-50-1	147	o-Dichlorobenzene	ND	0.50	0.32	ppbv		ND	3.0	1.9	ug/m3
106-46-7	147	p-Dichlorobenzene	ND	0.50	0.26	ppbv		ND	3.0	1.6	ug/m3
10061-02-6	111	trans-1,3-Dichloropropene	ND	0.50	0.19	ppbv		ND	2.3	0.86	ug/m3

ND = Not detected MDL = Method Detection Limit

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	TRIP BLANK	Date Sampled:	01/21/15
Lab Sample ID:	MC36556-5	Date Received:	01/22/15
Matrix:	AIR - Trip Blank Air Summa ID: M238	Percent Solids:	n/a
Method:	TO-15		
Project:	Macbeth, 617 Little Britain, New Windsor, NY		

CAS No.	MW	Compound	Result	RL	MDL	Units	Q	Result	RL	MDL	Units
64-17-5	46	Ethanol	ND	0.50	0.20	ppbv		ND	0.94	0.38	ug/m3
100-41-4	106.2	Ethylbenzene	ND	0.50	0.20	ppbv		ND	2.2	0.87	ug/m3
141-78-6	88	Ethyl Acetate	ND	0.50	0.15	ppbv		ND	1.8	0.54	ug/m3
622-96-8	120.2	4-Ethyltoluene	ND	0.50	0.20	ppbv		ND	2.5	0.98	ug/m3
76-13-1	187.4	Freon 113	ND	0.50	0.13	ppbv		ND	3.8	1.0	ug/m3
76-14-2	170.9	Freon 114	ND	0.50	0.16	ppbv		ND	3.5	1.1	ug/m3
142-82-5	100.2	Heptane	ND	0.50	0.17	ppbv		ND	2.0	0.70	ug/m3
87-68-3	260.8	Hexachlorobutadiene	ND	0.50	0.49	ppbv		ND	5.3	5.2	ug/m3
110-54-3	86.17	Hexane	ND	0.50	0.13	ppbv		ND	1.8	0.46	ug/m3
591-78-6	100	2-Hexanone	ND	0.50	0.13	ppbv		ND	2.0	0.53	ug/m3
67-63-0	60	Isopropyl Alcohol	ND	0.50	0.16	ppbv		ND	1.2	0.39	ug/m3
75-09-2	84.94	Methylene chloride	ND	0.50	0.12	ppbv		ND	1.7	0.42	ug/m3
78-93-3	72.11	Methyl ethyl ketone	ND	0.50	0.17	ppbv		ND	1.5	0.50	ug/m3
108-10-1	100.2	Methyl Isobutyl Ketone	ND	0.50	0.20	ppbv		ND	2.0	0.82	ug/m3
1634-04-4	88.15	Methyl Tert Butyl Ether	ND	0.50	0.20	ppbv		ND	1.8	0.72	ug/m3
115-07-1	42	Propylene	ND	0.50	0.11	ppbv		ND	0.86	0.19	ug/m3
100-42-5	104.1	Styrene	ND	0.50	0.17	ppbv		ND	2.1	0.72	ug/m3
79-34-5	167.9	1,1,2,2-Tetrachloroethane	ND	0.20	0.18	ppbv		ND	1.4	1.2	ug/m3
79-00-5	133.4	1,1,2-Trichloroethane	ND	0.20	0.16	ppbv		ND	1.1	0.87	ug/m3
120-82-1	181.5	1,2,4-Trichlorobenzene	ND	0.50	0.30	ppbv		ND	3.7	2.2	ug/m3
95-63-6	120.2	1,2,4-Trimethylbenzene	ND	0.50	0.23	ppbv		ND	2.5	1.1	ug/m3
108-67-8	120.2	1,3,5-Trimethylbenzene	ND	0.50	0.21	ppbv		ND	2.5	1.0	ug/m3
540-84-1	114.2	2,2,4-Trimethylpentane	ND	0.50	0.15	ppbv		ND	2.3	0.70	ug/m3
75-65-0	74.12	Tertiary Butyl Alcohol	ND	0.50	0.38	ppbv		ND	1.5	1.2	ug/m3
109-99-9	72	Tetrahydrofuran	ND	0.50	0.21	ppbv		ND	1.5	0.62	ug/m3
108-88-3	92.14	Toluene	ND	0.50	0.18	ppbv		ND	1.9	0.68	ug/m3
75-69-4	137.4	Trichlorofluoromethane	ND	0.50	0.14	ppbv		ND	2.8	0.79	ug/m3
75-01-4	62.5	Vinyl chloride	ND	0.20	0.13	ppbv		ND	0.51	0.33	ug/m3
108-05-4	86	Vinyl Acetate	ND	0.50	0.23	ppbv		ND	1.8	0.81	ug/m3
	106.2	m,p-Xylene	ND	0.50	0.41	ppbv		ND	2.2	1.8	ug/m3
95-47-6	106.2	o-Xylene	ND	0.50	0.21	ppbv		ND	2.2	0.91	ug/m3
1330-20-7	106.2	Xylenes (total)	ND	0.50	0.21	ppbv		ND	2.2	0.91	ug/m3

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
460-00-4	4-Bromofluorobenzene	95%		50-129%

ND = Not detected MDL = Method Detection Limit
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

Accutest Laboratories

Report of Analysis

Page 1 of 1

Client Sample ID:	TRIP BLANK	Date Sampled:	01/21/15
Lab Sample ID:	MC36556-5A	Date Received:	01/22/15
Matrix:	AIR - Trip Blank Air Summa ID: M238	Percent Solids:	n/a
Method:	TO-15 BY SIM		
Project:	Macbeth, 617 Little Britain, New Windsor, NY		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	Q29652.D	1	02/11/15	AA	n/a	n/a	MSQ1286
Run #2							

	Initial Volume
Run #1	400 ml
Run #2	

CAS No.	MW	Compound	Result	RL	MDL	Units	Q	Result	RL	MDL	Units
71-55-6	133.4	1,1,1-Trichloroethane	ND	0.020	0.020	ppbv		ND	0.11	0.11	ug/m3
127-18-4	165.8	Tetrachloroethylene	ND	0.020	0.0041	ppbv		ND	0.14	0.028	ug/m3
79-01-6	131.4	Trichloroethylene	ND	0.020	0.0022	ppbv		ND	0.11	0.012	ug/m3

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
460-00-4	4-Bromofluorobenzene	91%		57-139%

ND = Not detected MDL = Method Detection Limit
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

Misc. Forms

5

Custody Documents and Other Forms

Includes the following where applicable:

- Chain of Custody
- Summa Canister and Flow Controller Log
- Sample Tracking Chronicle



CHAIN OF CUSTODY

Air Sampling Field Data Sheet

FED-EX Tracking #

Lab Quote #

MC36556

Bottle Order Control #

MCM-1/13/2015-4

PAGE 1 OF 1

LAB JOB #

MCM

Company Name		Client / Reporting Information		Project Name		Weather Parameters		Requested Analysis							
H2M Associates INC		MACBETH		119 Cherry Hill Road Suite 200		617 Latic Britain Rd		Temperature (Fahrenheit)							
Parsippany, NJ 07054		New Windsor NY		Project # ZMAC0101		Client Purchase Order #		Start: 35 Maximum: 37							
Joe McNanna jmcnanna@h2m.com		Joe McNanna		Jason Potasnak		Atmospheric Pressure (inches of Hg)		Stop: 30 Minimum: 18							
Phone #		Fax #		Other weather comment:		Start: Maximum:		Stop: Minimum:							
Sampler(s) Name(s)		Air Type		Sampling Equipment Info		Start Sampling Information		Stop Sampling Information							
Lab Sample #	Field ID / Point of Collection	Indoor(I) Soil Vap(SV) Ambient(A)	Canister Serial #	Canister Size 6L or 1L	Flow Controller Serial #	Date	Time (24hr clock)	Canister Pressure ("Hg)	Interior Temp (F)	Sampler Init	Date	Time (24hr clock)	Canister Pressure ("Hg)	Interior Temp (F)	Sampler Init
MC36556-1	SG-2	SV	M2001	6L	MC238	1/20/15	1145	-29.4	75	JRM	1/21/15	1101	0	75	JRM
-2	IA-2	I	M275	6L	MC194	1/20/15	1150	-29.4	75	JRM	1/21/15	1102	0	75	JRM
-3	SG-3	SV	M283	6L	MC185	1/20/15	1303	-30	73	JWP	1/21/15	1250	-2	73	JWP
-4	IA-3	I	M160	6L	MC228	1/20/15	1253	-29.4	73	JWP	1/21/15	1135	0	73	JWP
-5	TRIP BLANK	-	M238	6L	MC230	-	-	-	-	JRM	-	-	-	-	-
Turnaround Time / Business days		Approved By:		Date:		Data Deliverable Information		Comments / Remarks							
Standard - 15 Days	X					Comm A Comm B Full T1 Other:		NYS Category B Full Data Package need following Reporting limits < .25 ug/m3 Trichloroethene (TCE) < 3 ug/m3 Tetrachloroethene (PCE) < 3 ug/m3 Trichloroethane (1,1,1 TCA)							
Sample Custody must be documented below each time samples change possession, including courier delivery.															
Relinquished by:	Date Time:	Received By:	Relinquished By:	Date Time:	Received By:	Relinquished By:	Date Time:	Received By:	Relinquished By:	Date Time:	Received By:	Relinquished By:	Date Time:	Received By:	Relinquished By:
Joseph McNanna	1/21/15 16:20	Raymond	2	1-22-15 9:15	3	4		2	5		4	5		4	5

SM013-01 (2/14/06)

Accutest Laboratories of New England

Tel: (508) 41-6200
Fax: (508) 41-7753

MC36556: Chain of Custody

Page 1 of 2

Accutest Laboratories Sample Receipt Summary

Accutest Job Number: MC36556 **Client:** H2M ASSOCIATES **Project:** 2MHC0101
Date / Time Received: 1/22/2015 9:15:00 AM **Delivery Method:** _____ **Airbill #'s:** _____

Cooler Temps (Initial/Adjusted):

Cooler Security

<u>Y or N</u>	<u>Y or N</u>
1. Custody Seals Present: <input checked="" type="checkbox"/> <input type="checkbox"/>	3. COC Present: <input checked="" type="checkbox"/> <input type="checkbox"/>
2. Custody Seals Intact: <input checked="" type="checkbox"/> <input type="checkbox"/>	4. Smpl Dates/Time OK: <input checked="" type="checkbox"/> <input type="checkbox"/>

Cooler Temperature

<u>Y or N</u>	<u>Y or N</u>
1. Temp criteria achieved: <input checked="" type="checkbox"/> <input type="checkbox"/>	
2. Thermometer ID: _____	
3. Cooler media: _____	
4. No. Coolers: _____	0

Quality Control Preservation

	<u>Y</u>	<u>or</u>	<u>N</u>	<u>N/A</u>
1. Trip Blank present / cooler:	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>
2. Trip Blank listed on COC:	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>
3. Samples preserved properly:	<input checked="" type="checkbox"/>		<input type="checkbox"/>	
4. VOCs headspace free:	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>

Sample Integrity - Documentation

<u>Y or N</u>	<u>Y or N</u>
1. Sample labels present on bottles: <input checked="" type="checkbox"/> <input type="checkbox"/>	
2. Container labeling complete: <input checked="" type="checkbox"/> <input type="checkbox"/>	
3. Sample container label / COC agree: <input checked="" type="checkbox"/> <input type="checkbox"/>	

Sample Integrity - Condition

<u>Y or N</u>	<u>Y or N</u>
1. Sample recvd within HT: <input checked="" type="checkbox"/> <input type="checkbox"/>	
2. All containers accounted for: <input checked="" type="checkbox"/> <input type="checkbox"/>	
3. Condition of sample: _____	Intact

Sample Integrity - Instructions

	<u>Y</u>	<u>or</u>	<u>N</u>	<u>N/A</u>
1. Analysis requested is clear:	<input checked="" type="checkbox"/>		<input type="checkbox"/>	
2. Bottles received for unspecified tests:	<input type="checkbox"/>		<input checked="" type="checkbox"/>	
3. Sufficient volume recvd for analysis:	<input checked="" type="checkbox"/>		<input type="checkbox"/>	
4. Compositing instructions clear:	<input type="checkbox"/>		<input type="checkbox"/>	<input checked="" type="checkbox"/>
5. Filtering instructions clear:	<input type="checkbox"/>		<input type="checkbox"/>	<input checked="" type="checkbox"/>

Comments

Summa Canister and Flow Controller Log

Page 1 of 1

Job Number: MC36556
Account: HMANNJP H2M Associates, Inc
Project: Macbeth, 617 Little Britain, New Windsor, NY
Received: 01/22/15

SUMMA CANISTERS													
Shipping							Receiving						
Summa ID	L	Vac " Hg	Date Out	By	SCC Batch	SCC FileID	Sample Number	Date In	By	Vac " Hg	Pres psig	Final psig	Dil Fact
M001	6	29.4	01/19/15	AA	CP1606	J29961A.D	MC36556-1	01/29/15	JB	0			1
M275	6	29.4	01/19/15	AA	CP1606	J29961A.D	MC36556-2	01/29/15	JB	0			1
M283	6	29.4	01/19/15	AA	CP1606	J29961A.D	MC36556-3	01/29/15	JB	0			1
M160	6	29.4	01/19/15	AA	CP1601	J29651.D	MC36556-4	01/29/15	JB	0			1
M238	6	29.4	01/19/15	AA	CP1601	J29651.D	MC36556-5	01/29/15	JB	30			1

FLOW CONTROLLERS / OTHER									
Shipping					Receiving				
Flow Ctrl ID	Date Out	By	cc/ min	Time hrs.	Date In	By	cc/ min	Equipment Type	
MC185	01/19/15	AA	4.3	24	01/31/15	JB	4.7	Flow Controller	
MC194	01/19/15	AA	4.3	24	01/31/15	JB	4	Flow Controller	
MC228	01/19/15	AA	4.3	24	01/31/15	JB	4.3	Flow Controller	
MC229	01/19/15	AA	4.3	24	01/31/15	JB	5	Flow Controller	
MC230	01/19/15	AA	4.3	24	01/31/15	JB	4.2	Flow Controller	

Accutest Bottle Order(s):

AA/01-19-15/H2M GRP/AIR

Prep Date 01/19/15 **Room Temp(F)** 70 **Bar Pres "Hg** 29.92

Internal Sample Tracking Chronicle

H2M Associates, Inc

Job No: MC36556

Macbeth, 617 Little Britain, New Windsor, NY

Project No: 2MAC0101

Sample Number	Method	Analyzed	By	Prepped	By	Test Codes
MC36556-1 Collected: 21-JAN-15 11:01 By: JMJP Received: 22-JAN-15 By: NT SG-2						
MC36556-1	TO-15	10-FEB-15 12:01	AA			VTO15STD
MC36556-1	TO-15	10-FEB-15 13:39	AA			VTO15STD
MC36556-2 Collected: 21-JAN-15 11:02 By: JMJP Received: 22-JAN-15 By: NT IA-2						
MC36556-2	TO-15	10-FEB-15 11:16	AA			VTO15STD
MC36556-3 Collected: 21-JAN-15 12:50 By: JMJP Received: 22-JAN-15 By: NT SG-3						
MC36556-3	TO-15	10-FEB-15 10:29	AA			VTO15STD
MC36556-3	TO-15	10-FEB-15 16:12	AA			VTO15STD
MC36556-4 Collected: 21-JAN-15 11:35 By: JMJP Received: 22-JAN-15 By: NT IA-3						
MC36556-4	TO-15	10-FEB-15 09:45	AA			VTO15STD
MC36556-5 Collected: 21-JAN-15 00:00 By: JMJP Received: 22-JAN-15 By: NT TRIP BLANK						
MC36556-5	TO-15	10-FEB-15 08:59	AA			VTO15STD
MC36556-1A Collected: 21-JAN-15 11:01 By: JMJP Received: 22-JAN-15 By: NT SG-2						
MC36556-1A	TO-15 BY SIM	11-FEB-15 13:44	AA			VTO15SIMSL
MC36556-1A	TO-15 BY SIM	11-FEB-15 18:37	AA			VTO15SIMSL
MC36556-2A Collected: 21-JAN-15 11:02 By: JMJP Received: 22-JAN-15 By: NT IA-2						
MC36556-2A	TO-15 BY SIM	11-FEB-15 15:11	AA			VTO15SIMSL

Internal Sample Tracking Chronicle

H2M Associates, Inc

Job No: MC36556

Macbeth, 617 Little Britain, New Windsor, NY

Project No: 2MAC0101

Sample Number	Method	Analyzed	By	Prepped	By	Test Codes
MC36556-3A Collected: 21-JAN-15 12:50 By: JMJP Received: 22-JAN-15 By: NT SG-3						
MC36556-3A	TO-15 BY SIM	11-FEB-15 14:27	AA			VTO15SIMSL
MC36556-3A	TO-15 BY SIM	11-FEB-15 19:24	AA			VTO15SIMSL
MC36556-4A Collected: 21-JAN-15 11:35 By: JMJP Received: 22-JAN-15 By: NT IA-3						
MC36556-4A	TO-15 BY SIM	11-FEB-15 15:57	AA			VTO15SIMSL
MC36556-5A Collected: 21-JAN-15 00:00 By: JMJP Received: 22-JAN-15 By: NT TRIP BLANK						
MC36556-5A	TO-15 BY SIM	11-FEB-15 16:42	AA			VTO15SIMSL

GC/MS Volatiles

QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries
- Instrument Performance Checks (BFB)
- Internal Standard Area Summaries
- Initial Calibration RT/ISTD Area Summaries
- Surrogate Recovery Summaries
- Initial and Continuing Calibration Summaries

Method Blank Summary

Job Number: MC36556

Account: HMANNJP H2M Associates, Inc

Project: Macbeth, 617 Little Britain, New Windsor, NY

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
MSJ1520-MB	J29935.D	1	02/09/15	AA	n/a	n/a	MSJ1520

The QC reported here applies to the following samples:

Method: TO-15

MC36556-1, MC36556-2, MC36556-3, MC36556-4, MC36556-5

CAS No.	Compound	Result	RL	MDL	Units	Q	Result	RL	Units
67-64-1	Acetone	ND	0.50	0.22	ppbv		ND	1.2	ug/m3
106-99-0	1,3-Butadiene	ND	0.50	0.15	ppbv		ND	1.1	ug/m3
71-43-2	Benzene	ND	0.50	0.13	ppbv		ND	1.6	ug/m3
75-27-4	Bromodichloromethane	ND	0.50	0.13	ppbv		ND	3.3	ug/m3
75-25-2	Bromoform	ND	0.50	0.19	ppbv		ND	5.2	ug/m3
74-83-9	Bromomethane	ND	0.50	0.14	ppbv		ND	1.9	ug/m3
593-60-2	Bromoethene	ND	0.50	0.14	ppbv		ND	2.2	ug/m3
100-44-7	Benzyl Chloride	ND	0.50	0.14	ppbv		ND	2.6	ug/m3
75-15-0	Carbon disulfide	ND	0.50	0.14	ppbv		ND	1.6	ug/m3
108-90-7	Chlorobenzene	ND	0.50	0.20	ppbv		ND	2.3	ug/m3
75-00-3	Chloroethane	ND	0.20	0.14	ppbv		ND	0.53	ug/m3
67-66-3	Chloroform	ND	0.50	0.092	ppbv		ND	2.4	ug/m3
74-87-3	Chloromethane	ND	0.50	0.14	ppbv		ND	1.0	ug/m3
107-05-1	3-Chloropropene	ND	0.50	0.13	ppbv		ND	1.6	ug/m3
95-49-8	2-Chlorotoluene	ND	0.50	0.23	ppbv		ND	2.6	ug/m3
56-23-5	Carbon tetrachloride	ND	0.20	0.13	ppbv		ND	1.3	ug/m3
110-82-7	Cyclohexane	ND	0.50	0.14	ppbv		ND	1.7	ug/m3
75-34-3	1,1-Dichloroethane	ND	0.20	0.078	ppbv		ND	0.81	ug/m3
75-35-4	1,1-Dichloroethylene	ND	0.20	0.14	ppbv		ND	0.79	ug/m3
106-93-4	1,2-Dibromoethane	ND	0.50	0.18	ppbv		ND	3.8	ug/m3
107-06-2	1,2-Dichloroethane	ND	0.20	0.16	ppbv		ND	0.81	ug/m3
78-87-5	1,2-Dichloropropane	ND	0.50	0.17	ppbv		ND	2.3	ug/m3
123-91-1	1,4-Dioxane	ND	0.50	0.13	ppbv		ND	1.8	ug/m3
75-71-8	Dichlorodifluoromethane	ND	0.50	0.11	ppbv		ND	2.5	ug/m3
124-48-1	Dibromochloromethane	ND	0.50	0.16	ppbv		ND	4.3	ug/m3
156-60-5	trans-1,2-Dichloroethylene	ND	0.20	0.13	ppbv		ND	0.79	ug/m3
156-59-2	cis-1,2-Dichloroethylene	ND	0.20	0.093	ppbv		ND	0.79	ug/m3
10061-01-5	cis-1,3-Dichloropropene	ND	0.50	0.17	ppbv		ND	2.3	ug/m3
541-73-1	m-Dichlorobenzene	ND	0.50	0.25	ppbv		ND	3.0	ug/m3
95-50-1	o-Dichlorobenzene	ND	0.50	0.32	ppbv		ND	3.0	ug/m3
106-46-7	p-Dichlorobenzene	ND	0.50	0.26	ppbv		ND	3.0	ug/m3
10061-02-6	trans-1,3-Dichloropropene	ND	0.50	0.19	ppbv		ND	2.3	ug/m3
64-17-5	Ethanol	ND	0.50	0.20	ppbv		ND	0.94	ug/m3
100-41-4	Ethylbenzene	ND	0.50	0.20	ppbv		ND	2.2	ug/m3
141-78-6	Ethyl Acetate	ND	0.50	0.15	ppbv		ND	1.8	ug/m3
622-96-8	4-Ethyltoluene	ND	0.50	0.20	ppbv		ND	2.5	ug/m3

Method Blank Summary

Page 2 of 2

Job Number: MC36556**Account:** HMANNJP H2M Associates, Inc**Project:** Macbeth, 617 Little Britain, New Windsor, NY

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
MSJ1520-MB	J29935.D	1	02/09/15	AA	n/a	n/a	MSJ1520

The QC reported here applies to the following samples:**Method:** TO-15

MC36556-1, MC36556-2, MC36556-3, MC36556-4, MC36556-5

CAS No.	Compound	Result	RL	MDL	Units	Q	Result	RL	Units
76-13-1	Freon 113	ND	0.50	0.13	ppbv		ND	3.8	ug/m3
76-14-2	Freon 114	ND	0.50	0.16	ppbv		ND	3.5	ug/m3
142-82-5	Heptane	ND	0.50	0.17	ppbv		ND	2.0	ug/m3
87-68-3	Hexachlorobutadiene	ND	0.50	0.49	ppbv		ND	5.3	ug/m3
110-54-3	Hexane	ND	0.50	0.13	ppbv		ND	1.8	ug/m3
591-78-6	2-Hexanone	ND	0.50	0.13	ppbv		ND	2.0	ug/m3
67-63-0	Isopropyl Alcohol	ND	0.50	0.16	ppbv		ND	1.2	ug/m3
75-09-2	Methylene chloride	ND	0.50	0.12	ppbv		ND	1.7	ug/m3
78-93-3	Methyl ethyl ketone	ND	0.50	0.17	ppbv		ND	1.5	ug/m3
108-10-1	Methyl Isobutyl Ketone	ND	0.50	0.20	ppbv		ND	2.0	ug/m3
1634-04-4	Methyl Tert Butyl Ether	ND	0.50	0.20	ppbv		ND	1.8	ug/m3
115-07-1	Propylene	ND	0.50	0.11	ppbv		ND	0.86	ug/m3
100-42-5	Styrene	ND	0.50	0.17	ppbv		ND	2.1	ug/m3
79-34-5	1,1,2,2-Tetrachloroethane	ND	0.20	0.18	ppbv		ND	1.4	ug/m3
79-00-5	1,1,2-Trichloroethane	ND	0.20	0.16	ppbv		ND	1.1	ug/m3
120-82-1	1,2,4-Trichlorobenzene	ND	0.50	0.30	ppbv		ND	3.7	ug/m3
95-63-6	1,2,4-Trimethylbenzene	ND	0.50	0.23	ppbv		ND	2.5	ug/m3
108-67-8	1,3,5-Trimethylbenzene	ND	0.50	0.21	ppbv		ND	2.5	ug/m3
540-84-1	2,2,4-Trimethylpentane	ND	0.50	0.15	ppbv		ND	2.3	ug/m3
75-65-0	Tertiary Butyl Alcohol	ND	0.50	0.38	ppbv		ND	1.5	ug/m3
127-18-4	Tetrachloroethylene	ND	0.20	0.16	ppbv		ND	1.4	ug/m3
109-99-9	Tetrahydrofuran	ND	0.50	0.21	ppbv		ND	1.5	ug/m3
108-88-3	Toluene	ND	0.50	0.18	ppbv		ND	1.9	ug/m3
75-69-4	Trichlorofluoromethane	ND	0.50	0.14	ppbv		ND	2.8	ug/m3
75-01-4	Vinyl chloride	ND	0.20	0.13	ppbv		ND	0.51	ug/m3
108-05-4	Vinyl Acetate	ND	0.50	0.23	ppbv		ND	1.8	ug/m3
	m,p-Xylene	ND	0.50	0.41	ppbv		ND	2.2	ug/m3
95-47-6	o-Xylene	ND	0.50	0.21	ppbv		ND	2.2	ug/m3
1330-20-7	Xylenes (total)	ND	0.50	0.21	ppbv		ND	2.2	ug/m3

CAS No.	Surrogate Recoveries	Limits
460-00-4	4-Bromofluorobenzene	95% 50-129%

Method Blank Summary

Job Number: MC36556

Account: HMANNJP H2M Associates, Inc

Project: Macbeth, 617 Little Britain, New Windsor, NY

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
MSJ1511-MB	J29717.D	1	01/25/15	AA	n/a	n/a	MSJ1511

The QC reported here applies to the following samples:

Method: TO-15

MSJ1511-SCC

CAS No.	Compound	Result	RL	MDL	Units	Q	Result	RL	Units
67-64-1	Acetone	ND	0.50	0.22	ppbv		ND	1.2	ug/m3
106-99-0	1,3-Butadiene	ND	0.50	0.15	ppbv		ND	1.1	ug/m3
71-43-2	Benzene	ND	0.50	0.13	ppbv		ND	1.6	ug/m3
75-27-4	Bromodichloromethane	ND	0.50	0.13	ppbv		ND	3.3	ug/m3
75-25-2	Bromoform	ND	0.50	0.19	ppbv		ND	5.2	ug/m3
74-83-9	Bromomethane	ND	0.50	0.14	ppbv		ND	1.9	ug/m3
593-60-2	Bromoethene	ND	0.50	0.14	ppbv		ND	2.2	ug/m3
100-44-7	Benzyl Chloride	ND	0.50	0.14	ppbv		ND	2.6	ug/m3
75-15-0	Carbon disulfide	ND	0.50	0.14	ppbv		ND	1.6	ug/m3
108-90-7	Chlorobenzene	ND	0.50	0.20	ppbv		ND	2.3	ug/m3
75-00-3	Chloroethane	ND	0.20	0.14	ppbv		ND	0.53	ug/m3
67-66-3	Chloroform	ND	0.50	0.092	ppbv		ND	2.4	ug/m3
74-87-3	Chloromethane	ND	0.50	0.14	ppbv		ND	1.0	ug/m3
107-05-1	3-Chloropropene	ND	0.50	0.13	ppbv		ND	1.6	ug/m3
95-49-8	2-Chlorotoluene	ND	0.50	0.23	ppbv		ND	2.6	ug/m3
56-23-5	Carbon tetrachloride	ND	0.20	0.13	ppbv		ND	1.3	ug/m3
110-82-7	Cyclohexane	ND	0.50	0.14	ppbv		ND	1.7	ug/m3
75-34-3	1,1-Dichloroethane	ND	0.20	0.078	ppbv		ND	0.81	ug/m3
75-35-4	1,1-Dichloroethylene	ND	0.20	0.14	ppbv		ND	0.79	ug/m3
106-93-4	1,2-Dibromoethane	ND	0.50	0.18	ppbv		ND	3.8	ug/m3
107-06-2	1,2-Dichloroethane	ND	0.20	0.16	ppbv		ND	0.81	ug/m3
78-87-5	1,2-Dichloropropane	ND	0.50	0.17	ppbv		ND	2.3	ug/m3
123-91-1	1,4-Dioxane	ND	0.50	0.13	ppbv		ND	1.8	ug/m3
75-71-8	Dichlorodifluoromethane	ND	0.50	0.11	ppbv		ND	2.5	ug/m3
124-48-1	Dibromochloromethane	ND	0.50	0.16	ppbv		ND	4.3	ug/m3
156-60-5	trans-1,2-Dichloroethylene	ND	0.20	0.13	ppbv		ND	0.79	ug/m3
156-59-2	cis-1,2-Dichloroethylene	ND	0.20	0.093	ppbv		ND	0.79	ug/m3
10061-01-5	cis-1,3-Dichloropropene	ND	0.50	0.17	ppbv		ND	2.3	ug/m3
541-73-1	m-Dichlorobenzene	ND	0.50	0.25	ppbv		ND	3.0	ug/m3
95-50-1	o-Dichlorobenzene	ND	0.50	0.32	ppbv		ND	3.0	ug/m3
106-46-7	p-Dichlorobenzene	ND	0.50	0.26	ppbv		ND	3.0	ug/m3
10061-02-6	trans-1,3-Dichloropropene	ND	0.50	0.19	ppbv		ND	2.3	ug/m3
64-17-5	Ethanol	ND	0.50	0.20	ppbv		ND	0.94	ug/m3
100-41-4	Ethylbenzene	ND	0.50	0.20	ppbv		ND	2.2	ug/m3
141-78-6	Ethyl Acetate	ND	0.50	0.15	ppbv		ND	1.8	ug/m3
622-96-8	4-Ethyltoluene	ND	0.50	0.20	ppbv		ND	2.5	ug/m3

Method Blank Summary

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Job Number: MC36556
Account: HMANNJP H2M Associates, Inc
Project: Macbeth, 617 Little Britain, New Windsor, NY

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
MSJ1511-MB	J29717.D	1	01/25/15	AA	n/a	n/a	MSJ1511

The QC reported here applies to the following samples:

Method: TO-15

MSJ1511-SCC

CAS No.	Compound	Result	RL	MDL	Units	Q	Result	RL	Units
76-13-1	Freon 113	ND	0.50	0.13	ppbv		ND	3.8	ug/m3
76-14-2	Freon 114	ND	0.50	0.16	ppbv		ND	3.5	ug/m3
142-82-5	Heptane	ND	0.50	0.17	ppbv		ND	2.0	ug/m3
87-68-3	Hexachlorobutadiene	ND	0.50	0.49	ppbv		ND	5.3	ug/m3
110-54-3	Hexane	ND	0.50	0.13	ppbv		ND	1.8	ug/m3
591-78-6	2-Hexanone	ND	0.50	0.13	ppbv		ND	2.0	ug/m3
67-63-0	Isopropyl Alcohol	ND	0.50	0.16	ppbv		ND	1.2	ug/m3
75-09-2	Methylene chloride	ND	0.50	0.12	ppbv		ND	1.7	ug/m3
78-93-3	Methyl ethyl ketone	ND	0.50	0.17	ppbv		ND	1.5	ug/m3
108-10-1	Methyl Isobutyl Ketone	ND	0.50	0.20	ppbv		ND	2.0	ug/m3
1634-04-4	Methyl Tert Butyl Ether	ND	0.50	0.20	ppbv		ND	1.8	ug/m3
115-07-1	Propylene	ND	0.50	0.11	ppbv		ND	0.86	ug/m3
100-42-5	Styrene	ND	0.50	0.17	ppbv		ND	2.1	ug/m3
79-34-5	1,1,2,2-Tetrachloroethane	ND	0.20	0.18	ppbv		ND	1.4	ug/m3
79-00-5	1,1,2-Trichloroethane	ND	0.20	0.16	ppbv		ND	1.1	ug/m3
120-82-1	1,2,4-Trichlorobenzene	ND	0.50	0.30	ppbv		ND	3.7	ug/m3
95-63-6	1,2,4-Trimethylbenzene	ND	0.50	0.23	ppbv		ND	2.5	ug/m3
108-67-8	1,3,5-Trimethylbenzene	ND	0.50	0.21	ppbv		ND	2.5	ug/m3
540-84-1	2,2,4-Trimethylpentane	ND	0.50	0.15	ppbv		ND	2.3	ug/m3
75-65-0	Tertiary Butyl Alcohol	ND	0.50	0.38	ppbv		ND	1.5	ug/m3
109-99-9	Tetrahydrofuran	ND	0.50	0.21	ppbv		ND	1.5	ug/m3
108-88-3	Toluene	ND	0.50	0.18	ppbv		ND	1.9	ug/m3
75-69-4	Trichlorofluoromethane	ND	0.50	0.14	ppbv		ND	2.8	ug/m3
75-01-4	Vinyl chloride	ND	0.20	0.13	ppbv		ND	0.51	ug/m3
108-05-4	Vinyl Acetate	ND	0.50	0.23	ppbv		ND	1.8	ug/m3
	m,p-Xylene	ND	0.50	0.41	ppbv		ND	2.2	ug/m3
95-47-6	o-Xylene	ND	0.50	0.21	ppbv		ND	2.2	ug/m3
1330-20-7	Xylenes (total)	ND	0.50	0.21	ppbv		ND	2.2	ug/m3

CAS No.	Surrogate Recoveries	Limits
460-00-4	4-Bromofluorobenzene	79% 50-129%

Method Blank Summary

Job Number: MC36556

Account: HMANNJP H2M Associates, Inc

Project: Macbeth, 617 Little Britain, New Windsor, NY

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
MSJ1521-MB	J29961.D	1	02/10/15	AA	n/a	n/a	MSJ1521

The QC reported here applies to the following samples:

Method: TO-15

MSJ1521-SCC

CAS No.	Compound	Result	RL	MDL	Units	Q	Result	RL	Units
67-64-1	Acetone	ND	0.50	0.22	ppbv		ND	1.2	ug/m3
106-99-0	1,3-Butadiene	ND	0.50	0.15	ppbv		ND	1.1	ug/m3
71-43-2	Benzene	ND	0.50	0.13	ppbv		ND	1.6	ug/m3
75-27-4	Bromodichloromethane	ND	0.50	0.13	ppbv		ND	3.3	ug/m3
75-25-2	Bromoform	ND	0.50	0.19	ppbv		ND	5.2	ug/m3
74-83-9	Bromomethane	ND	0.50	0.14	ppbv		ND	1.9	ug/m3
593-60-2	Bromoethene	ND	0.50	0.14	ppbv		ND	2.2	ug/m3
100-44-7	Benzyl Chloride	ND	0.50	0.14	ppbv		ND	2.6	ug/m3
75-15-0	Carbon disulfide	ND	0.50	0.14	ppbv		ND	1.6	ug/m3
108-90-7	Chlorobenzene	ND	0.50	0.20	ppbv		ND	2.3	ug/m3
75-00-3	Chloroethane	ND	0.20	0.14	ppbv		ND	0.53	ug/m3
67-66-3	Chloroform	ND	0.50	0.092	ppbv		ND	2.4	ug/m3
74-87-3	Chloromethane	ND	0.50	0.14	ppbv		ND	1.0	ug/m3
107-05-1	3-Chloropropene	ND	0.50	0.13	ppbv		ND	1.6	ug/m3
95-49-8	2-Chlorotoluene	ND	0.50	0.23	ppbv		ND	2.6	ug/m3
56-23-5	Carbon tetrachloride	ND	0.20	0.13	ppbv		ND	1.3	ug/m3
110-82-7	Cyclohexane	ND	0.50	0.14	ppbv		ND	1.7	ug/m3
75-34-3	1,1-Dichloroethane	ND	0.20	0.078	ppbv		ND	0.81	ug/m3
75-35-4	1,1-Dichloroethylene	ND	0.20	0.14	ppbv		ND	0.79	ug/m3
106-93-4	1,2-Dibromoethane	ND	0.50	0.18	ppbv		ND	3.8	ug/m3
107-06-2	1,2-Dichloroethane	ND	0.20	0.16	ppbv		ND	0.81	ug/m3
78-87-5	1,2-Dichloropropane	ND	0.50	0.17	ppbv		ND	2.3	ug/m3
123-91-1	1,4-Dioxane	ND	0.50	0.13	ppbv		ND	1.8	ug/m3
75-71-8	Dichlorodifluoromethane	ND	0.50	0.11	ppbv		ND	2.5	ug/m3
124-48-1	Dibromochloromethane	ND	0.50	0.16	ppbv		ND	4.3	ug/m3
156-60-5	trans-1,2-Dichloroethylene	ND	0.20	0.13	ppbv		ND	0.79	ug/m3
156-59-2	cis-1,2-Dichloroethylene	ND	0.20	0.093	ppbv		ND	0.79	ug/m3
10061-01-5	cis-1,3-Dichloropropene	ND	0.50	0.17	ppbv		ND	2.3	ug/m3
541-73-1	m-Dichlorobenzene	ND	0.50	0.25	ppbv		ND	3.0	ug/m3
95-50-1	o-Dichlorobenzene	ND	0.50	0.32	ppbv		ND	3.0	ug/m3
106-46-7	p-Dichlorobenzene	ND	0.50	0.26	ppbv		ND	3.0	ug/m3
10061-02-6	trans-1,3-Dichloropropene	ND	0.50	0.19	ppbv		ND	2.3	ug/m3
64-17-5	Ethanol	ND	0.50	0.20	ppbv		ND	0.94	ug/m3
100-41-4	Ethylbenzene	ND	0.50	0.20	ppbv		ND	2.2	ug/m3
141-78-6	Ethyl Acetate	ND	0.50	0.15	ppbv		ND	1.8	ug/m3
622-96-8	4-Ethyltoluene	ND	0.50	0.20	ppbv		ND	2.5	ug/m3

Method Blank Summary

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Job Number: MC36556
Account: HMANNJP H2M Associates, Inc
Project: Macbeth, 617 Little Britain, New Windsor, NY

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
MSJ1521-MB	J29961.D	1	02/10/15	AA	n/a	n/a	MSJ1521

The QC reported here applies to the following samples:

Method: TO-15

MSJ1521-SCC

CAS No.	Compound	Result	RL	MDL	Units	Q	Result	RL	Units
76-13-1	Freon 113	ND	0.50	0.13	ppbv		ND	3.8	ug/m3
76-14-2	Freon 114	ND	0.50	0.16	ppbv		ND	3.5	ug/m3
142-82-5	Heptane	ND	0.50	0.17	ppbv		ND	2.0	ug/m3
87-68-3	Hexachlorobutadiene	ND	0.50	0.49	ppbv		ND	5.3	ug/m3
110-54-3	Hexane	ND	0.50	0.13	ppbv		ND	1.8	ug/m3
591-78-6	2-Hexanone	ND	0.50	0.13	ppbv		ND	2.0	ug/m3
67-63-0	Isopropyl Alcohol	ND	0.50	0.16	ppbv		ND	1.2	ug/m3
75-09-2	Methylene chloride	ND	0.50	0.12	ppbv		ND	1.7	ug/m3
78-93-3	Methyl ethyl ketone	ND	0.50	0.17	ppbv		ND	1.5	ug/m3
108-10-1	Methyl Isobutyl Ketone	ND	0.50	0.20	ppbv		ND	2.0	ug/m3
1634-04-4	Methyl Tert Butyl Ether	ND	0.50	0.20	ppbv		ND	1.8	ug/m3
115-07-1	Propylene	ND	0.50	0.11	ppbv		ND	0.86	ug/m3
100-42-5	Styrene	ND	0.50	0.17	ppbv		ND	2.1	ug/m3
79-34-5	1,1,2,2-Tetrachloroethane	ND	0.20	0.18	ppbv		ND	1.4	ug/m3
79-00-5	1,1,2-Trichloroethane	ND	0.20	0.16	ppbv		ND	1.1	ug/m3
120-82-1	1,2,4-Trichlorobenzene	ND	0.50	0.30	ppbv		ND	3.7	ug/m3
95-63-6	1,2,4-Trimethylbenzene	ND	0.50	0.23	ppbv		ND	2.5	ug/m3
108-67-8	1,3,5-Trimethylbenzene	ND	0.50	0.21	ppbv		ND	2.5	ug/m3
540-84-1	2,2,4-Trimethylpentane	ND	0.50	0.15	ppbv		ND	2.3	ug/m3
75-65-0	Tertiary Butyl Alcohol	ND	0.50	0.38	ppbv		ND	1.5	ug/m3
127-18-4	Tetrachloroethylene	ND	0.20	0.16	ppbv		ND	1.4	ug/m3
109-99-9	Tetrahydrofuran	ND	0.50	0.21	ppbv		ND	1.5	ug/m3
108-88-3	Toluene	ND	0.50	0.18	ppbv		ND	1.9	ug/m3
75-69-4	Trichlorofluoromethane	ND	0.50	0.14	ppbv		ND	2.8	ug/m3
75-01-4	Vinyl chloride	ND	0.20	0.13	ppbv		ND	0.51	ug/m3
108-05-4	Vinyl Acetate	ND	0.50	0.23	ppbv		ND	1.8	ug/m3
	m,p-Xylene	ND	0.50	0.41	ppbv		ND	2.2	ug/m3
95-47-6	o-Xylene	ND	0.50	0.21	ppbv		ND	2.2	ug/m3
1330-20-7	Xylenes (total)	ND	0.50	0.21	ppbv		ND	2.2	ug/m3

CAS No.	Surrogate Recoveries	Limits
460-00-4	4-Bromofluorobenzene	102% 50-129%

Method Blank Summary

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Job Number: MC36556**Account:** HMANNJP H2M Associates, Inc**Project:** Macbeth, 617 Little Britain, New Windsor, NY

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
MSQ1286-MB	Q29647.D	1	02/11/15	AA	n/a	n/a	MSQ1286

The QC reported here applies to the following samples:**Method:** TO-15 BY SIM

MC36556-1A, MC36556-2A, MC36556-3A, MC36556-4A, MC36556-5A

CAS No.	Compound	Result	RL	MDL	Units	Q	Result	RL	Units
71-55-6	1,1,1-Trichloroethane	ND	0.020	0.020	ppbv		ND	0.11	ug/m3
127-18-4	Tetrachloroethylene	ND	0.020	0.0041	ppbv		ND	0.14	ug/m3
79-01-6	Trichloroethylene	ND	0.020	0.0022	ppbv		ND	0.11	ug/m3

CAS No.	Surrogate Recoveries	Limits
460-00-4	4-Bromofluorobenzene	93% 57-139%

Blank Spike Summary**Job Number:** MC36556**Account:** HMANNJP H2M Associates, Inc**Project:** Macbeth, 617 Little Britain, New Windsor, NY

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
MSJ1520-BS	J29932B.D	1	02/09/15	AA	n/a	n/a	MSJ1520

The QC reported here applies to the following samples:**Method:** TO-15

MC36556-1, MC36556-2, MC36556-3, MC36556-4, MC36556-5

CAS No.	Compound	Spike ppbv	BSP ppbv	BSP %	Limits
67-64-1	Acetone	10	8.0	80	70-130
106-99-0	1,3-Butadiene	10	8.2	82	70-130
71-43-2	Benzene	10	8.8	88	70-130
75-27-4	Bromodichloromethane	10	9.7	97	70-130
75-25-2	Bromoform	10	11.3	113	70-130
74-83-9	Bromomethane	10	9.1	91	70-130
593-60-2	Bromoethene	10	9.6	96	70-130
100-44-7	Benzyl Chloride	10	11.7	117	70-130
75-15-0	Carbon disulfide	10	9.0	90	70-130
108-90-7	Chlorobenzene	10	10.1	101	70-130
75-00-3	Chloroethane	10	8.4	84	70-130
67-66-3	Chloroform	10	9.7	97	70-130
74-87-3	Chloromethane	10	7.8	78	70-130
107-05-1	3-Chloropropene	10	8.8	88	70-130
95-49-8	2-Chlorotoluene	10	10.3	103	70-130
56-23-5	Carbon tetrachloride	10	10.9	109	70-130
110-82-7	Cyclohexane	10	8.9	89	70-130
75-34-3	1,1-Dichloroethane	10	9.7	97	70-130
75-35-4	1,1-Dichloroethylene	10	9.5	95	70-130
106-93-4	1,2-Dibromoethane	10	10.7	107	70-130
107-06-2	1,2-Dichloroethane	10	9.5	95	70-130
78-87-5	1,2-Dichloropropane	10	8.7	87	70-130
123-91-1	1,4-Dioxane	10	7.8	78	70-130
75-71-8	Dichlorodifluoromethane	10	8.8	88	70-130
124-48-1	Dibromochloromethane	10	11.3	113	70-130
156-60-5	trans-1,2-Dichloroethylene	10	9.9	99	70-130
156-59-2	cis-1,2-Dichloroethylene	10	9.9	99	70-130
10061-01-5	cis-1,3-Dichloropropene	10	9.1	91	70-130
541-73-1	m-Dichlorobenzene	10	10.1	101	70-130
95-50-1	o-Dichlorobenzene	10	9.9	99	70-130
106-46-7	p-Dichlorobenzene	10	9.7	97	70-130
10061-02-6	trans-1,3-Dichloropropene	10	9.3	93	70-130
64-17-5	Ethanol	10	7.9	79	70-130
100-41-4	Ethylbenzene	10	10.4	104	70-130
141-78-6	Ethyl Acetate	10	9.1	91	70-130
622-96-8	4-Ethyltoluene	10	10.4	104	70-130

* = Outside of Control Limits.

Blank Spike Summary

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Job Number: MC36556
Account: HMANNJP H2M Associates, Inc
Project: Macbeth, 617 Little Britain, New Windsor, NY

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
MSJ1520-BS	J29932B.D	1	02/09/15	AA	n/a	n/a	MSJ1520

The QC reported here applies to the following samples:

Method: TO-15

MC36556-1, MC36556-2, MC36556-3, MC36556-4, MC36556-5

CAS No.	Compound	Spike ppbv	BSP ppbv	BSP %	Limits
76-13-1	Freon 113	10	10.1	101	70-130
76-14-2	Freon 114	10	9.1	91	70-130
142-82-5	Heptane	10	8.4	84	70-130
87-68-3	Hexachlorobutadiene	10	11.0	110	70-130
110-54-3	Hexane	10	8.9	89	70-130
591-78-6	2-Hexanone	10	8.0	80	70-130
67-63-0	Isopropyl Alcohol	10	8.4	84	70-130
75-09-2	Methylene chloride	10	8.9	89	70-130
78-93-3	Methyl ethyl ketone	10	8.3	83	70-130
108-10-1	Methyl Isobutyl Ketone	10	7.2	72	70-130
1634-04-4	Methyl Tert Butyl Ether	10	8.7	87	70-130
115-07-1	Propylene	10	7.1	71	70-130
100-42-5	Styrene	10	10.6	106	70-130
79-34-5	1,1,2,2-Tetrachloroethane	10	11.1	111	70-130
79-00-5	1,1,2-Trichloroethane	10	9.2	92	70-130
120-82-1	1,2,4-Trichlorobenzene	10	7.9	79	70-130
95-63-6	1,2,4-Trimethylbenzene	10	8.6	86	70-130
108-67-8	1,3,5-Trimethylbenzene	10	9.8	98	70-130
540-84-1	2,2,4-Trimethylpentane	10	8.9	89	70-130
75-65-0	Tertiary Butyl Alcohol	10	8.5	85	70-130
127-18-4	Tetrachloroethylene	10	11.0	110	70-130
109-99-9	Tetrahydrofuran	10	8.0	80	70-130
108-88-3	Toluene	10	9.3	93	70-130
75-69-4	Trichlorofluoromethane	10	9.9	99	70-130
75-01-4	Vinyl chloride	10	8.3	83	70-130
108-05-4	Vinyl Acetate	10	8.8	88	70-130
	m,p-Xylene	20	20.9	105	70-130
95-47-6	o-Xylene	10	10.8	108	70-130
1330-20-7	Xylenes (total)	30	31.7	106	70-130

CAS No.	Surrogate Recoveries	BSP	Limits
460-00-4	4-Bromofluorobenzene	80%	50-129%

* = Outside of Control Limits.

Blank Spike Summary

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Job Number: MC36556**Account:** HMANNJP H2M Associates, Inc**Project:** Macbeth, 617 Little Britain, New Windsor, NY

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
MSJ1511-BS	J29715B.D	1	01/25/15	AA	n/a	n/a	MSJ1511

The QC reported here applies to the following samples:**Method:** TO-15

MSJ1511-SCC

CAS No.	Compound	Spike ppbv	BSP ppbv	BSP %	Limits
67-64-1	Acetone	10	8.8	88	70-130
106-99-0	1,3-Butadiene	10	9.1	91	70-130
71-43-2	Benzene	10	8.9	89	70-130
75-27-4	Bromodichloromethane	10	9.7	97	70-130
75-25-2	Bromoform	10	9.8	98	70-130
74-83-9	Bromomethane	10	8.8	88	70-130
593-60-2	Bromoethene	10	9.2	92	70-130
100-44-7	Benzyl Chloride	10	10.5	105	70-130
75-15-0	Carbon disulfide	10	8.8	88	70-130
108-90-7	Chlorobenzene	10	9.9	99	70-130
75-00-3	Chloroethane	10	9.5	95	70-130
67-66-3	Chloroform	10	9.7	97	70-130
74-87-3	Chloromethane	10	8.2	82	70-130
107-05-1	3-Chloropropene	10	9.5	95	70-130
95-49-8	2-Chlorotoluene	10	10.6	106	70-130
56-23-5	Carbon tetrachloride	10	9.6	96	70-130
110-82-7	Cyclohexane	10	9.2	92	70-130
75-34-3	1,1-Dichloroethane	10	10.1	101	70-130
75-35-4	1,1-Dichloroethylene	10	9.3	93	70-130
106-93-4	1,2-Dibromoethane	10	10.5	105	70-130
107-06-2	1,2-Dichloroethane	10	9.0	90	70-130
78-87-5	1,2-Dichloropropane	10	9.0	90	70-130
123-91-1	1,4-Dioxane	10	9.3	93	70-130
75-71-8	Dichlorodifluoromethane	10	7.4	74	70-130
124-48-1	Dibromochloromethane	10	10.6	106	70-130
156-60-5	trans-1,2-Dichloroethylene	10	10.2	102	70-130
156-59-2	cis-1,2-Dichloroethylene	10	10.2	102	70-130
10061-01-5	cis-1,3-Dichloropropene	10	8.9	89	70-130
541-73-1	m-Dichlorobenzene	10	9.9	99	70-130
95-50-1	o-Dichlorobenzene	10	9.7	97	70-130
106-46-7	p-Dichlorobenzene	10	9.7	97	70-130
10061-02-6	trans-1,3-Dichloropropene	10	8.8	88	70-130
64-17-5	Ethanol	10	8.5	85	70-130
100-41-4	Ethylbenzene	10	10.6	106	70-130
141-78-6	Ethyl Acetate	10	10.2	102	70-130
622-96-8	4-Ethyltoluene	10	11.2	112	70-130

* = Outside of Control Limits.

Blank Spike Summary

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Job Number: MC36556
Account: HMANNJP H2M Associates, Inc
Project: Macbeth, 617 Little Britain, New Windsor, NY

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
MSJ1511-BS	J29715B.D	1	01/25/15	AA	n/a	n/a	MSJ1511

The QC reported here applies to the following samples:

Method: TO-15

MSJ1511-SCC

CAS No.	Compound	Spike ppbv	BSP ppbv	BSP %	Limits
76-13-1	Freon 113	10	9.6	96	70-130
76-14-2	Freon 114	10	8.7	87	70-130
142-82-5	Heptane	10	9.5	95	70-130
87-68-3	Hexachlorobutadiene	10	9.6	96	70-130
110-54-3	Hexane	10	9.7	97	70-130
591-78-6	2-Hexanone	10	10.5	105	70-130
67-63-0	Isopropyl Alcohol	10	9.0	90	70-130
75-09-2	Methylene chloride	10	9.4	94	70-130
78-93-3	Methyl ethyl ketone	10	9.1	91	70-130
108-10-1	Methyl Isobutyl Ketone	10	9.1	91	70-130
1634-04-4	Methyl Tert Butyl Ether	10	9.2	92	70-130
115-07-1	Propylene	10	7.2	72	70-130
100-42-5	Styrene	10	11.0	110	70-130
79-34-5	1,1,2,2-Tetrachloroethane	10	10.8	108	70-130
79-00-5	1,1,2-Trichloroethane	10	9.1	91	70-130
120-82-1	1,2,4-Trichlorobenzene	10	10.5	105	70-130
95-63-6	1,2,4-Trimethylbenzene	10	10.5	105	70-130
108-67-8	1,3,5-Trimethylbenzene	10	10.8	108	70-130
540-84-1	2,2,4-Trimethylpentane	10	9.8	98	70-130
75-65-0	Tertiary Butyl Alcohol	10	9.1	91	70-130
109-99-9	Tetrahydrofuran	10	9.3	93	70-130
108-88-3	Toluene	10	9.2	92	70-130
75-69-4	Trichlorofluoromethane	10	8.9	89	70-130
75-01-4	Vinyl chloride	10	8.5	85	70-130
108-05-4	Vinyl Acetate	10	8.8	88	70-130
	m,p-Xylene	20	21.5	108	70-130
95-47-6	o-Xylene	10	10.9	109	70-130
1330-20-7	Xylenes (total)	30	32.5	108	70-130

CAS No.	Surrogate Recoveries	BSP	Limits
460-00-4	4-Bromofluorobenzene	85%	50-129%

* = Outside of Control Limits.

Blank Spike Summary

Job Number: MC36556
Account: HMANNJP H2M Associates, Inc
Project: Macbeth, 617 Little Britain, New Windsor, NY

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
MSJ1521-BS	J29958A.D	1	02/10/15	AA	n/a	n/a	MSJ1521

The QC reported here applies to the following samples:

Method: TO-15

MSJ1521-SCC

CAS No.	Compound	Spike ppbv	BSP ppbv	BSP %	Limits
67-64-1	Acetone	10	10.3	103	70-130
106-99-0	1,3-Butadiene	10	10.1	101	70-130
71-43-2	Benzene	10	10.0	100	70-130
75-27-4	Bromodichloromethane	10	11.4	114	70-130
75-25-2	Bromoform	10	11.5	115	70-130
74-83-9	Bromomethane	10	11.0	110	70-130
593-60-2	Bromoethene	10	10.8	108	70-130
100-44-7	Benzyl Chloride	10	11.7	117	70-130
75-15-0	Carbon disulfide	10	10.2	102	70-130
108-90-7	Chlorobenzene	10	11.0	110	70-130
75-00-3	Chloroethane	10	8.8	88	70-130
67-66-3	Chloroform	10	10.5	105	70-130
74-87-3	Chloromethane	10	10.1	101	70-130
107-05-1	3-Chloropropene	10	8.9	89	70-130
95-49-8	2-Chlorotoluene	10	11.5	115	70-130
56-23-5	Carbon tetrachloride	10	12.4	124	70-130
110-82-7	Cyclohexane	10	10.2	102	70-130
75-34-3	1,1-Dichloroethane	10	9.3	93	70-130
75-35-4	1,1-Dichloroethylene	10	10.2	102	70-130
106-93-4	1,2-Dibromoethane	10	11.6	116	70-130
107-06-2	1,2-Dichloroethane	10	10.8	108	70-130
78-87-5	1,2-Dichloropropane	10	11.1	111	70-130
123-91-1	1,4-Dioxane	10	12.7	127	70-130
75-71-8	Dichlorodifluoromethane	10	11.4	114	70-130
124-48-1	Dibromochloromethane	10	11.6	116	70-130
156-60-5	trans-1,2-Dichloroethylene	10	10.2	102	70-130
156-59-2	cis-1,2-Dichloroethylene	10	10.3	103	70-130
10061-01-5	cis-1,3-Dichloropropene	10	11.3	113	70-130
541-73-1	m-Dichlorobenzene	10	11.1	111	70-130
95-50-1	o-Dichlorobenzene	10	11.0	110	70-130
106-46-7	p-Dichlorobenzene	10	10.5	105	70-130
10061-02-6	trans-1,3-Dichloropropene	10	11.9	119	70-130
64-17-5	Ethanol	10	8.4	84	70-130
100-41-4	Ethylbenzene	10	11.7	117	70-130
141-78-6	Ethyl Acetate	10	11.0	110	70-130
622-96-8	4-Ethyltoluene	10	12.4	124	70-130

* = Outside of Control Limits.

Blank Spike Summary

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Job Number: MC36556
Account: HMANNJP H2M Associates, Inc
Project: Macbeth, 617 Little Britain, New Windsor, NY

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
MSJ1521-BS	J29958A.D	1	02/10/15	AA	n/a	n/a	MSJ1521

The QC reported here applies to the following samples:

Method: TO-15

MSJ1521-SCC

CAS No.	Compound	Spike ppbv	BSP ppbv	BSP %	Limits
76-13-1	Freon 113	10	10.9	109	70-130
76-14-2	Freon 114	10	10.9	109	70-130
142-82-5	Heptane	10	10.1	101	70-130
87-68-3	Hexachlorobutadiene	10	12.5	125	70-130
110-54-3	Hexane	10	9.3	93	70-130
591-78-6	2-Hexanone	10	10.8	108	70-130
67-63-0	Isopropyl Alcohol	10	9.5	95	70-130
75-09-2	Methylene chloride	10	9.4	94	70-130
78-93-3	Methyl ethyl ketone	10	9.9	99	70-130
108-10-1	Methyl Isobutyl Ketone	10	11.6	116	70-130
1634-04-4	Methyl Tert Butyl Ether	10	10.5	105	70-130
115-07-1	Propylene	10	8.9	89	70-130
100-42-5	Styrene	10	12.0	120	70-130
79-34-5	1,1,2,2-Tetrachloroethane	10	11.9	119	70-130
79-00-5	1,1,2-Trichloroethane	10	11.9	119	70-130
120-82-1	1,2,4-Trichlorobenzene	10	11.1	111	70-130
95-63-6	1,2,4-Trimethylbenzene	10	11.6	116	70-130
108-67-8	1,3,5-Trimethylbenzene	10	11.9	119	70-130
540-84-1	2,2,4-Trimethylpentane	10	10.4	104	70-130
75-65-0	Tertiary Butyl Alcohol	10	10.2	102	70-130
127-18-4	Tetrachloroethylene	10	10.9	109	70-130
109-99-9	Tetrahydrofuran	10	10.4	104	70-130
108-88-3	Toluene	10	12.1	121	70-130
75-69-4	Trichlorofluoromethane	10	11.8	118	70-130
75-01-4	Vinyl chloride	10	10.3	103	70-130
108-05-4	Vinyl Acetate	10	10.4	104	70-130
	m,p-Xylene	20	24.3	122	70-130
95-47-6	o-Xylene	10	12.4	124	70-130
1330-20-7	Xylenes (total)	30	36.6	122	70-130

CAS No.	Surrogate Recoveries	BSP	Limits
460-00-4	4-Bromofluorobenzene	114%	50-129%

* = Outside of Control Limits.

Blank Spike Summary

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Job Number: MC36556**Account:** HMANNJP H2M Associates, Inc**Project:** Macbeth, 617 Little Britain, New Windsor, NY

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
MSQ1286-BS	Q29645B.D	1	02/11/15	AA	n/a	n/a	MSQ1286

The QC reported here applies to the following samples:**Method:** TO-15 BY SIM

MC36556-1A, MC36556-2A, MC36556-3A, MC36556-4A, MC36556-5A

CAS No.	Compound	Spike ppbv	BSP ppbv	BSP %	Limits
71-55-6	1,1,1-Trichloroethane	0.5	0.40	80	70-130
127-18-4	Tetrachloroethylene	0.5	0.35	70	70-130
79-01-6	Trichloroethylene	0.5	0.40	80	70-130

CAS No.	Surrogate Recoveries	BSP	Limits
460-00-4	4-Bromofluorobenzene	99%	57-139%

* = Outside of Control Limits.

Duplicate Summary**Job Number:** MC36556**Account:** HMANNJP H2M Associates, Inc**Project:** Macbeth, 617 Little Britain, New Windsor, NY

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
MC36556-4DUP	J29955.D	1	02/10/15	AA	n/a	n/a	MSJ1520
MC36556-4	J29949.D	1	02/10/15	AA	n/a	n/a	MSJ1520

The QC reported here applies to the following samples:**Method:** TO-15

MC36556-1, MC36556-2, MC36556-3, MC36556-4, MC36556-5

CAS No.	Compound	MC36556-4 ppbv	DUP Q ppbv	Q	RPD	Limits
67-64-1	Acetone	11.1	10.9	2		25
106-99-0	1,3-Butadiene	ND	ND	nc		25
71-43-2	Benzene	0.72	0.70	3		25
75-27-4	Bromodichloromethane	ND	ND	nc		25
75-25-2	Bromoform	ND	ND	nc		25
74-83-9	Bromomethane	ND	ND	nc		25
593-60-2	Bromoethene	ND	ND	nc		20
100-44-7	Benzyl Chloride	ND	ND	nc		25
75-15-0	Carbon disulfide	ND	ND	nc		25
108-90-7	Chlorobenzene	ND	ND	nc		25
75-00-3	Chloroethane	ND	ND	nc		25
67-66-3	Chloroform	ND	ND	nc		25
74-87-3	Chloromethane	ND	ND	nc		25
107-05-1	3-Chloropropene	ND	ND	nc		25
95-49-8	2-Chlorotoluene	ND	ND	nc		25
56-23-5	Carbon tetrachloride	ND	ND	nc		25
110-82-7	Cyclohexane	ND	ND	nc		25
75-34-3	1,1-Dichloroethane	ND	ND	nc		25
75-35-4	1,1-Dichloroethylene	ND	ND	nc		25
106-93-4	1,2-Dibromoethane	ND	ND	nc		25
107-06-2	1,2-Dichloroethane	ND	ND	nc		25
78-87-5	1,2-Dichloropropane	ND	ND	nc		25
123-91-1	1,4-Dioxane	ND	ND	nc		25
75-71-8	Dichlorodifluoromethane	0.62	0.59	5		25
124-48-1	Dibromochloromethane	ND	ND	nc		25
156-60-5	trans-1,2-Dichloroethylene	ND	ND	nc		25
156-59-2	cis-1,2-Dichloroethylene	ND	ND	nc		25
10061-01-5	cis-1,3-Dichloropropene	ND	ND	nc		25
541-73-1	m-Dichlorobenzene	ND	ND	nc		25
95-50-1	o-Dichlorobenzene	ND	ND	nc		25
106-46-7	p-Dichlorobenzene	ND	ND	nc		25
10061-02-6	trans-1,3-Dichloropropene	ND	ND	nc		25
64-17-5	Ethanol	ND	ND	nc		25
100-41-4	Ethylbenzene	ND	ND	nc		25
141-78-6	Ethyl Acetate	ND	ND	nc		25
622-96-8	4-Ethyltoluene	ND	ND	nc		25

* = Outside of Control Limits.

Duplicate Summary

Job Number: MC36556
Account: HMANNJP H2M Associates, Inc
Project: Macbeth, 617 Little Britain, New Windsor, NY

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
MC36556-4DUP	J29955.D	1	02/10/15	AA	n/a	n/a	MSJ1520
MC36556-4	J29949.D	1	02/10/15	AA	n/a	n/a	MSJ1520

The QC reported here applies to the following samples:

Method: TO-15

MC36556-1, MC36556-2, MC36556-3, MC36556-4, MC36556-5

CAS No.	Compound	MC36556-4 ppbv	DUP Q	ppbv	Q	RPD	Limits
76-13-1	Freon 113	ND		ND		nc	25
76-14-2	Freon 114	ND		ND		nc	25
142-82-5	Heptane	ND		ND		nc	25
87-68-3	Hexachlorobutadiene	ND		ND		nc	25
110-54-3	Hexane	ND		ND		nc	25
591-78-6	2-Hexanone	ND		ND		nc	25
67-63-0	Isopropyl Alcohol	ND		ND		nc	25
75-09-2	Methylene chloride	ND		ND		nc	25
78-93-3	Methyl ethyl ketone	ND		ND		nc	25
108-10-1	Methyl Isobutyl Ketone	ND		ND		nc	25
1634-04-4	Methyl Tert Butyl Ether	ND		ND		nc	25
115-07-1	Propylene	ND		ND		nc	25
100-42-5	Styrene	ND		ND		nc	25
79-34-5	1,1,2,2-Tetrachloroethane	ND		ND		nc	25
79-00-5	1,1,2-Trichloroethane	ND		ND		nc	25
120-82-1	1,2,4-Trichlorobenzene	ND		ND		nc	25
95-63-6	1,2,4-Trimethylbenzene	ND		ND		nc	25
108-67-8	1,3,5-Trimethylbenzene	ND		ND		nc	25
540-84-1	2,2,4-Trimethylpentane	ND		ND		nc	25
75-65-0	Tertiary Butyl Alcohol	ND		ND		nc	25
127-18-4	Tetrachloroethylene	ND		ND		nc	25
109-99-9	Tetrahydrofuran	ND		ND		nc	25
108-88-3	Toluene	0.95		0.89		7	25
75-69-4	Trichlorofluoromethane	0.81		0.78		4	25
75-01-4	Vinyl chloride	ND		ND		nc	25
108-05-4	Vinyl Acetate	ND		ND		nc	25
	m,p-Xylene	ND		ND		nc	25
95-47-6	o-Xylene	ND		ND		nc	25
1330-20-7	Xylenes (total)	ND		ND		nc	25

CAS No.	Surrogate Recoveries	DUP	MC36556-4	Limits
460-00-4	4-Bromofluorobenzene	81%	81%	50-129%

* = Outside of Control Limits.

Duplicate Summary

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Job Number: MC36556**Account:** HMANNJP H2M Associates, Inc**Project:** Macbeth, 617 Little Britain, New Windsor, NY

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
MC36556-2ADUP	Q29653.D	1	02/11/15	AA	n/a	n/a	MSQ1286
MC36556-2A	Q29650.D	1	02/11/15	AA	n/a	n/a	MSQ1286

The QC reported here applies to the following samples:**Method:** TO-15 BY SIM

MC36556-1A, MC36556-2A, MC36556-3A, MC36556-4A, MC36556-5A

CAS No.	Compound	MC36556-2ADUP					Limits
		ppbv	Q	ppbv	Q	RPD	
71-55-6	1,1,1-Trichloroethane	ND		ND		nc	25
127-18-4	Tetrachloroethylene	0.029		0.020		37* a	25
79-01-6	Trichloroethylene	0.020		0.019	J	5	25

CAS No.	Surrogate Recoveries	DUP	MC36556-2ALimits
460-00-4	4-Bromofluorobenzene	101%	100% 57-139%

(a) High RPD due to possible matrix interference and/or sample non-homogeneity.

* = Outside of Control Limits.

Summa Cleaning Certification

Job Number: MC36556

Account: HMANNJP H2M Associates, Inc

Project: Macbeth, 617 Little Britain, New Windsor, NY

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
MSJ1511-SCC	J29743.D	1	01/26/15	AA	n/a	n/a	MSJ1511

The QC reported here (Summa M210) applies to the following samples:

Method: TO-15

Batch CP1601 cleaned 01/14/15: MC36556-4(M160), MC36556-5(M238)

CAS No.	Compound	Result	RL	MDL	Units	Q	Result	RL	Units
67-64-1	Acetone	ND	0.50	0.22	ppbv		ND	1.2	ug/m3
106-99-0	1,3-Butadiene	ND	0.50	0.15	ppbv		ND	1.1	ug/m3
71-43-2	Benzene	ND	0.50	0.13	ppbv		ND	1.6	ug/m3
75-27-4	Bromodichloromethane	ND	0.50	0.13	ppbv		ND	3.3	ug/m3
75-25-2	Bromoform	ND	0.50	0.19	ppbv		ND	5.2	ug/m3
74-83-9	Bromomethane	ND	0.50	0.14	ppbv		ND	1.9	ug/m3
593-60-2	Bromoethene	ND	0.50	0.14	ppbv		ND	2.2	ug/m3
100-44-7	Benzyl Chloride	ND	0.50	0.14	ppbv		ND	2.6	ug/m3
75-15-0	Carbon disulfide	ND	0.50	0.14	ppbv		ND	1.6	ug/m3
108-90-7	Chlorobenzene	ND	0.50	0.20	ppbv		ND	2.3	ug/m3
75-00-3	Chloroethane	ND	0.20	0.14	ppbv		ND	0.53	ug/m3
67-66-3	Chloroform	ND	0.50	0.092	ppbv		ND	2.4	ug/m3
74-87-3	Chloromethane	ND	0.50	0.14	ppbv		ND	1.0	ug/m3
107-05-1	3-Chloropropene	ND	0.50	0.13	ppbv		ND	1.6	ug/m3
95-49-8	2-Chlorotoluene	ND	0.50	0.23	ppbv		ND	2.6	ug/m3
56-23-5	Carbon tetrachloride	ND	0.20	0.13	ppbv		ND	1.3	ug/m3
110-82-7	Cyclohexane	ND	0.50	0.14	ppbv		ND	1.7	ug/m3
75-34-3	1,1-Dichloroethane	ND	0.20	0.078	ppbv		ND	0.81	ug/m3
75-35-4	1,1-Dichloroethylene	ND	0.20	0.14	ppbv		ND	0.79	ug/m3
106-93-4	1,2-Dibromoethane	ND	0.50	0.18	ppbv		ND	3.8	ug/m3
107-06-2	1,2-Dichloroethane	ND	0.20	0.16	ppbv		ND	0.81	ug/m3
78-87-5	1,2-Dichloropropane	ND	0.50	0.17	ppbv		ND	2.3	ug/m3
123-91-1	1,4-Dioxane	ND	0.50	0.13	ppbv		ND	1.8	ug/m3
75-71-8	Dichlorodifluoromethane	ND	0.50	0.11	ppbv		ND	2.5	ug/m3
124-48-1	Dibromochloromethane	ND	0.50	0.16	ppbv		ND	4.3	ug/m3
156-60-5	trans-1,2-Dichloroethylene	ND	0.20	0.13	ppbv		ND	0.79	ug/m3
156-59-2	cis-1,2-Dichloroethylene	ND	0.20	0.093	ppbv		ND	0.79	ug/m3
10061-01-5	cis-1,3-Dichloropropene	ND	0.50	0.17	ppbv		ND	2.3	ug/m3
541-73-1	m-Dichlorobenzene	ND	0.50	0.25	ppbv		ND	3.0	ug/m3
95-50-1	o-Dichlorobenzene	ND	0.50	0.32	ppbv		ND	3.0	ug/m3
106-46-7	p-Dichlorobenzene	ND	0.50	0.26	ppbv		ND	3.0	ug/m3
10061-02-6	trans-1,3-Dichloropropene	ND	0.50	0.19	ppbv		ND	2.3	ug/m3
64-17-5	Ethanol	ND	0.50	0.20	ppbv		ND	0.94	ug/m3
100-41-4	Ethylbenzene	ND	0.50	0.20	ppbv		ND	2.2	ug/m3
141-78-6	Ethyl Acetate	ND	0.50	0.15	ppbv		ND	1.8	ug/m3
622-96-8	4-Ethyltoluene	ND	0.50	0.20	ppbv		ND	2.5	ug/m3

Summa Cleaning Certification

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Job Number: MC36556
Account: HMANNJP H2M Associates, Inc
Project: Macbeth, 617 Little Britain, New Windsor, NY

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
MSJ1511-SCC	J29743.D	1	01/26/15	AA	n/a	n/a	MSJ1511

The QC reported here (Summa M210) applies to the following samples:

Method: TO-15

Batch CP1601 cleaned 01/14/15: MC36556-4(M160), MC36556-5(M238)

CAS No.	Compound	Result	RL	MDL	Units	Q	Result	RL	Units
76-13-1	Freon 113	ND	0.50	0.13	ppbv	ND	3.8	ug/m3	
76-14-2	Freon 114	ND	0.50	0.16	ppbv	ND	3.5	ug/m3	
142-82-5	Heptane	ND	0.50	0.17	ppbv	ND	2.0	ug/m3	
87-68-3	Hexachlorobutadiene	ND	0.50	0.49	ppbv	ND	5.3	ug/m3	
110-54-3	Hexane	ND	0.50	0.13	ppbv	ND	1.8	ug/m3	
591-78-6	2-Hexanone	ND	0.50	0.13	ppbv	ND	2.0	ug/m3	
67-63-0	Isopropyl Alcohol	ND	0.50	0.16	ppbv	ND	1.2	ug/m3	
75-09-2	Methylene chloride	ND	0.50	0.12	ppbv	ND	1.7	ug/m3	
78-93-3	Methyl ethyl ketone	ND	0.50	0.17	ppbv	ND	1.5	ug/m3	
108-10-1	Methyl Isobutyl Ketone	ND	0.50	0.20	ppbv	ND	2.0	ug/m3	
1634-04-4	Methyl Tert Butyl Ether	ND	0.50	0.20	ppbv	ND	1.8	ug/m3	
115-07-1	Propylene	ND	0.50	0.11	ppbv	ND	0.86	ug/m3	
100-42-5	Styrene	ND	0.50	0.17	ppbv	ND	2.1	ug/m3	
79-34-5	1,1,2,2-Tetrachloroethane	ND	0.20	0.18	ppbv	ND	1.4	ug/m3	
79-00-5	1,1,2-Trichloroethane	ND	0.20	0.16	ppbv	ND	1.1	ug/m3	
120-82-1	1,2,4-Trichlorobenzene	ND	0.50	0.30	ppbv	ND	3.7	ug/m3	
95-63-6	1,2,4-Trimethylbenzene	ND	0.50	0.23	ppbv	ND	2.5	ug/m3	
108-67-8	1,3,5-Trimethylbenzene	ND	0.50	0.21	ppbv	ND	2.5	ug/m3	
540-84-1	2,2,4-Trimethylpentane	ND	0.50	0.15	ppbv	ND	2.3	ug/m3	
75-65-0	Tertiary Butyl Alcohol	ND	0.50	0.38	ppbv	ND	1.5	ug/m3	
109-99-9	Tetrahydrofuran	ND	0.50	0.21	ppbv	ND	1.5	ug/m3	
108-88-3	Toluene	ND	0.50	0.18	ppbv	ND	1.9	ug/m3	
75-69-4	Trichlorofluoromethane	ND	0.50	0.14	ppbv	ND	2.8	ug/m3	
75-01-4	Vinyl chloride	ND	0.20	0.13	ppbv	ND	0.51	ug/m3	
108-05-4	Vinyl Acetate	ND	0.50	0.23	ppbv	ND	1.8	ug/m3	
	m,p-Xylene	ND	0.50	0.41	ppbv	ND	2.2	ug/m3	
95-47-6	o-Xylene	ND	0.50	0.21	ppbv	ND	2.2	ug/m3	
1330-20-7	Xylenes (total)	ND	0.50	0.21	ppbv	ND	2.2	ug/m3	

CAS No.	Surrogate Recoveries	Limits
460-00-4	4-Bromofluorobenzene	104% 50-129%

Summa Cleaning Certification

Job Number: MC36556

Account: HMANNJP H2M Associates, Inc

Project: Macbeth, 617 Little Britain, New Windsor, NY

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
MSJ1521-SCC	J29961A.D	1	02/10/15	AA	n/a	n/a	MSJ1521

The QC reported here (Summa M114) applies to the following samples:

Method: TO-15

Batch CP1606 cleaned 01/17/15: MC36556-1(M001), MC36556-2(M275), MC36556-3(M283)

CAS No.	Compound	Result	RL	MDL	Units	Q	Result	RL	Units
67-64-1	Acetone	ND	0.50	0.22	ppbv		ND	1.2	ug/m3
106-99-0	1,3-Butadiene	ND	0.50	0.15	ppbv		ND	1.1	ug/m3
71-43-2	Benzene	ND	0.50	0.13	ppbv		ND	1.6	ug/m3
75-27-4	Bromodichloromethane	ND	0.50	0.13	ppbv		ND	3.3	ug/m3
75-25-2	Bromoform	ND	0.50	0.19	ppbv		ND	5.2	ug/m3
74-83-9	Bromomethane	ND	0.50	0.14	ppbv		ND	1.9	ug/m3
593-60-2	Bromoethene	ND	0.50	0.14	ppbv		ND	2.2	ug/m3
100-44-7	Benzyl Chloride	ND	0.50	0.14	ppbv		ND	2.6	ug/m3
75-15-0	Carbon disulfide	ND	0.50	0.14	ppbv		ND	1.6	ug/m3
108-90-7	Chlorobenzene	ND	0.50	0.20	ppbv		ND	2.3	ug/m3
75-00-3	Chloroethane	ND	0.20	0.14	ppbv		ND	0.53	ug/m3
67-66-3	Chloroform	ND	0.50	0.092	ppbv		ND	2.4	ug/m3
74-87-3	Chloromethane	ND	0.50	0.14	ppbv		ND	1.0	ug/m3
107-05-1	3-Chloropropene	ND	0.50	0.13	ppbv		ND	1.6	ug/m3
95-49-8	2-Chlorotoluene	ND	0.50	0.23	ppbv		ND	2.6	ug/m3
56-23-5	Carbon tetrachloride	ND	0.20	0.13	ppbv		ND	1.3	ug/m3
110-82-7	Cyclohexane	ND	0.50	0.14	ppbv		ND	1.7	ug/m3
75-34-3	1,1-Dichloroethane	ND	0.20	0.078	ppbv		ND	0.81	ug/m3
75-35-4	1,1-Dichloroethylene	ND	0.20	0.14	ppbv		ND	0.79	ug/m3
106-93-4	1,2-Dibromoethane	ND	0.50	0.18	ppbv		ND	3.8	ug/m3
107-06-2	1,2-Dichloroethane	ND	0.20	0.16	ppbv		ND	0.81	ug/m3
78-87-5	1,2-Dichloropropane	ND	0.50	0.17	ppbv		ND	2.3	ug/m3
123-91-1	1,4-Dioxane	ND	0.50	0.13	ppbv		ND	1.8	ug/m3
75-71-8	Dichlorodifluoromethane	ND	0.50	0.11	ppbv		ND	2.5	ug/m3
124-48-1	Dibromochloromethane	ND	0.50	0.16	ppbv		ND	4.3	ug/m3
156-60-5	trans-1,2-Dichloroethylene	ND	0.20	0.13	ppbv		ND	0.79	ug/m3
156-59-2	cis-1,2-Dichloroethylene	ND	0.20	0.093	ppbv		ND	0.79	ug/m3
10061-01-5	cis-1,3-Dichloropropene	ND	0.50	0.17	ppbv		ND	2.3	ug/m3
541-73-1	m-Dichlorobenzene	ND	0.50	0.25	ppbv		ND	3.0	ug/m3
95-50-1	o-Dichlorobenzene	ND	0.50	0.32	ppbv		ND	3.0	ug/m3
106-46-7	p-Dichlorobenzene	ND	0.50	0.26	ppbv		ND	3.0	ug/m3
10061-02-6	trans-1,3-Dichloropropene	ND	0.50	0.19	ppbv		ND	2.3	ug/m3
64-17-5	Ethanol	ND	0.50	0.20	ppbv		ND	0.94	ug/m3
100-41-4	Ethylbenzene	ND	0.50	0.20	ppbv		ND	2.2	ug/m3
141-78-6	Ethyl Acetate	ND	0.50	0.15	ppbv		ND	1.8	ug/m3
622-96-8	4-Ethyltoluene	ND	0.50	0.20	ppbv		ND	2.5	ug/m3

Summa Cleaning Certification

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Job Number: MC36556
Account: HMANNJP H2M Associates, Inc
Project: Macbeth, 617 Little Britain, New Windsor, NY

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
MSJ1521-SCC	J29961A.D	1	02/10/15	AA	n/a	n/a	MSJ1521

The QC reported here (Summa M114) applies to the following samples: Method: TO-15

Batch CP1606 cleaned 01/17/15: MC36556-1(M001), MC36556-2(M275), MC36556-3(M283)

CAS No.	Compound	Result	RL	MDL	Units	Q	Result	RL	Units
76-13-1	Freon 113	ND	0.50	0.13	ppbv		ND	3.8	ug/m3
76-14-2	Freon 114	ND	0.50	0.16	ppbv		ND	3.5	ug/m3
142-82-5	Heptane	ND	0.50	0.17	ppbv		ND	2.0	ug/m3
87-68-3	Hexachlorobutadiene	ND	0.50	0.49	ppbv		ND	5.3	ug/m3
110-54-3	Hexane	ND	0.50	0.13	ppbv		ND	1.8	ug/m3
591-78-6	2-Hexanone	ND	0.50	0.13	ppbv		ND	2.0	ug/m3
67-63-0	Isopropyl Alcohol	ND	0.50	0.16	ppbv		ND	1.2	ug/m3
75-09-2	Methylene chloride	ND	0.50	0.12	ppbv		ND	1.7	ug/m3
78-93-3	Methyl ethyl ketone	ND	0.50	0.17	ppbv		ND	1.5	ug/m3
108-10-1	Methyl Isobutyl Ketone	ND	0.50	0.20	ppbv		ND	2.0	ug/m3
1634-04-4	Methyl Tert Butyl Ether	ND	0.50	0.20	ppbv		ND	1.8	ug/m3
115-07-1	Propylene	ND	0.50	0.11	ppbv		ND	0.86	ug/m3
100-42-5	Styrene	ND	0.50	0.17	ppbv		ND	2.1	ug/m3
79-34-5	1,1,2,2-Tetrachloroethane	ND	0.20	0.18	ppbv		ND	1.4	ug/m3
79-00-5	1,1,2-Trichloroethane	ND	0.20	0.16	ppbv		ND	1.1	ug/m3
120-82-1	1,2,4-Trichlorobenzene	ND	0.50	0.30	ppbv		ND	3.7	ug/m3
95-63-6	1,2,4-Trimethylbenzene	ND	0.50	0.23	ppbv		ND	2.5	ug/m3
108-67-8	1,3,5-Trimethylbenzene	ND	0.50	0.21	ppbv		ND	2.5	ug/m3
540-84-1	2,2,4-Trimethylpentane	ND	0.50	0.15	ppbv		ND	2.3	ug/m3
75-65-0	Tertiary Butyl Alcohol	ND	0.50	0.38	ppbv		ND	1.5	ug/m3
127-18-4	Tetrachloroethylene	ND	0.20	0.16	ppbv		ND	1.4	ug/m3
109-99-9	Tetrahydrofuran	ND	0.50	0.21	ppbv		ND	1.5	ug/m3
108-88-3	Toluene	ND	0.50	0.18	ppbv		ND	1.9	ug/m3
75-69-4	Trichlorofluoromethane	ND	0.50	0.14	ppbv		ND	2.8	ug/m3
75-01-4	Vinyl chloride	ND	0.20	0.13	ppbv		ND	0.51	ug/m3
108-05-4	Vinyl Acetate	ND	0.50	0.23	ppbv		ND	1.8	ug/m3
	m,p-Xylene	ND	0.50	0.41	ppbv		ND	2.2	ug/m3
95-47-6	o-Xylene	ND	0.50	0.21	ppbv		ND	2.2	ug/m3
1330-20-7	Xylenes (total)	ND	0.50	0.21	ppbv		ND	2.2	ug/m3

CAS No.	Surrogate Recoveries	Limits
460-00-4	4-Bromofluorobenzene	102% 50-129%

Instrument Performance Check (BFB)

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Job Number: MC36556**Account:** HMANNJP H2M Associates, Inc**Project:** Macbeth, 617 Little Britain, New Windsor, NY**Sample:** MSJ1510-BFB**Injection Date:** 01/22/15**Lab File ID:** J29700.D**Injection Time:** 19:53**Instrument ID:** GCMSJ

m/e	Ion Abundance Criteria	Raw Abundance	% Relative Abundance	Pass/Fail
50	8.0 - 40.0% of mass 95	28733	14.6	Pass
75	30.0 - 66.0% of mass 95	86901	44.2	Pass
95	Base peak, 100% relative abundance	196416	100.0	Pass
96	5.0 - 9.0% of mass 95	13223	6.73	Pass
173	Less than 2.0% of mass 174	346	0.18 (0.19) ^a	Pass
174	50.0 - 120.0% of mass 95	181781	92.5	Pass
175	4.0 - 9.0% of mass 174	12639	6.43 (6.95) ^a	Pass
176	93.0 - 101.0% of mass 174	176896	90.1 (97.3) ^a	Pass
177	5.0 - 9.0% of mass 176	11556	5.88 (6.53) ^b	Pass

(a) Value is % of mass 174

(b) Value is % of mass 176

This check applies to the following Samples, MS, MSD, Blanks, and Standards:

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
MSJ1510-IC1510	J29702.D	01/22/15	21:30	01:37	Initial cal 0.2
MSJ1510-IC1510	J29704.D	01/22/15	23:10	03:17	Initial cal 2
MSJ1510-IC1510	J29705.D	01/22/15	23:53	04:00	Initial cal 5
MSJ1510-IC1510	J29707.D	01/23/15	01:28	05:35	Initial cal 20
MSJ1510-IC1510	J29708.D	01/23/15	02:15	06:22	Initial cal 30
MSJ1510-IC1510	J29709.D	01/23/15	03:01	07:08	Initial cal 40
MSJ1510-ICC1510	J29712.D	01/23/15	11:17	15:24	Initial cal 10
MSJ1510-IC1510	J29713.D	01/23/15	12:52	16:59	Initial cal 0.5

Instrument Performance Check (BFB)

Job Number: MC36556
Account: HMANNJP H2M Associates, Inc
Project: Macbeth, 617 Little Britain, New Windsor, NY

Sample: MSJ1511-BFB
Lab File ID: J29714.D
Instrument ID: GCMSJ
Injection Date: 01/25/15
Injection Time: 16:52

m/e	Ion Abundance Criteria	Raw Abundance	% Relative Abundance	Pass/Fail
50	8.0 - 40.0% of mass 95	5327	14.6	Pass
75	30.0 - 66.0% of mass 95	16055	43.9	Pass
95	Base peak, 100% relative abundance	36552	100.0	Pass
96	5.0 - 9.0% of mass 95	2463	6.74	Pass
173	Less than 2.0% of mass 174	0	0.00 (0.00) ^a	Pass
174	50.0 - 120.0% of mass 95	32891	90.0	Pass
175	4.0 - 9.0% of mass 174	2384	6.52 (7.25) ^a	Pass
176	93.0 - 101.0% of mass 174	31837	87.1 (96.8) ^a	Pass
177	5.0 - 9.0% of mass 176	2157	5.90 (6.78) ^b	Pass

(a) Value is % of mass 174

(b) Value is % of mass 176

This check applies to the following Samples, MS, MSD, Blanks, and Standards:

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
MSJ1511-CC1510	J29715.D	01/25/15	17:41	00:49	Continuing cal 10
MSJ1511-ICV1510	J29715A.D	01/25/15	17:41	00:49	Initial cal verification 10
MSJ1511-BS	J29715B.D	01/25/15	17:41	00:49	Blank Spike
MSJ1511-SCC	J29717A.D	01/25/15	19:36	02:44	Summa Cleaning Certification
MSJ1511-MB	J29717.D	01/25/15	19:36	02:44	Method Blank
ZZZZZZ	J29719.D	01/25/15	21:09	04:17	(unrelated sample)
ZZZZZZ	J29720.D	01/25/15	22:02	05:10	(unrelated sample)
ZZZZZZ	J29721.D	01/25/15	22:45	05:53	(unrelated sample)
ZZZZZZ	J29722.D	01/25/15	23:37	06:45	(unrelated sample)
ZZZZZZ	J29724.D	01/26/15	01:11	08:19	(unrelated sample)
MC36483-3	J29726.D	01/26/15	02:44	09:52	(used for QC only; not part of job MC36556)
MSJ1511-SCC	J29728.D	01/26/15	04:18	11:26	Summa Cleaning Certification
MSJ1511-SCC	J29729.D	01/26/15	05:03	12:11	Summa Cleaning Certification
MSJ1511-SCC	J29730.D	01/26/15	05:53	13:01	Summa Cleaning Certification
MSJ1511-SCC	J29731.D	01/26/15	06:37	13:45	Summa Cleaning Certification
MSJ1511-SCC	J29732.D	01/26/15	07:30	14:38	Summa Cleaning Certification
MSJ1511-SCC	J29733.D	01/26/15	08:14	15:22	Summa Cleaning Certification
MSJ1511-SCC	J29734.D	01/26/15	09:05	16:13	Summa Cleaning Certification
ZZZZZZ	J29735.D	01/26/15	09:50	16:58	(unrelated sample)
MC36483-3DUP	J29736.D	01/26/15	10:44	17:52	Duplicate
ZZZZZZ	J29739.D	01/26/15	13:09	20:17	(unrelated sample)
ZZZZZZ	J29740.D	01/26/15	14:01	21:09	(unrelated sample)
ZZZZZZ	J29741.D	01/26/15	14:46	21:54	(unrelated sample)
MSJ1511-SCC	J29742.D	01/26/15	15:40	22:48	Summa Cleaning Certification

Instrument Performance Check (BFB)

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Job Number: MC36556

Account: HMANNJP H2M Associates, Inc

Project: Macbeth, 617 Little Britain, New Windsor, NY

Sample: MSJ1511-BFB

Injection Date: 01/25/15

Lab File ID: J29714.D

Injection Time: 16:52

Instrument ID: GCMSJ

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
MSJ1511-SCC	J29743.D	01/26/15	16:24	23:32	Summa Cleaning Certification

6.5.2

6

Instrument Performance Check (BFB)

Job Number: MC36556
Account: HMANNJP H2M Associates, Inc
Project: Macbeth, 617 Little Britain, New Windsor, NY

Sample: MSJ1520-BFB	Injection Date: 02/09/15
Lab File ID: J29932.D	Injection Time: 18:26
Instrument ID: GCMSJ	

m/e	Ion Abundance Criteria	Raw Abundance	% Relative Abundance	Pass/Fail
50	8.0 - 40.0% of mass 95	17976	12.4	Pass
75	30.0 - 66.0% of mass 95	60816	42.0	Pass
95	Base peak, 100% relative abundance	144896	100.0	Pass
96	5.0 - 9.0% of mass 95	9721	6.71	Pass
173	Less than 2.0% of mass 174	780	0.54 (0.56) ^a	Pass
174	50.0 - 120.0% of mass 95	139840	96.5	Pass
175	4.0 - 9.0% of mass 174	10539	7.27 (7.54) ^a	Pass
176	93.0 - 101.0% of mass 174	137920	95.2 (98.6) ^a	Pass
177	5.0 - 9.0% of mass 176	9063	6.25 (6.57) ^b	Pass

(a) Value is % of mass 174

(b) Value is % of mass 176

This check applies to the following Samples, MS, MSD, Blanks, and Standards:

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
MSJ1520-BS	J29932B.D	02/09/15	18:26	00:00	Blank Spike
MSJ1520-CC1510	J29932.D	02/09/15	18:26	00:00	Continuing cal 10
MSJ1520-SCC	J29934.D	02/09/15	20:44	02:18	Summa Cleaning Certification
MSJ1520-MB	J29935.D	02/09/15	21:29	03:03	Method Blank
MSJ1520-SCC	J29935A.D	02/09/15	21:29	03:03	Summa Cleaning Certification
ZZZZZZ	J29936.D	02/09/15	22:17	03:51	(unrelated sample)
ZZZZZZ	J29941.D	02/10/15	02:07	07:41	(unrelated sample)
ZZZZZZ	J29943.D	02/10/15	03:37	09:11	(unrelated sample)
ZZZZZZ	J29946.D	02/10/15	05:57	11:31	(unrelated sample)
MC36556-5	J29948.D	02/10/15	08:59	14:33	TRIP BLANK
MC36556-4	J29949.D	02/10/15	09:45	15:19	IA-3
MC36556-3	J29950.D	02/10/15	10:29	16:03	SG-3
MC36556-2	J29951.D	02/10/15	11:16	16:50	IA-2
MC36556-1	J29952.D	02/10/15	12:01	17:35	SG-2
MC36556-1	J29954.D	02/10/15	13:39	19:13	SG-2
MC36556-4DUP	J29955.D	02/10/15	14:27	20:01	Duplicate
ZZZZZZ	J29956.D	02/10/15	15:13	20:47	(unrelated sample)
MC36556-3	J29957.D	02/10/15	16:12	21:46	SG-3

Instrument Performance Check (BFB)

Job Number: MC36556
Account: HMANNJP H2M Associates, Inc
Project: Macbeth, 617 Little Britain, New Windsor, NY

Sample: MSJ1521-BFB	Injection Date: 02/10/15
Lab File ID: J29958.D	Injection Time: 18:01
Instrument ID: GCMSJ	

m/e	Ion Abundance Criteria	Raw Abundance	% Relative Abundance	Pass/Fail
50	8.0 - 40.0% of mass 95	27824	13.4	Pass
75	30.0 - 66.0% of mass 95	90984	43.7	Pass
95	Base peak, 100% relative abundance	208384	100.0	Pass
96	5.0 - 9.0% of mass 95	13809	6.63	Pass
173	Less than 2.0% of mass 174	1171	0.56 (0.56) ^a	Pass
174	50.0 - 120.0% of mass 95	207488	99.6	Pass
175	4.0 - 9.0% of mass 174	14649	7.03 (7.06) ^a	Pass
176	93.0 - 101.0% of mass 174	201600	96.7 (97.2) ^a	Pass
177	5.0 - 9.0% of mass 176	12498	6.00 (6.20) ^b	Pass

(a) Value is % of mass 174

(b) Value is % of mass 176

This check applies to the following Samples, MS, MSD, Blanks, and Standards:

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
MSJ1521-CC1510	J29958.D	02/10/15	18:01	00:00	Continuing cal 10
MSJ1521-BS	J29958A.D	02/10/15	18:01	00:00	Blank Spike
MSJ1521-SCC	J29960.D	02/10/15	20:13	02:12	Summa Cleaning Certification
MSJ1521-SCC	J29961A.D	02/10/15	20:58	02:57	Summa Cleaning Certification
MSJ1521-MB	J29961.D	02/10/15	20:58	02:57	Method Blank
ZZZZZZ	J29962.D	02/10/15	21:50	03:49	(unrelated sample)
ZZZZZZ	J29963.D	02/10/15	22:36	04:35	(unrelated sample)
ZZZZZZ	J29964.D	02/10/15	23:20	05:19	(unrelated sample)
ZZZZZZ	J29967.D	02/11/15	01:38	07:37	(unrelated sample)
ZZZZZZ	J29968.D	02/11/15	02:26	08:25	(unrelated sample)
ZZZZZZ	J29969.D	02/11/15	03:13	09:12	(unrelated sample)
MC36638-3	J29970.D	02/11/15	04:02	10:01	(used for QC only; not part of job MC36556)
ZZZZZZ	J29971.D	02/11/15	04:49	10:48	(unrelated sample)
ZZZZZZ	J29972.D	02/11/15	05:36	11:35	(unrelated sample)
ZZZZZZ	J29973.D	02/11/15	06:23	12:22	(unrelated sample)
ZZZZZZ	J29974.D	02/11/15	07:11	13:10	(unrelated sample)
ZZZZZZ	J29977.D	02/11/15	09:51	15:50	(unrelated sample)
ZZZZZZ	J29979.D	02/11/15	11:37	17:36	(unrelated sample)
ZZZZZZ	J29980.D	02/11/15	12:23	18:22	(unrelated sample)
ZZZZZZ	J29982.D	02/11/15	14:00	19:59	(unrelated sample)
ZZZZZZ	J29983.D	02/11/15	14:44	20:43	(unrelated sample)
MC36638-3DUP	J29984.D	02/11/15	15:32	21:31	Duplicate
ZZZZZZ	J29985.D	02/11/15	17:30	23:29	(unrelated sample)

Instrument Performance Check (BFB)

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Job Number: MC36556
Account: HMANNJP H2M Associates, Inc
Project: Macbeth, 617 Little Britain, New Windsor, NY

Sample: MSQ1286-BFB	Injection Date: 02/10/15
Lab File ID: Q29634.D	Injection Time: 20:26
Instrument ID: GCMSQ	

m/e	Ion Abundance Criteria	Raw Abundance	% Relative Abundance	Pass/Fail
50	8.0 - 40.0% of mass 95	76744	12.9	Pass
75	30.0 - 66.0% of mass 95	239266	40.3	Pass
95	Base peak, 100% relative abundance	594347	100.0	Pass
96	5.0 - 9.0% of mass 95	40957	6.89	Pass
173	Less than 2.0% of mass 174	3701	0.62 (0.64) ^a	Pass
174	50.0 - 120.0% of mass 95	574741	96.7	Pass
175	4.0 - 9.0% of mass 174	41024	6.90 (7.14) ^a	Pass
176	93.0 - 101.0% of mass 174	552363	92.9 (96.1) ^a	Pass
177	5.0 - 9.0% of mass 176	36755	6.18 (6.65) ^b	Pass

(a) Value is % of mass 174

(b) Value is % of mass 176

This check applies to the following Samples, MS, MSD, Blanks, and Standards:

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
MSQ1286-IC1286	Q29635.D	02/10/15	21:08	00:42	Initial cal 0.005
MSQ1286-IC1286	Q29636.D	02/10/15	21:51	01:25	Initial cal 0.02
MSQ1286-IC1286	Q29637.D	02/10/15	22:34	02:08	Initial cal 0.05
MSQ1286-IC1286	Q29638.D	02/10/15	23:20	02:54	Initial cal 0.1
MSQ1286-IC1286	Q29640.D	02/11/15	00:45	04:19	Initial cal 0.25
MSQ1286-ICC1286	Q29641.D	02/11/15	01:27	05:01	Initial cal 0.5
MSQ1286-IC1286	Q29642.D	02/11/15	02:10	05:44	Initial cal 20
MSQ1286-IC1286	Q29644.D	02/11/15	09:13	12:47	Initial cal 5
MSQ1286-ICV1286	Q29645A.D	02/11/15	10:14	13:48	Initial cal verification 0.5
MSQ1286-CC1286	Q29645.D	02/11/15	10:14	13:48	Continuing cal 0.5
MSQ1286-BS	Q29645B.D	02/11/15	10:14	13:48	Blank Spike
MSQ1286-MB	Q29647.D	02/11/15	12:54	16:28	Method Blank
MC36556-1A	Q29648.D	02/11/15	13:44	17:18	SG-2
MC36556-3A	Q29649.D	02/11/15	14:27	18:01	SG-3
MC36556-2A	Q29650.D	02/11/15	15:11	18:45	IA-2
MC36556-4A	Q29651.D	02/11/15	15:57	19:31	IA-3
MC36556-5A	Q29652.D	02/11/15	16:42	20:16	TRIP BLANK
MC36556-2ADUP	Q29653.D	02/11/15	17:54	21:28	Duplicate
MC36556-1A	Q29654.D	02/11/15	18:37	22:11	SG-2
MC36556-3A	Q29655.D	02/11/15	19:24	22:58	SG-3

Volatile Internal Standard Area Summary

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Job Number: MC36556
Account: HMANNJP H2M Associates, Inc
Project: Macbeth, 617 Little Britain, New Windsor, NY

Check Std:	MSJ1511-CC1510	Injection Date:	01/25/15
Lab File ID:	J29715.D	Injection Time:	17:41
Instrument ID:	GCMSJ	Method:	TO-15

	IS 1 AREA	RT	IS 2 AREA	RT	IS 3 AREA	RT
Check Std	522824	8.99	2587659	11.31	1164861	18.00
Upper Limit ^a	731954	9.32	3622723	11.64	1630805	18.33
Lower Limit ^b	313694	8.66	1552595	10.98	698917	17.67

Lab Sample ID	IS 1 AREA	RT	IS 2 AREA	RT	IS 3 AREA	RT
MSJ1511-BS	522824	8.99	2587659	11.31	1164861	18.00
MSJ1511-SCC	511779	8.99	2454206	11.29	1056288	17.97
MSJ1511-MB	511779	8.99	2454206	11.29	1056288	17.97
ZZZZZZ	445467	8.99	2226867	11.29	1142942	17.97
ZZZZZZ	441280	8.99	2118497	11.29	916677	17.97
ZZZZZZ	481429	8.99	2286885	11.29	1124234	17.97
ZZZZZZ	449003	8.99	2206293	11.29	1017356	17.97
ZZZZZZ	458895	8.99	2189429	11.29	1075338	17.97
MC36483-3	461736	8.99	2316808	11.29	1059018	17.97
MSJ1511-SCC	463005	8.99	2107585	11.29	989516	17.96
MSJ1511-SCC	480471	8.99	2309961	11.29	1111033	17.96
MSJ1511-SCC	484323	8.99	2418114	11.29	1121542	17.97
MSJ1511-SCC	469242	9.00	2303958	11.30	1091059	17.97
MSJ1511-SCC	466424	8.99	2280118	11.29	926719	17.97
MSJ1511-SCC	441702	9.00	2106189	11.29	1079944	17.97
MSJ1511-SCC	462528	8.99	2280832	11.29	927349	17.97
ZZZZZZ	486443	8.99	2328223	11.30	1203581	17.97
MC36483-3DUP	471115	8.99	2316635	11.29	954124	17.97
ZZZZZZ	420987	9.01	1961180	11.30	1060783	17.97
ZZZZZZ	466038	8.99	2253154	11.29	990755	17.96
ZZZZZZ	429519	8.99	2014983	11.29	1048384	17.97
MSJ1511-SCC	430590	8.99	2006060	11.29	883122	17.96
MSJ1511-SCC	449964	8.99	2045292	11.29	1028017	17.97

IS 1 = Bromochloromethane
IS 2 = 1,4-Difluorobenzene
IS 3 = Chlorobenzene-D5

(a) Upper Limit = + 40% of check standard area; Retention time + 0.33 minutes.
(b) Lower Limit = -40% of check standard area; Retention time -0.33 minutes.

Volatile Internal Standard Area Summary

Page 1 of 1

Job Number: MC36556
Account: HMANNJP H2M Associates, Inc
Project: Macbeth, 617 Little Britain, New Windsor, NY

Check Std:	MSJ1520-CC1510	Injection Date:	02/09/15
Lab File ID:	J29932.D	Injection Time:	18:26
Instrument ID:	GCMSJ	Method:	TO-15

	IS 1 AREA	RT	IS 2 AREA	RT	IS 3 AREA	RT
Check Std	407749	8.99	2070589	11.30	980156	17.98
Upper Limit ^a	570849	9.32	2898825	11.63	1372218	18.31
Lower Limit ^b	244649	8.66	1242353	10.97	588094	17.65

Lab Sample ID	IS 1 AREA	RT	IS 2 AREA	RT	IS 3 AREA	RT
MSJ1520-BS	407749	8.99	2070589	11.30	980156	17.98
MSJ1520-SCC	437854	8.99	2128534	11.29	1083694	17.96
MSJ1520-SCC	402444	8.99	1868157	11.29	910000	17.97
MSJ1520-MB	402444	8.99	1868157	11.29	910000	17.97
ZZZZZZ	399222	8.99	1840149	11.29	859590	17.96
ZZZZZZ	390650	8.99	1896318	11.29	828902	17.96
ZZZZZZ	390427	9.04	1784145	11.34	1014993	18.01
ZZZZZZ	398519	8.99	1882884	11.29	948764	17.96
MC36556-5	258966	9.00	1251011	11.29	614889	17.97
MC36556-4	335817	8.99	1595270	11.29	741541	17.96
MC36556-3	389032	8.99	1818695	11.29	987465	17.98
MC36556-2	405702	8.98	1933664	11.29	875798	17.96
MC36556-1	198933 ^c	9.02	831521 ^c	11.31	959843	17.97
MC36556-1	380929	8.99	1852681	11.29	867532	17.97
MC36556-4DUP	342899	8.99	1621070	11.29	777019	17.96
ZZZZZZ	353918	8.99	1751122	11.29	853124	17.97
MC36556-3	369480	8.99	1756264	11.29	847715	17.96

IS 1 = Bromochloromethane
IS 2 = 1,4-Difluorobenzene
IS 3 = Chlorobenzene-D5

(a) Upper Limit = + 40% of check standard area; Retention time + 0.33 minutes.

(b) Lower Limit = -40% of check standard area; Retention time -0.33 minutes.

(c) Outside control limits due to possible matrix interference. Confirmed by reanalysis.

Volatile Internal Standard Area Summary

Page 1 of 1

Job Number: MC36556
Account: HMANNJP H2M Associates, Inc
Project: Macbeth, 617 Little Britain, New Windsor, NY

Check Std:	MSJ1521-CC1510	Injection Date:	02/10/15
Lab File ID:	J29958.D	Injection Time:	18:01
Instrument ID:	GCMSJ	Method:	TO-15

	IS 1 AREA	RT	IS 2 AREA	RT	IS 3 AREA	RT
Check Std	372814	8.99	1750987	11.30	965502	17.98
Upper Limit ^a	521940	9.32	2451382	11.63	1351703	18.31
Lower Limit ^b	223688	8.66	1050592	10.97	579301	17.65

Lab Sample ID	IS 1 AREA	RT	IS 2 AREA	RT	IS 3 AREA	RT
MSJ1521-BS	372814	8.99	1750987	11.30	965502	17.98
MSJ1521-SCC	378802	9.01	1818575	11.30	813059	17.97
MSJ1521-SCC	384183	8.99	1840224	11.29	883223	17.97
MSJ1521-MB	384183	8.99	1840224	11.29	883223	17.97
ZZZZZZ	387846	8.99	1834070	11.29	812802	17.96
ZZZZZZ	379939	9.02	1890491	11.32	1025721	18.03
ZZZZZZ	407156	8.99	1826996	11.29	957710	17.97
ZZZZZZ	423967	8.99	2098655	11.29	980811	17.96
ZZZZZZ	179900 ^c	9.00	802920 ^c	11.30	807486	17.97
ZZZZZZ	368824	9.00	1750392	11.29	824581	17.96
MC36638-3	344366	8.99	1717202	11.29	723839	17.97
ZZZZZZ	379523	8.99	1854225	11.29	878660	17.96
ZZZZZZ	380054	8.99	1838627	11.29	868840	17.96
ZZZZZZ	183996 ^c	8.99	826915 ^c	11.28	724680	17.96
ZZZZZZ	343369	9.00	1618518	11.30	759821	17.97
ZZZZZZ	309650	8.99	1529098	11.29	730171	17.96
ZZZZZZ	339752	8.99	1698340	11.29	824557	17.97
ZZZZZZ	332651	8.99	1504069	11.29	697592	17.96
ZZZZZZ	345490	8.99	1668370	11.29	818558	17.97
ZZZZZZ	369525	8.99	1773200	11.29	886251	17.97
MC36638-3DUP	338561	8.99	1585539	11.29	736415	17.95
ZZZZZZ	336051	8.99	1556677	11.29	701520	17.97

IS 1 = Bromochloromethane
IS 2 = 1,4-Difluorobenzene
IS 3 = Chlorobenzene-D5

- (a) Upper Limit = + 40% of check standard area; Retention time + 0.33 minutes.
(b) Lower Limit = -40% of check standard area; Retention time -0.33 minutes.
(c) Outside control limits due to possible matrix interference. Confirmed by reanalysis.

Volatile Internal Standard Area Summary

Page 1 of 1

Job Number: MC36556
Account: HMANNJP H2M Associates, Inc
Project: Macbeth, 617 Little Britain, New Windsor, NY

Check Std:	MSQ1286-CC1286	Injection Date:	02/11/15
Lab File ID:	Q29645.D	Injection Time:	10:14
Instrument ID:	GCMSQ	Method:	TO-15 BY SIM

	IS 1 AREA	RT	IS 2 AREA	RT	IS 3 AREA	RT
Check Std	1274252	9.22	5860759	11.88	1870577	18.93
Upper Limit ^a	1783953	9.55	8205063	12.21	2618808	19.26
Lower Limit ^b	764551	8.89	3516455	11.55	1122346	18.60

Lab Sample ID	IS 1 AREA	RT	IS 2 AREA	RT	IS 3 AREA	RT
MSQ1286-BS	1274252	9.22	5860759	11.88	1870577	18.93
MSQ1286-MB	1287447	9.22	5993565	11.87	1896996	18.93
MC36556-1A	1335088	9.22	6460618	11.88	1989198	18.93
MC36556-3A	1262218	9.23	6130338	11.88	1960541	18.93
MC36556-2A	1114000	9.23	5169714	11.89	1677988	18.93
MC36556-4A	1202128	9.22	5743901	11.88	1872838	18.93
MC36556-5A	1223904	9.22	5985390	11.88	1881579	18.93
MC36556-2ADUP	1191194	9.22	5618321	11.88	1805324	18.93
MC36556-1A	1133335	9.22	5233320	11.88	1660476	18.93
MC36556-3A	1144668	9.23	5442817	11.88	1984963	18.93

IS 1 = Bromochloromethane
IS 2 = 1,4-Difluorobenzene
IS 3 = Chlorobenzene-D5

(a) Upper Limit = + 40% of check standard area; Retention time + 0.33 minutes.

(b) Lower Limit = -40% of check standard area; Retention time -0.33 minutes.

Initial Calibration Retention Time/Internal Standard Area Summary

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Job Number: MC36556
Account: HMANNJP H2M Associates, Inc
Project: Macbeth, 617 Little Britain, New Windsor, NY

Sample Number	Lab File ID	Injected	By	Level	Inst ID	Method	
MSJ1510-IC1510	J29702.D	01/22/15 21:30	AA	0.2	GCMSJ	TO-15	Reporting this level
MSJ1510-IC1510	J29704.D	01/22/15 23:10	AA	2	GCMSJ	TO-15	
MSJ1510-IC1510	J29705.D	01/22/15 23:53	AA	5	GCMSJ	TO-15	
MSJ1510-IC1510	J29707.D	01/23/15 01:28	AA	20	GCMSJ	TO-15	
MSJ1510-IC1510	J29708.D	01/23/15 02:15	AA	30	GCMSJ	TO-15	
MSJ1510-IC1510	J29709.D	01/23/15 03:01	AA	40	GCMSJ	TO-15	
MSJ1510-ICC1510	J29712.D	01/23/15 11:17	AA	10	GCMSJ	TO-15	
MSJ1510-IC1510	J29713.D	01/23/15 12:52	AA	0.5	GCMSJ	TO-15	

Target Compound	RT (min.)	Istd RT (min.)	Rel RT	Mean Rel RT	Rel RT Range (+ /- .06)
Benzene	10.89	11.29	0.965 ok	0.964	0.904-1.024
Bromodichloromethane	12.21	11.29	1.081 ok	1.081	1.021-1.141
Bromomethane	5.14	8.99	0.572 ok	0.571	0.511-0.631
Bromoethene	5.65	8.99	0.628 ok	0.627	0.567-0.687
sec-Butylbenzene	24.40	17.97	1.358 ok	1.356	1.296-1.416
Carbon disulfide	7.11	8.99	0.791 ok	0.789	0.729-0.849
Chloroform	9.12	8.99	1.014 ok	1.015	0.955-1.075
Chloromethane	4.50	8.99	0.501 ok	0.501	0.441-0.561
3-Chloropropene	6.88	8.99	0.765 ok	0.764	0.704-0.824
2-Chlorotoluene	22.21	17.97	1.236 ok	1.235	1.175-1.295
Carbon tetrachloride	11.07	8.99	1.231 ok	1.231	1.171-1.291
Cyclohexane	11.24	11.29	0.996 ok	0.994	0.934-1.054
1,1-Dichloroethane	7.90	8.99	0.879 ok	0.878	0.818-0.938
1,1-Dichloroethylene	6.64	8.99	0.739 ok	0.738	0.678-0.798
1,2-Dibromoethane	16.09	17.97	0.895 ok	0.895	0.835-0.955
1,2-Dichloropropane	11.96	11.29	1.059 ok	1.058	0.998-1.118
1,3-Dichloropropane	15.02	11.29	1.330 ok	1.330	1.270-1.390
Dichlorodifluoromethane	4.33	8.99	0.482 ok	0.481	0.421-0.541
Dibromochloromethane	15.66	17.97	0.871 ok	0.872	0.812-0.932
trans-1,2-Dichloroethylene	7.70	8.99	0.857 ok	0.856	0.796-0.916
cis-1,2-Dichloroethylene	8.80	8.99	0.979 ok	0.978	0.918-1.038
Ethylbenzene	18.74	17.97	1.043 ok	1.043	0.983-1.103
4-Ethyltoluene	22.65	17.97	1.260 ok	1.258	1.198-1.318
Freon 113	7.00	8.99	0.779 ok	0.778	0.718-0.838
Freon 114	4.60	8.99	0.512 ok	0.511	0.451-0.571
Heptane	12.63	11.29	1.119 ok	1.118	1.058-1.178
Hexachlorobutadiene	29.11	17.97	1.620 ok	1.617	1.557-1.677
Hexane	9.02	8.99	1.003 ok	1.003	0.943-1.063
Isopropylbenzene	21.18	17.97	1.179 ok	1.178	1.118-1.238
Methylene chloride	6.75	8.99	0.751 ok	0.750	0.690-0.810
Methyl Tert Butyl Ether	8.14	8.99	0.905 ok	0.889	0.829-0.949
Pentane	6.37	8.99	0.709 ok	0.707	0.647-0.767
Propylene	4.26	8.99	0.474 ok	0.473	0.413-0.533
Styrene	19.77	17.97	1.100 ok	1.100	1.040-1.160
1,1,1-Trichloroethane	10.31	8.99	1.147 ok	1.146	1.086-1.206
1,1,2,2-Tetrachloroethane	20.00	17.97	1.113 ok	1.112	1.052-1.172
1,1,2-Trichloroethane	14.54	11.29	1.288 ok	1.288	1.228-1.348
1,3,5-Trimethylbenzene	22.82	17.97	1.270 ok	1.268	1.208-1.328
2,2,4-Trimethylpentane	12.29	11.29	1.089 ok	1.088	1.028-1.148
tert-Butylbenzene	23.75	17.97	1.322 ok	1.321	1.261-1.381

Initial Calibration Retention Time/Internal Standard Area Summary

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Job Number: MC36556

Account: HMANNJP H2M Associates, Inc

Project: Macbeth, 617 Little Britain, New Windsor, NY

Sample Number	Lab File ID	Injected	By	Level	Inst ID	Method	
MSJ1510-IC1510	J29702.D	01/22/15 21:30	AA	0.2	GCMSJ	TO-15	Reporting this level
MSJ1510-IC1510	J29704.D	01/22/15 23:10	AA	2	GCMSJ	TO-15	
MSJ1510-IC1510	J29705.D	01/22/15 23:53	AA	5	GCMSJ	TO-15	
MSJ1510-IC1510	J29707.D	01/23/15 01:28	AA	20	GCMSJ	TO-15	
MSJ1510-IC1510	J29708.D	01/23/15 02:15	AA	30	GCMSJ	TO-15	
MSJ1510-IC1510	J29709.D	01/23/15 03:01	AA	40	GCMSJ	TO-15	
MSJ1510-ICC1510	J29712.D	01/23/15 11:17	AA	10	GCMSJ	TO-15	
MSJ1510-IC1510	J29713.D	01/23/15 12:52	AA	0.5	GCMSJ	TO-15	

Target Compound	RT (min.)	Istd RT (min.)	Rel RT	Mean Rel RT	Rel RT Range (+ /- .06)
Tetrachloroethylene	16.85	17.97	0.938 ok	0.937	0.877-0.997
Toluene	14.98	11.29	1.327 ok	1.326	1.266-1.386
Trichloroethylene	12.26	11.29	1.086 ok	1.085	1.025-1.145
Trichlorofluoromethane	6.03	8.99	0.671 ok	0.670	0.610-0.730
Vinyl chloride	4.73	8.99	0.526 ok	0.525	0.465-0.585
m,p-Xylene	19.09	17.97	1.062 ok	1.062	1.002-1.122
o-Xylene	19.97	17.97	1.111 ok	1.112	1.052-1.172

Internal Standard	RT (min.)	Mean RT(min.)	RT Range (+ /- 0.33)	Area	Mean Area	Area Range (+ /- 40 %)
Bromochloromethane	8.99 ok	9.00	8.67-9.33	495017	ok 489028	293417-684639
1,4-Difluorobenzene	11.29 ok	11.31	10.98-11.64	2401175	ok 2377269	1426361-3328177
Chlorobenzene-D5	17.97 ok	17.99	17.66-18.32	1069797	ok 1208388	725033-1691743

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Initial Calibration Retention Time/Internal Standard Area Summary

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Job Number: MC36556

Account: HMANNJP H2M Associates, Inc

Project: Macbeth, 617 Little Britain, New Windsor, NY

Sample Number	Lab File ID	Injected	By	Level	Inst ID	Method
MSJ1510-IC1510	J29702.D	01/22/15 21:30	AA	0.2	GCMSJ	TO-15
MSJ1510-IC1510	J29704.D	01/22/15 23:10	AA	2	GCMSJ	TO-15 Reporting this level
MSJ1510-IC1510	J29705.D	01/22/15 23:53	AA	5	GCMSJ	TO-15
MSJ1510-IC1510	J29707.D	01/23/15 01:28	AA	20	GCMSJ	TO-15
MSJ1510-IC1510	J29708.D	01/23/15 02:15	AA	30	GCMSJ	TO-15
MSJ1510-IC1510	J29709.D	01/23/15 03:01	AA	40	GCMSJ	TO-15
MSJ1510-ICC1510	J29712.D	01/23/15 11:17	AA	10	GCMSJ	TO-15
MSJ1510-IC1510	J29713.D	01/23/15 12:52	AA	0.5	GCMSJ	TO-15

Target Compound	RT (min.)	Istd RT (min.)	Rel RT	Mean Rel RT	Rel RT Range (+ /- .06)
Acetone	5.90	8.99	0.656 ok	0.656	0.596-0.716
Acrolein	5.77	8.99	0.642 ok	0.639	0.579-0.699
Acrylonitrile	6.34	8.99	0.705 ok	0.702	0.642-0.762
1,3-Butadiene	4.86	8.99	0.541 ok	0.541	0.481-0.601
Benzene	10.88	11.29	0.964 ok	0.964	0.904-1.024
Bromodichloromethane	12.19	11.29	1.080 ok	1.081	1.021-1.141
Bromoform	19.21	17.96	1.070 ok	1.070	1.010-1.130
Bromomethane	5.13	8.99	0.571 ok	0.571	0.511-0.631
Bromoethene	5.64	8.99	0.627 ok	0.627	0.567-0.687
n-Butylbenzene	25.60	17.96	1.425 ok	1.423	1.363-1.483
sec-Butylbenzene	24.37	17.96	1.357 ok	1.356	1.296-1.416
Benzyl Chloride	24.07	17.96	1.340 ok	1.339	1.279-1.399
Carbon disulfide	7.10	8.99	0.790 ok	0.789	0.729-0.849
Chlorobenzene	18.05	17.96	1.005 ok	1.005	0.945-1.065
Chloroethane	5.29	8.99	0.588 ok	0.589	0.529-0.649
Chloroform	9.12	8.99	1.014 ok	1.015	0.955-1.075
Chloromethane	4.50	8.99	0.501 ok	0.501	0.441-0.561
3-Chloropropene	6.86	8.99	0.763 ok	0.764	0.704-0.824
2-Chlorotoluene	22.19	17.96	1.236 ok	1.235	1.175-1.295
Carbon tetrachloride	11.07	8.99	1.231 ok	1.231	1.171-1.291
Cyclohexane	11.23	11.29	0.995 ok	0.994	0.934-1.054
1,1-Dichloroethane	7.90	8.99	0.879 ok	0.878	0.818-0.938
1,1-Dichloroethylene	6.64	8.99	0.739 ok	0.738	0.678-0.798
1,2-Dibromoethane	16.07	17.96	0.895 ok	0.895	0.835-0.955
1,2-Dichloroethane	9.99	8.99	1.111 ok	1.113	1.053-1.173
1,2-Dichloropropane	11.94	11.29	1.058 ok	1.058	0.998-1.118
1,3-Dichloropropane	15.00	11.29	1.329 ok	1.330	1.270-1.390
1,4-Dioxane	12.42	11.29	1.100 ok	1.099	1.039-1.159
Dichlorodifluoromethane	4.32	8.99	0.481 ok	0.481	0.421-0.541
Dibromochloromethane	15.65	17.96	0.871 ok	0.872	0.812-0.932
trans-1,2-Dichloroethylene	7.69	8.99	0.855 ok	0.856	0.796-0.916
cis-1,2-Dichloroethylene	8.79	8.99	0.978 ok	0.978	0.918-1.038
cis-1,3-Dichloropropene	13.46	11.29	1.192 ok	1.193	1.133-1.253
m-Dichlorobenzene	24.10	17.96	1.342 ok	1.341	1.281-1.401
o-Dichlorobenzene	24.99	17.96	1.391 ok	1.390	1.330-1.450
p-Dichlorobenzene	24.26	17.96	1.351 ok	1.350	1.290-1.410
trans-1,3-Dichloropropene	14.24	11.29	1.261 ok	1.262	1.202-1.322
Ethanol	5.53	8.99	0.615 ok	0.611	0.551-0.671
Ethylbenzene	18.73	17.96	1.043 ok	1.043	0.983-1.103
Ethyl Acetate	9.02	8.99	1.003 ok	1.003	0.943-1.063

Initial Calibration Retention Time/Internal Standard Area Summary

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Job Number: MC36556
Account: HMANNJP H2M Associates, Inc
Project: Macbeth, 617 Little Britain, New Windsor, NY

Sample Number	Lab File ID	Injected	By	Level	Inst ID	Method
MSJ1510-IC1510	J29702.D	01/22/15 21:30	AA	0.2	GCMSJ	TO-15
MSJ1510-IC1510	J29704.D	01/22/15 23:10	AA	2	GCMSJ	TO-15 Reporting this level
MSJ1510-IC1510	J29705.D	01/22/15 23:53	AA	5	GCMSJ	TO-15
MSJ1510-IC1510	J29707.D	01/23/15 01:28	AA	20	GCMSJ	TO-15
MSJ1510-IC1510	J29708.D	01/23/15 02:15	AA	30	GCMSJ	TO-15
MSJ1510-IC1510	J29709.D	01/23/15 03:01	AA	40	GCMSJ	TO-15
MSJ1510-ICC1510	J29712.D	01/23/15 11:17	AA	10	GCMSJ	TO-15
MSJ1510-IC1510	J29713.D	01/23/15 12:52	AA	0.5	GCMSJ	TO-15

Target Compound	RT (min.)	Istd RT (min.)	Rel RT	Mean Rel RT	Rel RT Range (+ /- .06)
4-Ethyltoluene	22.61	17.96	1.259 ok	1.258	1.198-1.318
Freon 113	7.00	8.99	0.779 ok	0.778	0.718-0.838
Freon 114	4.59	8.99	0.511 ok	0.511	0.451-0.571
Heptane	12.63	11.29	1.119 ok	1.118	1.058-1.178
Hexachlorobutadiene	29.09	17.96	1.620 ok	1.617	1.557-1.677
Hexane	9.01	8.99	1.002 ok	1.003	0.943-1.063
2-Hexanone	15.51	17.96	0.864 ok	0.863	0.803-0.923
Isopropylbenzene	21.17	17.96	1.179 ok	1.178	1.118-1.238
Isopropyl Alcohol	6.18	8.99	0.687 ok	0.692	0.632-0.752
p-Isopropyltoluene	24.73	17.96	1.377 ok	1.375	1.315-1.435
Methylene chloride	6.74	8.99	0.750 ok	0.750	0.690-0.810
Methyl ethyl ketone	8.35	8.99	0.929 ok	0.929	0.869-0.989
Methyl Isobutyl Ketone	13.59	11.29	1.204 ok	1.205	1.145-1.265
Methyl Tert Butyl Ether	7.98	8.99	0.888 ok	0.889	0.829-0.949
Methylmethacrylate	12.50	11.29	1.107 ok	1.108	1.048-1.168
Naphthalene	28.47	17.96	1.585 ok	1.581	1.521-1.641
Nonane	20.41	17.96	1.136 ok	1.136	1.076-1.196
Pentane	6.35	8.99	0.706 ok	0.707	0.647-0.767
Propylene	4.25	8.99	0.473 ok	0.473	0.413-0.533
Styrene	19.76	17.96	1.100 ok	1.100	1.040-1.160
1,1,1-Trichloroethane	10.30	8.99	1.146 ok	1.146	1.086-1.206
1,1,1,2-Tetrachloroethane	18.00	17.96	1.002 ok	1.003	0.943-1.063
1,1,2,2-Tetrachloroethane	19.96	17.96	1.111 ok	1.112	1.052-1.172
1,1,2-Trichloroethane	14.52	11.29	1.286 ok	1.288	1.228-1.348
1,2,4-Trichlorobenzene	28.26	17.96	1.573 ok	1.570	1.510-1.630
1,2,4-Trimethylbenzene	23.75	17.96	1.322 ok	1.321	1.261-1.381
1,3,5-Trimethylbenzene	22.79	17.96	1.269 ok	1.268	1.208-1.328
2,2,4-Trimethylpentane	12.28	11.29	1.088 ok	1.088	1.028-1.148
Tertiary Butyl Alcohol	6.76	8.99	0.752 ok	0.760	0.700-0.820
tert-Butylbenzene	23.73	17.96	1.321 ok	1.321	1.261-1.381
Tetrachloroethylene	16.84	17.96	0.938 ok	0.937	0.877-0.997
Tetrahydrofuran	9.66	8.99	1.075 ok	1.074	1.014-1.134
Toluene	14.97	11.29	1.326 ok	1.326	1.266-1.386
Trichloroethylene	12.25	11.29	1.085 ok	1.085	1.025-1.145
Trichlorofluoromethane	6.02	8.99	0.670 ok	0.670	0.610-0.730
Vinyl chloride	4.72	8.99	0.525 ok	0.525	0.465-0.585
Vinyl Acetate	8.04	8.99	0.894 ok	0.894	0.834-0.954
m,p-Xylene	19.09	17.96	1.063 ok	1.062	1.002-1.122
o-Xylene	19.97	17.96	1.112 ok	1.112	1.052-1.172

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Initial Calibration Retention Time/Internal Standard Area Summary

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Job Number: MC36556

Account: HMANNJP H2M Associates, Inc

Project: Macbeth, 617 Little Britain, New Windsor, NY

Sample Number	Lab File ID	Injected	By	Level	Inst ID	Method
MSJ1510-IC1510	J29702.D	01/22/15 21:30	AA	0.2	GCMSJ	TO-15
MSJ1510-IC1510	J29704.D	01/22/15 23:10	AA	2	GCMSJ	TO-15
MSJ1510-IC1510	J29705.D	01/22/15 23:53	AA	5	GCMSJ	TO-15
MSJ1510-IC1510	J29707.D	01/23/15 01:28	AA	20	GCMSJ	TO-15
MSJ1510-IC1510	J29708.D	01/23/15 02:15	AA	30	GCMSJ	TO-15
MSJ1510-IC1510	J29709.D	01/23/15 03:01	AA	40	GCMSJ	TO-15
MSJ1510-ICC1510	J29712.D	01/23/15 11:17	AA	10	GCMSJ	TO-15
MSJ1510-IC1510	J29713.D	01/23/15 12:52	AA	0.5	GCMSJ	TO-15

Internal Standard	RT (min.)	Mean RT(min.)	RT Range (+ /- 0.33)	Area	Mean Area	Area Range (+ /- 40 %)
Bromochloromethane	8.99 ok	9.00	8.67-9.33	507146 ok	489028	293417-684639
1,4-Difluorobenzene	11.29 ok	11.31	10.98-11.64	2430280 ok	2377269	1426361-3328177
Chlorobenzene-D5	17.96 ok	17.99	17.66-18.32	1080253 ok	1208388	725033-1691743

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Initial Calibration Retention Time/Internal Standard Area Summary

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Job Number: MC36556
Account: HMANNJP H2M Associates, Inc
Project: Macbeth, 617 Little Britain, New Windsor, NY

Sample Number	Lab File ID	Injected	By	Level	Inst ID	Method
MSJ1510-IC1510	J29702.D	01/22/15 21:30	AA	0.2	GCMSJ	TO-15
MSJ1510-IC1510	J29704.D	01/22/15 23:10	AA	2	GCMSJ	TO-15
MSJ1510-IC1510	J29705.D	01/22/15 23:53	AA	5	GCMSJ	TO-15 Reporting this level
MSJ1510-IC1510	J29707.D	01/23/15 01:28	AA	20	GCMSJ	TO-15
MSJ1510-IC1510	J29708.D	01/23/15 02:15	AA	30	GCMSJ	TO-15
MSJ1510-IC1510	J29709.D	01/23/15 03:01	AA	40	GCMSJ	TO-15
MSJ1510-ICC1510	J29712.D	01/23/15 11:17	AA	10	GCMSJ	TO-15
MSJ1510-IC1510	J29713.D	01/23/15 12:52	AA	0.5	GCMSJ	TO-15

Target Compound	RT (min.)	Istd RT (min.)	Rel RT	Mean Rel RT	Rel RT Range (+ /- .06)
Acetone	5.89	8.99	0.655 ok	0.656	0.596-0.716
Acrolein	5.76	8.99	0.641 ok	0.639	0.579-0.699
Acrylonitrile	6.32	8.99	0.703 ok	0.702	0.642-0.762
1,3-Butadiene	4.87	8.99	0.542 ok	0.541	0.481-0.601
Benzene	10.89	11.30	0.964 ok	0.964	0.904-1.024
Bromodichloromethane	12.20	11.30	1.080 ok	1.081	1.021-1.141
Bromoform	19.23	17.97	1.070 ok	1.070	1.010-1.130
Bromomethane	5.14	8.99	0.572 ok	0.571	0.511-0.631
Bromoethene	5.64	8.99	0.627 ok	0.627	0.567-0.687
n-Butylbenzene	25.60	17.97	1.425 ok	1.423	1.363-1.483
sec-Butylbenzene	24.38	17.97	1.357 ok	1.356	1.296-1.416
Benzyl Chloride	24.08	17.97	1.340 ok	1.339	1.279-1.399
Carbon disulfide	7.10	8.99	0.790 ok	0.789	0.729-0.849
Chlorobenzene	18.05	17.97	1.004 ok	1.005	0.945-1.065
Chloroethane	5.30	8.99	0.590 ok	0.589	0.529-0.649
Chloroform	9.12	8.99	1.014 ok	1.015	0.955-1.075
Chloromethane	4.51	8.99	0.502 ok	0.501	0.441-0.561
3-Chloropropene	6.87	8.99	0.764 ok	0.764	0.704-0.824
2-Chlorotoluene	22.20	17.97	1.235 ok	1.235	1.175-1.295
Carbon tetrachloride	11.07	8.99	1.231 ok	1.231	1.171-1.291
Cyclohexane	11.24	11.30	0.995 ok	0.994	0.934-1.054
1,1-Dichloroethane	7.90	8.99	0.879 ok	0.878	0.818-0.938
1,1-Dichloroethylene	6.64	8.99	0.739 ok	0.738	0.678-0.798
1,2-Dibromoethane	16.08	17.97	0.895 ok	0.895	0.835-0.955
1,2-Dichloroethane	10.00	8.99	1.112 ok	1.113	1.053-1.173
1,2-Dichloropropane	11.94	11.30	1.057 ok	1.058	0.998-1.118
1,3-Dichloropropane	15.01	11.30	1.328 ok	1.330	1.270-1.390
1,4-Dioxane	12.35	11.30	1.093 ok	1.099	1.039-1.159
Dichlorodifluoromethane	4.33	8.99	0.482 ok	0.481	0.421-0.541
Dibromochloromethane	15.67	17.97	0.872 ok	0.872	0.812-0.932
trans-1,2-Dichloroethylene	7.70	8.99	0.857 ok	0.856	0.796-0.916
cis-1,2-Dichloroethylene	8.80	8.99	0.979 ok	0.978	0.918-1.038
cis-1,3-Dichloropropene	13.47	11.30	1.192 ok	1.193	1.133-1.253
m-Dichlorobenzene	24.11	17.97	1.342 ok	1.341	1.281-1.401
o-Dichlorobenzene	25.00	17.97	1.391 ok	1.390	1.330-1.450
p-Dichlorobenzene	24.27	17.97	1.351 ok	1.350	1.290-1.410
trans-1,3-Dichloropropene	14.26	11.30	1.262 ok	1.262	1.202-1.322
Ethanol	5.55	8.99	0.617 ok	0.611	0.551-0.671
Ethylbenzene	18.74	17.97	1.043 ok	1.043	0.983-1.103
Ethyl Acetate	9.02	8.99	1.003 ok	1.003	0.943-1.063

Initial Calibration Retention Time/Internal Standard Area Summary

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Job Number: MC36556
Account: HMANNJP H2M Associates, Inc
Project: Macbeth, 617 Little Britain, New Windsor, NY

Sample Number	Lab File ID	Injected	By	Level	Inst ID	Method
MSJ1510-IC1510	J29702.D	01/22/15 21:30	AA	0.2	GCMSJ	TO-15
MSJ1510-IC1510	J29704.D	01/22/15 23:10	AA	2	GCMSJ	TO-15
MSJ1510-IC1510	J29705.D	01/22/15 23:53	AA	5	GCMSJ	TO-15
MSJ1510-IC1510	J29707.D	01/23/15 01:28	AA	20	GCMSJ	TO-15
MSJ1510-IC1510	J29708.D	01/23/15 02:15	AA	30	GCMSJ	TO-15
MSJ1510-IC1510	J29709.D	01/23/15 03:01	AA	40	GCMSJ	TO-15
MSJ1510-ICC1510	J29712.D	01/23/15 11:17	AA	10	GCMSJ	TO-15
MSJ1510-IC1510	J29713.D	01/23/15 12:52	AA	0.5	GCMSJ	TO-15

Reporting this level

Target Compound	RT (min.)	Istd RT (min.)	Rel RT	Mean Rel RT	Rel RT Range (+ /- .06)
4-Ethyltoluene	22.62	17.97	1.259 ok	1.258	1.198-1.318
Freon 113	7.00	8.99	0.779 ok	0.778	0.718-0.838
Freon 114	4.61	8.99	0.513 ok	0.511	0.451-0.571
Heptane	12.64	11.30	1.119 ok	1.118	1.058-1.178
Hexachlorobutadiene	29.09	17.97	1.619 ok	1.617	1.557-1.677
Hexane	9.02	8.99	1.003 ok	1.003	0.943-1.063
2-Hexanone	15.48	17.97	0.861 ok	0.863	0.803-0.923
Isopropylbenzene	21.18	17.97	1.179 ok	1.178	1.118-1.238
Isopropyl Alcohol	6.15	8.99	0.684 ok	0.692	0.632-0.752
p-Isopropyltoluene	24.74	17.97	1.377 ok	1.375	1.315-1.435
Methylene chloride	6.75	8.99	0.751 ok	0.750	0.690-0.810
Methyl ethyl ketone	8.33	8.99	0.927 ok	0.929	0.869-0.989
Methyl Isobutyl Ketone	13.58	11.30	1.202 ok	1.205	1.145-1.265
Methyl Tert Butyl Ether	7.97	8.99	0.887 ok	0.889	0.829-0.949
Methylmethacrylate	12.51	11.30	1.107 ok	1.108	1.048-1.168
Naphthalene	28.45	17.97	1.583 ok	1.581	1.521-1.641
Nonane	20.42	17.97	1.136 ok	1.136	1.076-1.196
Pentane	6.37	8.99	0.709 ok	0.707	0.647-0.767
Propylene	4.26	8.99	0.474 ok	0.473	0.413-0.533
Styrene	19.78	17.97	1.101 ok	1.100	1.040-1.160
1,1,1-Trichloroethane	10.31	8.99	1.147 ok	1.146	1.086-1.206
1,1,1,2-Tetrachloroethane	18.02	17.97	1.003 ok	1.003	0.943-1.063
1,1,2,2-Tetrachloroethane	19.98	17.97	1.112 ok	1.112	1.052-1.172
1,1,2-Trichloroethane	14.54	11.30	1.287 ok	1.288	1.228-1.348
1,2,4-Trichlorobenzene	28.25	17.97	1.572 ok	1.570	1.510-1.630
1,2,4-Trimethylbenzene	23.76	17.97	1.322 ok	1.321	1.261-1.381
1,3,5-Trimethylbenzene	22.80	17.97	1.269 ok	1.268	1.208-1.328
2,2,4-Trimethylpentane	12.29	11.30	1.088 ok	1.088	1.028-1.148
Tertiary Butyl Alcohol	6.73	8.99	0.749 ok	0.760	0.700-0.820
tert-Butylbenzene	23.75	17.97	1.322 ok	1.321	1.261-1.381
Tetrachloroethylene	16.85	17.97	0.938 ok	0.937	0.877-0.997
Tetrahydrofuran	9.64	8.99	1.072 ok	1.074	1.014-1.134
Toluene	14.97	11.30	1.325 ok	1.326	1.266-1.386
Trichloroethylene	12.26	11.30	1.085 ok	1.085	1.025-1.145
Trichlorofluoromethane	6.03	8.99	0.671 ok	0.670	0.610-0.730
Vinyl chloride	4.73	8.99	0.526 ok	0.525	0.465-0.585
Vinyl Acetate	8.03	8.99	0.893 ok	0.894	0.834-0.954
m,p-Xylene	19.09	17.97	1.062 ok	1.062	1.002-1.122
o-Xylene	19.99	17.97	1.112 ok	1.112	1.052-1.172

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Initial Calibration Retention Time/Internal Standard Area Summary

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Job Number: MC36556

Account: HMANNJP H2M Associates, Inc

Project: Macbeth, 617 Little Britain, New Windsor, NY

Sample Number	Lab File ID	Injected	By	Level	Inst ID	Method
MSJ1510-IC1510	J29702.D	01/22/15 21:30	AA	0.2	GCMSJ	TO-15
MSJ1510-IC1510	J29704.D	01/22/15 23:10	AA	2	GCMSJ	TO-15
MSJ1510-IC1510	J29705.D	01/22/15 23:53	AA	5	GCMSJ	TO-15
MSJ1510-IC1510	J29707.D	01/23/15 01:28	AA	20	GCMSJ	TO-15
MSJ1510-IC1510	J29708.D	01/23/15 02:15	AA	30	GCMSJ	TO-15
MSJ1510-IC1510	J29709.D	01/23/15 03:01	AA	40	GCMSJ	TO-15
MSJ1510-ICC1510	J29712.D	01/23/15 11:17	AA	10	GCMSJ	TO-15
MSJ1510-IC1510	J29713.D	01/23/15 12:52	AA	0.5	GCMSJ	TO-15

Reporting this level

Internal Standard	RT (min.)	Mean RT(min.)	RT Range (+ /- 0.33)	Area	Mean Area	Area Range (+ /- 40 %)
Bromochloromethane	8.99 ok	9.00	8.67-9.33	484773 ok	489028	293417-684639
1,4-Difluorobenzene	11.30 ok	11.31	10.98-11.64	2311570 ok	2377269	1426361-3328177
Chlorobenzene-D5	17.97 ok	17.99	17.66-18.32	1243312 ok	1208388	725033-1691743

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Initial Calibration Retention Time/Internal Standard Area Summary

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Job Number: MC36556
Account: HMANNJP H2M Associates, Inc
Project: Macbeth, 617 Little Britain, New Windsor, NY

Sample Number	Lab File ID	Injected	By	Level	Inst ID	Method
MSJ1510-IC1510	J29702.D	01/22/15 21:30	AA	0.2	GCMSJ	TO-15
MSJ1510-IC1510	J29704.D	01/22/15 23:10	AA	2	GCMSJ	TO-15
MSJ1510-IC1510	J29705.D	01/22/15 23:53	AA	5	GCMSJ	TO-15
MSJ1510-IC1510	J29707.D	01/23/15 01:28	AA	20	GCMSJ	TO-15
MSJ1510-IC1510	J29708.D	01/23/15 02:15	AA	30	GCMSJ	TO-15
MSJ1510-IC1510	J29709.D	01/23/15 03:01	AA	40	GCMSJ	TO-15
MSJ1510-ICC1510	J29712.D	01/23/15 11:17	AA	10	GCMSJ	TO-15
MSJ1510-IC1510	J29713.D	01/23/15 12:52	AA	0.5	GCMSJ	TO-15

Reporting this level

Target Compound	RT (min.)	Istd RT (min.)	Rel RT	Mean Rel RT	Rel RT Range (+ /- .06)
Acetone	5.87	9.00	0.652 ok	0.656	0.596-0.716
Acrolein	5.74	9.00	0.638 ok	0.639	0.579-0.699
Acrylonitrile	6.31	9.00	0.701 ok	0.702	0.642-0.762
1,3-Butadiene	4.87	9.00	0.541 ok	0.541	0.481-0.601
Benzene	10.90	11.32	0.963 ok	0.964	0.904-1.024
Bromodichloromethane	12.23	11.32	1.080 ok	1.081	1.021-1.141
Bromoform	19.28	18.00	1.071 ok	1.070	1.010-1.130
Bromomethane	5.14	9.00	0.571 ok	0.571	0.511-0.631
Bromoethene	5.64	9.00	0.627 ok	0.627	0.567-0.687
n-Butylbenzene	25.61	18.00	1.423 ok	1.423	1.363-1.483
sec-Butylbenzene	24.40	18.00	1.356 ok	1.356	1.296-1.416
Benzyl Chloride	24.10	18.00	1.339 ok	1.339	1.279-1.399
Carbon disulfide	7.10	9.00	0.789 ok	0.789	0.729-0.849
Chlorobenzene	18.08	18.00	1.004 ok	1.005	0.945-1.065
Chloroethane	5.30	9.00	0.589 ok	0.589	0.529-0.649
Chloroform	9.14	9.00	1.016 ok	1.015	0.955-1.075
Chloromethane	4.51	9.00	0.501 ok	0.501	0.441-0.561
3-Chloropropene	6.87	9.00	0.763 ok	0.764	0.704-0.824
2-Chlorotoluene	22.22	18.00	1.234 ok	1.235	1.175-1.295
Carbon tetrachloride	11.09	9.00	1.232 ok	1.231	1.171-1.291
Cyclohexane	11.24	11.32	0.993 ok	0.994	0.934-1.054
1,1-Dichloroethane	7.91	9.00	0.879 ok	0.878	0.818-0.938
1,1-Dichloroethylene	6.65	9.00	0.739 ok	0.738	0.678-0.798
1,2-Dibromoethane	16.12	18.00	0.896 ok	0.895	0.835-0.955
1,2-Dichloroethane	10.02	9.00	1.113 ok	1.113	1.053-1.173
1,2-Dichloropropane	11.97	11.32	1.057 ok	1.058	0.998-1.118
1,3-Dichloropropane	15.05	11.32	1.330 ok	1.330	1.270-1.390
1,4-Dioxane	12.34	11.32	1.090 ok	1.099	1.039-1.159
Dichlorodifluoromethane	4.34	9.00	0.482 ok	0.481	0.421-0.541
Dibromochloromethane	15.70	18.00	0.872 ok	0.872	0.812-0.932
trans-1,2-Dichloroethylene	7.70	9.00	0.856 ok	0.856	0.796-0.916
cis-1,2-Dichloroethylene	8.80	9.00	0.978 ok	0.978	0.918-1.038
cis-1,3-Dichloropropene	13.50	11.32	1.193 ok	1.193	1.133-1.253
m-Dichlorobenzene	24.14	18.00	1.341 ok	1.341	1.281-1.401
o-Dichlorobenzene	25.02	18.00	1.390 ok	1.390	1.330-1.450
p-Dichlorobenzene	24.29	18.00	1.349 ok	1.350	1.290-1.410
trans-1,3-Dichloropropene	14.29	11.32	1.262 ok	1.262	1.202-1.322
Ethanol	5.46	9.00	0.607 ok	0.611	0.551-0.671
Ethylbenzene	18.77	18.00	1.043 ok	1.043	0.983-1.103
Ethyl Acetate	9.03	9.00	1.003 ok	1.003	0.943-1.063

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Initial Calibration Retention Time/Internal Standard Area Summary

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Job Number: MC36556
Account: HMANNJP H2M Associates, Inc
Project: Macbeth, 617 Little Britain, New Windsor, NY

Sample Number	Lab File ID	Injected	By	Level	Inst ID	Method
MSJ1510-IC1510	J29702.D	01/22/15 21:30	AA	0.2	GCMSJ	TO-15
MSJ1510-IC1510	J29704.D	01/22/15 23:10	AA	2	GCMSJ	TO-15
MSJ1510-IC1510	J29705.D	01/22/15 23:53	AA	5	GCMSJ	TO-15
MSJ1510-IC1510	J29707.D	01/23/15 01:28	AA	20	GCMSJ	TO-15
MSJ1510-IC1510	J29708.D	01/23/15 02:15	AA	30	GCMSJ	TO-15
MSJ1510-IC1510	J29709.D	01/23/15 03:01	AA	40	GCMSJ	TO-15
MSJ1510-ICC1510	J29712.D	01/23/15 11:17	AA	10	GCMSJ	TO-15
MSJ1510-IC1510	J29713.D	01/23/15 12:52	AA	0.5	GCMSJ	TO-15

Reporting this level

Target Compound	RT (min.)	Istd RT (min.)	Rel RT	Mean Rel RT	Rel RT Range (+ /- .06)
4-Ethyltoluene	22.64	18.00	1.258 ok	1.258	1.198-1.318
Freon 113	7.00	9.00	0.778 ok	0.778	0.718-0.838
Freon 114	4.61	9.00	0.512 ok	0.511	0.451-0.571
Heptane	12.65	11.32	1.117 ok	1.118	1.058-1.178
Hexachlorobutadiene	29.09	18.00	1.616 ok	1.617	1.557-1.677
Hexane	9.02	9.00	1.002 ok	1.003	0.943-1.063
2-Hexanone	15.47	18.00	0.859 ok	0.863	0.803-0.923
Isopropylbenzene	21.21	18.00	1.178 ok	1.178	1.118-1.238
Isopropyl Alcohol	6.18	9.00	0.687 ok	0.692	0.632-0.752
p-Isopropyltoluene	24.76	18.00	1.376 ok	1.375	1.315-1.435
Methylene chloride	6.75	9.00	0.750 ok	0.750	0.690-0.810
Methyl ethyl ketone	8.34	9.00	0.927 ok	0.929	0.869-0.989
Methyl Isobutyl Ketone	13.59	11.32	1.201 ok	1.205	1.145-1.265
Methyl Tert Butyl Ether	7.97	9.00	0.886 ok	0.889	0.829-0.949
Methylmethacrylate	12.53	11.32	1.107 ok	1.108	1.048-1.168
Naphthalene	28.45	18.00	1.581 ok	1.581	1.521-1.641
Nonane	20.44	18.00	1.136 ok	1.136	1.076-1.196
Pentane	6.37	9.00	0.708 ok	0.707	0.647-0.767
Propylene	4.26	9.00	0.473 ok	0.473	0.413-0.533
Styrene	19.81	18.00	1.101 ok	1.100	1.040-1.160
1,1,1-Trichloroethane	10.32	9.00	1.147 ok	1.146	1.086-1.206
1,1,1,2-Tetrachloroethane	18.06	18.00	1.003 ok	1.003	0.943-1.063
1,1,2,2-Tetrachloroethane	20.02	18.00	1.112 ok	1.112	1.052-1.172
1,1,2-Trichloroethane	14.57	11.32	1.287 ok	1.288	1.228-1.348
1,2,4-Trichlorobenzene	28.25	18.00	1.569 ok	1.570	1.510-1.630
1,2,4-Trimethylbenzene	23.79	18.00	1.322 ok	1.321	1.261-1.381
1,3,5-Trimethylbenzene	22.83	18.00	1.268 ok	1.268	1.208-1.328
2,2,4-Trimethylpentane	12.31	11.32	1.087 ok	1.088	1.028-1.148
Tertiary Butyl Alcohol	6.78	9.00	0.753 ok	0.760	0.700-0.820
tert-Butylbenzene	23.77	18.00	1.321 ok	1.321	1.261-1.381
Tetrachloroethylene	16.87	18.00	0.937 ok	0.937	0.877-0.997
Tetrahydrofuran	9.63	9.00	1.070 ok	1.074	1.014-1.134
Toluene	15.00	11.32	1.325 ok	1.326	1.266-1.386
Trichloroethylene	12.28	11.32	1.085 ok	1.085	1.025-1.145
Trichlorofluoromethane	6.04	9.00	0.671 ok	0.670	0.610-0.730
Vinyl chloride	4.73	9.00	0.526 ok	0.525	0.465-0.585
Vinyl Acetate	8.04	9.00	0.893 ok	0.894	0.834-0.954
m,p-Xylene	19.12	18.00	1.062 ok	1.062	1.002-1.122
o-Xylene	20.02	18.00	1.112 ok	1.112	1.052-1.172

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Initial Calibration Retention Time/Internal Standard Area Summary

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Job Number: MC36556

Account: HMANNJP H2M Associates, Inc

Project: Macbeth, 617 Little Britain, New Windsor, NY

Sample Number	Lab File ID	Injected	By	Level	Inst ID	Method
MSJ1510-IC1510	J29702.D	01/22/15 21:30	AA	0.2	GCMSJ	TO-15
MSJ1510-IC1510	J29704.D	01/22/15 23:10	AA	2	GCMSJ	TO-15
MSJ1510-IC1510	J29705.D	01/22/15 23:53	AA	5	GCMSJ	TO-15
MSJ1510-IC1510	J29707.D	01/23/15 01:28	AA	20	GCMSJ	TO-15
MSJ1510-IC1510	J29708.D	01/23/15 02:15	AA	30	GCMSJ	TO-15
MSJ1510-IC1510	J29709.D	01/23/15 03:01	AA	40	GCMSJ	TO-15
MSJ1510-ICC1510	J29712.D	01/23/15 11:17	AA	10	GCMSJ	TO-15
MSJ1510-IC1510	J29713.D	01/23/15 12:52	AA	0.5	GCMSJ	TO-15

Reporting this level

Internal Standard	RT (min.)	Mean RT(min.)	RT Range (+ /- 0.33)	Area	Mean Area	Area Range (+ /- 40 %)
Bromochloromethane	9.00 ok	9.00	8.67-9.33	516682 ok	489028	293417-684639
1,4-Difluorobenzene	11.32 ok	11.31	10.98-11.64	2444961 ok	2377269	1426361-3328177
Chlorobenzene-D5	18.00 ok	17.99	17.66-18.32	1455912 ok	1208388	725033-1691743

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Initial Calibration Retention Time/Internal Standard Area Summary

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Job Number: MC36556
Account: HMANNJP H2M Associates, Inc
Project: Macbeth, 617 Little Britain, New Windsor, NY

Sample Number	Lab File ID	Injected	By	Level	Inst ID	Method
MSJ1510-IC1510	J29702.D	01/22/15 21:30	AA	0.2	GCMSJ	TO-15
MSJ1510-IC1510	J29704.D	01/22/15 23:10	AA	2	GCMSJ	TO-15
MSJ1510-IC1510	J29705.D	01/22/15 23:53	AA	5	GCMSJ	TO-15
MSJ1510-IC1510	J29707.D	01/23/15 01:28	AA	20	GCMSJ	TO-15
MSJ1510-IC1510	J29708.D	01/23/15 02:15	AA	30	GCMSJ	TO-15
MSJ1510-IC1510	J29709.D	01/23/15 03:01	AA	40	GCMSJ	TO-15
MSJ1510-ICC1510	J29712.D	01/23/15 11:17	AA	10	GCMSJ	TO-15
MSJ1510-IC1510	J29713.D	01/23/15 12:52	AA	0.5	GCMSJ	TO-15

Reporting this level

Target Compound	RT (min.)	Istd RT (min.)	Rel RT	Mean Rel RT	Rel RT Range (+ /- .06)
Acetone	5.86	9.00	0.651 ok	0.656	0.596-0.716
Acrolein	5.73	9.00	0.637 ok	0.639	0.579-0.699
Acrylonitrile	6.30	9.00	0.700 ok	0.702	0.642-0.762
1,3-Butadiene	4.86	9.00	0.540 ok	0.541	0.481-0.601
Benzene	10.90	11.32	0.963 ok	0.964	0.904-1.024
Bromodichloromethane	12.24	11.32	1.081 ok	1.081	1.021-1.141
Bromoform	19.30	18.02	1.071 ok	1.070	1.010-1.130
Bromomethane	5.13	9.00	0.570 ok	0.571	0.511-0.631
Bromoethene	5.63	9.00	0.626 ok	0.627	0.567-0.687
n-Butylbenzene	25.61	18.02	1.421 ok	1.423	1.363-1.483
sec-Butylbenzene	24.41	18.02	1.355 ok	1.356	1.296-1.416
Benzyl Chloride	24.12	18.02	1.339 ok	1.339	1.279-1.399
Carbon disulfide	7.09	9.00	0.788 ok	0.789	0.729-0.849
Chlorobenzene	18.10	18.02	1.004 ok	1.005	0.945-1.065
Chloroethane	5.29	9.00	0.588 ok	0.589	0.529-0.649
Chloroform	9.14	9.00	1.016 ok	1.015	0.955-1.075
Chloromethane	4.50	9.00	0.500 ok	0.501	0.441-0.561
3-Chloropropene	6.86	9.00	0.762 ok	0.764	0.704-0.824
2-Chlorotoluene	22.24	18.02	1.234 ok	1.235	1.175-1.295
Carbon tetrachloride	11.09	9.00	1.232 ok	1.231	1.171-1.291
Cyclohexane	11.24	11.32	0.993 ok	0.994	0.934-1.054
1,1-Dichloroethane	7.90	9.00	0.878 ok	0.878	0.818-0.938
1,1-Dichloroethylene	6.64	9.00	0.738 ok	0.738	0.678-0.798
1,2-Dibromoethane	16.14	18.02	0.896 ok	0.895	0.835-0.955
1,2-Dichloroethane	10.02	9.00	1.113 ok	1.113	1.053-1.173
1,2-Dichloropropane	11.98	11.32	1.058 ok	1.058	0.998-1.118
1,3-Dichloropropane	15.07	11.32	1.331 ok	1.330	1.270-1.390
1,4-Dioxane	12.35	11.32	1.091 ok	1.099	1.039-1.159
Dichlorodifluoromethane	4.33	9.00	0.481 ok	0.481	0.421-0.541
Dibromochloromethane	15.73	18.02	0.873 ok	0.872	0.812-0.932
trans-1,2-Dichloroethylene	7.69	9.00	0.854 ok	0.856	0.796-0.916
cis-1,2-Dichloroethylene	8.80	9.00	0.978 ok	0.978	0.918-1.038
cis-1,3-Dichloropropene	13.50	11.32	1.193 ok	1.193	1.133-1.253
m-Dichlorobenzene	24.15	18.02	1.340 ok	1.341	1.281-1.401
o-Dichlorobenzene	25.02	18.02	1.388 ok	1.390	1.330-1.450
p-Dichlorobenzene	24.30	18.02	1.349 ok	1.350	1.290-1.410
trans-1,3-Dichloropropene	14.30	11.32	1.263 ok	1.262	1.202-1.322
Ethanol	5.45	9.00	0.606 ok	0.611	0.551-0.671
Ethylbenzene	18.79	18.02	1.043 ok	1.043	0.983-1.103
Ethyl Acetate	9.03	9.00	1.003 ok	1.003	0.943-1.063

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Job Number: MC36556
Account: HMANNJP H2M Associates, Inc
Project: Macbeth, 617 Little Britain, New Windsor, NY

Sample Number	Lab File ID	Injected	By	Level	Inst ID	Method
MSJ1510-IC1510	J29702.D	01/22/15 21:30	AA	0.2	GCMSJ	TO-15
MSJ1510-IC1510	J29704.D	01/22/15 23:10	AA	2	GCMSJ	TO-15
MSJ1510-IC1510	J29705.D	01/22/15 23:53	AA	5	GCMSJ	TO-15
MSJ1510-IC1510	J29707.D	01/23/15 01:28	AA	20	GCMSJ	TO-15
MSJ1510-IC1510	J29708.D	01/23/15 02:15	AA	30	GCMSJ	TO-15
MSJ1510-IC1510	J29709.D	01/23/15 03:01	AA	40	GCMSJ	TO-15
MSJ1510-ICC1510	J29712.D	01/23/15 11:17	AA	10	GCMSJ	TO-15
MSJ1510-IC1510	J29713.D	01/23/15 12:52	AA	0.5	GCMSJ	TO-15

Reporting this level

Target Compound	RT (min.)	Istd RT (min.)	Rel RT	Mean Rel RT	Rel RT Range (+ /- .06)
4-Ethyltoluene	22.66	18.02	1.257 ok	1.258	1.198-1.318
Freon 113	6.99	9.00	0.777 ok	0.778	0.718-0.838
Freon 114	4.59	9.00	0.510 ok	0.511	0.451-0.571
Heptane	12.66	11.32	1.118 ok	1.118	1.058-1.178
Hexachlorobutadiene	29.10	18.02	1.615 ok	1.617	1.557-1.677
Hexane	9.02	9.00	1.002 ok	1.003	0.943-1.063
2-Hexanone	15.48	18.02	0.859 ok	0.863	0.803-0.923
Isopropylbenzene	21.22	18.02	1.178 ok	1.178	1.118-1.238
Isopropyl Alcohol	6.19	9.00	0.688 ok	0.692	0.632-0.752
p-Isopropyltoluene	24.76	18.02	1.374 ok	1.375	1.315-1.435
Methylene chloride	6.74	9.00	0.749 ok	0.750	0.690-0.810
Methyl ethyl ketone	8.35	9.00	0.928 ok	0.929	0.869-0.989
Methyl Isobutyl Ketone	13.62	11.32	1.203 ok	1.205	1.145-1.265
Methyl Tert Butyl Ether	7.95	9.00	0.883 ok	0.889	0.829-0.949
Methylmethacrylate	12.55	11.32	1.109 ok	1.108	1.048-1.168
Naphthalene	28.45	18.02	1.579 ok	1.581	1.521-1.641
Nonane	20.45	18.02	1.135 ok	1.136	1.076-1.196
Pentane	6.35	9.00	0.706 ok	0.707	0.647-0.767
Propylene	4.25	9.00	0.472 ok	0.473	0.413-0.533
Styrene	19.83	18.02	1.100 ok	1.100	1.040-1.160
1,1,1-Trichloroethane	10.32	9.00	1.147 ok	1.146	1.086-1.206
1,1,1,2-Tetrachloroethane	18.07	18.02	1.003 ok	1.003	0.943-1.063
1,1,2,2-Tetrachloroethane	20.03	18.02	1.112 ok	1.112	1.052-1.172
1,1,2-Trichloroethane	14.60	11.32	1.290 ok	1.288	1.228-1.348
1,2,4-Trichlorobenzene	28.25	18.02	1.568 ok	1.570	1.510-1.630
1,2,4-Trimethylbenzene	23.80	18.02	1.321 ok	1.321	1.261-1.381
1,3,5-Trimethylbenzene	22.84	18.02	1.267 ok	1.268	1.208-1.328
2,2,4-Trimethylpentane	12.31	11.32	1.087 ok	1.088	1.028-1.148
Tertiary Butyl Alcohol	6.80	9.00	0.756 ok	0.760	0.700-0.820
tert-Butylbenzene	23.78	18.02	1.320 ok	1.321	1.261-1.381
Tetrachloroethylene	16.88	18.02	0.937 ok	0.937	0.877-0.997
Tetrahydrofuran	9.63	9.00	1.070 ok	1.074	1.014-1.134
Toluene	15.01	11.32	1.326 ok	1.326	1.266-1.386
Trichloroethylene	12.28	11.32	1.085 ok	1.085	1.025-1.145
Trichlorofluoromethane	6.02	9.00	0.669 ok	0.670	0.610-0.730
Vinyl chloride	4.72	9.00	0.524 ok	0.525	0.465-0.585
Vinyl Acetate	8.04	9.00	0.893 ok	0.894	0.834-0.954
m,p-Xylene	19.13	18.02	1.062 ok	1.062	1.002-1.122
o-Xylene	20.03	18.02	1.112 ok	1.112	1.052-1.172

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Initial Calibration Retention Time/Internal Standard Area Summary

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Job Number: MC36556

Account: HMANNJP H2M Associates, Inc

Project: Macbeth, 617 Little Britain, New Windsor, NY

Sample Number	Lab File ID	Injected	By	Level	Inst ID	Method
MSJ1510-IC1510	J29702.D	01/22/15 21:30	AA	0.2	GCMSJ	TO-15
MSJ1510-IC1510	J29704.D	01/22/15 23:10	AA	2	GCMSJ	TO-15
MSJ1510-IC1510	J29705.D	01/22/15 23:53	AA	5	GCMSJ	TO-15
MSJ1510-IC1510	J29707.D	01/23/15 01:28	AA	20	GCMSJ	TO-15
MSJ1510-IC1510	J29708.D	01/23/15 02:15	AA	30	GCMSJ	TO-15
MSJ1510-IC1510	J29709.D	01/23/15 03:01	AA	40	GCMSJ	TO-15
MSJ1510-ICC1510	J29712.D	01/23/15 11:17	AA	10	GCMSJ	TO-15
MSJ1510-IC1510	J29713.D	01/23/15 12:52	AA	0.5	GCMSJ	TO-15

Reporting this level

Internal Standard	RT (min.)	Mean RT(min.)	RT Range (+ /- 0.33)	Area	Mean Area	Area Range (+ /- 40 %)
Bromochloromethane	9.00 ok	9.00	8.67-9.33	462055 ok	489028	293417-684639
1,4-Difluorobenzene	11.32 ok	11.31	10.98-11.64	2292570 ok	2377269	1426361-3328177
Chlorobenzene-D5	18.02 ok	17.99	17.66-18.32	1213611 ok	1208388	725033-1691743

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Initial Calibration Retention Time/Internal Standard Area Summary

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Job Number: MC36556
Account: HMANNJP H2M Associates, Inc
Project: Macbeth, 617 Little Britain, New Windsor, NY

Sample Number	Lab File ID	Injected	By	Level	Inst ID	Method
MSJ1510-IC1510	J29702.D	01/22/15 21:30	AA	0.2	GCMSJ	TO-15
MSJ1510-IC1510	J29704.D	01/22/15 23:10	AA	2	GCMSJ	TO-15
MSJ1510-IC1510	J29705.D	01/22/15 23:53	AA	5	GCMSJ	TO-15
MSJ1510-IC1510	J29707.D	01/23/15 01:28	AA	20	GCMSJ	TO-15
MSJ1510-IC1510	J29708.D	01/23/15 02:15	AA	30	GCMSJ	TO-15
MSJ1510-IC1510	J29709.D	01/23/15 03:01	AA	40	GCMSJ	TO-15
MSJ1510-ICC1510	J29712.D	01/23/15 11:17	AA	10	GCMSJ	TO-15
MSJ1510-IC1510	J29713.D	01/23/15 12:52	AA	0.5	GCMSJ	TO-15

Reporting this level

Target Compound	RT (min.)	Istd RT (min.)	Rel RT	Mean Rel RT	Rel RT Range (+ /- .06)
Acetone	5.87	9.02	0.651 ok	0.656	0.596-0.716
Acrolein	5.74	9.02	0.636 ok	0.639	0.579-0.699
Acrylonitrile	6.32	9.02	0.701 ok	0.702	0.642-0.762
1,3-Butadiene	4.86	9.02	0.539 ok	0.541	0.481-0.601
Benzene	10.92	11.35	0.962 ok	0.964	0.904-1.024
Bromodichloromethane	12.27	11.35	1.081 ok	1.081	1.021-1.141
Bromoform	19.34	18.05	1.071 ok	1.070	1.010-1.130
Bromomethane	5.14	9.02	0.570 ok	0.571	0.511-0.631
Bromoethene	5.64	9.02	0.625 ok	0.627	0.567-0.687
n-Butylbenzene	25.63	18.05	1.420 ok	1.423	1.363-1.483
sec-Butylbenzene	24.43	18.05	1.353 ok	1.356	1.296-1.416
Benzyl Chloride	24.14	18.05	1.337 ok	1.339	1.279-1.399
Carbon disulfide	7.10	9.02	0.787 ok	0.789	0.729-0.849
Chlorobenzene	18.13	18.05	1.004 ok	1.005	0.945-1.065
Chloroethane	5.30	9.02	0.588 ok	0.589	0.529-0.649
Chloroform	9.16	9.02	1.016 ok	1.015	0.955-1.075
Chloromethane	4.50	9.02	0.499 ok	0.501	0.441-0.561
3-Chloropropene	6.88	9.02	0.763 ok	0.764	0.704-0.824
2-Chlorotoluene	22.26	18.05	1.233 ok	1.235	1.175-1.295
Carbon tetrachloride	11.10	9.02	1.231 ok	1.231	1.171-1.291
Cyclohexane	11.26	11.35	0.992 ok	0.994	0.934-1.054
1,1-Dichloroethane	7.92	9.02	0.878 ok	0.878	0.818-0.938
1,1-Dichloroethylene	6.65	9.02	0.737 ok	0.738	0.678-0.798
1,2-Dibromoethane	16.18	18.05	0.896 ok	0.895	0.835-0.955
1,2-Dichloroethane	10.05	9.02	1.114 ok	1.113	1.053-1.173
1,2-Dichloropropane	12.00	11.35	1.057 ok	1.058	0.998-1.118
1,3-Dichloropropane	15.10	11.35	1.330 ok	1.330	1.270-1.390
1,4-Dioxane	12.41	11.35	1.093 ok	1.099	1.039-1.159
Dichlorodifluoromethane	4.33	9.02	0.480 ok	0.481	0.421-0.541
Dibromochloromethane	15.76	18.05	0.873 ok	0.872	0.812-0.932
trans-1,2-Dichloroethylene	7.70	9.02	0.854 ok	0.856	0.796-0.916
cis-1,2-Dichloroethylene	8.82	9.02	0.978 ok	0.978	0.918-1.038
cis-1,3-Dichloropropene	13.53	11.35	1.192 ok	1.193	1.133-1.253
m-Dichlorobenzene	24.17	18.05	1.339 ok	1.341	1.281-1.401
o-Dichlorobenzene	25.04	18.05	1.387 ok	1.390	1.330-1.450
p-Dichlorobenzene	24.32	18.05	1.347 ok	1.350	1.290-1.410
trans-1,3-Dichloropropene	14.33	11.35	1.263 ok	1.262	1.202-1.322
Ethanol	5.48	9.02	0.608 ok	0.611	0.551-0.671
Ethylbenzene	18.81	18.05	1.042 ok	1.043	0.983-1.103
Ethyl Acetate	9.04	9.02	1.002 ok	1.003	0.943-1.063

Initial Calibration Retention Time/Internal Standard Area Summary

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Job Number: MC36556
Account: HMANNJP H2M Associates, Inc
Project: Macbeth, 617 Little Britain, New Windsor, NY

Sample Number	Lab File ID	Injected	By	Level	Inst ID	Method
MSJ1510-IC1510	J29702.D	01/22/15 21:30	AA	0.2	GCMSJ	TO-15
MSJ1510-IC1510	J29704.D	01/22/15 23:10	AA	2	GCMSJ	TO-15
MSJ1510-IC1510	J29705.D	01/22/15 23:53	AA	5	GCMSJ	TO-15
MSJ1510-IC1510	J29707.D	01/23/15 01:28	AA	20	GCMSJ	TO-15
MSJ1510-IC1510	J29708.D	01/23/15 02:15	AA	30	GCMSJ	TO-15
MSJ1510-IC1510	J29709.D	01/23/15 03:01	AA	40	GCMSJ	TO-15
MSJ1510-ICC1510	J29712.D	01/23/15 11:17	AA	10	GCMSJ	TO-15
MSJ1510-IC1510	J29713.D	01/23/15 12:52	AA	0.5	GCMSJ	TO-15

Reporting this level

Target Compound	RT (min.)	Istd RT (min.)	Rel RT	Mean Rel RT	Rel RT Range (+ /- .06)
4-Ethyltoluene	22.68	18.05	1.257 ok	1.258	1.198-1.318
Freon 113	7.00	9.02	0.776 ok	0.778	0.718-0.838
Freon 114	4.60	9.02	0.510 ok	0.511	0.451-0.571
Heptane	12.67	11.35	1.116 ok	1.118	1.058-1.178
Hexachlorobutadiene	29.10	18.05	1.612 ok	1.617	1.557-1.677
Hexane	9.03	9.02	1.001 ok	1.003	0.943-1.063
2-Hexanone	15.53	18.05	0.860 ok	0.863	0.803-0.923
Isopropylbenzene	21.25	18.05	1.177 ok	1.178	1.118-1.238
Isopropyl Alcohol	6.27	9.02	0.695 ok	0.692	0.632-0.752
p-Isopropyltoluene	24.77	18.05	1.372 ok	1.375	1.315-1.435
Methylene chloride	6.75	9.02	0.748 ok	0.750	0.690-0.810
Methyl ethyl ketone	8.38	9.02	0.929 ok	0.929	0.869-0.989
Methyl Isobutyl Ketone	13.67	11.35	1.204 ok	1.205	1.145-1.265
Methyl Tert Butyl Ether	7.97	9.02	0.884 ok	0.889	0.829-0.949
Methylmethacrylate	12.58	11.35	1.108 ok	1.108	1.048-1.168
Naphthalene	28.45	18.05	1.576 ok	1.581	1.521-1.641
Nonane	20.47	18.05	1.134 ok	1.136	1.076-1.196
Pentane	6.37	9.02	0.706 ok	0.707	0.647-0.767
Propylene	4.26	9.02	0.472 ok	0.473	0.413-0.533
Styrene	19.85	18.05	1.100 ok	1.100	1.040-1.160
1,1,1-Trichloroethane	10.34	9.02	1.146 ok	1.146	1.086-1.206
1,1,1,2-Tetrachloroethane	18.10	18.05	1.003 ok	1.003	0.943-1.063
1,1,2,2-Tetrachloroethane	20.07	18.05	1.112 ok	1.112	1.052-1.172
1,1,2-Trichloroethane	14.63	11.35	1.289 ok	1.288	1.228-1.348
1,2,4-Trichlorobenzene	28.25	18.05	1.565 ok	1.570	1.510-1.630
1,2,4-Trimethylbenzene	23.82	18.05	1.320 ok	1.321	1.261-1.381
1,3,5-Trimethylbenzene	22.86	18.05	1.266 ok	1.268	1.208-1.328
2,2,4-Trimethylpentane	12.33	11.35	1.086 ok	1.088	1.028-1.148
Tertiary Butyl Alcohol	6.90	9.02	0.765 ok	0.760	0.700-0.820
tert-Butylbenzene	23.79	18.05	1.318 ok	1.321	1.261-1.381
Tetrachloroethylene	16.89	18.05	0.936 ok	0.937	0.877-0.997
Tetrahydrofuran	9.65	9.02	1.070 ok	1.074	1.014-1.134
Toluene	15.03	11.35	1.324 ok	1.326	1.266-1.386
Trichloroethylene	12.30	11.35	1.084 ok	1.085	1.025-1.145
Trichlorofluoromethane	6.03	9.02	0.669 ok	0.670	0.610-0.730
Vinyl chloride	4.73	9.02	0.524 ok	0.525	0.465-0.585
Vinyl Acetate	8.06	9.02	0.894 ok	0.894	0.834-0.954
m,p-Xylene	19.16	18.05	1.061 ok	1.062	1.002-1.122
o-Xylene	20.07	18.05	1.112 ok	1.112	1.052-1.172

Initial Calibration Retention Time/Internal Standard Area Summary

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Job Number: MC36556

Account: HMANNJP H2M Associates, Inc

Project: Macbeth, 617 Little Britain, New Windsor, NY

Sample Number	Lab File ID	Injected	By	Level	Inst ID	Method
MSJ1510-IC1510	J29702.D	01/22/15 21:30	AA	0.2	GCMSJ	TO-15
MSJ1510-IC1510	J29704.D	01/22/15 23:10	AA	2	GCMSJ	TO-15
MSJ1510-IC1510	J29705.D	01/22/15 23:53	AA	5	GCMSJ	TO-15
MSJ1510-IC1510	J29707.D	01/23/15 01:28	AA	20	GCMSJ	TO-15
MSJ1510-IC1510	J29708.D	01/23/15 02:15	AA	30	GCMSJ	TO-15
MSJ1510-IC1510	J29709.D	01/23/15 03:01	AA	40	GCMSJ	TO-15
MSJ1510-ICC1510	J29712.D	01/23/15 11:17	AA	10	GCMSJ	TO-15
MSJ1510-IC1510	J29713.D	01/23/15 12:52	AA	0.5	GCMSJ	TO-15

Reporting this level

Internal Standard	RT (min.)	Mean RT(min.)	RT Range (+ /- 0.33)	Area	Mean Area	Area Range (+ /- 40 %)
Bromochloromethane	9.02 ok	9.00	8.67-9.33	498061 ok	489028	293417-684639
1,4-Difluorobenzene	11.35 ok	11.31	10.98-11.64	2697103 ok	2377269	1426361-3328177
Chlorobenzene-D5	18.05 ok	17.99	17.66-18.32	1528268 ok	1208388	725033-1691743

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Initial Calibration Retention Time/Internal Standard Area Summary

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Job Number: MC36556
Account: HMANNJP H2M Associates, Inc
Project: Macbeth, 617 Little Britain, New Windsor, NY

Sample Number	Lab File ID	Injected	By	Level	Inst ID	Method
MSJ1510-IC1510	J29702.D	01/22/15 21:30	AA	0.2	GCMSJ	TO-15
MSJ1510-IC1510	J29704.D	01/22/15 23:10	AA	2	GCMSJ	TO-15
MSJ1510-IC1510	J29705.D	01/22/15 23:53	AA	5	GCMSJ	TO-15
MSJ1510-IC1510	J29707.D	01/23/15 01:28	AA	20	GCMSJ	TO-15
MSJ1510-IC1510	J29708.D	01/23/15 02:15	AA	30	GCMSJ	TO-15
MSJ1510-IC1510	J29709.D	01/23/15 03:01	AA	40	GCMSJ	TO-15
MSJ1510-ICC1510	J29712.D	01/23/15 11:17	AA	10	GCMSJ	TO-15 Reporting this level
MSJ1510-IC1510	J29713.D	01/23/15 12:52	AA	0.5	GCMSJ	TO-15

Target Compound	RT (min.)	Istd RT (min.)	Rel RT	Mean Rel RT	Rel RT Range (+ /- .06)
Acetone	5.88	9.00	0.653 ok	0.656	0.596-0.716
Acrolein	5.75	9.00	0.639 ok	0.639	0.579-0.699
Acrylonitrile	6.32	9.00	0.702 ok	0.702	0.642-0.762
1,3-Butadiene	4.87	9.00	0.541 ok	0.541	0.481-0.601
Benzene	10.90	11.31	0.964 ok	0.964	0.904-1.024
Bromodichloromethane	12.22	11.31	1.080 ok	1.081	1.021-1.141
Bromoform	19.27	18.00	1.071 ok	1.070	1.010-1.130
Bromomethane	5.14	9.00	0.571 ok	0.571	0.511-0.631
Bromoethene	5.64	9.00	0.627 ok	0.627	0.567-0.687
n-Butylbenzene	25.61	18.00	1.423 ok	1.423	1.363-1.483
sec-Butylbenzene	24.40	18.00	1.356 ok	1.356	1.296-1.416
Benzyl Chloride	24.10	18.00	1.339 ok	1.339	1.279-1.399
Carbon disulfide	7.10	9.00	0.789 ok	0.789	0.729-0.849
Chlorobenzene	18.08	18.00	1.004 ok	1.005	0.945-1.065
Chloroethane	5.30	9.00	0.589 ok	0.589	0.529-0.649
Chloroform	9.13	9.00	1.014 ok	1.015	0.955-1.075
Chloromethane	4.51	9.00	0.501 ok	0.501	0.441-0.561
3-Chloropropene	6.87	9.00	0.763 ok	0.764	0.704-0.824
2-Chlorotoluene	22.22	18.00	1.234 ok	1.235	1.175-1.295
Carbon tetrachloride	11.08	9.00	1.231 ok	1.231	1.171-1.291
Cyclohexane	11.24	11.31	0.994 ok	0.994	0.934-1.054
1,1-Dichloroethane	7.90	9.00	0.878 ok	0.878	0.818-0.938
1,1-Dichloroethylene	6.64	9.00	0.738 ok	0.738	0.678-0.798
1,2-Dibromoethane	16.12	18.00	0.896 ok	0.895	0.835-0.955
1,2-Dichloroethane	10.01	9.00	1.112 ok	1.113	1.053-1.173
1,2-Dichloropropane	11.96	11.31	1.057 ok	1.058	0.998-1.118
1,3-Dichloropropane	15.04	11.31	1.330 ok	1.330	1.270-1.390
1,4-Dioxane	12.36	11.31	1.093 ok	1.099	1.039-1.159
Dichlorodifluoromethane	4.34	9.00	0.482 ok	0.481	0.421-0.541
Dibromochloromethane	15.70	18.00	0.872 ok	0.872	0.812-0.932
trans-1,2-Dichloroethylene	7.70	9.00	0.856 ok	0.856	0.796-0.916
cis-1,2-Dichloroethylene	8.80	9.00	0.978 ok	0.978	0.918-1.038
cis-1,3-Dichloropropene	13.49	11.31	1.193 ok	1.193	1.133-1.253
m-Dichlorobenzene	24.14	18.00	1.341 ok	1.341	1.281-1.401
o-Dichlorobenzene	25.02	18.00	1.390 ok	1.390	1.330-1.450
p-Dichlorobenzene	24.29	18.00	1.349 ok	1.350	1.290-1.410
trans-1,3-Dichloropropene	14.28	11.31	1.263 ok	1.262	1.202-1.322
Ethanol	5.50	9.00	0.611 ok	0.611	0.551-0.671
Ethylbenzene	18.77	18.00	1.043 ok	1.043	0.983-1.103
Ethyl Acetate	9.03	9.00	1.003 ok	1.003	0.943-1.063

Initial Calibration Retention Time/Internal Standard Area Summary

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Job Number: MC36556

Account: HMANNJP H2M Associates, Inc

Project: Macbeth, 617 Little Britain, New Windsor, NY

Sample Number	Lab File ID	Injected	By	Level	Inst ID	Method
MSJ1510-IC1510	J29702.D	01/22/15 21:30	AA	0.2	GCMSJ	TO-15
MSJ1510-IC1510	J29704.D	01/22/15 23:10	AA	2	GCMSJ	TO-15
MSJ1510-IC1510	J29705.D	01/22/15 23:53	AA	5	GCMSJ	TO-15
MSJ1510-IC1510	J29707.D	01/23/15 01:28	AA	20	GCMSJ	TO-15
MSJ1510-IC1510	J29708.D	01/23/15 02:15	AA	30	GCMSJ	TO-15
MSJ1510-IC1510	J29709.D	01/23/15 03:01	AA	40	GCMSJ	TO-15
MSJ1510-ICC1510	J29712.D	01/23/15 11:17	AA	10	GCMSJ	TO-15
MSJ1510-IC1510	J29713.D	01/23/15 12:52	AA	0.5	GCMSJ	TO-15

Reporting this level

Target Compound	RT (min.)	Istd RT (min.)	Rel RT	Mean Rel RT	Rel RT Range (+ /- .06)
4-Ethyltoluene	22.64	18.00	1.258 ok	1.258	1.198-1.318
Freon 113	7.00	9.00	0.778 ok	0.778	0.718-0.838
Freon 114	4.61	9.00	0.512 ok	0.511	0.451-0.571
Heptane	12.65	11.31	1.118 ok	1.118	1.058-1.178
Hexachlorobutadiene	29.09	18.00	1.616 ok	1.617	1.557-1.677
Hexane	9.02	9.00	1.002 ok	1.003	0.943-1.063
2-Hexanone	15.50	18.00	0.861 ok	0.863	0.803-0.923
Isopropylbenzene	21.21	18.00	1.178 ok	1.178	1.118-1.238
Isopropyl Alcohol	6.18	9.00	0.687 ok	0.692	0.632-0.752
p-Isopropyltoluene	24.76	18.00	1.376 ok	1.375	1.315-1.435
Methylene chloride	6.75	9.00	0.750 ok	0.750	0.690-0.810
Methyl ethyl ketone	8.34	9.00	0.927 ok	0.929	0.869-0.989
Methyl Isobutyl Ketone	13.61	11.31	1.203 ok	1.205	1.145-1.265
Methyl Tert Butyl Ether	7.97	9.00	0.886 ok	0.889	0.829-0.949
Methylmethacrylate	12.53	11.31	1.108 ok	1.108	1.048-1.168
Naphthalene	28.44	18.00	1.580 ok	1.581	1.521-1.641
Nonane	20.44	18.00	1.136 ok	1.136	1.076-1.196
Pentane	6.37	9.00	0.708 ok	0.707	0.647-0.767
Propylene	4.26	9.00	0.473 ok	0.473	0.413-0.533
Styrene	19.81	18.00	1.101 ok	1.100	1.040-1.160
1,1,1-Trichloroethane	10.31	9.00	1.146 ok	1.146	1.086-1.206
1,1,1,2-Tetrachloroethane	18.05	18.00	1.003 ok	1.003	0.943-1.063
1,1,2,2-Tetrachloroethane	20.02	18.00	1.112 ok	1.112	1.052-1.172
1,1,2-Trichloroethane	14.57	11.31	1.288 ok	1.288	1.228-1.348
1,2,4-Trichlorobenzene	28.24	18.00	1.569 ok	1.570	1.510-1.630
1,2,4-Trimethylbenzene	23.78	18.00	1.321 ok	1.321	1.261-1.381
1,3,5-Trimethylbenzene	22.83	18.00	1.268 ok	1.268	1.208-1.328
2,2,4-Trimethylpentane	12.30	11.31	1.088 ok	1.088	1.028-1.148
Tertiary Butyl Alcohol	6.78	9.00	0.753 ok	0.760	0.700-0.820
tert-Butylbenzene	23.77	18.00	1.321 ok	1.321	1.261-1.381
Tetrachloroethylene	16.87	18.00	0.937 ok	0.937	0.877-0.997
Tetrahydrofuran	9.64	9.00	1.071 ok	1.074	1.014-1.134
Toluene	14.99	11.31	1.325 ok	1.326	1.266-1.386
Trichloroethylene	12.27	11.31	1.085 ok	1.085	1.025-1.145
Trichlorofluoromethane	6.04	9.00	0.671 ok	0.670	0.610-0.730
Vinyl chloride	4.73	9.00	0.526 ok	0.525	0.465-0.585
Vinyl Acetate	8.04	9.00	0.893 ok	0.894	0.834-0.954
m,p-Xylene	19.12	18.00	1.062 ok	1.062	1.002-1.122
o-Xylene	20.02	18.00	1.112 ok	1.112	1.052-1.172

Initial Calibration Retention Time/Internal Standard Area Summary

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Job Number: MC36556

Account: HMANNJP H2M Associates, Inc

Project: Macbeth, 617 Little Britain, New Windsor, NY

Sample Number	Lab File ID	Injected	By	Level	Inst ID	Method
MSJ1510-IC1510	J29702.D	01/22/15 21:30	AA	0.2	GCMSJ	TO-15
MSJ1510-IC1510	J29704.D	01/22/15 23:10	AA	2	GCMSJ	TO-15
MSJ1510-IC1510	J29705.D	01/22/15 23:53	AA	5	GCMSJ	TO-15
MSJ1510-IC1510	J29707.D	01/23/15 01:28	AA	20	GCMSJ	TO-15
MSJ1510-IC1510	J29708.D	01/23/15 02:15	AA	30	GCMSJ	TO-15
MSJ1510-IC1510	J29709.D	01/23/15 03:01	AA	40	GCMSJ	TO-15
MSJ1510-ICC1510	J29712.D	01/23/15 11:17	AA	10	GCMSJ	TO-15
MSJ1510-IC1510	J29713.D	01/23/15 12:52	AA	0.5	GCMSJ	TO-15

Reporting this level

Internal Standard	RT (min.)	Mean RT(min.)	RT Range (+ /- 0.33)	Area	Mean Area	Area Range (+ /- 40 %)
Bromochloromethane	9.00 ok	9.00	8.67-9.33	436050 ok	489028	293417-684639
1,4-Difluorobenzene	11.31 ok	11.31	10.98-11.64	1933654 ok	2377269	1426361-3328177
Chlorobenzene-D5	18.00 ok	17.99	17.66-18.32	998793 ok	1208388	725033-1691743

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Initial Calibration Retention Time/Internal Standard Area Summary

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Job Number: MC36556

Account: HMANNJP H2M Associates, Inc

Project: Macbeth, 617 Little Britain, New Windsor, NY

Sample Number	Lab File ID	Injected	By	Level	Inst ID	Method
MSJ1510-IC1510	J29702.D	01/22/15 21:30	AA	0.2	GCMSJ	TO-15
MSJ1510-IC1510	J29704.D	01/22/15 23:10	AA	2	GCMSJ	TO-15
MSJ1510-IC1510	J29705.D	01/22/15 23:53	AA	5	GCMSJ	TO-15
MSJ1510-IC1510	J29707.D	01/23/15 01:28	AA	20	GCMSJ	TO-15
MSJ1510-IC1510	J29708.D	01/23/15 02:15	AA	30	GCMSJ	TO-15
MSJ1510-IC1510	J29709.D	01/23/15 03:01	AA	40	GCMSJ	TO-15
MSJ1510-ICC1510	J29712.D	01/23/15 11:17	AA	10	GCMSJ	TO-15
MSJ1510-IC1510	J29713.D	01/23/15 12:52	AA	0.5	GCMSJ	TO-15

Reporting this level

Target Compound	RT (min.)	Istd RT (min.)	Rel RT	Mean Rel RT	Rel RT Range (+ /- .06)
Acetone	6.04	8.99	0.672 ok	0.656	0.596-0.716
1,3-Butadiene	4.87	8.99	0.542 ok	0.541	0.481-0.601
Benzene	10.89	11.29	0.965 ok	0.964	0.904-1.024
Bromodichloromethane	12.20	11.29	1.081 ok	1.081	1.021-1.141
Bromoform	19.22	17.97	1.070 ok	1.070	1.010-1.130
Bromomethane	5.14	8.99	0.572 ok	0.571	0.511-0.631
Bromoethene	5.64	8.99	0.627 ok	0.627	0.567-0.687
n-Butylbenzene	25.62	17.97	1.426 ok	1.423	1.363-1.483
sec-Butylbenzene	24.38	17.97	1.357 ok	1.356	1.296-1.416
Benzyl Chloride	24.12	17.97	1.342 ok	1.339	1.279-1.399
Carbon disulfide	7.10	8.99	0.790 ok	0.789	0.729-0.849
Chlorobenzene	18.05	17.97	1.004 ok	1.005	0.945-1.065
Chloroethane	5.30	8.99	0.590 ok	0.589	0.529-0.649
Chloroform	9.12	8.99	1.014 ok	1.015	0.955-1.075
Chloromethane	4.51	8.99	0.502 ok	0.501	0.441-0.561
3-Chloropropene	6.87	8.99	0.764 ok	0.764	0.704-0.824
2-Chlorotoluene	22.20	17.97	1.235 ok	1.235	1.175-1.295
Carbon tetrachloride	11.07	8.99	1.231 ok	1.231	1.171-1.291
Cyclohexane	11.24	11.29	0.996 ok	0.994	0.934-1.054
1,1-Dichloroethane	7.90	8.99	0.879 ok	0.878	0.818-0.938
1,1-Dichloroethylene	6.65	8.99	0.740 ok	0.738	0.678-0.798
1,2-Dibromoethane	16.08	17.97	0.895 ok	0.895	0.835-0.955
1,2-Dichloroethane	10.00	8.99	1.112 ok	1.113	1.053-1.173
1,2-Dichloropropane	11.94	11.29	1.058 ok	1.058	0.998-1.118
1,3-Dichloropropane	15.01	11.29	1.329 ok	1.330	1.270-1.390
1,4-Dioxane	12.77	11.29	1.131 ok	1.099	1.039-1.159
Dichlorodifluoromethane	4.33	8.99	0.482 ok	0.481	0.421-0.541
Dibromochloromethane	15.65	17.97	0.871 ok	0.872	0.812-0.932
trans-1,2-Dichloroethylene	7.70	8.99	0.857 ok	0.856	0.796-0.916
cis-1,2-Dichloroethylene	8.80	8.99	0.979 ok	0.978	0.918-1.038
cis-1,3-Dichloropropene	13.48	11.29	1.194 ok	1.193	1.133-1.253
m-Dichlorobenzene	24.11	17.97	1.342 ok	1.341	1.281-1.401
o-Dichlorobenzene	25.01	17.97	1.392 ok	1.390	1.330-1.450
p-Dichlorobenzene	24.27	17.97	1.351 ok	1.350	1.290-1.410
trans-1,3-Dichloropropene	14.26	11.29	1.263 ok	1.262	1.202-1.322
Ethylbenzene	18.73	17.97	1.042 ok	1.043	0.983-1.103
Ethyl Acetate	9.02	8.99	1.003 ok	1.003	0.943-1.063
4-Ethyltoluene	22.62	17.97	1.259 ok	1.258	1.198-1.318
Freon 113	7.00	8.99	0.779 ok	0.778	0.718-0.838
Freon 114	4.60	8.99	0.512 ok	0.511	0.451-0.571

Initial Calibration Retention Time/Internal Standard Area Summary

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Job Number: MC36556
Account: HMANNJP H2M Associates, Inc
Project: Macbeth, 617 Little Britain, New Windsor, NY

Sample Number	Lab File ID	Injected	By	Level	Inst ID	Method
MSJ1510-IC1510	J29702.D	01/22/15 21:30	AA	0.2	GCMSJ	TO-15
MSJ1510-IC1510	J29704.D	01/22/15 23:10	AA	2	GCMSJ	TO-15
MSJ1510-IC1510	J29705.D	01/22/15 23:53	AA	5	GCMSJ	TO-15
MSJ1510-IC1510	J29707.D	01/23/15 01:28	AA	20	GCMSJ	TO-15
MSJ1510-IC1510	J29708.D	01/23/15 02:15	AA	30	GCMSJ	TO-15
MSJ1510-IC1510	J29709.D	01/23/15 03:01	AA	40	GCMSJ	TO-15
MSJ1510-ICC1510	J29712.D	01/23/15 11:17	AA	10	GCMSJ	TO-15
MSJ1510-IC1510	J29713.D	01/23/15 12:52	AA	0.5	GCMSJ	TO-15

Reporting this level

Target Compound	RT (min.)	Istd RT (min.)	Rel RT	Mean Rel RT	Rel RT Range (+ /- .06)
Heptane	12.64	11.29	1.120 ok	1.118	1.058-1.178
Hexachlorobutadiene	29.09	17.97	1.619 ok	1.617	1.557-1.677
Hexane	9.02	8.99	1.003 ok	1.003	0.943-1.063
2-Hexanone	15.78	17.97	0.878 ok	0.863	0.803-0.923
Isopropylbenzene	21.18	17.97	1.179 ok	1.178	1.118-1.238
Isopropyl Alcohol	6.41	8.99	0.713 ok	0.692	0.632-0.752
p-Isopropyltoluene	24.74	17.97	1.377 ok	1.375	1.315-1.435
Methylene chloride	6.75	8.99	0.751 ok	0.750	0.690-0.810
Methyl ethyl ketone	8.45	8.99	0.940 ok	0.929	0.869-0.989
Methyl Isobutyl Ketone	13.79	11.29	1.221 ok	1.205	1.145-1.265
Methyl Tert Butyl Ether	8.06	8.99	0.897 ok	0.889	0.829-0.949
Methylmethacrylate	12.55	11.29	1.112 ok	1.108	1.048-1.168
Naphthalene	28.50	17.97	1.586 ok	1.581	1.521-1.641
Nonane	20.42	17.97	1.136 ok	1.136	1.076-1.196
Pentane	6.37	8.99	0.709 ok	0.707	0.647-0.767
Propylene	4.26	8.99	0.474 ok	0.473	0.413-0.533
Styrene	19.77	17.97	1.100 ok	1.100	1.040-1.160
1,1,1-Trichloroethane	10.31	8.99	1.147 ok	1.146	1.086-1.206
1,1,1,2-Tetrachloroethane	18.01	17.97	1.002 ok	1.003	0.943-1.063
1,1,2,2-Tetrachloroethane	19.97	17.97	1.111 ok	1.112	1.052-1.172
1,1,2-Trichloroethane	14.53	11.29	1.287 ok	1.288	1.228-1.348
1,2,4-Trichlorobenzene	28.30	17.97	1.575 ok	1.570	1.510-1.630
1,2,4-Trimethylbenzene	23.76	17.97	1.322 ok	1.321	1.261-1.381
1,3,5-Trimethylbenzene	22.80	17.97	1.269 ok	1.268	1.208-1.328
2,2,4-Trimethylpentane	12.29	11.29	1.089 ok	1.088	1.028-1.148
Tertiary Butyl Alcohol	7.13	8.99	0.793 ok	0.760	0.700-0.820
tert-Butylbenzene	23.74	17.97	1.321 ok	1.321	1.261-1.381
Tetrachloroethylene	16.85	17.97	0.938 ok	0.937	0.877-0.997
Tetrahydrofuran	9.78	8.99	1.088 ok	1.074	1.014-1.134
Toluene	14.98	11.29	1.327 ok	1.326	1.266-1.386
Trichloroethylene	12.25	11.29	1.085 ok	1.085	1.025-1.145
Trichlorofluoromethane	6.03	8.99	0.671 ok	0.670	0.610-0.730
Vinyl chloride	4.73	8.99	0.526 ok	0.525	0.465-0.585
Vinyl Acetate	8.09	8.99	0.900 ok	0.894	0.834-0.954
m,p-Xylene	19.09	17.97	1.062 ok	1.062	1.002-1.122
o-Xylene	19.98	17.97	1.112 ok	1.112	1.052-1.172

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Initial Calibration Retention Time/Internal Standard Area Summary

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Job Number: MC36556

Account: HMANNJP H2M Associates, Inc

Project: Macbeth, 617 Little Britain, New Windsor, NY

Sample Number	Lab File ID	Injected	By	Level	Inst ID	Method	
MSJ1510-IC1510	J29702.D	01/22/15 21:30	AA	0.2	GCMSJ	TO-15	
MSJ1510-IC1510	J29704.D	01/22/15 23:10	AA	2	GCMSJ	TO-15	
MSJ1510-IC1510	J29705.D	01/22/15 23:53	AA	5	GCMSJ	TO-15	
MSJ1510-IC1510	J29707.D	01/23/15 01:28	AA	20	GCMSJ	TO-15	
MSJ1510-IC1510	J29708.D	01/23/15 02:15	AA	30	GCMSJ	TO-15	
MSJ1510-IC1510	J29709.D	01/23/15 03:01	AA	40	GCMSJ	TO-15	
MSJ1510-ICC1510	J29712.D	01/23/15 11:17	AA	10	GCMSJ	TO-15	
MSJ1510-IC1510	J29713.D	01/23/15 12:52	AA	0.5	GCMSJ	TO-15	Reporting this level

Internal Standard	RT (min.)	Mean RT(min.)	RT Range (+ /- 0.33)	Area	Mean Area	Area Range (+ /- 40 %)
Bromochloromethane	8.99 ok	9.00	8.67-9.33	512439 ok	489028	293417-684639
1,4-Difluorobenzene	11.29 ok	11.31	10.98-11.64	2506837 ok	2377269	1426361-3328177
Chlorobenzene-D5	17.97 ok	17.99	17.66-18.32	1077158 ok	1208388	725033-1691743

Initial Calibration Retention Time/Internal Standard Area Summary

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Job Number: MC36556

Account: HMANNJP H2M Associates, Inc

Project: Macbeth, 617 Little Britain, New Windsor, NY

Sample Number	Lab File ID	Injected	By	Level	Inst ID	Method
MSQ1286-IC1286	Q29635.D	02/10/15 21:08	AA	0.005	GCMSQ	TO-15 BY SIM Reporting this level
MSQ1286-IC1286	Q29636.D	02/10/15 21:51	AA	0.02	GCMSQ	TO-15 BY SIM
MSQ1286-IC1286	Q29637.D	02/10/15 22:34	AA	0.05	GCMSQ	TO-15 BY SIM
MSQ1286-IC1286	Q29638.D	02/10/15 23:20	AA	0.1	GCMSQ	TO-15 BY SIM
MSQ1286-IC1286	Q29640.D	02/11/15 00:45	AA	0.25	GCMSQ	TO-15 BY SIM
MSQ1286-ICC1286	Q29641.D	02/11/15 01:27	AA	0.5	GCMSQ	TO-15 BY SIM
MSQ1286-IC1286	Q29642.D	02/11/15 02:10	AA	20	GCMSQ	TO-15 BY SIM
MSQ1286-IC1286	Q29644.D	02/11/15 09:13	AA	5	GCMSQ	TO-15 BY SIM

Target Compound	RT (min.)	Istd RT (min.)	Rel RT	Mean Rel RT	Rel RT Range (+ /- .06)
Acetone	5.68	9.22	0.616 ok	0.613	0.553-0.673
Benzene	11.36	11.88	0.956 ok	0.956	0.896-1.016
Chlorobenzene	19.01	18.93	1.004 ok	1.004	0.944-1.064
cis-1,2-Dichloroethylene	9.00	9.22	0.976 ok	0.977	0.917-1.037
Ethanol	5.17	9.22	0.561 ok	0.559	0.499-0.619
Ethylbenzene	19.66	18.93	1.039 ok	1.038	0.978-1.098
Freon 113	6.93	9.22	0.752 ok	0.752	0.692-0.812
Heptane	13.39	11.88	1.127 ok	1.127	1.067-1.187
1,1,1-Trichloroethane	10.73	9.22	1.164 ok	1.163	1.103-1.223
Tetrachloroethylene	17.82	18.93	0.941 ok	0.941	0.881-1.001
Toluene	15.86	11.88	1.335 ok	1.335	1.275-1.395
Trichloroethylene	12.92	11.88	1.088 ok	1.087	1.027-1.147
m,p-Xylene	19.95	18.93	1.054 ok	1.056	0.996-1.116
o-Xylene	20.73	18.93	1.095 ok	1.095	1.035-1.155

Internal Standard	RT (min.)	Mean RT(min.)	RT Range (+ /- 0.33)	Area	Mean Area	Area Range (+ /- 40 %)
Bromochloromethane	9.22 ok	9.22	8.89-9.55	1354509 ok	1313055	787833-1838277
1,4-Difluorobenzene	11.88 ok	11.88	11.55-12.21	6492570 ok	6185849	3711509-8660189
Chlorobenzene-D5	18.93 ok	18.93	18.60-19.26	1995099 ok	2008008	1204805-2811211

Initial Calibration Retention Time/Internal Standard Area Summary

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Job Number: MC36556

Account: HMANNJP H2M Associates, Inc

Project: Macbeth, 617 Little Britain, New Windsor, NY

Sample Number	Lab File ID	Injected	By	Level	Inst ID	Method
MSQ1286-IC1286	Q29635.D	02/10/15 21:08	AA	0.005	GCMSQ	TO-15 BY SIM
MSQ1286-IC1286	Q29636.D	02/10/15 21:51	AA	0.02	GCMSQ	TO-15 BY SIM Reporting this level
MSQ1286-IC1286	Q29637.D	02/10/15 22:34	AA	0.05	GCMSQ	TO-15 BY SIM
MSQ1286-IC1286	Q29638.D	02/10/15 23:20	AA	0.1	GCMSQ	TO-15 BY SIM
MSQ1286-IC1286	Q29640.D	02/11/15 00:45	AA	0.25	GCMSQ	TO-15 BY SIM
MSQ1286-ICC1286	Q29641.D	02/11/15 01:27	AA	0.5	GCMSQ	TO-15 BY SIM
MSQ1286-IC1286	Q29642.D	02/11/15 02:10	AA	20	GCMSQ	TO-15 BY SIM
MSQ1286-IC1286	Q29644.D	02/11/15 09:13	AA	5	GCMSQ	TO-15 BY SIM

Target Compound	RT (min.)	Istd RT (min.)	Rel RT	Mean Rel RT	Rel RT Range (+ /- .06)
Acetone	5.72	9.23	0.620 ok	0.613	0.553-0.673
Benzene	11.37	11.89	0.956 ok	0.956	0.896-1.016
Chlorobenzene	19.01	18.94	1.004 ok	1.004	0.944-1.064
cis-1,2-Dichloroethylene	9.02	9.23	0.977 ok	0.977	0.917-1.037
Ethanol	5.23	9.23	0.567 ok	0.559	0.499-0.619
Ethylbenzene	19.67	18.94	1.039 ok	1.038	0.978-1.098
Freon 113	6.95	9.23	0.753 ok	0.752	0.692-0.812
Heptane	13.39	11.89	1.126 ok	1.127	1.067-1.187
1,1,1-Trichloroethane	10.73	9.23	1.163 ok	1.163	1.103-1.223
Tetrachloroethylene	17.83	18.94	0.941 ok	0.941	0.881-1.001
Toluene	15.86	11.89	1.334 ok	1.335	1.275-1.395
Trichloroethylene	12.92	11.89	1.087 ok	1.087	1.027-1.147
m,p-Xylene	19.99	18.94	1.055 ok	1.056	0.996-1.116
o-Xylene	20.74	18.94	1.095 ok	1.095	1.035-1.155

Internal Standard	RT (min.)	Mean RT(min.)	RT Range (+ /- 0.33)	Area	Mean Area	Area Range (+ /- 40 %)
Bromochloromethane	9.23 ok	9.22	8.89-9.55	1246976 ok	1313055	787833-1838277
1,4-Difluorobenzene	11.89 ok	11.88	11.55-12.21	5794797 ok	6185849	3711509-8660189
Chlorobenzene-D5	18.94 ok	18.93	18.60-19.26	1862888 ok	2008008	1204805-2811211

Initial Calibration Retention Time/Internal Standard Area Summary

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Job Number: MC36556

Account: HMANNJP H2M Associates, Inc

Project: Macbeth, 617 Little Britain, New Windsor, NY

Sample Number	Lab File ID	Injected	By	Level	Inst ID	Method
MSQ1286-IC1286	Q29635.D	02/10/15 21:08	AA	0.005	GCMSQ	TO-15 BY SIM
MSQ1286-IC1286	Q29636.D	02/10/15 21:51	AA	0.02	GCMSQ	TO-15 BY SIM
MSQ1286-IC1286	Q29637.D	02/10/15 22:34	AA	0.05	GCMSQ	TO-15 BY SIM Reporting this level
MSQ1286-IC1286	Q29638.D	02/10/15 23:20	AA	0.1	GCMSQ	TO-15 BY SIM
MSQ1286-IC1286	Q29640.D	02/11/15 00:45	AA	0.25	GCMSQ	TO-15 BY SIM
MSQ1286-ICC1286	Q29641.D	02/11/15 01:27	AA	0.5	GCMSQ	TO-15 BY SIM
MSQ1286-IC1286	Q29642.D	02/11/15 02:10	AA	20	GCMSQ	TO-15 BY SIM
MSQ1286-IC1286	Q29644.D	02/11/15 09:13	AA	5	GCMSQ	TO-15 BY SIM

Target Compound	RT (min.)	Istd RT (min.)	Rel RT	Mean Rel RT	Rel RT Range (+ /- .06)
Acetone	5.65	9.22	0.613 ok	0.613	0.553-0.673
Benzene	11.36	11.88	0.956 ok	0.956	0.896-1.016
Chlorobenzene	19.01	18.93	1.004 ok	1.004	0.944-1.064
cis-1,2-Dichloroethylene	9.01	9.22	0.977 ok	0.977	0.917-1.037
Ethanol	5.15	9.22	0.559 ok	0.559	0.499-0.619
Ethylbenzene	19.66	18.93	1.039 ok	1.038	0.978-1.098
Freon 113	6.94	9.22	0.753 ok	0.752	0.692-0.812
Heptane	13.39	11.88	1.127 ok	1.127	1.067-1.187
Naphthalene	27.32	18.93	1.443 ok	1.443	1.383-1.503
1,1,1-Trichloroethane	10.72	9.22	1.163 ok	1.163	1.103-1.223
Tetrachloroethylene	17.82	18.93	0.941 ok	0.941	0.881-1.001
Toluene	15.86	11.88	1.335 ok	1.335	1.275-1.395
Trichloroethylene	12.92	11.88	1.088 ok	1.087	1.027-1.147
m,p-Xylene	19.99	18.93	1.056 ok	1.056	0.996-1.116
o-Xylene	20.73	18.93	1.095 ok	1.095	1.035-1.155

Internal Standard	RT (min.)	Mean RT(min.)	RT Range (+ /- 0.33)	Area	Mean Area	Area Range (+ /- 40 %)
Bromochloromethane	9.22 ok	9.22	8.89-9.55	1268185	ok 1313055	787833-1838277
1,4-Difluorobenzene	11.88 ok	11.88	11.55-12.21	5887482	ok 6185849	3711509-8660189
Chlorobenzene-D5	18.93 ok	18.93	18.60-19.26	1920877	ok 2008008	1204805-2811211

Initial Calibration Retention Time/Internal Standard Area Summary

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Job Number: MC36556

Account: HMANNJP H2M Associates, Inc

Project: Macbeth, 617 Little Britain, New Windsor, NY

Sample Number	Lab File ID	Injected	By	Level	Inst ID	Method
MSQ1286-IC1286	Q29635.D	02/10/15 21:08	AA	0.005	GCMSQ	TO-15 BY SIM
MSQ1286-IC1286	Q29636.D	02/10/15 21:51	AA	0.02	GCMSQ	TO-15 BY SIM
MSQ1286-IC1286	Q29637.D	02/10/15 22:34	AA	0.05	GCMSQ	TO-15 BY SIM
MSQ1286-IC1286	Q29638.D	02/10/15 23:20	AA	0.1	GCMSQ	TO-15 BY SIM Reporting this level
MSQ1286-IC1286	Q29640.D	02/11/15 00:45	AA	0.25	GCMSQ	TO-15 BY SIM
MSQ1286-ICC1286	Q29641.D	02/11/15 01:27	AA	0.5	GCMSQ	TO-15 BY SIM
MSQ1286-IC1286	Q29642.D	02/11/15 02:10	AA	20	GCMSQ	TO-15 BY SIM
MSQ1286-IC1286	Q29644.D	02/11/15 09:13	AA	5	GCMSQ	TO-15 BY SIM

Target Compound	RT (min.)	Istd RT (min.)	Rel RT	Mean Rel RT	Rel RT Range (+ /- .06)
Acetone	5.68	9.24	0.615 ok	0.613	0.553-0.673
Benzene	11.37	11.89	0.956 ok	0.956	0.896-1.016
Chlorobenzene	19.01	18.94	1.004 ok	1.004	0.944-1.064
cis-1,2-Dichloroethylene	9.02	9.24	0.976 ok	0.977	0.917-1.037
Ethanol	5.19	9.24	0.562 ok	0.559	0.499-0.619
Ethylbenzene	19.67	18.94	1.039 ok	1.038	0.978-1.098
Freon 113	6.95	9.24	0.752 ok	0.752	0.692-0.812
Heptane	13.40	11.89	1.127 ok	1.127	1.067-1.187
Naphthalene	27.31	18.94	1.442 ok	1.443	1.383-1.503
1,1,1-Trichloroethane	10.73	9.24	1.161 ok	1.163	1.103-1.223
Tetrachloroethylene	17.83	18.94	0.941 ok	0.941	0.881-1.001
Toluene	15.86	11.89	1.334 ok	1.335	1.275-1.395
Trichloroethylene	12.92	11.89	1.087 ok	1.087	1.027-1.147
m,p-Xylene	19.99	18.94	1.055 ok	1.056	0.996-1.116
o-Xylene	20.73	18.94	1.095 ok	1.095	1.035-1.155

Internal Standard	RT (min.)	Mean RT(min.)	RT Range (+ /- 0.33)	Area	Mean Area	Area Range (+ /- 40 %)
Bromochloromethane	9.24 ok	9.22	8.89-9.55	1301781	ok 1313055	787833-1838277
1,4-Difluorobenzene	11.89 ok	11.88	11.55-12.21	6250595	ok 6185849	3711509-8660189
Chlorobenzene-D5	18.94 ok	18.93	18.60-19.26	1960771	ok 2008008	1204805-2811211

Initial Calibration Retention Time/Internal Standard Area Summary

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Job Number: MC36556
Account: HMANNJP H2M Associates, Inc
Project: Macbeth, 617 Little Britain, New Windsor, NY

Sample Number	Lab File ID	Injected	By	Level	Inst ID	Method
MSQ1286-IC1286	Q29635.D	02/10/15 21:08	AA	0.005	GCMSQ	TO-15 BY SIM
MSQ1286-IC1286	Q29636.D	02/10/15 21:51	AA	0.02	GCMSQ	TO-15 BY SIM
MSQ1286-IC1286	Q29637.D	02/10/15 22:34	AA	0.05	GCMSQ	TO-15 BY SIM
MSQ1286-IC1286	Q29638.D	02/10/15 23:20	AA	0.1	GCMSQ	TO-15 BY SIM
MSQ1286-IC1286	Q29640.D	02/11/15 00:45	AA	0.25	GCMSQ	TO-15 BY SIM Reporting this level
MSQ1286-ICC1286	Q29641.D	02/11/15 01:27	AA	0.5	GCMSQ	TO-15 BY SIM
MSQ1286-IC1286	Q29642.D	02/11/15 02:10	AA	20	GCMSQ	TO-15 BY SIM
MSQ1286-IC1286	Q29644.D	02/11/15 09:13	AA	5	GCMSQ	TO-15 BY SIM

Target Compound	RT (min.)	Istd RT (min.)	Rel RT	Mean Rel RT	Rel RT Range (+ /- .06)
Acetone	5.65	9.22	0.613 ok	0.613	0.553-0.673
Benzene	11.36	11.88	0.956 ok	0.956	0.896-1.016
Chlorobenzene	19.01	18.93	1.004 ok	1.004	0.944-1.064
cis-1,2-Dichloroethylene	9.01	9.22	0.977 ok	0.977	0.917-1.037
Ethanol	5.15	9.22	0.559 ok	0.559	0.499-0.619
Ethylbenzene	19.66	18.93	1.039 ok	1.038	0.978-1.098
Freon 113	6.94	9.22	0.753 ok	0.752	0.692-0.812
Heptane	13.39	11.88	1.127 ok	1.127	1.067-1.187
Naphthalene	27.36	18.93	1.445 ok	1.443	1.383-1.503
1,1,1-Trichloroethane	10.73	9.22	1.164 ok	1.163	1.103-1.223
Tetrachloroethylene	17.82	18.93	0.941 ok	0.941	0.881-1.001
Toluene	15.86	11.88	1.335 ok	1.335	1.275-1.395
Trichloroethylene	12.92	11.88	1.088 ok	1.087	1.027-1.147
m,p-Xylene	19.99	18.93	1.056 ok	1.056	0.996-1.116
o-Xylene	20.73	18.93	1.095 ok	1.095	1.035-1.155

Internal Standard	RT (min.)	Mean RT(min.)	RT Range (+ /- 0.33)	Area	Mean Area	Area Range (+ /- 40 %)
Bromochloromethane	9.22 ok	9.22	8.89-9.55	1269924 ok	1313055	787833-1838277
1,4-Difluorobenzene	11.88 ok	11.88	11.55-12.21	6103269 ok	6185849	3711509-8660189
Chlorobenzene-D5	18.93 ok	18.93	18.60-19.26	1936007 ok	2008008	1204805-2811211

Initial Calibration Retention Time/Internal Standard Area Summary

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Job Number: MC36556

Account: HMANNJP H2M Associates, Inc

Project: Macbeth, 617 Little Britain, New Windsor, NY

Sample Number	Lab File ID	Injected	By	Level	Inst ID	Method
MSQ1286-IC1286	Q29635.D	02/10/15 21:08	AA	0.005	GCMSQ	TO-15 BY SIM
MSQ1286-IC1286	Q29636.D	02/10/15 21:51	AA	0.02	GCMSQ	TO-15 BY SIM
MSQ1286-IC1286	Q29637.D	02/10/15 22:34	AA	0.05	GCMSQ	TO-15 BY SIM
MSQ1286-IC1286	Q29638.D	02/10/15 23:20	AA	0.1	GCMSQ	TO-15 BY SIM
MSQ1286-IC1286	Q29640.D	02/11/15 00:45	AA	0.25	GCMSQ	TO-15 BY SIM
MSQ1286-ICC1286	Q29641.D	02/11/15 01:27	AA	0.5	GCMSQ	TO-15 BY SIM Reporting this level
MSQ1286-IC1286	Q29642.D	02/11/15 02:10	AA	20	GCMSQ	TO-15 BY SIM
MSQ1286-IC1286	Q29644.D	02/11/15 09:13	AA	5	GCMSQ	TO-15 BY SIM

Target Compound	RT (min.)	Istd RT (min.)	Rel RT	Mean Rel RT	Rel RT Range (+ /- .06)
Acetone	5.63	9.22	0.611 ok	0.613	0.553-0.673
Benzene	11.36	11.88	0.956 ok	0.956	0.896-1.016
Chlorobenzene	19.01	18.93	1.004 ok	1.004	0.944-1.064
cis-1,2-Dichloroethylene	9.00	9.22	0.976 ok	0.977	0.917-1.037
Ethanol	5.13	9.22	0.556 ok	0.559	0.499-0.619
Ethylbenzene	19.66	18.93	1.039 ok	1.038	0.978-1.098
Freon 113	6.93	9.22	0.752 ok	0.752	0.692-0.812
Heptane	13.39	11.88	1.127 ok	1.127	1.067-1.187
Naphthalene	27.33	18.93	1.444 ok	1.443	1.383-1.503
1,1,1-Trichloroethane	10.72	9.22	1.163 ok	1.163	1.103-1.223
Tetrachloroethylene	17.82	18.93	0.941 ok	0.941	0.881-1.001
Toluene	15.85	11.88	1.334 ok	1.335	1.275-1.395
Trichloroethylene	12.92	11.88	1.088 ok	1.087	1.027-1.147
m,p-Xylene	19.99	18.93	1.056 ok	1.056	0.996-1.116
o-Xylene	20.73	18.93	1.095 ok	1.095	1.035-1.155

Internal Standard	RT (min.)	Mean RT(min.)	RT Range (+ /- 0.33)	Area	Mean Area	Area Range (+ /- 40 %)
Bromochloromethane	9.22 ok	9.22	8.89-9.55	1253988	ok 1313055	787833-1838277
1,4-Difluorobenzene	11.88 ok	11.88	11.55-12.21	5963381	ok 6185849	3711509-8660189
Chlorobenzene-D5	18.93 ok	18.93	18.60-19.26	1916088	ok 2008008	1204805-2811211

Initial Calibration Retention Time/Internal Standard Area Summary

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Job Number: MC36556

Account: HMANNJP H2M Associates, Inc

Project: Macbeth, 617 Little Britain, New Windsor, NY

Sample Number	Lab File ID	Injected	By	Level	Inst ID	Method
MSQ1286-IC1286	Q29635.D	02/10/15 21:08	AA	0.005	GCMSQ	TO-15 BY SIM
MSQ1286-IC1286	Q29636.D	02/10/15 21:51	AA	0.02	GCMSQ	TO-15 BY SIM
MSQ1286-IC1286	Q29637.D	02/10/15 22:34	AA	0.05	GCMSQ	TO-15 BY SIM
MSQ1286-IC1286	Q29638.D	02/10/15 23:20	AA	0.1	GCMSQ	TO-15 BY SIM
MSQ1286-IC1286	Q29640.D	02/11/15 00:45	AA	0.25	GCMSQ	TO-15 BY SIM
MSQ1286-ICC1286	Q29641.D	02/11/15 01:27	AA	0.5	GCMSQ	TO-15 BY SIM
MSQ1286-IC1286	Q29642.D	02/11/15 02:10	AA	20	GCMSQ	TO-15 BY SIM Reporting this level
MSQ1286-IC1286	Q29644.D	02/11/15 09:13	AA	5	GCMSQ	TO-15 BY SIM

Target Compound	RT (min.)	Istd RT (min.)	Rel RT	Mean Rel RT	Rel RT Range (+ /- .06)
Acetone	5.60	9.23	0.607 ok	0.613	0.553-0.673
Benzene	11.37	11.89	0.956 ok	0.956	0.896-1.016
Chlorobenzene	19.02	18.94	1.004 ok	1.004	0.944-1.064
cis-1,2-Dichloroethylene	9.02	9.23	0.977 ok	0.977	0.917-1.037
Ethanol	5.10	9.23	0.553 ok	0.559	0.499-0.619
Ethylbenzene	19.66	18.94	1.038 ok	1.038	0.978-1.098
Freon 113	6.94	9.23	0.752 ok	0.752	0.692-0.812
Heptane	13.40	11.89	1.127 ok	1.127	1.067-1.187
Naphthalene	27.30	18.94	1.441 ok	1.443	1.383-1.503
1,1,1-Trichloroethane	10.73	9.23	1.163 ok	1.163	1.103-1.223
Tetrachloroethylene	17.83	18.94	0.941 ok	0.941	0.881-1.001
Toluene	15.87	11.89	1.335 ok	1.335	1.275-1.395
Trichloroethylene	12.92	11.89	1.087 ok	1.087	1.027-1.147
m,p-Xylene	20.00	18.94	1.056 ok	1.056	0.996-1.116
o-Xylene	20.74	18.94	1.095 ok	1.095	1.035-1.155

Internal Standard	RT (min.)	Mean RT(min.)	RT Range (+ /- 0.33)	Area	Mean Area	Area Range (+ /- 40 %)
Bromochloromethane	9.23 ok	9.22	8.89-9.55	1450635	ok 1313055	787833-1838277
1,4-Difluorobenzene	11.89 ok	11.88	11.55-12.21	6720756	ok 6185849	3711509-8660189
Chlorobenzene-D5	18.94 ok	18.93	18.60-19.26	2342258	ok 2008008	1204805-2811211

Initial Calibration Retention Time/Internal Standard Area Summary

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Job Number: MC36556

Account: HMANNJP H2M Associates, Inc

Project: Macbeth, 617 Little Britain, New Windsor, NY

Sample Number	Lab File ID	Injected	By	Level	Inst ID	Method
MSQ1286-IC1286	Q29635.D	02/10/15 21:08	AA	0.005	GCMSQ	TO-15 BY SIM
MSQ1286-IC1286	Q29636.D	02/10/15 21:51	AA	0.02	GCMSQ	TO-15 BY SIM
MSQ1286-IC1286	Q29637.D	02/10/15 22:34	AA	0.05	GCMSQ	TO-15 BY SIM
MSQ1286-IC1286	Q29638.D	02/10/15 23:20	AA	0.1	GCMSQ	TO-15 BY SIM
MSQ1286-IC1286	Q29640.D	02/11/15 00:45	AA	0.25	GCMSQ	TO-15 BY SIM
MSQ1286-ICC1286	Q29641.D	02/11/15 01:27	AA	0.5	GCMSQ	TO-15 BY SIM
MSQ1286-IC1286	Q29642.D	02/11/15 02:10	AA	20	GCMSQ	TO-15 BY SIM
MSQ1286-IC1286	Q29644.D	02/11/15 09:13	AA	5	GCMSQ	TO-15 BY SIM Reporting this level

Target Compound	RT (min.)	Istd RT (min.)	Rel RT	Mean Rel RT	Rel RT Range (+ /- .06)
Acetone	5.61	9.22	0.608 ok	0.613	0.553-0.673
Benzene	11.36	11.88	0.956 ok	0.956	0.896-1.016
Chlorobenzene	19.01	18.93	1.004 ok	1.004	0.944-1.064
cis-1,2-Dichloroethylene	9.01	9.22	0.977 ok	0.977	0.917-1.037
Ethanol	5.11	9.22	0.554 ok	0.559	0.499-0.619
Ethylbenzene	19.66	18.93	1.039 ok	1.038	0.978-1.098
Freon 113	6.94	9.22	0.753 ok	0.752	0.692-0.812
Heptane	13.39	11.88	1.127 ok	1.127	1.067-1.187
Naphthalene	27.30	18.93	1.442 ok	1.443	1.383-1.503
1,1,1-Trichloroethane	10.73	9.22	1.164 ok	1.163	1.103-1.223
Tetrachloroethylene	17.82	18.93	0.941 ok	0.941	0.881-1.001
Toluene	15.86	11.88	1.335 ok	1.335	1.275-1.395
Trichloroethylene	12.92	11.88	1.088 ok	1.087	1.027-1.147
m,p-Xylene	19.99	18.93	1.056 ok	1.056	0.996-1.116
o-Xylene	20.73	18.93	1.095 ok	1.095	1.035-1.155

Internal Standard	RT (min.)	Mean RT(min.)	RT Range (+ /- 0.33)	Area	Mean Area	Area Range (+ /- 40 %)
Bromochloromethane	9.22 ok	9.22	8.89-9.55	1358443	ok 1313055	787833-1838277
1,4-Difluorobenzene	11.88 ok	11.88	11.55-12.21	6273945	ok 6185849	3711509-8660189
Chlorobenzene-D5	18.93 ok	18.93	18.60-19.26	2130073	ok 2008008	1204805-2811211

Volatile Surrogate Recovery Summary

Page 1 of 1

Job Number: MC36556
Account: HMANNJP H2M Associates, Inc
Project: Macbeth, 617 Little Britain, New Windsor, NY

Method: TO-15 **Matrix:** AIR

Samples and QC shown here apply to the above method

Lab Sample ID	Lab File ID	S1
MC36556-1	J29954.D	95
MC36556-1	J29952.D	125
MC36556-2	J29951.D	84
MC36556-3	J29957.D	102
MC36556-3	J29950.D	123
MC36556-4	J29949.D	81
MC36556-5	J29948.D	95
MC36556-4DUP	J29955.D	81
MSJ1511-SCC	J29743.D	104
MSJ1520-BS	J29932B.D	80
MSJ1520-MB	J29935.D	95
MSJ1521-SCC	J29961A.D	102
MSJ1511-BS	J29715B.D	85
MSJ1511-MB	J29717.D	79
MSJ1521-BS	J29958A.D	114
MSJ1521-MB	J29961.D	102

Surrogate Compounds **Recovery Limits**

S1 = 4-Bromofluorobenzene 50-129%

6.8.1

6

Volatile Surrogate Recovery Summary

Job Number: MC36556
Account: HMANNJP H2M Associates, Inc
Project: Macbeth, 617 Little Britain, New Windsor, NY

Method: TO-15 BY SIM	Matrix: AIR
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Samples and QC shown here apply to the above method

Lab Sample ID	Lab File ID	S1
MC36556-1A	Q29654.D	95
MC36556-1A	Q29648.D	101
MC36556-2A	Q29650.D	100
MC36556-3A	Q29655.D	101
MC36556-3A	Q29649.D	94
MC36556-4A	Q29651.D	102
MC36556-5A	Q29652.D	91
MC36556-2ADUP	Q29653.D	101
MSQ1286-BS	Q29645B.D	99
MSQ1286-MB	Q29647.D	93

Surrogate Compounds	Recovery Limits
S1 = 4-Bromofluorobenzene	57-139%

Initial Calibration Summary

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Job Number: MC36556
Account: HMANNP H2M Associates, Inc
Project: Macbeth, 617 Little Britain, New Windsor, NY

Sample: MSJ1510-ICC1510
Lab FileID: J29712.D

Response Factor Report MSJ

Method : C:\msdchem\1\methods\J150122T.M (RTE Integrator)
 Title : T015 by GCMS w/DB-1 60 m X .25 mm ID 1.0 um
 Last Update : Fri Jan 23 13:48:53 2015
 Response via : Initial Calibration

Calibration Files

.5 =j29713.D 2 =j29704.D 5 =j29705.D 10 =j29712.D
 20 =j29707.D 30 =j29708.D 40 =j29709.D 0.2 =j29702.D
 = =

Compound	.5	2	5	10	20	30	40	0.2	Avg	%RSD
1) I BROMOCHLOROMETHANE -----ISTD-----										
2) DICHLORODIFLUOROMETHANE										
	2.096	2.886	2.920	2.972	2.171	2.340	2.337	2.831	2.569	14.29
3) PROPYLENE										
	0.287	0.401	0.394	0.399	0.317	0.332	0.340	0.378	0.356	12.05
4) FREON 114										
	2.204	2.259	2.598	2.549	2.043	2.167	2.093	2.460	2.297	9.22
5) CHLOROMETHANE										
	0.391	0.475	0.559	0.548	0.422	0.463	0.476	0.442	0.472	12.24
6) VINYL CHLORIDE										
	0.561	0.653	0.798	0.797	0.619	0.678	0.686	0.599	0.674	12.85
7) 1,3-BUTADIENE										
	0.262	0.308	0.340	0.350	0.299	0.321	0.319		0.314	9.27
8) BROMOMETHANE										
	0.824	0.883	1.024	1.020	0.830	0.910	0.902	0.815	0.901	9.18
9) CHLOROETHANE										
	0.295	0.316	0.309	0.340	0.304	0.334	0.315		0.316	5.06
10) ACROLEIN										
	0.095	0.115	0.151	0.146	0.170	0.166			0.140	21.13
11) TRICHLOROFLUOROMETHANE										
	2.443	2.462	2.683	2.738	2.289	2.546	2.437	2.675	2.534	6.08
12) ISOPROPYL ALCOHOL										
	0.573	0.555	0.603	0.694	0.677	0.753	0.703		0.651	11.42
13) ACETONE										
	0.626	0.432	0.461	0.546	0.520	0.580	0.546		0.530	12.61
14) ACRYLONITRILE										
	0.192	0.247	0.316	0.298	0.344	0.324			0.287	19.82
15) PENTANE										
	0.493	0.459	0.499	0.514	0.423	0.469	0.449	0.455	0.470	6.39
16) 1,1-DICHLOROETHYLENE										
	0.889	0.886	0.974	1.057	0.873	0.982	0.949	0.845	0.932	7.59
17) CARBON DISULFIDE										
	1.820	1.877	2.276	2.390	1.781	2.032	2.038	2.052	2.033	10.52
18) ETHANOL										
	0.077	0.086	0.099	0.108	0.121	0.113			0.101	16.63
19) BROMOETHENE										
	0.846	0.873	0.990	1.048	0.874	0.976	0.944	0.774	0.916	9.75
20) METHYLENE CHLORIDE										
	0.805	0.736	0.768	0.861	0.714	0.819	0.793	0.779	0.784	5.93
21) 3-CHLOROPROPENE										
	0.378	0.364	0.396	0.526	0.444	0.564	0.537		0.458	18.12
22) FREON 113										
	1.901	1.828	1.863	2.092	1.764	1.960	1.828	1.819	1.882	5.48
23) TRANS-1,2-DICHLOROETHYLENE										

Initial Calibration Summary

Job Number: MC36556
Account: HMANNJP H2M Associates, Inc
Project: Macbeth, 617 Little Britain, New Windsor, NY

Sample: MSJ1510-ICC1510
Lab FileID: J29712.D

		0.719	0.730	0.820	0.951	0.795	0.912	0.890	0.567	0.798	15.68
24)	TERTIARY BUTYL ALCOHOL										
		0.923	0.897	0.956	1.110	1.081	1.181	1.114		1.038	10.62
25)	METHYL TERTIARY BUTYL ETHER										
		1.742	1.413	1.509	1.880	1.736	1.928	1.855		1.723	11.27
26)	TETRAHYDROFURAN										
		0.457	0.424	0.466	0.544	0.519	0.576	0.544		0.504	11.02
27)	HEXANE										
		1.064	0.966	1.022	1.138	0.947	1.061	1.004	0.899	1.012	7.48
28)	VINYL ACETATE										
		0.921	0.624	0.730	0.962	0.947	1.074	1.075		0.905	18.72
29)	1,1-DICHLOROETHANE										
		1.364	1.068	1.203	1.526	1.294	1.469	1.426	1.072	1.303	13.45
30)	METHYL ETHYL KETONE										
		0.784	0.675	0.717	0.825	0.768	0.876	0.857		0.786	9.30
31)	cis-1,2-DICHLOROETHYLENE										
		0.951	0.846	1.027	1.228	1.065	1.222	1.169	0.720	1.028	17.73
32)	ETHYL ACETATE										
		0.552	1.287	1.353	1.518	1.345	1.504	1.424		1.283	25.98
33)	CHLOROFORM										
		2.063	1.811	2.047	2.319	2.050	2.337	2.230	1.783	2.080	10.09
34)	1,1,1-TRICHLOROETHANE										
		2.151	1.825	2.098	2.463	2.181	2.505	2.410	1.836	2.184	12.12
35)	CARBON TETRACHLORIDE										
		2.258	2.081	2.313	2.693	2.376	2.741	2.623	1.905	2.374	12.55
36)	1,2-DICHLOROETHANE										
		0.901	0.738	0.878	1.047	0.983	1.220	1.214		0.997	17.84
37)	I 1,4-DIFLUOROBENZENE	-----ISTD-----									
38)	BENZENE										
		0.577	0.439	0.506	0.661	0.555	0.653	0.592		0.569	13.81
39)	CYCLOHEXANE										
		0.278	0.252	0.276	0.333	0.267	0.292	0.255		0.279	9.89
40)	TRICHLOROETHYLENE										
		0.307	0.326	0.346	0.414	0.333	0.340	0.277	0.275	0.327	13.55
41)	1,2-DICHLOROPROPANE										
		0.196	0.154	0.174	0.218	0.189	0.218	0.197	0.140	0.186	15.20
42)	BROMODICHLOROMETHANE										
		0.437	0.343	0.401	0.534	0.465	0.516	0.437	0.323	0.432	17.38
43)	2,2,4-TRIMETHYLPENTANE										
		0.905	0.852	0.915	1.062	0.821	0.822	0.668	0.769	0.852	13.57
44)	1,4-DIOXANE										
		0.061	0.073	0.083	0.114	0.104	0.112	0.099		0.092	22.11
45)	METHYL METHACRYLATE										
		0.104	0.116	0.130	0.163	0.155	0.162	0.139		0.139	16.76
46)	HEPTANE										
		0.259	0.255	0.269	0.308	0.250	0.258	0.216	0.218	0.254	11.43
47)	METHYL ISOBUTYL KETONE										
		0.238	0.238	0.262	0.323	0.293	0.306	0.262		0.274	12.12
48)	cis-1,3-DICHLOROPROPENE										
		0.236	0.202	0.252	0.352	0.321	0.378	0.346		0.298	22.69
49)	TOLUENE										
		0.405	0.318	0.366	0.492	0.441	0.507	0.464	0.247	0.405	22.29
50)	trans-1,3-DICHLOROPROPENE										
		0.179	0.174	0.222	0.319	0.301	0.351	0.325		0.267	27.57
51)	1,1,2-TRICHLOROETHANE										
		0.210	0.167	0.188	0.250	0.227	0.261	0.239	0.134	0.210	20.95
52)	1,3-DICHLOROPROPANE										
		0.291	0.245	0.279	0.364	0.333	0.372	0.336	0.173	0.299	22.39

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Job Number: MC36556
Account: HMANNJP H2M Associates, Inc
Project: Macbeth, 617 Little Britain, New Windsor, NY

Sample: MSJ1510-ICC1510
Lab FileID: J29712.D

53)	I	CHLORO BENZENE-D5	-----ISTD-----								
54)		2-HEXANONE	0.423	0.401	0.385	0.528	0.433	0.515	0.412	0.443	12.76
55)		TETRACHLOROETHYLENE	0.866	0.723	0.679	0.958	0.739	0.930	0.765	0.662	14.35
56)		DIBROMOCHLOROMETHANE	1.055	0.760	0.760	1.141	0.907	1.196	1.028	0.654	21.10
57)		1,2-DIBROMOETHANE	0.808	0.632	0.634	0.908	0.723	0.970	0.841	0.406	24.51
58)		1,1,1,2-TETRACHLOROETHANE	0.698	0.518	0.506	0.745	0.609	0.798	0.675	0.650	17.04
59)		CHLOROBENZENE	1.351	1.012	0.974	1.412	1.135	1.495	1.259	1.234	16.21
60)		ETHYLBENZENE	1.962	1.527	1.440	2.070	1.644	2.082	1.747	1.105	20.03
61)		m,p-XYLENE	0.787	0.617	0.587	0.854	0.693	0.866	0.715	0.409	22.08
62)		o-XYLENE	0.767	0.605	0.587	0.854	0.700	0.861	0.705	0.395	22.58
63)		STYRENE	1.002	0.795	0.807	1.222	1.005	1.293	1.099	0.440	28.54
64)		NONANE	0.892	0.702	0.681	0.913	0.705	0.850	0.682	0.775	13.56
65)		BROMOFORM	0.856	0.620	0.649	1.022	0.849	1.161	1.009	0.881	22.64
66)		4-BROMOFLUOROBENZENE	0.905	0.905	1.303	1.336	1.440	0.937	1.334	0.820	22.45
67)		1,1,2,2-TETRACHLOROETHANE	1.072	0.854	0.808	1.114	0.898	1.076	0.860	0.600	18.94
68)		ISOPROPYLBENZENE	2.171	1.685	1.620	2.344	1.905	2.365	1.951	1.188	21.01
69)		2-CHLOROTOLUENE	1.496	1.125	1.122	1.639	1.352	1.719	1.457	0.809	22.70
70)		4-ETHYLTOLUENE	1.747	1.418	1.443	2.151	1.795	2.242	1.849	0.759	28.16
71)		1,3,5-TRIMETHYLBENZENE	1.807	1.351	1.333	1.943	1.621	2.002	1.648	0.981	21.85
72)		TERT-BUTYLBENZENE	1.737	1.388	1.377	2.039	1.742	2.124	1.709	0.883	24.64
73)		1,2,4-TRIMETHYLBENZENE	1.583	1.286	1.305	1.948	1.663	2.024	1.614	1.632	17.40
74)		m-DICHLOROBENZENE	0.951	0.748	0.798	1.249	1.100	1.454	1.248	1.078	24.04
75)		BENZYL CHLORIDE	0.459	0.374	0.514	1.000	0.903	1.217		0.745	45.95
		---- Quadratic regression ----	Coefficient = 0.9910								
			Response Ratio = -0.00926 + 0.57346 *A + 0.20967 *A^2								
76)		p-DICHLOROBENZENE	1.092	0.787	0.804	1.237	1.076	1.421	1.225	1.092	21.29
77)		SEC-BUTYLBENZENE	2.299	1.838	1.861	2.692	2.267	2.780	2.250	1.112	24.97
78)		4-ISOPROPYLTOLUENE	1.738	1.431	1.470	2.204	1.905	2.353	1.898	1.857	18.60
79)		o-DICHLOROBENZENE	0.981	0.695	0.728	1.072	0.940	1.235	1.061	0.959	20.11
80)		n-BUTYLBENZENE	1.297	1.062	1.145	1.759	1.547	1.956	1.591	1.480	22.11
81)		HEXACHLOROBUTADIENE	0.457	0.258	0.258	0.360	0.351	0.456	0.349	0.200	27.75

Initial Calibration Summary

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Job Number: MC36556
Account: HMANNJP H2M Associates, Inc
Project: Macbeth, 617 Little Britain, New Windsor, NY

Sample: MSJ1510-ICC1510
Lab FileID: J29712.D

82) 1,2,4-TRICHLOROBENZENE
0.227 0.099 0.168 0.338 0.304 0.410 0.258 44.53
---- Quadratic regression ---- Coefficient = 0.9904
Response Ratio = -0.00374 + 0.19227 *A + 0.07109 *A^2

83) NAPHTHALENE
0.529 0.156 0.295 0.660 0.592 0.788 0.503 46.91
---- Quadratic regression ---- Coefficient = 0.9900
Response Ratio = -0.01491 + 0.38983 *A + 0.13105 *A^2

(#) = Out of Range ### Number of calibration levels exceeded format ###

J150122T.M

Mon Jan 26 15:50:55 2015

6.9.1

6

Initial Calibration Verification

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Job Number: MC36556
 Account: HMANNJP H2M Associates, Inc
 Project: Macbeth, 617 Little Britain, New Windsor, NY

Sample: MSJ1511-ICV1510
 Lab FileID: J29715A.D

Evaluate Continuing Calibration Report

Data File : C:\msdchem\1\data\J150125\j29715a.D Vial: 2
 Acq On : 25 Jan 2015 5:41 pm Operator: akina
 Sample : ICV1510-10(m407) Inst : MSJ
 Misc : ms33716,msj1511,,,,,1 Multiplr: 1.00
 MS Integration Params: RTEINT.P

Method : C:\msdchem\1\methods\J150122T.M (RTE Integrator)
 Title : T015 by GCMS w/DB-1 60 m X .25 mm ID 1.0 um
 Last Update : Fri Jan 23 13:48:53 2015
 Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 60% Max. R.T. Dev 0.33min
 Max. RRF Dev : 30% Max. Rel. Area : 140%

	Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)	R.T.
1 I	BROMOCHLOROMETHANE	1.000	1.000	0.0	120	0.00	8.99
2 m	DICHLORODIFLUOROMETHANE	2.569	1.901	26.0	77	0.00	4.34
3 m	PROPYLENE	0.356	0.257	27.8	77	0.00	4.26
4 m	FREON 114	2.297	1.994	13.2	94	0.00	4.61
5 m	CHLOROMETHANE	0.472	0.385	18.4	84	0.00	4.51
6 m	VINYL CHLORIDE	0.674	0.570	15.4	86	0.00	4.73
7 m	1,3-BUTADIENE	0.314	0.285	9.2	98	0.00	4.87
8 m	BROMOMETHANE	0.901	0.794	11.9	93	0.00	5.14
9 m	CHLOROETHANE	0.316	0.301	4.7	106	0.00	5.30
10 m	ACROLEIN	0.140	0.128	8.6	102	0.00	5.75
11 m	TRICHLOROFLUOROMETHANE	2.534	2.246	11.4	98	0.00	6.03
12 m	ISOPROPYL ALCOHOL	0.651	0.586	10.0	101	0.01	6.18
13 m	ACETONE	0.530	0.467	11.9	103	0.00	5.88
14 m	ACRYLONITRILE	0.287	0.273	4.9	103	0.00	6.31
15 m	PENTANE	0.470	0.434	7.7	101	0.00	6.37
16 m	1,1-DICHLOROETHYLENE	0.932	0.871	6.5	99	0.00	6.65
17 m	CARBON DISULFIDE	2.033	1.782	12.3	89	0.00	7.10
18 m	ETHANOL	0.101	0.085	15.8	103	0.00	5.49
19 m	BROMOETHENE	0.916	0.847	7.5	97	0.00	5.64
20 m	METHYLENE CHLORIDE	0.784	0.741	5.5	103	0.00	6.75
21 m	3-CHLOROPROPENE	0.458	0.437	4.6	100	0.00	6.87
22 m	FREON 113	1.882	1.805	4.1	103	0.00	7.00
23 m	TRANS-1,2-DICHLOROETHYLEN	0.798	0.812	-1.8	102	0.00	7.70
24 m	TERTIARY BUTYL ALCOHOL	1.038	0.945	9.0	102	0.00	6.77
25 m	METHYL TERTIARY BUTYL ETH	1.723	1.594	7.5	102	0.00	7.97
26 m	TETRAHYDROFURAN	0.504	0.468	7.1	103	0.00	9.64
27 m	HEXANE	1.012	0.982	3.0	103	0.00	9.02
28 m	VINYL ACETATE	0.905	0.799	11.7	99	0.00	8.04
29 m	1,1-DICHLOROETHANE	1.303	1.317	-1.1	103	0.00	7.90
30 m	METHYL ETHYL KETONE	0.786	0.713	9.3	104	0.00	8.34
31 m	cis-1,2-DICHLOROETHYLENE	1.028	1.051	-2.2	103	0.00	8.80
32 m	ETHYL ACETATE	1.283	1.310	-2.1	103	0.00	9.03
33 m	CHLOROFORM	2.080	2.016	3.1	104	0.00	9.13
34 m	1,1,1-TRICHLOROETHANE	2.184	2.119	3.0	103	0.00	10.31
35 m	CARBON TETRACHLORIDE	2.374	2.289	3.6	102	0.00	11.08
36 m	1,2-DICHLOROETHANE	0.997	0.899	9.8	103	0.00	10.01
37 I	1,4-DIFLUOROBENZENE	1.000	1.000	0.0	134	0.00	11.31
38 m	BENZENE	0.569	0.509	10.5	103	0.00	10.89
39 m	CYCLOHEXANE	0.279	0.255	8.6	103	0.00	11.24
40 m	TRICHLOROETHYLENE	0.327	0.324	0.9	105	0.00	12.27
41 m	1,2-DICHLOROPROPANE	0.186	0.168	9.7	103	0.00	11.96

Initial Calibration Verification

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Job Number: MC36556
 Account: HMANNJP H2M Associates, Inc
 Project: Macbeth, 617 Little Britain, New Windsor, NY

Sample: MSJ1511-ICV1510
 Lab FileID: J29715A.D

42 m	BROMODICHLOROMETHANE	0.432	0.418	3.2	105	0.00	12.22
43 m	2,2,4-TRIMETHYLPENTANE	0.852	0.838	1.6	106	0.00	12.30
44 m	1,4-DIOXANE	0.092	0.085	7.6	100	0.00	12.36
45 m	METHYL METHACRYLATE	0.139	0.126	9.4	104	0.00	12.53
46 m	HEPTANE	0.254	0.242	4.7	105	0.00	12.64
47 m	METHYL ISOBUTYL KETONE	0.274	0.251	8.4	104	0.01	13.60
48 m	cis-1,3-DICHLOROPROPENE	0.298	0.265	11.1	101	0.00	13.48
49 m	TOLUENE	0.405	0.373	7.9	101	0.00	14.99
50 m	trans-1,3-DICHLOROPROPENE	0.267	0.236	11.6	99	0.00	14.27
51 m	1,1,2-TRICHLOROETHANE	0.210	0.190	9.5	102	0.00	14.56
52 m	1,3-DICHLOROPROPANE	0.299	0.278	7.0	102	0.00	15.04
53 I	CHLOROBENZENE-D5	1.000	1.000	0.0	117	0.00	18.00
54 m	2-HEXANONE	0.443	0.463	-4.5	102	0.00	15.49
55 m	TETRACHLOROETHYLENE	0.790	0.840	-6.3	102	0.00	16.86
56 m	DIBROMOCHLOROMETHANE	0.937	0.993	-6.0	102	0.00	15.69
57 m	1,2-DIBROMOETHANE	0.740	0.776	-4.9	100	0.00	16.11
58 m	1,1,1,2-TETRACHLOROETHANE	0.650	0.645	0.8	101	0.00	18.05
59 m	CHLOROBENZENE	1.234	1.216	1.5	100	0.00	18.08
60 m	ETHYLBENZENE	1.697	1.795	-5.8	101	0.00	18.76
61 m	m,p-XYLENE	0.691	0.744	-7.7	102	0.00	19.11
62 m	o-XYLENE	0.684	0.748	-9.4	102	0.00	20.01
63 m	STYRENE	0.958	1.050	-9.6	100	0.00	19.80
64 m	NONANE	0.775	0.815	-5.2	104	0.00	20.44
65 m	BROMOFORM	0.881	0.868	1.5	99	0.00	19.27
66 S	4-BROMOFLUOROBENZENE	1.123	0.955	15.0	83	0.00	20.92
67 m	1,1,2,2-TETRACHLOROETHANE	0.910	0.981	-7.8	103	0.00	20.01
68 m	ISOPROPYLBENZENE	1.904	2.054	-7.9	102	0.00	21.20
69 m	2-CHLOROTOLUENE	1.340	1.421	-6.0	101	0.00	22.22
70 m	4-ETHYLTOLUENE	1.675	1.874	-11.9	102	0.00	22.64
71 m	1,3,5-TRIMETHYLBENZENE	1.586	1.710	-7.8	103	0.00	22.82
72 m	TERT-BUTYLBENZENE	1.625	1.803	-11.0	103	0.00	23.76
73 m	1,2,4-TRIMETHYLBENZENE	1.632	1.707	-4.6	102	0.00	23.78
74 m	m-DICHLOROBENZENE	1.078	1.068	0.9	100	0.00	24.13
----- Amount Calc. %Drift -----							
75 m	BENZYL CHLORIDE	10.000	10.478	-4.8	96	0.00	24.10
----- AvgRF CCRF %Dev -----							
76 m	p-DICHLOROBENZENE	1.092	1.057	3.2	100	0.00	24.28
77 m	SEC-BUTYLBENZENE	2.138	2.383	-11.5	103	0.00	24.40
78 m	4-ISOPROPYLTOLUENE	1.857	1.947	-4.8	103	0.00	24.75
79 m	o-DICHLOROBENZENE	0.959	0.926	3.4	101	0.00	25.01
80 m	n-BUTYLBENZENE	1.480	1.536	-3.8	102	0.00	25.61
81 m	HEXACHLOROBUTADIENE	0.336	0.324	3.6	105	0.00	29.10
----- Amount Calc. %Drift -----							
82 m	1,2,4-TRICHLOROBENZENE	10.000	10.534	-5.3	96	0.00	28.25
83 m	NAPHTHALENE	10.000	10.353	-3.5	93	0.00	28.45

(#) = Out of Range

SPCC's out = 0 CCC's out = 0

j29712.D J150122T.M

Wed Jan 28 13:23:35 2015

Continuing Calibration Summary

Page 1 of 2

Job Number: MC36556
 Account: HMANNJP H2M Associates, Inc
 Project: Macbeth, 617 Little Britain, New Windsor, NY

Sample: MSJ1511-CC1510
 Lab FileID: J29715.D

Evaluate Continuing Calibration Report

Data File : C:\msdchem\1\data\J150125\j29715.D Vial: 2
 Acq On : 25 Jan 2015 5:41 pm Operator: akina
 Sample : cc1510-10(m407) Inst : MSJ
 Misc : ms33716,msj1511,,,,,1 Multiplr: 1.00
 MS Integration Params: RTEINT.P

Method : C:\msdchem\1\methods\J150122T.M (RTE Integrator)
 Title : T015 by GCMS w/DB-1 60 m X .25 mm ID 1.0 um
 Last Update : Fri Jan 23 13:48:53 2015
 Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 60% Max. R.T. Dev 0.33min
 Max. RRF Dev : 30% Max. Rel. Area : 140%

	Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)	R.T.
1 I	BROMOCHLOROMETHANE	1.000	1.000	0.0	120	0.00	8.99
2 m	DICHLORODIFLUOROMETHANE	2.569	1.901	26.0	77	0.00	4.34
3 m	PROPYLENE	0.356	0.257	27.8	77	0.00	4.26
4 m	FREON 114	2.297	1.994	13.2	94	0.00	4.61
5 m	CHLOROMETHANE	0.472	0.385	18.4	84	0.00	4.51
6 m	VINYL CHLORIDE	0.674	0.570	15.4	86	0.00	4.73
7 m	1,3-BUTADIENE	0.314	0.285	9.2	98	0.00	4.87
8 m	BROMOMETHANE	0.901	0.794	11.9	93	0.00	5.14
9 m	CHLOROETHANE	0.316	0.301	4.7	106	0.00	5.30
10 m	ACROLEIN	0.140	0.128	8.6	102	0.00	5.75
11 m	TRICHLOROFLUOROMETHANE	2.534	2.246	11.4	98	0.00	6.03
12 m	ISOPROPYL ALCOHOL	0.651	0.586	10.0	101	0.01	6.18
13 m	ACETONE	0.530	0.467	11.9	103	0.00	5.88
14 m	ACRYLONITRILE	0.287	0.273	4.9	103	0.00	6.31
15 m	PENTANE	0.470	0.434	7.7	101	0.00	6.37
16 m	1,1-DICHLOROETHYLENE	0.932	0.871	6.5	99	0.00	6.65
17 m	CARBON DISULFIDE	2.033	1.782	12.3	89	0.00	7.10
18 m	ETHANOL	0.101	0.085	15.8	103	0.00	5.49
19 m	BROMOETHENE	0.916	0.847	7.5	97	0.00	5.64
20 m	METHYLENE CHLORIDE	0.784	0.741	5.5	103	0.00	6.75
21 m	3-CHLOROPROPENE	0.458	0.437	4.6	100	0.00	6.87
22 m	FREON 113	1.882	1.805	4.1	103	0.00	7.00
23 m	TRANS-1,2-DICHLOROETHYLEN	0.798	0.812	-1.8	102	0.00	7.70
24 m	TERTIARY BUTYL ALCOHOL	1.038	0.945	9.0	102	0.00	6.77
25 m	METHYL TERTIARY BUTYL ETH	1.723	1.594	7.5	102	0.00	7.97
26 m	TETRAHYDROFURAN	0.504	0.468	7.1	103	0.00	9.64
27 m	HEXANE	1.012	0.982	3.0	103	0.00	9.02
28 m	VINYL ACETATE	0.905	0.799	11.7	99	0.00	8.04
29 m	1,1-DICHLOROETHANE	1.303	1.317	-1.1	103	0.00	7.90
30 m	METHYL ETHYL KETONE	0.786	0.713	9.3	104	0.00	8.34
31 m	cis-1,2-DICHLOROETHYLENE	1.028	1.051	-2.2	103	0.00	8.80
32 m	ETHYL ACETATE	1.283	1.310	-2.1	103	0.00	9.03
33 m	CHLOROFORM	2.080	2.016	3.1	104	0.00	9.13
34 m	1,1,1-TRICHLOROETHANE	2.184	2.119	3.0	103	0.00	10.31
35 m	CARBON TETRACHLORIDE	2.374	2.289	3.6	102	0.00	11.08
36 m	1,2-DICHLOROETHANE	0.997	0.899	9.8	103	0.00	10.01
37 I	1,4-DIFLUOROBENZENE	1.000	1.000	0.0	134	0.00	11.31
38 m	BENZENE	0.569	0.509	10.5	103	0.00	10.89
39 m	CYCLOHEXANE	0.279	0.255	8.6	103	0.00	11.24
40 m	TRICHLOROETHYLENE	0.327	0.324	0.9	105	0.00	12.27
41 m	1,2-DICHLOROPROPANE	0.186	0.168	9.7	103	0.00	11.96

Continuing Calibration Summary

Page 2 of 2

Job Number: MC36556
Account: HMANNJP H2M Associates, Inc
Project: Macbeth, 617 Little Britain, New Windsor, NY

Sample: MSJ1511-CC1510
Lab FileID: J29715.D

42 m	BROMODICHLOROMETHANE	0.432	0.418	3.2	105	0.00	12.22
43 m	2,2,4-TRIMETHYLPENTANE	0.852	0.838	1.6	106	0.00	12.30
44 m	1,4-DIOXANE	0.092	0.085	7.6	100	0.00	12.36
45 m	METHYL METHACRYLATE	0.139	0.126	9.4	104	0.00	12.53
46 m	HEPTANE	0.254	0.242	4.7	105	0.00	12.64
47 m	METHYL ISOBUTYL KETONE	0.274	0.251	8.4	104	0.01	13.60
48 m	cis-1,3-DICHLOROPROPENE	0.298	0.265	11.1	101	0.00	13.48
49 m	TOLUENE	0.405	0.373	7.9	101	0.00	14.99
50 m	trans-1,3-DICHLOROPROPENE	0.267	0.236	11.6	99	0.00	14.27
51 m	1,1,2-TRICHLOROETHANE	0.210	0.190	9.5	102	0.00	14.56
52 m	1,3-DICHLOROPROPANE	0.299	0.278	7.0	102	0.00	15.04
53 I	CHLOROBENZENE-D5	1.000	1.000	0.0	117	0.00	18.00
54 m	2-HEXANONE	0.443	0.463	-4.5	102	0.00	15.49
55 m	TETRACHLOROETHYLENE	0.790	0.840	-6.3	102	0.00	16.86
56 m	DIBROMOCHLOROMETHANE	0.937	0.993	-6.0	102	0.00	15.69
57 m	1,2-DIBROMOETHANE	0.740	0.776	-4.9	100	0.00	16.11
58 m	1,1,1,2-TETRACHLOROETHANE	0.650	0.645	0.8	101	0.00	18.05
59 m	CHLOROBENZENE	1.234	1.216	1.5	100	0.00	18.08
60 m	ETHYLBENZENE	1.697	1.795	-5.8	101	0.00	18.76
61 m	m,p-XYLENE	0.691	0.744	-7.7	102	0.00	19.11
62 m	o-XYLENE	0.684	0.748	-9.4	102	0.00	20.01
63 m	STYRENE	0.958	1.050	-9.6	100	0.00	19.80
64 m	NONANE	0.775	0.815	-5.2	104	0.00	20.44
65 m	BROMOFORM	0.881	0.868	1.5	99	0.00	19.27
66 S	4-BROMOFLUOROBENZENE	1.123	0.955	15.0	83	0.00	20.92
67 m	1,1,2,2-TETRACHLOROETHANE	0.910	0.981	-7.8	103	0.00	20.01
68 m	ISOPROPYLBENZENE	1.904	2.054	-7.9	102	0.00	21.20
69 m	2-CHLOROTOLUENE	1.340	1.421	-6.0	101	0.00	22.22
70 m	4-ETHYLTOLUENE	1.675	1.874	-11.9	102	0.00	22.64
71 m	1,3,5-TRIMETHYLBENZENE	1.586	1.710	-7.8	103	0.00	22.82
72 m	TERT-BUTYLBENZENE	1.625	1.803	-11.0	103	0.00	23.76
73 m	1,2,4-TRIMETHYLBENZENE	1.632	1.707	-4.6	102	0.00	23.78
74 m	m-DICHLOROBENZENE	1.078	1.068	0.9	100	0.00	24.13
----- Amount Calc. %Drift -----							
75 m	BENZYL CHLORIDE	10.000	10.478	-4.8	96	0.00	24.10
----- AvgRF CCRF %Dev -----							
76 m	p-DICHLOROBENZENE	1.092	1.057	3.2	100	0.00	24.28
77 m	SEC-BUTYLBENZENE	2.138	2.383	-11.5	103	0.00	24.40
78 m	4-ISOPROPYLTOLUENE	1.857	1.947	-4.8	103	0.00	24.75
79 m	o-DICHLOROBENZENE	0.959	0.926	3.4	101	0.00	25.01
80 m	n-BUTYLBENZENE	1.480	1.536	-3.8	102	0.00	25.61
81 m	HEXACHLOROBUTADIENE	0.336	0.324	3.6	105	0.00	29.10
----- Amount Calc. %Drift -----							
82 m	1,2,4-TRICHLOROBENZENE	10.000	10.534	-5.3	96	0.00	28.25
83 m	NAPHTHALENE	10.000	10.353	-3.5	93	0.00	28.45

(#) = Out of Range

SPCC's out = 0 CCC's out = 0

j29712.D J150122T.M

Wed Jan 28 13:23:32 2015

Continuing Calibration Summary

Page 1 of 2

Job Number: MC36556
 Account: HMANNJP H2M Associates, Inc
 Project: Macbeth, 617 Little Britain, New Windsor, NY

Sample: MSJ1520-CC1510
 Lab FileID: J29932.D

Evaluate Continuing Calibration Report

Data File : C:\msdchem\1\data\J150209\j29932.D Vial: 1
 Acq On : 9 Feb 2015 6:26 pm Operator: AkinA
 Sample : CC1510-10(m399) Inst : MSJ
 Misc : ms33838,msj1520,,,,,1 Multiplr: 1.00
 MS Integration Params: RTEINT.P

Method : C:\msdchem\1\methods\J150122T.M (RTE Integrator)
 Title : T015 by GCMS w/DB-1 60 m X .25 mm ID 1.0 um
 Last Update : Fri Jan 23 13:48:53 2015
 Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 60% Max. R.T. Dev 0.33min
 Max. RRF Dev : 30% Max. Rel. Area : 140%

	Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)	R.T.
1 I	BROMOCHLOROMETHANE	1.000	1.000	0.0	94	-0.01	8.99
2 m	DICHLORODIFLUOROMETHANE	2.569	2.248	12.5	71	0.00	4.33
3 m	PROPYLENE	0.356	0.251	29.5	59#	-0.01	4.25
4 m	FREON 114	2.297	2.097	8.7	77	0.00	4.60
5 m	CHLOROMETHANE	0.472	0.370	21.6	63	0.00	4.50
6 m	VINYL CHLORIDE	0.674	0.561	16.8	66	0.00	4.73
7 m	1,3-BUTADIENE	0.314	0.257	18.2	69	0.00	4.86
8 m	BROMOMETHANE	0.901	0.818	9.2	75	0.00	5.14
9 m	CHLOROETHANE	0.316	0.266	15.8	73	-0.01	5.29
10 m	ACROLEIN	0.140	0.111	20.7	69	0.00	5.74
11 m	TRICHLOROFLUOROMETHANE	2.534	2.519	0.6	86	0.00	6.03
12 m	ISOPROPYL ALCOHOL	0.651	0.547	16.0	74	0.00	6.16
13 m	ACETONE	0.530	0.422	20.4	72	0.00	5.88
14 m	ACRYLONITRILE	0.287	0.244	15.0	72	0.00	6.30
15 m	PENTANE	0.470	0.392	16.6	71	0.00	6.36
16 m	1,1-DICHLOROETHYLENE	0.932	0.883	5.3	78	-0.01	6.64
17 m	CARBON DISULFIDE	2.033	1.832	9.9	72	0.00	7.10
18 m	ETHANOL	0.101	0.080	20.8	75	0.00	5.49
19 m	BROMOETHENE	0.916	0.878	4.1	78	0.00	5.64
20 m	METHYLENE CHLORIDE	0.784	0.699	10.8	76	0.00	6.75
21 m	3-CHLOROPROPENE	0.458	0.403	12.0	72	0.00	6.86
22 m	FREON 113	1.882	1.908	-1.4	85	0.00	7.00
23 m	TRANS-1,2-DICHLOROETHYLEN	0.798	0.786	1.5	77	0.00	7.69
24 m	TERTIARY BUTYL ALCOHOL	1.038	0.885	14.7	75	0.00	6.75
25 m	METHYL TERTIARY BUTYL ETH	1.723	1.507	12.5	75	0.00	7.97
26 m	TETRAHYDROFURAN	0.504	0.403	20.0	69	0.00	9.64
27 m	HEXANE	1.012	0.896	11.5	74	0.00	9.02
28 m	VINYL ACETATE	0.905	0.800	11.6	78	0.00	8.03
29 m	1,1-DICHLOROETHANE	1.303	1.260	3.3	77	-0.01	7.90
30 m	METHYL ETHYL KETONE	0.786	0.656	16.5	74	0.00	8.34
31 m	cis-1,2-DICHLOROETHYLENE	1.028	1.021	0.7	78	-0.01	8.79
32 m	ETHYL ACETATE	1.283	1.166	9.1	72	0.00	9.03
33 m	CHLOROFORM	2.080	2.009	3.4	81	-0.01	9.12
34 m	1,1,1-TRICHLOROETHANE	2.184	2.234	-2.3	85	0.00	10.31
35 m	CARBON TETRACHLORIDE	2.374	2.597	-9.4	90	0.00	11.07
36 m	1,2-DICHLOROETHANE	0.997	0.944	5.3	84	0.00	10.00
37 I	1,4-DIFLUOROBENZENE	1.000	1.000	0.0	107	-0.01	11.30
38 m	BENZENE	0.569	0.501	12.0	81	0.00	10.89
39 m	CYCLOHEXANE	0.279	0.248	11.1	80	0.00	11.24
40 m	TRICHLOROETHYLENE	0.327	0.313	4.3	81	-0.01	12.26
41 m	1,2-DICHLOROPROPANE	0.186	0.163	12.4	80	-0.01	11.95

Continuing Calibration Summary

Page 2 of 2

Job Number: MC36556
Account: HMANNJP H2M Associates, Inc
Project: Macbeth, 617 Little Britain, New Windsor, NY

Sample: MSJ1520-CC1510
Lab FileID: J29932.D

42 m	BROMODICHLOROMETHANE	0.432	0.420	2.8	84	0.00	12.21
43 m	2,2,4-TRIMETHYLPENTANE	0.852	0.754	11.5	76	0.00	12.30
44 m	1,4-DIOXANE	0.092	0.072	21.7	68	0.01	12.36
45 m	METHYL METHACRYLATE	0.139	0.114	18.0	75	0.00	12.52
46 m	HEPTANE	0.254	0.213	16.1	74	0.00	12.64
47 m	METHYL ISOBUTYL KETONE	0.274	0.198	27.7	66	0.00	13.59
48 m	cis-1,3-DICHLOROPROPENE	0.298	0.272	8.7	83	0.00	13.48
49 m	TOLUENE	0.405	0.377	6.9	82	0.00	14.99
50 m	trans-1,3-DICHLOROPROPENE	0.267	0.248	7.1	83	0.00	14.27
51 m	1,1,2-TRICHLOROETHANE	0.210	0.192	8.6	82	0.00	14.55
52 m	1,3-DICHLOROPROPANE	0.299	0.278	7.0	82	0.00	15.03
53 I	CHLOROBENZENE-D5	1.000	1.000	0.0	98	0.00	17.98
54 m	2-HEXANONE	0.443	0.353	20.3	66	0.00	15.49
55 m	TETRACHLOROETHYLENE	0.790	0.866	-9.6	89	0.00	16.86
56 m	DIBROMOCHLOROMETHANE	0.937	1.056	-12.7	91	0.00	15.69
57 m	1,2-DIBROMOETHANE	0.740	0.795	-7.4	86	-0.01	16.10
58 m	1,1,1,2-TETRACHLOROETHANE	0.650	0.694	-6.8	91	0.00	18.03
59 m	CHLOROBENZENE	1.234	1.246	-1.0	87	0.00	18.06
60 m	ETHYLBENZENE	1.697	1.759	-3.7	83	0.00	18.76
61 m	m,p-XYLENE	0.691	0.723	-4.6	83	0.00	19.10
62 m	o-XYLENE	0.684	0.736	-7.6	85	0.00	20.00
63 m	STYRENE	0.958	1.013	-5.7	81	0.00	19.79
64 m	NONANE	0.775	0.643	17.0	69	0.00	20.43
65 m	BROMOFORM	0.881	0.992	-12.6	95	0.00	19.26
66 S	4-BROMOFLUOROBENZENE	1.123	0.898	20.0	66	0.00	20.92
67 m	1,1,2,2-TETRACHLOROETHANE	0.910	1.007	-10.7	89	0.00	20.00
68 m	ISOPROPYLBENZENE	1.904	2.070	-8.7	87	0.00	21.20
69 m	2-CHLOROTOLUENE	1.340	1.379	-2.9	83	0.00	22.21
70 m	4-ETHYLTOLUENE	1.675	1.750	-4.5	80	0.00	22.63
71 m	1,3,5-TRIMETHYLBENZENE	1.586	1.555	2.0	79	0.00	22.82
72 m	TERT-BUTYLBENZENE	1.625	1.733	-6.6	83	0.00	23.76
73 m	1,2,4-TRIMETHYLBENZENE	1.632	1.409	13.7	71	0.00	23.77
74 m	m-DICHLOROBENZENE	1.078	1.088	-0.9	86	0.00	24.12
		Amount	Calc.	%Drift			
75 m	BENZYL CHLORIDE	10.000	11.702	-17.0	93	0.00	24.09
		AvgRF	CCRF	%Dev			
76 m	p-DICHLOROBENZENE	1.092	1.055	3.4	84	0.00	24.28
77 m	SEC-BUTYLBENZENE	2.138	2.326	-8.8	85	0.00	24.39
78 m	4-ISOPROPYLTOLUENE	1.857	1.968	-6.0	88	0.00	24.74
79 m	o-DICHLOROBENZENE	0.959	0.952	0.7	87	0.00	25.01
80 m	n-BUTYLBENZENE	1.480	1.313	11.3	73	0.00	25.60
81 m	HEXACHLOROBUTADIENE	0.336	0.370	-10.1	101	-0.01	29.09
		Amount	Calc.	%Drift			
82 m	1,2,4-TRICHLOROBENZENE	10.000	7.937	20.6	56	-0.01	28.24
83 m	NAPHTHALENE	10.000	8.912	10.9	65	-0.01	28.44

(#) = Out of Range

SPCC's out = 0 CCC's out = 0

j29712.D J150122T.M

Tue Feb 10 17:06:12 2015

Continuing Calibration Summary

Page 1 of 2

Job Number: MC36556
 Account: HMANNJP H2M Associates, Inc
 Project: Macbeth, 617 Little Britain, New Windsor, NY

Sample: MSJ1521-CC1510
 Lab FileID: J29958.D

Evaluate Continuing Calibration Report

Data File : C:\msdchem\1\data\J150210\j29958.D Vial: 1
 Acq On : 10 Feb 2015 6:01 pm Operator: AkinA
 Sample : CC1510-10(m399) Inst : MSJ
 Misc : ms33838,msj1521,,,,,1 Multiplr: 1.00
 MS Integration Params: RTEINT.P

Method : C:\msdchem\1\methods\J150122T.M (RTE Integrator)
 Title : T015 by GCMS w/DB-1 60 m X .25 mm ID 1.0 um
 Last Update : Fri Jan 23 13:48:53 2015
 Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 60% Max. R.T. Dev 0.33min
 Max. RRF Dev : 30% Max. Rel. Area : 140%

	Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)	R.T.
1 I	BROMOCHLOROMETHANE	1.000	1.000	0.0	85	0.00	8.99
2 m	DICHLORODIFLUOROMETHANE	2.569	2.936	-14.3	84	0.00	4.33
3 m	PROPYLENE	0.356	0.316	11.2	68	-0.01	4.25
4 m	FREON 114	2.297	2.500	-8.8	84	0.00	4.60
5 m	CHLOROMETHANE	0.472	0.477	-1.1	75	0.00	4.50
6 m	VINYL CHLORIDE	0.674	0.695	-3.1	75	0.00	4.73
7 m	1,3-BUTADIENE	0.314	0.317	-1.0	77	0.00	4.86
8 m	BROMOMETHANE	0.901	0.989	-9.8	83	0.00	5.14
9 m	CHLOROETHANE	0.316	0.277	12.3	70	-0.01	5.29
10 m	ACROLEIN	0.140	0.131	6.4	75	0.00	5.74
11 m	TRICHLOROFLUOROMETHANE	2.534	2.995	-18.2	94	0.00	6.03
12 m	ISOPROPYL ALCOHOL	0.651	0.621	4.6	77	0.00	6.17
13 m	ACETONE	0.530	0.545	-2.8	85	0.00	5.88
14 m	ACRYLONITRILE	0.287	0.272	5.2	74	0.00	6.30
15 m	PENTANE	0.470	0.434	7.7	72	0.00	6.36
16 m	1,1-DICHLOROETHYLENE	0.932	0.953	-2.3	77	0.00	6.64
17 m	CARBON DISULFIDE	2.033	2.064	-1.5	74	0.00	7.10
18 m	ETHANOL	0.101	0.085	15.8	73	0.00	5.48
19 m	BROMOETHENE	0.916	0.989	-8.0	81	0.00	5.64
20 m	METHYLENE CHLORIDE	0.784	0.737	6.0	73	0.00	6.75
21 m	3-CHLOROPROPENE	0.458	0.409	10.7	66	0.00	6.86
22 m	FREON 113	1.882	2.047	-8.8	84	0.00	7.00
23 m	TRANS-1,2-DICHLOROETHYLEN	0.798	0.814	-2.0	73	0.00	7.69
24 m	TERTIARY BUTYL ALCOHOL	1.038	1.060	-2.1	82	0.00	6.75
25 m	METHYL TERTIARY BUTYL ETH	1.723	1.810	-5.0	82	0.00	7.97
26 m	TETRAHYDROFURAN	0.504	0.522	-3.6	82	0.00	9.63
27 m	HEXANE	1.012	0.944	6.7	71	0.00	9.02
28 m	VINYL ACETATE	0.905	0.938	-3.6	83	0.00	8.03
29 m	1,1-DICHLOROETHANE	1.303	1.214	6.8	68	0.00	7.90
30 m	METHYL ETHYL KETONE	0.786	0.780	0.8	81	0.00	8.34
31 m	cis-1,2-DICHLOROETHYLENE	1.028	1.063	-3.4	74	0.00	8.80
32 m	ETHYL ACETATE	1.283	1.415	-10.3	80	0.00	9.02
33 m	CHLOROFORM	2.080	2.190	-5.3	81	0.00	9.13
34 m	1,1,1-TRICHLOROETHANE	2.184	2.474	-13.3	86	0.00	10.31
35 m	CARBON TETRACHLORIDE	2.374	2.939	-23.8	93	0.00	11.07
36 m	1,2-DICHLOROETHANE	0.997	1.081	-8.4	88	0.00	10.00
37 I	1,4-DIFLUOROBENZENE	1.000	1.000	0.0	91	0.00	11.30
38 m	BENZENE	0.569	0.569	0.0	78	0.00	10.89
39 m	CYCLOHEXANE	0.279	0.284	-1.8	77	0.00	11.24
40 m	TRICHLOROETHYLENE	0.327	0.376	-15.0	82	0.00	12.27
41 m	1,2-DICHLOROPROPANE	0.186	0.205	-10.2	85	0.00	11.96

Continuing Calibration Summary

Page 2 of 2

Job Number: MC36556
Account: HMANNJP H2M Associates, Inc
Project: Macbeth, 617 Little Britain, New Windsor, NY

Sample: MSJ1521-CC1510
Lab FileID: J29958.D

42 m	BROMODICHLOROMETHANE	0.432	0.494	-14.4	84	0.00	12.22
43 m	2,2,4-TRIMETHYLPENTANE	0.852	0.888	-4.2	76	0.00	12.30
44 m	1,4-DIOXANE	0.092	0.117	-27.2	93	-0.01	12.34
45 m	METHYL METHACRYLATE	0.139	0.165	-18.7	92	0.00	12.52
46 m	HEPTANE	0.254	0.257	-1.2	76	0.00	12.64
47 m	METHYL ISOBUTYL KETONE	0.274	0.319	-16.4	89	0.00	13.59
48 m	cis-1,3-DICHLOROPROPENE	0.298	0.338	-13.4	87	0.00	13.48
49 m	TOLUENE	0.405	0.492	-21.5	91	0.00	14.99
50 m	trans-1,3-DICHLOROPROPENE	0.267	0.320	-19.9	91	0.00	14.27
51 m	1,1,2-TRICHLOROETHANE	0.210	0.250	-19.0	91	0.00	14.55
52 m	1,3-DICHLOROPROPANE	0.299	0.377	-26.1	94	0.00	15.03
53 I	CHLOROBENZENE-D5	1.000	1.000	0.0	97	0.00	17.98
54 m	2-HEXANONE	0.443	0.477	-7.7	87	-0.01	15.47
55 m	TETRACHLOROETHYLENE	0.790	0.864	-9.4	87	0.00	16.86
56 m	DIBROMOCHLOROMETHANE	0.937	1.085	-15.8	92	0.00	15.69
57 m	1,2-DIBROMOETHANE	0.740	0.862	-16.5	92	0.00	16.10
58 m	1,1,1,2-TETRACHLOROETHANE	0.650	0.758	-16.6	98	0.00	18.04
59 m	CHLOROBENZENE	1.234	1.360	-10.2	93	0.00	18.07
60 m	ETHYLBENZENE	1.697	1.993	-17.4	93	0.00	18.76
61 m	m,p-XYLENE	0.691	0.838	-21.3	95	0.00	19.10
62 m	o-XYLENE	0.684	0.846	-23.7	96	0.00	20.00
63 m	STYRENE	0.958	1.151	-20.1	91	0.00	19.79
64 m	NONANE	0.775	0.826	-6.6	87	0.00	20.43
65 m	BROMOFORM	0.881	1.011	-14.8	96	0.00	19.26
66 S	4-BROMOFLUOROBENZENE	1.123	1.280	-14.0	93	0.00	20.92
67 m	1,1,2,2-TETRACHLOROETHANE	0.910	1.079	-18.6	94	0.00	20.00
68 m	ISOPROPYLBENZENE	1.904	2.304	-21.0	95	0.00	21.20
69 m	2-CHLOROTOLUENE	1.340	1.539	-14.9	91	0.00	22.21
70 m	4-ETHYLTOLUENE	1.675	2.070	-23.6	93	0.00	22.63
71 m	1,3,5-TRIMETHYLBENZENE	1.586	1.881	-18.6	94	0.00	22.82
72 m	TERT-BUTYLBENZENE	1.625	2.039	-25.5	97	0.00	23.75
73 m	1,2,4-TRIMETHYLBENZENE	1.632	1.897	-16.2	94	0.00	23.77
74 m	m-DICHLOROBENZENE	1.078	1.199	-11.2	93	0.00	24.12
		Amount	Calc.	%Drift			
75 m	BENZYL CHLORIDE	10.000	11.652	-16.5	91	0.00	24.09
		AvgRF	CCRF	%Dev			
76 m	p-DICHLOROBENZENE	1.092	1.149	-5.2	90	0.00	24.28
77 m	SEC-BUTYLBENZENE	2.138	2.687	-25.7	96	0.00	24.39
78 m	4-ISOPROPYLTOLUENE	1.857	2.246	-20.9	99	0.00	24.74
79 m	o-DICHLOROBENZENE	0.959	1.051	-9.6	95	0.00	25.01
80 m	n-BUTYLBENZENE	1.480	1.688	-14.1	93	0.00	25.60
81 m	HEXACHLOROBUTADIENE	0.336	0.420	-25.0	113	-0.02	29.08
		Amount	Calc.	%Drift			
82 m	1,2,4-TRICHLOROBENZENE	10.000	11.127	-11.3	85	-0.02	28.24
83 m	NAPHTHALENE	10.000	12.046	-20.5	94	-0.02	28.43

(#) = Out of Range

SPCC's out = 0 CCC's out = 0

j29712.D J150122T.M

Wed Feb 11 16:02:41 2015

Initial Calibration Summary

Page 1 of 4

Job Number: MC36556
Account: HMANNJP H2M Associates, Inc
Project: Macbeth, 617 Little Britain, New Windsor, NY

Sample: MSQ1286-ICC1286
Lab FileID: Q29641.D

Response Factor Report MSQ

Method : C:\msdchem\1\MET...Q150210FULLSIM.M (RTE Integrator)
Title : T015 by GCMS w/DB-1 60 m X .25 mm ID 1.0 um
Last Update : Wed Feb 11 09:56:19 2015
Response via : Initial Calibration

Calibration Files

.02 =Q29636.D 5 =Q29644.D 0.5 =Q29641.D 0.25=Q29640.D
.005=Q29635.D 0.1 =Q29638.D 0.05=Q29637.D 20 =Q29642.D
= = = =

Compound	.02	5	0.5	0.25	.005	0.1	0.05	20	Avg	%RSD
1) I BROMOCHLOROMETHANE	-----ISTD-----									
2) DICHLORODIFLUOROMETHANE									0.000	-1.00
3) PROPYLENE									0.000	-1.00
4) FREON 114									0.000	-1.00
5) CHLOROMETHANE									0.000	-1.00
6) VINYL CHLORIDE									0.000	-1.00
7) 1,3-BUTADIENE									0.000	-1.00
8) BROMOMETHANE									0.000	-1.00
9) CHLOROETHANE									0.000	-1.00
10) ACROLEIN									0.000	-1.00
11) TRICHLOROFLUOROMETHANE									0.000	-1.00
12) ISOPROPYL ALCOHOL									0.000	-1.00
13) ACETONE									0.000	-1.00
	0.761	0.164	0.193	0.225	1.170	0.719	0.740	0.115	0.511	E1 75.91
	---- Linear regression ---- Coefficient = 0.9906									
	Response Ratio = 0.05311 + 1.15125 *A									
14) ACRYLONITRILE									0.000	-1.00
15) PENTANE									0.000	-1.00
16) 1,1-DICHLOROETHYLENE									0.000	-1.00
17) CARBON DISULFIDE									0.000	-1.00
18) ETHANOL									0.000	-1.00
	2.090	0.208	0.224	0.283	4.617	1.395	1.672	0.104	1.324	E1 116.26
	---- Quadratic regression ---- Coefficient = 0.9975									
	Response Ratio = 0.04421 + 2.29948 *A + -0.64121 *A^2									
19) BROMOETHENE									0.000	-1.00
20) METHYLENE CHLORIDE									0.000	-1.00

Initial Calibration Summary

Job Number: MC36556
Account: HMANNJP H2M Associates, Inc
Project: Macbeth, 617 Little Britain, New Windsor, NY

Sample: MSQ1286-ICC1286
Lab FileID: Q29641.D

		0.000	-1.00
21)	3-CHLOROPROPENE		
		0.000	-1.00
22)	FREON 113		
	2.296 2.874 2.065 2.317 1.698 2.374 2.011 1.636	2.159	18.51
	---- Quadratic regression ---- Coefficient = 0.9997		
	Response Ratio = -0.01628 + 3.31180 *A + -0.83369 *A^2		
23)	TRANS-1,2-DICHLOROETHYLENE		
		0.000	-1.00
24)	TERTIARY BUTYL ALCOHOL		
		0.000	-1.00
25)	METHYL TERTIARY BUTYL ETHER		
		0.000	-1.00
26)	TETRAHYDROFURAN		
		0.000	-1.00
27)	HEXANE		
		0.000	-1.00
28)	VINYL ACETATE		
		0.000	-1.00
29)	1,1-DICHLOROETHANE		
		0.000	-1.00
30)	METHYL ETHYL KETONE		
		0.000	-1.00
31)	cis-1,2-DICHLOROETHYLENE		
	1.920 1.623 1.688 1.888 1.528 1.839 1.820 1.409	1.714	10.71
32)	ETHYL ACETATE		
		0.000	-1.00
33)	CHLOROFORM		
		0.000	-1.00
34)	1,1,1-TRICHLOROETHANE		
	3.407 3.008 3.273 3.687 2.334 3.279 3.175 2.577	3.093	14.33
35)	CARBON TETRACHLORIDE		
		0.000	-1.00
36)	1,2-DICHLOROETHANE		
		0.000	-1.00
37) I	1,4-DIFLUOROBENZENE -----ISTD-----		
38)	BENZENE		
	1.572 0.887 0.985 1.145 1.749 1.289 1.370 0.701	1.212	29.10
	---- Linear regression ---- Coefficient = 0.9959		
	Response Ratio = 0.01572 + 0.70254 *A		
39)	CYCLOHEXANE		
		0.000	-1.00
40)	TRICHLOROETHYLENE		
	0.746 0.495 0.539 0.575 0.983 0.619 0.730 0.429	0.640	27.57
41)	1,2-DICHLOROPROPANE		
		0.000	-1.00
42)	BROMODICHLOROMETHANE		
		0.000	-1.00
43)	2,2,4-TRIMETHYLPENTANE		
		0.000	-1.00
44)	1,4-DIOXANE		
		0.000	-1.00
45)	METHYL METHACRYLATE		
		0.000	-1.00
46)	HEPTANE		
	0.622 0.414 0.450 0.515 0.768 0.490 0.516	0.539	22.25
47)	METHYL ISOBUTYL KETONE		

Initial Calibration Summary

Job Number: MC36556
Account: HMANNJP H2M Associates, Inc
Project: Macbeth, 617 Little Britain, New Windsor, NY

Sample: MSQ1286-ICC1286
Lab FileID: Q29641.D

		0.000	-1.00
48)	cis-1,3-DICHLOROPROPENE	0.000	-1.00
49)	TOLUENE	0.942	25.52
	1.277 0.632 0.719 0.838 1.221 0.946 0.964		
50)	trans-1,3-DICHLOROPROPENE	0.000	-1.00
51)	1,1,2-TRICHLOROETHANE	0.000	-1.00
52)	1,3-DICHLOROPROPANE	0.000	-1.00
53)	I CHLOROBENZENE-D5 -----ISTD-----		
54)	2-HEXANONE	0.000	-1.00
55)	TETRACHLOROETHYLENE	2.195	15.19
	2.559 1.687 1.932 2.180 2.650 2.174 2.182		
56)	DIBROMOCHLOROMETHANE	0.000	-1.00
57)	1,2-DIBROMOETHANE	0.000	-1.00
58)	1,1,1,2-TETRACHLOROETHANE	0.000	-1.00
59)	CHLOROBENZENE	4.092	19.66
	5.374 2.909 3.451 4.018 3.858 4.588 4.445		
60)	ETHYLBENZENE	2.561 E1	24.56
	3.227 1.666 2.029 2.404 3.465 2.618 2.519		
61)	m,p-XYLENE	2.363	17.77
	2.938 1.677 1.990 2.309 2.591 2.604 2.435		
62)	o-XYLENE	2.378	17.01
	2.913 1.714 2.018 2.323 2.630 2.611 2.434		
63)	STYRENE	0.000	-1.00
64)	NONANE	0.000	-1.00
65)	BROMOFORM	0.000	-1.00
66)	4-BROMOFLUOROBENZENE	0.820	4.85
	0.769 0.855 0.862 0.845 0.753 0.821 0.814 0.839		
67)	1,1,2,2-TETRACHLOROETHANE	0.000	-1.00
68)	ISOPROPYLBENZENE	0.000	-1.00
69)	2-CHLOROTOLUENE	0.000	-1.00
70)	4-ETHYLTOLUENE	0.000	-1.00
71)	1,3,5-TRIMETHYLBENZENE	0.000	-1.00
72)	TERT-BUTYLBENZENE	0.000	-1.00
73)	1,2,4-TRIMETHYLBENZENE	0.000	-1.00
74)	m-DICHLOROBENZENE	0.000	-1.00
75)	BENZYL CHLORIDE	0.000	-1.00
76)	p-DICHLOROBENZENE	0.000	-1.00
77)	SEC-BUTYLBENZENE	0.000	-1.00

Initial Calibration Summary

Job Number: MC36556
Account: HMANNJP H2M Associates, Inc
Project: Macbeth, 617 Little Britain, New Windsor, NY

Sample: MSQ1286-ICC1286
Lab FileID: Q29641.D

		0.000	-1.00
78)	4-ISOPROPYLTOLUENE	0.000	-1.00
79)	o-DICHLOROBENZENE	0.000	-1.00
80)	n-BUTYLBENZENE	0.000	-1.00
81)	HEXACHLOROBUTADIENE	0.000	-1.00
82)	1,2,4-TRICHLOROBENZENE	0.000	-1.00
83)	NAPHTHALENE	0.000	-1.00

(#)= Out of Range ### Number of calibration levels exceeded format ###			
Q150210FULSIM.M		Thu Feb 12 11:18:45 2015	

6.9.6
6

Initial Calibration Verification

Page 1 of 3

Job Number: MC36556
Account: HMANNJP H2M Associates, Inc
Project: Macbeth, 617 Little Britain, New Windsor, NY

Sample: MSQ1286-ICV1286
Lab FileID: Q29645A.D

Evaluate Continuing Calibration Report

Data File : C:\msdchem\1\DATA\Q150210\Q29645a.D Vial: 5
Acq On : 11 Feb 2015 10:14 am Operator: akina
Sample : icv1286-0.5(m398) Inst : MSQ
Misc : ms33846,msq1286,,,,,1 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\msdchem\1\MET...Q150210FULLSIM.M (RTE Integrator)
Title : T015 by GCMS w/DB-1 60 m X .25 mm ID 1.0 um
Last Update : Wed Feb 11 09:56:19 2015
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 60% Max. R.T. Dev 0.33min
Max. RRF Dev : 30% Max. Rel. Area : 140%

	Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)	R.T.
1 I	BROMOCHLOROMETHANE	1.000	1.000	0.0	102	0.00	9.22
2 m	DICHLORODIFLUOROMETHANE			NA			
3 m	PROPYLENE			NA			
4 m	FREON 114			NA			
5 m	CHLOROMETHANE			NA			
6 m	VINYL CHLORIDE			NA			
7 m	1,3-BUTADIENE			NA			
8 m	BROMOMETHANE			NA			
9 m	CHLOROETHANE			NA			
10 m	ACROLEIN			NA			
11 m	TRICHLOROFLUOROMETHANE			NA			
12 m	ISOPROPYL ALCOHOL			NA			
	----- Amount	Calc.	%Drift				
13 m	ACETONE	0.500	0.136	72.8#	72	0.05	5.64
	----- AvgRF	CCRF	%Dev				
14 m	ACRYLONITRILE			NA			
15 m	PENTANE			NA			
16 m	1,1-DICHLOROETHYLENE			NA			
17 m	CARBON DISULFIDE			NA			
	----- Amount	Calc.	%Drift				
18 m	ETHANOL	0.500	0.250	50.0#	92	0.05	5.14
	----- AvgRF	CCRF	%Dev				
19 m	BROMOETHENE			NA			
20 m	METHYLENE CHLORIDE			NA			
21 m	3-CHLOROPROPENE			NA			
	----- Amount	Calc.	%Drift				
22 m	FREON 113	0.500	0.391	21.8	110	0.00	6.94
	----- AvgRF	CCRF	%Dev				
23 m	TRANS-1,2-DICHLOROETHYLEN			NA			
24 m	TERTIARY BUTYL ALCOHOL			NA			
25 m	METHYL TERTIARY BUTYL ETH			NA			
26 m	TETRAHYDROFURAN			NA			
27 m	HEXANE			NA			
28 m	VINYL ACETATE			NA			
29 m	1,1-DICHLOROETHANE			NA			
30 m	METHYL ETHYL KETONE			NA			

Initial Calibration Verification

Page 2 of 3

Job Number: MC36556
 Account: HMANNJP H2M Associates, Inc
 Project: Macbeth, 617 Little Britain, New Windsor, NY

Sample: MSQ1286-ICV1286
 Lab FileID: Q29645A.D

31	m	cis-1,2-DICHLOROETHYLENE	1.714	1.274	25.7	77	0.00	9.01
32	m	ETHYL ACETATE		-----NA-----				
33	m	CHLOROFORM		-----NA-----				
34	m	1,1,1-TRICHLOROETHANE	3.093	2.456	20.6	76	0.00	10.72
35	m	CARBON TETRACHLORIDE		-----NA-----				
36	m	1,2-DICHLOROETHANE		-----NA-----				
37	I	1,4-DIFLUOROBENZENE	1.000	1.000	0.0	98	0.00	11.88
38	m	BENZENE	0.500	0.254	49.2#	67	0.00	11.36
39	m	CYCLOHEXANE		-----NA-----				
40	m	TRICHLOROETHYLENE	0.640	0.516	19.4	94	0.00	12.92
41	m	1,2-DICHLOROPROPANE		-----NA-----				
42	m	BROMODICHLOROMETHANE		-----NA-----				
43	m	2,2,4-TRIMETHYLPENTANE		-----NA-----				
44	m	1,4-DIOXANE		-----NA-----				
45	m	METHYL METHACRYLATE		-----NA-----				
46	m	HEPTANE	0.539	0.355	34.1#	78	0.00	13.39
47	m	METHYL ISOBUTYL KETONE		-----NA-----				
48	m	cis-1,3-DICHLOROPROPENE		-----NA-----				
49	m	TOLUENE	0.942	0.471	50.0#	64	0.00	15.85
50	m	trans-1,3-DICHLOROPROPENE		-----NA-----				
51	m	1,1,2-TRICHLOROETHANE		-----NA-----				
52	m	1,3-DICHLOROPROPANE		-----NA-----				
53	I	CHLOROBENZENE-D5	1.000	1.000	0.0	98	0.00	18.93
54	m	2-HEXANONE		-----NA-----				
55	m	TETRACHLOROETHYLENE	2.195	1.556	29.1	79	0.00	17.82
56	m	DIBROMOCHLOROMETHANE		-----NA-----				
57	m	1,2-DIBROMOETHANE		-----NA-----				
58	m	1,1,1,2-TETRACHLOROETHANE		-----NA-----				
59	m	CHLOROBENZENE	4.092	2.348	42.6#	66	0.00	19.01
60	m	ETHYLBENZENE	25.612	13.323	48.0#	64	0.00	19.66
61	m	m,p-XYLENE	2.363	1.302	44.9#	64	0.00	19.99
62	m	o-XYLENE	2.378	1.313	44.8#	63	0.00	20.73
63	m	STYRENE		-----NA-----				
64	m	NONANE		-----NA-----				
65	m	BROMOFORM		-----NA-----				
66	S	4-BROMOFLUOROBENZENE	0.820	0.814	0.7	92	0.00	21.45
67	m	1,1,2,2-TETRACHLOROETHANE		-----NA-----				
68	m	ISOPROPYLBENZENE		-----NA-----				
69	m	2-CHLOROTOLUENE		-----NA-----				
70	m	4-ETHYLTOLUENE		-----NA-----				
71	m	1,3,5-TRIMETHYLBENZENE		-----NA-----				
72	m	TERT-BUTYLBENZENE		-----NA-----				
73	m	1,2,4-TRIMETHYLBENZENE		-----NA-----				
74	m	m-DICHLOROBENZENE		-----NA-----				
75	m	BENZYL CHLORIDE		-----NA-----				
76	m	p-DICHLOROBENZENE		-----NA-----				
77	m	SEC-BUTYLBENZENE		-----NA-----				
78	m	4-ISOPROPYLTOLUENE		-----NA-----				
79	m	o-DICHLOROBENZENE		-----NA-----				
80	m	n-BUTYLBENZENE		-----NA-----				
81	m	HEXACHLOROBUTADIENE		-----NA-----				
82	m	1,2,4-TRICHLOROBENZENE		-----NA-----				
83	m	NAPHTHALENE		-----NA-----				

6.9.7

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Initial Calibration Verification

Job Number: MC36556
Account: HMANNJP H2M Associates, Inc
Project: Macbeth, 617 Little Britain, New Windsor, NY

Sample: MSQ1286-ICV1286
Lab FileID: Q29645A.D

(#) = Out of Range SPCC's out = 0 CCC's out = 0
Q29641.D Q150210FULLSIM.M Thu Feb 12 13:38:10 2015

6.9.7
6

Continuing Calibration Summary

Page 1 of 3

Job Number: MC36556
 Account: HMANNJP H2M Associates, Inc
 Project: Macbeth, 617 Little Britain, New Windsor, NY

Sample: MSQ1286-CC1286
 Lab FileID: Q29645.D

Evaluate Continuing Calibration Report

Data File : C:\msdchem\1\DATA\Q150210\Q29645.D Vial: 5
 Acq On : 11 Feb 2015 10:14 am Operator: akina
 Sample : CC1286-0.5(m398) Inst : MSQ
 Misc : ms33846,msq1286,,,,,1 Multiplr: 1.00
 MS Integration Params: rteint.p

Method : C:\msdchem\1\MET...Q150210FULLSIM.M (RTE Integrator)
 Title : T015 by GCMS w/DB-1 60 m X .25 mm ID 1.0 um
 Last Update : Wed Feb 11 09:56:19 2015
 Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 60% Max. R.T. Dev 0.33min
 Max. RRF Dev : 30% Max. Rel. Area : 140%

	Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)	R.T.
1 I	BROMOCHLOROMETHANE	1.000	1.000	0.0	102	0.00	9.22
2 m	DICHLORODIFLUOROMETHANE			NA			
3 m	PROPYLENE			NA			
4 m	FREON 114			NA			
5 m	CHLOROMETHANE			NA			
6 m	VINYL CHLORIDE			NA			
7 m	1,3-BUTADIENE			NA			
8 m	BROMOMETHANE			NA			
9 m	CHLOROETHANE			NA			
10 m	ACROLEIN			NA			
11 m	TRICHLOROFLUOROMETHANE			NA			
12 m	ISOPROPYL ALCOHOL			NA			
----- Amount Calc. %Drift -----							
13 m	ACETONE	0.500	0.136	72.8#	72	0.05	5.64
----- AvgRF CCRF %Dev -----							
14 m	ACRYLONITRILE			NA			
15 m	PENTANE			NA			
16 m	1,1-DICHLOROETHYLENE			NA			
17 m	CARBON DISULFIDE			NA			
----- Amount Calc. %Drift -----							
18 m	ETHANOL	0.500	0.250	50.0#	92	0.05	5.14
----- AvgRF CCRF %Dev -----							
19 m	BROMOETHENE			NA			
20 m	METHYLENE CHLORIDE			NA			
21 m	3-CHLOROPROPENE			NA			
----- Amount Calc. %Drift -----							
22 m	FREON 113	0.500	0.391	21.8	110	0.00	6.94
----- AvgRF CCRF %Dev -----							
23 m	TRANS-1,2-DICHLOROETHYLEN			NA			
24 m	TERTIARY BUTYL ALCOHOL			NA			
25 m	METHYL TERTIARY BUTYL ETH			NA			
26 m	TETRAHYDROFURAN			NA			
27 m	HEXANE			NA			
28 m	VINYL ACETATE			NA			
29 m	1,1-DICHLOROETHANE			NA			
30 m	METHYL ETHYL KETONE			NA			

6.9.8

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Continuing Calibration Summary

Page 2 of 3

Job Number: MC36556
Account: HMANNJP H2M Associates, Inc
Project: Macbeth, 617 Little Britain, New Windsor, NY

Sample: MSQ1286-CC1286
Lab FileID: Q29645.D

31	m	cis-1,2-DICHLOROETHYLENE	1.714	1.274	25.7	77	0.00	9.01
32	m	ETHYL ACETATE		-----NA-----				
33	m	CHLOROFORM		-----NA-----				
34	m	1,1,1-TRICHLOROETHANE	3.093	2.456	20.6	76	0.00	10.72
35	m	CARBON TETRACHLORIDE		-----NA-----				
36	m	1,2-DICHLOROETHANE		-----NA-----				
37	I	1,4-DIFLUOROBENZENE	1.000	1.000	0.0	98	0.00	11.88
		----- Amount	Calc.	%Drift				
38	m	BENZENE	0.500	0.254	49.2#	67	0.00	11.36
		----- AvgRF	CCRF	%Dev				
39	m	CYCLOHEXANE		-----NA-----				
40	m	TRICHLOROETHYLENE	0.640	0.516	19.4	94	0.00	12.92
41	m	1,2-DICHLOROPROPANE		-----NA-----				
42	m	BROMODICHLOROMETHANE		-----NA-----				
43	m	2,2,4-TRIMETHYLPENTANE		-----NA-----				
44	m	1,4-DIOXANE		-----NA-----				
45	m	METHYL METHACRYLATE		-----NA-----				
46	m	HEPTANE	0.539	0.355	34.1#	78	0.00	13.39
47	m	METHYL ISOBUTYL KETONE		-----NA-----				
48	m	cis-1,3-DICHLOROPROPENE		-----NA-----				
49	m	TOLUENE	0.942	0.471	50.0#	64	0.00	15.85
50	m	trans-1,3-DICHLOROPROPENE		-----NA-----				
51	m	1,1,2-TRICHLOROETHANE		-----NA-----				
52	m	1,3-DICHLOROPROPANE		-----NA-----				
53	I	CHLOROBENZENE-D5	1.000	1.000	0.0	98	0.00	18.93
54	m	2-HEXANONE		-----NA-----				
55	m	TETRACHLOROETHYLENE	2.195	1.556	29.1	79	0.00	17.82
56	m	DIBROMOCHLOROMETHANE		-----NA-----				
57	m	1,2-DIBROMOETHANE		-----NA-----				
58	m	1,1,1,2-TETRACHLOROETHANE		-----NA-----				
59	m	CHLOROBENZENE	4.092	2.348	42.6#	66	0.00	19.01
60	m	ETHYLBENZENE	25.612	13.323	48.0#	64	0.00	19.66
61	m	m,p-XYLENE	2.363	1.302	44.9#	64	0.00	19.99
62	m	o-XYLENE	2.378	1.313	44.8#	63	0.00	20.73
63	m	STYRENE		-----NA-----				
64	m	NONANE		-----NA-----				
65	m	BROMOFORM		-----NA-----				
66	S	4-BROMOFLUOROBENZENE	0.820	0.814	0.7	92	0.00	21.45
67	m	1,1,2,2-TETRACHLOROETHANE		-----NA-----				
68	m	ISOPROPYLBENZENE		-----NA-----				
69	m	2-CHLOROTOLUENE		-----NA-----				
70	m	4-ETHYLTOLUENE		-----NA-----				
71	m	1,3,5-TRIMETHYLBENZENE		-----NA-----				
72	m	TERT-BUTYLBENZENE		-----NA-----				
73	m	1,2,4-TRIMETHYLBENZENE		-----NA-----				
74	m	m-DICHLOROBENZENE		-----NA-----				
75	m	BENZYL CHLORIDE		-----NA-----				
76	m	p-DICHLOROBENZENE		-----NA-----				
77	m	SEC-BUTYLBENZENE		-----NA-----				
78	m	4-ISOPROPYLTOLUENE		-----NA-----				
79	m	o-DICHLOROBENZENE		-----NA-----				
80	m	n-BUTYLBENZENE		-----NA-----				
81	m	HEXACHLOROBUTADIENE		-----NA-----				
82	m	1,2,4-TRICHLOROBENZENE		-----NA-----				
83	m	NAPHTHALENE		-----NA-----				

6.9.8

6

Continuing Calibration Summary

Job Number: MC36556
Account: HMANNJP H2M Associates, Inc
Project: Macbeth, 617 Little Britain, New Windsor, NY

Sample: MSQ1286-CC1286
Lab FileID: Q29645.D

(#) = Out of Range SPCC's out = 0 CCC's out = 0
Q29641.D Q150210FULLSIM.M Thu Feb 12 13:20:18 2015

GC/MS Volatiles

Raw Data

7

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\J150209\
 Data File : j29952.D
 Acq On : 10 Feb 2015 12:01 pm
 Operator : AkinA
 Sample : MC36556-1(M001)
 Misc : ms33838,msj1520,,,,,1
 ALS Vial : 6 Sample Multiplier: 1

Quant Time: Feb 10 16:10:48 2015
 Quant Method : C:\msdchem\1\methods\J150122T.M
 Quant Title : T015 by GCMS w/DB-1 60 m X .25 mm ID 1.0 um
 QLast Update : Fri Jan 23 13:48:53 2015
 Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)

Internal Standards						
1) BROMOCHLOROMETHANE	9.018	128	198933	10.00	PPBV	# 0.02
37) 1,4-DIFLUOROBENZENE	11.311	114	831521	10.00	PPBV	0.00
53) CHLOROBENZENE-D5	17.973	82	959843	10.00	PPBV	#-0.02
System Monitoring Compounds						
66) 4-BROMOFLUOROBENZENE	20.893	95	675406	6.27	PPBV	-0.02
Spiked Amount	5.000	Range	50 - 129	Recovery	=	125.40%
Target Compounds						Qvalue
2) DICHLORODIFLUOROMETHANE	4.333	85	132050	2.58	PPBV	98
11) TRICHLOROFLUOROMETHANE	6.043	101	517064	10.26	PPBV	99
13) ACETONE	6.018	43	300889m	28.53	PPBV	
22) FREON 113	7.022	151	5530412	147.73	PPBV	95
30) METHYL ETHYL KETONE	8.440	43	49253m	3.15	PPBV	
34) 1,1,1-TRICHLOROETHANE	10.326	97	2209125	50.86	PPBV	100
35) CARBON TETRACHLORIDE	11.086	117	20912	0.44	PPBV	99
38) BENZENE	10.897	78	14731	0.31	PPBV #	86
40) TRICHLOROETHYLENE	12.266	95	72622	2.67	PPBV	98
49) TOLUENE	14.980	92	44086	1.31	PPBV	99
54) 2-HEXANONE	15.527	43	13647	0.32	PPBV #	76

(#) = qualifier out of range (m) = manual integration (+) = signals summed

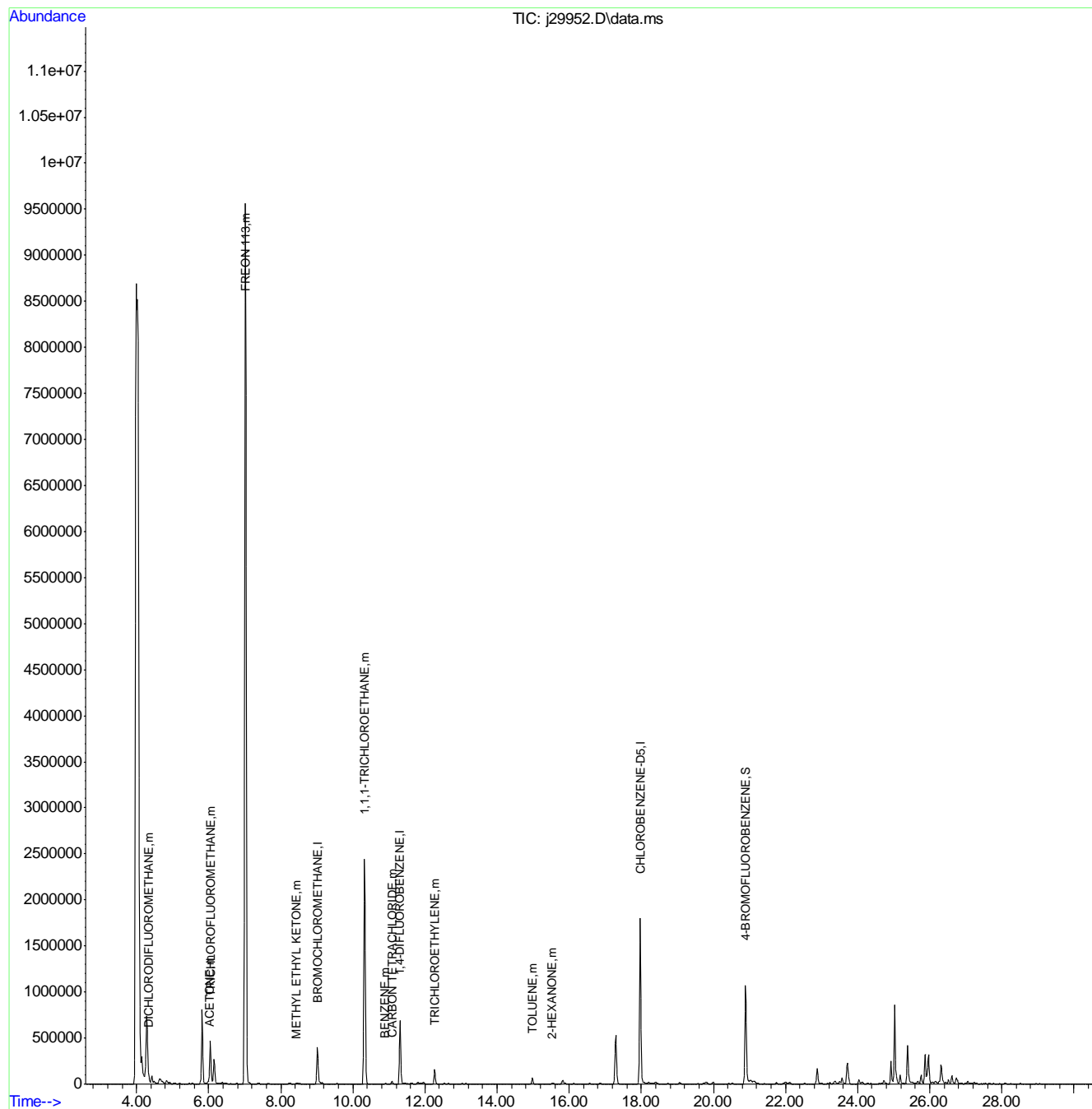
7.1.1

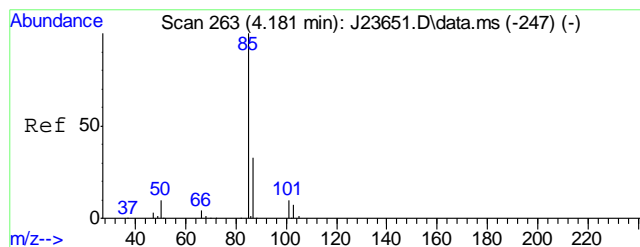
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Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\J150209\
Data File : j29952.D
Acq On : 10 Feb 2015 12:01 pm
Operator : AkinA
Sample : MC36556-1(M001)
Misc : ms33838,msj1520,,,,,1
ALS Vial : 6 Sample Multiplier: 1

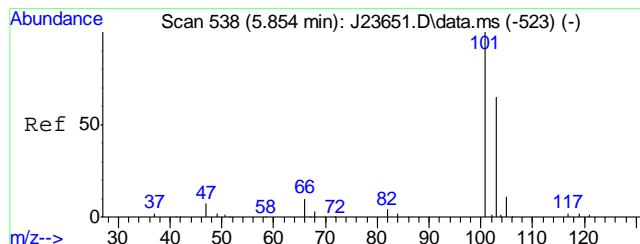
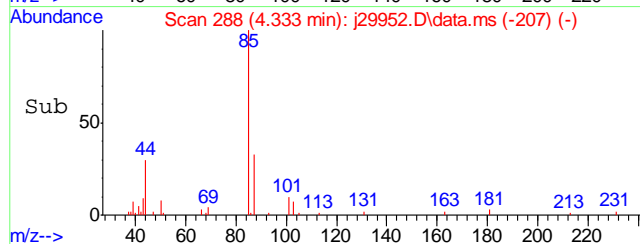
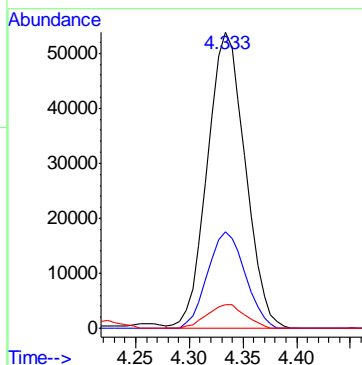
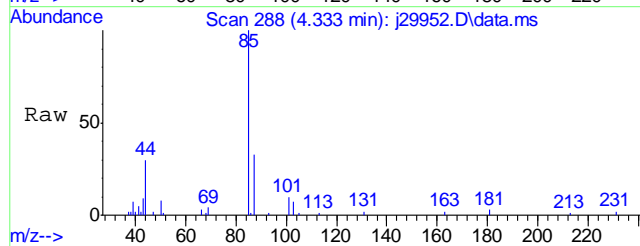
Quant Time: Feb 10 16:10:48 2015
Quant Method : C:\msdchem\1\methods\J150122T.M
Quant Title : T015 by GCMS w/DB-1 60 m X .25 mm ID 1.0 um
QLast Update : Fri Jan 23 13:48:53 2015
Response via : Initial Calibration





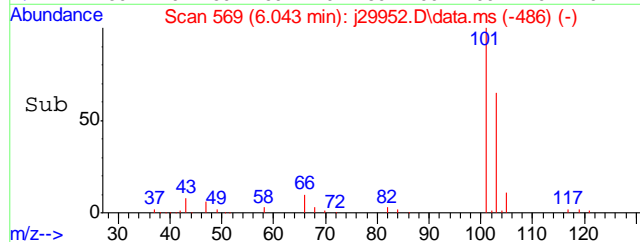
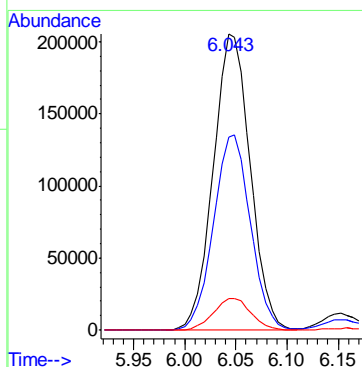
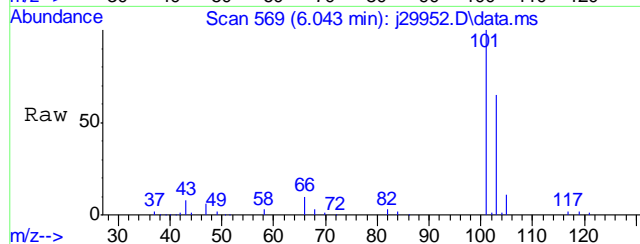
#2
 DICHLORODIFLUOROMETHANE
 Concen: 2.58 PPBV
 RT: 4.333 min Scan# 288
 Delta R.T. -0.006 min
 Lab File: j29952.D
 Acq: 10 Feb 2015 12:01 pm

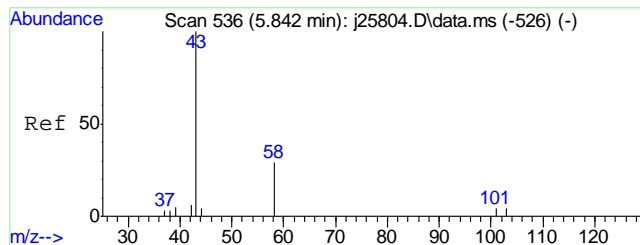
Tgt Ion	Ratio	Lower	Upper
85	100		
87	32.3	12.7	52.7
50	8.0	0.0	30.0



#11
 TRICHLOROFLUOROMETHANE
 Concen: 10.26 PPBV
 RT: 6.043 min Scan# 569
 Delta R.T. 0.006 min
 Lab File: j29952.D
 Acq: 10 Feb 2015 12:01 pm

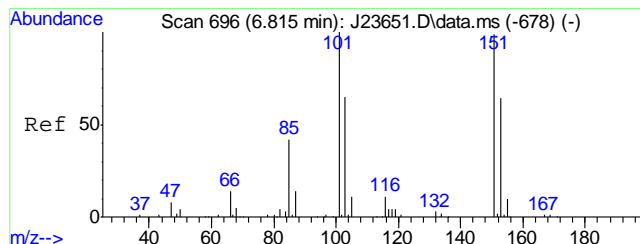
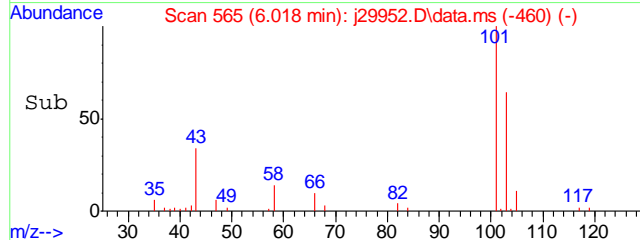
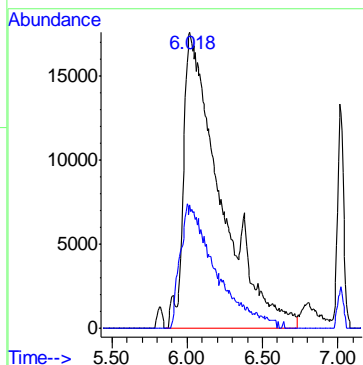
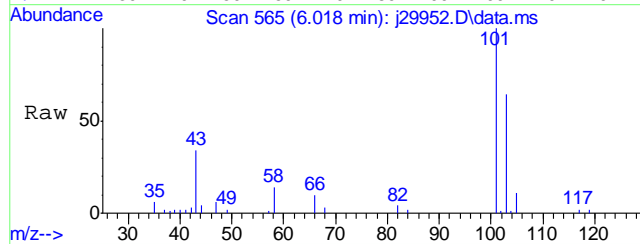
Tgt Ion	Ratio	Lower	Upper
101	100		
103	65.8	45.1	85.1
105	10.7	0.0	30.5





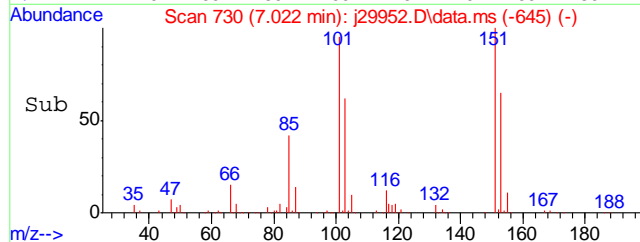
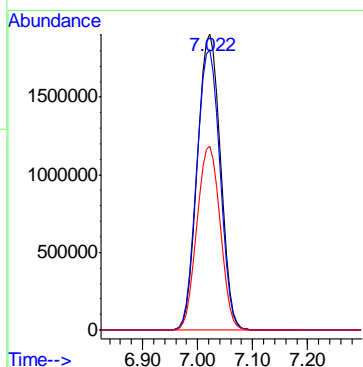
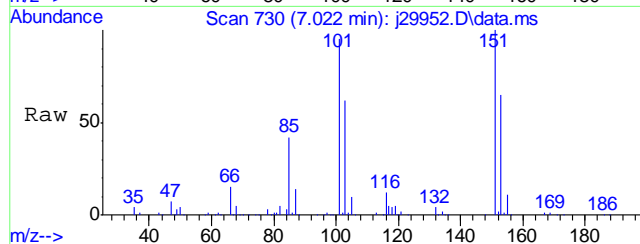
#13
 ACETONE
 Concen: 28.53 PPBV m
 RT: 6.018 min Scan# 565
 Delta R.T. 0.139 min
 Lab File: j29952.D
 Acq: 10 Feb 2015 12:01 pm

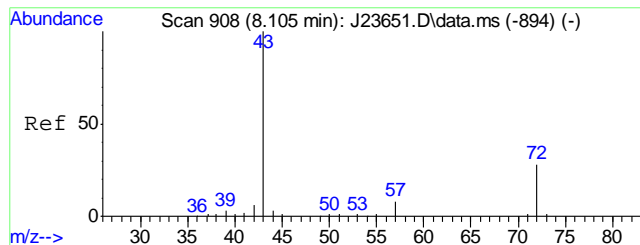
Tgt Ion: 43 Resp: 300889
 Ion Ratio Lower Upper
 43 100
 58 0.0 10.3 50.3#



#22
 FREON 113
 Concen: 147.73 PPBV
 RT: 7.022 min Scan# 730
 Delta R.T. 0.018 min
 Lab File: j29952.D
 Acq: 10 Feb 2015 12:01 pm

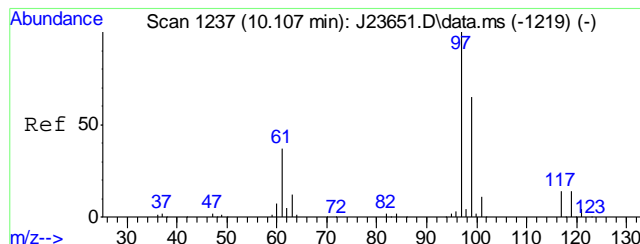
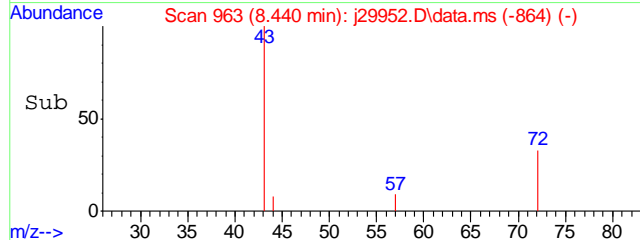
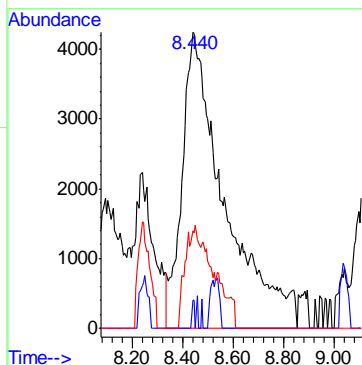
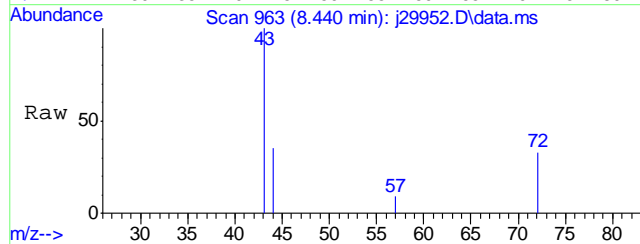
Tgt Ion: 151 Resp: 5530412
 Ion Ratio Lower Upper
 151 100
 101 95.6 81.2 121.2
 103 62.7 45.4 85.4





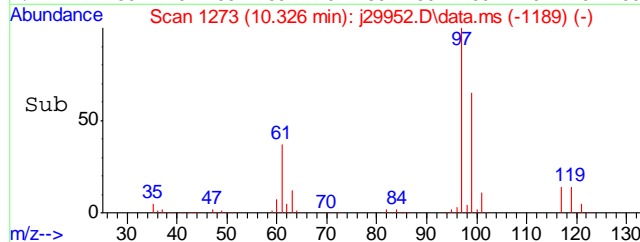
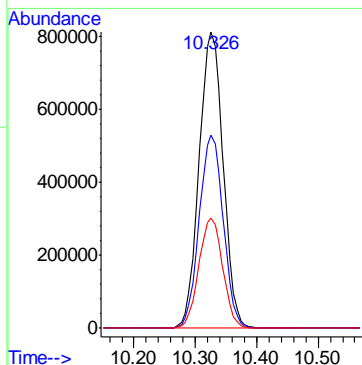
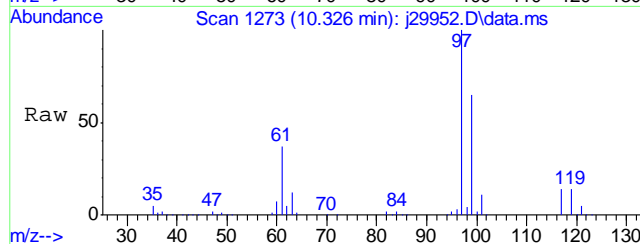
#30
METHYL ETHYL KETONE
Concen: 3.15 PPBV m
RT: 8.440 min Scan# 963
Delta R.T. 0.104 min
Lab File: j29952.D
Acq: 10 Feb 2015 12:01 pm

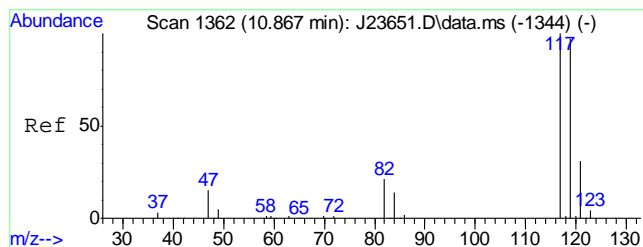
Tgt Ion	Ratio	Lower	Upper
43	100		
57	0.0	0.0	28.1
72	23.5	6.9	46.9



#34
1,1,1-TRICHLOROETHANE
Concen: 50.86 PPBV
RT: 10.326 min Scan# 1273
Delta R.T. 0.013 min
Lab File: j29952.D
Acq: 10 Feb 2015 12:01 pm

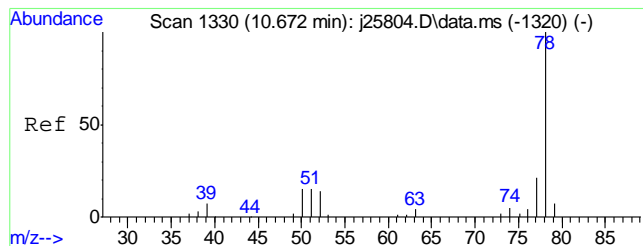
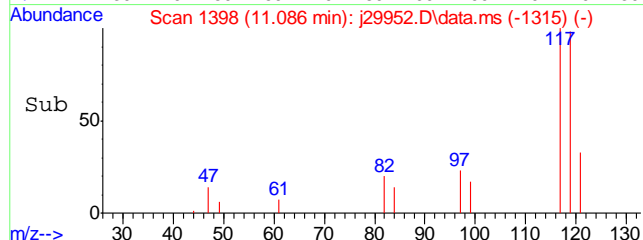
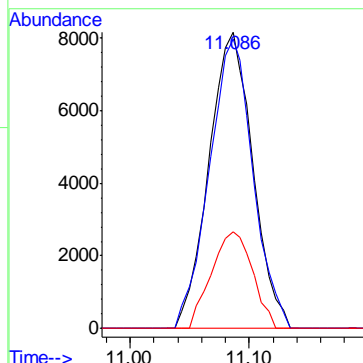
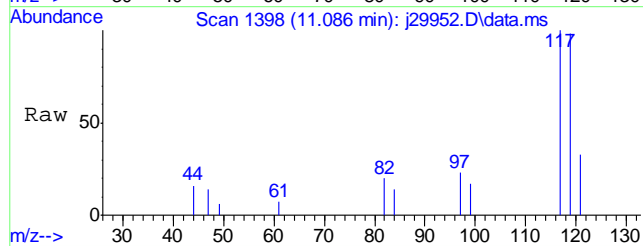
Tgt Ion	Ratio	Lower	Upper
97	100		
99	65.1	45.3	85.3
61	36.8	17.3	57.3





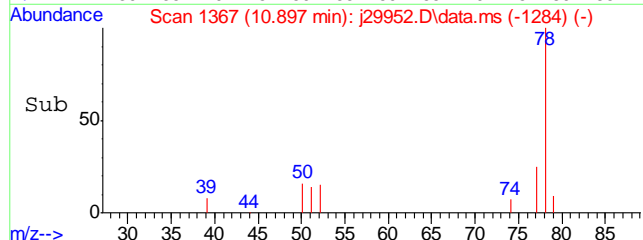
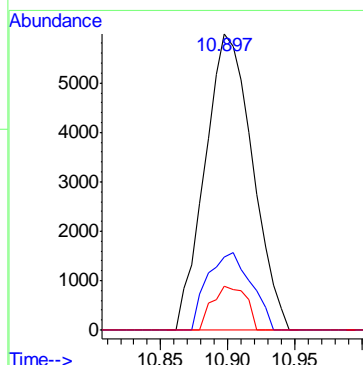
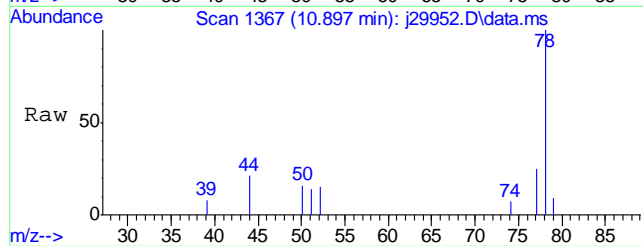
#35
CARBON TETRACHLORIDE
Concen: 0.44 PPBV
RT: 11.086 min Scan# 1398
Delta R.T. 0.006 min
Lab File: j29952.D
Acq: 10 Feb 2015 12:01 pm

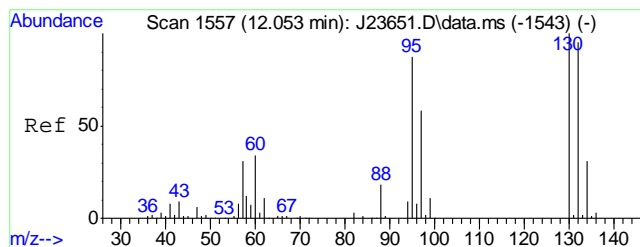
Tgt Ion:	117	Resp:	20912
Ion Ratio	Lower	Upper	
117	100		
119	97.6	76.7	116.7
121	30.7	11.1	51.1



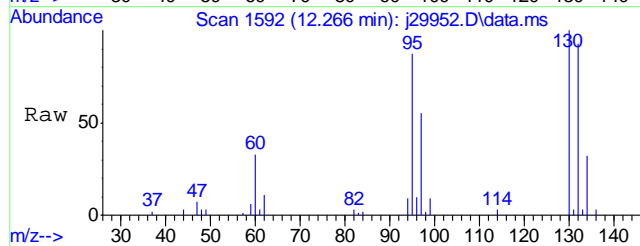
#38
BENZENE
Concen: 0.31 PPBV
RT: 10.897 min Scan# 1367
Delta R.T. 0.006 min
Lab File: j29952.D
Acq: 10 Feb 2015 12:01 pm

Tgt Ion:	78	Resp:	14731
Ion Ratio	Lower	Upper	
78	100		
77	24.0	3.2	43.2
52	0.0	0.0	33.8

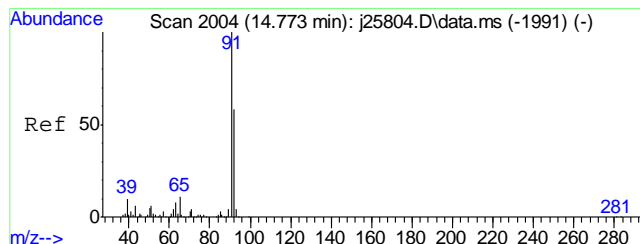
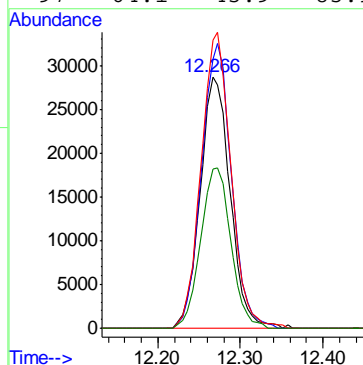
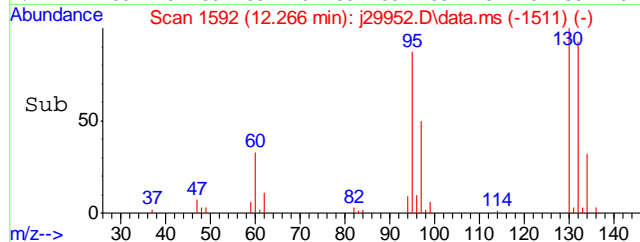




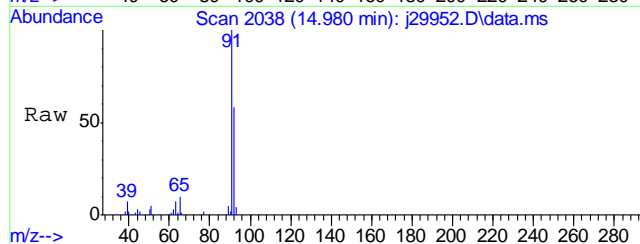
#40
TRICHLOROETHYLENE
Concen: 2.67 PPBV
RT: 12.266 min Scan# 1592
Delta R.T. -0.006 min
Lab File: j29952.D
Acq: 10 Feb 2015 12:01 pm



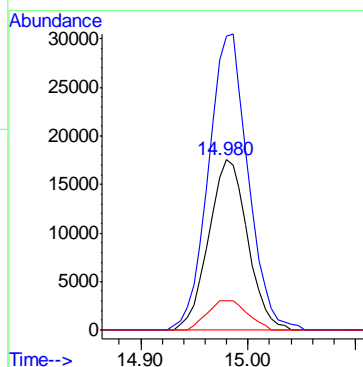
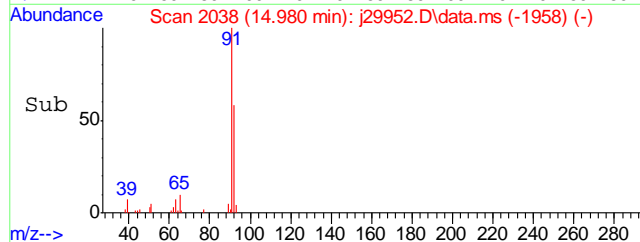
Tgt Ion	Ratio	Lower	Upper
95	100		
132	112.8	89.9	129.9
130	116.6	94.6	134.6
97	64.1	45.9	85.9

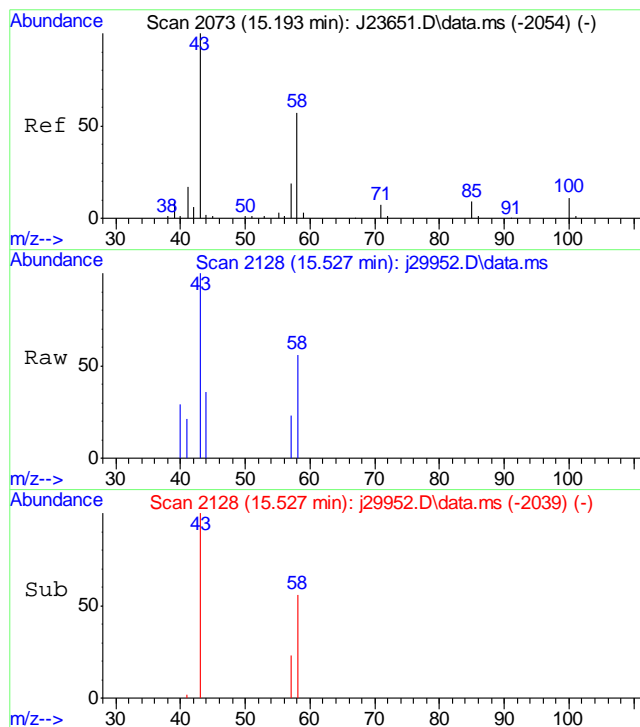


#49
TOLUENE
Concen: 1.31 PPBV
RT: 14.980 min Scan# 2038
Delta R.T. -0.012 min
Lab File: j29952.D
Acq: 10 Feb 2015 12:01 pm



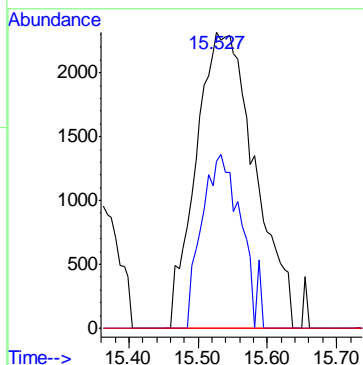
Tgt Ion	Ratio	Lower	Upper
92	100		
91	177.0	155.8	195.8
65	17.6	0.0	39.3





#54
 2-HEXANONE
 Concen: 0.32 PPBV
 RT: 15.527 min Scan# 2128
 Delta R.T. 0.043 min
 Lab File: j29952.D
 Acq: 10 Feb 2015 12:01 pm

Tgt Ion: 43 Resp: 13647
 Ion Ratio Lower Upper
 43 100
 58 39.3 36.1 76.1
 100 0.0 0.0 31.1



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\J150209\
Data File : j29954.D
Acq On : 10 Feb 2015 1:39 pm
Operator : AkinA
Sample : MC36556-1(M001)
Misc : ms33838,msj1520,,,,,10
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Feb 10 16:13:02 2015
Quant Method : C:\msdchem\1\methods\J150122T.M
Quant Title : T015 by GCMS w/DB-1 60 m X .25 mm ID 1.0 um
QLast Update : Fri Jan 23 13:48:53 2015
Response via : Initial Calibration

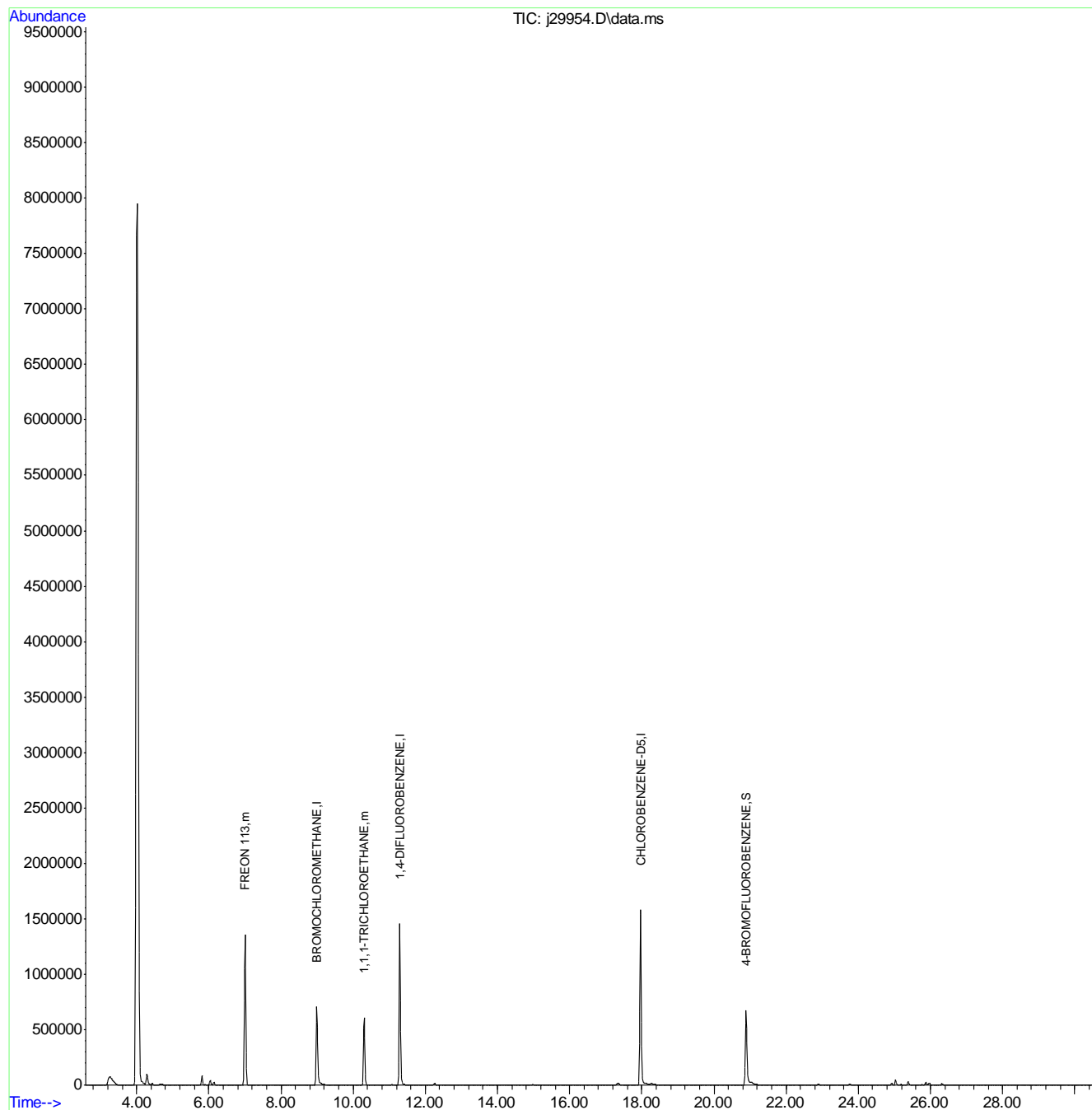
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) BROMOCHLOROMETHANE	8.993	128	380929	10.00	PPBV	# 0.00
37) 1,4-DIFLUOROBENZENE	11.293	114	1852681	10.00	PPBV	-0.02
53) CHLOROBENZENE-D5	17.967	82	867532	10.00	PPBV	#-0.02
System Monitoring Compounds						
66) 4-BROMOFLUOROBENZENE	20.893	95	464476	4.77	PPBV	-0.02
Spiked Amount	5.000	Range	50 - 129	Recovery	=	95.40%
Target Compounds						
22) FREON 113	7.004	151	704683	9.83	PPBV	Qvalue 99
34) 1,1,1-TRICHLOROETHANE	10.301	97	537563	6.46	PPBV	99

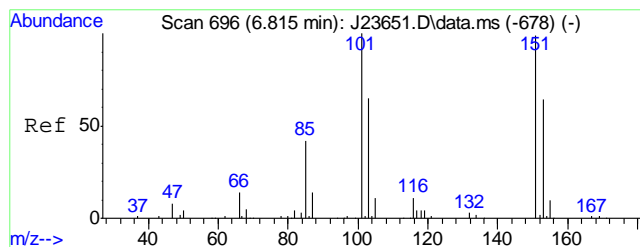
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\J150209\
Data File : j29954.D
Acq On : 10 Feb 2015 1:39 pm
Operator : AkinA
Sample : MC36556-1(M001)
Misc : ms33838,msj1520,,,,,10
ALS Vial : 6 Sample Multiplier: 1

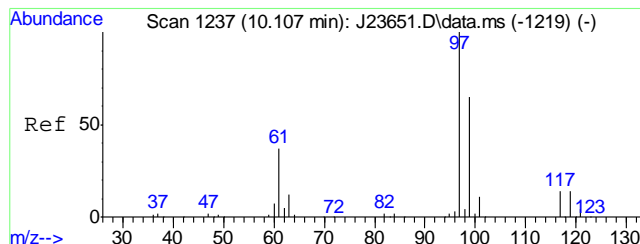
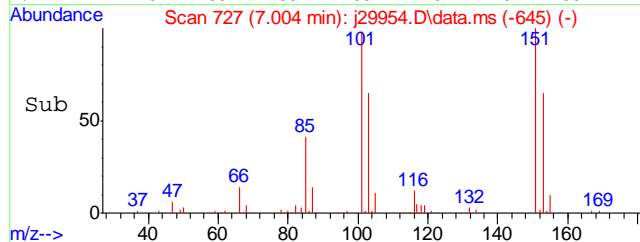
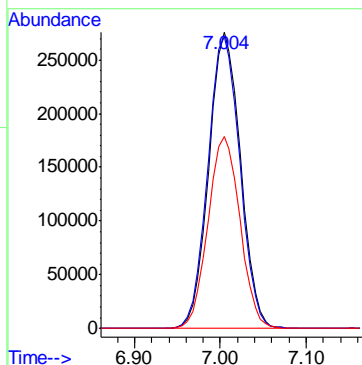
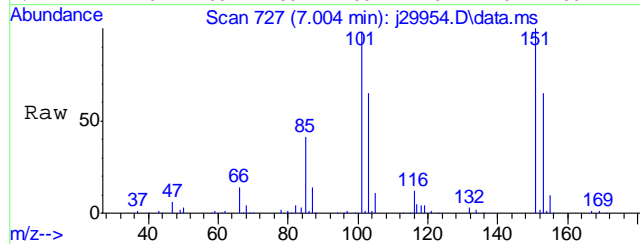
Quant Time: Feb 10 16:13:02 2015
Quant Method : C:\msdchem\1\methods\J150122T.M
Quant Title : T015 by GCMS w/DB-1 60 m X .25 mm ID 1.0 um
QLast Update : Fri Jan 23 13:48:53 2015
Response via : Initial Calibration





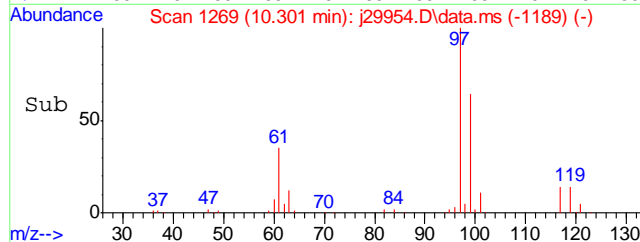
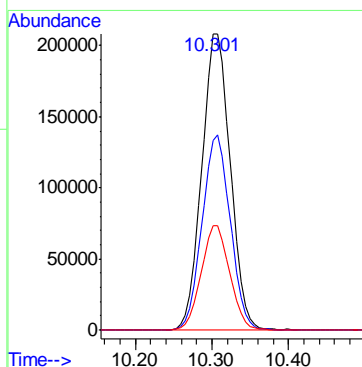
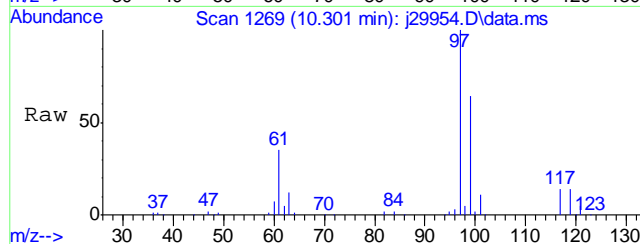
#22
 FREON 113
 Concen: 9.83 PPBV
 RT: 7.004 min Scan# 727
 Delta R.T. 0.000 min
 Lab File: j29954.D
 Acq: 10 Feb 2015 1:39 pm

Tgt Ion	Ratio	Lower	Upper
151	100		
101	99.7	81.2	121.2
103	65.4	45.4	85.4



#34
 1,1,1-TRICHLOROETHANE
 Concen: 6.46 PPBV
 RT: 10.301 min Scan# 1269
 Delta R.T. -0.012 min
 Lab File: j29954.D
 Acq: 10 Feb 2015 1:39 pm

Tgt Ion	Ratio	Lower	Upper
97	100		
99	65.2	45.3	85.3
61	35.3	17.3	57.3



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\J150209\
 Data File : j29951.D
 Acq On : 10 Feb 2015 11:16 am
 Operator : AkinA
 Sample : MC36556-2(M275)
 Misc : ms33838,msj1520,,,,,1
 ALS Vial : 4 Sample Multiplier: 1

Quant Time: Feb 10 15:57:57 2015
 Quant Method : C:\msdchem\1\methods\J150122T.M
 Quant Title : T015 by GCMS w/DB-1 60 m X .25 mm ID 1.0 um
 QLast Update : Fri Jan 23 13:48:53 2015
 Response via : Initial Calibration

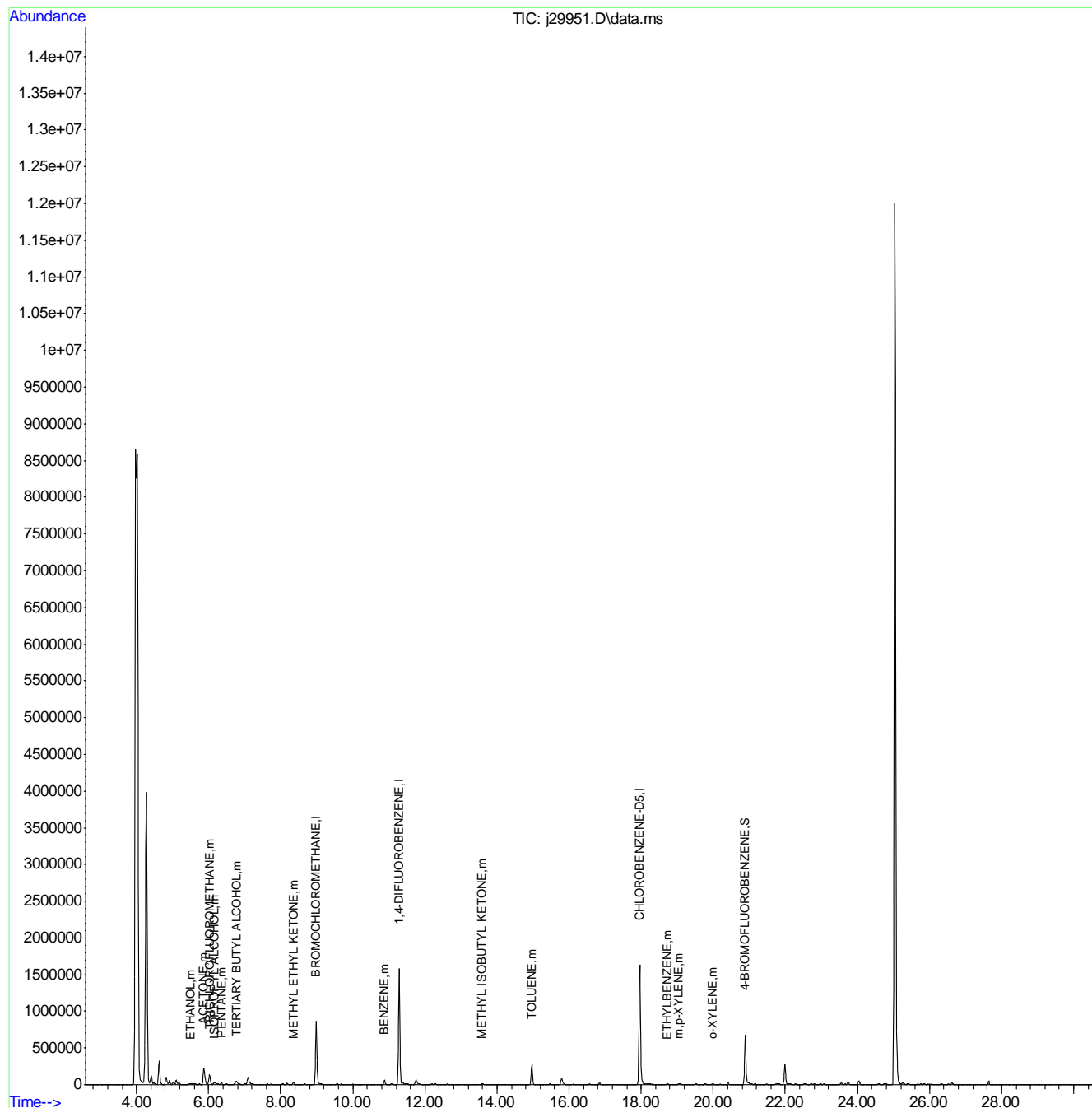
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) BROMOCHLOROMETHANE	8.981	128	405702	10.00	PPBV	#-0.02
37) 1,4-DIFLUOROBENZENE	11.287	114	1933664	10.00	PPBV	-0.02
53) CHLOROBENZENE-D5	17.960	82	875798	10.00	PPBV	#-0.03
System Monitoring Compounds						
66) 4-BROMOFLUOROBENZENE	20.887	95	410706	4.18	PPBV	-0.03
Spiked Amount	5.000	Range	50 - 129	Recovery	=	83.60%
Target Compounds						
					Qvalue	
11) TRICHLOROFLUOROMETHANE	6.024	101	152221	1.48	PPBV	100
12) ISOPROPYL ALCOHOL	6.170	45	64498	2.44	PPBV	# 74
13) ACETONE	5.860	43	434031	20.18	PPBV	81
15) PENTANE	6.359	42	13012	0.68	PPBV	93
18) ETHANOL	5.495	45	68308	16.72	PPBV	91
24) TERTIARY BUTYL ALCOHOL	6.767	59	113830	2.70	PPBV	# 86
30) METHYL ETHYL KETONE	8.348	43	54116	1.70	PPBV	92
38) BENZENE	10.873	78	83111	0.76	PPBV	98
47) METHYL ISOBUTYL KETONE	13.574	43	19644	0.37	PPBV	# 89
49) TOLUENE	14.967	92	187536	2.39	PPBV	99
60) ETHYLBENZENE	18.727	91	20398	0.14	PPBV	# 92
61) m,p-XYLENE	19.043	106	14332	0.24	PPBV	97
62) o-XYLENE	19.974	106	5886	0.10	PPBV	# 84

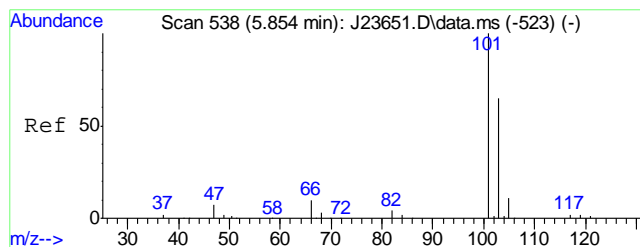
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\J150209\
Data File : j29951.D
Acq On : 10 Feb 2015 11:16 am
Operator : AkinA
Sample : MC36556-2(M275)
Misc : ms33838,msj1520,,,,,1
ALS Vial : 4 Sample Multiplier: 1

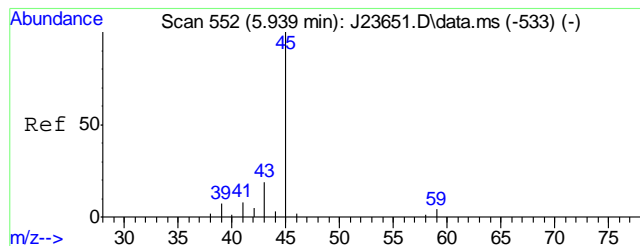
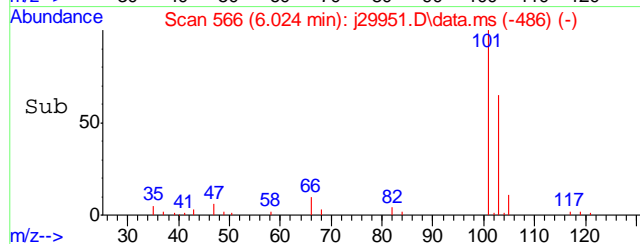
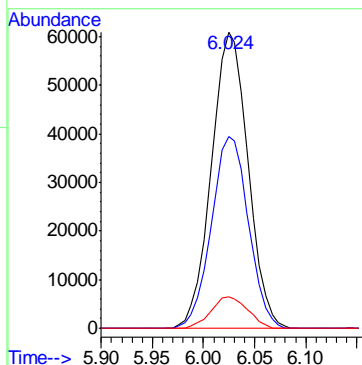
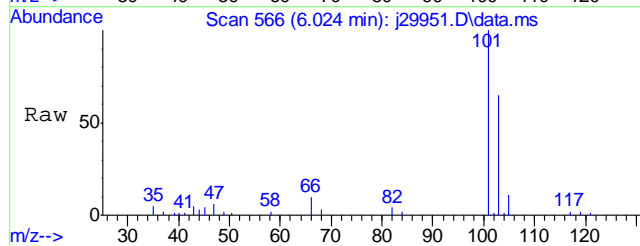
Quant Time: Feb 10 15:57:57 2015
Quant Method : C:\msdchem\1\methods\J150122T.M
Quant Title : T015 by GCMS w/DB-1 60 m X .25 mm ID 1.0 um
QLast Update : Fri Jan 23 13:48:53 2015
Response via : Initial Calibration





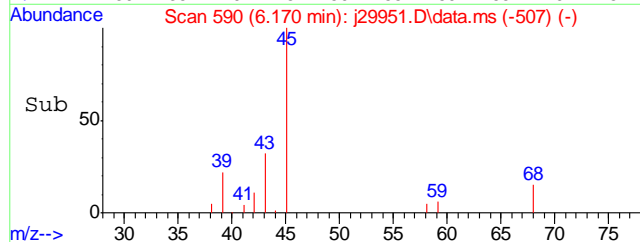
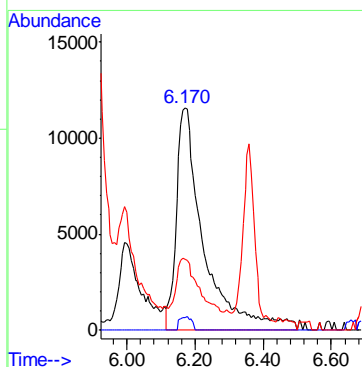
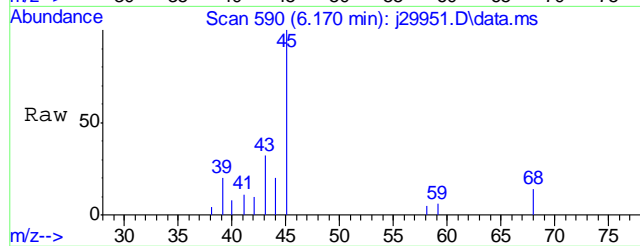
#11
TRICHLOROFLUOROMETHANE
Concen: 1.48 PPBV
RT: 6.024 min Scan# 566
Delta R.T. -0.013 min
Lab File: j29951.D
Acq: 10 Feb 2015 11:16 am

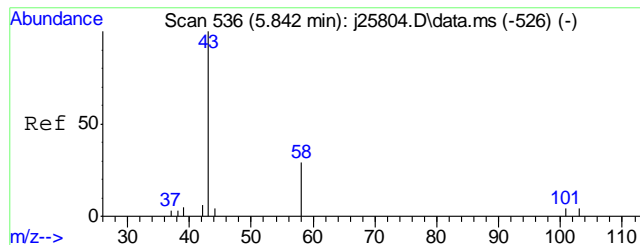
Tgt Ion	Ratio	Lower	Upper
101	100		
103	65.5	45.1	85.1
105	10.6	0.0	30.5



#12
ISOPROPYL ALCOHOL
Concen: 2.44 PPBV
RT: 6.170 min Scan# 590
Delta R.T. 0.006 min
Lab File: j29951.D
Acq: 10 Feb 2015 11:16 am

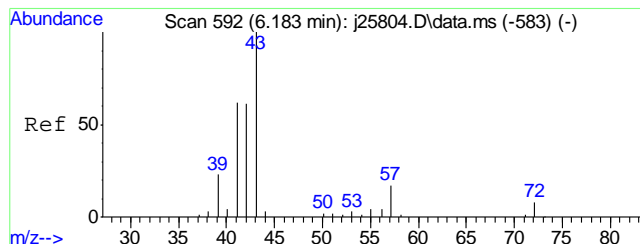
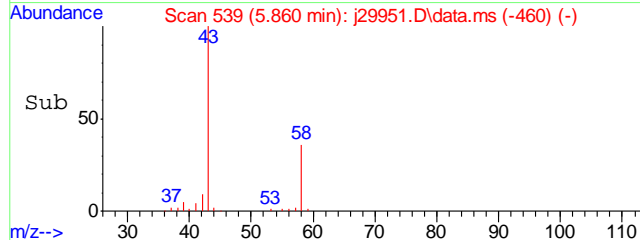
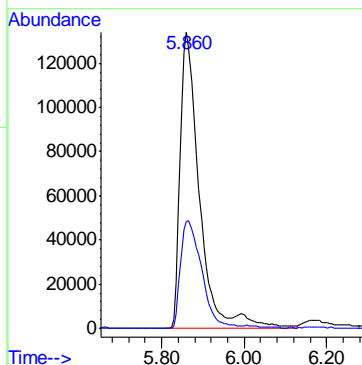
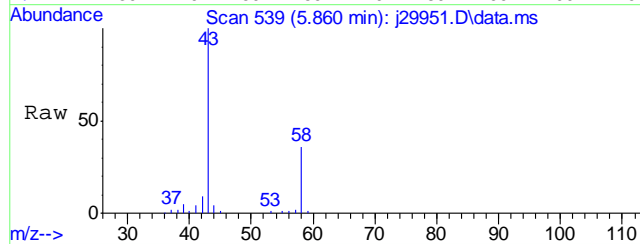
Tgt Ion	Ratio	Lower	Upper
45	100		
59	0.0	0.0	23.9
43	33.9	0.6	40.6





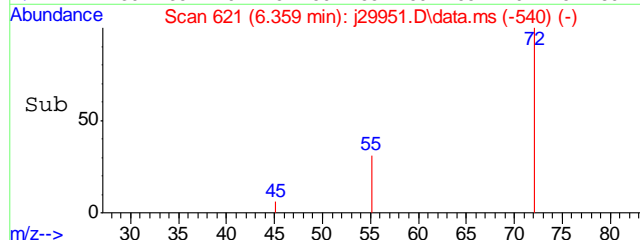
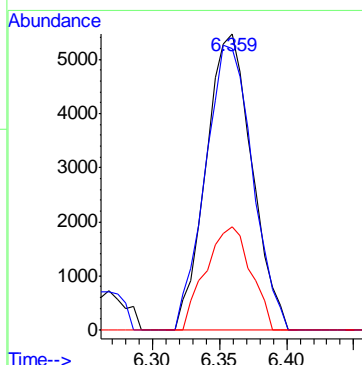
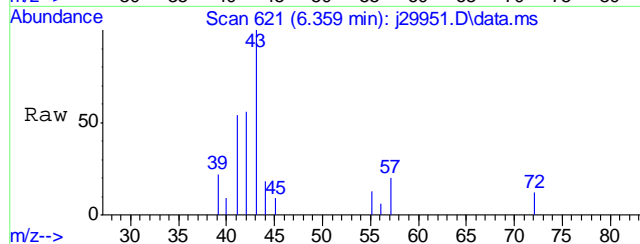
#13
ACETONE
Concen: 20.18 PPBV
RT: 5.860 min Scan# 539
Delta R.T. -0.019 min
Lab File: j29951.D
Acq: 10 Feb 2015 11:16 am

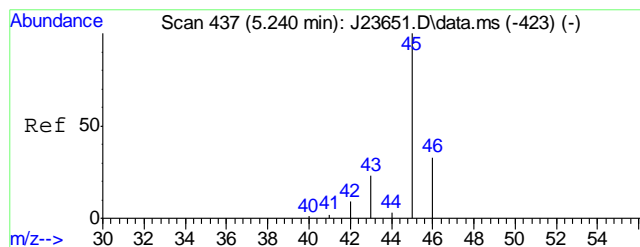
Tgt Ion: 43 Resp: 434031
Ion Ratio Lower Upper
43 100
58 40.6 10.3 50.3



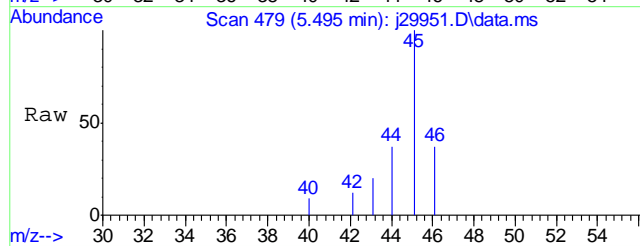
#15
PENTANE
Concen: 0.68 PPBV
RT: 6.359 min Scan# 621
Delta R.T. -0.006 min
Lab File: j29951.D
Acq: 10 Feb 2015 11:16 am

Tgt Ion: 42 Resp: 13012
Ion Ratio Lower Upper
42 100
41 98.6 73.8 113.8
57 34.1 7.2 47.2



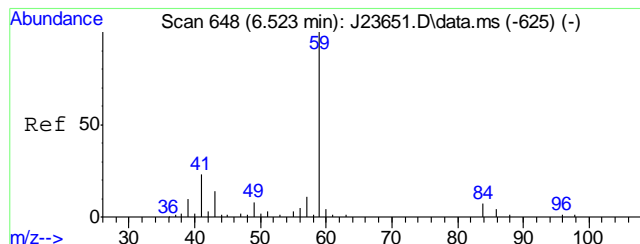
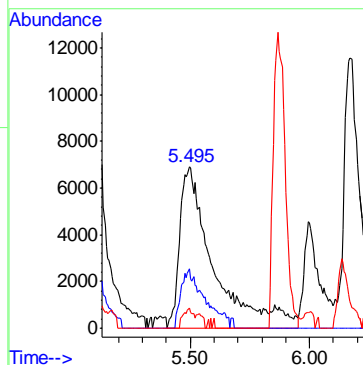
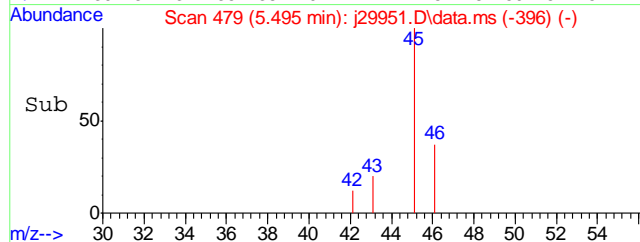


#18
 ETHANOL
 Concen: 16.72 PPBV
 RT: 5.495 min Scan# 479
 Delta R.T. 0.006 min
 Lab File: j29951.D
 Acq: 10 Feb 2015 11:16 am

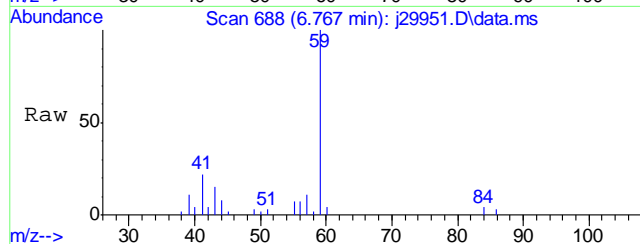


Tgt Ion: 45 Resp: 68308

Ion	Ratio	Lower	Upper
45	100		
46	25.6	11.4	51.4
42	5.4	0.0	27.1

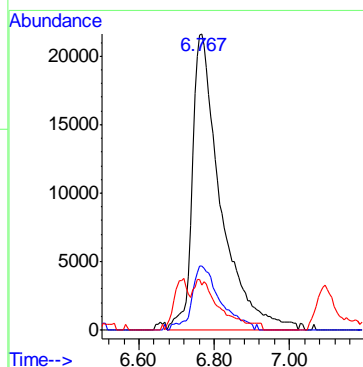
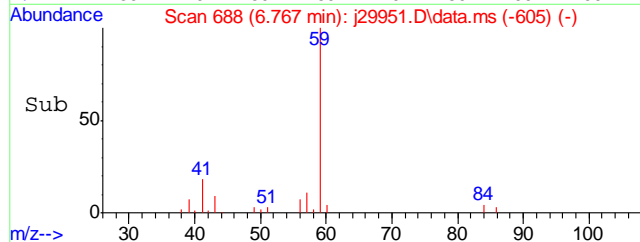


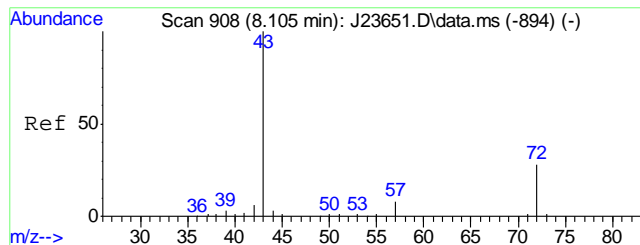
#24
 TERTIARY BUTYL ALCOHOL
 Concen: 2.70 PPBV
 RT: 6.767 min Scan# 688
 Delta R.T. 0.006 min
 Lab File: j29951.D
 Acq: 10 Feb 2015 11:16 am



Tgt Ion: 59 Resp: 113830

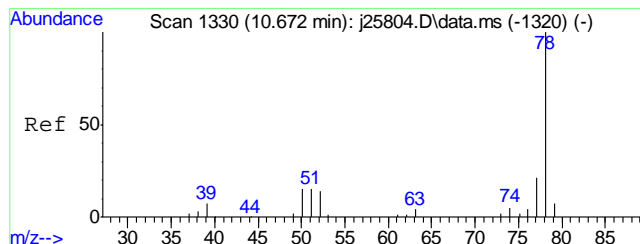
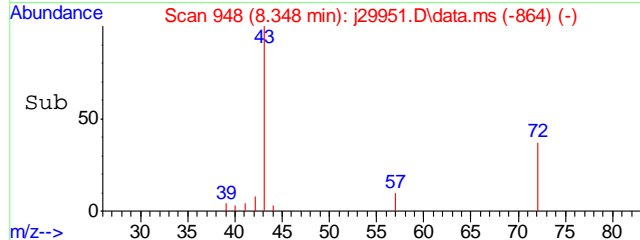
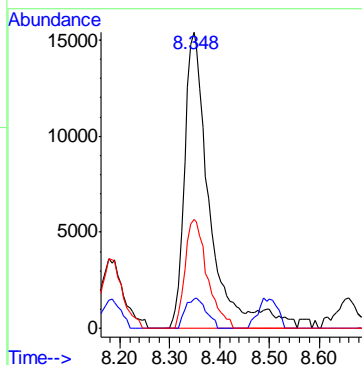
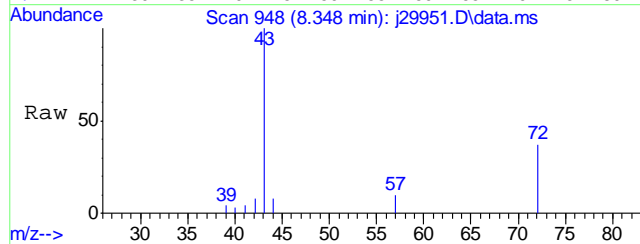
Ion	Ratio	Lower	Upper
59	100		
41	22.0	2.8	42.8
43	0.0	0.0	33.7





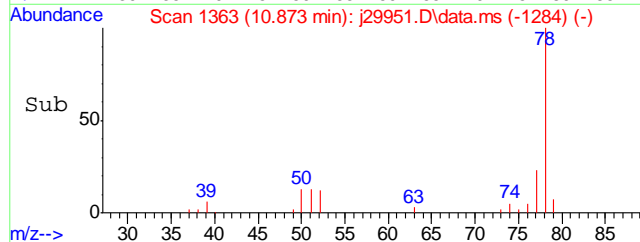
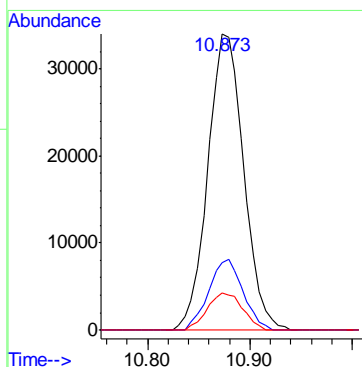
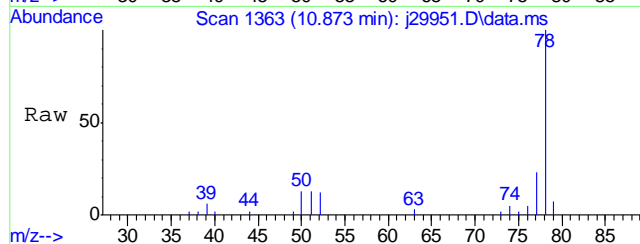
#30
METHYL ETHYL KETONE
Concen: 1.70 PPBV
RT: 8.348 min Scan# 948
Delta R.T. 0.012 min
Lab File: j29951.D
Acq: 10 Feb 2015 11:16 am

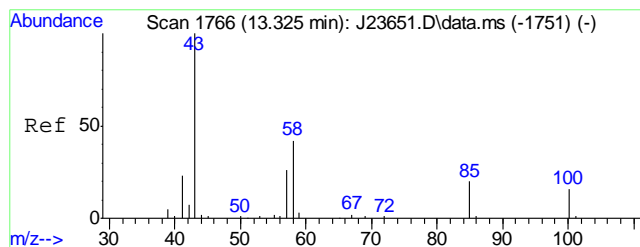
Tgt Ion	Ratio	Lower	Upper
43	100		
57	8.4	0.0	28.1
72	32.3	6.9	46.9



#38
BENZENE
Concen: 0.76 PPBV
RT: 10.873 min Scan# 1363
Delta R.T. -0.018 min
Lab File: j29951.D
Acq: 10 Feb 2015 11:16 am

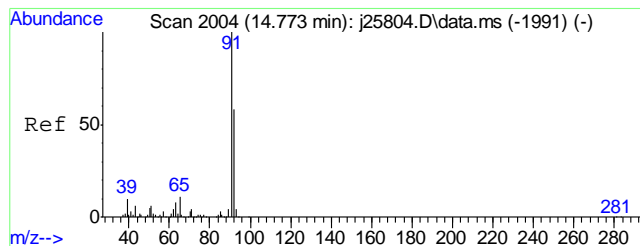
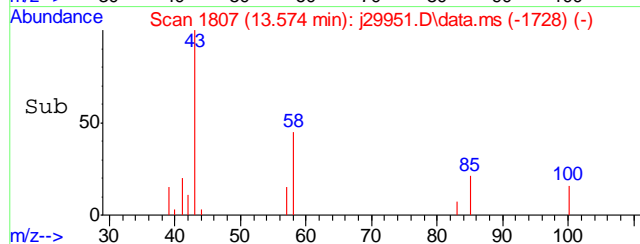
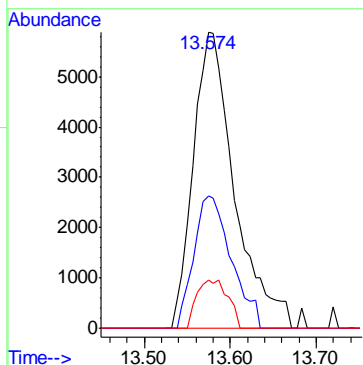
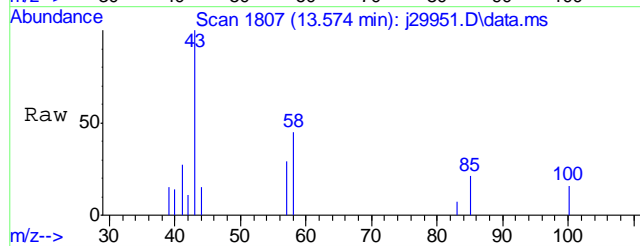
Tgt Ion	Ratio	Lower	Upper
78	100		
77	22.8	3.2	43.2
52	12.3	0.0	33.8





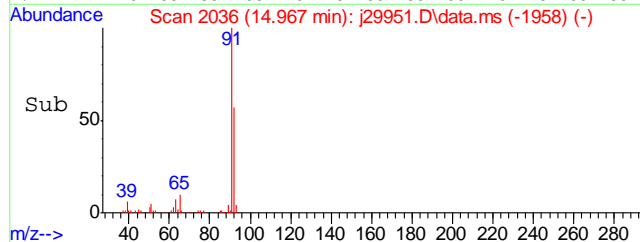
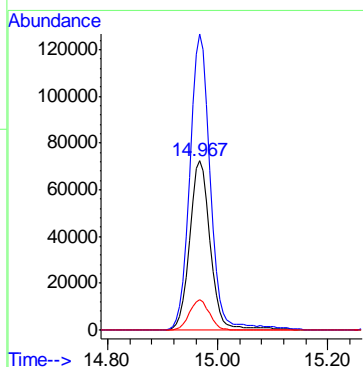
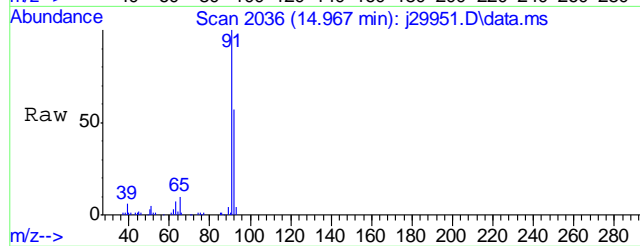
#47
METHYL ISOBUTYL KETONE
Concen: 0.37 PPBV
RT: 13.574 min Scan# 1807
Delta R.T. -0.018 min
Lab File: j29951.D
Acq: 10 Feb 2015 11:16 am

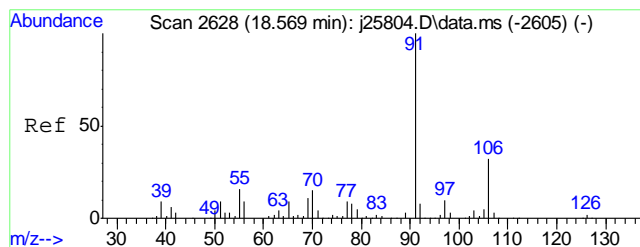
Tgt Ion	Ratio	Lower	Upper
43	100		
58	40.5	21.0	61.0
100	0.0	0.0	35.4



#49
TOLUENE
Concen: 2.39 PPBV
RT: 14.967 min Scan# 2036
Delta R.T. -0.025 min
Lab File: j29951.D
Acq: 10 Feb 2015 11:16 am

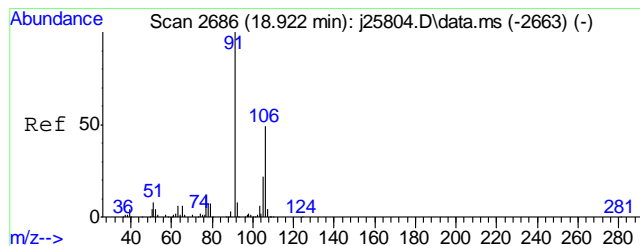
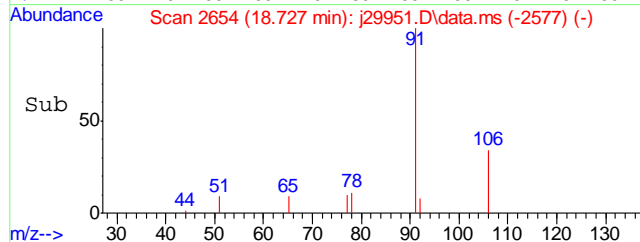
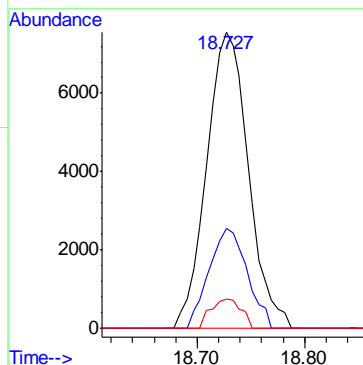
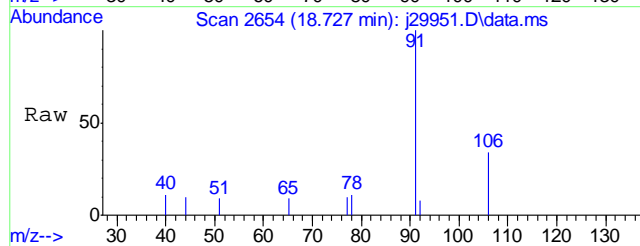
Tgt Ion	Ratio	Lower	Upper
92	100		
91	174.2	155.8	195.8
65	17.2	0.0	39.3





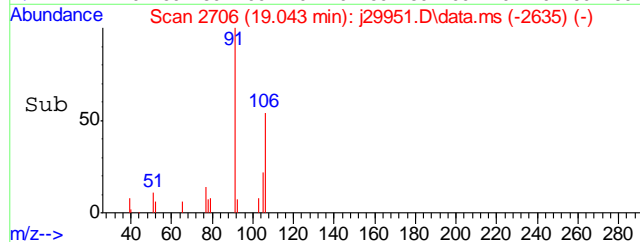
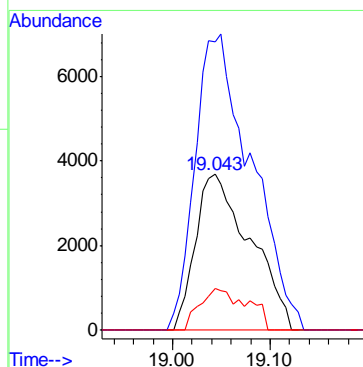
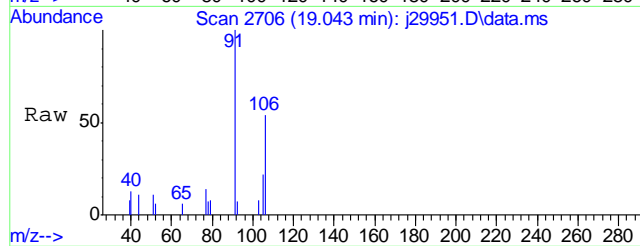
#60
ETHYLBENZENE
Concen: 0.14 PPBV
RT: 18.727 min Scan# 2654
Delta R.T. -0.030 min
Lab File: j29951.D
Acq: 10 Feb 2015 11:16 am

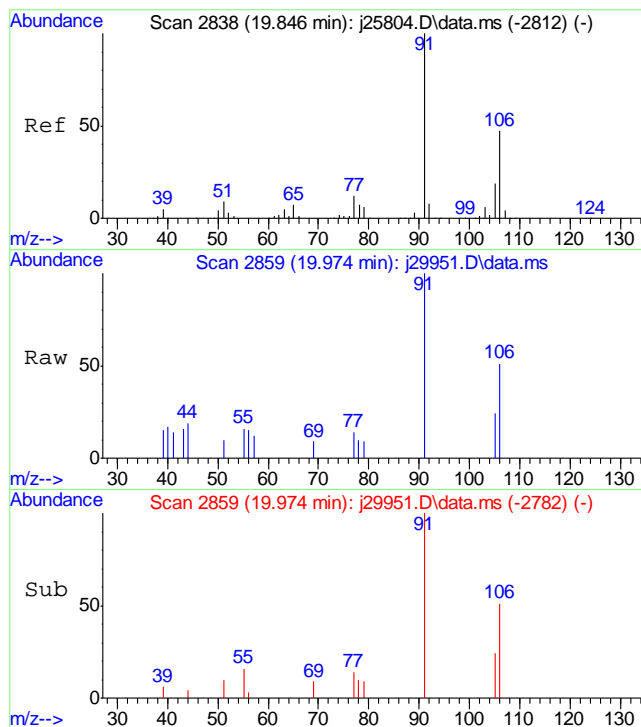
Tgt Ion	Ratio	Lower	Upper
91	100		
106	30.8	13.1	53.1
77	0.0	0.0	28.2



#61
m,p-XYLENE
Concen: 0.24 PPBV
RT: 19.043 min Scan# 2706
Delta R.T. -0.067 min
Lab File: j29951.D
Acq: 10 Feb 2015 11:16 am

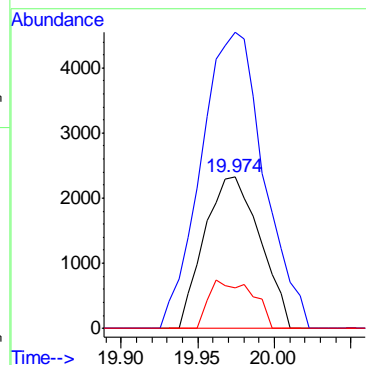
Tgt Ion	Ratio	Lower	Upper
106	100		
91	194.8	152.1	228.1
77	23.0	19.4	29.2





#62
o-XYLENE
Concen: 0.10 PPBV
RT: 19.974 min Scan# 2859
Delta R.T. -0.031 min
Lab File: j29951.D
Acq: 10 Feb 2015 11:16 am

Tgt Ion	Ratio	Lower	Upper
106	100		
91	220.8	183.3	223.3
77	0.0	4.9	44.9



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\J150209\
 Data File : j29950.D
 Acq On : 10 Feb 2015 10:29 am
 Operator : AkinA
 Sample : MC36556-3(M283)
 Misc : ms33838,msj1520,,,,,1
 ALS Vial : 3 Sample Multiplier: 1

Quant Time: Feb 10 15:50:07 2015
 Quant Method : C:\msdchem\1\methods\J150122T.M
 Quant Title : T015 by GCMS w/DB-1 60 m X .25 mm ID 1.0 um
 QLast Update : Fri Jan 23 13:48:53 2015
 Response via : Initial Calibration

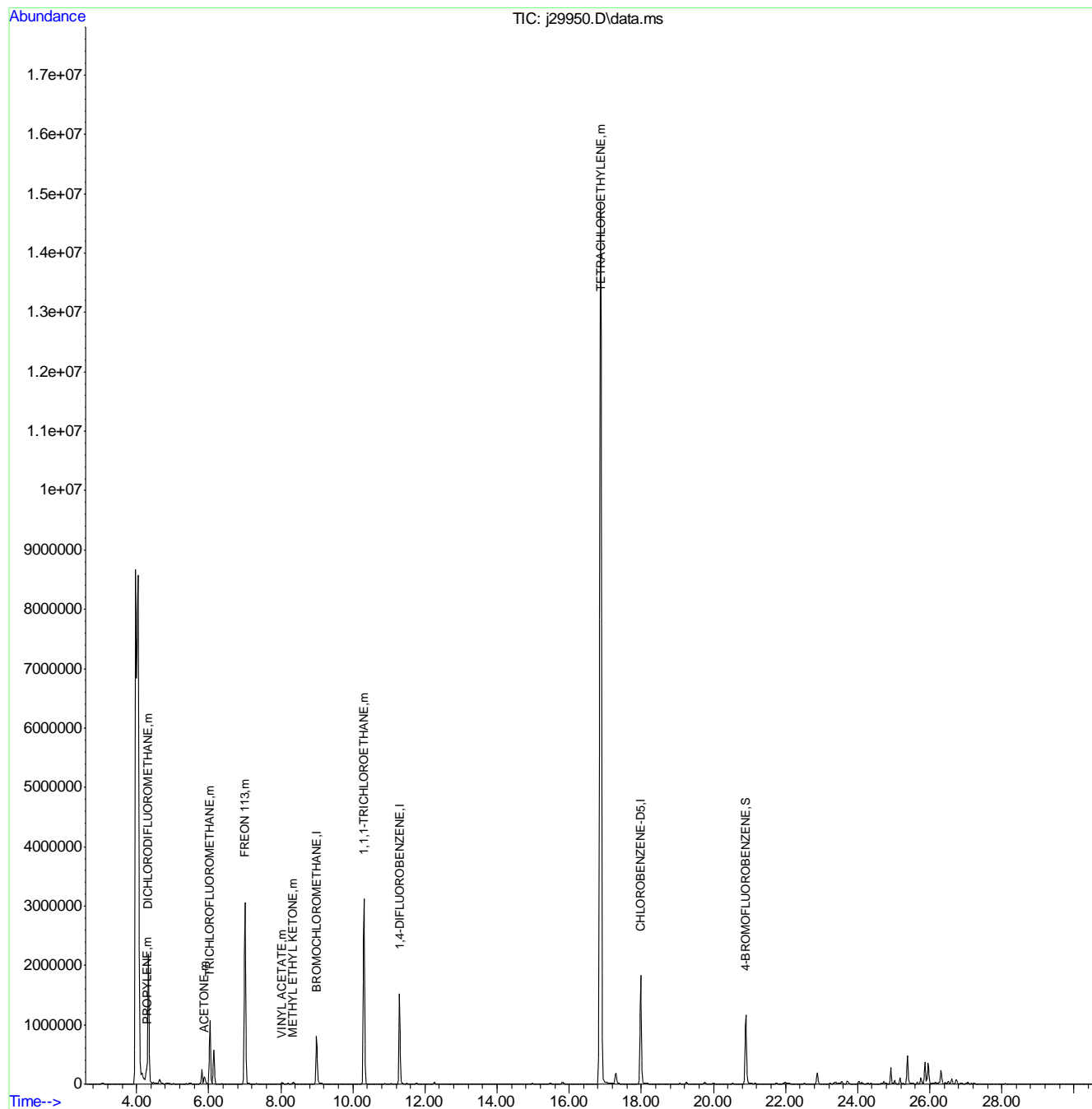
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) BROMOCHLOROMETHANE	8.993	128	389032	10.00	PPBV	# 0.00
37) 1,4-DIFLUOROBENZENE	11.293	114	1818695	10.00	PPBV	-0.02
53) CHLOROBENZENE-D5	17.985	82	987465	10.00	PPBV	# 0.00
System Monitoring Compounds						
66) 4-BROMOFLUOROBENZENE	20.899	95	679285	6.13	PPBV	-0.02
Spiked Amount	5.000	Range	50 - 129	Recovery	=	122.60%
Target Compounds						
						Qvalue
2) DICHLORODIFLUOROMETHANE	4.327	85	3083028	30.85	PPBV	98
3) PROPYLENE	4.279	41	67893	4.90	PPBV	# 48
11) TRICHLOROFLUOROMETHANE	6.037	101	1257221	12.75	PPBV	100
13) ACETONE	5.879	43	204446	9.91	PPBV	77
22) FREON 113	7.004	151	1624384	22.19	PPBV	97
28) VINYL ACETATE	8.020	43	48682	1.38	PPBV	# 77
30) METHYL ETHYL KETONE	8.342	43	72123	2.36	PPBV	87
34) 1,1,1-TRICHLOROETHANE	10.307	97	2798128	32.94	PPBV	97
55) TETRACHLOROETHYLENE	16.872	164	8381764	107.43	PPBV	100

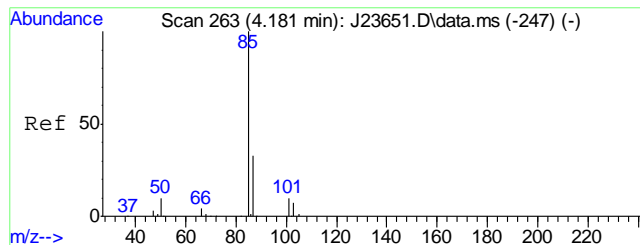
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\J150209\
Data File : j29950.D
Acq On : 10 Feb 2015 10:29 am
Operator : AkinA
Sample : MC36556-3(M283)
Misc : ms33838,msj1520,,,,,1
ALS Vial : 3 Sample Multiplier: 1

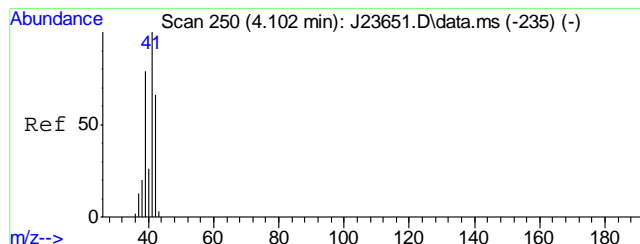
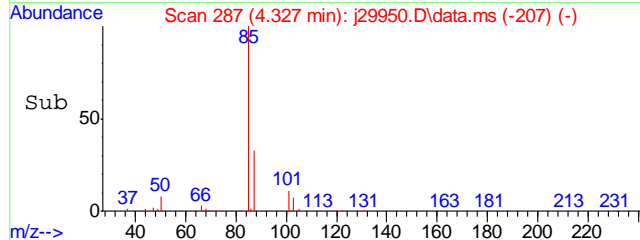
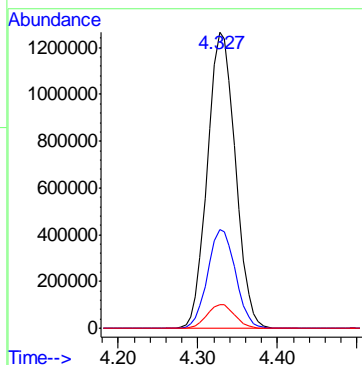
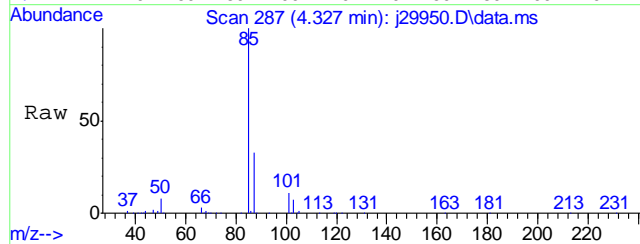
Quant Time: Feb 10 15:50:07 2015
Quant Method : C:\msdchem\1\methods\J150122T.M
Quant Title : T015 by GCMS w/DB-1 60 m X .25 mm ID 1.0 um
QLast Update : Fri Jan 23 13:48:53 2015
Response via : Initial Calibration





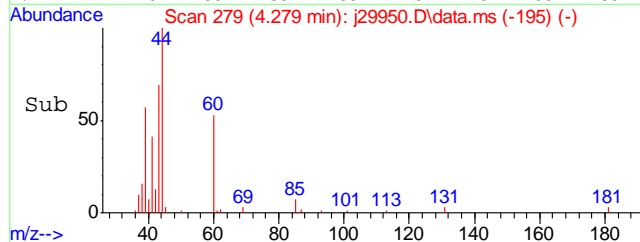
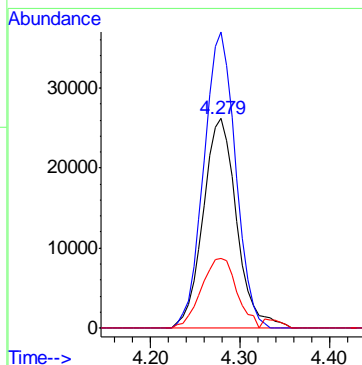
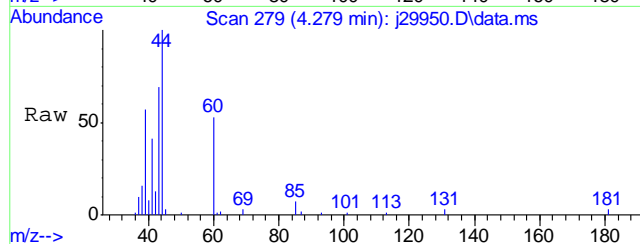
#2
DICHLORODIFLUOROMETHANE
Concen: 30.85 PPBV
RT: 4.327 min Scan# 287
Delta R.T. -0.012 min
Lab File: j29950.D
Acq: 10 Feb 2015 10:29 am

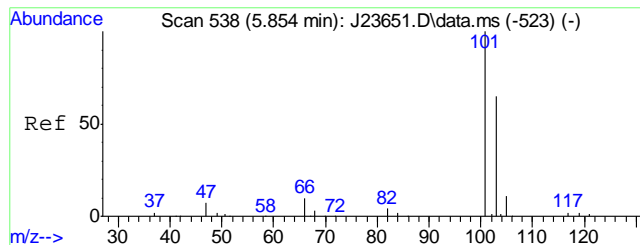
Tgt Ion: 85 Resp: 3083028
Ion Ratio Lower Upper
85 100
87 33.1 12.7 52.7
50 7.9 0.0 30.0



#3
PROPYLENE
Concen: 4.90 PPBV
RT: 4.279 min Scan# 279
Delta R.T. 0.013 min
Lab File: j29950.D
Acq: 10 Feb 2015 10:29 am

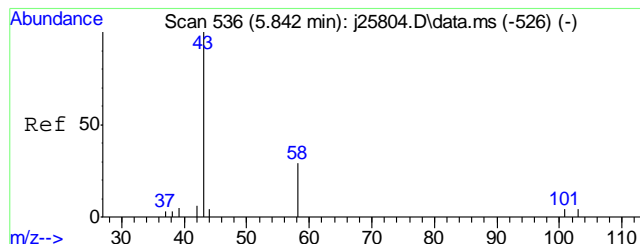
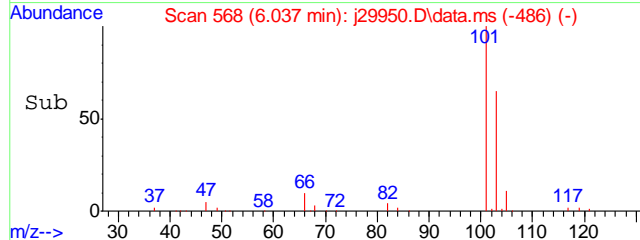
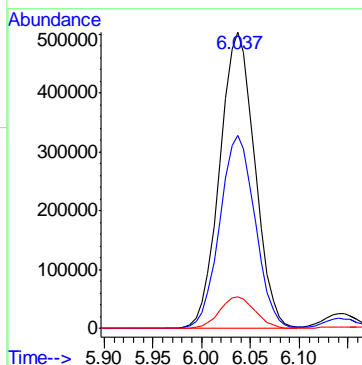
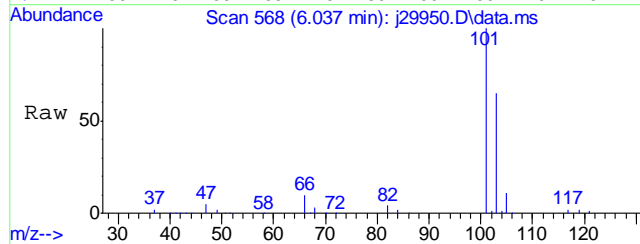
Tgt Ion: 41 Resp: 67893
Ion Ratio Lower Upper
41 100
39 134.0 58.5 98.5#
42 35.0 45.8 85.8#





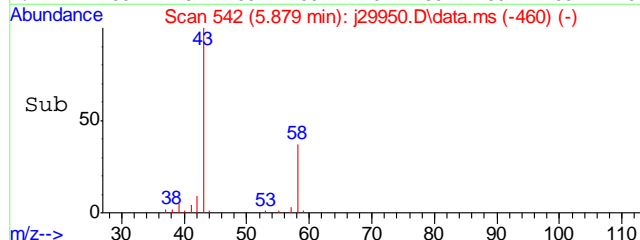
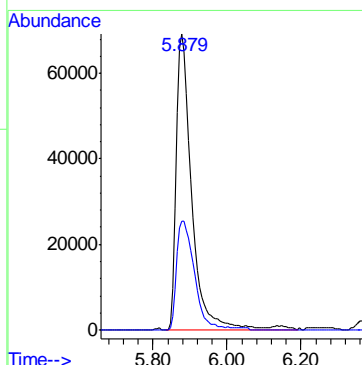
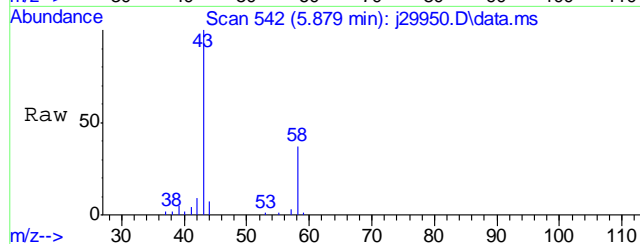
#11
 TRICHLOROFLUOROMETHANE
 Concen: 12.75 PPBV
 RT: 6.037 min Scan# 568
 Delta R.T. -0.000 min
 Lab File: j29950.D
 Acq: 10 Feb 2015 10:29 am

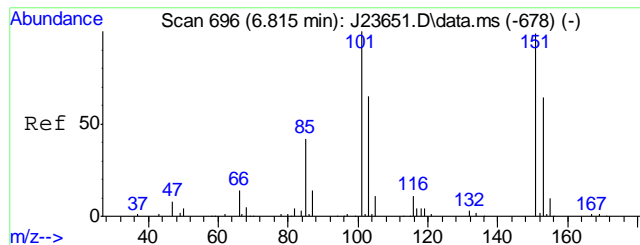
Tgt Ion: 101 Resp: 1257221
 Ion Ratio Lower Upper
 101 100
 103 65.4 45.1 85.1
 105 10.8 0.0 30.5



#13
 ACETONE
 Concen: 9.91 PPBV
 RT: 5.879 min Scan# 542
 Delta R.T. -0.000 min
 Lab File: j29950.D
 Acq: 10 Feb 2015 10:29 am

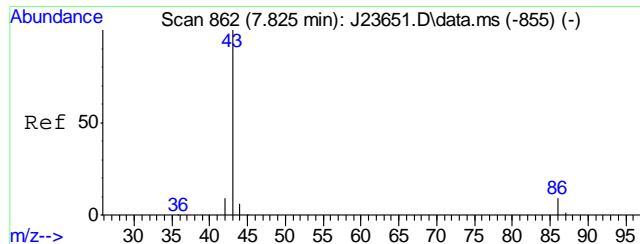
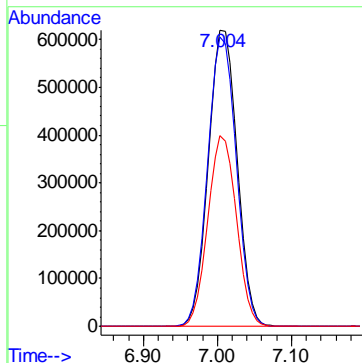
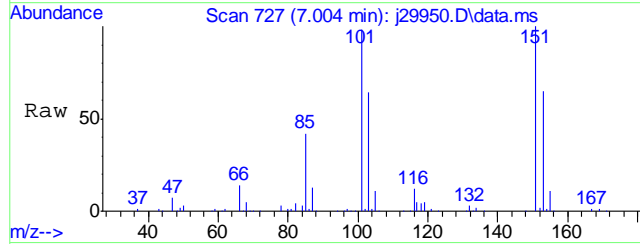
Tgt Ion: 43 Resp: 204446
 Ion Ratio Lower Upper
 43 100
 58 42.6 10.3 50.3





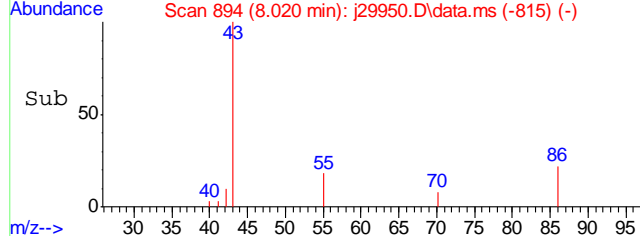
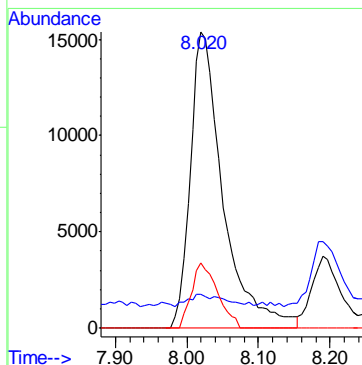
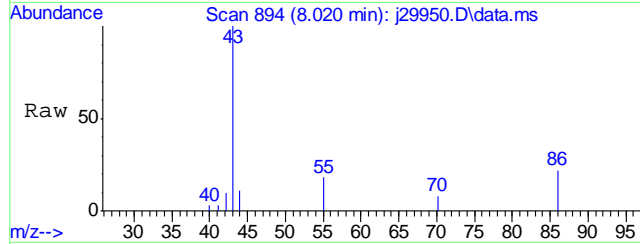
#22
FREON 113
Concen: 22.19 PPBV
RT: 7.004 min Scan# 727
Delta R.T. 0.000 min
Lab File: j29950.D
Acq: 10 Feb 2015 10:29 am

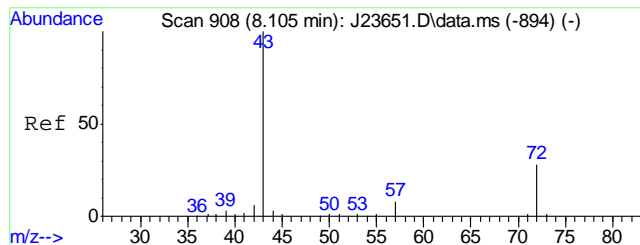
Tgt Ion: 151 Resp: 1624384
Ion Ratio Lower Upper
151 100
101 97.6 81.2 121.2
103 64.0 45.4 85.4



#28
VINYL ACETATE
Concen: 1.38 PPBV
RT: 8.020 min Scan# 894
Delta R.T. -0.018 min
Lab File: j29950.D
Acq: 10 Feb 2015 10:29 am

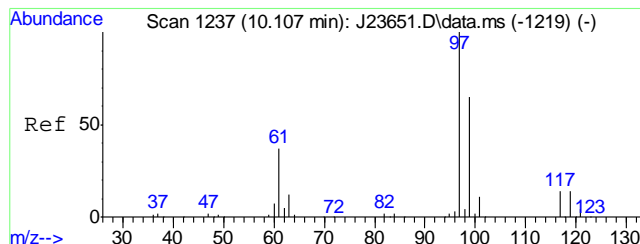
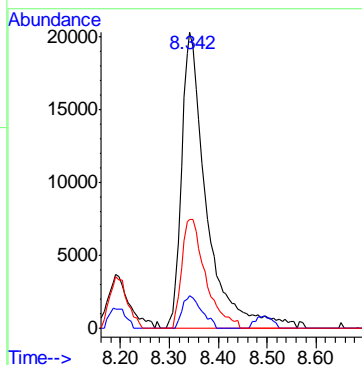
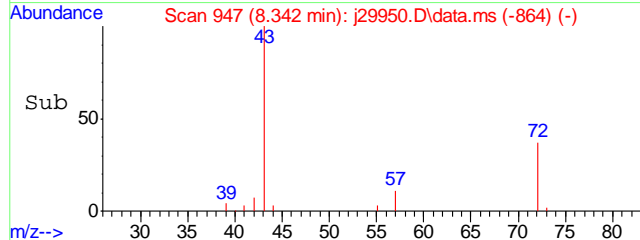
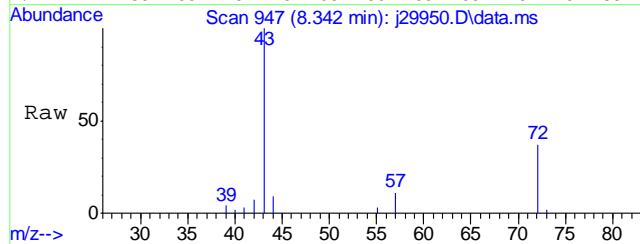
Tgt Ion: 43 Resp: 48682
Ion Ratio Lower Upper
43 100
44 0.0 0.0 27.6
86 17.6 0.0 29.0





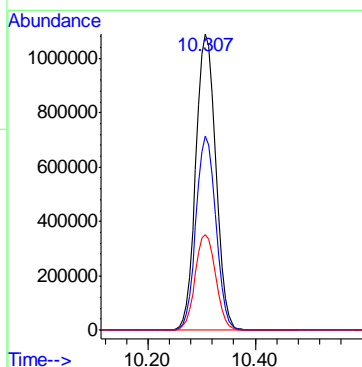
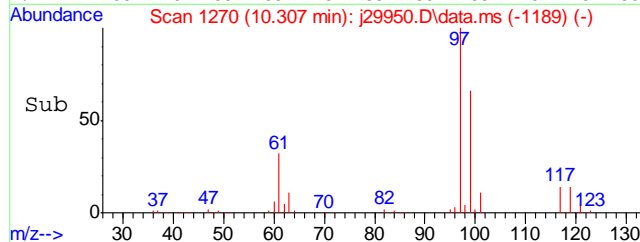
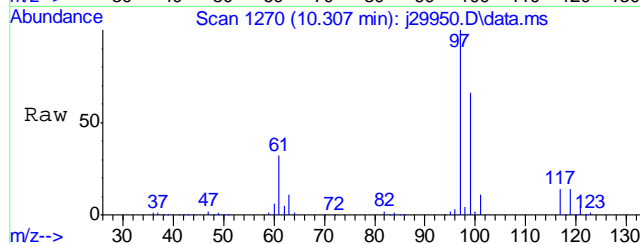
#30
METHYL ETHYL KETONE
Concen: 2.36 PPBV
RT: 8.342 min Scan# 947
Delta R.T. 0.006 min
Lab File: j29950.D
Acq: 10 Feb 2015 10:29 am

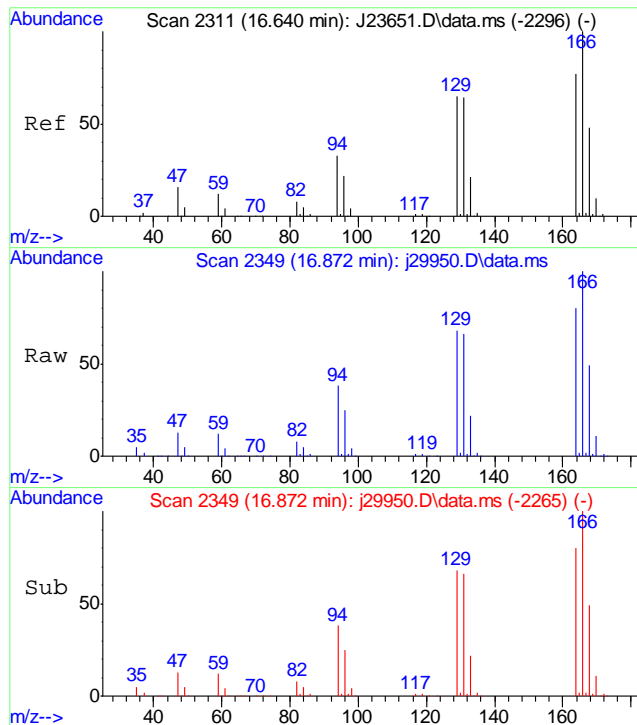
Tgt Ion	Ratio	Lower	Upper
43	100		
57	8.6	0.0	28.1
72	35.2	6.9	46.9



#34
1,1,1-TRICHLOROETHANE
Concen: 32.94 PPBV
RT: 10.307 min Scan# 1270
Delta R.T. -0.006 min
Lab File: j29950.D
Acq: 10 Feb 2015 10:29 am

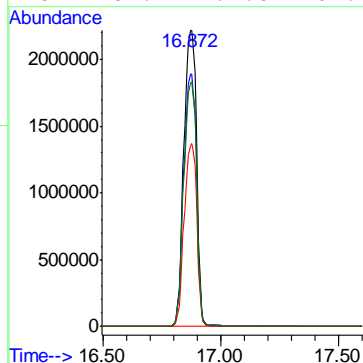
Tgt Ion	Ratio	Lower	Upper
97	100		
99	65.2	45.3	85.3
61	33.2	17.3	57.3





#55
TETRACHLOROETHYLENE
Concen: 107.43 PPBV
RT: 16.872 min Scan# 2349
Delta R.T. 0.013 min
Lab File: j29950.D
Acq: 10 Feb 2015 10:29 am

Tgt Ion:164 Resp: 8381764
Ion Ratio Lower Upper
164 100
129 85.6 65.6 105.6
168 61.1 42.1 82.1
131 82.7 62.8 102.8



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\J150209\
Data File : j29957.D
Acq On : 10 Feb 2015 4:12 pm
Operator : AkinA
Sample : MC36556-3(M283)
Misc : ms33838,msj1520,,,,,5
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Feb 10 16:47:14 2015
Quant Method : C:\msdchem\1\methods\J150122T.M
Quant Title : T015 by GCMS w/DB-1 60 m X .25 mm ID 1.0 um
QLast Update : Fri Jan 23 13:48:53 2015
Response via : Initial Calibration

Compound		R.T.	QIon	Response	Conc	Units	Dev(Min)

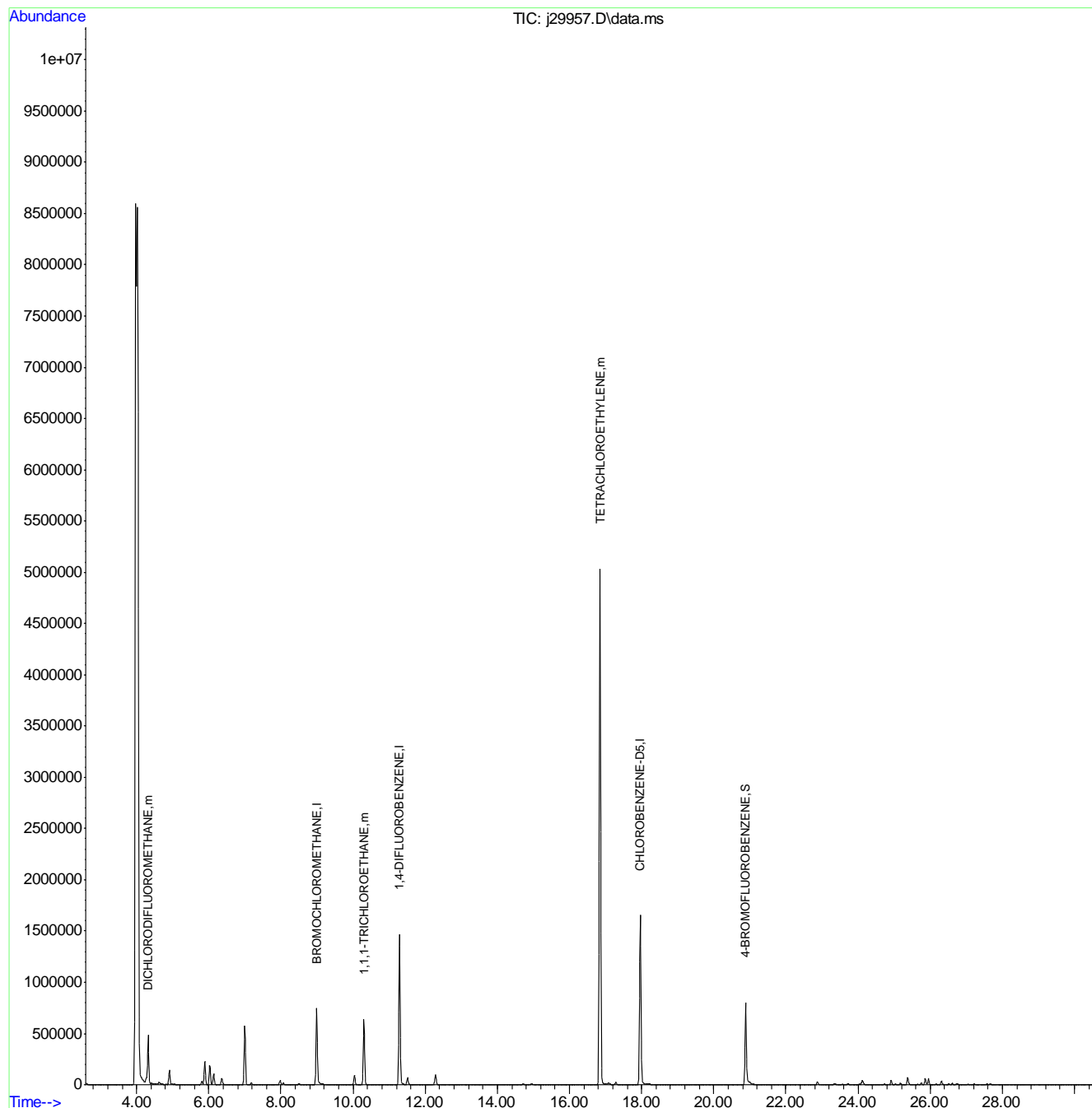
Internal Standards							
1)	BROMOCHLOROMETHANE	8.987	128	369480	10.00	PPBV	#-0.01
37)	1,4-DIFLUOROBENZENE	11.287	114	1756264	10.00	PPBV	-0.02
53)	CHLOROBENZENE-D5	17.960	82	847715	10.00	PPBV	#-0.03
System Monitoring Compounds							
66)	4-BROMOFLUOROBENZENE	20.880	95	485129	5.10	PPBV	-0.04
Spiked Amount 5.000		Range	50 - 129	Recovery	=	102.00%	
Target Compounds							
2)	DICHLORODIFLUOROMETHANE	4.321	85	647313	6.82	PPBV	Qvalue 98
34)	1,1,1-TRICHLOROETHANE	10.301	97	546674	6.78	PPBV	98
55)	TETRACHLOROETHYLENE	16.847	164	1991548	29.73	PPBV	98

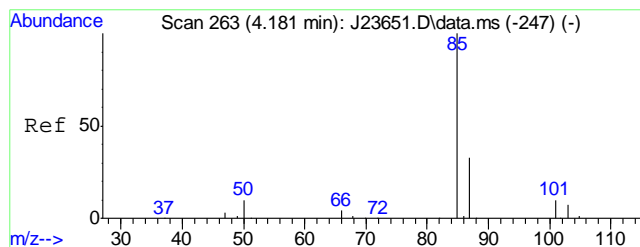
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\J150209\
Data File : j29957.D
Acq On : 10 Feb 2015 4:12 pm
Operator : AkinA
Sample : MC36556-3(M283)
Misc : ms33838,msj1520,,,,,5
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Feb 10 16:47:14 2015
Quant Method : C:\msdchem\1\methods\J150122T.M
Quant Title : T015 by GCMS w/DB-1 60 m X .25 mm ID 1.0 um
QLast Update : Fri Jan 23 13:48:53 2015
Response via : Initial Calibration





#2

DICHLORODIFLUOROMETHANE

Concen: 6.82 PPBV

RT: 4.321 min Scan# 286

Delta R.T. -0.018 min

Lab File: j29957.D

Acq: 10 Feb 2015 4:12 pm

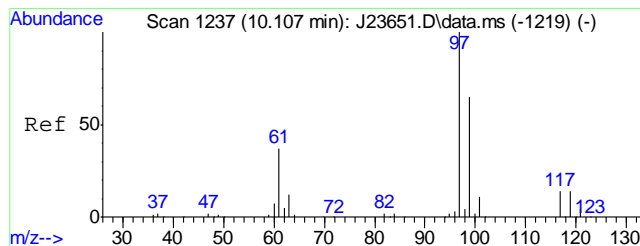
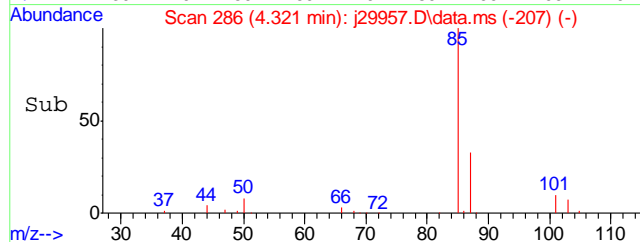
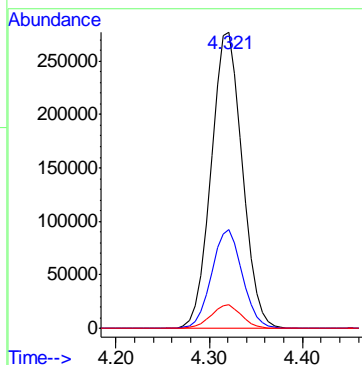
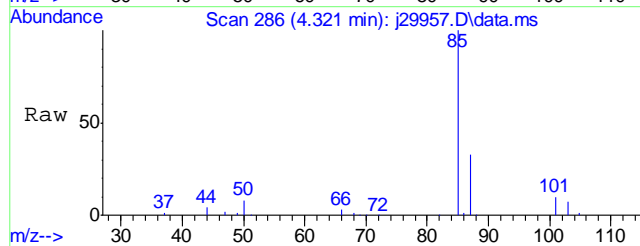
Tgt Ion: 85 Resp: 647313

Ion Ratio Lower Upper

85 100

87 32.9 12.7 52.7

50 7.8 0.0 30.0



#34

1,1,1-TRICHLOROETHANE

Concen: 6.78 PPBV

RT: 10.301 min Scan# 1269

Delta R.T. -0.012 min

Lab File: j29957.D

Acq: 10 Feb 2015 4:12 pm

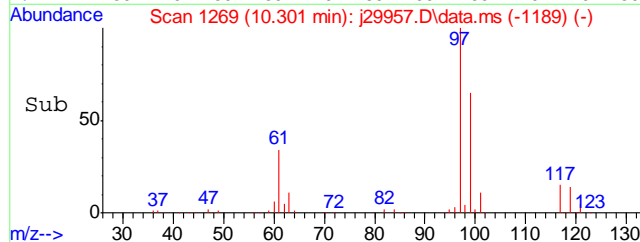
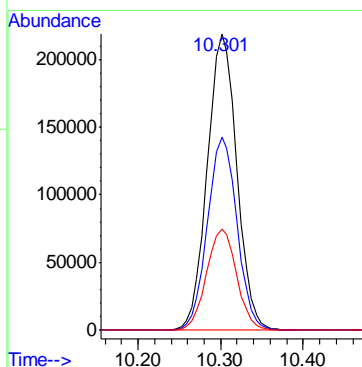
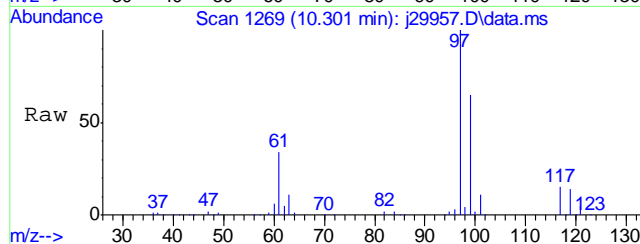
Tgt Ion: 97 Resp: 546674

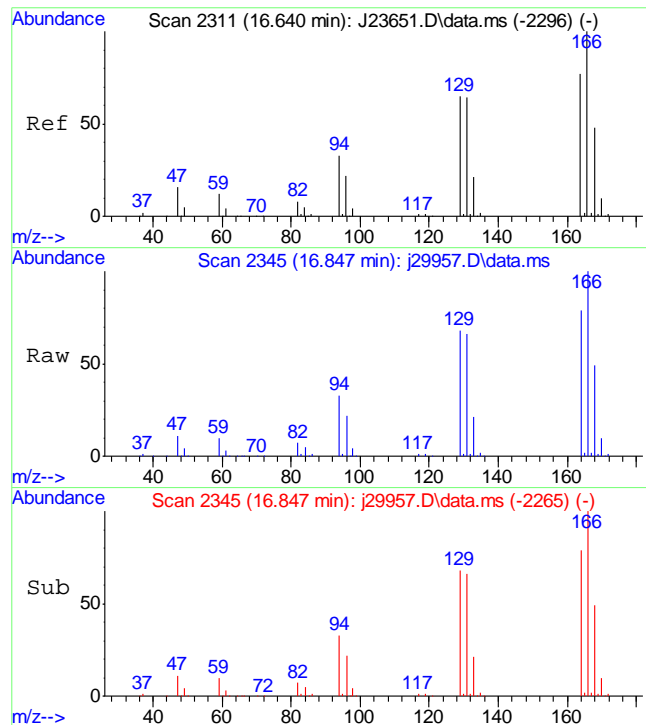
Ion Ratio Lower Upper

97 100

99 65.2 45.3 85.3

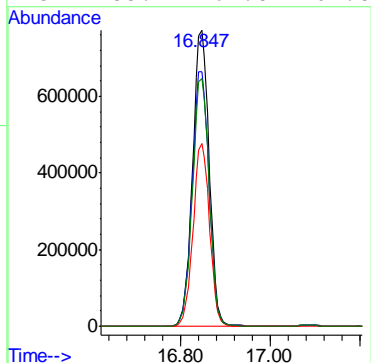
61 34.5 17.3 57.3





#55
TETRACHLOROETHYLENE
Concen: 29.73 PPBV
RT: 16.847 min Scan# 2345
Delta R.T. -0.012 min
Lab File: j29957.D
Acq: 10 Feb 2015 4:12 pm

Tgt Ion:	164	Resp:	1991548
Ion	Ratio	Lower	Upper
164	100		
129	88.2	65.6	105.6
168	61.6	42.1	82.1
131	85.2	62.8	102.8



7.1.5
7

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\J150209\
Data File : j29949.D
Acq On : 10 Feb 2015 9:45 am
Operator : AkinA
Sample : MC36556-4(M160)
Misc : ms33838,msj1520,,,,,1
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Feb 10 16:32:26 2015
Quant Method : C:\msdchem\1\methods\J150122T.M
Quant Title : T015 by GCMS w/DB-1 60 m X .25 mm ID 1.0 um
QLast Update : Fri Jan 23 13:48:53 2015
Response via : Initial Calibration

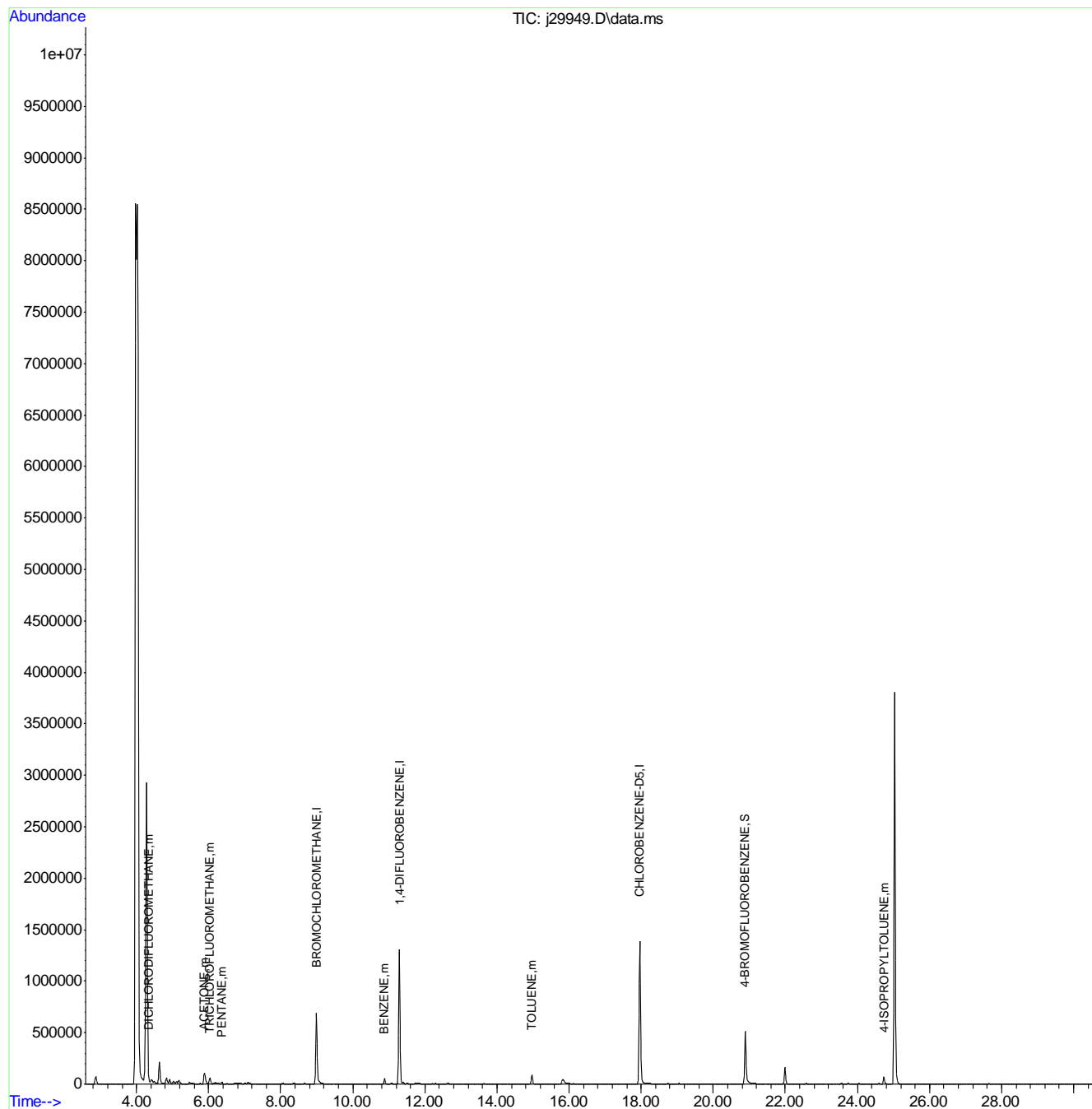
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) BROMOCHLOROMETHANE	8.987	128	335817	10.00	PPBV	#-0.01
37) 1,4-DIFLUOROBENZENE	11.293	114	1595270	10.00	PPBV	-0.02
53) CHLOROBENZENE-D5	17.960	82	741541	10.00	PPBV	#-0.03
System Monitoring Compounds						
66) 4-BROMOFLUOROBENZENE	20.887	95	335165	4.03	PPBV	-0.03
Spiked Amount	5.000	Range	50 - 129	Recovery	=	80.60%
Target Compounds						
2) DICHLORODIFLUOROMETHANE	4.333	85	53564	0.62	PPBV	Qvalue 97
11) TRICHLOROFLUOROMETHANE	6.031	101	68875	0.81	PPBV	99
13) ACETONE	5.872	43	197213	11.08	PPBV	81
15) PENTANE	6.365	42	9414	0.60	PPBV	97
38) BENZENE	10.879	78	65170	0.72	PPBV	97
49) TOLUENE	14.973	92	61685	0.95	PPBV	99
78) 4-ISOPROPYLTOLUENE	24.731	119	63479	0.46	PPBV	98

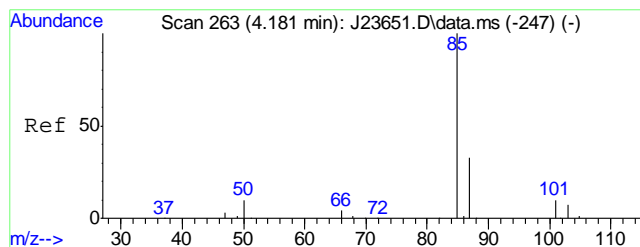
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\J150209\
Data File : j29949.D
Acq On : 10 Feb 2015 9:45 am
Operator : AkinA
Sample : MC36556-4(M160)
Misc : ms33838,msj1520,,,,,1
ALS Vial : 2 Sample Multiplier: 1

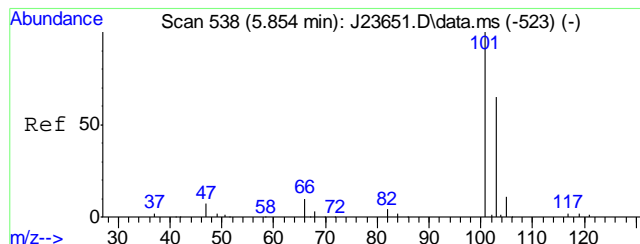
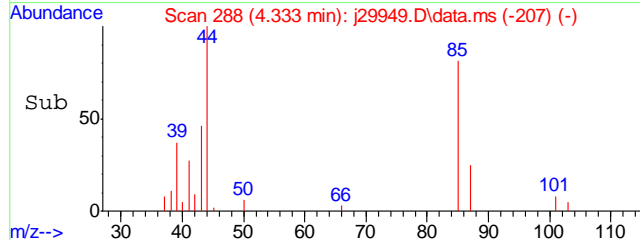
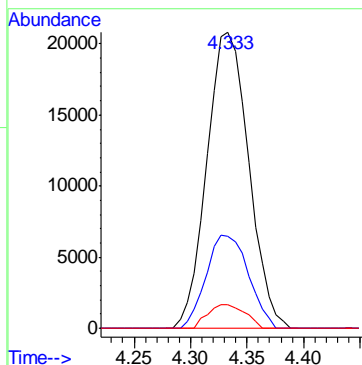
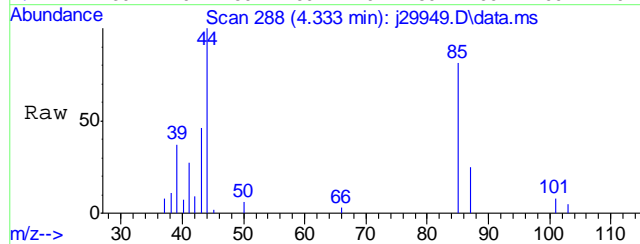
Quant Time: Feb 10 16:32:26 2015
Quant Method : C:\msdchem\1\methods\J150122T.M
Quant Title : T015 by GCMS w/DB-1 60 m X .25 mm ID 1.0 um
QLast Update : Fri Jan 23 13:48:53 2015
Response via : Initial Calibration





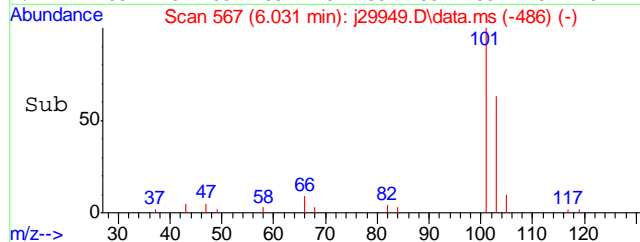
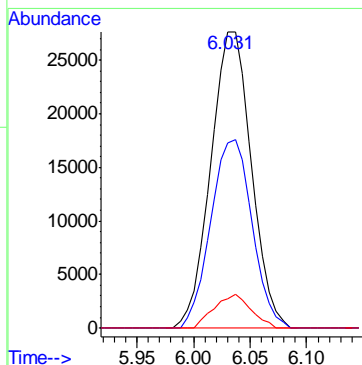
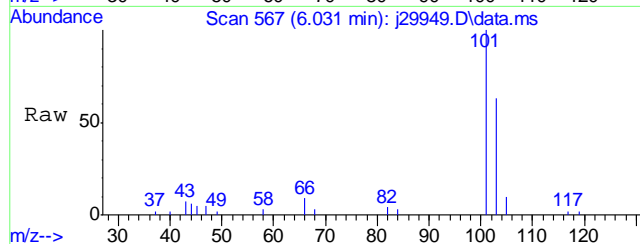
#2
DICHLORODIFLUOROMETHANE
Concen: 0.62 PPBV
RT: 4.333 min Scan# 288
Delta R.T. -0.006 min
Lab File: j29949.D
Acq: 10 Feb 2015 9:45 am

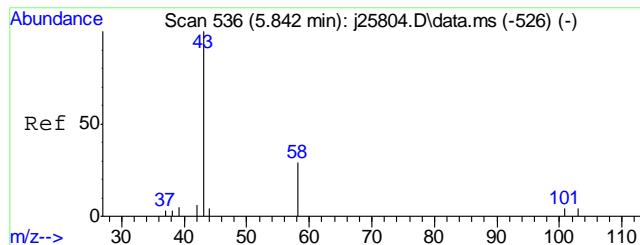
Tgt Ion:	85	Resp:	53564
Ion Ratio	Lower	Upper	
85	100		
87	31.8	12.7	52.7
50	7.1	0.0	30.0



#11
TRICHLOROFLUOROMETHANE
Concen: 0.81 PPBV
RT: 6.031 min Scan# 567
Delta R.T. -0.006 min
Lab File: j29949.D
Acq: 10 Feb 2015 9:45 am

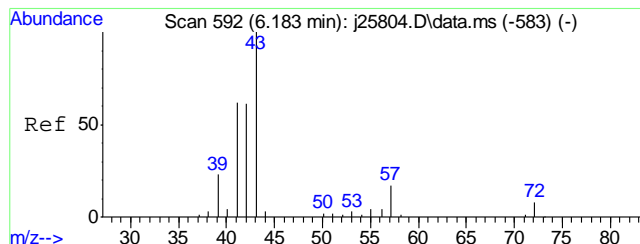
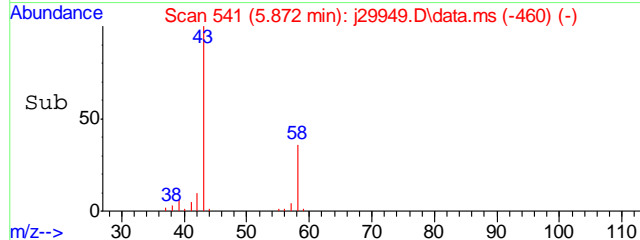
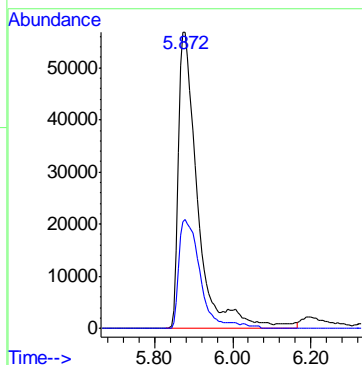
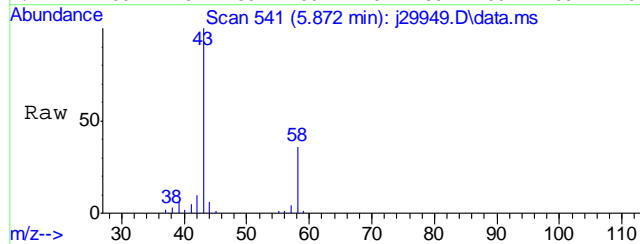
Tgt Ion:	101	Resp:	68875
Ion Ratio	Lower	Upper	
101	100		
103	64.6	45.1	85.1
105	10.1	0.0	30.5





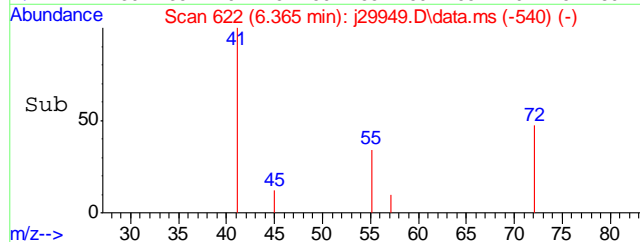
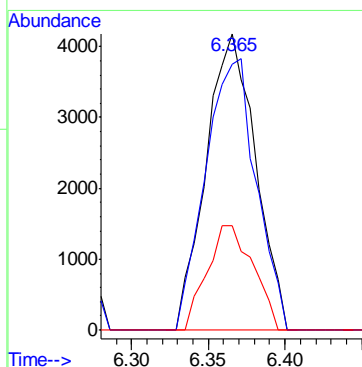
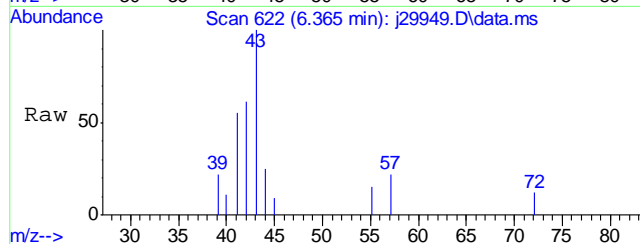
#13
 ACETONE
 Concen: 11.08 PPBV
 RT: 5.872 min Scan# 541
 Delta R.T. -0.007 min
 Lab File: j29949.D
 Acq: 10 Feb 2015 9:45 am

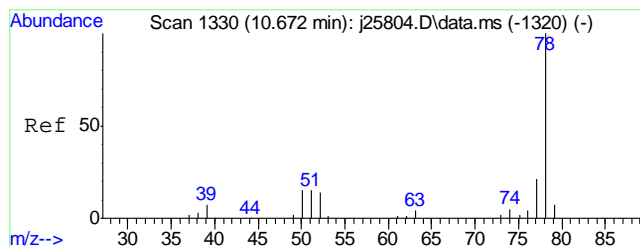
Tgt Ion: 43 Resp: 197213
 Ion Ratio Lower Upper
 43 100
 58 40.5 10.3 50.3



#15
 PENTANE
 Concen: 0.60 PPBV
 RT: 6.365 min Scan# 622
 Delta R.T. 0.000 min
 Lab File: j29949.D
 Acq: 10 Feb 2015 9:45 am

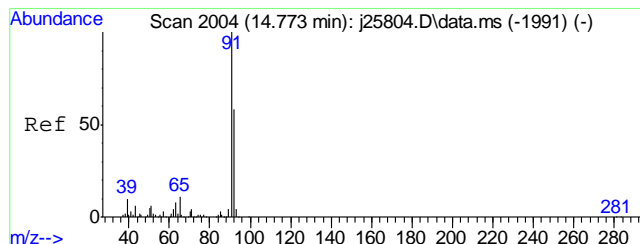
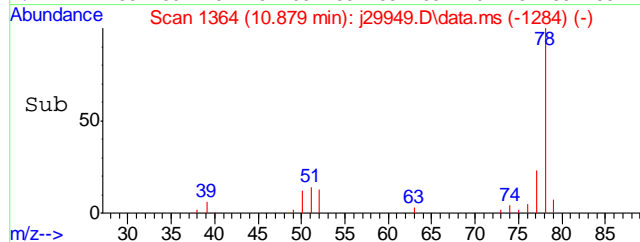
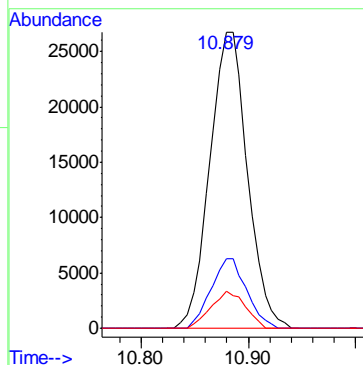
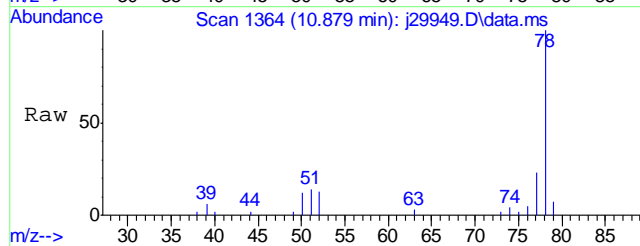
Tgt Ion: 42 Resp: 9414
 Ion Ratio Lower Upper
 42 100
 41 94.0 73.8 113.8
 57 32.7 7.2 47.2





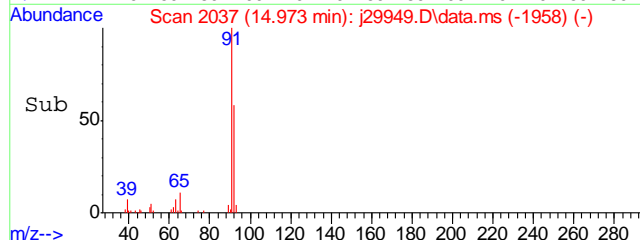
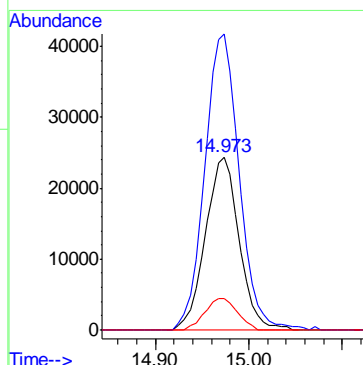
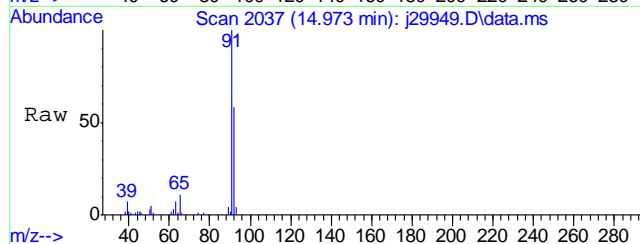
#38
 BENZENE
 Concen: 0.72 PPBV
 RT: 10.879 min Scan# 1364
 Delta R.T. -0.012 min
 Lab File: j29949.D
 Acq: 10 Feb 2015 9:45 am

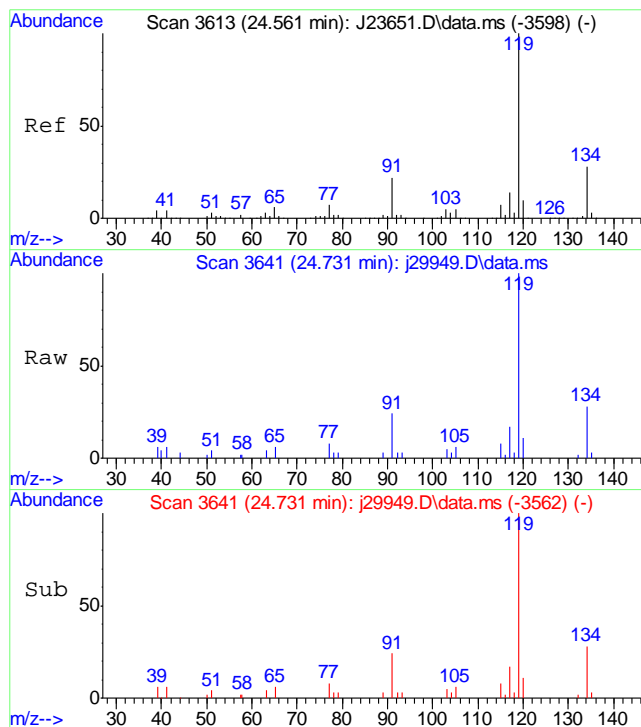
Tgt Ion	Ratio	Lower	Upper
78	100		
77	22.2	3.2	43.2
52	11.4	0.0	33.8



#49
 TOLUENE
 Concen: 0.95 PPBV
 RT: 14.973 min Scan# 2037
 Delta R.T. -0.019 min
 Lab File: j29949.D
 Acq: 10 Feb 2015 9:45 am

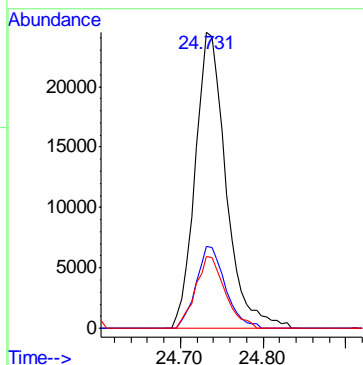
Tgt Ion	Ratio	Lower	Upper
92	100		
91	174.9	155.8	195.8
65	17.8	0.0	39.3





#78
 4-ISOPROPYLTOLUENE
 Concen: 0.46 PPBV
 RT: 24.731 min Scan# 3641
 Delta R.T. -0.019 min
 Lab File: j29949.D
 Acq: 10 Feb 2015 9:45 am

Tgt Ion:119	Resp:	63479
Ion Ratio	Lower	Upper
119	100	
134	26.2	7.6 47.6
91	23.1	2.7 42.7



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\J150209\
 Data File : j29948.D
 Acq On : 10 Feb 2015 8:59 am
 Operator : AkinA
 Sample : MC36556-5(M238)
 Misc : ms33838,msj1520,,,,,1
 ALS Vial : 1 Sample Multiplier: 1

Quant Time: Feb 10 09:44:50 2015
 Quant Method : C:\msdchem\1\methods\J150122T.M
 Quant Title : T015 by GCMS w/DB-1 60 m X .25 mm ID 1.0 um
 QLast Update : Fri Jan 23 13:48:53 2015
 Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)

Internal Standards						
1) BROMOCHLOROMETHANE	9.000	128	258966	10.00	PPBV	0.00
37) 1,4-DIFLUOROBENZENE	11.293	114	1251011	10.00	PPBV	-0.02
53) CHLOROBENZENE-D5	17.967	82	614889	10.00	PPBV	#-0.02

System Monitoring Compounds
 66) 4-BROMOFLUOROBENZENE 20.893 95 329475 4.77 PPBV -0.02
 Spiked Amount 5.000 Range 50 - 129 Recovery = 95.40%

Target Compounds Qvalue

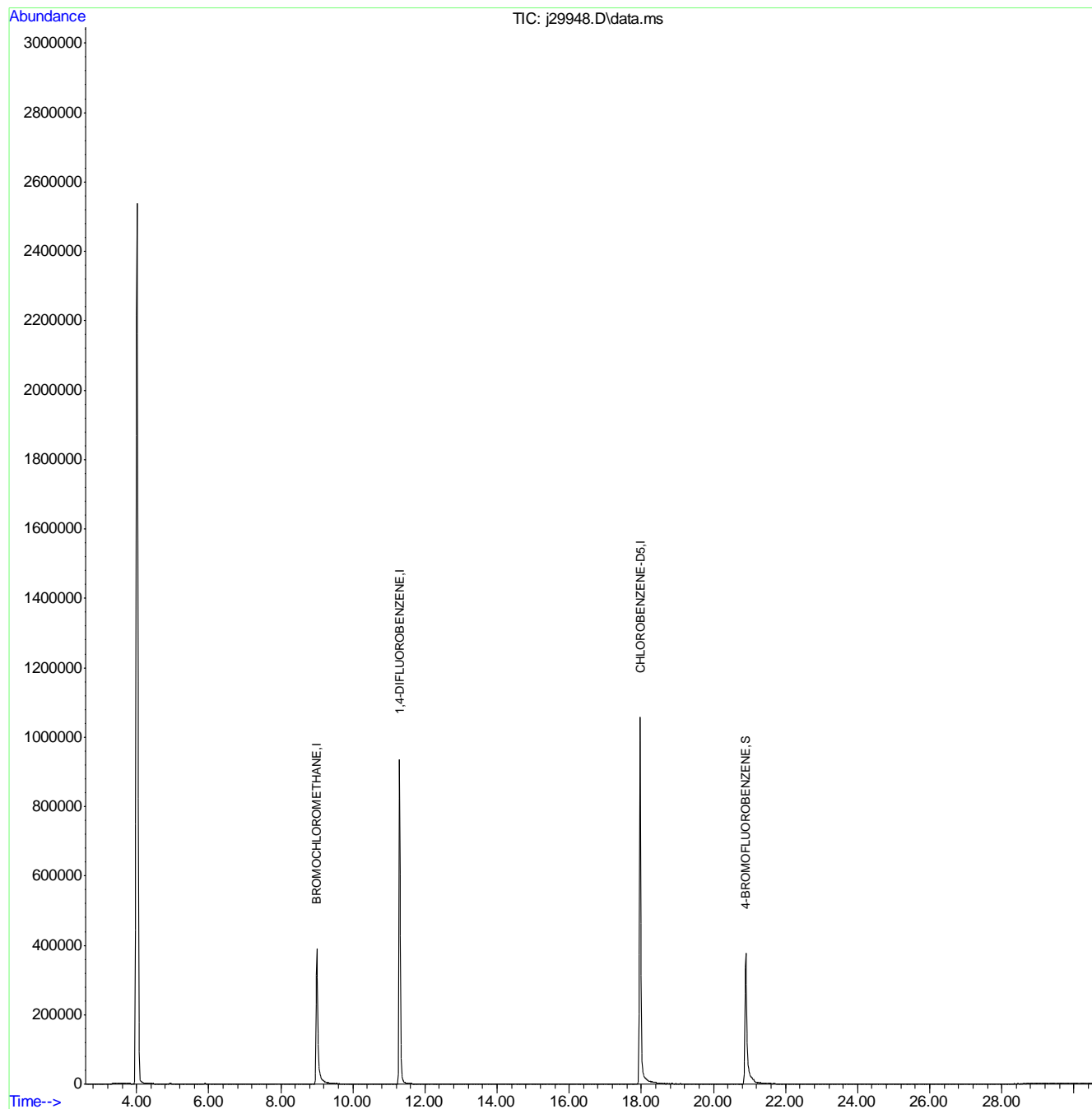
(#) = qualifier out of range (m) = manual integration (+) = signals summed

7.1.7
7

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\J150209\
Data File : j29948.D
Acq On : 10 Feb 2015 8:59 am
Operator : AkinA
Sample : MC36556-5(M238)
Misc : ms33838,msj1520,,,,,1
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Feb 10 09:44:50 2015
Quant Method : C:\msdchem\1\methods\J150122T.M
Quant Title : T015 by GCMS w/DB-1 60 m X .25 mm ID 1.0 um
QLast Update : Fri Jan 23 13:48:53 2015
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\Q150210\
Data File : Q29648.D
Acq On : 11 Feb 2015 1:44 pm
Operator : akina
Sample : MC36556-1a(m001)
Misc : ms33846,msq1286,,,,,2
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Feb 11 17:27:13 2015
Quant Method : C:\msdchem\1\METHODS\Q150210FULLSIM.M
Quant Title : T015 by GCMS w/DB-1 60 m X .25 mm ID 1.0 um
QLast Update : Wed Feb 11 09:56:19 2015
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)

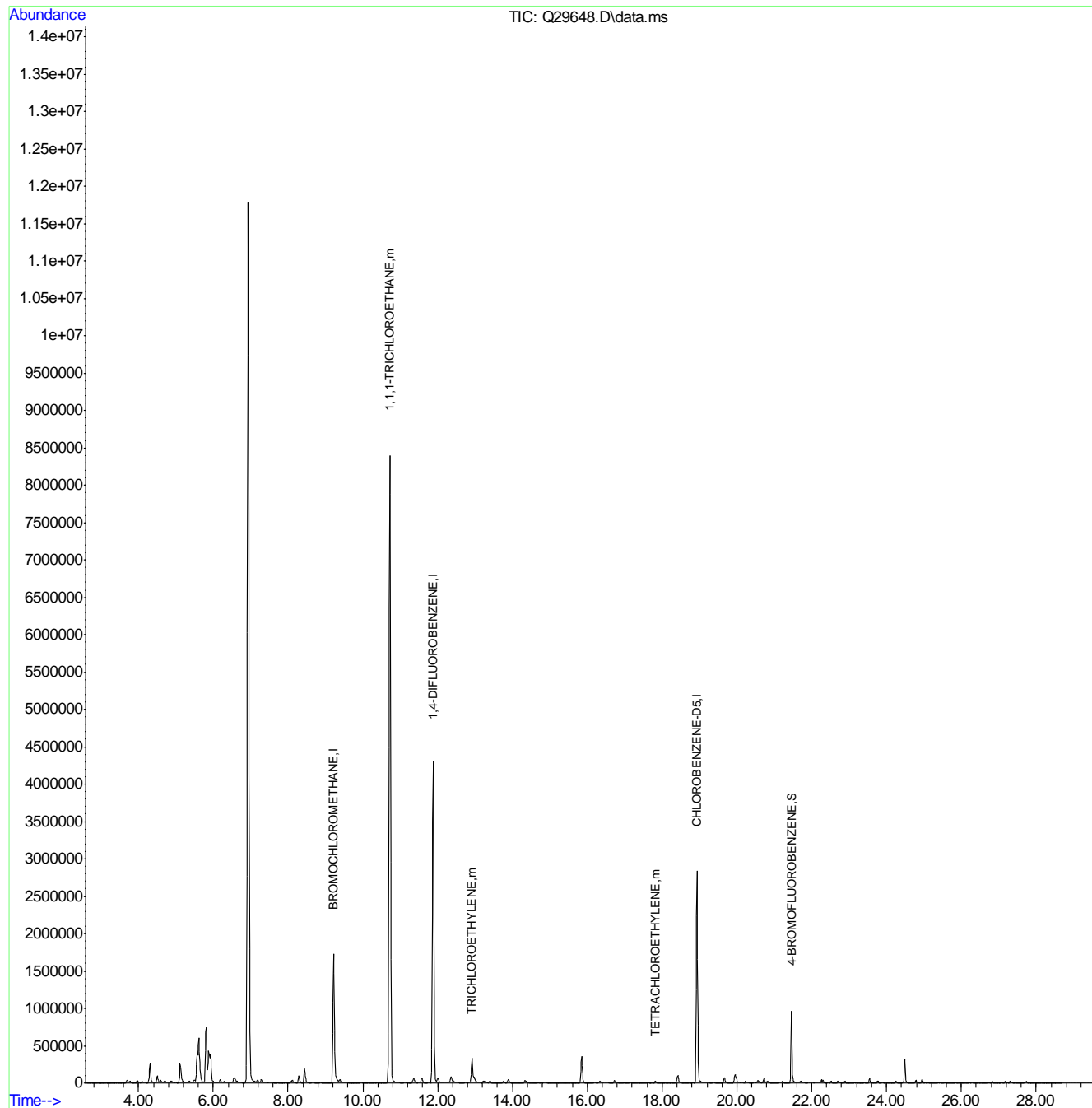
Internal Standards						
1) BROMOCHLOROMETHANE	9.222	128	1335088	10.00	PPBV	# 0.00
37) 1,4-DIFLUOROBENZENE	11.882	114	6460618	10.00	PPBV	0.00
53) CHLOROBENZENE-D5	18.931	82	1989198	10.00	PPBV	# 0.00
System Monitoring Compounds						
66) 4-BROMOFLUOROBENZENE	21.463	95	822998	5.05	PPBV	0.00
Spiked Amount	5.000	Range	50 - 129	Recovery	=	101.00%
Target Compounds						
34) 1,1,1-TRICHLOROETHANE	10.721	97	9508965	23.03	PPBV	Qvalue 94
40) TRICHLOROETHYLENE	12.916	95	242227	0.59	PPBV	# 69
55) TETRACHLOROETHYLENE	17.819	164	10805	0.02	PPBV	# 1

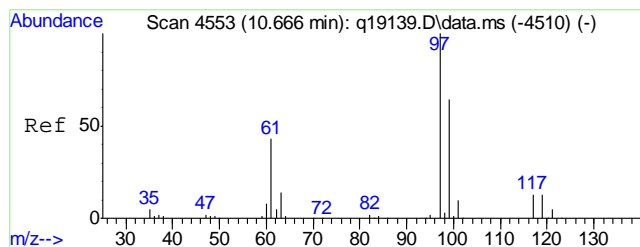
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\Q150210\
Data File : Q29648.D
Acq On : 11 Feb 2015 1:44 pm
Operator : akina
Sample : MC36556-1a(m001)
Misc : ms33846,msq1286,,,,,2
ALS Vial : 2 Sample Multiplier: 1

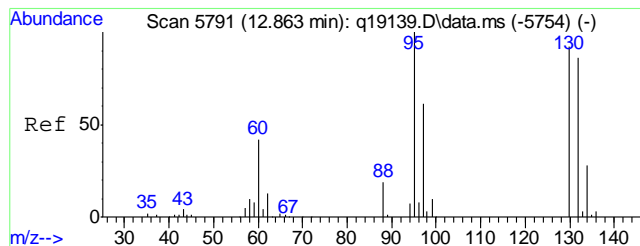
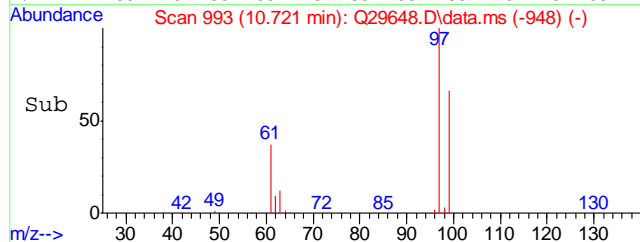
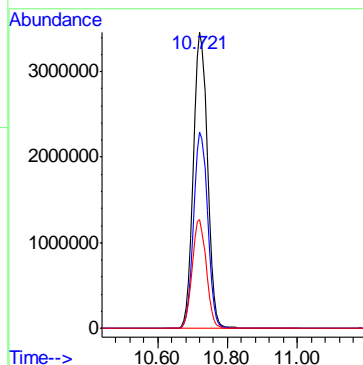
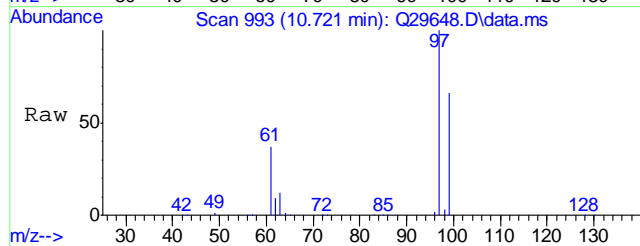
Quant Time: Feb 11 17:27:13 2015
Quant Method : C:\msdchem\1\METHODS\Q150210FULLSIM.M
Quant Title : T015 by GCMS w/DB-1 60 m X .25 mm ID 1.0 um
QLast Update : Wed Feb 11 09:56:19 2015
Response via : Initial Calibration





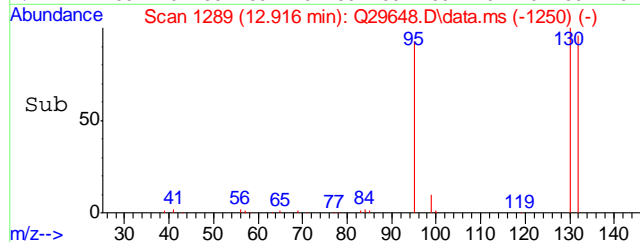
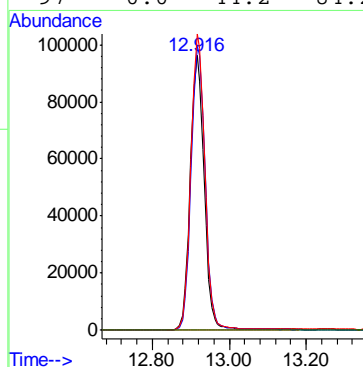
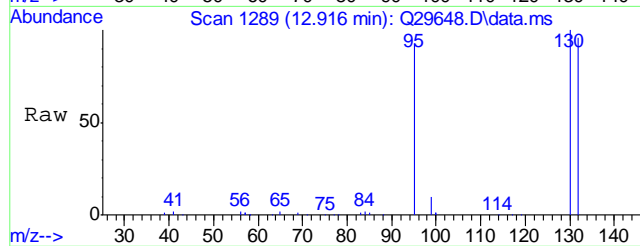
#34
1,1,1-TRICHLOROETHANE
Concen: 23.03 PPBV
RT: 10.721 min Scan# 993
Delta R.T. 0.000 min
Lab File: Q29648.D
Acq: 11 Feb 2015 1:44 pm

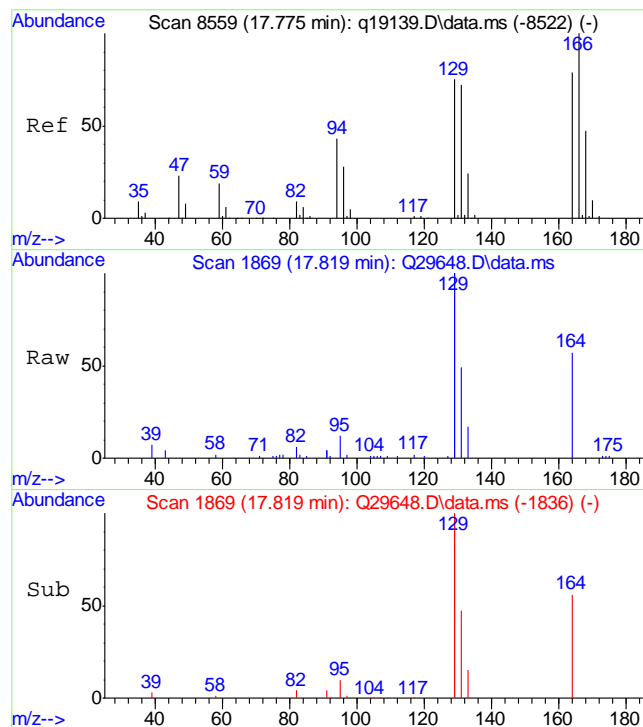
Tgt Ion	Ratio	Lower	Upper
97	100		
99	66.1	44.2	84.2
61	36.8	23.5	63.5



#40
TRICHLOROETHYLENE
Concen: 0.59 PPBV
RT: 12.916 min Scan# 1289
Delta R.T. 0.000 min
Lab File: Q29648.D
Acq: 11 Feb 2015 1:44 pm

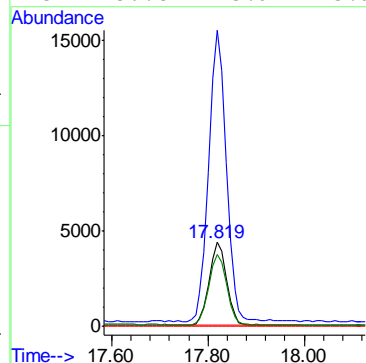
Tgt Ion	Ratio	Lower	Upper
95	100		
132	104.2	71.3	111.3
130	108.0	75.1	115.1
97	0.0	44.2	84.2#





#55
TETRACHLOROETHYLENE
Concen: 0.02 PPBV
RT: 17.819 min Scan# 1869
Delta R.T. 0.000 min
Lab File: Q29648.D
Acq: 11 Feb 2015 1:44 pm

Tgt Ion:	164	Resp:	10805
Ion Ratio	Lower	Upper	
164	100		
129	354.8	78.3	118.3#
168	0.0	40.4	80.4#
131	86.5	73.9	113.9



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\Q150210\
Data File : Q29654.D
Acq On : 11 Feb 2015 6:37 pm
Operator : akina
Sample : MC36556-1a(m001)
Misc : ms33846,msq1286,,,,,10
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Feb 12 08:52:26 2015
Quant Method : C:\msdchem\1\METHODS\Q150210FULLSIM.M
Quant Title : T015 by GCMS w/DB-1 60 m X .25 mm ID 1.0 um
QLast Update : Wed Feb 11 09:56:19 2015
Response via : Initial Calibration

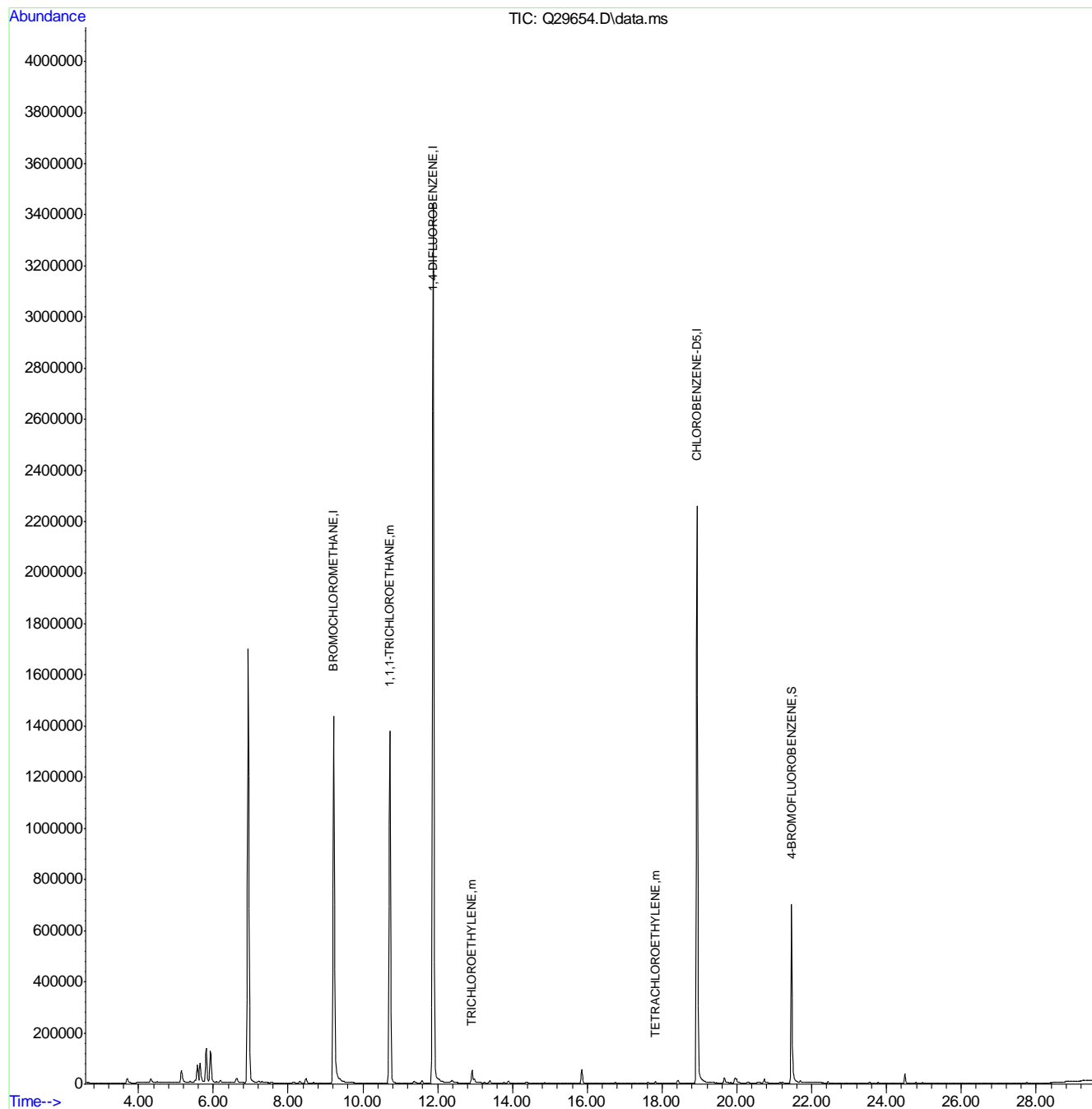
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) BROMOCHLOROMETHANE	9.222	128	1133335	10.00	PPBV	# 0.00
37) 1,4-DIFLUOROBENZENE	11.882	114	5233320	10.00	PPBV	0.00
53) CHLOROBENZENE-D5	18.932	82	1660476	10.00	PPBV	# 0.00
System Monitoring Compounds						
66) 4-BROMOFLUOROBENZENE	21.464	95	647839	4.76	PPBV	0.00
Spiked Amount	5.000	Range	50 - 129	Recovery	=	95.20%
Target Compounds						
34) 1,1,1-TRICHLOROETHANE	10.721	97	1551843	4.43	PPBV	Qvalue 95
40) TRICHLOROETHYLENE	12.916	95	39605	0.12	PPBV	# 69
55) TETRACHLOROETHYLENE	17.819	164	2793	0.01	PPBV	# 1

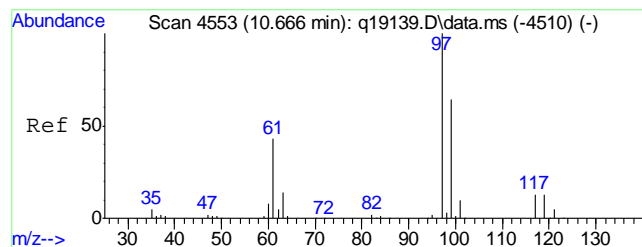
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\Q150210\
Data File : Q29654.D
Acq On : 11 Feb 2015 6:37 pm
Operator : akina
Sample : MC36556-1a(m001)
Misc : ms33846,msq1286,,,,,10
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Feb 12 08:52:26 2015
Quant Method : C:\msdchem\1\METHODS\Q150210FULLSIM.M
Quant Title : T015 by GCMS w/DB-1 60 m X .25 mm ID 1.0 um
QLast Update : Wed Feb 11 09:56:19 2015
Response via : Initial Calibration

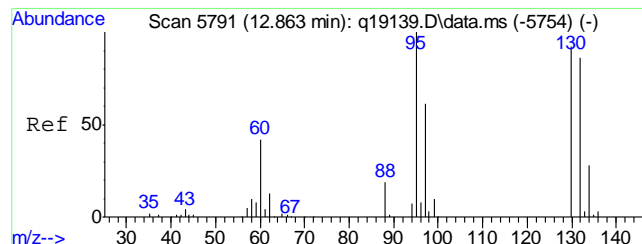
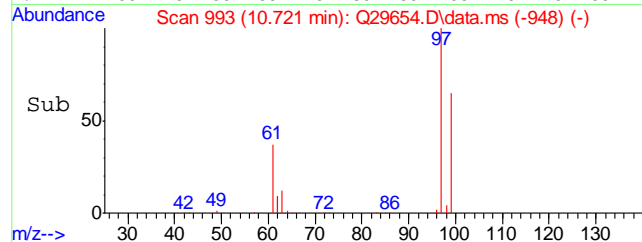
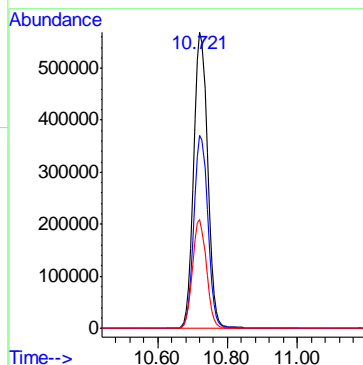
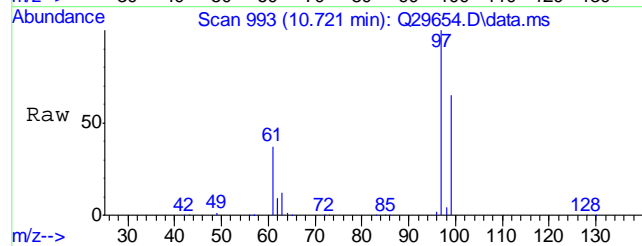




#34
1,1,1-TRICHLOROETHANE
Concen: 4.43 PPBV
RT: 10.721 min Scan# 993
Delta R.T. 0.000 min
Lab File: Q29654.D
Acq: 11 Feb 2015 6:37 pm

Tgt Ion: 97 Resp: 1551843

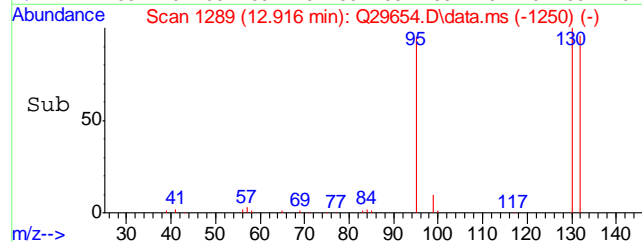
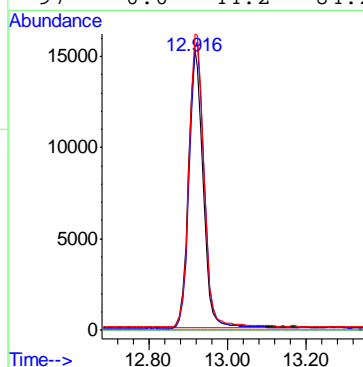
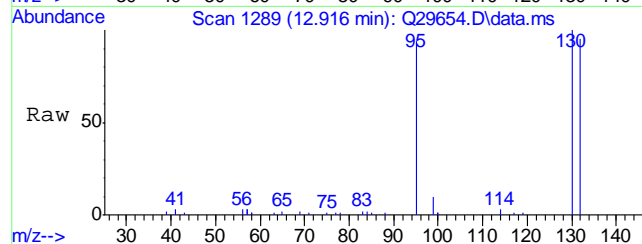
Ion	Ratio	Lower	Upper
97	100		
99	65.2	44.2	84.2
61	36.7	23.5	63.5

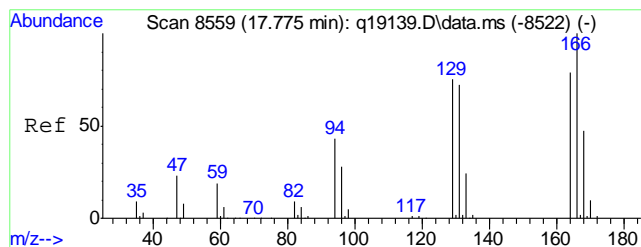


#40
TRICHLOROETHYLENE
Concen: 0.12 PPBV
RT: 12.916 min Scan# 1289
Delta R.T. 0.000 min
Lab File: Q29654.D
Acq: 11 Feb 2015 6:37 pm

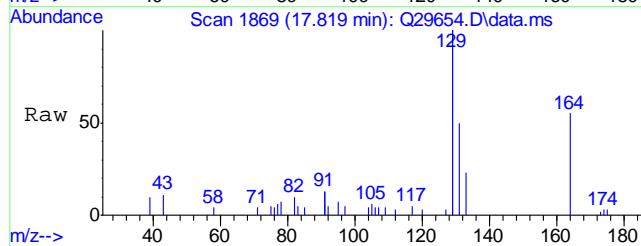
Tgt Ion: 95 Resp: 39605

Ion	Ratio	Lower	Upper
95	100		
132	104.9	71.3	111.3
130	108.1	75.1	115.1
97	0.0	44.2	84.2#

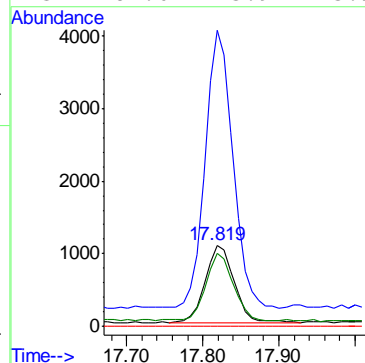
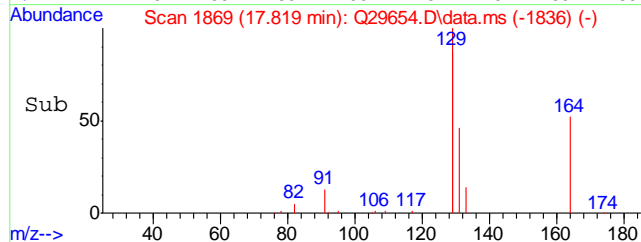




#55
TETRACHLOROETHYLENE
Concen: 0.01 PPBV
RT: 17.819 min Scan# 1869
Delta R.T. 0.000 min
Lab File: Q29654.D
Acq: 11 Feb 2015 6:37 pm



Tgt Ion	Ratio	Lower	Upper
164	100		
129	348.3	78.3	118.3#
168	0.0	40.4	80.4#
131	84.0	73.9	113.9



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\Q150210\
Data File : Q29650.D
Acq On : 11 Feb 2015 3:11 pm
Operator : akina
Sample : MC36556-2a(m275)
Misc : ms33846,msq1286,,,,,1
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Feb 12 13:28:45 2015
Quant Method : C:\msdchem\1\METHODS\Q150210FULLSIM.M
Quant Title : T015 by GCMS w/DB-1 60 m X .25 mm ID 1.0 um
QLast Update : Wed Feb 11 09:56:19 2015
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)

Internal Standards						
1) BROMOCHLOROMETHANE	9.229	128	1114000	10.00	PPBV	# 0.01
37) 1,4-DIFLUOROBENZENE	11.889	114	5169714	10.00	PPBV	0.00
53) CHLOROBENZENE-D5	18.931	82	1677988	10.00	PPBV	# 0.00
System Monitoring Compounds						
66) 4-BROMOFLUOROBENZENE	21.463	95	687182	5.00	PPBV	0.00
Spiked Amount	5.000	Range	50 - 129	Recovery	=	100.00%
Target Compounds						
34) 1,1,1-TRICHLOROETHANE	10.728	97	5572	0.02	PPBV	Qvalue 96
40) TRICHLOROETHYLENE	12.924	95	6713	0.02	PPBV	# 70
55) TETRACHLOROETHYLENE	17.819	164	10841	0.03	PPBV	# 1

(#) = qualifier out of range (m) = manual integration (+) = signals summed

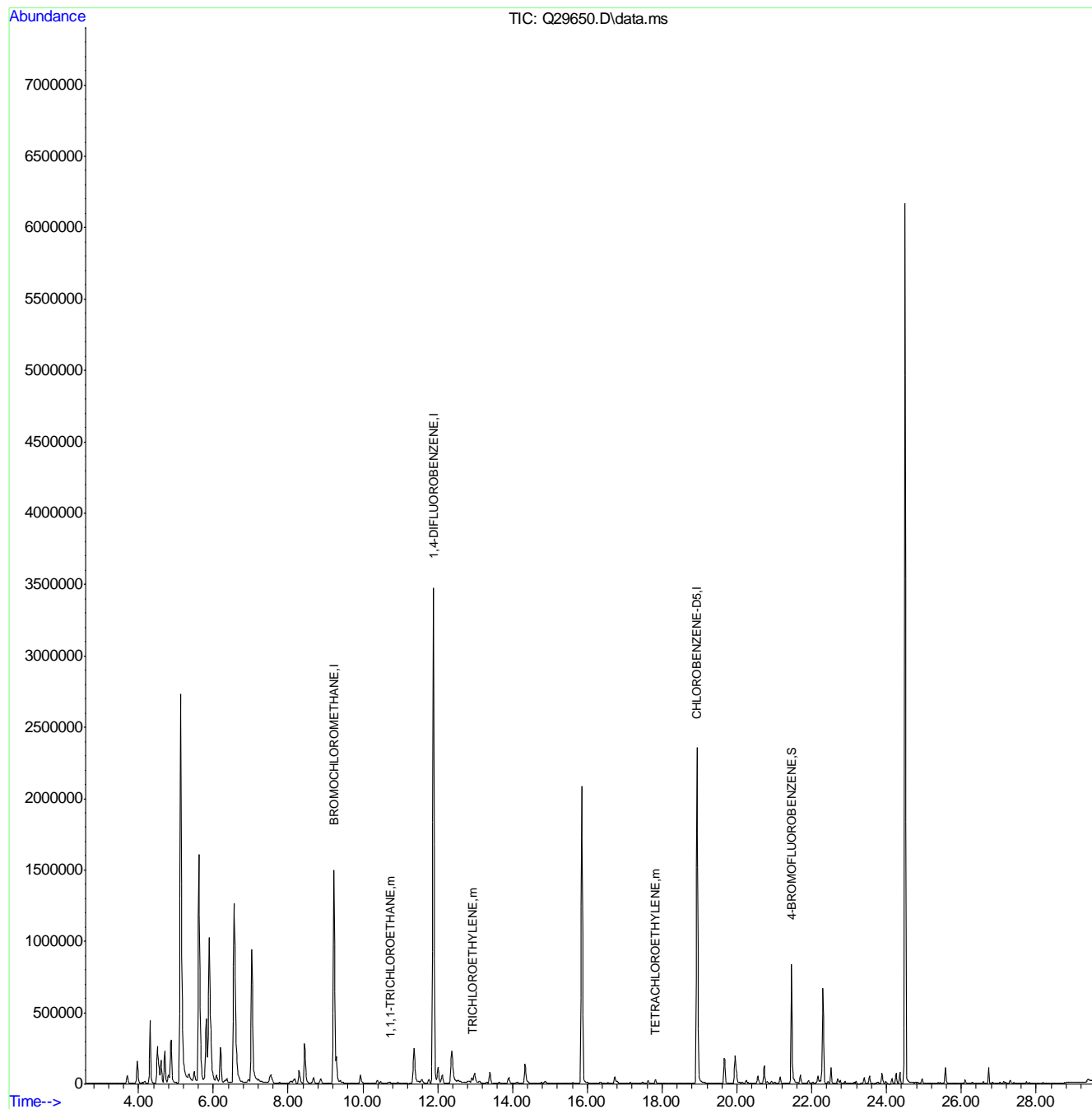
7.1.10

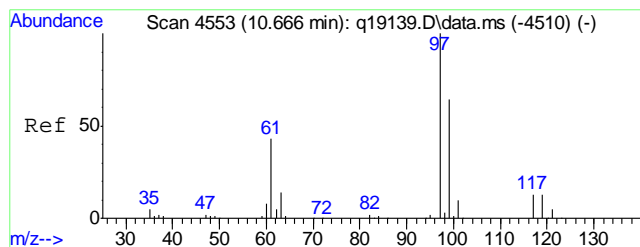
7

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\Q150210\
Data File : Q29650.D
Acq On : 11 Feb 2015 3:11 pm
Operator : akina
Sample : MC36556-2a(m275)
Misc : ms33846,msq1286,,,,,1
ALS Vial : 4 Sample Multiplier: 1

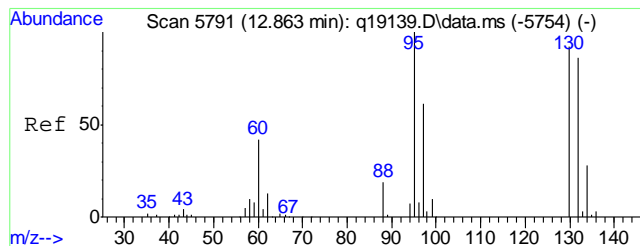
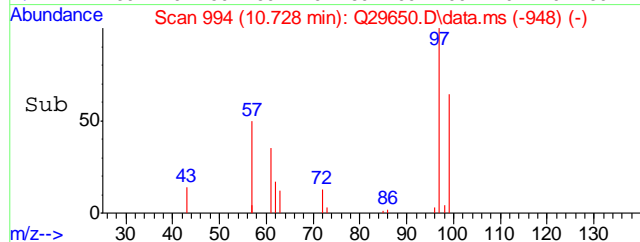
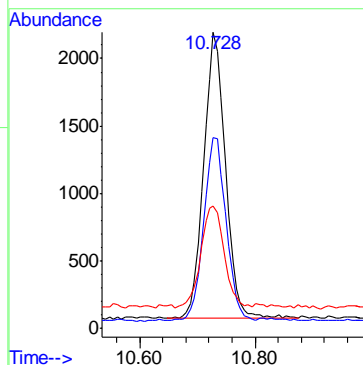
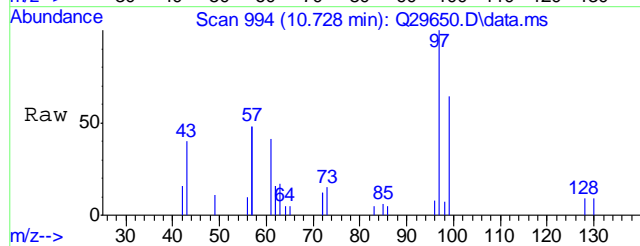
Quant Time: Feb 12 13:28:45 2015
Quant Method : C:\msdchem\1\METHODS\Q150210FULLSIM.M
Quant Title : T015 by GCMS w/DB-1 60 m X .25 mm ID 1.0 um
QLast Update : Wed Feb 11 09:56:19 2015
Response via : Initial Calibration





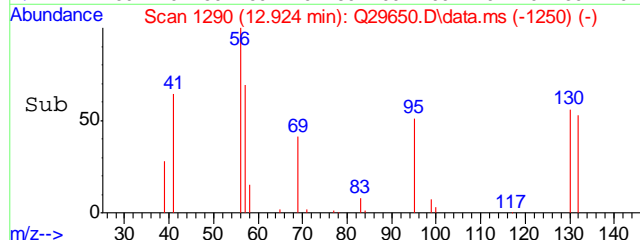
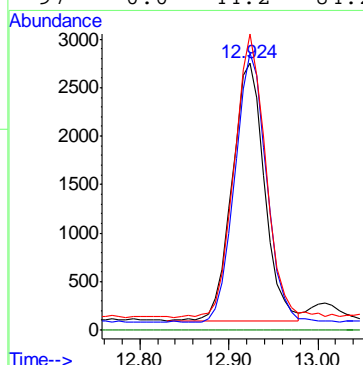
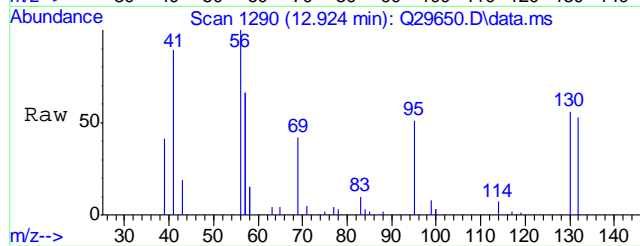
#34
1,1,1-TRICHLOROETHANE
Concen: 0.02 PPBV
RT: 10.728 min Scan# 994
Delta R.T. 0.007 min
Lab File: Q29650.D
Acq: 11 Feb 2015 3:11 pm

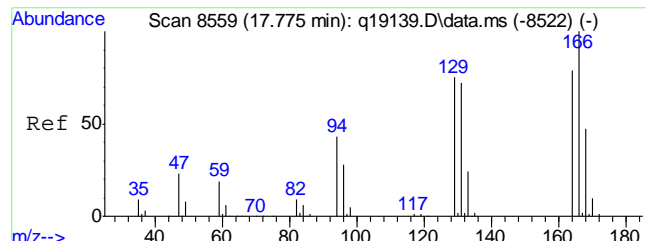
Tgt Ion	Ratio	Lower	Upper
97	100		
99	65.3	44.2	84.2
61	39.0	23.5	63.5



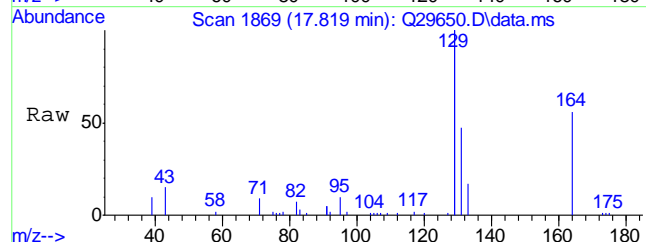
#40
TRICHLOROETHYLENE
Concen: 0.02 PPBV
RT: 12.924 min Scan# 1290
Delta R.T. 0.008 min
Lab File: Q29650.D
Acq: 11 Feb 2015 3:11 pm

Tgt Ion	Ratio	Lower	Upper
95	100		
132	102.6	71.3	111.3
130	107.2	75.1	115.1
97	0.0	44.2	84.2

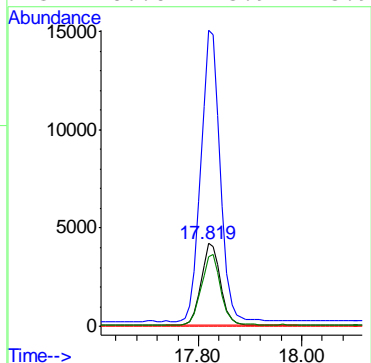
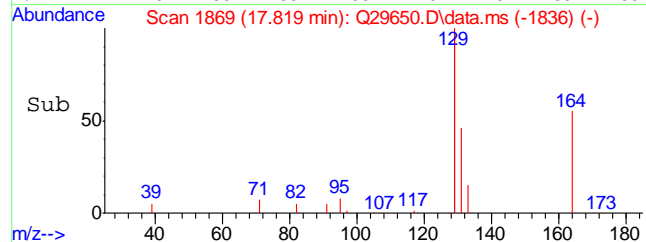




#55
TETRACHLOROETHYLENE
Concen: 0.03 PPBV
RT: 17.819 min Scan# 1869
Delta R.T. -0.000 min
Lab File: Q29650.D
Acq: 11 Feb 2015 3:11 pm



Tgt Ion:	164	Resp:	10841
Ion Ratio	Lower	Upper	
164	100		
129	355.6	78.3	118.3#
168	0.0	40.4	80.4#
131	86.8	73.9	113.9



7.1.10
7

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\Q150210\
Data File : Q29649.D
Acq On : 11 Feb 2015 2:27 pm
Operator : akina
Sample : MC36556-3a(m283)
Misc : ms33846,msq1286,,,,,10
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Feb 11 14:58:06 2015
Quant Method : C:\msdchem\1\METHODS\Q150210FULLSIM.M
Quant Title : T015 by GCMS w/DB-1 60 m X .25 mm ID 1.0 um
QLast Update : Wed Feb 11 09:56:19 2015
Response via : Initial Calibration

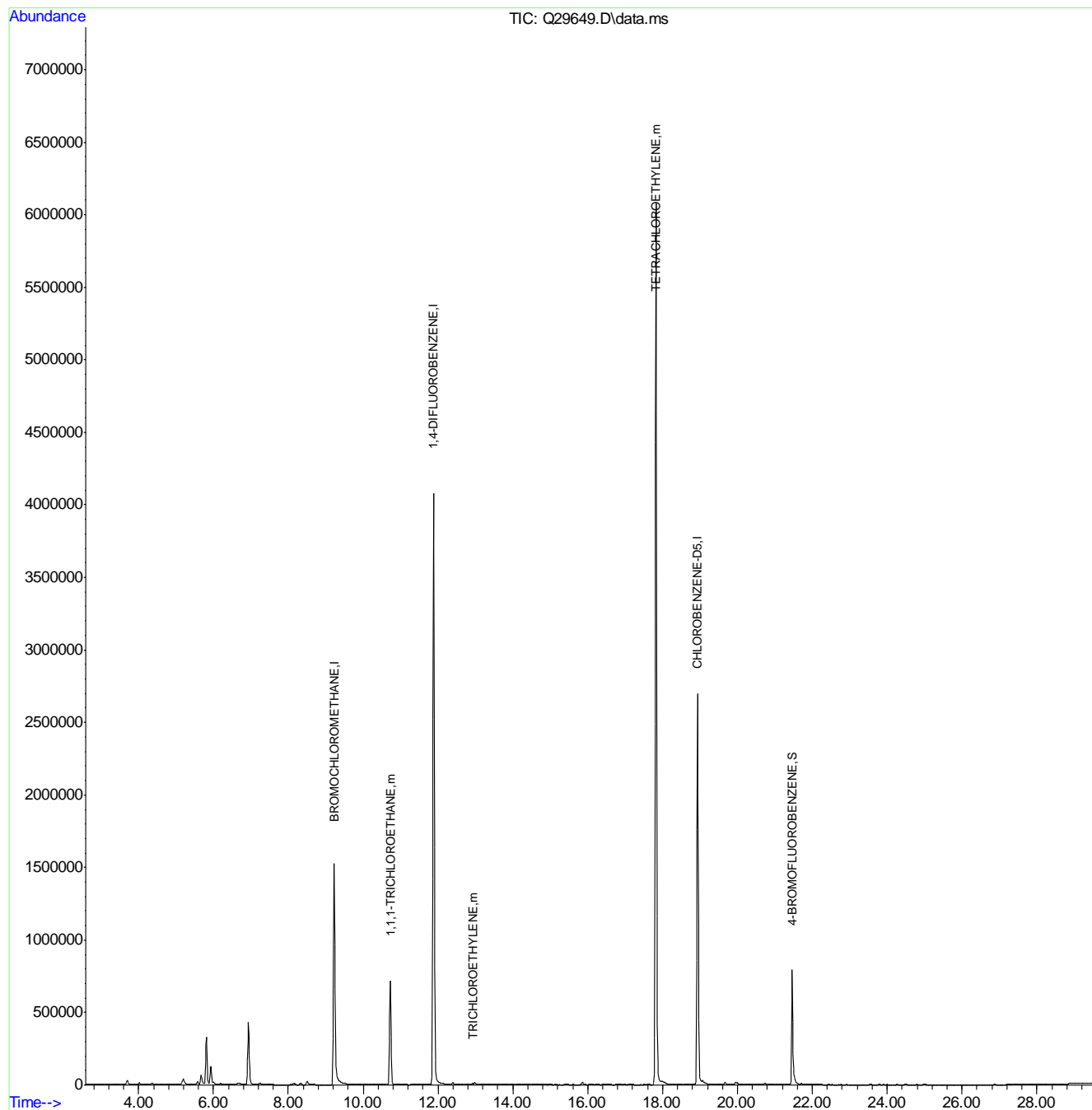
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) BROMOCHLOROMETHANE	9.229	128	1262218	10.00	PPBV	# 0.01
37) 1,4-DIFLUOROBENZENE	11.882	114	6130338	10.00	PPBV	0.00
53) CHLOROBENZENE-D5	18.932	82	1960541	10.00	PPBV	# 0.00
System Monitoring Compounds						
66) 4-BROMOFLUOROBENZENE	21.464	95	756341	4.71	PPBV	0.00
Spiked Amount	5.000	Range	50 - 129	Recovery	=	94.20%
Target Compounds						
34) 1,1,1-TRICHLOROETHANE	10.728	97	819444	2.10	PPBV	Qvalue 95
40) TRICHLOROETHYLENE	12.924	95	5770	0.01	PPBV	# 69
55) TETRACHLOROETHYLENE	17.828	164	2815086	6.54	PPBV	# 1

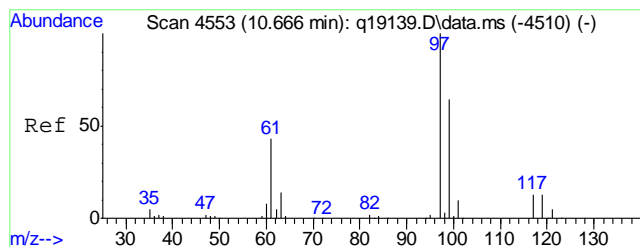
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\Q150210\
Data File : Q29649.D
Acq On : 11 Feb 2015 2:27 pm
Operator : akina
Sample : MC36556-3a(m283)
Misc : ms33846,msq1286,,,,,10
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Feb 11 14:58:06 2015
Quant Method : C:\msdchem\1\METHODS\Q150210FULLSIM.M
Quant Title : T015 by GCMS w/DB-1 60 m X .25 mm ID 1.0 um
QLast Update : Wed Feb 11 09:56:19 2015
Response via : Initial Calibration





#34

1,1,1-TRICHLOROETHANE

Concen: 2.10 PPBV

RT: 10.728 min Scan# 994

Delta R.T. 0.007 min

Lab File: Q29649.D

Acq: 11 Feb 2015 2:27 pm

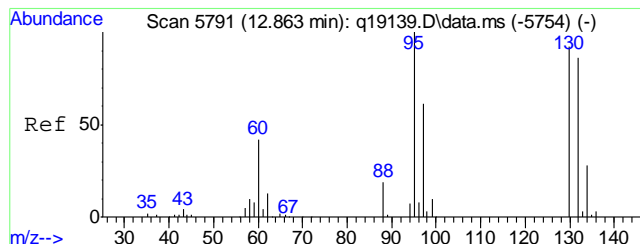
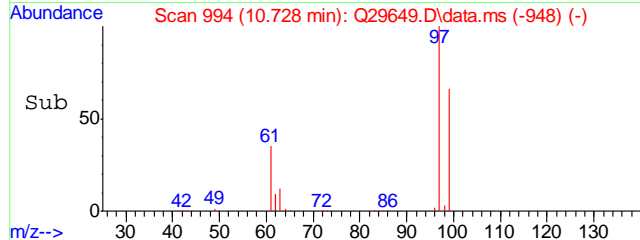
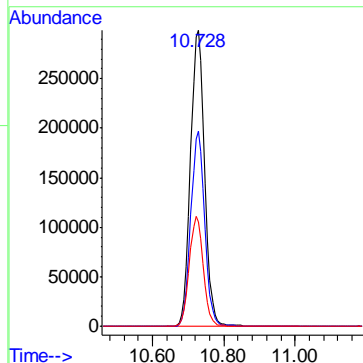
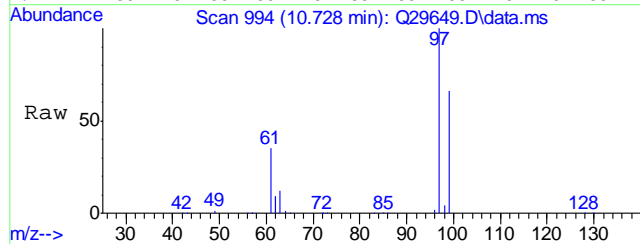
Tgt Ion: 97 Resp: 819444

Ion Ratio Lower Upper

97 100

99 65.1 44.2 84.2

61 36.8 23.5 63.5



#40

TRICHLOROETHYLENE

Concen: 0.01 PPBV

RT: 12.924 min Scan# 1290

Delta R.T. 0.008 min

Lab File: Q29649.D

Acq: 11 Feb 2015 2:27 pm

Tgt Ion: 95 Resp: 5770

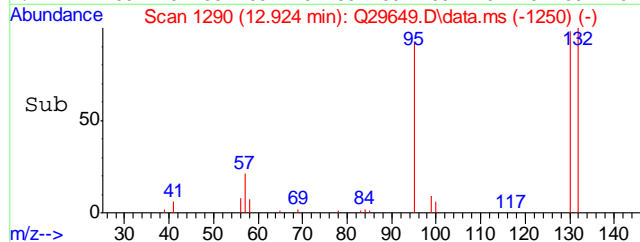
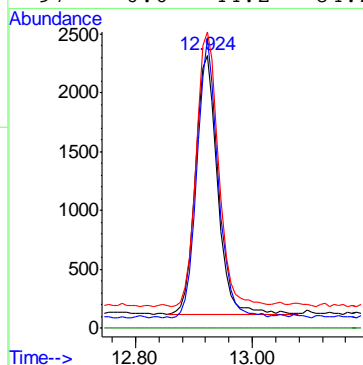
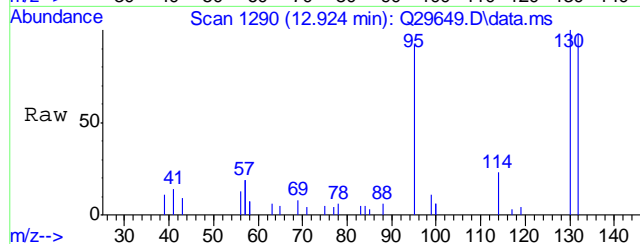
Ion Ratio Lower Upper

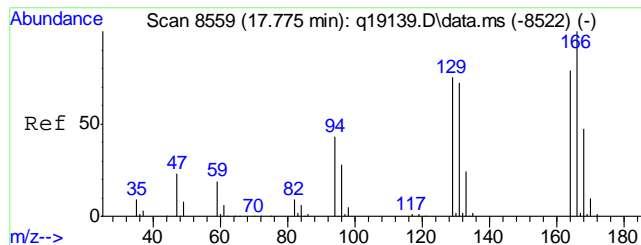
95 100

132 102.1 71.3 111.3

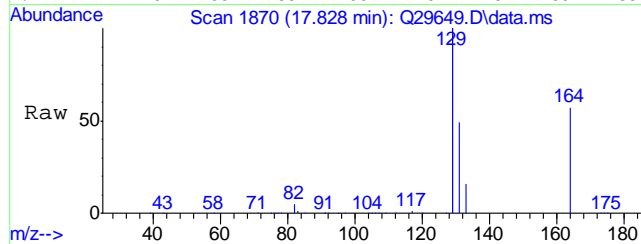
130 110.2 75.1 115.1

97 0.0 44.2 84.2#

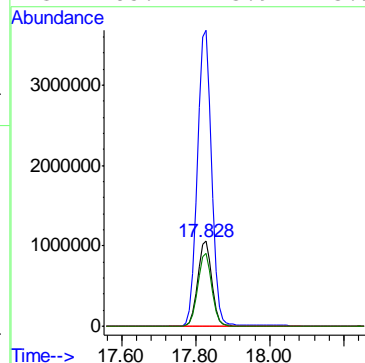
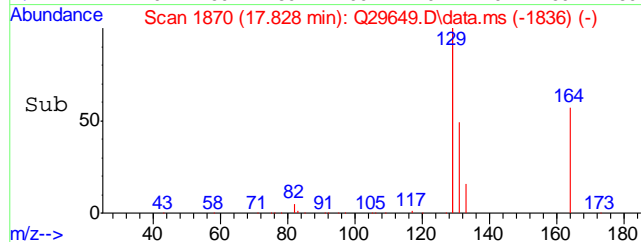




#55
TETRACHLOROETHYLENE
Concen: 6.54 PPBV
RT: 17.828 min Scan# 1870
Delta R.T. 0.009 min
Lab File: Q29649.D
Acq: 11 Feb 2015 2:27 pm



Tgt Ion	Ratio	Lower	Upper
164	100		
129	350.9	78.3	118.3#
168	0.0	40.4	80.4#
131	85.1	73.9	113.9



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\Q150210\
 Data File : Q29655.D
 Acq On : 11 Feb 2015 7:24 pm
 Operator : akina
 Sample : MC36556-3a(m283)
 Misc : ms33846,msq1286,,,,,1
 ALS Vial : 3 Sample Multiplier: 1

Quant Time: Feb 12 08:53:09 2015
 Quant Method : C:\msdchem\1\METHODS\Q150210FULLSIM.M
 Quant Title : T015 by GCMS w/DB-1 60 m X .25 mm ID 1.0 um
 QLast Update : Wed Feb 11 09:56:19 2015
 Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)

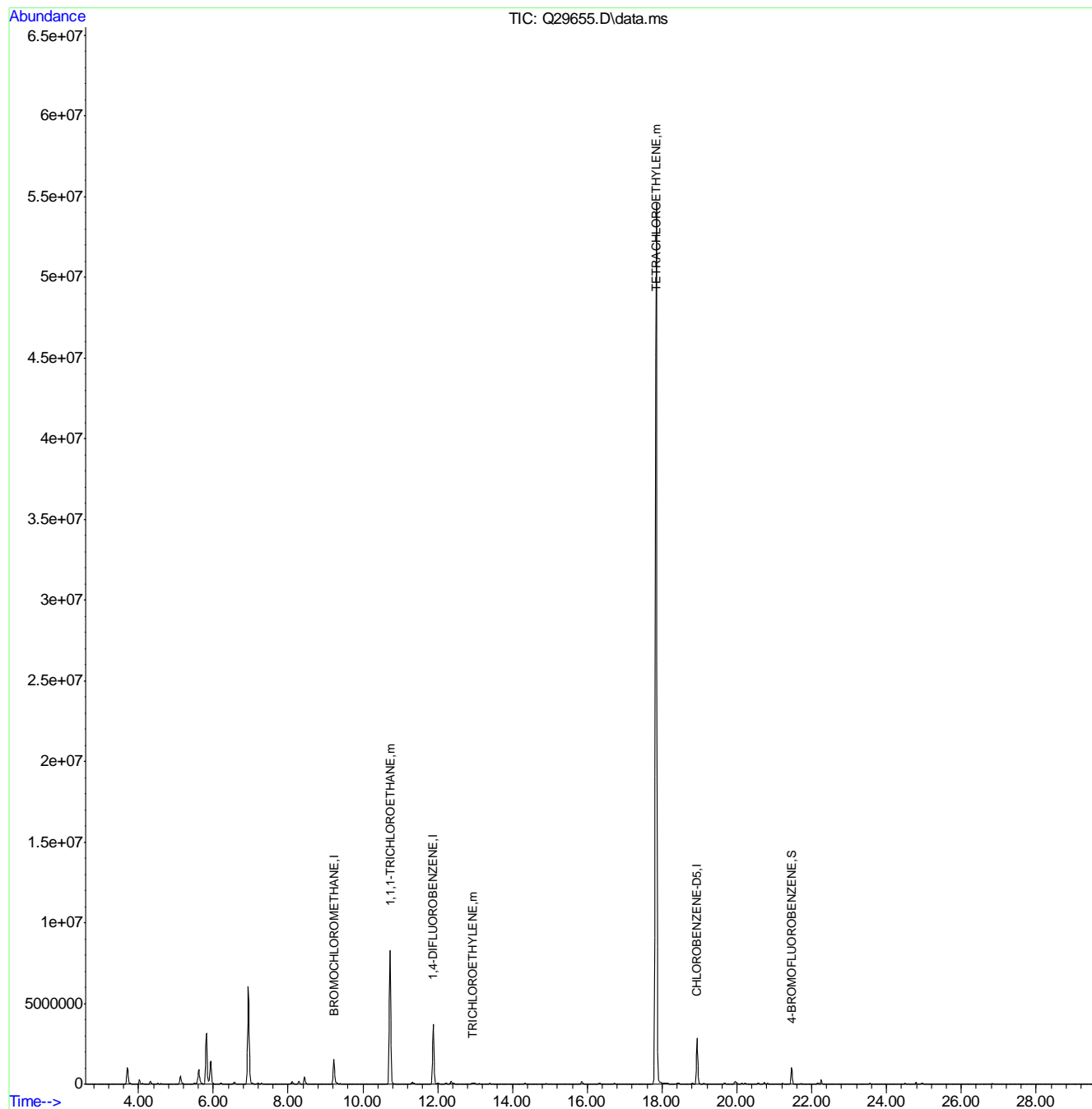
Internal Standards						
1) BROMOCHLOROMETHANE	9.229	128	1144668	10.00	PPBV	# 0.01
37) 1,4-DIFLUOROBENZENE	11.882	114	5442817	10.00	PPBV	0.00
53) CHLOROBENZENE-D5	18.932	82	1984963	10.00	PPBV	# 0.00
System Monitoring Compounds						
66) 4-BROMOFLUOROBENZENE	21.464	95	824365	5.07	PPBV	0.00
Spiked Amount	5.000	Range	50 - 129	Recovery	=	101.40%
Target Compounds						
34) 1,1,1-TRICHLOROETHANE	10.728	97	9439148	26.66	PPBV	Qvalue 94
40) TRICHLOROETHYLENE	12.924	95	54581	0.16	PPBV	# 69
55) TETRACHLOROETHYLENE	17.837	164	27928742	64.10	PPBV	# 40

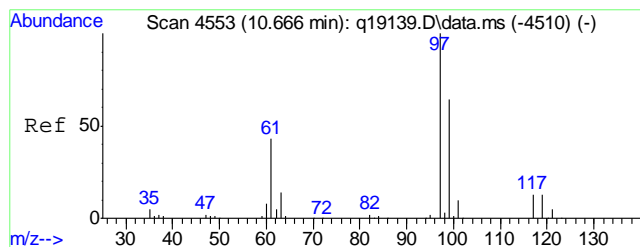
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\Q150210\
Data File : Q29655.D
Acq On : 11 Feb 2015 7:24 pm
Operator : akina
Sample : MC36556-3a(m283)
Misc : ms33846,msq1286,,,,,1
ALS Vial : 3 Sample Multiplier: 1

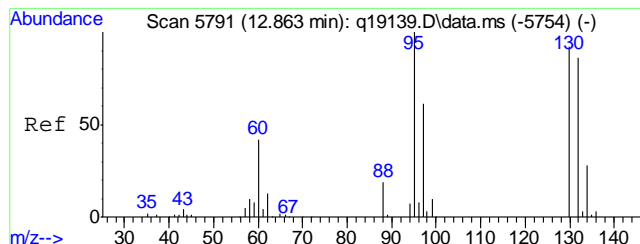
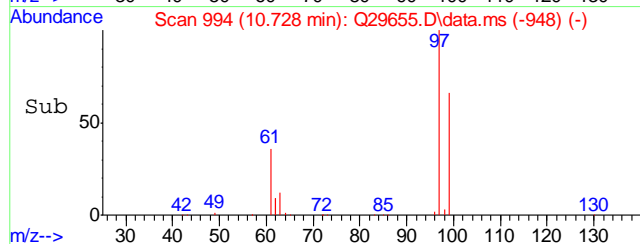
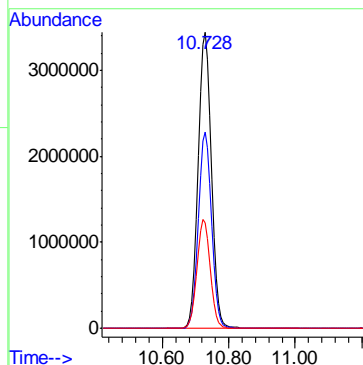
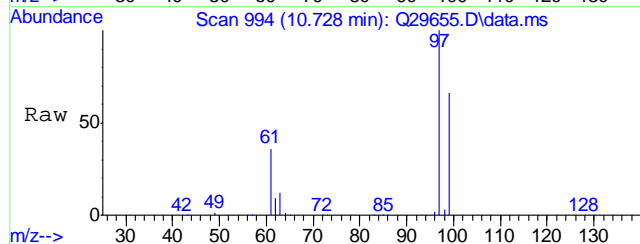
Quant Time: Feb 12 08:53:09 2015
Quant Method : C:\msdchem\1\METHODS\Q150210FULLSIM.M
Quant Title : T015 by GCMS w/DB-1 60 m X .25 mm ID 1.0 um
QLast Update : Wed Feb 11 09:56:19 2015
Response via : Initial Calibration





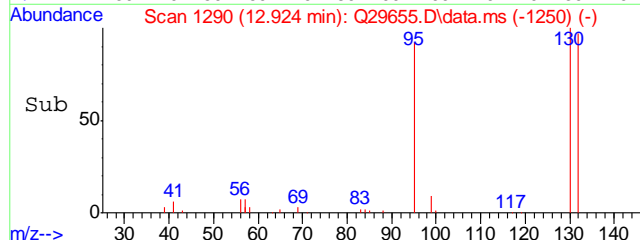
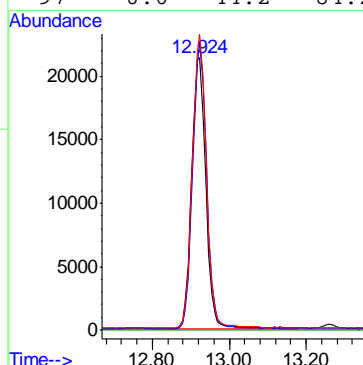
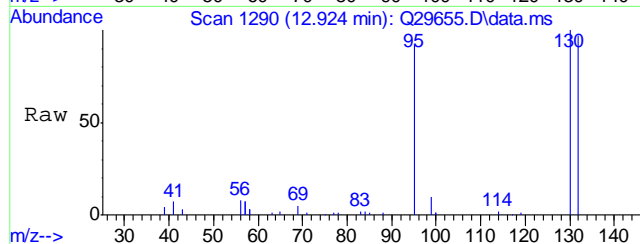
#34
1,1,1-TRICHLOROETHANE
Concen: 26.66 PPBV
RT: 10.728 min Scan# 994
Delta R.T. 0.007 min
Lab File: Q29655.D
Acq: 11 Feb 2015 7:24 pm

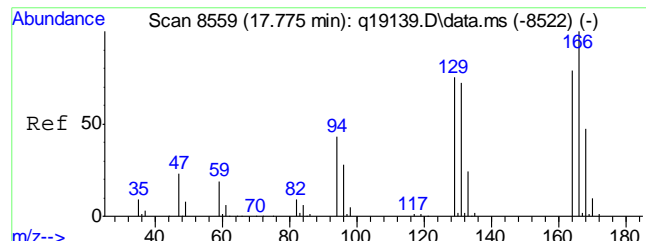
Tgt Ion	Ratio	Lower	Upper
97	100		
99	66.0	44.2	84.2
61	36.9	23.5	63.5



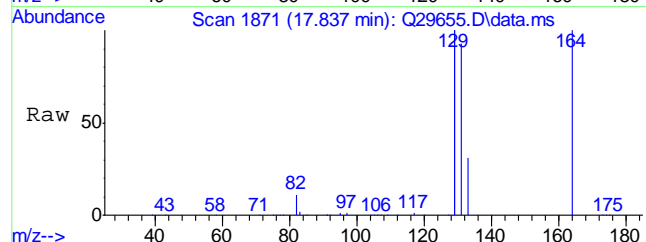
#40
TRICHLOROETHYLENE
Concen: 0.16 PPBV
RT: 12.924 min Scan# 1290
Delta R.T. 0.008 min
Lab File: Q29655.D
Acq: 11 Feb 2015 7:24 pm

Tgt Ion	Ratio	Lower	Upper
95	100		
132	104.4	71.3	111.3
130	107.2	75.1	115.1
97	0.0	44.2	84.2#

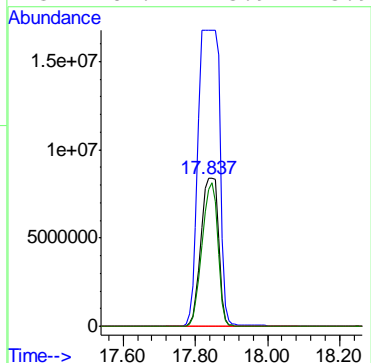
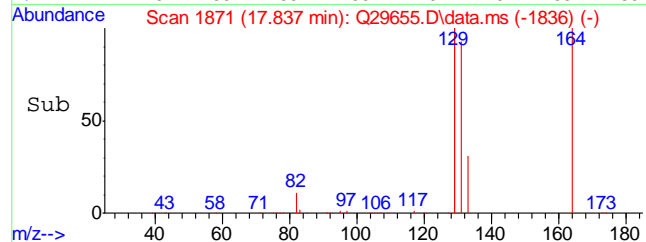




#55
TETRACHLOROETHYLENE
Concen: 64.10 PPBV
RT: 17.837 min Scan# 1871
Delta R.T. 0.018 min
Lab File: Q29655.D
Acq: 11 Feb 2015 7:24 pm



Tgt Ion:	164	Resp:	27928742
Ion Ratio	Lower	Upper	
164	100		
129	0.0	78.3	118.3#
168	0.0	40.4	80.4#
131	87.1	73.9	113.9



7.1.12
7

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\Q150210\
 Data File : Q29651.D
 Acq On : 11 Feb 2015 3:57 pm
 Operator : akina
 Sample : MC36556-4a(m160)
 Misc : ms33846,msq1286,,,,,1
 ALS Vial : 5 Sample Multiplier: 1

Quant Time: Feb 12 13:32:48 2015
 Quant Method : C:\msdchem\1\METHODS\Q150210FULLSIM.M
 Quant Title : T015 by GCMS w/DB-1 60 m X .25 mm ID 1.0 um
 QLast Update : Wed Feb 11 09:56:19 2015
 Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)

Internal Standards						
1) BROMOCHLOROMETHANE	9.222	128	1202128	10.00	PPBV	# 0.00
37) 1,4-DIFLUOROBENZENE	11.882	114	5743901	10.00	PPBV	0.00
53) CHLOROBENZENE-D5	18.931	82	1872838	10.00	PPBV	# 0.00
System Monitoring Compounds						
66) 4-BROMOFLUOROBENZENE	21.463	95	785027	5.11	PPBV	0.00
Spiked Amount	5.000	Range	50 - 129	Recovery	=	102.20%
Target Compounds						
34) 1,1,1-TRICHLOROETHANE	10.721	97	3652	0.01	PPBV	Qvalue 95
40) TRICHLOROETHYLENE	12.916	95	3234	0.01	PPBV	# 64
55) TETRACHLOROETHYLENE	17.819	164	9843	0.02	PPBV	# 1

(#) = qualifier out of range (m) = manual integration (+) = signals summed

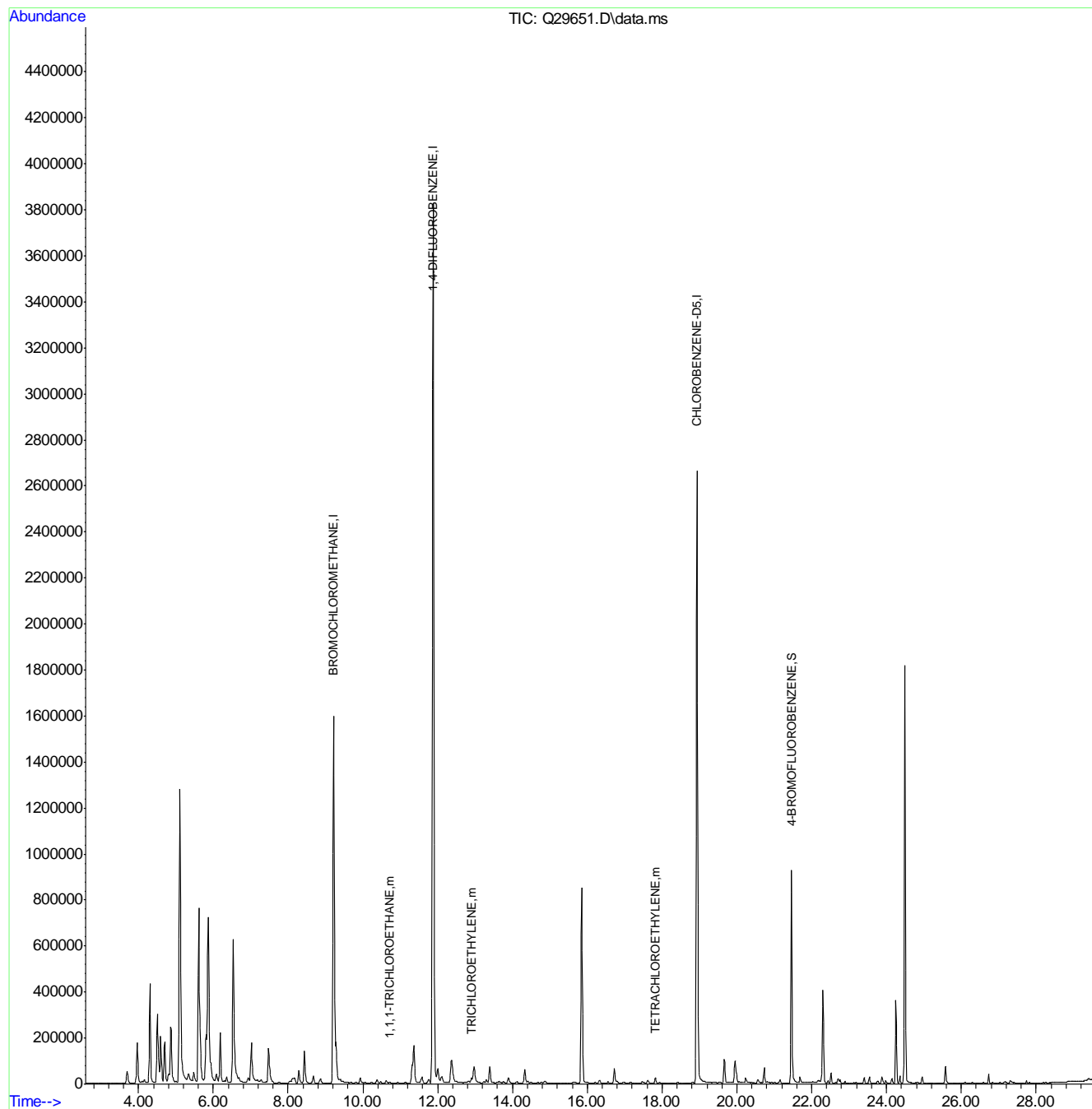
7.1.13

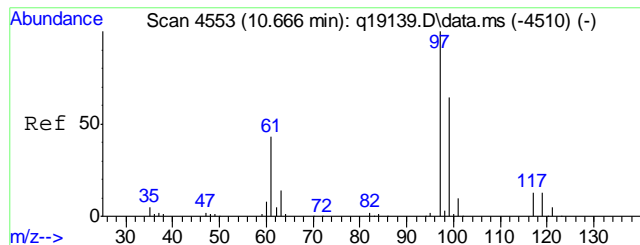
7

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\Q150210\
Data File : Q29651.D
Acq On : 11 Feb 2015 3:57 pm
Operator : akina
Sample : MC36556-4a(m160)
Misc : ms33846,msq1286,,,,,1
ALS Vial : 5 Sample Multiplier: 1

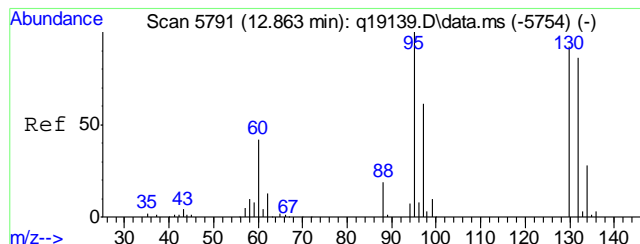
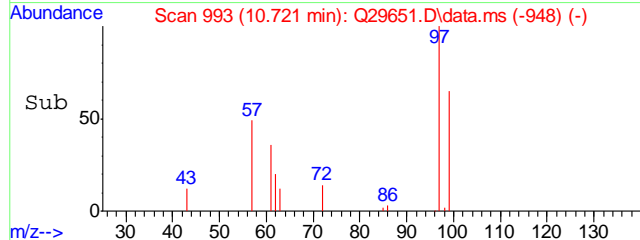
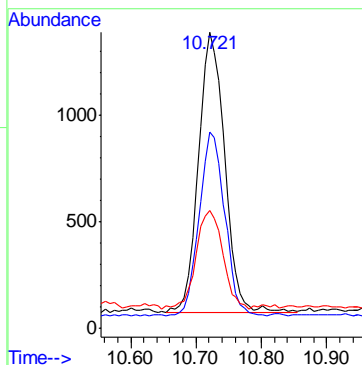
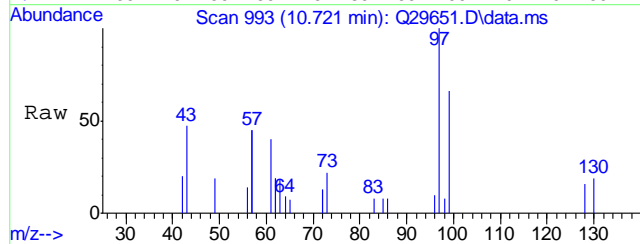
Quant Time: Feb 12 13:32:48 2015
Quant Method : C:\msdchem\1\METHODS\Q150210FULLSIM.M
Quant Title : T015 by GCMS w/DB-1 60 m X .25 mm ID 1.0 um
QLast Update : Wed Feb 11 09:56:19 2015
Response via : Initial Calibration





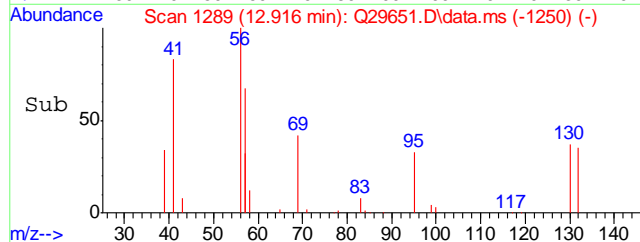
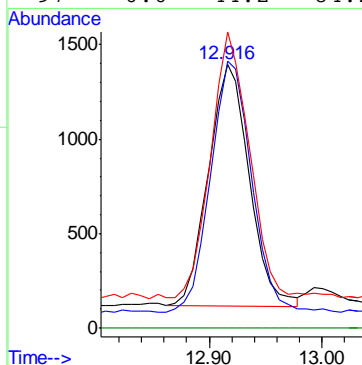
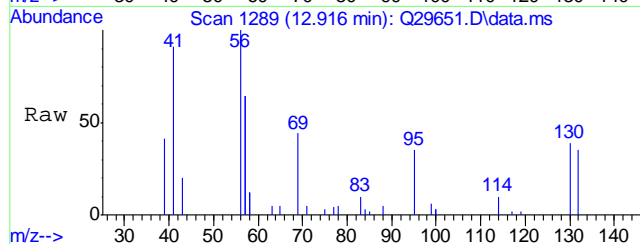
#34
1,1,1-TRICHLOROETHANE
Concen: 0.01 PPBV
RT: 10.721 min Scan# 993
Delta R.T. 0.000 min
Lab File: Q29651.D
Acq: 11 Feb 2015 3:57 pm

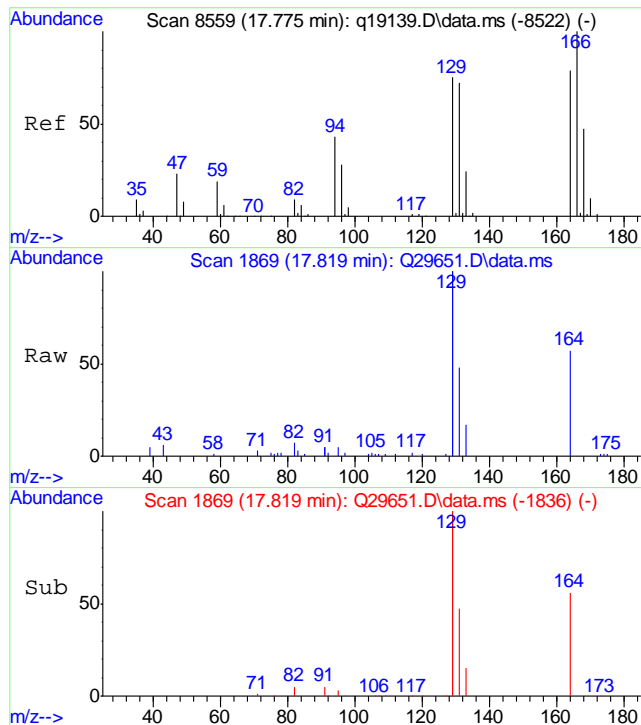
Tgt Ion	Ratio	Lower	Upper
97	100		
99	63.8	44.2	84.2
61	36.0	23.5	63.5



#40
TRICHLOROETHYLENE
Concen: 0.01 PPBV
RT: 12.916 min Scan# 1289
Delta R.T. -0.000 min
Lab File: Q29651.D
Acq: 11 Feb 2015 3:57 pm

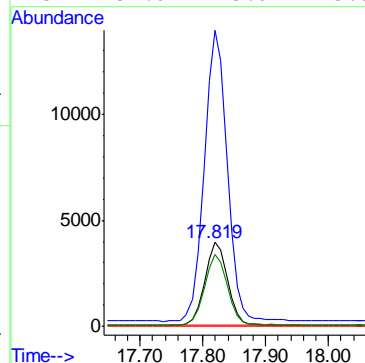
Tgt Ion	Ratio	Lower	Upper
95	100		
132	109.0	71.3	111.3
130	116.1	75.1	115.1#
97	0.0	44.2	84.2#





#55
TETRACHLOROETHYLENE
Concen: 0.02 PPBV
RT: 17.819 min Scan# 1869
Delta R.T. 0.000 min
Lab File: Q29651.D
Acq: 11 Feb 2015 3:57 pm

Tgt Ion	Ratio	Lower	Upper
164	100		
129	359.6	78.3	118.3#
168	0.0	40.4	80.4#
131	84.9	73.9	113.9



7.1.13

7

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\Q150210\
Data File : Q29652.D
Acq On : 11 Feb 2015 4:42 pm
Operator : akina
Sample : MC36556-5a(m238)
Misc : ms33846,msq1286,,,,,1
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Feb 12 13:35:49 2015
Quant Method : C:\msdchem\1\METHODS\Q150210FULLSIM.M
Quant Title : T015 by GCMS w/DB-1 60 m X .25 mm ID 1.0 um
QLast Update : Wed Feb 11 09:56:19 2015
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)

Internal Standards						
1) BROMOCHLOROMETHANE	9.222	128	1223904	10.00	PPBV	# 0.00
37) 1,4-DIFLUOROBENZENE	11.882	114	5985390	10.00	PPBV	0.00
53) CHLOROBENZENE-D5	18.932	82	1881579	10.00	PPBV	# 0.00

System Monitoring Compounds
66) 4-BROMOFLUOROBENZENE 21.464 95 702587 4.55 PPBV 0.00
Spiked Amount 5.000 Range 50 - 129 Recovery = 91.00%

Target Compounds	Qvalue
-----	-----

(#) = qualifier out of range (m) = manual integration (+) = signals summed

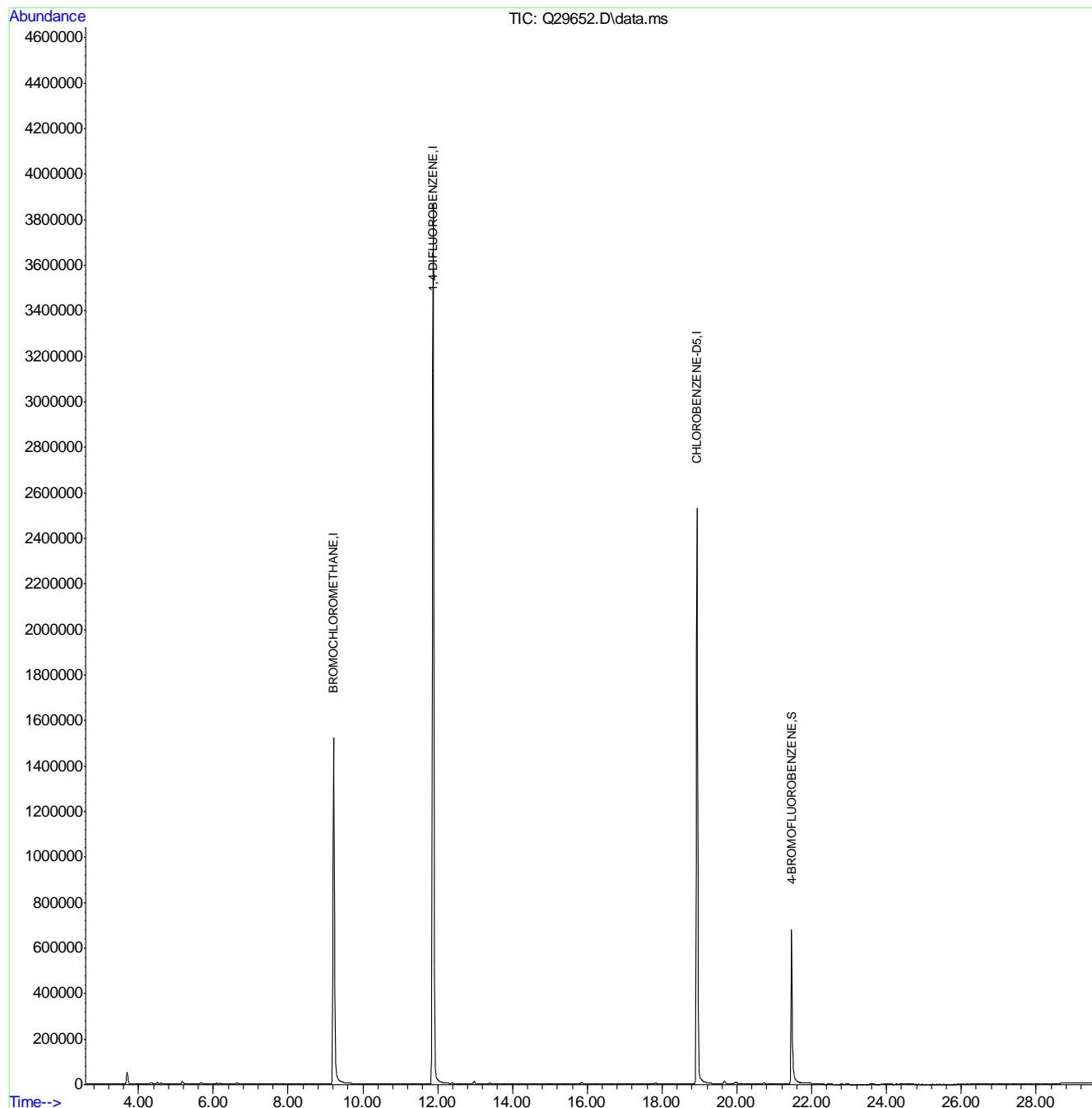
7.1.14

7

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\Q150210\
 Data File : Q29652.D
 Acq On : 11 Feb 2015 4:42 pm
 Operator : akina
 Sample : MC36556-5a(m238)
 Misc : ms33846,msq1286,,,,,1
 ALS Vial : 6 Sample Multiplier: 1

Quant Time: Feb 12 13:35:49 2015
 Quant Method : C:\msdchem\1\METHODS\Q150210FULLSIM.M
 Quant Title : T015 by GCMS w/DB-1 60 m X .25 mm ID 1.0 um
 QLast Update : Wed Feb 11 09:56:19 2015
 Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\J150209\
Data File : j29935.D
Acq On : 9 Feb 2015 9:29 pm
Operator : AkinA
Sample : mb(m421)
Misc : ms33838,msj1520,,,,,1
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Feb 10 08:16:31 2015
Quant Method : C:\msdchem\1\methods\J150122T.M
Quant Title : T015 by GCMS w/DB-1 60 m X .25 mm ID 1.0 um
QLast Update : Fri Jan 23 13:48:53 2015
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) BROMOCHLOROMETHANE	8.993	128	402444	10.00	PPBV	# 0.00
37) 1,4-DIFLUOROBENZENE	11.293	114	1868157	10.00	PPBV	-0.02
53) CHLOROBENZENE-D5	17.967	82	910000	10.00	PPBV	#-0.02

System Monitoring Compounds						
66) 4-BROMOFLUOROBENZENE	20.893	95	485778	4.76	PPBV	-0.02
Spiked Amount	5.000	Range	50 - 129	Recovery	=	95.20%

Target Compounds	Qvalue
------------------	--------

(#) = qualifier out of range (m) = manual integration (+) = signals summed

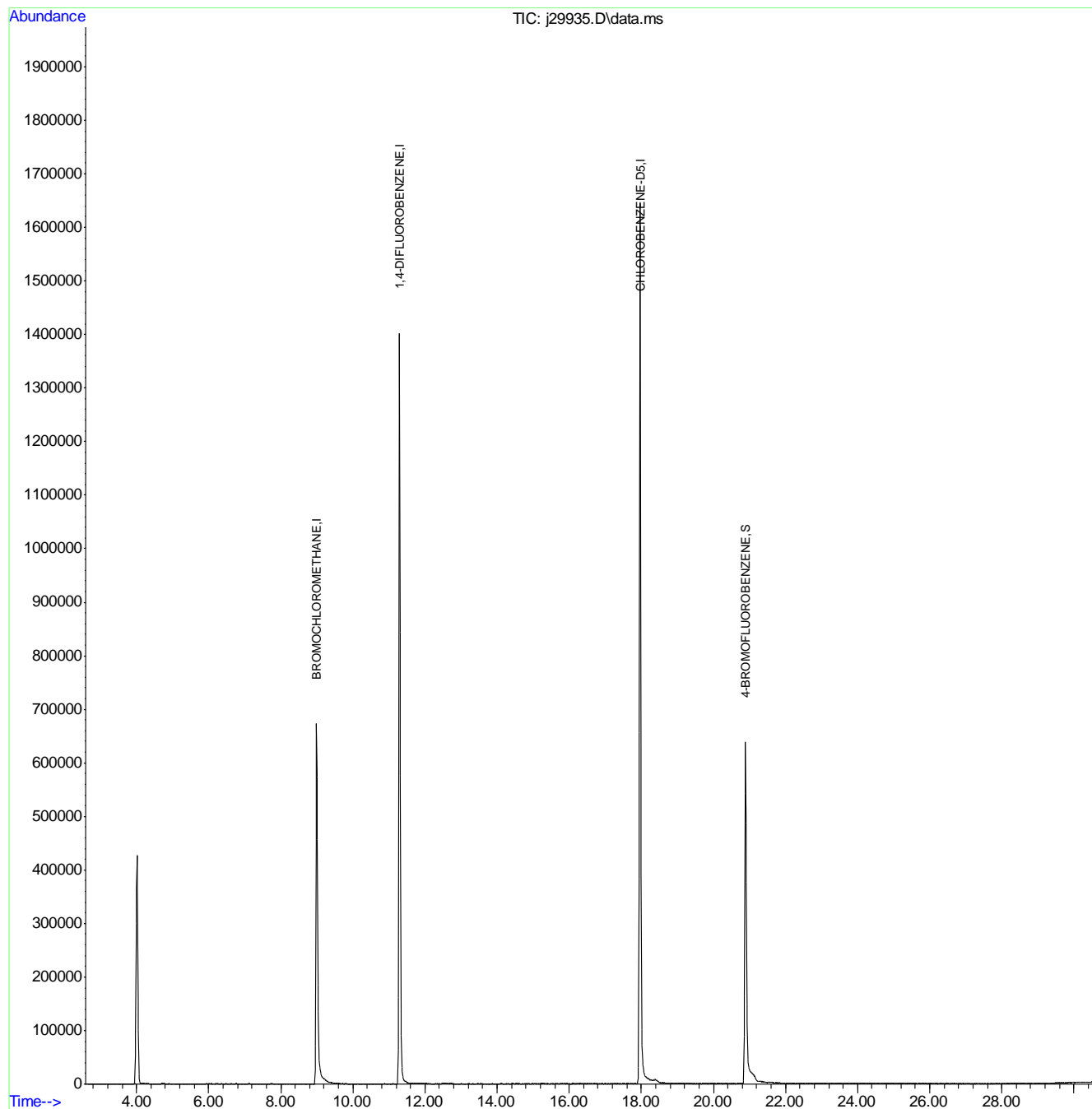
7.2.1

7

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\J150209\
Data File : j29935.D
Acq On : 9 Feb 2015 9:29 pm
Operator : AkinA
Sample : mb(m421)
Misc : ms33838,msj1520,,,,,1
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Feb 10 08:16:31 2015
Quant Method : C:\msdchem\1\methods\J150122T.M
Quant Title : T015 by GCMS w/DB-1 60 m X .25 mm ID 1.0 um
QLast Update : Fri Jan 23 13:48:53 2015
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\J150125\
Data File : j29717.D
Acq On : 25 Jan 2015 7:36 pm
Operator : akina
Sample : mb(m181)
Misc : ms33766,msj1511,,,,,1
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Jan 26 09:04:50 2015
Quant Method : C:\msdchem\1\methods\J150122T.M
Quant Title : T015 by GCMS w/DB-1 60 m X .25 mm ID 1.0 um
QLast Update : Fri Jan 23 13:48:53 2015
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) BROMOCHLOROMETHANE	8.993	128	511779	10.00	PPBV	0.00
37) 1,4-DIFLUOROBENZENE	11.293	114	2454206	10.00	PPBV	-0.02
53) CHLOROBENZENE-D5	17.967	82	1056288	10.00	PPBV	#-0.02

System Monitoring Compounds

66) 4-BROMOFLUOROBENZENE	20.893	95	466502	3.93	PPBV	-0.02
Spiked Amount	5.000	Range	50 - 129	Recovery	=	78.60%

Target Compounds	Qvalue
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(#) = qualifier out of range (m) = manual integration (+) = signals summed

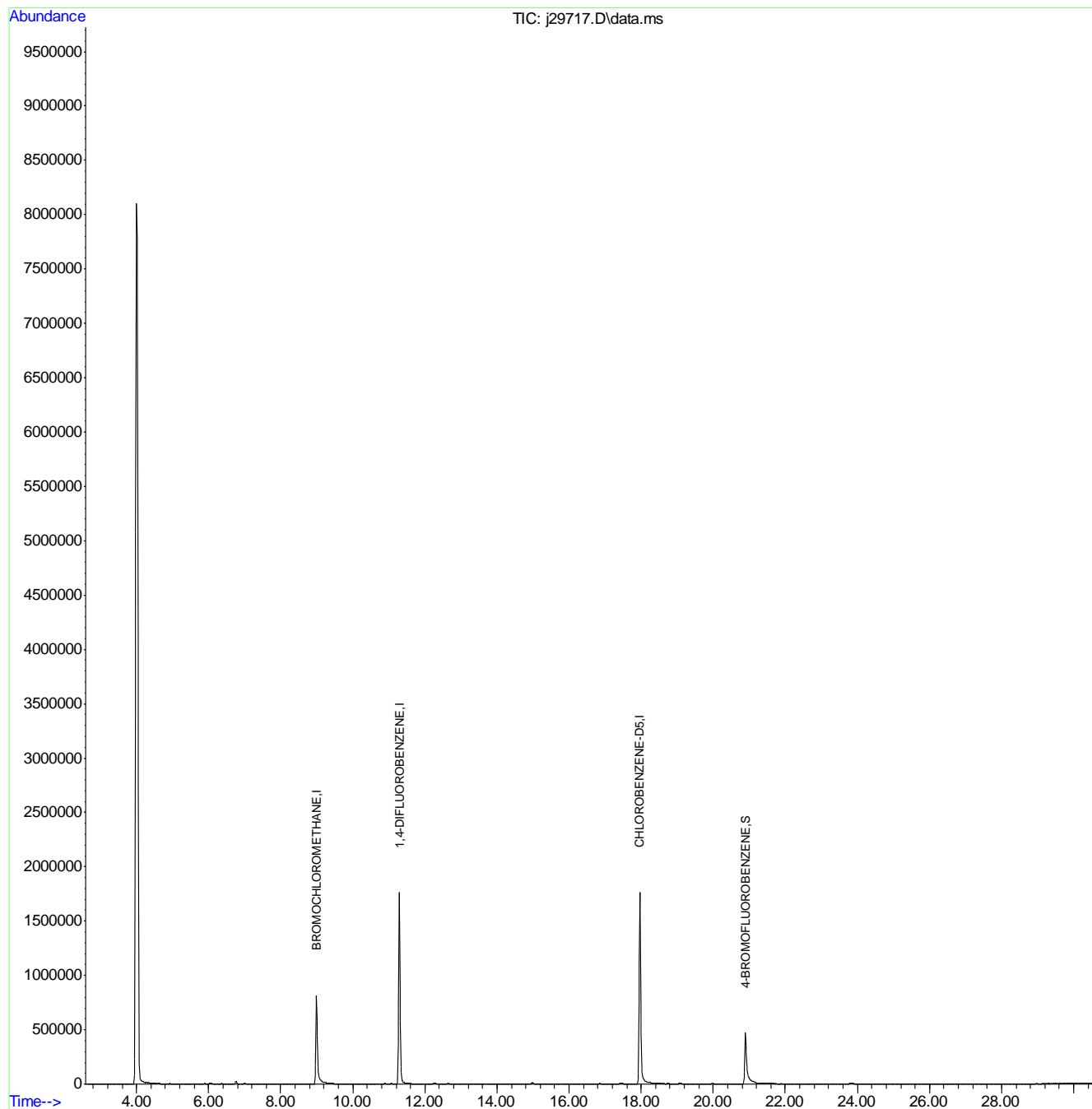
7.2.2

7

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\J150125\
Data File : j29717.D
Acq On : 25 Jan 2015 7:36 pm
Operator : akina
Sample : mb(m181)
Misc : ms33766,msj1511,,,,,1
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Jan 26 09:04:50 2015
Quant Method : C:\msdchem\1\methods\J150122T.M
Quant Title : T015 by GCMS w/DB-1 60 m X .25 mm ID 1.0 um
QLast Update : Fri Jan 23 13:48:53 2015
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\J150210\
Data File : j29961.D
Acq On : 10 Feb 2015 8:58 pm
Operator : AkinA
Sample : mb(m114)
Misc : ms33838,msj1521,,,,,1
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Feb 11 07:38:05 2015
Quant Method : C:\msdchem\1\methods\J150122T.M
Quant Title : T015 by GCMS w/DB-1 60 m X .25 mm ID 1.0 um
QLast Update : Fri Jan 23 13:48:53 2015
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) BROMOCHLOROMETHANE	8.993	128	384183	10.00	PPBV	# 0.00
37) 1,4-DIFLUOROBENZENE	11.293	114	1840224	10.00	PPBV	-0.02
53) CHLOROBENZENE-D5	17.967	82	883223	10.00	PPBV	#-0.02

System Monitoring Compounds

66) 4-BROMOFLUOROBENZENE	20.887	95	506751	5.11	PPBV	-0.03
Spiked Amount	5.000	Range	50 - 129	Recovery	=	102.20%

Target Compounds	Qvalue
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(#) = qualifier out of range (m) = manual integration (+) = signals summed

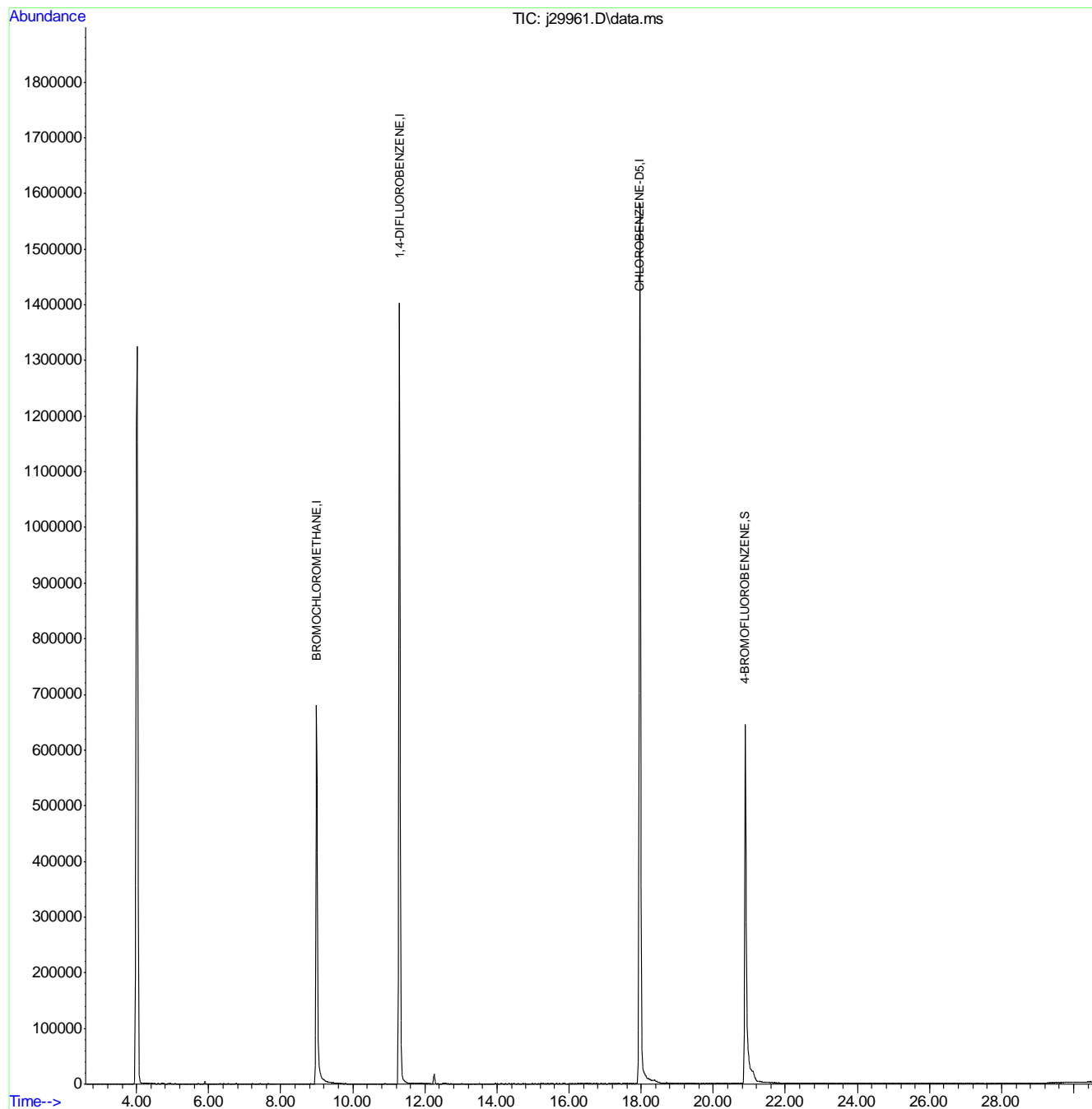
7.2.3

7

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\J150210\
Data File : j29961.D
Acq On : 10 Feb 2015 8:58 pm
Operator : AkinA
Sample : mb(ml14)
Misc : ms33838,msj1521,,,,,1
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Feb 11 07:38:05 2015
Quant Method : C:\msdchem\1\methods\J150122T.M
Quant Title : T015 by GCMS w/DB-1 60 m X .25 mm ID 1.0 um
QLast Update : Fri Jan 23 13:48:53 2015
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\Q150210\
Data File : Q29647.D
Acq On : 11 Feb 2015 12:54 pm
Operator : akina
Sample : mb(m312)
Misc : ms33846,msq1286,,,,,1
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Feb 11 13:25:27 2015
Quant Method : C:\msdchem\1\METHODS\Q150210FULLSIM.M
Quant Title : T015 by GCMS w/DB-1 60 m X .25 mm ID 1.0 um
QLast Update : Wed Feb 11 09:56:19 2015
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) BROMOCHLOROMETHANE	9.216	128	1287447	10.00	PPBV	# 0.00
37) 1,4-DIFLUOROBENZENE	11.874	114	5993565	10.00	PPBV	0.00
53) CHLOROBENZENE-D5	18.931	82	1896996	10.00	PPBV	# 0.00

System Monitoring Compounds

66) 4-BROMOFLUOROBENZENE	21.463	95	725308	4.66	PPBV	0.00
Spiked Amount	5.000	Range	50 - 129	Recovery	=	93.20%

Target Compounds	Qvalue
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(#) = qualifier out of range (m) = manual integration (+) = signals summed

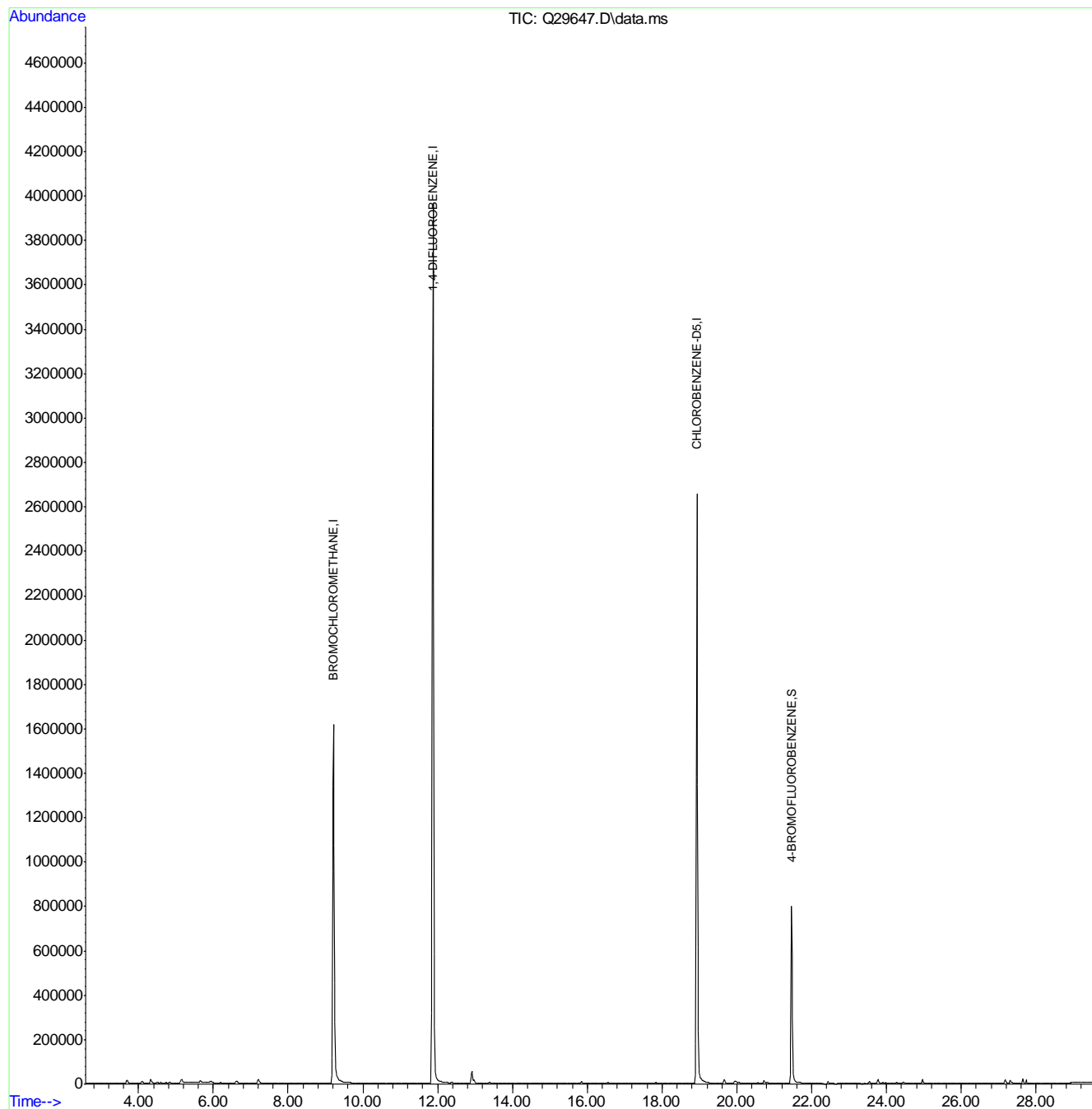
7.2.4

7

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\Q150210\
Data File : Q29647.D
Acq On : 11 Feb 2015 12:54 pm
Operator : akina
Sample : mb(m312)
Misc : ms33846,msq1286,,,,,1
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Feb 11 13:25:27 2015
Quant Method : C:\msdchem\1\METHODS\Q150210FULLSIM.M
Quant Title : T015 by GCMS w/DB-1 60 m X .25 mm ID 1.0 um
QLast Update : Wed Feb 11 09:56:19 2015
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\J150209\
 Data File : j29932b.D
 Acq On : 9 Feb 2015 6:26 pm
 Operator : AkinA
 Sample : bs(m399)
 Misc : ms33838,msj1520,,,,,1
 ALS Vial : 1 Sample Multiplier: 1

Quant Time: Feb 10 08:14:45 2015
 Quant Method : C:\msdchem\1\methods\J150122T.M
 Quant Title : T015 by GCMS w/DB-1 60 m X .25 mm ID 1.0 um
 QLast Update : Fri Jan 23 13:48:53 2015
 Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) BROMOCHLOROMETHANE	8.987	128	407749m	10.00	PPBV	-0.01
37) 1,4-DIFLUOROBENZENE	11.299	114	2070589	10.00	PPBV	-0.01
53) CHLOROBENZENE-D5	17.985	82	980156	10.00	PPBV	# 0.00

System Monitoring Compounds						
66) 4-BROMOFLUOROBENZENE	20.917	95	440139	4.00	PPBV	0.00
Spiked Amount	5.000	Range	50 - 129	Recovery	=	80.00%

Target Compounds						Qvalue
2) DICHLORODIFLUOROMETHANE	4.333	85	916651	8.75	PPBV	98
3) PROPYLENE	4.254	41	102510	7.06	PPBV	99
4) FREON 114	4.601	85	854922	9.13	PPBV	95
5) CHLOROMETHANE	4.504	50	150671	7.83	PPBV	98
6) VINYL CHLORIDE	4.729	62	228921	8.33	PPBV	99
7) 1,3-BUTADIENE	4.863	39	104757	8.18	PPBV #	74
8) BROMOMETHANE	5.136	94	333530	9.08	PPBV	99
9) CHLOROETHANE	5.295	64	108665	8.43	PPBV	95
10) ACROLEIN	5.745	56	45109	7.89	PPBV	99
11) TRICHLOROFLUOROMETHANE	6.031	101	1027218	9.94	PPBV	100
12) ISOPROPYL ALCOHOL	6.164	45	223065	8.40	PPBV	98
13) ACETONE	5.879	43	171871	7.95	PPBV	89
14) ACRYLONITRILE	6.304	53	99304	8.49	PPBV	94
15) PENTANE	6.359	42	159792	8.34	PPBV	91
16) 1,1-DICHLOROETHYLENE	6.639	96	360063	9.48	PPBV	87
17) CARBON DISULFIDE	7.095	76	746994	9.01	PPBV	97
18) ETHANOL	5.489	45	32511	7.92	PPBV #	95
19) BROMOETHENE	5.635	106	358192	9.59	PPBV	100
20) METHYLENE CHLORIDE	6.748	84	285060	8.91	PPBV	83
21) 3-CHLOROPROPENE	6.864	39	164316	8.79	PPBV #	88
22) FREON 113	6.998	151	777885	10.14	PPBV	98
23) TRANS-1,2-DICHLOROETHY...	7.691	96	320687	9.86	PPBV	90
24) TERTIARY BUTYL ALCOHOL	6.755	59	360781	8.53	PPBV	87
25) METHYL TERTIARY BUTYL ...	7.965	73	614559	8.75	PPBV	96
26) TETRAHYDROFURAN	9.638	42	164176	7.99	PPBV	76
27) HEXANE	9.018	57	365457	8.85	PPBV	89
28) VINYL ACETATE	8.032	43	326163	8.84	PPBV	93
29) 1,1-DICHLOROETHANE	7.898	63	513872	9.67	PPBV	99
30) METHYL ETHYL KETONE	8.342	43	267485	8.35	PPBV	85
31) cis-1,2-DICHLOROETHYLENE	8.793	96	416175	9.92	PPBV	92
32) ETHYL ACETATE	9.030	43	475380	9.09	PPBV #	97
33) CHLOROFORM	9.121	83	819338	9.66	PPBV	98
34) 1,1,1-TRICHLOROETHANE	10.307	97	910915	10.23	PPBV	98
35) CARBON TETRACHLORIDE	11.074	117	1059099	10.94	PPBV	100
36) 1,2-DICHLOROETHANE	10.003	62	385063	9.47	PPBV	99
38) BENZENE	10.885	78	1036459	8.80	PPBV	98
39) CYCLOHEXANE	11.238	84	513244	8.88	PPBV	92
40) TRICHLOROETHYLENE	12.260	95	649029	9.57	PPBV	98
41) 1,2-DICHLOROPROPANE	11.950	63	336565	8.75	PPBV	99
42) BROMODICHLOROMETHANE	12.212	83	869189	9.72	PPBV	100

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\J150209\
 Data File : j29932b.D
 Acq On : 9 Feb 2015 6:26 pm
 Operator : AkinA
 Sample : bs(m399)
 Misc : ms33838,msj1520,,,,,1
 ALS Vial : 1 Sample Multiplier: 1

Quant Time: Feb 10 08:14:45 2015

Quant Method : C:\msdchem\1\methods\J150122T.M

Quant Title : T015 by GCMS w/DB-1 60 m X .25 mm ID 1.0 um

QLast Update : Fri Jan 23 13:48:53 2015

Response via : Initial Calibration

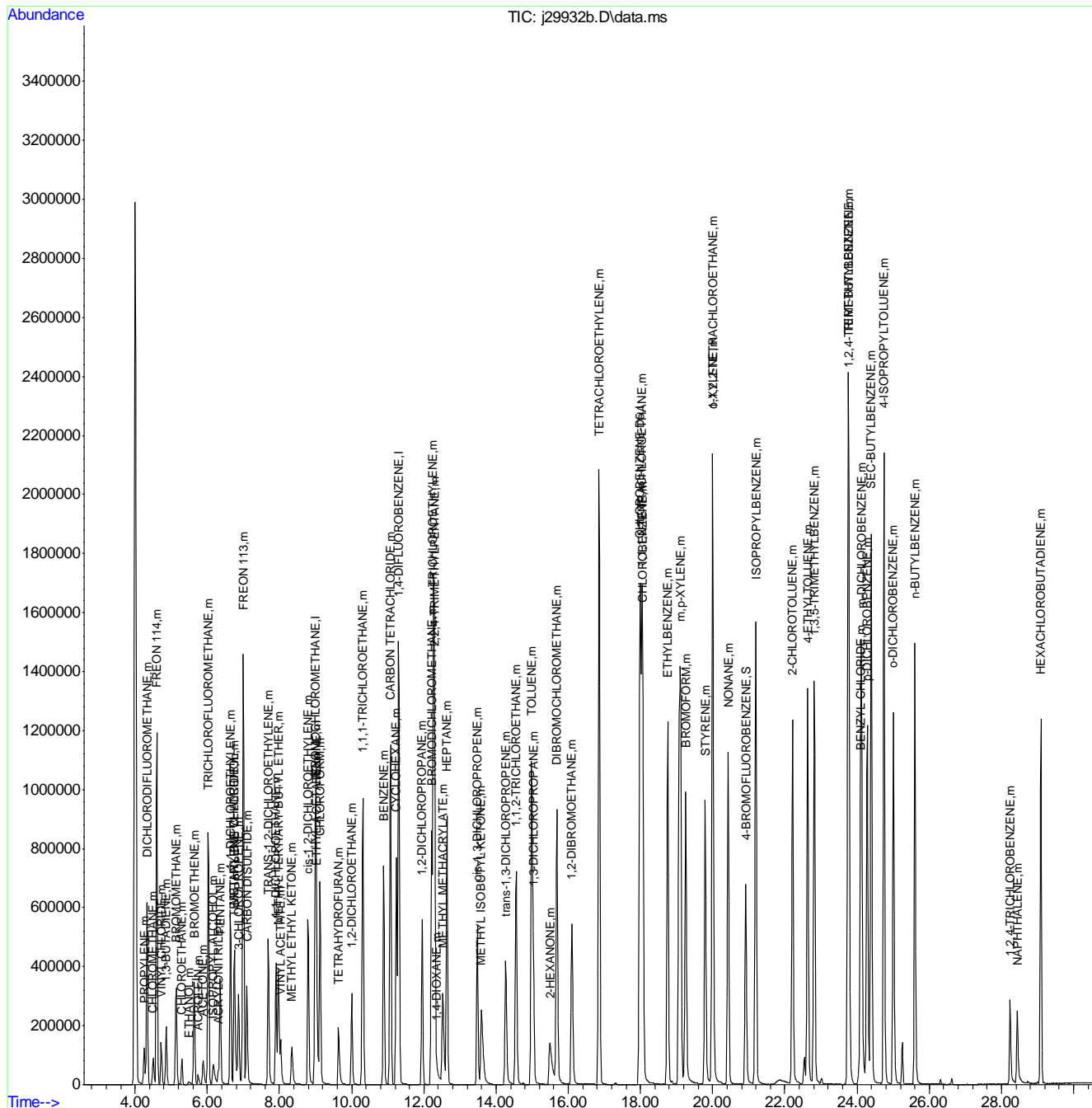
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
43) 2,2,4-TRIMETHYLPENTANE	12.297	57	1561515	8.85	PPBV	99
44) 1,4-DIOXANE	12.364	88	149720	7.83	PPBV #	100
45) METHYL METHACRYLATE	12.522	41	235362	8.21	PPBV #	33
46) HEPTANE	12.637	43	441725	8.39	PPBV #	80
47) METHYL ISOBUTYL KETONE	13.593	43	409316	7.20	PPBV	86
48) cis-1,3-DICHLOROPROPENE	13.483	75	563235	9.12	PPBV #	76
49) TOLUENE	14.986	92	780022	9.30	PPBV	98
50) trans-1,3-DICHLOROPROPENE	14.268	75	513907	9.28	PPBV	92
51) 1,1,2-TRICHLOROETHANE	14.554	83	398560	9.19	PPBV	99
52) 1,3-DICHLOROPROPANE	15.028	76	575381	9.29	PPBV	99
54) 2-HEXANONE	15.491	43	345916	7.98	PPBV	85
55) TETRACHLOROETHYLENE	16.859	164	849089	10.96	PPBV	98
56) DIBROMOCHLOROMETHANE	15.685	129	1034660	11.26	PPBV	100
57) 1,2-DIBROMOETHANE	16.099	107	778749	10.73	PPBV	100
58) 1,1,1,2-TETRACHLOROETHANE	18.034	131	680688	10.69	PPBV #	40
59) CHLOROBENZENE	18.064	112	1220917	10.09	PPBV	97
60) ETHYLBENZENE	18.757	91	1723780	10.36	PPBV	99
61) m,p-XYLENE	19.104	106	1416338	20.91	PPBV	98
62) o-XYLENE	19.999	106	721104	10.75	PPBV	98
63) STYRENE	19.792	104	992477	10.57	PPBV	99
64) NONANE	20.430	43	630584	8.30	PPBV	86
65) BROMOFORM	19.256	173	972146	11.26	PPBV	100
67) 1,1,2,2-TETRACHLOROETHANE	19.999	83	986721	11.06	PPBV	99
68) ISOPROPYLBENZENE	21.197	105	2028597	10.87	PPBV	99
69) 2-CHLOROTOLUENE	22.213	91	1351921	10.29	PPBV	99
70) 4-ETHYLTOLUENE	22.633	105	1715254	10.44	PPBV	100
71) 1,3,5-TRIMETHYLBENZENE	22.815	105	1524460	9.81	PPBV	100
72) TERT-BUTYLBENZENE	23.758	119	1698244	10.66	PPBV	99
73) 1,2,4-TRIMETHYLBENZENE	23.770	105	1381222	8.63	PPBV	94
74) m-DICHLOROBENZENE	24.123	146	1066320	10.09	PPBV	99
75) BENZYL CHLORIDE	24.093	91	930140	11.70	PPBV	98
76) p-DICHLOROBENZENE	24.281	146	1034511	9.67	PPBV	99
77) SEC-BUTYLBENZENE	24.391	105	2279886	10.88	PPBV	100
78) 4-ISOPROPYLTOLUENE	24.744	119	1928708	10.60	PPBV	99
79) o-DICHLOROBENZENE	25.005	146	933260	9.93	PPBV	99
80) n-BUTYLBENZENE	25.601	91	1286664	8.87	PPBV	100
81) HEXACHLOROBUTADIENE	29.093	225	363113	11.02	PPBV	100
82) 1,2,4-TRICHLOROBENZENE	28.242	180	189818	7.94	PPBV	98
83) NAPHTHALENE	28.443	128	427954	8.91	PPBV	97

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\J150209\
Data File : j29932b.D
Acq On : 9 Feb 2015 6:26 pm
Operator : AkinA
Sample : bs(m399)
Misc : ms33838,msj1520,,,,,1
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Feb 10 08:14:45 2015
Quant Method : C:\msdchem\1\methods\J150122T.M
Quant Title : T015 by GCMS w/DB-1 60 m X .25 mm ID 1.0 um
QLast Update : Fri Jan 23 13:48:53 2015
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\J150125\
 Data File : j29715B.D
 Acq On : 25 Jan 2015 5:41 pm
 Operator : akina
 Sample : BS(m407)
 Misc : ms33716,msj1511,,,,,1
 ALS Vial : 2 Sample Multiplier: 1

Quant Time: Jan 25 18:25:37 2015

Quant Method : C:\msdchem\1\methods\J150122T.M

Quant Title : T015 by GCMS w/DB-1 60 m X .25 mm ID 1.0 um

QLast Update : Fri Jan 23 13:48:53 2015

Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) BROMOCHLOROMETHANE	8.993	128	522824	10.00	PPBV	# 0.00
37) 1,4-DIFLUOROBENZENE	11.311	114	2587659	10.00	PPBV	0.00
53) CHLOROBENZENE-D5	17.997	82	1164861	10.00	PPBV	# 0.00

System Monitoring Compounds

66) 4-BROMOFLUOROBENZENE 20.923 95 556109 4.25 PPBV 0.00
 Spiked Amount 5.000 Range 50 - 129 Recovery = 85.00%

Target Compounds

						Qvalue
2) DICHLORODIFLUOROMETHANE	4.339	85	993942	7.40	PPBV	99
3) PROPYLENE	4.260	41	134478	7.23	PPBV	98
4) FREON 114	4.607	85	1042624	8.68	PPBV	99
5) CHLOROMETHANE	4.510	50	201187	8.15	PPBV	98
6) VINYL CHLORIDE	4.735	62	298137	8.46	PPBV	99
7) 1,3-BUTADIENE	4.869	39	148854	9.06	PPBV	# 76
8) BROMOMETHANE	5.142	94	415331	8.82	PPBV	99
9) CHLOROETHANE	5.301	64	157509	9.53	PPBV	96
10) ACROLEIN	5.751	56	67142	9.15	PPBV	98
11) TRICHLOROFLUOROMETHANE	6.031	101	1174454	8.86	PPBV	100
12) ISOPROPYL ALCOHOL	6.177	45	306212	9.00	PPBV	98
13) ACETONE	5.885	43	244368	8.82	PPBV	86
14) ACRYLONITRILE	6.310	53	142547	9.50	PPBV	96
15) PENTANE	6.365	42	227152	9.24	PPBV	94
16) 1,1-DICHLOROETHYLENE	6.645	96	455400	9.35	PPBV	89
17) CARBON DISULFIDE	7.101	76	931606	8.76	PPBV	95
18) ETHANOL	5.489	45	44637	8.48	PPBV	# 91
19) BROMOETHENE	5.641	106	442738	9.25	PPBV	99
20) METHYLENE CHLORIDE	6.748	84	387319	9.45	PPBV	85
21) 3-CHLOROPROPENE	6.870	39	228376	9.53	PPBV	# 82
22) FREON 113	7.004	151	943615	9.59	PPBV	97
23) TRANS-1,2-DICHLOROETHY...	7.697	96	424371	10.17	PPBV	92
24) TERTIARY BUTYL ALCOHOL	6.767	59	494314	9.11	PPBV	87
25) METHYL TERTIARY BUTYL ...	7.971	73	833273	9.25	PPBV	98
26) TETRAHYDROFURAN	9.638	42	244520	9.28	PPBV	81
27) HEXANE	9.018	57	513331	9.70	PPBV	89
28) VINYL ACETATE	8.038	43	417494	8.83	PPBV	93
29) 1,1-DICHLOROETHANE	7.904	63	688557	10.11	PPBV	99
30) METHYL ETHYL KETONE	8.342	43	373034	9.08	PPBV	85
31) cis-1,2-DICHLOROETHYLENE	8.805	96	549399	10.22	PPBV	94
32) ETHYL ACETATE	9.030	43	684799	10.21	PPBV	# 98
33) CHLOROFORM	9.127	83	1054214	9.69	PPBV	98
34) 1,1,1-TRICHLOROETHANE	10.313	97	1107622	9.70	PPBV	98
35) CARBON TETRACHLORIDE	11.080	117	1196908	9.64	PPBV	100
36) 1,2-DICHLOROETHANE	10.009	62	469773	9.01	PPBV	98
38) BENZENE	10.891	78	1315935	8.94	PPBV	98
39) CYCLOHEXANE	11.244	84	660887	9.15	PPBV	96
40) TRICHLOROETHYLENE	12.272	95	838185	9.89	PPBV	98
41) 1,2-DICHLOROPROPANE	11.962	63	434315	9.03	PPBV	96
42) BROMODICHLOROMETHANE	12.218	83	1082396	9.68	PPBV	100

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\J150125\
 Data File : j29715B.D
 Acq On : 25 Jan 2015 5:41 pm
 Operator : akina
 Sample : BS(m407)
 Misc : ms33716,msj1511,,,,,1
 ALS Vial : 2 Sample Multiplier: 1

Quant Time: Jan 25 18:25:37 2015

Quant Method : C:\msdchem\1\methods\J150122T.M

Quant Title : T015 by GCMS w/DB-1 60 m X .25 mm ID 1.0 um

QLast Update : Fri Jan 23 13:48:53 2015

Response via : Initial Calibration

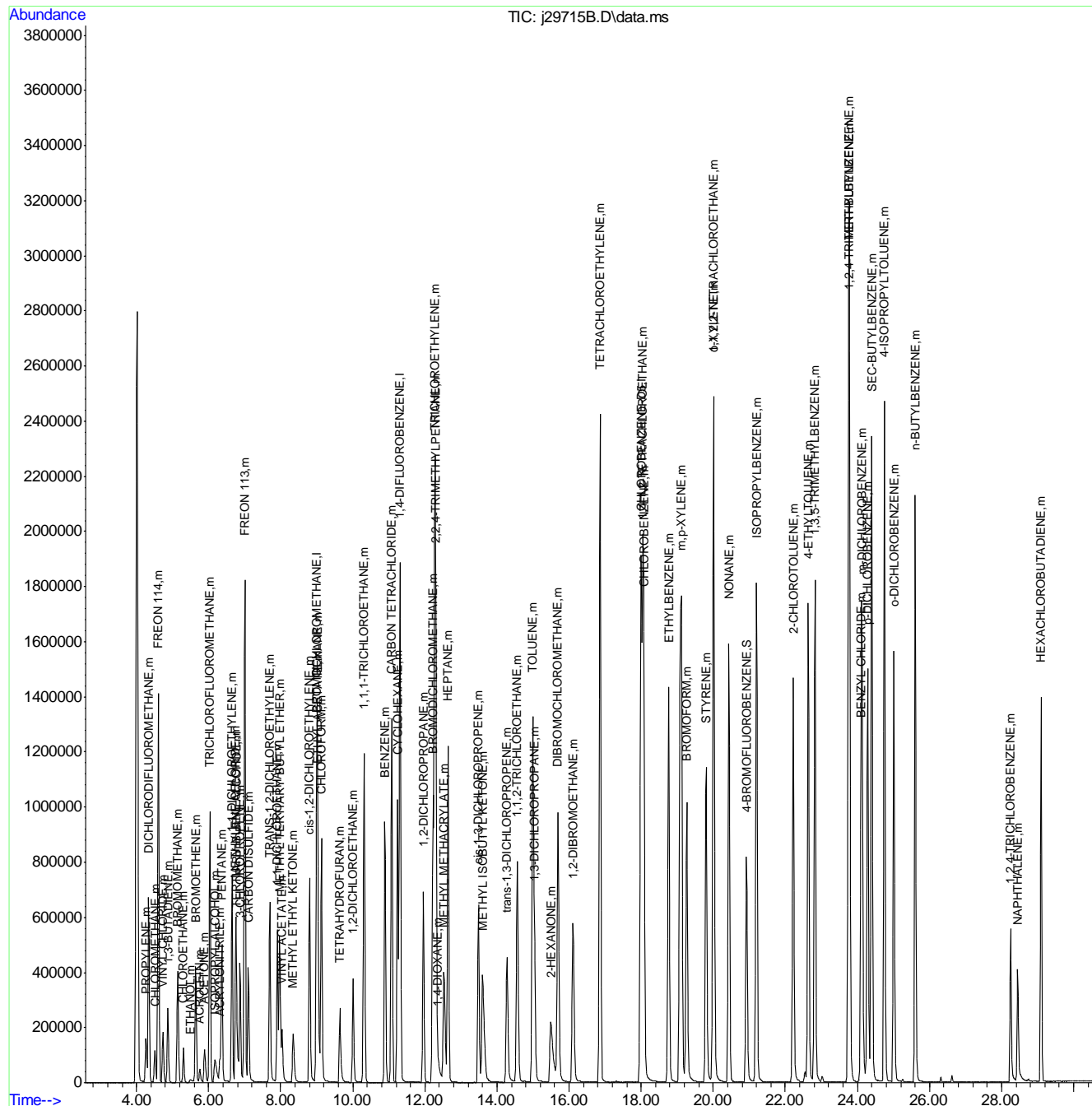
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
43) 2,2,4-TRIMETHYLPENTANE	12.303	57	2168110	9.84	PPBV	99
44) 1,4-DIOXANE	12.358	88	221025	9.25	PPBV #	100
45) METHYL METHACRYLATE	12.528	41	327097	9.13	PPBV #	41
46) HEPTANE	12.643	43	627086	9.54	PPBV	85
47) METHYL ISOBUTYL KETONE	13.605	43	649507	9.15	PPBV	89
48) cis-1,3-DICHLOROPROPENE	13.483	75	685873	8.89	PPBV #	78
49) TOLUENE	14.992	92	964851	9.21	PPBV	98
50) trans-1,3-DICHLOROPROPENE	14.274	75	610342	8.82	PPBV	94
51) 1,1,2-TRICHLOROETHANE	14.560	83	492596	9.09	PPBV	99
52) 1,3-DICHLOROPROPANE	15.040	76	719761	9.30	PPBV	100
54) 2-HEXANONE	15.491	43	539464	10.47	PPBV	88
55) TETRACHLOROETHYLENE	16.859	164	978386	10.63	PPBV	96
56) DIBROMOCHLOROMETHANE	15.691	129	1156984	10.59	PPBV	100
57) 1,2-DIBROMOETHANE	16.111	107	904378	10.49	PPBV	100
58) 1,1,1,2-TETRACHLOROETHANE	18.046	131	751846	9.93	PPBV #	40
59) CHLOROBENZENE	18.076	112	1416704	9.86	PPBV	99
60) ETHYLBENZENE	18.764	91	2090415	10.57	PPBV	100
61) m,p-XYLENE	19.110	106	1734152	21.54	PPBV	100
62) o-XYLENE	20.011	106	871059	10.93	PPBV	100
63) STYRENE	19.804	104	1223160	10.96	PPBV	100
64) NONANE	20.436	43	949542	10.52	PPBV	90
65) BROMOFORM	19.268	173	1010573	9.85	PPBV	99
67) 1,1,2,2-TETRACHLOROETHANE	20.011	83	1142640	10.77	PPBV	99
68) ISOPROPYLBENZENE	21.203	105	2392758	10.79	PPBV	100
69) 2-CHLOROTOLUENE	22.219	91	1654976	10.60	PPBV	97
70) 4-ETHYLTOLUENE	22.639	105	2183013	11.19	PPBV	100
71) 1,3,5-TRIMETHYLBENZENE	22.821	105	1991438	10.78	PPBV	99
72) TERT-BUTYLBENZENE	23.758	119	2100350	11.10	PPBV	99
73) 1,2,4-TRIMETHYLBENZENE	23.776	105	1988551	10.46	PPBV	94
74) m-DICHLOROBENZENE	24.129	146	1243912	9.90	PPBV	99
75) BENZYL CHLORIDE	24.099	91	957284	10.48	PPBV	99
76) p-DICHLOROBENZENE	24.281	146	1231053	9.68	PPBV	99
77) SEC-BUTYLBENZENE	24.397	105	2775849	11.15	PPBV	99
78) 4-ISOPROPYLTOLUENE	24.750	119	2268406	10.49	PPBV	99
79) o-DICHLOROBENZENE	25.011	146	1078937	9.66	PPBV	98
80) n-BUTYLBENZENE	25.608	91	1789227	10.38	PPBV	99
81) HEXACHLOROBUTADIENE	29.099	225	377152	9.63	PPBV	100
82) 1,2,4-TRICHLOROBENZENE	28.248	180	323458	10.53	PPBV	99
83) NAPHTHALENE	28.449	128	616360	10.35	PPBV	98

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\J150125\
Data File : j29715B.D
Acq On : 25 Jan 2015 5:41 pm
Operator : akina
Sample : BS(m407)
Misc : ms33716,msj1511,,,,,1
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Jan 25 18:25:37 2015
Quant Method : C:\msdchem\1\methods\J150122T.M
Quant Title : TO15 by GCMS w/DB-1 60 m X .25 mm ID 1.0 um
QLast Update : Fri Jan 23 13:48:53 2015
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\J150210\
 Data File : j29958a.D
 Acq On : 10 Feb 2015 6:01 pm
 Operator : AkinA
 Sample : bs(m399)
 Misc : ms33838,msj1521,,,,,1
 ALS Vial : 1 Sample Multiplier: 1

Quant Time: Feb 10 18:33:07 2015

Quant Method : C:\msdchem\1\methods\J150122T.M

Quant Title : T015 by GCMS w/DB-1 60 m X .25 mm ID 1.0 um

QLast Update : Fri Jan 23 13:48:53 2015

Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) BROMOCHLOROMETHANE	8.993	128	372814	10.00	PPBV	# 0.00
37) 1,4-DIFLUOROBENZENE	11.305	114	1750987	10.00	PPBV	0.00
53) CHLOROBENZENE-D5	17.985	82	965502	10.00	PPBV	# 0.00

System Monitoring Compounds

66) 4-BROMOFLUOROBENZENE 20.917 95 618159 5.70 PPBV 0.00
 Spiked Amount 5.000 Range 50 - 129 Recovery = 114.00%

Target Compounds

						Qvalue
2) DICHLORODIFLUOROMETHANE	4.333	85	1094576	11.43	PPBV	98
3) PROPYLENE	4.254	41	117728	8.87	PPBV	97
4) FREON 114	4.601	85	932139	10.89	PPBV	96
5) CHLOROMETHANE	4.504	50	177967	10.12	PPBV	98
6) VINYL CHLORIDE	4.729	62	259191	10.31	PPBV	98
7) 1,3-BUTADIENE	4.862	39	118176	10.09	PPBV	# 81
8) BROMOMETHANE	5.136	94	368709	10.98	PPBV	99
9) CHLOROETHANE	5.294	64	103185	8.75	PPBV	96
10) ACROLEIN	5.745	56	48975	9.36	PPBV	98
11) TRICHLOROFLUOROMETHANE	6.031	101	1116566	11.82	PPBV	100
12) ISOPROPYL ALCOHOL	6.170	45	231453	9.54	PPBV	94
13) ACETONE	5.878	43	203067	10.27	PPBV	92
14) ACRYLONITRILE	6.304	53	101500	9.49	PPBV	97
15) PENTANE	6.359	42	161617	9.22	PPBV	92
16) 1,1-DICHLOROETHYLENE	6.645	96	355109	10.22	PPBV	91
17) CARBON DISULFIDE	7.095	76	769571	10.15	PPBV	98
18) ETHANOL	5.483	45	31648	8.43	PPBV	# 92
19) BROMOETHENE	5.635	106	368841	10.80	PPBV	99
20) METHYLENE CHLORIDE	6.748	84	274784	9.40	PPBV	84
21) 3-CHLOROPROPENE	6.864	39	152512	8.92	PPBV	91
22) FREON 113	6.998	151	763185	10.88	PPBV	98
23) TRANS-1,2-DICHLOROETHY...	7.691	96	303356	10.20	PPBV	92
24) TERTIARY BUTYL ALCOHOL	6.754	59	395241	10.22	PPBV	90
25) METHYL TERTIARY BUTYL ...	7.965	73	674970	10.51	PPBV	96
26) TETRAHYDROFURAN	9.626	42	194660	10.36	PPBV	79
27) HEXANE	9.018	57	351834	9.32	PPBV	91
28) VINYL ACETATE	8.032	43	349542	10.36	PPBV	93
29) 1,1-DICHLOROETHANE	7.904	63	452502	9.32	PPBV	99
30) METHYL ETHYL KETONE	8.336	43	290850	9.93	PPBV	85
31) cis-1,2-DICHLOROETHYLENE	8.799	96	396261	10.33	PPBV	94
32) ETHYL ACETATE	9.024	43	527436	11.03	PPBV	# 97
33) CHLOROFORM	9.127	83	816280	10.53	PPBV	98
34) 1,1,1-TRICHLOROETHANE	10.307	97	922344	11.33	PPBV	98
35) CARBON TETRACHLORIDE	11.074	117	1095757	12.38	PPBV	100
36) 1,2-DICHLOROETHANE	10.003	62	402918	10.84	PPBV	99
38) BENZENE	10.891	78	997133	10.01	PPBV	98
39) CYCLOHEXANE	11.238	84	496549	10.16	PPBV	93
40) TRICHLOROETHYLENE	12.266	95	659190	11.50	PPBV	99
41) 1,2-DICHLOROPROPANE	11.956	63	359614	11.05	PPBV	98
42) BROMODICHLOROMETHANE	12.218	83	865850	11.44	PPBV	100

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\J150210\
 Data File : j29958a.D
 Acq On : 10 Feb 2015 6:01 pm
 Operator : AkinA
 Sample : bs(m399)
 Misc : ms33838,msj1521,,,,,1
 ALS Vial : 1 Sample Multiplier: 1

Quant Time: Feb 10 18:33:07 2015

Quant Method : C:\msdchem\1\methods\J150122T.M

Quant Title : T015 by GCMS w/DB-1 60 m X .25 mm ID 1.0 um

QLast Update : Fri Jan 23 13:48:53 2015

Response via : Initial Calibration

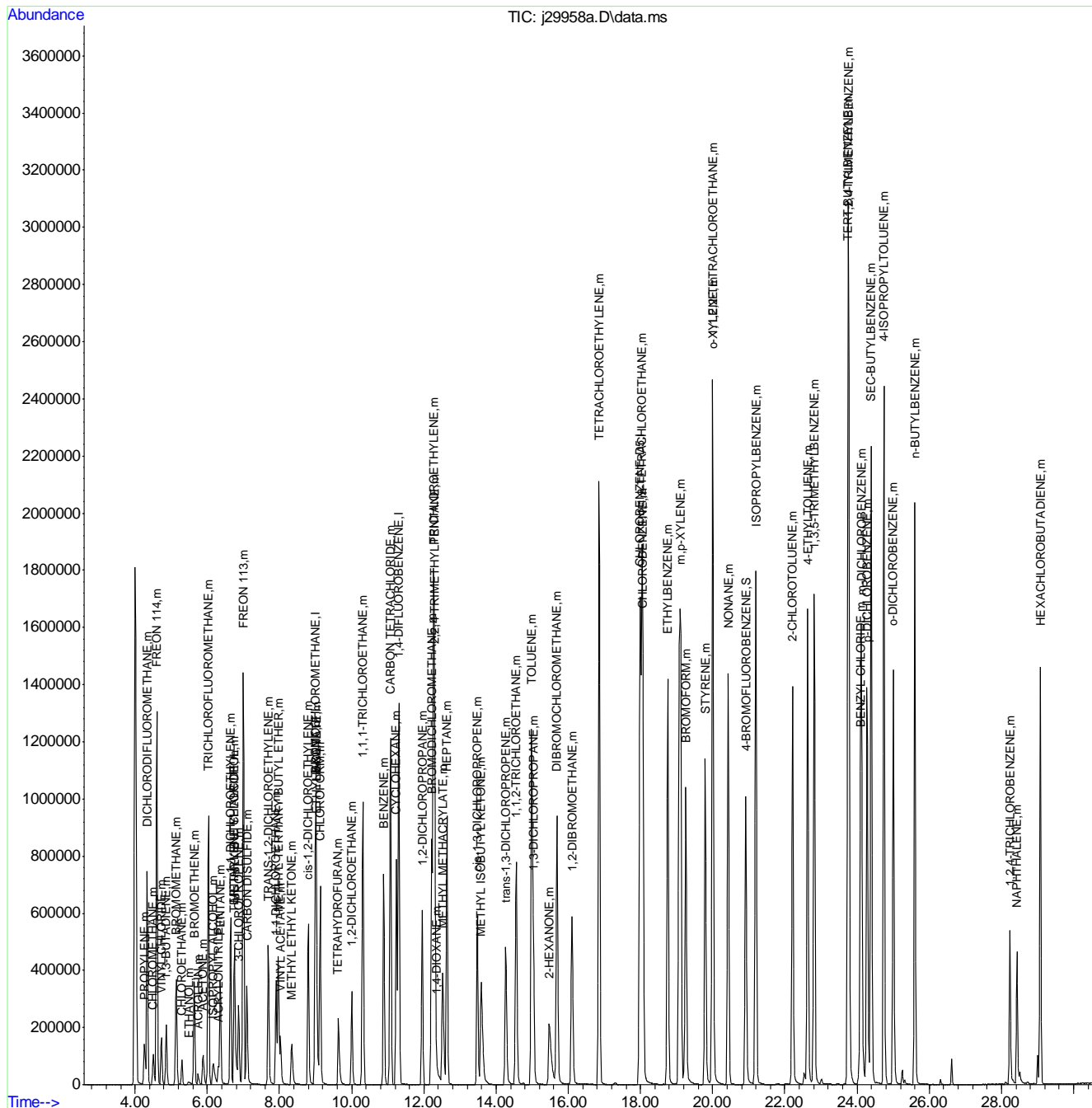
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
43) 2,2,4-TRIMETHYLPENTANE	12.297	57	1554364	10.42	PPBV	99
44) 1,4-DIOXANE	12.339	88	205657	12.72	PPBV #	100
45) METHYL METHACRYLATE	12.522	41	289228	11.92	PPBV #	40
46) HEPTANE	12.637	43	450671	10.13	PPBV	82
47) METHYL ISOBUTYL KETONE	13.586	43	558383	11.62	PPBV	89
48) cis-1,3-DICHLOROPROPENE	13.483	75	591518	11.33	PPBV #	78
49) TOLUENE	14.986	92	860637	12.14	PPBV	98
50) trans-1,3-DICHLOROPROPENE	14.268	75	559543	11.95	PPBV	93
51) 1,1,2-TRICHLOROETHANE	14.554	83	438181	11.94	PPBV	99
52) 1,3-DICHLOROPROPANE	15.028	76	659672	12.60	PPBV	99
54) 2-HEXANONE	15.472	43	460860	10.79	PPBV	90
55) TETRACHLOROETHYLENE	16.859	164	834663	10.94	PPBV	97
56) DIBROMOCHLOROMETHANE	15.685	129	1047996	11.58	PPBV	100
57) 1,2-DIBROMOETHANE	16.105	107	832125	11.64	PPBV	100
58) 1,1,1,2-TETRACHLOROETHANE	18.039	131	731522	11.66	PPBV #	40
59) CHLOROBENZENE	18.070	112	1313178	11.02	PPBV	99
60) ETHYLBENZENE	18.757	91	1924279	11.74	PPBV	100
61) m,p-XYLENE	19.104	106	1617902	24.25	PPBV	100
62) o-XYLENE	20.004	106	816695	12.36	PPBV	98
63) STYRENE	19.792	104	1111576	12.02	PPBV	100
64) NONANE	20.430	43	797179	10.65	PPBV	88
65) BROMOFORM	19.256	173	975971	11.48	PPBV	99
67) 1,1,2,2-TETRACHLOROETHANE	19.998	83	1042232	11.86	PPBV	100
68) ISOPROPYLBENZENE	21.197	105	2224662	12.10	PPBV	100
69) 2-CHLOROTOLUENE	22.213	91	1486091	11.49	PPBV	99
70) 4-ETHYLTOLUENE	22.633	105	1998891	12.36	PPBV	100
71) 1,3,5-TRIMETHYLBENZENE	22.815	105	1816494	11.87	PPBV	100
72) TERT-BUTYLBENZENE	23.752	119	1968412	12.55	PPBV	100
73) 1,2,4-TRIMETHYLBENZENE	23.770	105	1831096	11.62	PPBV	96
74) m-DICHLOROBENZENE	24.123	146	1157288	11.12	PPBV	99
75) BENZYL CHLORIDE	24.093	91	911035	11.65	PPBV	99
76) p-DICHLOROBENZENE	24.275	146	1109250	10.52	PPBV	99
77) SEC-BUTYLBENZENE	24.391	105	2594080	12.57	PPBV	100
78) 4-ISOPROPYLTOLUENE	24.744	119	2168828	12.10	PPBV	100
79) o-DICHLOROBENZENE	25.005	146	1014275	10.95	PPBV	99
80) n-BUTYLBENZENE	25.601	91	1629689	11.41	PPBV	100
81) HEXACHLOROBUTADIENE	29.081	225	405674	12.50	PPBV	100
82) 1,2,4-TRICHLOROBENZENE	28.236	180	287926	11.13	PPBV	98
83) NAPHTHALENE	28.430	128	622613	12.05	PPBV	98

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\J150210\
Data File : j29958a.D
Acq On : 10 Feb 2015 6:01 pm
Operator : AkinA
Sample : bs(m399)
Misc : ms33838,msj1521,,,,,1
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Feb 10 18:33:07 2015
Quant Method : C:\msdchem\1\methods\J150122T.M
Quant Title : T015 by GCMS w/DB-1 60 m X .25 mm ID 1.0 um
QLast Update : Fri Jan 23 13:48:53 2015
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\Q150210\
Data File : Q29645b.D
Acq On : 11 Feb 2015 10:14 am
Operator : akina
Sample : bs(m398)
Misc : ms33846,msq1286,,,,,1
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Feb 11 10:48:43 2015
Quant Method : C:\msdchem\1\METHODS\Q150210FULLSIM.M
Quant Title : TO15 by GCMS w/DB-1 60 m X .25 mm ID 1.0 um
QLast Update : Wed Feb 11 09:56:19 2015
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) BROMOCHLOROMETHANE	9.222	128	1274252	10.00	PPBV	# 0.00
37) 1,4-DIFLUOROBENZENE	11.882	114	5860759	10.00	PPBV	0.00
53) CHLOROBENZENE-D5	18.931	82	1870577	10.00	PPBV	# 0.00

System Monitoring Compounds						
66) 4-BROMOFLUOROBENZENE	21.454	95	761299	4.96	PPBV	0.00
Spiked Amount	5.000	Range	50 - 129	Recovery	=	99.20%

Target Compounds						Qvalue
13) ACETONE	5.639	43	87582	0.14	PPBV	90
18) ETHANOL	5.141	45	129204	0.25	PPBV #	62
22) FREON 113	6.940	151	142446	0.39	PPBV #	76
31) cis-1,2-DICHLOROETHYLENE	9.009	96	81183	0.37	PPBV	89
34) 1,1,1-TRICHLOROETHANE	10.721	97	156489	0.40	PPBV	95
38) BENZENE	11.365	78	196594	0.25	PPBV #	86
40) TRICHLOROETHYLENE	12.916	95	151211	0.40	PPBV #	68
46) HEPTANE	13.394	43	104130	0.33	PPBV #	1
49) TOLUENE	15.848	92	138017	0.25	PPBV #	1
55) TETRACHLOROETHYLENE	17.819	164	145514	0.35	PPBV #	1
59) CHLOROBENZENE	19.013	112	219648	0.29	PPBV #	74
60) ETHYLBENZENE	19.664	91	1246127	0.26	PPBV #	64
61) m,p-XYLENE	19.989	106	243529	0.55	PPBV #	1
62) o-XYLENE	20.731	106	122757	0.28	PPBV #	1

(#) = qualifier out of range (m) = manual integration (+) = signals summed

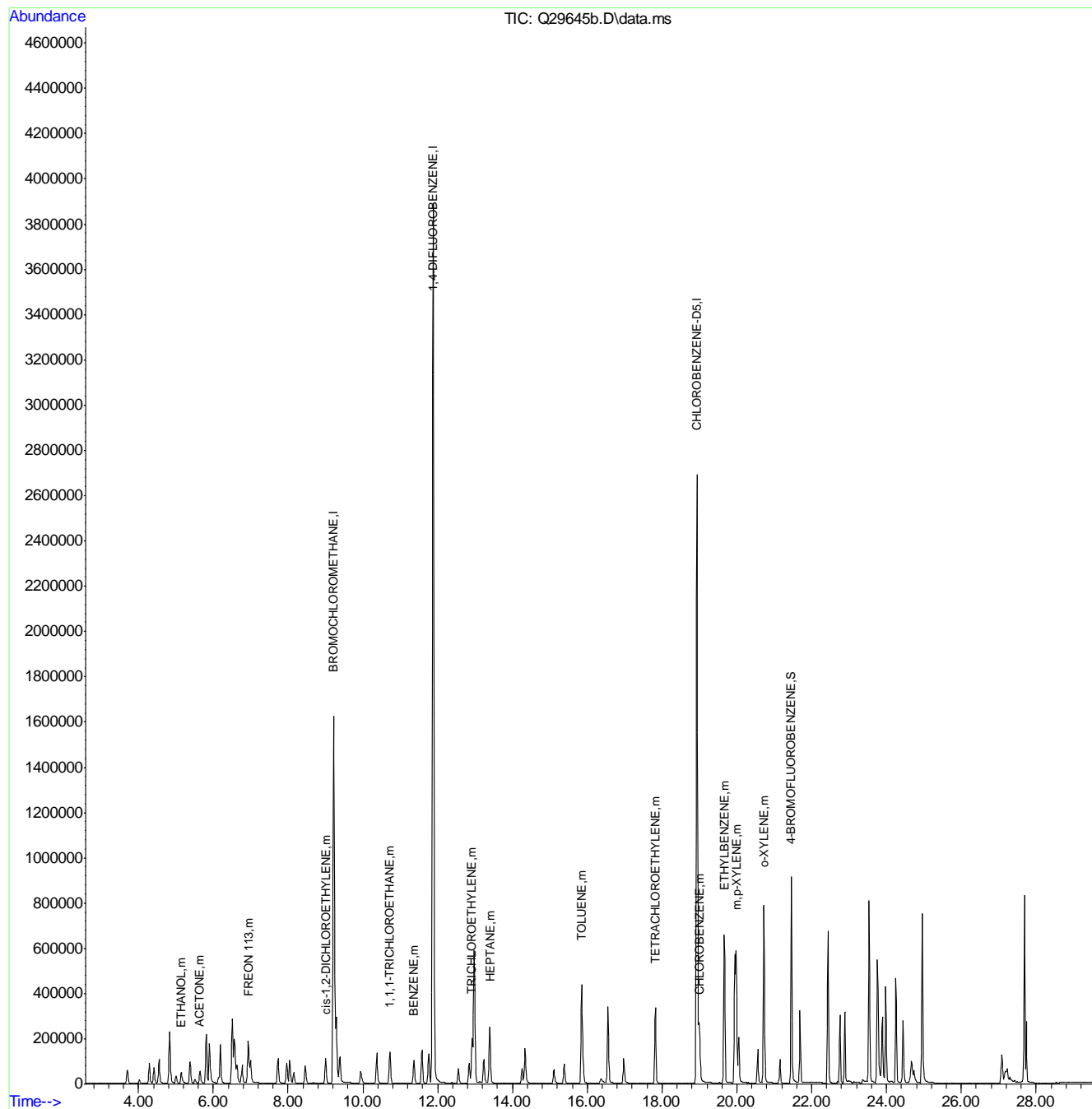
7.3.4

7

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\Q150210\
Data File : Q29645b.D
Acq On : 11 Feb 2015 10:14 am
Operator : akina
Sample : bs(m398)
Misc : ms33846,msq1286,,,,,1
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Feb 11 10:48:43 2015
Quant Method : C:\msdchem\1\METHODS\Q150210FULLSIM.M
Quant Title : T015 by GCMS w/DB-1 60 m X .25 mm ID 1.0 um
QLast Update : Wed Feb 11 09:56:19 2015
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\J150209\
Data File : j29955.D
Acq On : 10 Feb 2015 2:27 pm
Operator : AkinA
Sample : MC36556-4dup(M160)
Misc : ms33838,msj1520,,,,,1
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Feb 10 16:22:04 2015
Quant Method : C:\msdchem\1\methods\J150122T.M
Quant Title : T015 by GCMS w/DB-1 60 m X .25 mm ID 1.0 um
QLast Update : Fri Jan 23 13:48:53 2015
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) BROMOCHLOROMETHANE	8.987	128	342899	10.00	PPBV	#-0.01
37) 1,4-DIFLUOROBENZENE	11.287	114	1621070	10.00	PPBV	-0.02
53) CHLOROBENZENE-D5	17.960	82	777019	10.00	PPBV	#-0.03
System Monitoring Compounds						
66) 4-BROMOFLUOROBENZENE	20.887	95	354479	4.06	PPBV	-0.03
Spiked Amount	5.000	Range	50 - 129	Recovery	=	81.20%
Target Compounds						
2) DICHLORODIFLUOROMETHANE	4.339	85	52260	0.59	PPBV	Qvalue 98
11) TRICHLOROFLUOROMETHANE	6.031	101	67716	0.78	PPBV	99
13) ACETONE	5.976	43	197390m	10.86	PPBV	
15) PENTANE	6.365	42	9547	0.59	PPBV #	88
38) BENZENE	10.879	78	64267	0.70	PPBV	97
49) TOLUENE	14.967	92	58476	0.89	PPBV	99
78) 4-ISOPROPYLTOLUENE	24.731	119	67896	0.47	PPBV	98

(#) = qualifier out of range (m) = manual integration (+) = signals summed

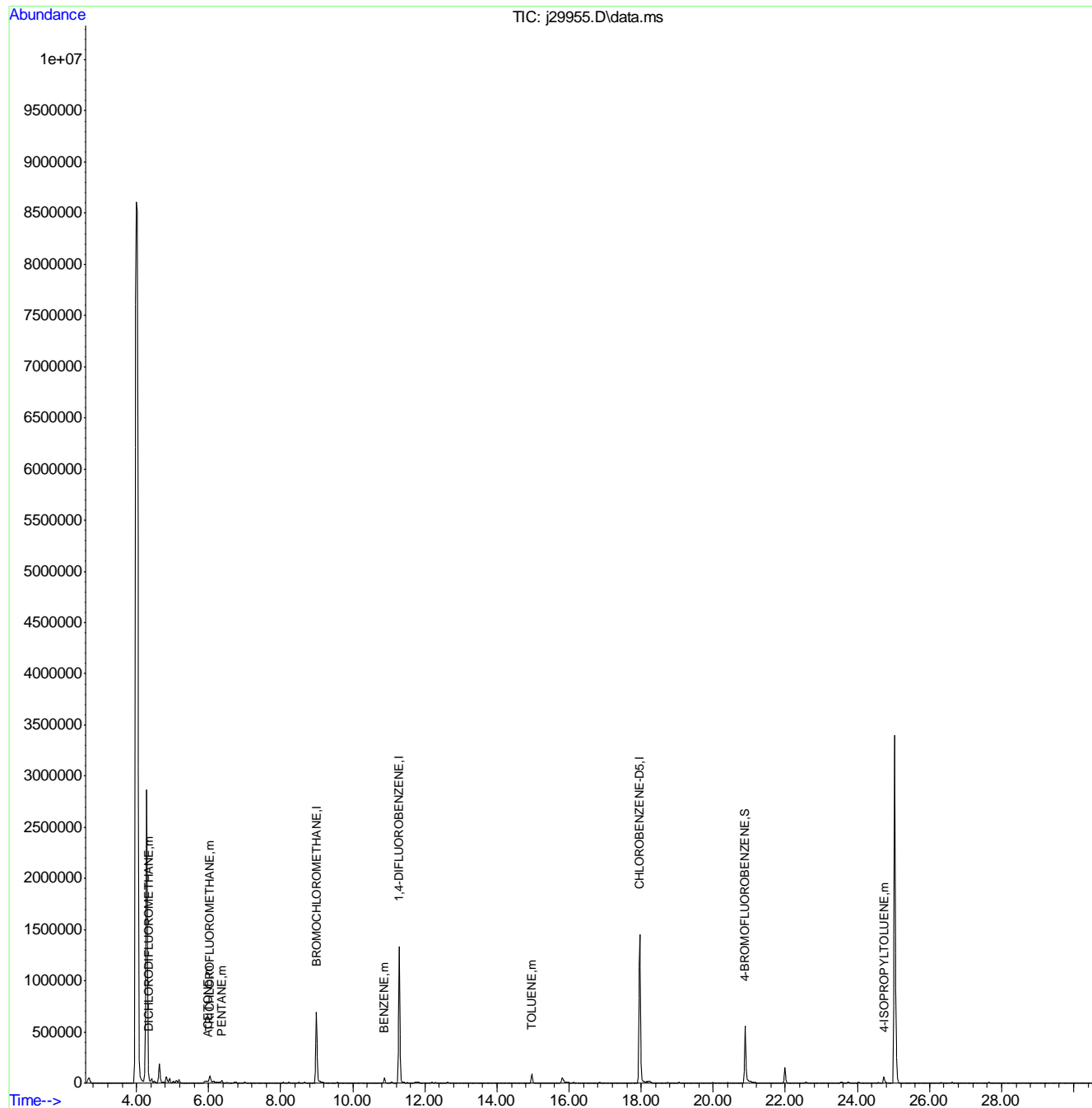
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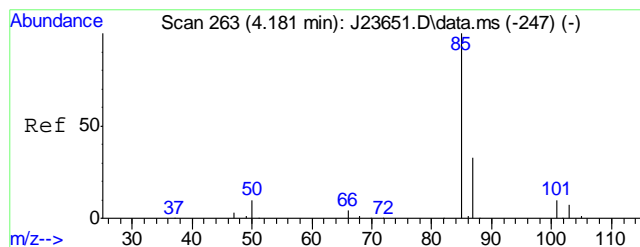
7

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\J150209\
Data File : j29955.D
Acq On : 10 Feb 2015 2:27 pm
Operator : AkinA
Sample : MC36556-4dup(M160)
Misc : ms33838,msj1520,,,,,1
ALS Vial : 2 Sample Multiplier: 1

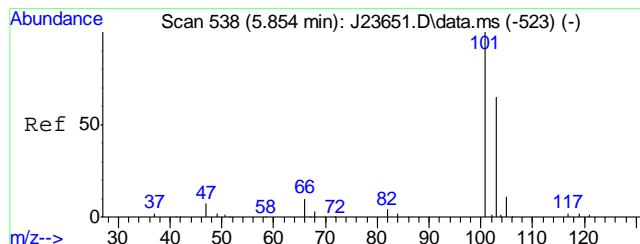
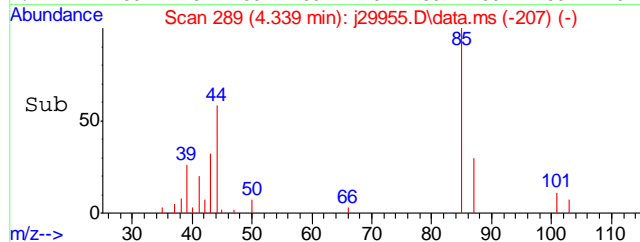
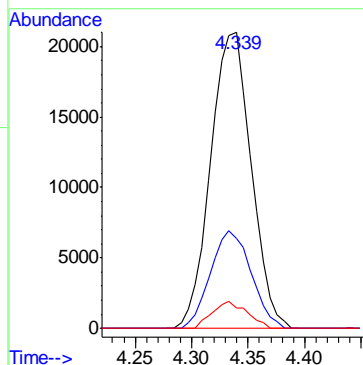
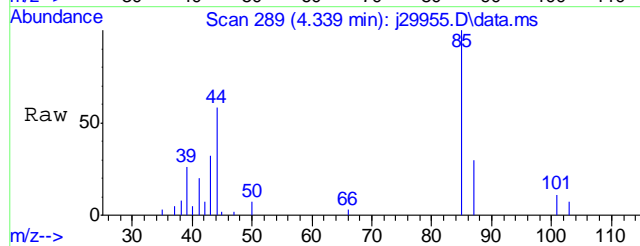
Quant Time: Feb 10 16:22:04 2015
Quant Method : C:\msdchem\1\methods\J150122T.M
Quant Title : T015 by GCMS w/DB-1 60 m X .25 mm ID 1.0 um
QLast Update : Fri Jan 23 13:48:53 2015
Response via : Initial Calibration





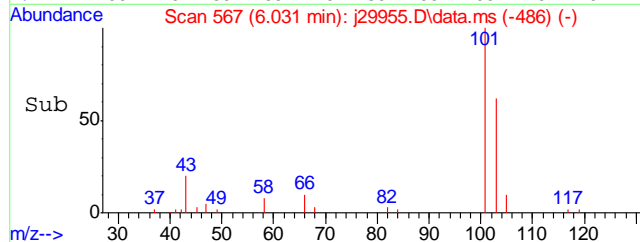
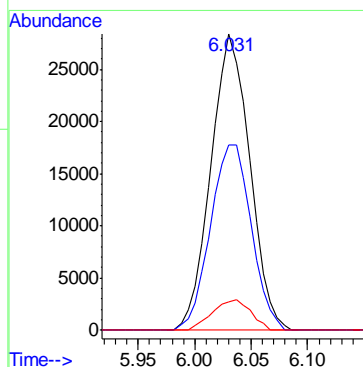
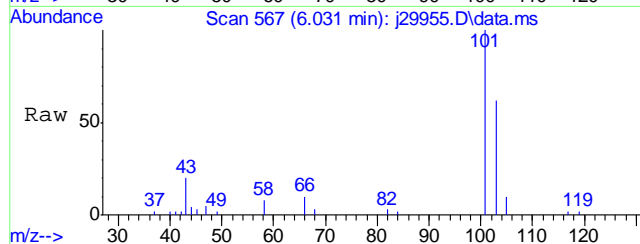
#2
 DICHLORODIFLUOROMETHANE
 Concen: 0.59 PPBV
 RT: 4.339 min Scan# 289
 Delta R.T. 0.000 min
 Lab File: j29955.D
 Acq: 10 Feb 2015 2:27 pm

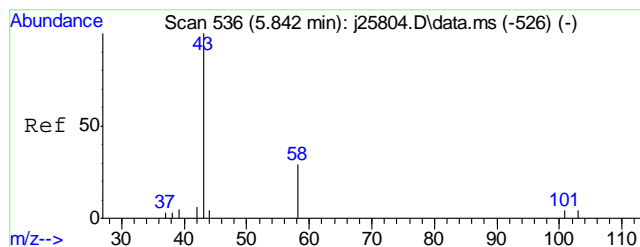
Tgt Ion	85	87	50	Resp	52260
Ratio	100	33.1	7.8	Lower	Upper
		12.7	0.0		
		52.7	30.0		



#11
 TRICHLOROFLUOROMETHANE
 Concen: 0.78 PPBV
 RT: 6.031 min Scan# 567
 Delta R.T. -0.006 min
 Lab File: j29955.D
 Acq: 10 Feb 2015 2:27 pm

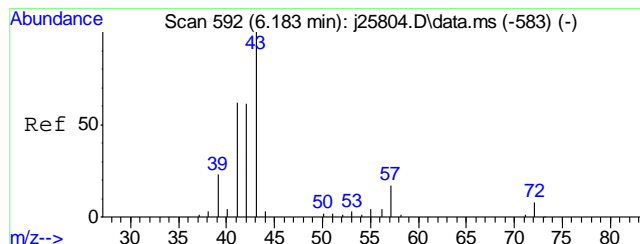
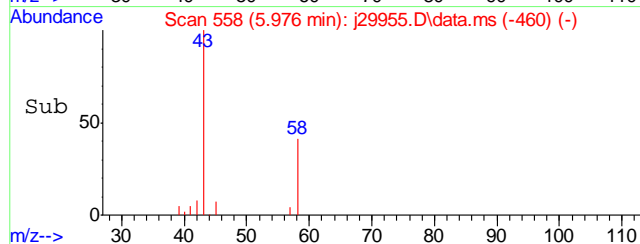
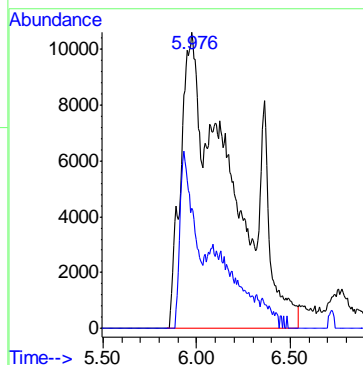
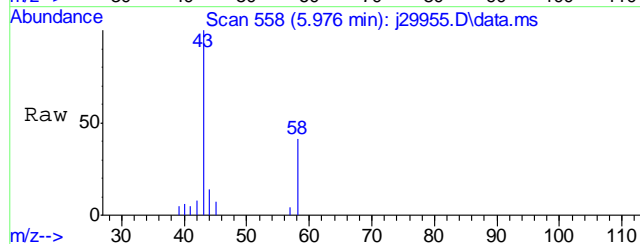
Tgt Ion	101	103	105	Resp	67716
Ratio	100	65.8	10.0	Lower	Upper
		45.1	0.0		
		85.1	30.5		





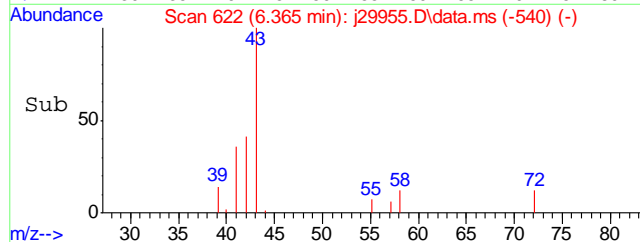
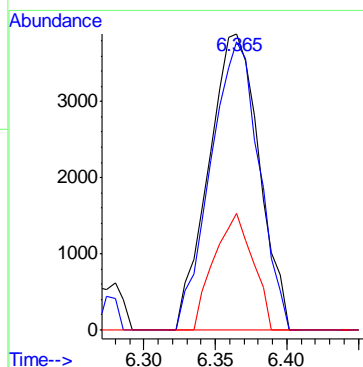
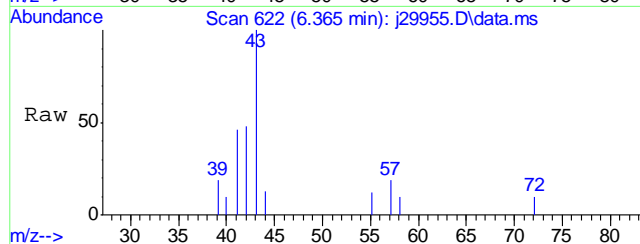
#13
 ACETONE
 Concen: 10.86 PPBV m
 RT: 5.976 min Scan# 558
 Delta R.T. 0.097 min
 Lab File: j29955.D
 Acq: 10 Feb 2015 2:27 pm

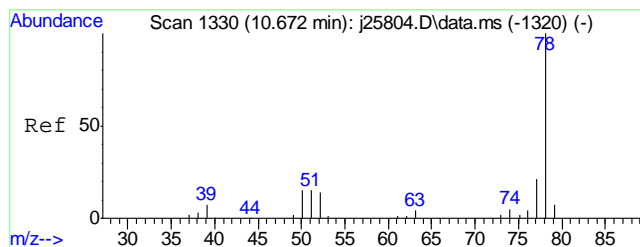
Tgt Ion: 43 Resp: 197390
 Ion Ratio Lower Upper
 43 100
 58 0.0 10.3 50.3#



#15
 PENTANE
 Concen: 0.59 PPBV
 RT: 6.365 min Scan# 622
 Delta R.T. 0.000 min
 Lab File: j29955.D
 Acq: 10 Feb 2015 2:27 pm

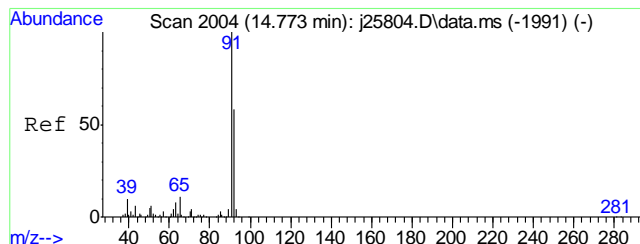
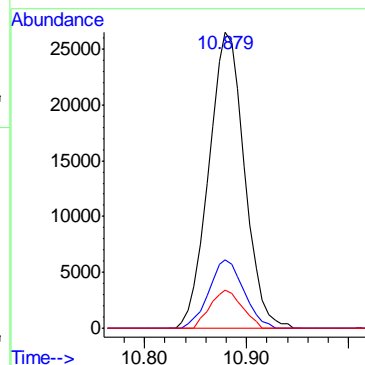
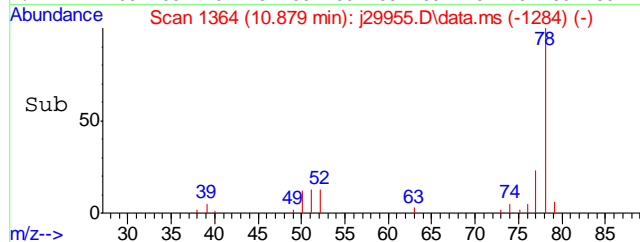
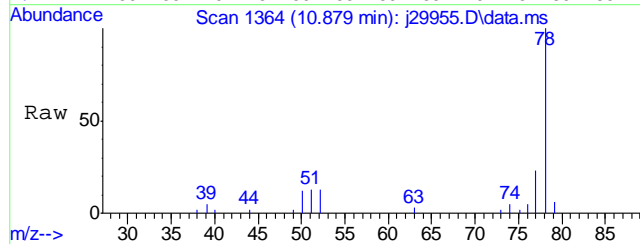
Tgt Ion: 42 Resp: 9547
 Ion Ratio Lower Upper
 42 100
 41 93.5 73.8 113.8
 57 0.0 7.2 47.2#





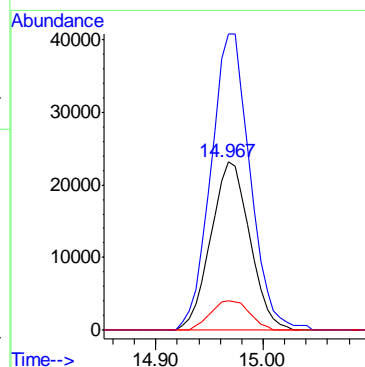
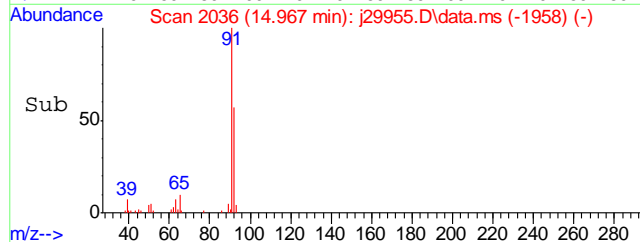
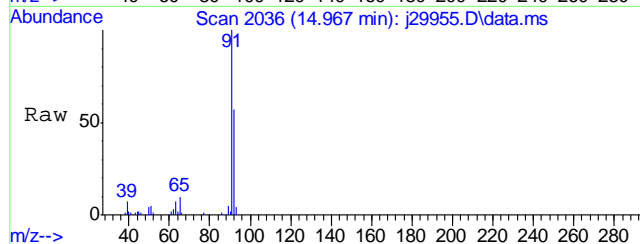
#38
BENZENE
Concen: 0.70 PPBV
RT: 10.879 min Scan# 1364
Delta R.T. -0.012 min
Lab File: j29955.D
Acq: 10 Feb 2015 2:27 pm

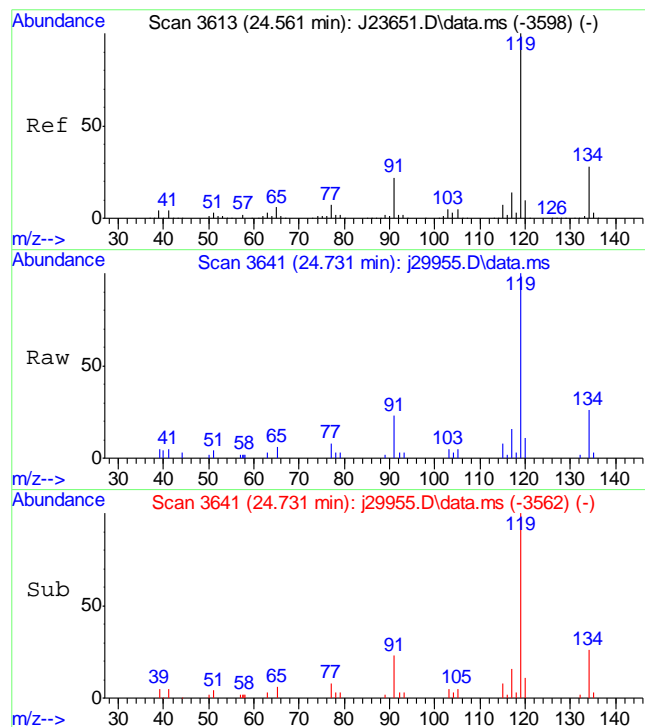
Tgt Ion:	78	Resp:	64267
Ion Ratio	Lower	Upper	
78	100		
77	22.8	3.2	43.2
52	11.5	0.0	33.8



#49
TOLUENE
Concen: 0.89 PPBV
RT: 14.967 min Scan# 2036
Delta R.T. -0.025 min
Lab File: j29955.D
Acq: 10 Feb 2015 2:27 pm

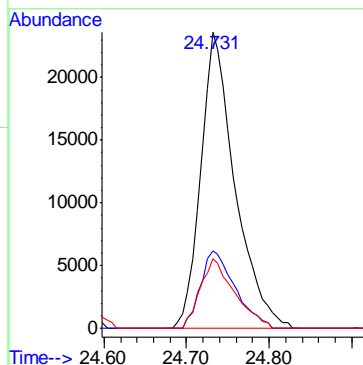
Tgt Ion:	92	Resp:	58476
Ion Ratio	Lower	Upper	
92	100		
91	176.7	155.8	195.8
65	17.5	0.0	39.3





#78
4-ISOPROPYLTOLUENE
Concen: 0.47 PPBV
RT: 24.731 min Scan# 3641
Delta R.T. -0.019 min
Lab File: j29955.D
Acq: 10 Feb 2015 2:27 pm

Tgt Ion:	119	Resp:	67896
Ion Ratio	Lower	Upper	
119	100		
134	26.6	7.6	47.6
91	23.5	2.7	42.7



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\Q150210\
Data File : Q29653.D
Acq On : 11 Feb 2015 5:54 pm
Operator : akina
Sample : MC36556-2adup(m275)
Misc : ms33846,msq1286,,,,,1
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Feb 12 08:51:39 2015
Quant Method : C:\msdchem\1\METHODS\Q150210FULLSIM.M
Quant Title : T015 by GCMS w/DB-1 60 m X .25 mm ID 1.0 um
QLast Update : Wed Feb 11 09:56:19 2015
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)

Internal Standards						
1) BROMOCHLOROMETHANE	9.216	128	1191194	10.00	PPBV	# 0.00
37) 1,4-DIFLUOROBENZENE	11.882	114	5618321	10.00	PPBV	0.00
53) CHLOROBENZENE-D5	18.931	82	1805324	10.00	PPBV	# 0.00
System Monitoring Compounds						
66) 4-BROMOFLUOROBENZENE	21.454	95	745378	5.04	PPBV	0.00
Spiked Amount	5.000	Range	50 - 129	Recovery	=	100.80%
Target Compounds						
34) 1,1,1-TRICHLOROETHANE	10.721	97	5149	0.01	PPBV	Qvalue 96
40) TRICHLOROETHYLENE	12.916	95	6674	0.02	PPBV	# 70
55) TETRACHLOROETHYLENE	17.819	164	7980	0.02	PPBV	# 1

(#) = qualifier out of range (m) = manual integration (+) = signals summed

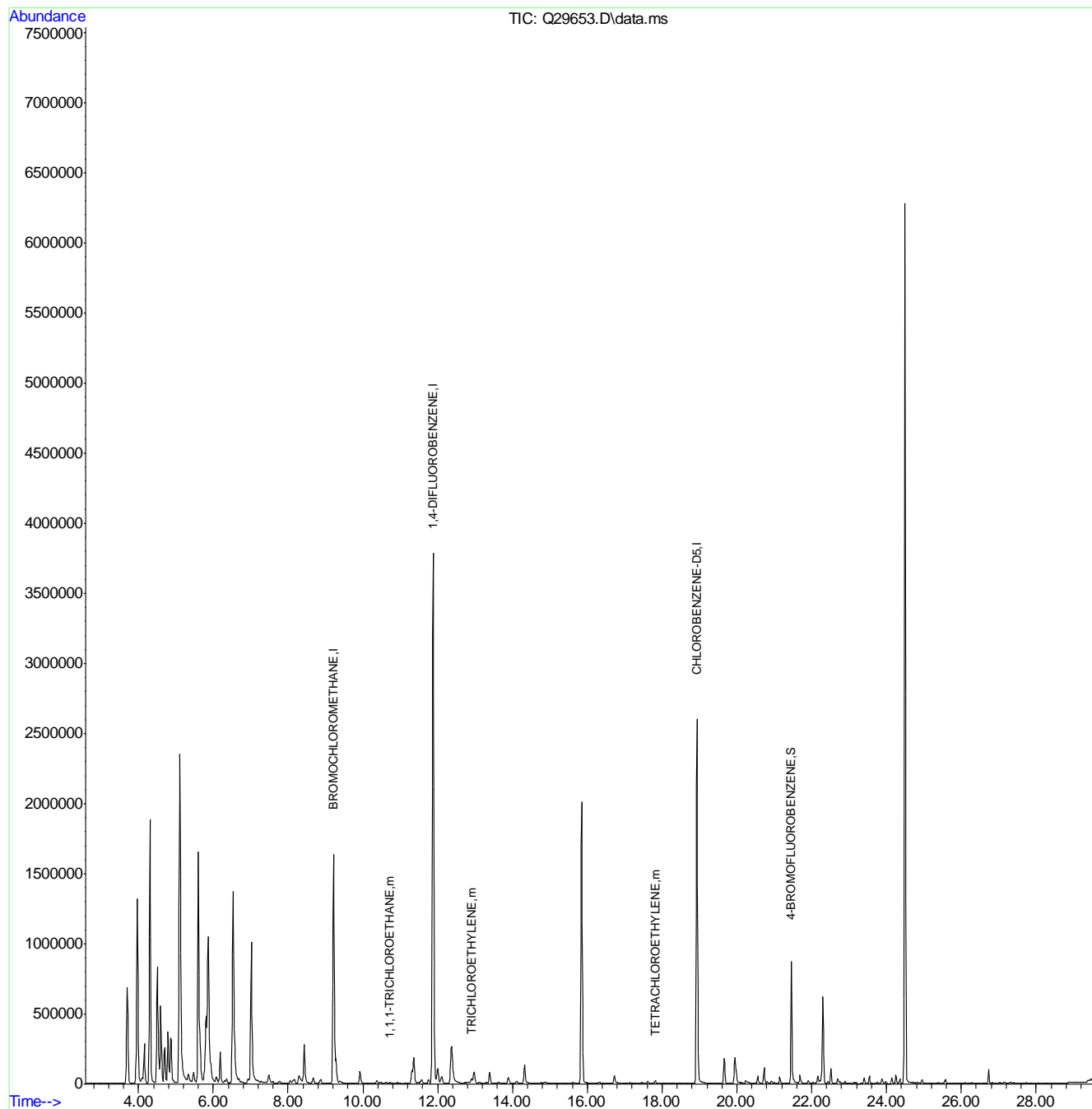
7.4.2

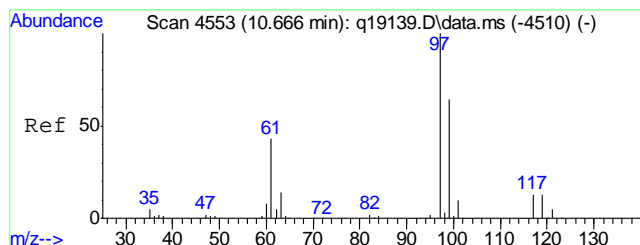
7

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\Q150210\
Data File : Q29653.D
Acq On : 11 Feb 2015 5:54 pm
Operator : akina
Sample : MC36556-2adup(m275)
Misc : ms33846,msq1286,,,,,1
ALS Vial : 4 Sample Multiplier: 1

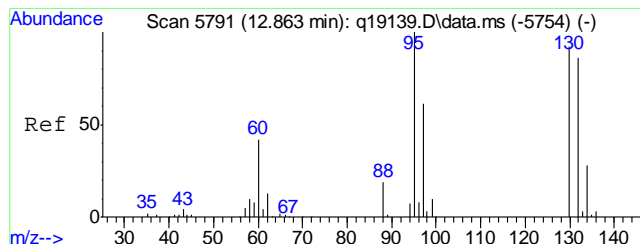
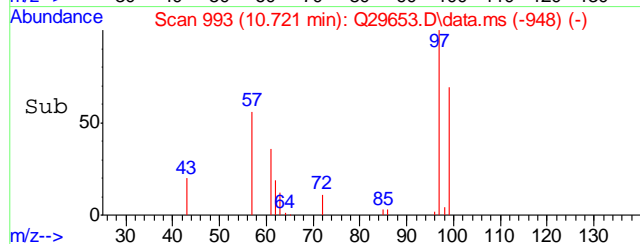
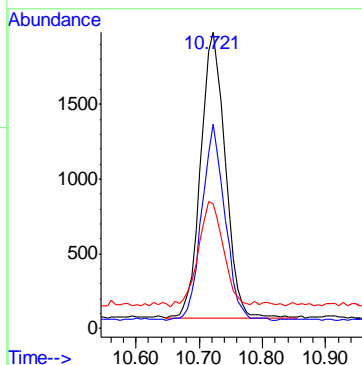
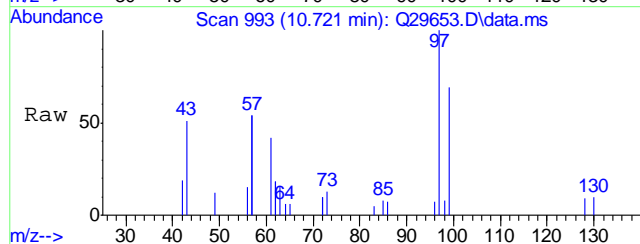
Quant Time: Feb 12 08:51:39 2015
Quant Method : C:\msdchem\1\METHODS\Q150210FULLSIM.M
Quant Title : T015 by GCMS w/DB-1 60 m X .25 mm ID 1.0 um
QLast Update : Wed Feb 11 09:56:19 2015
Response via : Initial Calibration





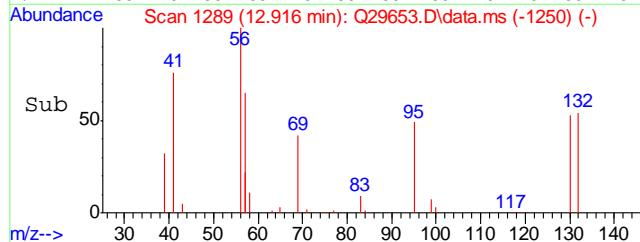
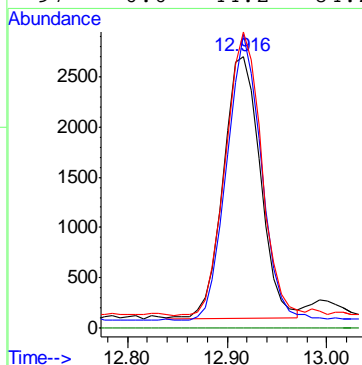
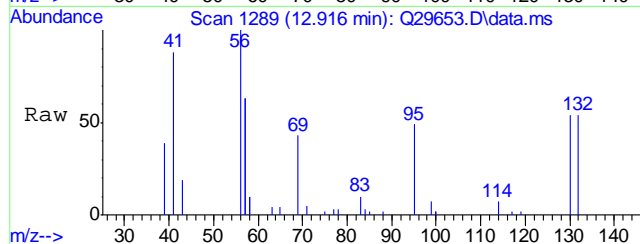
#34
1,1,1-TRICHLOROETHANE
Concen: 0.01 PPBV
RT: 10.721 min Scan# 993
Delta R.T. 0.000 min
Lab File: Q29653.D
Acq: 11 Feb 2015 5:54 pm

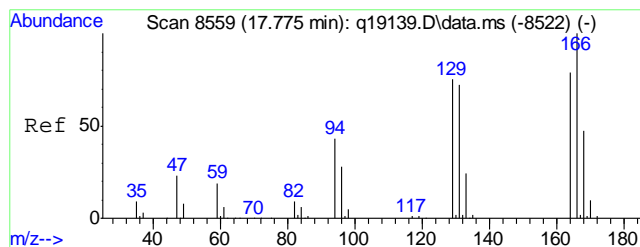
Tgt Ion	97	Resp	5149
Ion Ratio	100		
99	64.9	44.2	84.2
61	38.3	23.5	63.5



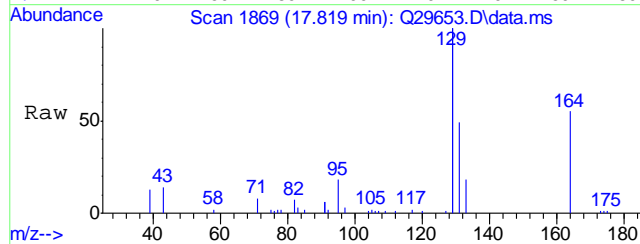
#40
TRICHLOROETHYLENE
Concen: 0.02 PPBV
RT: 12.916 min Scan# 1289
Delta R.T. 0.000 min
Lab File: Q29653.D
Acq: 11 Feb 2015 5:54 pm

Tgt Ion	95	Resp	6674
Ion Ratio <td>100</td> <td></td> <td></td>	100		
132	103.5	71.3	111.3
130	105.3	75.1	115.1
97	0.0	44.2	84.2#

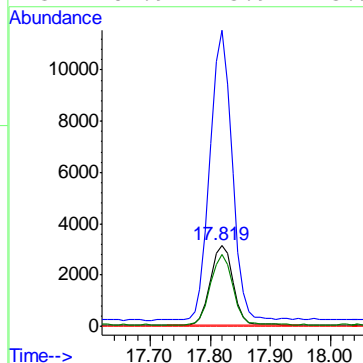
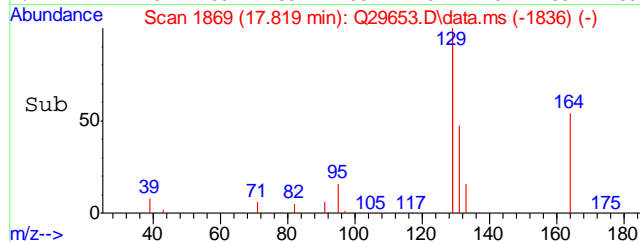




#55
TETRACHLOROETHYLENE
Concen: 0.02 PPBV
RT: 17.819 min Scan# 1869
Delta R.T. 0.000 min
Lab File: Q29653.D
Acq: 11 Feb 2015 5:54 pm



Tgt Ion	Ratio	Lower	Upper
164	100		
129	361.1	78.3	118.3#
168	0.0	40.4	80.4#
131	87.9	73.9	113.9



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\J150125\
Data File : j29743.D
Acq On : 26 Jan 2015 4:24 pm
Operator : akina
Sample : scc(m210)
Misc : ms33766,msj1511,,,,,1
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Jan 28 08:57:45 2015
Quant Method : C:\msdchem\1\methods\J150122T.M
Quant Title : T015 by GCMS w/DB-1 60 m X .25 mm ID 1.0 um
QLast Update : Fri Jan 23 13:48:53 2015
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) BROMOCHLOROMETHANE	8.993	128	449964	10.00	PPBV	0.00
37) 1,4-DIFLUOROBENZENE	11.293	114	2045292	10.00	PPBV	-0.02
53) CHLOROBENZENE-D5	17.966	82	1028017	10.00	PPBV	#-0.02

System Monitoring Compounds

66) 4-BROMOFLUOROBENZENE	20.887	95	597474	5.18	PPBV	-0.03
Spiked Amount	5.000	Range	50 - 129	Recovery	=	103.60%

Target Compounds	Qvalue
------------------	--------

(#) = qualifier out of range (m) = manual integration (+) = signals summed

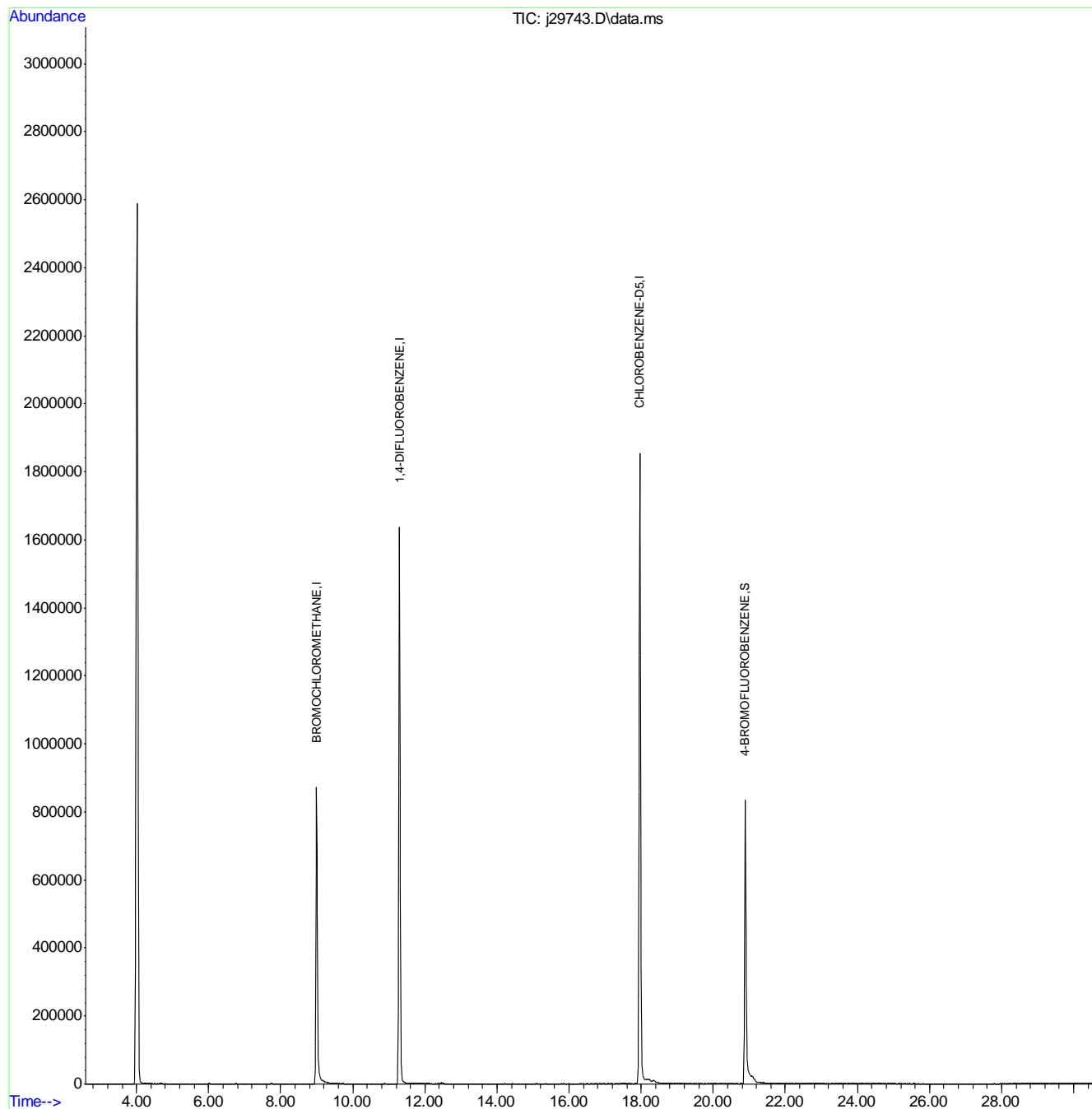
7.5.1

7

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\J150125\
Data File : j29743.D
Acq On : 26 Jan 2015 4:24 pm
Operator : akina
Sample : scc(m210)
Misc : ms33766,msj1511,,,,,1
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Jan 28 08:57:45 2015
Quant Method : C:\msdchem\1\methods\J150122T.M
Quant Title : T015 by GCMS w/DB-1 60 m X .25 mm ID 1.0 um
QLast Update : Fri Jan 23 13:48:53 2015
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\J150210\
Data File : j29961a.D
Acq On : 10 Feb 2015 8:58 pm
Operator : AkinA
Sample : scc(ml14)
Misc : ms33838,msj1521,,,,,1
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Feb 11 07:38:05 2015
Quant Method : C:\msdchem\1\methods\J150122T.M
Quant Title : T015 by GCMS w/DB-1 60 m X .25 mm ID 1.0 um
QLast Update : Fri Jan 23 13:48:53 2015
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)

Internal Standards						
1) BROMOCHLOROMETHANE	8.993	128	384183	10.00	PPBV	# 0.00
37) 1,4-DIFLUOROBENZENE	11.293	114	1840224	10.00	PPBV	-0.02
53) CHLOROBENZENE-D5	17.967	82	883223	10.00	PPBV	#-0.02

System Monitoring Compounds

66) 4-BROMOFLUOROBENZENE	20.887	95	506751	5.11	PPBV	-0.03
Spiked Amount	5.000	Range	50 - 129	Recovery	=	102.20%

Target Compounds	Qvalue

(#) = qualifier out of range (m) = manual integration (+) = signals summed

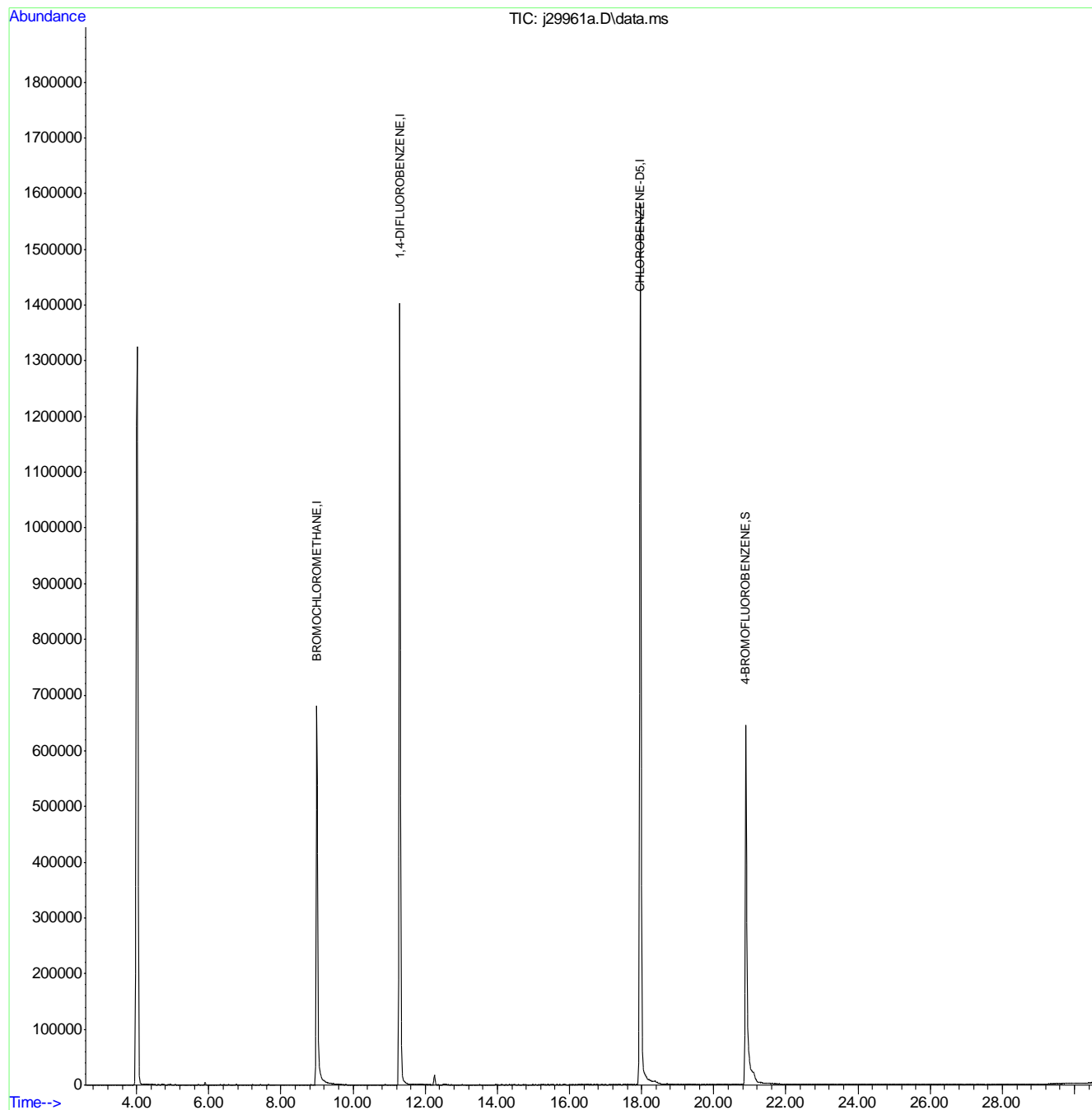
7.5.2

7

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\J150210\
Data File : j29961a.D
Acq On : 10 Feb 2015 8:58 pm
Operator : AkinA
Sample : scc(ml14)
Misc : ms33838,msj1521,,,,,1
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Feb 11 07:38:05 2015
Quant Method : C:\msdchem\1\methods\J150122T.M
Quant Title : T015 by GCMS w/DB-1 60 m X .25 mm ID 1.0 um
QLast Update : Fri Jan 23 13:48:53 2015
Response via : Initial Calibration

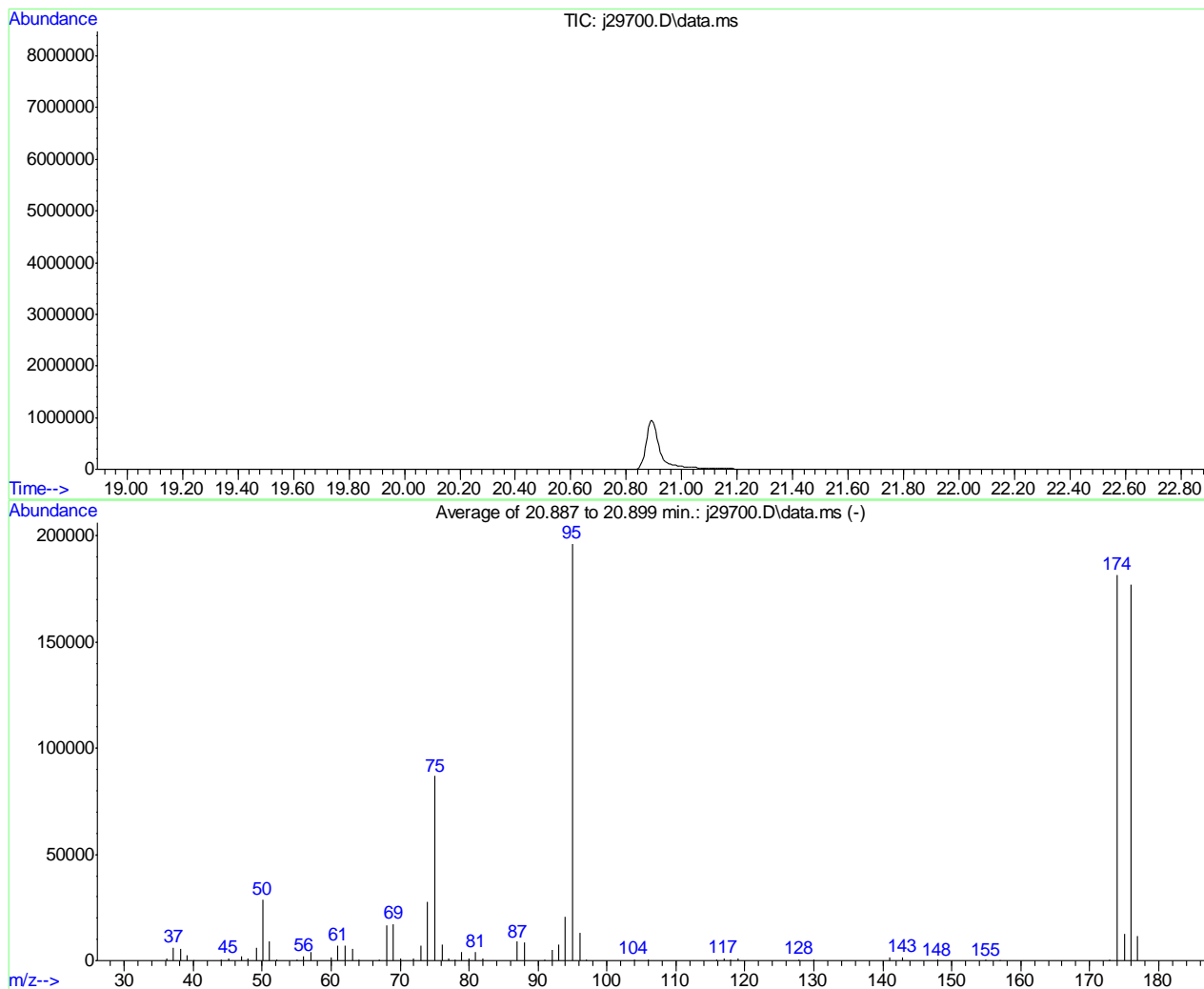


BFB

Data File : C:\msdchem\1\data\J150122\j29700.D
Acq On : 22 Jan 2015 7:53 pm
Sample : bfb
Misc : ms33716,msj1510,,,,,1
MS Integration Params: RTEINT.P

Vial: 4
Operator: akina
Inst : MSJ
Multiplr: 1.00

Method : C:\msdchem\1\methods\J150122T.M (RTE Integrator)
Title : T015 by GCMS w/DB-1 60 m X .25 mm ID 1.0 um



Spectrum Information: Average of 20.887 to 20.899 min.

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	8	40	14.6	28733	PASS
75	95	30	66	44.2	86901	PASS
95	95	100	100	100.0	196416	PASS
96	95	5	9	6.7	13223	PASS
173	174	0.00	2	0.2	346	PASS
174	95	50	120	92.5	181781	PASS
175	174	4	9	7.0	12639	PASS
176	174	93	101	97.3	176896	PASS
177	176	5	9	6.5	11556	PASS

j29700.D J150122T.M Mon Jan 26 15:39:58 2015

Average of 20.887 to 20.899 min.: j29700.D\data.ms

bfb

Modified:subtracted

m/z	abund.	m/z	abund.	m/z	abund.	m/z	abund.
36.10	1173	51.10	8978	68.00	16792	80.00	1144
37.10	6302	52.05	470	69.00	17358	80.95	4268
38.10	5768	55.05	300	70.05	1254	81.95	985
39.10	2343	56.05	2270	72.00	820	87.00	8883
40.00	131	57.05	4023	73.05	7177	88.00	8695
44.05	618	60.05	1344	74.00	27824	90.95	591
45.10	1217	61.00	7274	75.05	86901	92.00	4817
47.05	2117	62.05	7122	76.05	7351	93.00	7336
48.00	818	63.05	5329	77.00	1143	94.00	20765
49.10	5830	64.05	542	78.00	773	95.00	196416
50.10	28733	67.05	301	78.95	4185	96.05	13223

Average of 20.887 to 20.899 min.: j29700.D\data.ms

bfb

Modified:subtracted

m/z	abund.	m/z	abund.	m/z	abund.	m/z	abund.
97.05	291	147.90	428				
103.95	721	154.95	464				
105.95	721	156.90	140				
115.95	606	172.90	346				
117.00	1268	174.00	181781				
117.90	688	175.00	12639				
118.95	905	176.00	176896				
127.90	729	177.00	11556				
129.95	715						
140.95	1617						
142.90	1684						

7.6.1

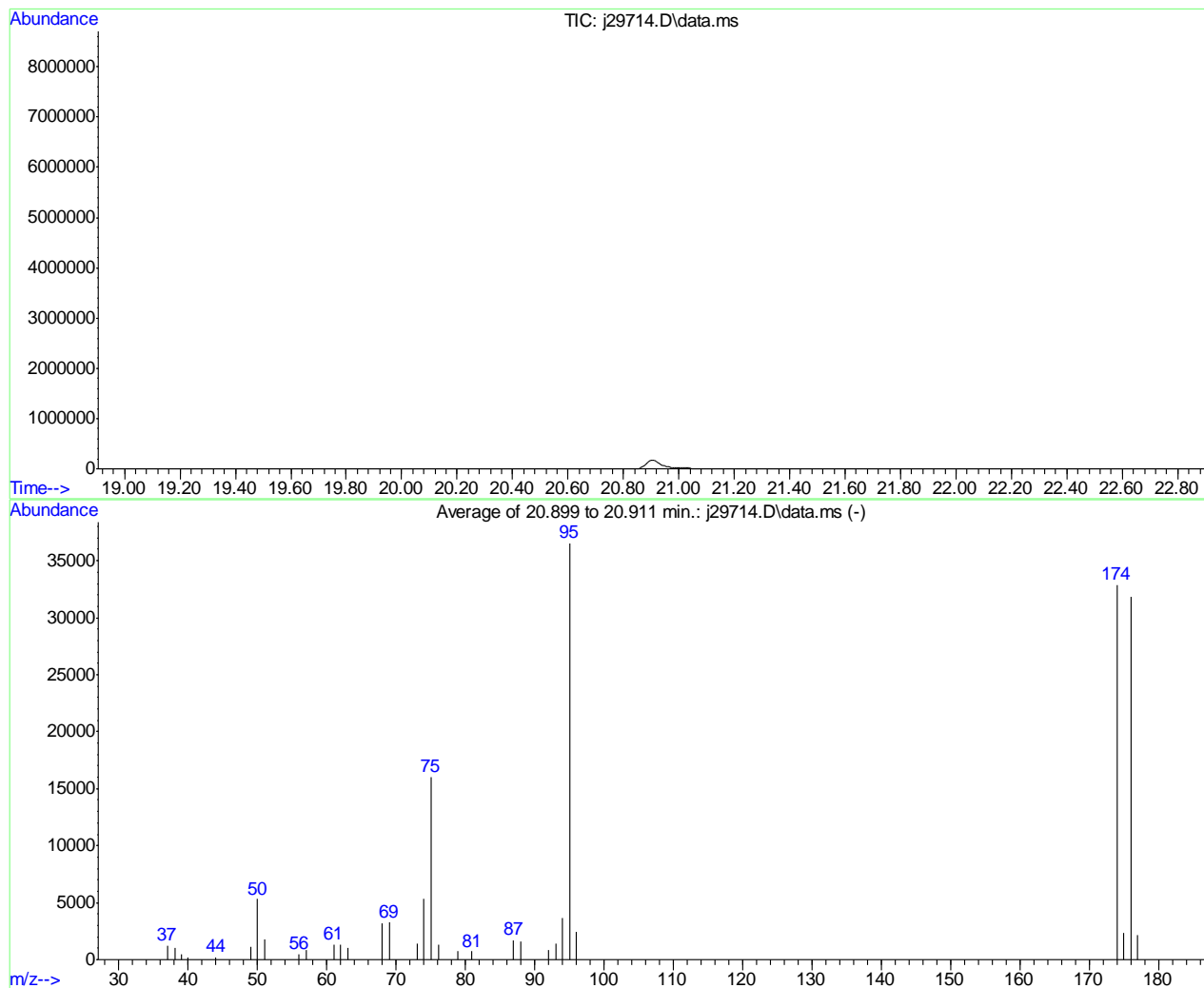
7

BFB

Data File : C:\msdchem\1\data\J150125\j29714.D
 Acq On : 25 Jan 2015 4:52 pm
 Sample : bfb
 Misc : ms33716,msj1511,,,,,1
 MS Integration Params: RTEINT.P

Vial: 1
 Operator: akina
 Inst : MSJ
 Multiplr: 1.00

Method : C:\msdchem\1\methods\J150122T.M (RTE Integrator)
 Title : T015 by GCMS w/DB-1 60 m X .25 mm ID 1.0 um



Spectrum Information: Average of 20.899 to 20.911 min.

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	8	40	14.6	5327	PASS
75	95	30	66	43.9	16055	PASS
95	95	100	100	100.0	36552	PASS
96	95	5	9	6.7	2463	PASS
173	174	0.00	2	0.0	0	PASS
174	95	50	120	90.0	32891	PASS
175	174	4	9	7.2	2384	PASS
176	174	93	101	96.8	31837	PASS
177	176	5	9	6.8	2157	PASS

j29714.D J150122T.M Wed Jan 28 11:40:48 2015

Average of 20.899 to 20.911 min.: j29714.D\data.ms

bfb

Modified:subtracted

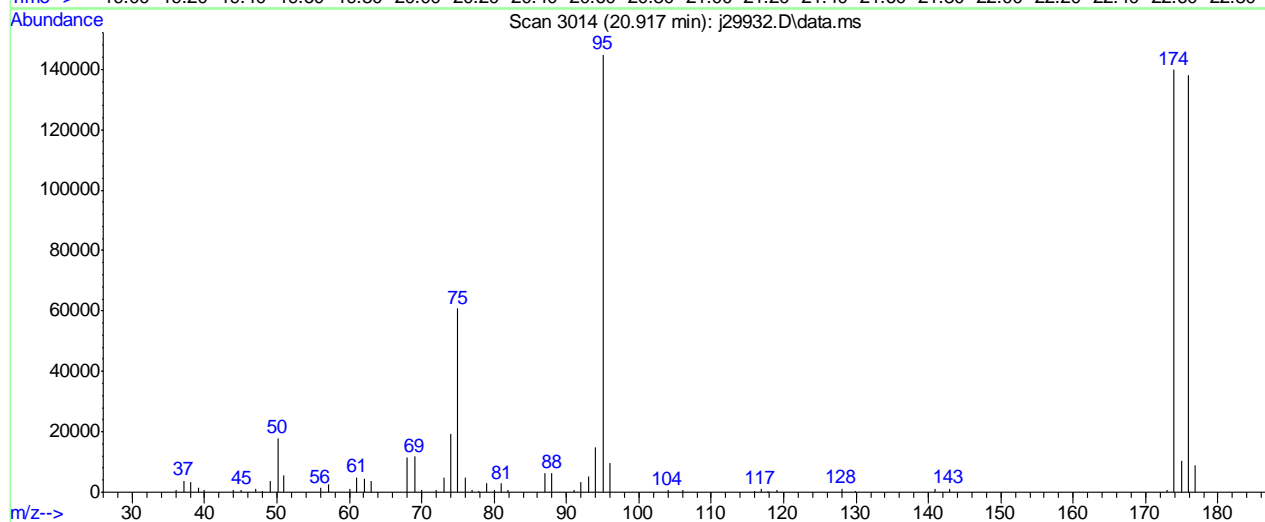
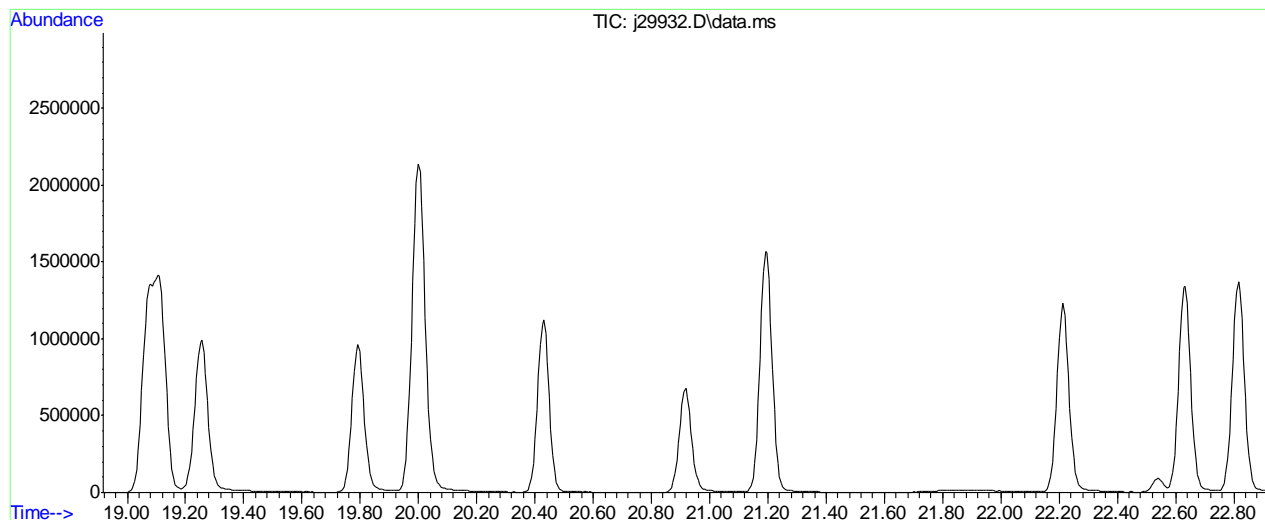
m/z	abund.	m/z	abund.	m/z	abund.	m/z	abund.
37.05	1261	62.05	1289	88.00	1598		
38.10	1039	63.05	1036	92.00	869		
39.10	440	68.00	3144	93.00	1453		
40.00	185	69.05	3235	94.05	3661		
44.00	227	73.00	1445	95.00	36552		
49.05	1116	74.05	5344	96.05	2463		
50.05	5327	75.05	16055	174.00	32891		
51.05	1744	76.10	1361	174.95	2384		
56.05	500	78.95	787	175.95	31837		
57.05	821	80.95	742	176.95	2157		
61.05	1339	86.95	1687				

BFB

Data File : C:\msdchem\1\data\J150209\j29932.D
 Acq On : 9 Feb 2015 6:26 pm
 Sample : bfb
 Misc : ms33838,msj1520,,,,,1
 MS Integration Params: RTEINT.P

Vial: 1
 Operator: AkinA
 Inst : MSJ
 Multiplr: 1.00

Method : C:\msdchem\1\methods\J150122T.M (RTE Integrator)
 Title : T015 by GCMS w/DB-1 60 m X .25 mm ID 1.0 um



Spectrum Information: Scan 3014

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	8	40	12.4	17976	PASS
75	95	30	66	42.0	60816	PASS
95	95	100	100	100.0	144896	PASS
96	95	5	9	6.7	9721	PASS
173	174	0.00	2	0.6	780	PASS
174	95	50	120	96.5	139840	PASS
175	174	4	9	7.5	10539	PASS
176	174	93	101	98.6	137920	PASS
177	176	5	9	6.6	9063	PASS

j29932.D J150122T.M Tue Feb 10 17:03:29 2015

Scan 3014 (20.917 min): j29932.D\data.ms
bfb

m/z	abund.	m/z	abund.	m/z	abund.	m/z	abund.
36.00	801	51.00	5744	73.00	4772	88.00	6477
37.10	3712	56.00	1336	74.00	19424	91.00	620
38.10	3330	57.10	2704	75.00	60816	92.00	3280
39.10	1512	60.00	976	76.00	4968	93.00	5379
40.00	906	61.00	4890	77.00	933	94.00	14835
44.00	803	62.10	4600	77.90	558	95.00	144896
45.10	851	63.00	3696	78.90	2808	96.00	9721
47.10	1193	68.00	11527	80.00	884	104.00	653
48.00	553	69.00	11783	81.00	2901	106.00	585
49.00	3785	70.00	864	81.90	671	115.90	430
50.10	17976	72.00	636	87.00	6396	116.90	960

Scan 3014 (20.917 min): j29932.D\data.ms
bfb

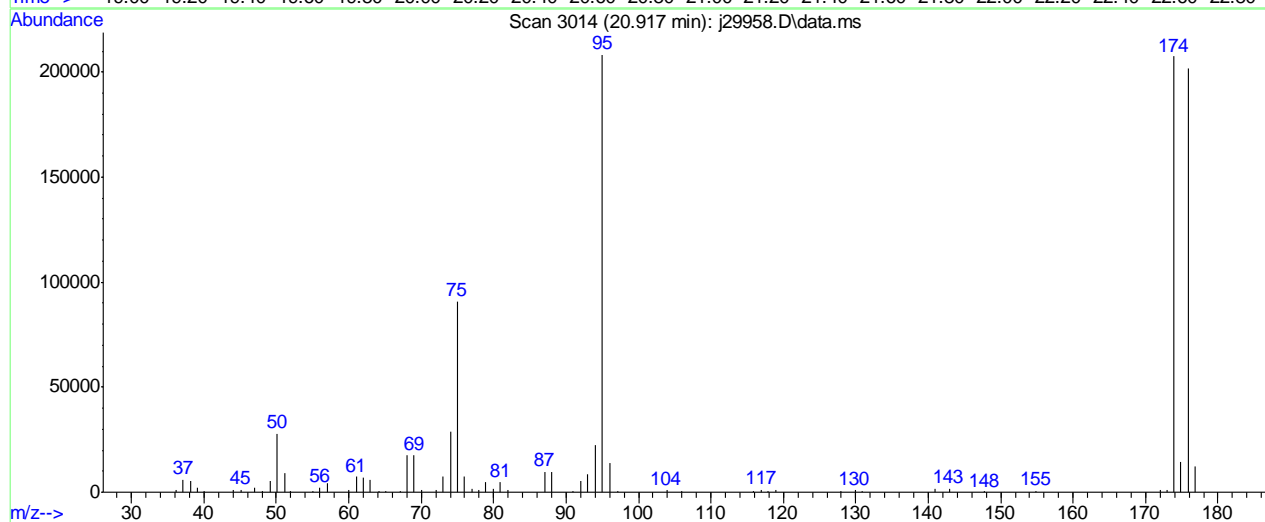
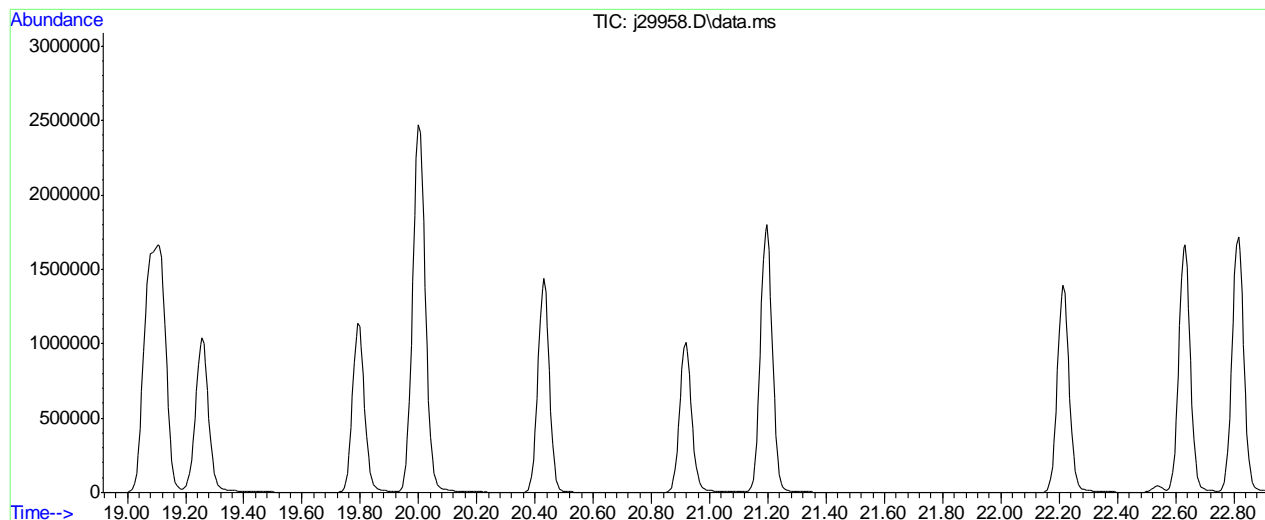
m/z	abund.	m/z	abund.	m/z	abund.	m/z	abund.
117.90	513						
119.00	695						
128.00	1134						
129.90	462						
140.90	1078						
142.90	1253						
172.90	780						
173.90	139840						
174.90	10539						
175.90	137920						
176.90	9063						

BFB

Data File : C:\msdchem\1\data\J150210\j29958.D
 Acq On : 10 Feb 2015 6:01 pm
 Sample : bfb
 Misc : ms33838,msj1521,,,,,1
 MS Integration Params: RTEINT.P

Vial: 1
 Operator: AkinA
 Inst : MSJ
 Multiplr: 1.00

Method : C:\msdchem\1\methods\J150122T.M (RTE Integrator)
 Title : T015 by GCMS w/DB-1 60 m X .25 mm ID 1.0 um



Spectrum Information: Scan 3014

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	8	40	13.4	27824	PASS
75	95	30	66	43.7	90984	PASS
95	95	100	100	100.0	208384	PASS
96	95	5	9	6.6	13809	PASS
173	174	0.00	2	0.6	1171	PASS
174	95	50	120	99.6	207488	PASS
175	174	4	9	7.1	14649	PASS
176	174	93	101	97.2	201600	PASS
177	176	5	9	6.2	12498	PASS

j29958.D J150122T.M Wed Feb 11 15:56:48 2015

Scan 3014 (20.917 min): j29958.D\data.ms
bfb

m/z	abund.	m/z	abund.	m/z	abund.	m/z	abund.
36.10	1162	51.10	9283	67.10	456	78.90	4780
37.10	5912	52.00	460	68.00	17528	80.00	1506
38.10	5454	55.10	470	69.00	17832	80.90	4838
39.10	2375	56.00	2269	70.00	1286	81.90	1060
40.00	790	57.00	4226	72.00	983	87.00	9863
44.10	1135	60.00	1302	73.00	7566	88.00	9426
45.10	1248	61.00	7446	74.00	28688	91.00	796
47.00	1981	62.00	7175	75.00	90984	92.00	5340
48.10	781	63.00	5730	76.00	7561	93.00	8327
49.10	5514	64.10	506	77.00	1487	94.00	22384
50.10	27824	65.10	554	77.90	874	95.00	208384

Scan 3014 (20.917 min): j29958.D\data.ms
bfb

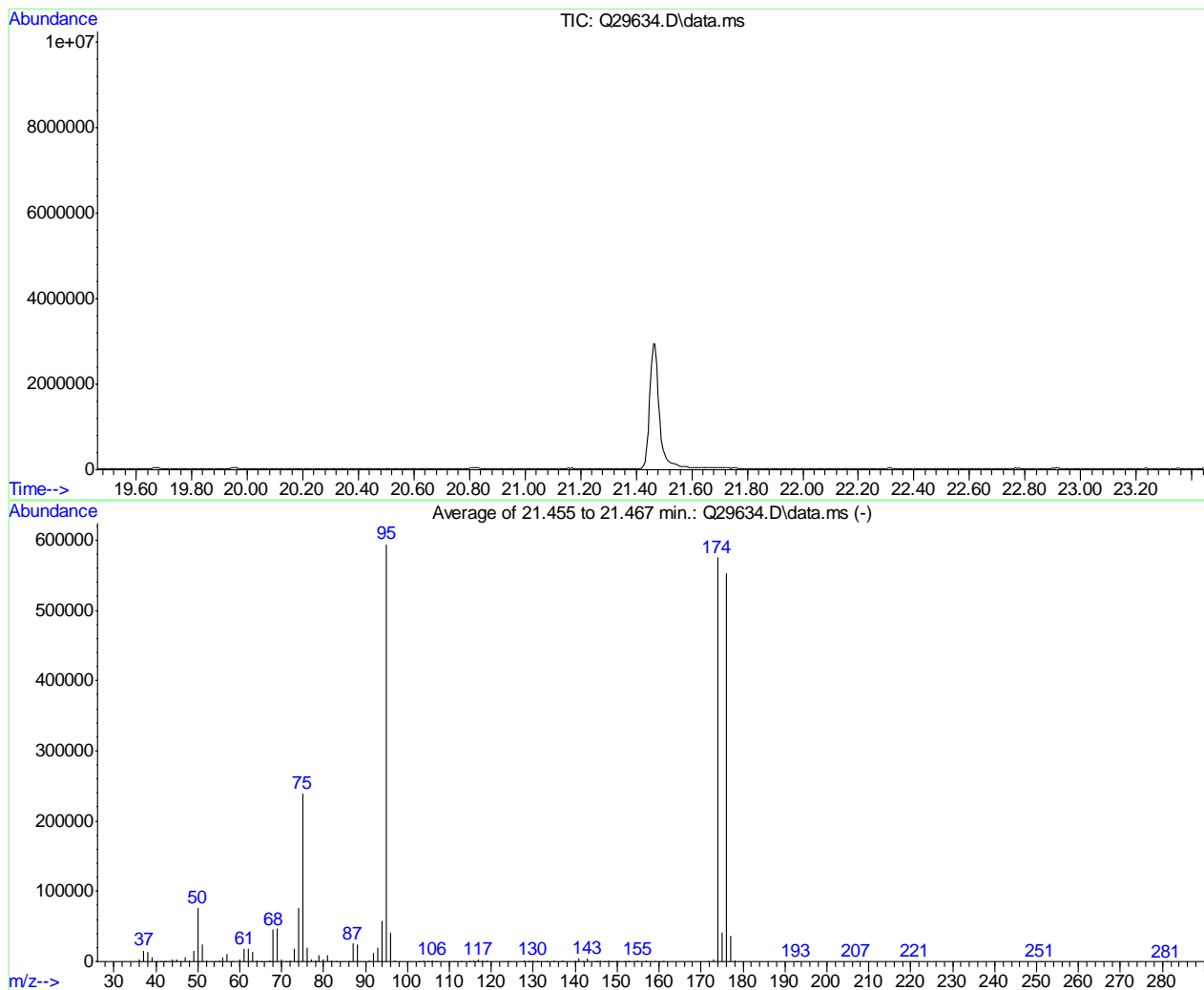
m/z	abund.	m/z	abund.	m/z	abund.	m/z	abund.
96.00	13809	140.90	1707				
97.10	449	142.90	1828				
103.90	825	147.80	469				
105.90	802	154.90	569				
115.90	676	172.00	993				
117.00	1291	173.00	1171				
117.90	694	173.90	207488				
118.90	1072	174.90	14649				
127.90	682	175.90	201600				
129.90	827	176.90	12498				
130.90	413						

BFB

Data File : C:\msdchem\1\DATA\Q150210\Q29634.D
Acq On : 10 Feb 2015 8:26 pm
Sample : bfb
Misc : ms33846,msql286,,,,,1
MS Integration Params: rteint.p

Vial: 1
Operator: akina
Inst : MSQ
Multiplr: 1.00

Method : C:\msdchem\1\MET...Q150210FULLSIM.M (RTE Integrator)
Title : T015 by GCMS w/DB-1 60 m X .25 mm ID 1.0 um



Spectrum Information: Average of 21.455 to 21.467 min.

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	8	40	12.9	76744	PASS
75	95	30	66	40.3	239266	PASS
95	95	100	100	100.0	594347	PASS
96	95	5	9	6.9	40957	PASS
173	174	0.00	2	0.6	3701	PASS
174	95	50	120	96.7	574741	PASS
175	174	4	9	7.1	41024	PASS
176	174	93	101	96.1	552363	PASS
177	176	5	9	6.7	36755	PASS

Average of 21.455 to 21.467 min.: Q29634.D\data.ms

blk

Modified:subtracted

m/z	abund.	m/z	abund.	m/z	abund.	m/z	abund.
36.10	2733	46.00	160	58.10	364	71.10	172
37.10	15419	47.05	5807	60.00	3834	72.00	2120
38.10	14426	48.00	1977	61.05	17946	73.05	19054
39.05	6339	49.05	15394	62.10	18467	73.95	75712
40.00	363	50.05	76744	63.05	13808	75.00	239266
41.10	78	51.05	24192	64.05	1318	76.05	20011
41.90	241	52.05	1362	65.10	365	77.05	3358
42.30	185	54.10	145	67.05	1287	78.00	2138
43.10	115	55.05	1367	68.00	45051	78.95	9436
44.00	2602	56.05	5874	69.00	46619	80.00	3011
45.05	3643	57.05	10052	70.05	3824	80.95	9701

Average of 21.455 to 21.467 min.: Q29634.D\data.ms

blk

Modified:subtracted

m/z	abund.	m/z	abund.	m/z	abund.	m/z	abund.
82.00	1883	97.00	1287	116.95	2565	134.95	957
82.90	355	102.90	197	117.90	1349	136.95	881
86.05	692	103.95	1696	118.90	2080	139.80	168
87.00	25731	104.90	783	123.90	328	140.00	146
88.00	24859	105.95	1893	127.95	1782	140.95	4056
90.95	1144	106.90	640	128.80	437	141.90	489
92.00	12610	109.90	177	129.00	302	142.95	4475
93.00	19659	110.90	179	129.95	2220	144.90	411
94.00	57496	112.90	304	130.80	190	145.10	218
95.00	594347	114.85	660	130.95	617	145.90	912
96.00	40957	115.95	1689	133.10	189	147.00	173

Average of 21.455 to 21.467 min.: Q29634.D\data.ms

blk

Modified:subtracted

m/z	abund.	m/z	abund.	m/z	abund.	m/z	abund.
147.90	1378	160.95	675	221.00	171		
148.85	581	171.80	164	250.90	172		
149.80	178	173.00	3701	281.05	2		
150.00	167	174.00	574741				
151.90	137	175.00	41024				
152.70	140	176.00	552363				
152.90	204	176.95	36755				
154.00	309	177.95	1064				
154.95	1568	192.80	143				
156.95	1274	207.05	208				
158.95	368	209.10	154				

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\J150122\
 Data File : j29702.D
 Acq On : 22 Jan 2015 9:30 pm
 Operator : akina
 Sample : ic1510-0.2(m434)
 Misc : ms33716,msj1510,,,,,1
 ALS Vial : 6 Sample Multiplier: 1

Quant Time: Jan 23 10:32:59 2015
 Quant Method : C:\msdchem\1\methods\J150122T.M
 Quant Title : T015 by GCMS w/DB-1 60 m X .25 mm ID 1.0 um
 QLast Update : Fri Jan 23 10:27:16 2015
 Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)

Internal Standards						
1) BROMOCHLOROMETHANE	8.993	128	495017	10.00	PPBV	0.00
37) 1,4-DIFLUOROBENZENE	11.293	114	2401175	10.00	PPBV	-0.02
53) CHLOROBENZENE-D5	17.966	82	1069797	10.00	PPBV	#-0.02

System Monitoring Compounds						
66) 4-BROMOFLUOROBENZENE	20.893	95	438458	3.53	PPBV	-0.02
Spiked Amount	5.000	Range	50 - 129	Recovery	=	70.60%

Target Compounds						Qvalue
2) DICHLORODIFLUOROMETHANE	4.333	85	28032	0.22	PPBV	# 92
3) PROPYLENE	4.260	41	3745	0.21	PPBV	# 13
4) FREON 114	4.601	85	24356	0.21	PPBV	# 98
5) CHLOROMETHANE	4.504	50	4372	0.18	PPBV	# 42
6) VINYL CHLORIDE	4.729	62	5935	0.17	PPBV	# 49
8) BROMOMETHANE	5.142	94	8069	0.18	PPBV	# 90
11) TRICHLOROFLUOROMETHANE	6.030	101	26487	0.21	PPBV	# 94
15) PENTANE	6.365	42	4500	0.19	PPBV	# 86
16) 1,1-DICHLOROETHYLENE	6.645	96	8370	0.18	PPBV	# 88
17) CARBON DISULFIDE	7.107	76	20314	0.20	PPBV	# 72
19) BROMOETHENE	5.647	106	7664	0.17	PPBV	# 93
20) METHYLENE CHLORIDE	6.754	84	7711	0.20	PPBV	# 89
21) 3-CHLOROPROPENE	6.876	39	3100	0.14	PPBV	# 73
22) FREON 113	7.004	151	18013	0.19	PPBV	# 95
23) TRANS-1,2-DICHLOROETHY...	7.703	96	5612	0.14	PPBV	# 99
25) METHYL TERTIARY BUTYL ...	8.141	73	11176	0.13	PPBV	# 58
27) HEXANE	9.018	57	8903	0.17	PPBV	# 88
29) 1,1-DICHLOROETHANE	7.904	63	10611	0.16	PPBV	# 88
31) cis-1,2-DICHLOROETHYLENE	8.805	96	7130	0.13	PPBV	# 95
33) CHLOROFORM	9.121	83	17656	0.16	PPBV	# 89
34) 1,1,1-TRICHLOROETHANE	10.307	97	18176	0.16	PPBV	# 98
35) CARBON TETRACHLORIDE	11.068	117	18857	0.15	PPBV	# 99
38) BENZENE	10.885	78	19621	0.14	PPBV	# 84
39) CYCLOHEXANE	11.244	84	12389	0.18	PPBV	# 68
40) TRICHLOROETHYLENE	12.260	95	13205	0.16	PPBV	# 95
41) 1,2-DICHLOROPROPANE	11.956	63	6721	0.14	PPBV	# 37
42) BROMODICHLOROMETHANE	12.205	83	15489	0.14	PPBV	# 98
43) 2,2,4-TRIMETHYLPENTANE	12.290	57	36938	0.17	PPBV	# 93
46) HEPTANE	12.631	43	10486	0.16	PPBV	# 94
49) TOLUENE	14.979	92	11838	0.11	PPBV	# 93
51) 1,1,2-TRICHLOROETHANE	14.541	83	6412	0.12	PPBV	# 96
52) 1,3-DICHLOROPROPANE	15.016	76	8295	0.10	PPBV	# 43
55) TETRACHLOROETHYLENE	16.847	164	14154	0.16	PPBV	# 92
56) DIBROMOCHLOROMETHANE	15.661	129	13999	0.13	PPBV	# 88
57) 1,2-DIBROMOETHANE	16.087	107	8697	0.10	PPBV	# 95
60) ETHYLBENZENE	18.739	91	23648	0.12	PPBV	# 93
61) m,p-XYLENE	19.092	106	17494	0.22	PPBV	# 86
62) o-XYLENE	19.974	106	8448	0.11	PPBV	# 82
63) STYRENE	19.773	104	9420	0.08	PPBV	# 91
67) 1,1,2,2-TETRACHLOROETHANE	19.998	83	12835	0.12	PPBV	# 91

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\J150122\
Data File : j29702.D
Acq On : 22 Jan 2015 9:30 pm
Operator : akina
Sample : ic1510-0.2(m434)
Misc : ms33716,msj1510,,,,,1
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Jan 23 10:32:59 2015
Quant Method : C:\msdchem\1\methods\J150122T.M
Quant Title : T015 by GCMS w/DB-1 60 m X .25 mm ID 1.0 um
QLast Update : Fri Jan 23 10:27:16 2015
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
68) ISOPROPYLBENZENE	21.185	105	25427	0.12	PPBV	96
69) 2-CHLOROTOLUENE	22.207	91	17304	0.11	PPBV #	82
70) 4-ETHYLTOLUENE	22.651	105	16235	0.08	PPBV #	86
71) 1,3,5-TRIMETHYLBENZENE	22.815	105	20982	0.12	PPBV #	84
72) TERT-BUTYLBENZENE	23.746	119	18886	0.10	PPBV	97
77) SEC-BUTYLBENZENE	24.403	105	23797	0.10	PPBV	88
81) HEXACHLOROBUTADIENE	29.105	225	4279	0.11	PPBV #	19

(#) = qualifier out of range (m) = manual integration (+) = signals summed

7.7.1

7

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\J150122\
 Data File : j29704.D
 Acq On : 22 Jan 2015 11:10 pm
 Operator : akina
 Sample : ic1510-2(m131)
 Misc : ms33716,msj1510,,,,,1
 ALS Vial : 7 Sample Multiplier: 1

Quant Time: Jan 23 09:49:27 2015
 Quant Method : C:\msdchem\1\methods\J150122T.M
 Quant Title : T015 by GCMS w/DB-1 60 m X .25 mm ID 1.0 um
 QLast Update : Fri Jan 23 09:38:28 2015
 Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) BROMOCHLOROMETHANE	8.987	128	507146	10.00	PPBV	-0.01
37) 1,4-DIFLUOROBENZENE	11.287	114	2430280	10.00	PPBV	-0.02
53) CHLOROBENZENE-D5	17.961	82	1080253	10.00	PPBV	#-0.03

System Monitoring Compounds						
66) 4-BROMOFLUOROBENZENE	20.887	95	488687	3.66	PPBV	-0.03
Spiked Amount	5.000	Range	50 - 129	Recovery	=	73.20%

Target Compounds	R.T.	QIon	Response	Conc	Units	Qvalue
2) DICHLORODIFLUOROMETHANE	4.321	85	292738	2.26	PPBV	99
3) PROPYLENE	4.248	41	40700	2.20	PPBV	99
4) FREON 114	4.595	85	229170	1.94	PPBV	99
5) CHLOROMETHANE	4.498	50	48139	1.94	PPBV	99
6) VINYL CHLORIDE	4.723	62	66269	1.85	PPBV	100
7) 1,3-BUTADIENE	4.857	39	31205	1.89	PPBV #	81
8) BROMOMETHANE	5.130	94	89519	1.90	PPBV	99
9) CHLOROETHANE	5.295	64	32072	1.99	PPBV	96
10) ACROLEIN	5.769	56	9606	1.28	PPBV	80
11) TRICHLOROFLUOROMETHANE	6.025	101	249757	1.95	PPBV	100
12) ISOPROPYL ALCOHOL	6.177	45	56277	1.56	PPBV #	91
13) ACETONE	5.903	43	43784	1.58	PPBV	91
14) ACRYLONITRILE	6.341	53	19516	1.26	PPBV	91
15) PENTANE	6.353	42	46514	1.93	PPBV	96
16) 1,1-DICHLOROETHYLENE	6.639	96	89864	1.87	PPBV	90
17) CARBON DISULFIDE	7.095	76	190353	1.83	PPBV	94
18) ETHANOL	5.532	45	7775	1.44	PPBV #	50
19) BROMOETHENE	5.635	106	88593	1.84	PPBV	100
20) METHYLENE CHLORIDE	6.742	84	74603	1.90	PPBV	86
21) 3-CHLOROPROPENE	6.864	39	36886	1.68	PPBV	85
22) FREON 113	6.998	151	185436	1.93	PPBV	96
23) TRANS-1,2-DICHLOROETHY...	7.692	96	74030	1.73	PPBV	94
24) TERTIARY BUTYL ALCOHOL	6.761	59	91016	1.59	PPBV	86
25) METHYL TERTIARY BUTYL ...	7.984	73	143319	1.55	PPBV	99
26) TETRAHYDROFURAN	9.663	42	43021	1.55	PPBV	86
27) HEXANE	9.012	57	97941	1.87	PPBV	90
28) VINYL ACETATE	8.038	43	63310	1.30	PPBV	96
29) 1,1-DICHLOROETHANE	7.898	63	108298	1.63	PPBV	100
30) METHYL ETHYL KETONE	8.349	43	68495	1.62	PPBV	92
31) cis-1,2-DICHLOROETHYLENE	8.793	96	85791	1.56	PPBV	96
32) ETHYL ACETATE	9.024	43	130526	1.74	PPBV #	93
33) CHLOROFORM	9.115	83	183649	1.69	PPBV	98
34) 1,1,1-TRICHLOROETHANE	10.301	97	185121	1.64	PPBV	99
35) CARBON TETRACHLORIDE	11.068	117	211109	1.70	PPBV	100
36) 1,2-DICHLOROETHANE	9.991	62	74833	1.48	PPBV	99
38) BENZENE	10.879	78	213612	1.53	PPBV	98
39) CYCLOHEXANE	11.232	84	122405	1.77	PPBV	86
40) TRICHLOROETHYLENE	12.254	95	158288	1.79	PPBV	95
41) 1,2-DICHLOROPROPANE	11.938	63	74689	1.53	PPBV	97
42) BROMODICHLOROMETHANE	12.193	83	166833	1.49	PPBV	98

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\J150122\
Data File : j29704.D
Acq On : 22 Jan 2015 11:10 pm
Operator : akina
Sample : ic1510-2(m131)
Misc : ms33716,msj1510,,,,,1
ALS Vial : 7 Sample Multiplier: 1

Quant Time: Jan 23 09:49:27 2015

Quant Method : C:\msdchem\1\methods\J150122T.M

Quant Title : T015 by GCMS w/DB-1 60 m X .25 mm ID 1.0 um

QLast Update : Fri Jan 23 09:38:28 2015

Response via : Initial Calibration

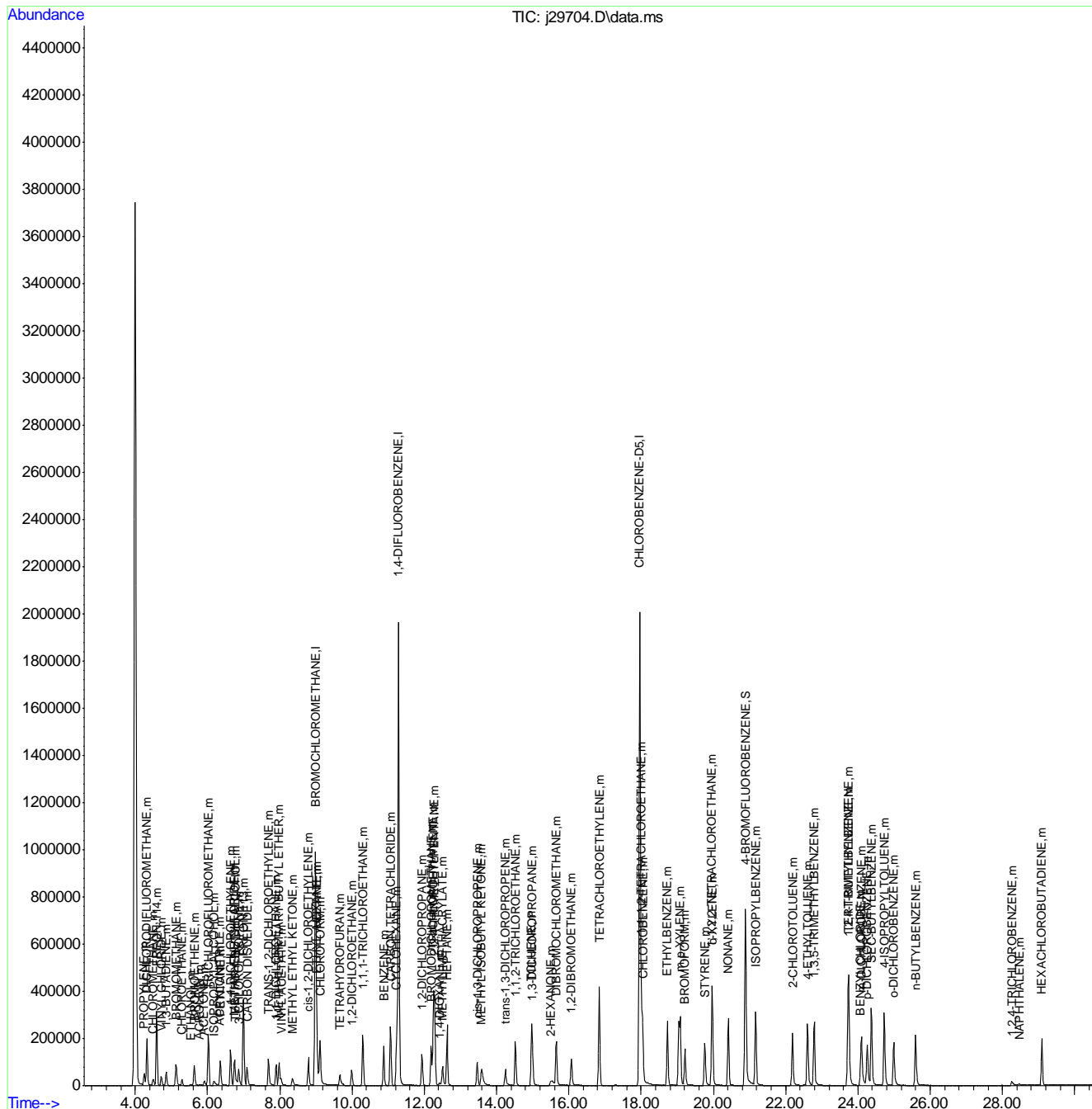
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
43) 2,2,4-TRIMETHYLPENTANE	12.285	57	413923	1.82	PPBV	98
44) 1,4-DIOXANE	12.418	88	35630	1.40	PPBV #	100
45) METHYL METHACRYLATE	12.504	41	56164	1.45	PPBV #	48
46) HEPTANE	12.631	43	123894	1.83	PPBV	90
47) METHYL ISOBUTYL KETONE	13.586	43	115602	1.53	PPBV	94
48) cis-1,3-DICHLOROPROPENE	13.465	75	98139	1.29	PPBV #	80
49) TOLUENE	14.967	92	154563	1.42	PPBV	98
50) trans-1,3-DICHLOROPROPENE	14.244	75	84747	1.20	PPBV	91
51) 1,1,2-TRICHLOROETHANE	14.523	83	81151	1.46	PPBV	99
52) 1,3-DICHLOROPROPANE	14.998	76	118919	1.44	PPBV	99
54) 2-HEXANONE	15.509	43	86586m	1.64	PPBV	
55) TETRACHLOROETHYLENE	16.841	164	156143	1.80	PPBV	94
56) DIBROMOCHLOROMETHANE	15.655	129	164224	1.59	PPBV	99
57) 1,2-DIBROMOETHANE	16.069	107	136611	1.60	PPBV	99
58) 1,1,1,2-TETRACHLOROETHANE	18.003	131	111970	1.59	PPBV #	40
59) CHLOROBENZENE	18.046	112	218750	1.64	PPBV	99
60) ETHYLBENZENE	18.727	91	329833	1.67	PPBV	98
61) m,p-XYLENE	19.086	106	266806	3.25	PPBV	98
62) o-XYLENE	19.974	106	130685	1.58	PPBV	96
63) STYRENE	19.761	104	171696	1.47	PPBV	99
64) NONANE	20.412	43	151741	1.73	PPBV	95
65) BROMOFORM	19.214	173	133904	1.41	PPBV	98
67) 1,1,2,2-TETRACHLOROETHANE	19.962	83	184597	1.68	PPBV	99
68) ISOPROPYLBENZENE	21.167	105	364123	1.61	PPBV	99
69) 2-CHLOROTOLUENE	22.189	91	242982	1.53	PPBV	96
70) 4-ETHYLTOLUENE	22.608	105	306283	1.46	PPBV	99
71) 1,3,5-TRIMETHYLBENZENE	22.791	105	291819	1.54	PPBV	98
72) TERT-BUTYLBENZENE	23.734	119	299913	1.49	PPBV	97
73) 1,2,4-TRIMETHYLBENZENE	23.746	105	277809	1.45	PPBV	95
74) m-DICHLOROBENZENE	24.099	146	161661	1.32	PPBV	98
75) BENZYL CHLORIDE	24.075	91	80843	0.86	PPBV	96
76) p-DICHLOROBENZENE	24.257	146	169986	1.40	PPBV	98
77) SEC-BUTYLBENZENE	24.373	105	397043	1.49	PPBV	98
78) 4-ISOPROPYLTOLUENE	24.732	119	309147	1.42	PPBV	98
79) o-DICHLOROBENZENE	24.993	146	150223	1.40	PPBV	99
80) n-BUTYLBENZENE	25.595	91	229352	1.32	PPBV	96
81) HEXACHLOROBUTADIENE	29.094	225	55653	1.49	PPBV	99
82) 1,2,4-TRICHLOROBENZENE	28.260	180	21494m	0.70	PPBV	
83) NAPHTHALENE	28.467	128	33676m	0.57	PPBV	

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\J150122\
Data File : j29704.D
Acq On : 22 Jan 2015 11:10 pm
Operator : akina
Sample : ic1510-2(m131)
Misc : ms33716,msj1510,,,,,1
ALS Vial : 7 Sample Multiplier: 1

Quant Time: Jan 23 09:49:27 2015
Quant Method : C:\msdchem\1\methods\J150122T.M
Quant Title : TO15 by GCMS w/DB-1 60 m X .25 mm ID 1.0 um
QLast Update : Fri Jan 23 09:38:28 2015
Response via : Initial Calibration



7.7.2

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\J150122\
 Data File : j29705.D
 Acq On : 22 Jan 2015 11:53 pm
 Operator : akina
 Sample : ic1510-5(m131)
 Misc : ms33716,msj1510,,,,,1
 ALS Vial : 7 Sample Multiplier: 1

Quant Time: Jan 23 09:33:46 2015
 Quant Method : C:\msdchem\1\methods\J150122T.M
 Quant Title : T015 by GCMS w/DB-1 60 m X .25 mm ID 1.0 um
 QLast Update : Wed Jan 21 12:40:10 2015
 Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) BROMOCHLOROMETHANE	8.993	128	484773	10.00	PPBV	0.00
37) 1,4-DIFLUOROBENZENE	11.299	114	2311570	10.00	PPBV	-0.01
53) CHLOROBENZENE-D5	17.973	82	1243312	10.00	PPBV	#-0.02

System Monitoring Compounds						
66) 4-BROMOFLUOROBENZENE	20.899	95	809999	5.74	PPBV	-0.02
Spiked Amount	5.000	Range	50 - 129	Recovery	=	114.80%

Target Compounds						Qvalue
2) DICHLORODIFLUOROMETHANE	4.333	85	707817	5.11	PPBV	99
3) PROPYLENE	4.260	41	95453	4.84	PPBV	98
4) FREON 114	4.607	85	629628	4.97	PPBV	99
5) CHLOROMETHANE	4.510	50	135447	5.12	PPBV	97
6) VINYL CHLORIDE	4.729	62	193518	5.15	PPBV	99
7) 1,3-BUTADIENE	4.869	39	82502	4.70	PPBV #	78
8) BROMOMETHANE	5.142	94	248142	5.00	PPBV	99
9) CHLOROETHANE	5.300	64	74803	4.22	PPBV	96
10) ACROLEIN	5.757	56	27828	3.28	PPBV	100
11) TRICHLOROFLUOROMETHANE	6.030	101	650232	4.60	PPBV	100
12) ISOPROPYL ALCOHOL	6.146	45	146180	3.97	PPBV	95
13) ACETONE	5.891	43	111702	3.59	PPBV	90
14) ACRYLONITRILE	6.316	53	59852	3.53	PPBV	93
15) PENTANE	6.365	42	120902	4.37	PPBV	97
16) 1,1-DICHLOROETHYLENE	6.645	96	235984	4.45	PPBV	89
17) CARBON DISULFIDE	7.101	76	551737	4.91	PPBV	95
18) ETHANOL	5.550	45	20900	4.27	PPBV #	85
19) BROMOETHENE	5.641	106	239889	4.63	PPBV	100
20) METHYLENE CHLORIDE	6.754	84	186142	4.25	PPBV	85
21) 3-CHLOROPROPENE	6.870	39	96059	3.79	PPBV #	86
22) FREON 113	7.004	151	451543	4.15	PPBV	97
23) TRANS-1,2-DICHLOROETHY...	7.697	96	198640	4.30	PPBV	91
24) TERTIARY BUTYL ALCOHOL	6.730	59	231752	3.85	PPBV	91
25) METHYL TERTIARY BUTYL ...	7.971	73	365698	3.44	PPBV	98
26) TETRAHYDROFURAN	9.638	42	112937	3.74	PPBV	87
27) HEXANE	9.018	57	247616	4.13	PPBV	90
28) VINYL ACETATE	8.032	43	176940	3.06	PPBV	94
29) 1,1-DICHLOROETHANE	7.904	63	291604	3.79	PPBV	99
30) METHYL ETHYL KETONE	8.330	43	173687	3.74	PPBV	89
31) cis-1,2-DICHLOROETHYLENE	8.799	96	248902	4.16	PPBV	95
32) ETHYL ACETATE	9.024	43	327947	4.23	PPBV #	100
33) CHLOROFORM	9.121	83	496094	4.13	PPBV	98
34) 1,1,1-TRICHLOROETHANE	10.307	97	508556	4.03	PPBV	98
35) CARBON TETRACHLORIDE	11.074	117	560565	4.07	PPBV	100
36) 1,2-DICHLOROETHANE	9.997	62	212909	3.61	PPBV	99
38) BENZENE	10.885	78	584427	3.54	PPBV	98
39) CYCLOHEXANE	11.238	84	318821	4.14	PPBV	93
40) TRICHLOROETHYLENE	12.260	95	399859	4.33	PPBV	97
41) 1,2-DICHLOROPROPANE	11.944	63	201473	3.52	PPBV	97
42) BROMODICHLOROMETHANE	12.199	83	463649	3.68	PPBV	99

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\J150122\
 Data File : j29705.D
 Acq On : 22 Jan 2015 11:53 pm
 Operator : akina
 Sample : ic1510-5(m131)
 Misc : ms33716,msj1510,,,,,1
 ALS Vial : 7 Sample Multiplier: 1

Quant Time: Jan 23 09:33:46 2015

Quant Method : C:\msdchem\1\methods\J150122T.M

Quant Title : T015 by GCMS w/DB-1 60 m X .25 mm ID 1.0 um

QLast Update : Wed Jan 21 12:40:10 2015

Response via : Initial Calibration

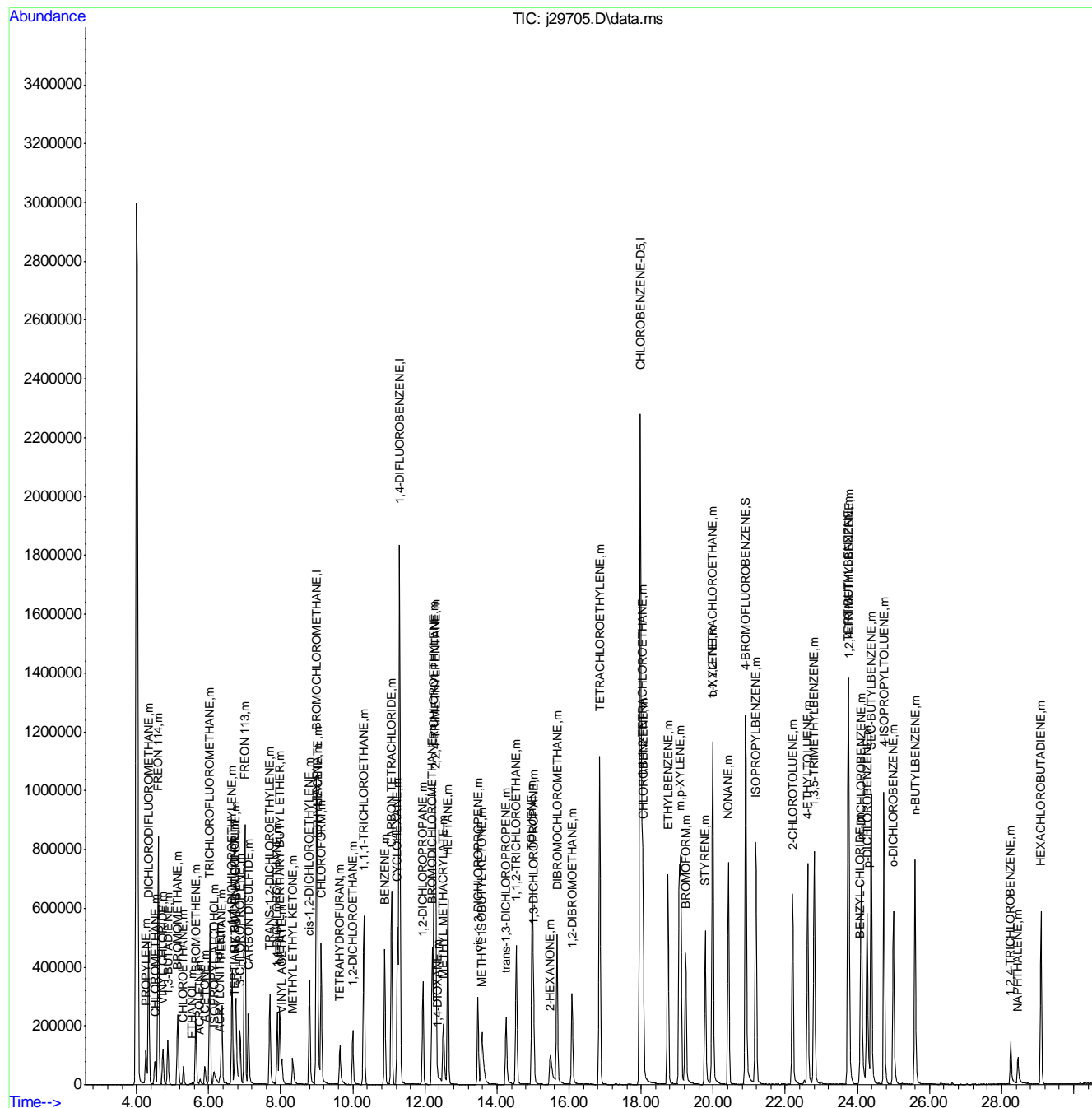
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
43) 2,2,4-TRIMETHYLPENTANE	12.290	57	1057307	4.32	PPBV	99
44) 1,4-DIOXANE	12.351	88	96093	3.83	PPBV #	100
45) METHYL METHACRYLATE	12.509	41	149895	3.63	PPBV #	48
46) HEPTANE	12.637	43	310740	4.20	PPBV	89
47) METHYL ISOBUTYL KETONE	13.580	43	302774	4.02	PPBV	93
48) cis-1,3-DICHLOROPROPENE	13.471	75	291008	3.38	PPBV #	79
49) TOLUENE	14.973	92	423174	3.33	PPBV	98
50) trans-1,3-DICHLOROPROPENE	14.255	75	257051	3.36	PPBV	95
51) 1,1,2-TRICHLOROETHANE	14.535	83	217715	3.41	PPBV	99
52) 1,3-DICHLOROPROPANE	15.010	76	322742	3.46	PPBV	100
54) 2-HEXANONE	15.478	43	239230	3.48	PPBV	92
55) TETRACHLOROETHYLENE	16.847	164	422317	3.25	PPBV	94
56) DIBROMOCHLOROMETHANE	15.667	129	472441	2.99	PPBV	100
57) 1,2-DIBROMOETHANE	16.081	107	393936	3.05	PPBV	99
58) 1,1,1,2-TETRACHLOROETHANE	18.021	131	314801	2.91	PPBV #	40
59) CHLOROBENZENE	18.052	112	605690	2.92	PPBV	99
60) ETHYLBENZENE	18.739	91	894956	2.92	PPBV	99
61) m,p-XYLENE	19.092	106	729404	5.83	PPBV	98
62) o-XYLENE	19.986	106	365107	2.96	PPBV	98
63) STYRENE	19.779	104	501575	2.90	PPBV	99
64) NONANE	20.424	43	423305	3.25	PPBV	94
65) BROMOFORM	19.232	173	403518	2.91	PPBV	99
67) 1,1,2,2-TETRACHLOROETHANE	19.980	83	502195	3.39	PPBV	99
68) ISOPROPYLBENZENE	21.179	105	1007316	2.97	PPBV	99
69) 2-CHLOROTOLUENE	22.201	91	697539	2.99	PPBV	97
70) 4-ETHYLTOLUENE	22.620	105	896819	2.97	PPBV	99
71) 1,3,5-TRIMETHYLBENZENE	22.803	105	828623	3.02	PPBV	98
72) TERT-BUTYLBENZENE	23.746	119	856220	3.01	PPBV	97
73) 1,2,4-TRIMETHYLBENZENE	23.758	105	811408	3.06	PPBV	94
74) m-DICHLOROBENZENE	24.111	146	496072	2.98	PPBV	99
75) BENZYL CHLORIDE	24.080	91	319396	2.78	PPBV	99
76) p-DICHLOROBENZENE	24.269	146	499610	3.02	PPBV	97
77) SEC-BUTYLBENZENE	24.385	105	1156956	3.10	PPBV	98
78) 4-ISOPROPYLTOLUENE	24.737	119	914065	3.02	PPBV	98
79) o-DICHLOROBENZENE	24.999	146	452817	3.19	PPBV	99
80) n-BUTYLBENZENE	25.601	91	711828	3.09	PPBV	98
81) HEXACHLOROBUTADIENE	29.093	225	160358	3.68	PPBV	100
82) 1,2,4-TRICHLOROBENZENE	28.254	180	104340	3.62	PPBV	98
83) NAPHTHALENE	28.455	128	183175m	2.48	PPBV	

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\J150122\
Data File : j29705.D
Acq On : 22 Jan 2015 11:53 pm
Operator : akina
Sample : ic1510-5(m131)
Misc : ms33716,msj1510,,,,,1
ALS Vial : 7 Sample Multiplier: 1

Quant Time: Jan 23 09:33:46 2015
Quant Method : C:\msdchem\1\methods\J150122T.M
Quant Title : TO15 by GCMS w/DB-1 60 m X .25 mm ID 1.0 um
QLast Update : Wed Jan 21 12:40:10 2015
Response via : Initial Calibration



J150122T.M Mon Jan 26 15:41:33 2015

Page: 3

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\J150122\
 Data File : j29707.D
 Acq On : 23 Jan 2015 1:28 am
 Operator : akina
 Sample : ic1510-20(m131)
 Misc : ms33716,msj1510,,,,,1
 ALS Vial : 7 Sample Multiplier: 1

Quant Time: Jan 23 09:33:59 2015
 Quant Method : C:\msdchem\1\methods\J150122T.M
 Quant Title : T015 by GCMS w/DB-1 60 m X .25 mm ID 1.0 um
 QLast Update : Wed Jan 21 12:40:10 2015
 Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) BROMOCHLOROMETHANE	8.999	128	516682	10.00	PPBV	# 0.00
37) 1,4-DIFLUOROBENZENE	11.317	114	2444961	10.00	PPBV	0.00
53) CHLOROBENZENE-D5	18.003	82	1455912	10.00	PPBV	# 0.01

System Monitoring Compounds						
66) 4-BROMOFLUOROBENZENE	20.929	95	1048605	6.34	PPBV	0.01
Spiked Amount	5.000	Range	50 - 129	Recovery	=	126.80%

Target Compounds	R.T.	QIon	Response	Conc	Units	Qvalue
2) DICHLORODIFLUOROMETHANE	4.339	85	2243207	15.19	PPBV	98
3) PROPYLENE	4.260	41	327935	15.61	PPBV	98
4) FREON 114	4.607	85	2110782	15.64	PPBV	98
5) CHLOROMETHANE	4.510	50	436437	15.49	PPBV	97
6) VINYL CHLORIDE	4.735	62	639158	15.95	PPBV	99
7) 1,3-BUTADIENE	4.869	39	308763	16.50	PPBV	# 76
8) BROMOMETHANE	5.142	94	858062	16.21	PPBV	99
9) CHLOROETHANE	5.300	64	313919	16.61	PPBV	96
10) ACROLEIN	5.745	56	150800	16.67	PPBV	97
11) TRICHLOROFLUOROMETHANE	6.037	101	2365667	15.69	PPBV	100
12) ISOPROPYL ALCOHOL	6.183	45	699949	17.82	PPBV	99
13) ACETONE	5.872	43	537671	16.23	PPBV	86
14) ACRYLONITRILE	6.310	53	307888	17.05	PPBV	97
15) PENTANE	6.365	42	437594	14.83	PPBV	94
16) 1,1-DICHLOROETHYLENE	6.651	96	902340	15.95	PPBV	89
17) CARBON DISULFIDE	7.101	76	1840486	15.36	PPBV	95
18) ETHANOL	5.459	45	111838	21.46	PPBV	99
19) BROMOETHENE	5.641	106	903368	16.37	PPBV	100
20) METHYLENE CHLORIDE	6.754	84	737895	15.82	PPBV	84
21) 3-CHLOROPROPENE	6.870	39	459108	16.99	PPBV	# 86
22) FREON 113	7.004	151	1822579	15.72	PPBV	99
23) TRANS-1,2-DICHLOROETHY...	7.697	96	821589	16.70	PPBV	92
24) TERTIARY BUTYL ALCOHOL	6.779	59	1116895	17.41	PPBV	88
25) METHYL TERTIARY BUTYL ...	7.965	73	1793658	15.82	PPBV	97
26) TETRAHYDROFURAN	9.626	42	536188	16.68	PPBV	81
27) HEXANE	9.024	57	978208	15.31	PPBV	90
28) VINYL ACETATE	8.038	43	978086	15.86	PPBV	91
29) 1,1-DICHLOROETHANE	7.910	63	1337119	16.32	PPBV	99
30) METHYL ETHYL KETONE	8.342	43	793168	16.02	PPBV	83
31) cis-1,2-DICHLOROETHYLENE	8.805	96	1100238	17.27	PPBV	94
32) ETHYL ACETATE	9.030	43	1389681	16.82	PPBV	97
33) CHLOROFORM	9.139	83	2118671	16.55	PPBV	98
34) 1,1,1-TRICHLOROETHANE	10.319	97	2254003	16.74	PPBV	98
35) CARBON TETRACHLORIDE	11.086	117	2455405	16.73	PPBV	99
36) 1,2-DICHLOROETHANE	10.015	62	1015436	16.17	PPBV	98
38) BENZENE	10.903	78	2714730	15.57	PPBV	98
39) CYCLOHEXANE	11.244	84	1305082	16.03	PPBV	95
40) TRICHLOROETHYLENE	12.278	95	1630312	16.70	PPBV	99
41) 1,2-DICHLOROPROPANE	11.968	63	926184	15.30	PPBV	97
42) BROMODICHLOROMETHANE	12.230	83	2275696	17.07	PPBV	100

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\J150122\
Data File : j29707.D
Acq On : 23 Jan 2015 1:28 am
Operator : akina
Sample : ic1510-20(m131)
Misc : ms33716,msj1510,,,,,1
ALS Vial : 7 Sample Multiplier: 1

Quant Time: Jan 23 09:33:59 2015

Quant Method : C:\msdchem\1\methods\J150122T.M

Quant Title : T015 by GCMS w/DB-1 60 m X .25 mm ID 1.0 um

QLast Update : Wed Jan 21 12:40:10 2015

Response via : Initial Calibration

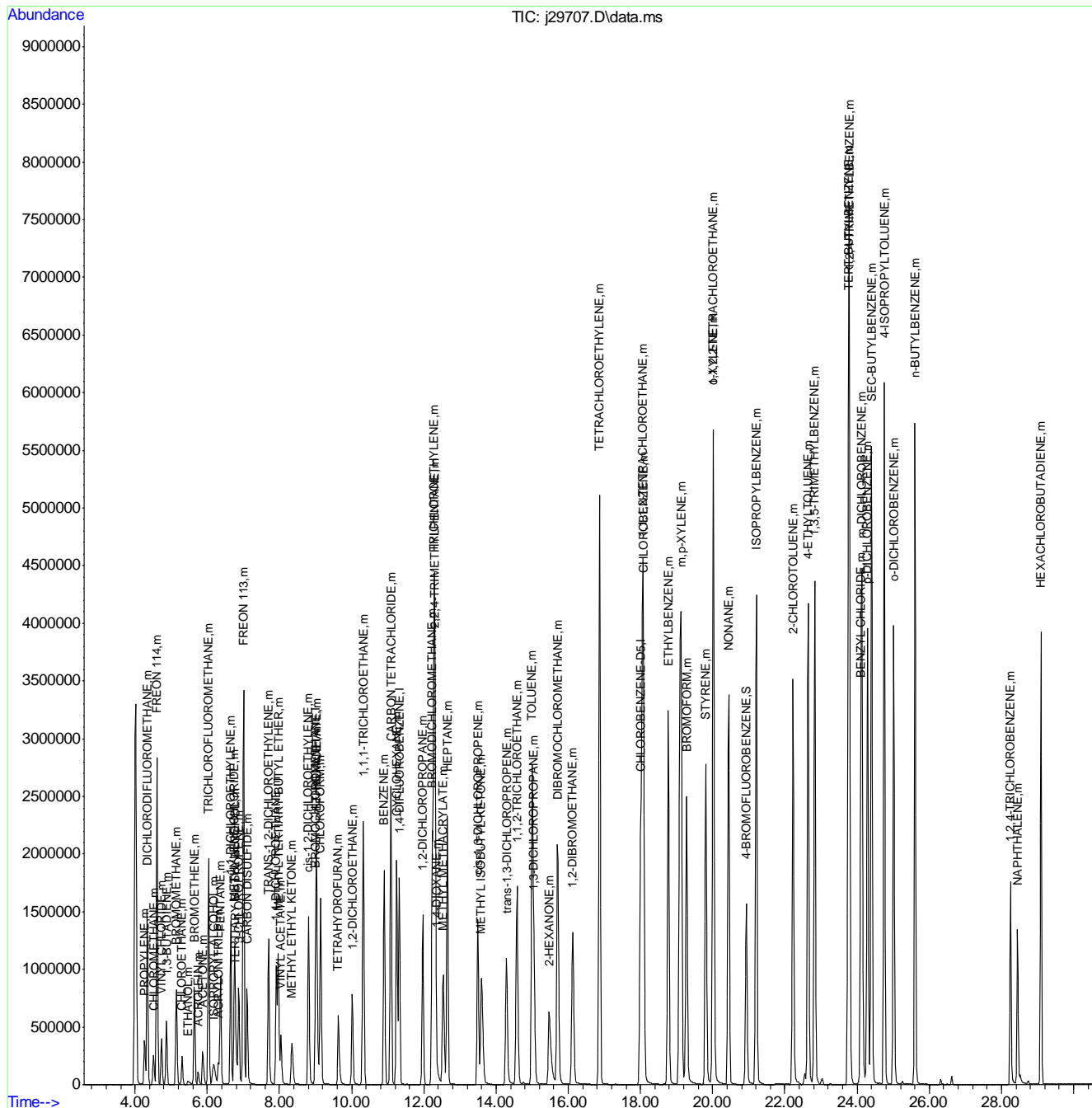
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
43) 2,2,4-TRIMETHYLPENTANE	12.309	57	4012783	15.50	PPBV	99
44) 1,4-DIOXANE	12.339	88	507626	19.12	PPBV #	100
45) METHYL METHACRYLATE	12.534	41	759483	17.38	PPBV #	40
46) HEPTANE	12.649	43	1221023	15.60	PPBV	83
47) METHYL ISOBUTYL KETONE	13.592	43	1430736	17.94	PPBV	88
48) cis-1,3-DICHLOROPROPENE	13.495	75	1570769	17.26	PPBV #	78
49) TOLUENE	14.998	92	2156570	16.03	PPBV	97
50) trans-1,3-DICHLOROPROPENE	14.286	75	1472144	18.20	PPBV	94
51) 1,1,2-TRICHLOROETHANE	14.572	83	1109582	16.41	PPBV	99
52) 1,3-DICHLOROPROPANE	15.046	76	1628013	16.49	PPBV	99
54) 2-HEXANONE	15.466	43	1262205	15.67	PPBV	87
55) TETRACHLOROETHYLENE	16.865	164	2151090	14.12	PPBV	97
56) DIBROMOCHLOROMETHANE	15.703	129	2640058	14.26	PPBV	99
57) 1,2-DIBROMOETHANE	16.123	107	2106294	13.91	PPBV	100
58) 1,1,1,2-TETRACHLOROETHANE	18.058	131	1772493	14.01	PPBV	98
59) CHLOROBENZENE	18.082	112	3304913	13.60	PPBV	99
60) ETHYLBENZENE	18.769	91	4787184	13.36	PPBV	99
61) m,p-XYLENE	19.122	106	4037391	27.57	PPBV	99
62) o-XYLENE	20.017	106	2038213	14.11	PPBV	98
63) STYRENE	19.810	104	2925800	14.45	PPBV	100
64) NONANE	20.442	43	2052007	13.44	PPBV	87
65) BROMOFORM	19.281	173	2471192	15.21	PPBV	100
67) 1,1,2,2-TETRACHLOROETHANE	20.017	83	2615956	15.08	PPBV	100
68) ISOPROPYLBENZENE	21.209	105	5546055	13.96	PPBV	99
69) 2-CHLOROTOLUENE	22.225	91	3936494	14.41	PPBV	98
70) 4-ETHYLTOLUENE	22.645	105	5225932	14.79	PPBV	99
71) 1,3,5-TRIMETHYLBENZENE	22.827	105	4720761	14.68	PPBV	100
72) TERT-BUTYLBENZENE	23.770	119	5073432	15.23	PPBV	100
73) 1,2,4-TRIMETHYLBENZENE	23.788	105	4841871	15.59	PPBV	94
74) m-DICHLOROBENZENE	24.135	146	3202389	16.42	PPBV	99
75) BENZYL CHLORIDE	24.105	91	2629759	19.52	PPBV	99
76) p-DICHLOROBENZENE	24.287	146	3132488	16.18	PPBV	99
77) SEC-BUTYLBENZENE	24.403	105	6601702	15.09	PPBV	99
78) 4-ISOPROPYLTOLUENE	24.756	119	5546109	15.67	PPBV	99
79) o-DICHLOROBENZENE	25.017	146	2738420	16.48	PPBV	99
80) n-BUTYLBENZENE	25.607	91	4504791	16.70	PPBV	99
81) HEXACHLOROBUTADIENE	29.093	225	1023101	20.03	PPBV	99
82) 1,2,4-TRICHLOROBENZENE	28.254	180	884697	26.22	PPBV	99
83) NAPHTHALENE	28.448	128	1724233	19.92	PPBV	99

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\J150122\
Data File : j29707.D
Acq On : 23 Jan 2015 1:28 am
Operator : akina
Sample : ic1510-20(m131)
Misc : ms33716,msj1510,,,,,1
ALS Vial : 7 Sample Multiplier: 1

Quant Time: Jan 23 09:33:59 2015
Quant Method : C:\msdchem\1\methods\J150122T.M
Quant Title : T015 by GCMS w/DB-1 60 m X .25 mm ID 1.0 um
QLast Update : Wed Jan 21 12:40:10 2015
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\J150122\
 Data File : j29708.D
 Acq On : 23 Jan 2015 2:15 am
 Operator : akina
 Sample : ic1510-30(m131)
 Misc : ms33716,msj1510,,,,,1
 ALS Vial : 7 Sample Multiplier: 1

Quant Time: Jan 23 10:11:43 2015
 Quant Method : C:\msdchem\1\methods\J150122T.M
 Quant Title : T015 by GCMS w/DB-1 60 m X .25 mm ID 1.0 um
 QLast Update : Fri Jan 23 09:38:28 2015
 Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) BROMOCHLOROMETHANE	8.999	128	462055	10.00	PPBV	# 0.00
37) 1,4-DIFLUOROBENZENE	11.323	114	2292570	10.00	PPBV	0.01
53) CHLOROBENZENE-D5	18.015	82	1213611	10.00	PPBV	# 0.02

System Monitoring Compounds						
66) 4-BROMOFLUOROBENZENE	20.941	95	568851	3.79	PPBV	0.02
Spiked Amount	5.000	Range	50 - 129	Recovery	=	75.80%

Target Compounds						Qvalue
2) DICHLORODIFLUOROMETHANE	4.327	85	3244152	27.55	PPBV	98
3) PROPYLENE	4.248	41	459570	27.29	PPBV	98
4) FREON 114	4.595	85	3003543	27.84	PPBV	97
5) CHLOROMETHANE	4.497	50	641531	28.35	PPBV	97
6) VINYL CHLORIDE	4.723	62	940038	28.80	PPBV	99
7) 1,3-BUTADIENE	4.856	39	445389	29.63	PPBV	# 76
8) BROMOMETHANE	5.130	94	1260892	29.30	PPBV	99
9) CHLOROETHANE	5.288	64	462674	31.43	PPBV	96
10) ACROLEIN	5.732	56	235745	34.47	PPBV	99
11) TRICHLOROFLUOROMETHANE	6.024	101	3529762	30.19	PPBV	100
12) ISOPROPYL ALCOHOL	6.195	45	1043580	31.84	PPBV	97
13) ACETONE	5.860	43	803850	31.80	PPBV	87
14) ACRYLONITRILE	6.304	53	476851	33.71	PPBV	98
15) PENTANE	6.353	42	650618	29.58	PPBV	93
16) 1,1-DICHLOROETHYLENE	6.639	96	1360832	31.02	PPBV	89
17) CARBON DISULFIDE	7.089	76	2816460	29.70	PPBV	95
18) ETHANOL	5.447	45	167198	33.98	PPBV	98
19) BROMOETHENE	5.629	106	1352520	30.83	PPBV	99
20) METHYLENE CHLORIDE	6.742	84	1135261	31.68	PPBV	84
21) 3-CHLOROPROPENE	6.864	39	781246	38.96	PPBV	83
22) FREON 113	6.992	151	2716233	31.03	PPBV	100
23) TRANS-1,2-DICHLOROETHY...	7.691	96	1264410	32.35	PPBV	92
24) TERTIARY BUTYL ALCOHOL	6.803	59	1636371	31.47	PPBV	# 68
25) METHYL TERTIARY BUTYL ...	7.953	73	2671906	31.75	PPBV	98
26) TETRAHYDROFURAN	9.626	42	797925	31.50	PPBV	79
27) HEXANE	9.018	57	1470038	30.79	PPBV	89
28) VINYL ACETATE	8.038	43	1488212	33.56	PPBV	90
29) 1,1-DICHLOROETHANE	7.904	63	2035818	33.66	PPBV	99
30) METHYL ETHYL KETONE	8.348	43	1213826	31.47	PPBV	82
31) cis-1,2-DICHLOROETHYLENE	8.805	96	1694051	33.78	PPBV	94
32) ETHYL ACETATE	9.030	43	2084349	30.51	PPBV	97
33) CHLOROFORM	9.139	83	3239925	32.66	PPBV	98
34) 1,1,1-TRICHLOROETHANE	10.319	97	3471727	33.73	PPBV	98
35) CARBON TETRACHLORIDE	11.086	117	3798898	33.49	PPBV	99
36) 1,2-DICHLOROETHANE	10.021	62	1690976	36.67	PPBV	98
38) BENZENE	10.903	78	4488534	34.12	PPBV	99
39) CYCLOHEXANE	11.244	84	2007825	30.73	PPBV	92
40) TRICHLOROETHYLENE	12.284	95	2341783	28.02	PPBV	100
41) 1,2-DICHLOROPROPANE	11.980	63	1501826	32.70	PPBV	98
42) BROMODICHLOROMETHANE	12.242	83	3549132	33.51	PPBV	100

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\J150122\
Data File : j29708.D
Acq On : 23 Jan 2015 2:15 am
Operator : akina
Sample : ic1510-30(m131)
Misc : ms33716,msj1510,,,,,1
ALS Vial : 7 Sample Multiplier: 1

Quant Time: Jan 23 10:11:43 2015
Quant Method : C:\msdchem\1\methods\J150122T.M
Quant Title : T015 by GCMS w/DB-1 60 m X .25 mm ID 1.0 um
QLast Update : Fri Jan 23 09:38:28 2015
Response via : Initial Calibration

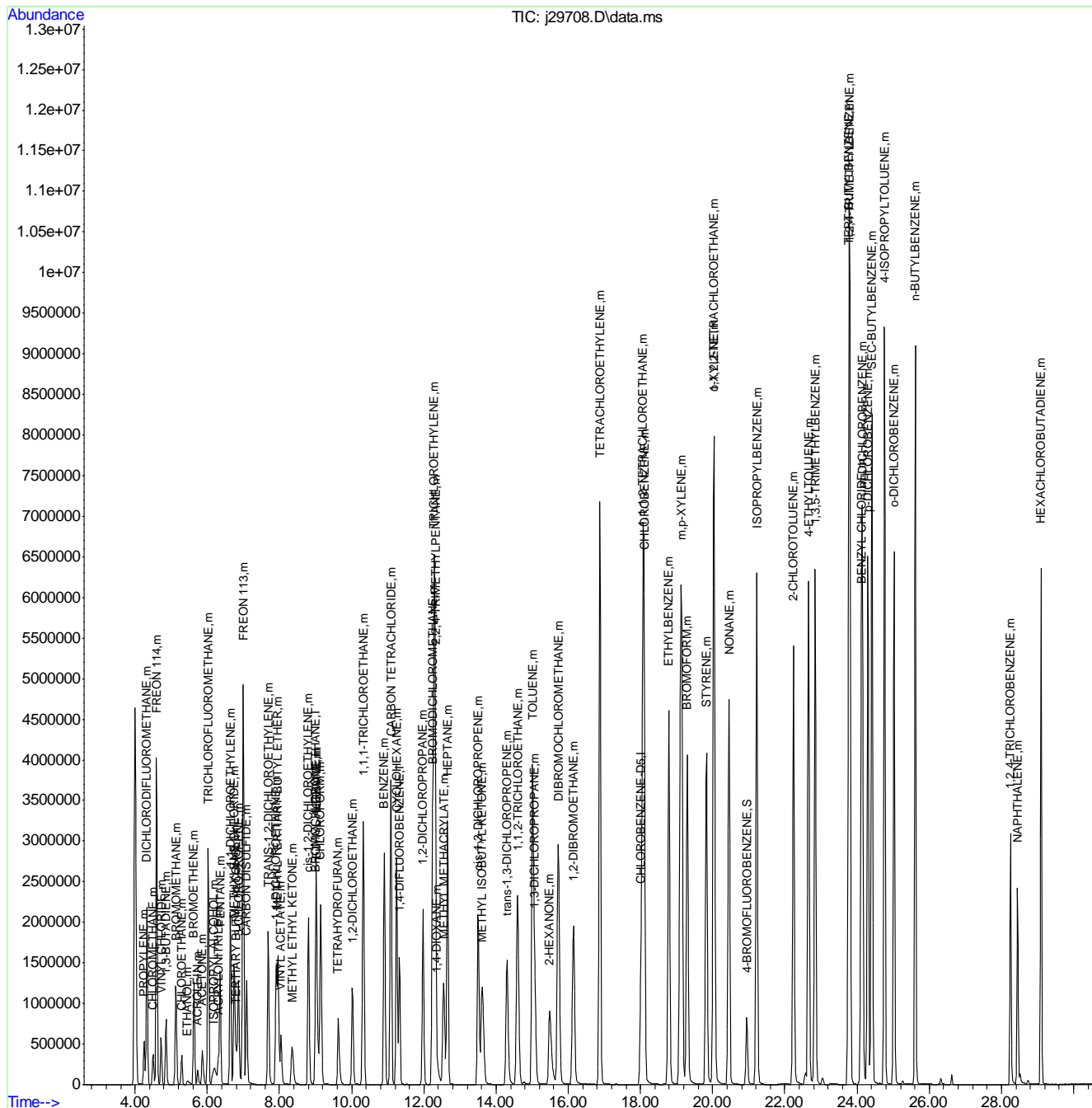
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
43) 2,2,4-TRIMETHYLPENTANE	12.315	57	5656441	26.31	PPBV	99
44) 1,4-DIOXANE	12.351	88	770885	32.11	PPBV #	100
45) METHYL METHACRYLATE	12.546	41	1117021m	30.48	PPBV	
46) HEPTANE	12.656	43	1772276	27.73	PPBV	81
47) METHYL ISOBUTYL KETONE	13.617	43	2101183	29.51	PPBV	86
48) cis-1,3-DICHLOROPROPENE	13.501	75	2603091	36.15	PPBV	86
49) TOLUENE	15.010	92	3489718	34.00	PPBV	96
50) trans-1,3-DICHLOROPROPENE	14.304	75	2414940	36.35	PPBV	93
51) 1,1,2-TRICHLOROETHANE	14.596	83	1793553	34.10	PPBV	100
52) 1,3-DICHLOROPROPANE	15.071	76	2559509	32.80	PPBV	98
54) 2-HEXANONE	15.484	43	1876034	31.70	PPBV	85
55) TETRACHLOROETHYLENE	16.878	164	3384909	34.77	PPBV	98
56) DIBROMOCHLOROMETHANE	15.728	129	4353983	37.47	PPBV	99
57) 1,2-DIBROMOETHANE	16.141	107	3530781	36.80	PPBV	100
58) 1,1,1,2-TETRACHLOROETHANE	18.070	131	2906938	36.84	PPBV #	85
59) CHLOROBENZENE	18.100	112	5441708	36.38	PPBV	98
60) ETHYLBENZENE	18.788	91	7581643	34.09	PPBV	99
61) m,p-XYLENE	19.128	106	6307060	68.34	PPBV	98
62) o-XYLENE	20.035	106	3136234	33.72	PPBV	96
63) STYRENE	19.828	104	4707558	35.92	PPBV	99
64) NONANE	20.455	43	3094084	31.37	PPBV	83
65) BROMOFORM	19.299	173	4228715	39.73	PPBV	99
67) 1,1,2,2-TETRACHLOROETHANE	20.035	83	3918268	31.75	PPBV	100
68) ISOPROPYLBENZENE	21.221	105	8610972	33.87	PPBV	98
69) 2-CHLOROTOLUENE	22.237	91	6259082	35.05	PPBV	99
70) 4-ETHYLTOLUENE	22.657	105	8164567	34.74	PPBV	99
71) 1,3,5-TRIMETHYLBENZENE	22.839	105	7287890	34.17	PPBV	99
72) TERT-BUTYLBENZENE	23.776	119	7733455	34.26	PPBV	100
73) 1,2,4-TRIMETHYLBENZENE	23.801	105	7368451	34.13	PPBV #	30
74) m-DICHLOROBENZENE	24.147	146	5292876	38.52	PPBV	99
75) BENZYL CHLORIDE	24.117	91	4430624	42.19	PPBV	97
76) p-DICHLOROBENZENE	24.299	146	5175341	38.06	PPBV	99
77) SEC-BUTYLBENZENE	24.409	105	10122374	33.89	PPBV	98
78) 4-ISOPROPYLTOLUENE	24.762	119	8565978	34.93	PPBV	99
79) o-DICHLOROBENZENE	25.023	146	4497526	37.42	PPBV	99
80) n-BUTYLBENZENE	25.614	91	7120430	36.35	PPBV	98
81) HEXACHLOROBUTADIENE	29.099	225	1661256	39.65	PPBV	99
82) 1,2,4-TRICHLOROBENZENE	28.248	180	1493372	42.99	PPBV	99
83) NAPHTHALENE	28.448	128	2870629m	42.97	PPBV	

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\J150122\
 Data File : j29708.D
 Acq On : 23 Jan 2015 2:15 am
 Operator : akina
 Sample : ic1510-30(m131)
 Misc : ms33716,msj1510,,,,,1
 ALS Vial : 7 Sample Multiplier: 1

Quant Time: Jan 23 10:11:43 2015
 Quant Method : C:\msdchem\1\methods\J150122T.M
 Quant Title : T015 by GCMS w/DB-1 60 m X .25 mm ID 1.0 um
 QLast Update : Fri Jan 23 09:38:28 2015
 Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\J150122\
 Data File : j29709.D
 Acq On : 23 Jan 2015 3:01 am
 Operator : akina
 Sample : ic1510-40(m131)
 Misc : ms33716,msj1510,,,,,1
 ALS Vial : 7 Sample Multiplier: 1

Quant Time: Jan 23 10:22:05 2015
 Quant Method : C:\msdchem\1\methods\J150122T.M
 Quant Title : T015 by GCMS w/DB-1 60 m X .25 mm ID 1.0 um
 QLast Update : Fri Jan 23 09:38:28 2015
 Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) BROMOCHLOROMETHANE	9.018	128	498061	10.00	PPBV	# 0.02
37) 1,4-DIFLUOROBENZENE	11.348	114	2697103	10.00	PPBV	0.04
53) CHLOROBENZENE-D5	18.046	82	1528268m	10.00	PPBV	0.05

System Monitoring Compounds						
66) 4-BROMOFLUOROBENZENE	20.972	95	1019325	5.39	PPBV	0.05
Spiked Amount	5.000	Range	50 - 129	Recovery	=	107.80%

Target Compounds				Qvalue		
2) DICHLORODIFLUOROMETHANE	4.333	85	4655628	36.68	PPBV	98
3) PROPYLENE	4.260	41	677994	37.35	PPBV	99
4) FREON 114	4.601	85	4169563	35.86	PPBV	97
5) CHLOROMETHANE	4.504	50	949141	38.92	PPBV	97
6) VINYL CHLORIDE	4.729	62	1367265	38.86	PPBV	98
7) 1,3-BUTADIENE	4.863	39	635743	39.23	PPBV	# 76
8) BROMOMETHANE	5.136	94	1797733	38.76	PPBV	99
9) CHLOROETHANE	5.301	64	628254	39.60	PPBV	96
10) ACROLEIN	5.745	56	329993	44.76	PPBV	98
11) TRICHLOROFLUOROMETHANE	6.031	101	4855535	38.53	PPBV	100
12) ISOPROPYL ALCOHOL	6.274	45	1399742	39.62	PPBV	89
13) ACETONE	5.872	43	1088219	39.94	PPBV	85
14) ACRYLONITRILE	6.323	53	646354	42.39	PPBV	98
15) PENTANE	6.365	42	893828	37.70	PPBV	91
16) 1,1-DICHLOROETHYLENE	6.645	96	1891227	39.99	PPBV	88
17) CARBON DISULFIDE	7.101	76	4060145	39.72	PPBV	95
18) ETHANOL	5.483	45	225806	42.57	PPBV	98
19) BROMOETHENE	5.641	106	1881316	39.78	PPBV	99
20) METHYLENE CHLORIDE	6.755	84	1580172	40.91	PPBV	84
21) 3-CHLOROPROPENE	6.876	39	1070381	49.53	PPBV	88
22) FREON 113	7.004	151	3642478	38.60	PPBV	100
23) TRANS-1,2-DICHLOROETHY...	7.704	96	1773404	42.09	PPBV	92
24) TERTIARY BUTYL ALCOHOL	6.901	59	2220155	39.61	PPBV	# 69
25) METHYL TERTIARY BUTYL ...	7.971	73	3695334	40.73	PPBV	98
26) TETRAHYDROFURAN	9.650	42	1083333	39.68	PPBV	78
27) HEXANE	9.030	57	1999531	38.85	PPBV	89
28) VINYL ACETATE	8.062	43	2141645	44.81	PPBV	90
29) 1,1-DICHLOROETHANE	7.916	63	2840426	43.57	PPBV	99
30) METHYL ETHYL KETONE	8.385	43	1708204	41.08	PPBV	82
31) cis-1,2-DICHLOROETHYLENE	8.817	96	2329244	43.09	PPBV	93
32) ETHYL ACETATE	9.036	43	2836132	38.51	PPBV	# 93
33) CHLOROFORM	9.164	83	4442331	41.54	PPBV	98
34) 1,1,1-TRICHLOROETHANE	10.338	97	4801063	43.27	PPBV	98
35) CARBON TETRACHLORIDE	11.098	117	5226234	42.74	PPBV	99
36) 1,2-DICHLOROETHANE	10.046	62	2418775	48.66	PPBV	98
38) BENZENE	10.922	78	6387826	41.28	PPBV	98
39) CYCLOHEXANE	11.256	84	2754630	35.83	PPBV	91
40) TRICHLOROETHYLENE	12.303	95	2992478	30.43	PPBV	100
41) 1,2-DICHLOROPROPANE	12.005	63	2122845	39.28	PPBV	98
42) BROMODICHLOROMETHANE	12.266	83	4716503	37.86	PPBV	100

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\J150122\
Data File : j29709.D
Acq On : 23 Jan 2015 3:01 am
Operator : akina
Sample : ic1510-40(m131)
Misc : ms33716,msj1510,,,,,1
ALS Vial : 7 Sample Multiplier: 1

Quant Time: Jan 23 10:22:05 2015

Quant Method : C:\msdchem\1\methods\J150122T.M

Quant Title : T015 by GCMS w/DB-1 60 m X .25 mm ID 1.0 um

QLast Update : Fri Jan 23 09:38:28 2015

Response via : Initial Calibration

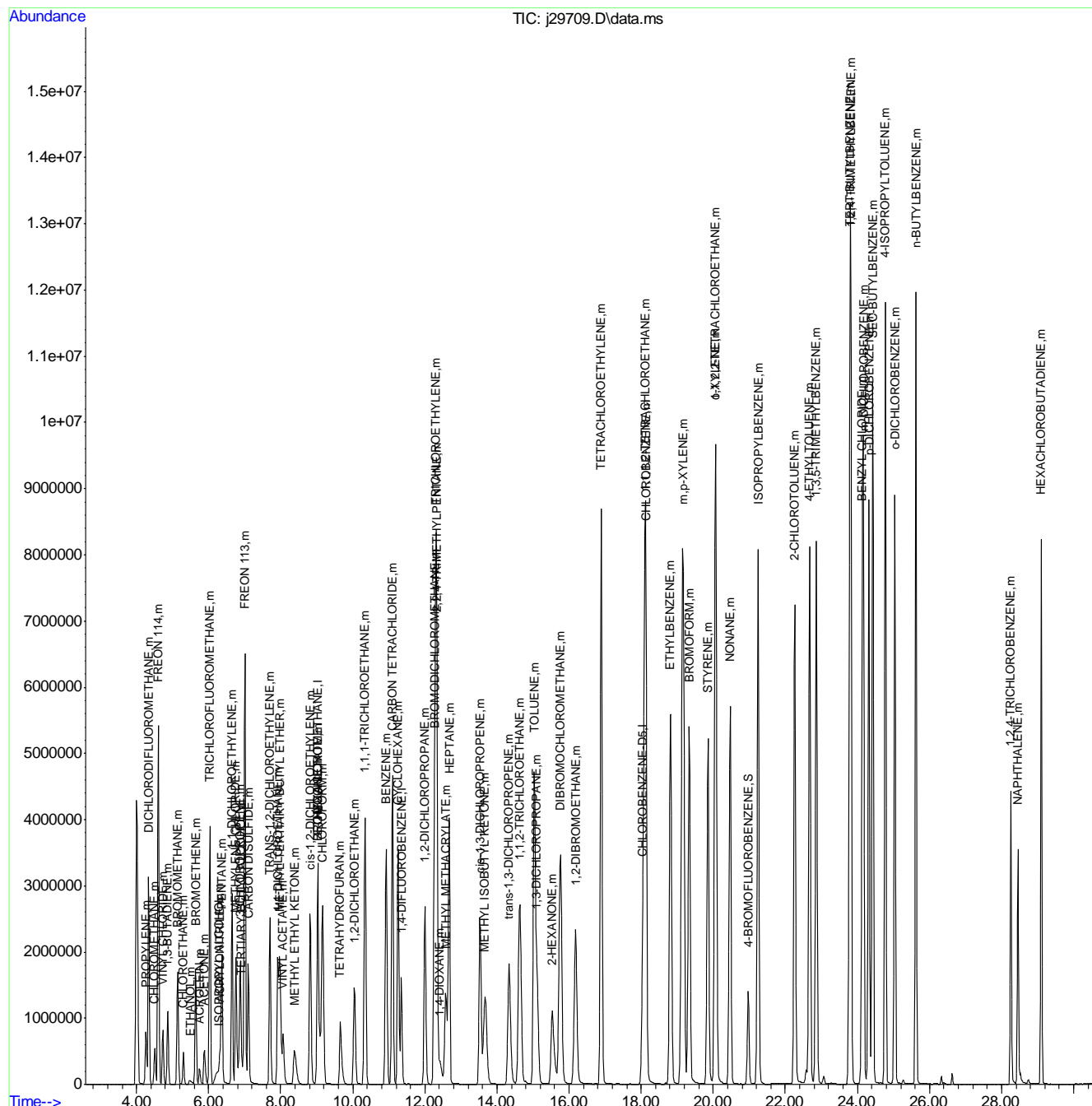
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
43) 2,2,4-TRIMETHYLPENTANE	12.333	57	7207225	28.50	PPBV	98
44) 1,4-DIOXANE	12.406	88	1068039	37.82	PPBV #	100
45) METHYL METHACRYLATE	12.576	41	1497196	34.73	PPBV #	30
46) HEPTANE	12.674	43	2331681	31.01	PPBV #	79
47) METHYL ISOBUTYL KETONE	13.665	43	2825106	33.73	PPBV	85
48) cis-1,3-DICHLOROPROPENE	13.526	75	3735913	44.10	PPBV	85
49) TOLUENE	15.028	92	5009803	41.49	PPBV	96
50) trans-1,3-DICHLOROPROPENE	14.335	75	3504925	44.85	PPBV	92
51) 1,1,2-TRICHLOROETHANE	14.627	83	2578999	41.68	PPBV	99
52) 1,3-DICHLOROPROPANE	15.101	76	3623345	39.47	PPBV	98
54) 2-HEXANONE	15.533	43	2520800	33.83	PPBV	83
55) TETRACHLOROETHYLENE	16.890	164	4679083	38.17	PPBV	98
56) DIBROMOCHLOROMETHANE	15.758	129	6282101	42.94	PPBV	99
57) 1,2-DIBROMOETHANE	16.184	107	5143682	42.57	PPBV	100
58) 1,1,1,2-TETRACHLOROETHANE	18.100	131	4124004	41.51	PPBV #	84
59) CHLOROBENZENE	18.131	112	7695675	40.85	PPBV	97
60) ETHYLBENZENE	18.812	91	10678556	38.13	PPBV	98
61) m,p-XYLENE	19.159	106	8737804	75.19	PPBV	98
62) o-XYLENE	20.065	106	4309941	36.80	PPBV	95
63) STYRENE	19.852	104	6715505	40.69	PPBV	99
64) NONANE	20.473	43	4167735	33.56	PPBV	81
65) BROMOFORM	19.335	173	6166866	46.02	PPBV	99
67) 1,1,2,2-TETRACHLOROETHANE	20.065	83	5256158	33.83	PPBV	99
68) ISOPROPYLBENZENE	21.246	105	11923923	37.24	PPBV	98
69) 2-CHLOROTOLUENE	22.262	91	8904021	39.60	PPBV	98
70) 4-ETHYLTOLUENE	22.675	105	11303284	38.20	PPBV	98
71) 1,3,5-TRIMETHYLBENZENE	22.858	105	10074886	37.52	PPBV	98
72) TERT-BUTYLBENZENE	23.795	119	10449562	36.76	PPBV	100
73) 1,2,4-TRIMETHYLBENZENE	23.819	105	9869240	36.30	PPBV #	30
74) m-DICHLOROBENZENE	24.166	146	7632091	44.11	PPBV	99
75) BENZYL CHLORIDE	24.135	91	6271727	47.42	PPBV	96
76) p-DICHLOROBENZENE	24.318	146	7490291	43.74	PPBV	99
77) SEC-BUTYLBENZENE	24.427	105	13755717	36.57	PPBV	96
78) 4-ISOPROPYLTOLUENE	24.774	119	11604568	37.58	PPBV	98
79) o-DICHLOROBENZENE	25.036	146	6486365	42.85	PPBV	99
80) n-BUTYLBENZENE	25.626	91	9728021	39.44	PPBV	96
81) HEXACHLOROBUTADIENE	29.099	225	2130526	40.38	PPBV	99
82) 1,2,4-TRICHLOROBENZENE	28.254	180	2106934	48.16	PPBV	99
83) NAPHTHALENE	28.455	128	4217654	50.13	PPBV	100

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\J150122\
Data File : j29709.D
Acq On : 23 Jan 2015 3:01 am
Operator : akina
Sample : ic1510-40(m131)
Misc : ms33716,msj1510,,,,,1
ALS Vial : 7 Sample Multiplier: 1

Quant Time: Jan 23 10:22:05 2015
Quant Method : C:\msdchem\1\methods\J150122T.M
Quant Title : TO15 by GCMS w/DB-1 60 m X .25 mm ID 1.0 um
QLast Update : Fri Jan 23 09:38:28 2015
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\J150122\
 Data File : j29712.D
 Acq On : 23 Jan 2015 11:17 am
 Operator : akina
 Sample : ICC1510-10(m131)
 Misc : ms33716,msj1510,,,,,1
 ALS Vial : 7 Sample Multiplier: 1

Quant Time: Jan 23 12:17:35 2015

Quant Method : C:\msdchem\1\methods\J150122T.M

Quant Title : T015 by GCMS w/DB-1 60 m X .25 mm ID 1.0 um

QLast Update : Fri Jan 23 10:57:35 2015

Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) BROMOCHLOROMETHANE	8.999	128	436050	10.00	PPBV	# 0.00
37) 1,4-DIFLUOROBENZENE	11.311	114	1933654	10.00	PPBV	0.00
53) CHLOROBENZENE-D5	17.997	82	998793	10.00	PPBV	# 0.00

System Monitoring Compounds

66) 4-BROMOFLUOROBENZENE 20.929 95 667203 5.76 PPBV 0.01
 Spiked Amount 5.000 Range 50 - 129 Recovery = 115.20%

Target Compounds

						Qvalue
2) DICHLORODIFLUOROMETHANE	4.339	85	1296045	11.25	PPBV	99
3) PROPYLENE	4.260	41	173774	10.81	PPBV	99
4) FREON 114	4.607	85	1111459	10.96	PPBV	98
5) CHLOROMETHANE	4.510	50	238809	11.50	PPBV	97
6) VINYL CHLORIDE	4.735	62	347569	11.81	PPBV	99
7) 1,3-BUTADIENE	4.869	39	152637	11.04	PPBV	# 76
8) BROMOMETHANE	5.142	94	444648	11.30	PPBV	99
9) CHLOROETHANE	5.300	64	148411	10.65	PPBV	96
10) ACROLEIN	5.751	56	65697	10.34	PPBV	98
11) TRICHLOROFLUOROMETHANE	6.037	101	1193705	10.61	PPBV	100
12) ISOPROPYL ALCOHOL	6.183	45	302452	10.15	PPBV	99
13) ACETONE	5.884	43	237889	9.73	PPBV	88
14) ACRYLONITRILE	6.316	53	137876	10.66	PPBV	98
15) PENTANE	6.365	42	224207	10.77	PPBV	95
16) 1,1-DICHLOROETHYLENE	6.645	96	460892	11.28	PPBV	88
17) CARBON DISULFIDE	7.101	76	1042047	11.61	PPBV	95
18) ETHANOL	5.495	45	43258	9.45	PPBV	# 94
19) BROMOETHENE	5.641	106	457089	11.45	PPBV	99
20) METHYLENE CHLORIDE	6.754	84	375227	10.88	PPBV	84
21) 3-CHLOROPROPENE	6.870	39	229505	12.10	PPBV	# 85
22) FREON 113	7.004	151	912055	10.98	PPBV	98
23) TRANS-1,2-DICHLOROETHY...	7.697	96	414486	11.87	PPBV	91
24) TERTIARY BUTYL ALCOHOL	6.779	59	484008	10.32	PPBV	85
25) METHYL TERTIARY BUTYL ...	7.971	73	819563	10.93	PPBV	98
26) TETRAHYDROFURAN	9.638	42	237029	10.24	PPBV	80
27) HEXANE	9.018	57	496065	10.97	PPBV	89
28) VINYL ACETATE	8.038	43	419630	10.08	PPBV	92
29) 1,1-DICHLOROETHANE	7.904	63	665462	11.71	PPBV	99
30) METHYL ETHYL KETONE	8.342	43	359694	9.90	PPBV	84
31) cis-1,2-DICHLOROETHYLENE	8.805	96	535426	11.95	PPBV	93
32) ETHYL ACETATE	9.030	43	662112	11.07	PPBV	# 98
33) CHLOROFORM	9.133	83	1011193	10.70	PPBV	98
34) 1,1,1-TRICHLOROETHANE	10.313	97	1073997	11.19	PPBV	98
35) CARBON TETRACHLORIDE	11.080	117	1174077	11.25	PPBV	99
36) 1,2-DICHLOROETHANE	10.009	62	456630	10.24	PPBV	99
38) BENZENE	10.897	78	1278167	11.34	PPBV	98
39) CYCLOHEXANE	11.244	84	644424	11.90	PPBV	95
40) TRICHLOROETHYLENE	12.272	95	801174	11.99	PPBV	98
41) 1,2-DICHLOROPROPANE	11.962	63	420779	11.15	PPBV	97
42) BROMODICHLOROMETHANE	12.224	83	1032742	12.07	PPBV	100

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\J150122\
Data File : j29712.D
Acq On : 23 Jan 2015 11:17 am
Operator : akina
Sample : ICC1510-10(m131)
Misc : ms33716,msj1510,,,,,1
ALS Vial : 7 Sample Multiplier: 1

Quant Time: Jan 23 12:17:35 2015

Quant Method : C:\msdchem\1\methods\J150122T.M

Quant Title : T015 by GCMS w/DB-1 60 m X .25 mm ID 1.0 um

QLast Update : Fri Jan 23 10:57:35 2015

Response via : Initial Calibration

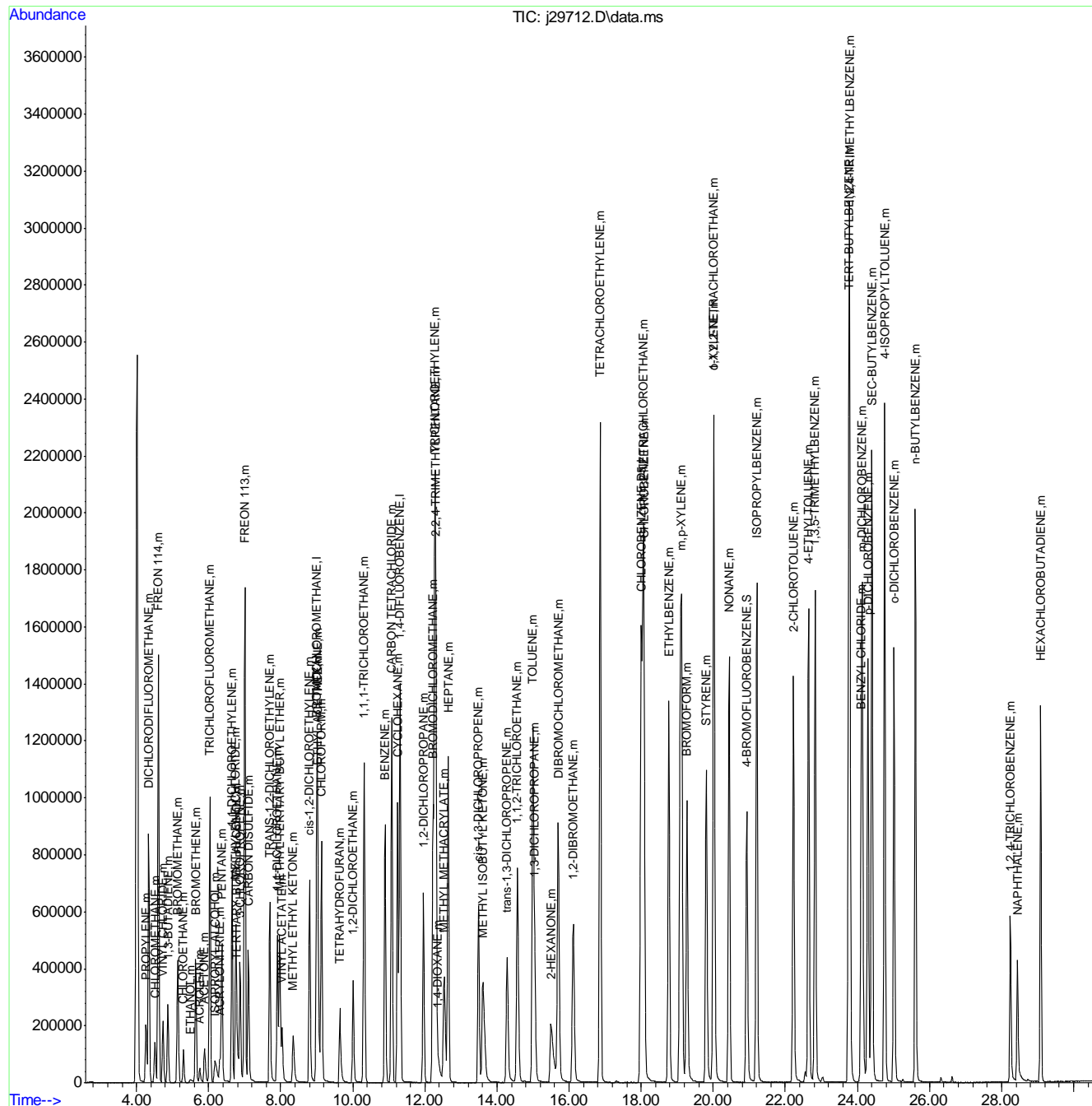
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
43) 2,2,4-TRIMETHYLPENTANE	12.303	57	2053799	11.86	PPBV	99
44) 1,4-DIOXANE	12.363	88	220831	12.23	PPBV #	100
45) METHYL METHACRYLATE	12.534	41	315912	11.08	PPBV #	40
46) HEPTANE	12.649	43	595525	11.39	PPBV	84
47) METHYL ISOBUTYL KETONE	13.611	43	624790	11.08	PPBV	88
48) cis-1,3-DICHLOROPROPENE	13.489	75	680590	11.47	PPBV #	77
49) TOLUENE	14.992	92	950930	11.05	PPBV	98
50) trans-1,3-DICHLOROPROPENE	14.280	75	617268	11.61	PPBV	94
51) 1,1,2-TRICHLOROETHANE	14.566	83	483712	11.39	PPBV	99
52) 1,3-DICHLOROPROPANE	15.040	76	703203	11.51	PPBV	99
54) 2-HEXANONE	15.503	43	527678	11.75	PPBV	87
55) TETRACHLOROETHYLENE	16.865	164	956990	12.16	PPBV	96
56) DIBROMOCHLOROMETHANE	15.697	129	1139135	11.65	PPBV	100
57) 1,2-DIBROMOETHANE	16.117	107	907194	11.32	PPBV	100
58) 1,1,1,2-TETRACHLOROETHANE	18.052	131	743953	11.30	PPBV #	40
59) CHLOROBENZENE	18.076	112	1409962	11.23	PPBV	100
60) ETHYLBENZENE	18.769	91	2067472	11.39	PPBV	100
61) m,p-XYLENE	19.116	106	1705751	22.93	PPBV	100
62) o-XYLENE	20.017	106	852826	11.50	PPBV	100
63) STYRENE	19.810	104	1220131	11.63	PPBV	100
64) NONANE	20.442	43	912304	11.58	PPBV	89
65) BROMOFORM	19.274	173	1020752	11.51	PPBV	100
67) 1,1,2,2-TETRACHLOROETHANE	20.017	83	1112961	11.81	PPBV	100
68) ISOPROPYLBENZENE	21.209	105	2340752	12.04	PPBV	100
69) 2-CHLOROTOLUENE	22.225	91	1636618	11.96	PPBV	98
70) 4-ETHYLTOLUENE	22.645	105	2148461	11.68	PPBV	100
71) 1,3,5-TRIMETHYLBENZENE	22.827	105	1940563	12.07	PPBV	99
72) TERT-BUTYLBENZENE	23.770	119	2036380	11.54	PPBV	99
73) 1,2,4-TRIMETHYLBENZENE	23.782	105	1945735	11.69	PPBV	94
74) m-DICHLOROBENZENE	24.135	146	1247118	11.39	PPBV	99
75) BENZYL CHLORIDE	24.105	91	999056	11.51	PPBV	99
76) p-DICHLOROBENZENE	24.293	146	1235930	11.17	PPBV	98
77) SEC-BUTYLBENZENE	24.403	105	2688875	11.55	PPBV	99
78) 4-ISOPROPYLTOLUENE	24.756	119	2201333	11.62	PPBV	99
79) o-DICHLOROBENZENE	25.017	146	1071136	11.00	PPBV	98
80) n-BUTYLBENZENE	25.607	91	1757202	11.72	PPBV	99
81) HEXACHLOROBUTADIENE	29.087	225	359178	10.86	PPBV	100
82) 1,2,4-TRICHLOROBENZENE	28.242	180	337672	13.17	PPBV	99
83) NAPHTHALENE	28.442	128	659527	13.41	PPBV	98

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\J150122\
Data File : j29712.D
Acq On : 23 Jan 2015 11:17 am
Operator : akina
Sample : ICC1510-10(m131)
Misc : ms33716,msj1510,,,,,1
ALS Vial : 7 Sample Multiplier: 1

Quant Time: Jan 23 12:17:35 2015
Quant Method : C:\msdchem\1\methods\J150122T.M
Quant Title : TO15 by GCMS w/DB-1 60 m X .25 mm ID 1.0 um
QLast Update : Fri Jan 23 10:57:35 2015
Response via : Initial Calibration



J150122T.M Mon Jan 26 15:41:49 2015

Page: 3

7.7.7

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\J150122\
 Data File : j29713.D
 Acq On : 23 Jan 2015 12:52 pm
 Operator : akina
 Sample : ic1510-0.5(m434)
 Misc : ms33716,msj1510,,,,,1
 ALS Vial : 6 Sample Multiplier: 1

Quant Time: Jan 23 13:38:33 2015
 Quant Method : C:\msdchem\1\methods\J150122T.M
 Quant Title : T015 by GCMS w/DB-1 60 m X .25 mm ID 1.0 um
 QLast Update : Fri Jan 23 12:32:02 2015
 Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) BROMOCHLOROMETHANE	8.993	128	512439	10.00	PPBV	0.00
37) 1,4-DIFLUOROBENZENE	11.293	114	2506837	10.00	PPBV	-0.02
53) CHLOROBENZENE-D5	17.967	82	1077158	10.00	PPBV	#-0.02

System Monitoring Compounds						
66) 4-BROMOFLUOROBENZENE	20.893	95	487333m	3.73	PPBV	-0.02
Spiked Amount	5.000	Range	50 - 129	Recovery	=	74.60%

Target Compounds				Qvalue		
2) DICHLORODIFLUOROMETHANE	4.333	85	53697	0.39	PPBV	98
3) PROPYLENE	4.260	41	7353	0.39	PPBV	97
4) FREON 114	4.601	85	56475	0.47	PPBV	99
5) CHLOROMETHANE	4.510	50	10012	0.40	PPBV #	42
6) VINYL CHLORIDE	4.729	62	14385	0.41	PPBV #	95
7) 1,3-BUTADIENE	4.869	39	6704	0.41	PPBV #	77
8) BROMOMETHANE	5.142	94	21110	0.45	PPBV #	94
9) CHLOROETHANE	5.301	64	7568	0.46	PPBV #	45
11) TRICHLOROFLUOROMETHANE	6.031	101	62596	0.47	PPBV	99
12) ISOPROPYL ALCOHOL	6.414	45	14681m	0.43	PPBV	
13) ACETONE	6.037	43	16046	0.58	PPBV	96
15) PENTANE	6.365	42	12640	0.52	PPBV	98
16) 1,1-DICHLOROETHYLENE	6.645	96	22787	0.47	PPBV	89
17) CARBON DISULFIDE	7.101	76	46631	0.43	PPBV	97
19) BROMOETHENE	5.641	106	21686	0.46	PPBV #	95
20) METHYLENE CHLORIDE	6.755	84	20624	0.51	PPBV	85
21) 3-CHLOROPROPENE	6.870	39	9683	0.43	PPBV #	79
22) FREON 113	7.004	151	48715	0.50	PPBV	95
23) TRANS-1,2-DICHLOROETHY...	7.698	96	18421	0.45	PPBV	91
24) TERTIARY BUTYL ALCOHOL	7.132	59	23660m	0.44	PPBV	
25) METHYL TERTIARY BUTYL ...	8.063	73	44634	0.52	PPBV #	96
26) TETRAHYDROFURAN	9.784	42	11717	0.44	PPBV	90
27) HEXANE	9.018	57	27256	0.51	PPBV	87
28) VINYL ACETATE	8.087	43	23596	0.50	PPBV #	77
29) 1,1-DICHLOROETHANE	7.904	63	34945	0.52	PPBV	99
30) METHYL ETHYL KETONE	8.452	43	20098	0.49	PPBV #	94
31) cis-1,2-DICHLOROETHYLENE	8.799	96	24368	0.46	PPBV	95
32) ETHYL ACETATE	9.018	43	14142	0.21	PPBV #	93
33) CHLOROFORM	9.121	83	52856	0.48	PPBV	99
34) 1,1,1-TRICHLOROETHANE	10.307	97	55118	0.49	PPBV	98
35) CARBON TETRACHLORIDE	11.068	117	57842	0.47	PPBV	99
36) 1,2-DICHLOROETHANE	9.997	62	23096	0.45	PPBV #	91
38) BENZENE	10.885	78	72279	0.49	PPBV	98
39) CYCLOHEXANE	11.238	84	34903	0.49	PPBV #	46
40) TRICHLOROETHYLENE	12.254	95	38466	0.44	PPBV	99
41) 1,2-DICHLOROPROPANE	11.944	63	24608	0.51	PPBV	93
42) BROMODICHLOROMETHANE	12.199	83	54766	0.49	PPBV	97
43) 2,2,4-TRIMETHYLPENTANE	12.291	57	113497	0.51	PPBV	98
44) 1,4-DIOXANE	12.765	88	7596m	0.33	PPBV	
45) METHYL METHACRYLATE	12.552	41	13098	0.37	PPBV #	43

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\J150122\
 Data File : j29713.D
 Acq On : 23 Jan 2015 12:52 pm
 Operator : akina
 Sample : ic1510-0.5(m434)
 Misc : ms33716,msj1510,,,,,1
 ALS Vial : 6 Sample Multiplier: 1

Quant Time: Jan 23 13:38:33 2015

Quant Method : C:\msdchem\1\methods\J150122T.M

Quant Title : T015 by GCMS w/DB-1 60 m X .25 mm ID 1.0 um

QLast Update : Fri Jan 23 12:32:02 2015

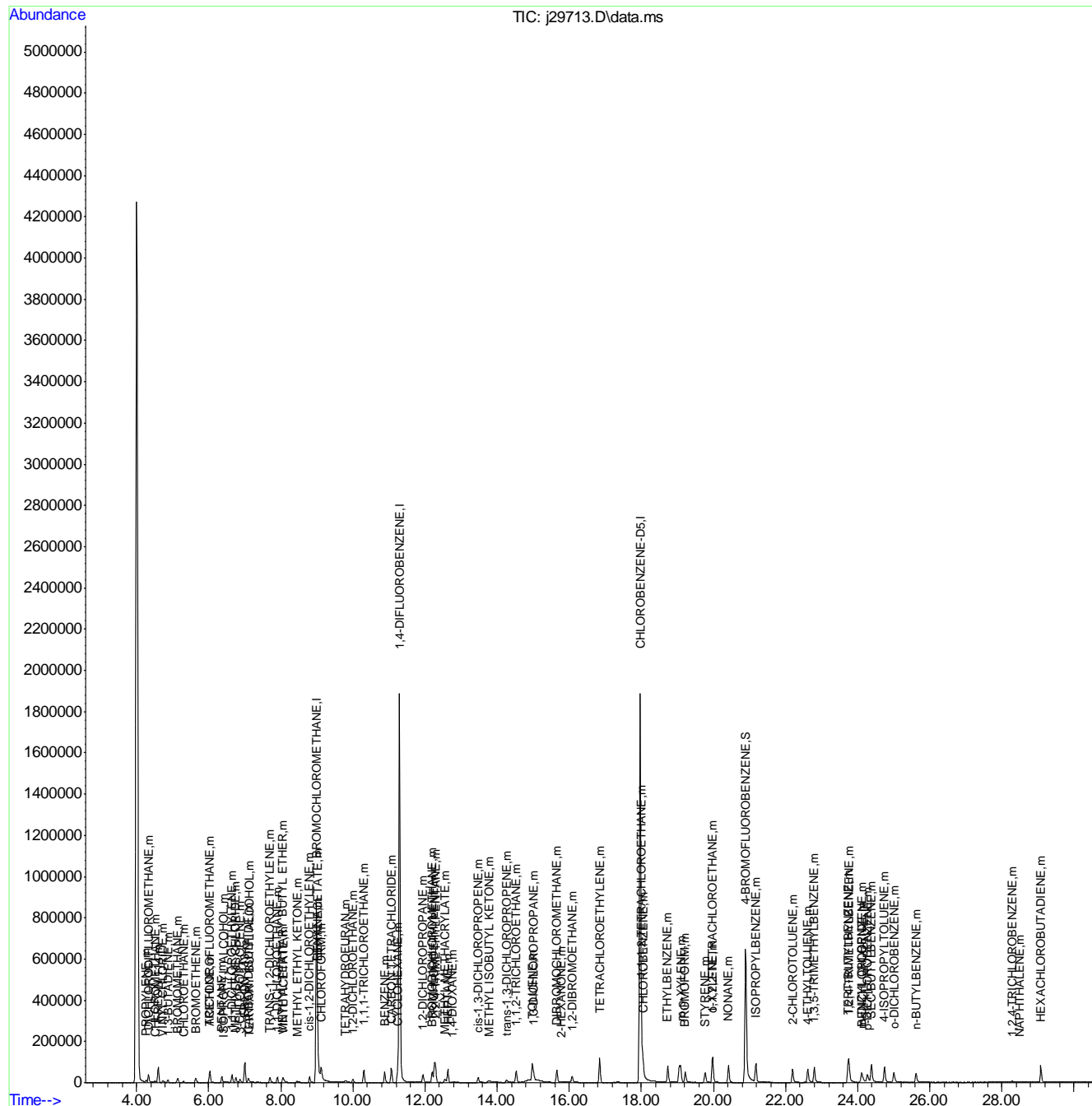
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
46) HEPTANE	12.637	43	32510	0.48	PPBV	86
47) METHYL ISOBUTYL KETONE	13.787	43	29843m	0.42	PPBV	
48) cis-1,3-DICHLOROPROPENE	13.477	75	29589	0.39	PPBV #	75
49) TOLUENE	14.980	92	50772	0.46	PPBV	98
50) trans-1,3-DICHLOROPROPENE	14.256	75	22442	0.33	PPBV	83
51) 1,1,2-TRICHLOROETHANE	14.529	83	26357	0.48	PPBV	97
52) 1,3-DICHLOROPROPANE	15.010	76	36513	0.47	PPBV	99
54) 2-HEXANONE	15.783	43	22756m	0.49	PPBV	
55) TETRACHLOROETHYLENE	16.847	164	46615	0.55	PPBV	94
56) DIBROMOCHLOROMETHANE	15.655	129	56804	0.54	PPBV	99
57) 1,2-DIBROMOETHANE	16.081	107	43535	0.51	PPBV #	98
58) 1,1,1,2-TETRACHLOROETHANE	18.009	131	37582	0.54	PPBV #	40
59) CHLOROBENZENE	18.046	112	72769	0.55	PPBV	99
60) ETHYLBENZENE	18.733	91	105692	0.55	PPBV	97
61) m,p-XYLENE	19.092	106	84783	1.09	PPBV	99
62) o-XYLENE	19.980	106	41298	0.53	PPBV	95
63) STYRENE	19.773	104	53969	0.49	PPBV	97
64) NONANE	20.418	43	48061	0.58	PPBV #	91
65) BROMOFORM	19.220	173	46079	0.49	PPBV	97
67) 1,1,2,2-TETRACHLOROETHANE	19.974	83	57757	0.59	PPBV	97
68) ISOPROPYLBENZENE	21.179	105	116923	0.57	PPBV	97
69) 2-CHLOROTOLUENE	22.201	91	80598	0.56	PPBV	95
70) 4-ETHYLTOLUENE	22.621	105	94110m	0.49	PPBV	
71) 1,3,5-TRIMETHYLBENZENE	22.797	105	97303	0.58	PPBV	95
72) TERT-BUTYLBENZENE	23.740	119	93548	0.51	PPBV	98
73) 1,2,4-TRIMETHYLBENZENE	23.758	105	85281	0.49	PPBV	96
74) m-DICHLOROBENZENE	24.111	146	51237	0.45	PPBV	97
75) BENZYL CHLORIDE	24.117	91	24740m	0.27	PPBV	
76) p-DICHLOROBENZENE	24.269	146	58797	0.51	PPBV	98
77) SEC-BUTYLBENZENE	24.385	105	123843	0.51	PPBV	96
78) 4-ISOPROPYLTOLUENE	24.744	119	93589	0.48	PPBV	97
79) o-DICHLOROBENZENE	25.005	146	52819	0.52	PPBV	97
80) n-BUTYLBENZENE	25.620	91	69853	0.45	PPBV	90
81) HEXACHLOROBUTADIENE	29.087	225	24638	0.71	PPBV	97
82) 1,2,4-TRICHLOROBENZENE	28.297	180	12237	0.46	PPBV #	82
83) NAPHTHALENE	28.497	128	28466	0.55	PPBV #	69

(#) = qualifier out of range (m) = manual integration (+) = signals summed

(QT Reviewed)

Quant Time: Jan 23 13:38:33 2015
Quant Method : C:\msdchem\1\methods\J150122T.M
Quant Title : TO15 by GCMS w/DB-1 60 m X .25 mm ID 1.0 um
QLast Update : Fri Jan 23 12:32:02 2015
Response via : Initial Calibration



7.7.8

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\J150125\
 Data File : j29715.D
 Acq On : 25 Jan 2015 5:41 pm
 Operator : akina
 Sample : cc1510-10(m407)
 Misc : ms33716,msj1511,,,,,1
 ALS Vial : 2 Sample Multiplier: 1

Quant Time: Jan 25 18:25:37 2015
 Quant Method : C:\msdchem\1\methods\J150122T.M
 Quant Title : T015 by GCMS w/DB-1 60 m X .25 mm ID 1.0 um
 QLast Update : Fri Jan 23 13:48:53 2015
 Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) BROMOCHLOROMETHANE	8.993	128	522824	10.00	PPBV	# 0.00
37) 1,4-DIFLUOROBENZENE	11.311	114	2587659	10.00	PPBV	0.00
53) CHLOROBENZENE-D5	17.997	82	1164861	10.00	PPBV	# 0.00

System Monitoring Compounds						
66) 4-BROMOFLUOROBENZENE	20.923	95	556109	4.25	PPBV	0.00
Spiked Amount	5.000	Range	50 - 129	Recovery	=	85.00%

Target Compounds						Qvalue
2) DICHLORODIFLUOROMETHANE	4.339	85	993942	7.40	PPBV	99
3) PROPYLENE	4.260	41	134478	7.23	PPBV	98
4) FREON 114	4.607	85	1042624	8.68	PPBV	99
5) CHLOROMETHANE	4.510	50	201187	8.15	PPBV	98
6) VINYL CHLORIDE	4.735	62	298137	8.46	PPBV	99
7) 1,3-BUTADIENE	4.869	39	148854	9.06	PPBV	# 76
8) BROMOMETHANE	5.142	94	415331	8.82	PPBV	99
9) CHLOROETHANE	5.301	64	157509	9.53	PPBV	96
10) ACROLEIN	5.751	56	67142	9.15	PPBV	98
11) TRICHLOROFLUOROMETHANE	6.031	101	1174454	8.86	PPBV	100
12) ISOPROPYL ALCOHOL	6.177	45	306212	9.00	PPBV	98
13) ACETONE	5.885	43	244368	8.82	PPBV	86
14) ACRYLONITRILE	6.310	53	142547	9.50	PPBV	96
15) PENTANE	6.365	42	227152	9.24	PPBV	94
16) 1,1-DICHLOROETHYLENE	6.645	96	455400	9.35	PPBV	89
17) CARBON DISULFIDE	7.101	76	931606	8.76	PPBV	95
18) ETHANOL	5.489	45	44637	8.48	PPBV	# 91
19) BROMOETHENE	5.641	106	442738	9.25	PPBV	99
20) METHYLENE CHLORIDE	6.748	84	387319	9.45	PPBV	85
21) 3-CHLOROPROPENE	6.870	39	228376	9.53	PPBV	# 82
22) FREON 113	7.004	151	943615	9.59	PPBV	97
23) TRANS-1,2-DICHLOROETHY...	7.697	96	424371	10.17	PPBV	92
24) TERTIARY BUTYL ALCOHOL	6.767	59	494314	9.11	PPBV	87
25) METHYL TERTIARY BUTYL ...	7.971	73	833273	9.25	PPBV	98
26) TETRAHYDROFURAN	9.638	42	244520	9.28	PPBV	81
27) HEXANE	9.018	57	513331	9.70	PPBV	89
28) VINYL ACETATE	8.038	43	417494	8.83	PPBV	93
29) 1,1-DICHLOROETHANE	7.904	63	688557	10.11	PPBV	99
30) METHYL ETHYL KETONE	8.342	43	373034	9.08	PPBV	85
31) cis-1,2-DICHLOROETHYLENE	8.805	96	549399	10.22	PPBV	94
32) ETHYL ACETATE	9.030	43	684799	10.21	PPBV	# 98
33) CHLOROFORM	9.127	83	1054214	9.69	PPBV	98
34) 1,1,1-TRICHLOROETHANE	10.313	97	1107622	9.70	PPBV	98
35) CARBON TETRACHLORIDE	11.080	117	1196908	9.64	PPBV	100
36) 1,2-DICHLOROETHANE	10.009	62	469773	9.01	PPBV	98
38) BENZENE	10.891	78	1315935	8.94	PPBV	98
39) CYCLOHEXANE	11.244	84	660887	9.15	PPBV	96
40) TRICHLOROETHYLENE	12.272	95	838185	9.89	PPBV	98
41) 1,2-DICHLOROPROPANE	11.962	63	434315	9.03	PPBV	96
42) BROMODICHLOROMETHANE	12.218	83	1082396	9.68	PPBV	100

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\J150125\
 Data File : j29715.D
 Acq On : 25 Jan 2015 5:41 pm
 Operator : akina
 Sample : cc1510-10(m407)
 Misc : ms33716,msj1511,,,,,1
 ALS Vial : 2 Sample Multiplier: 1

Quant Time: Jan 25 18:25:37 2015

Quant Method : C:\msdchem\1\methods\J150122T.M

Quant Title : T015 by GCMS w/DB-1 60 m X .25 mm ID 1.0 um

QLast Update : Fri Jan 23 13:48:53 2015

Response via : Initial Calibration

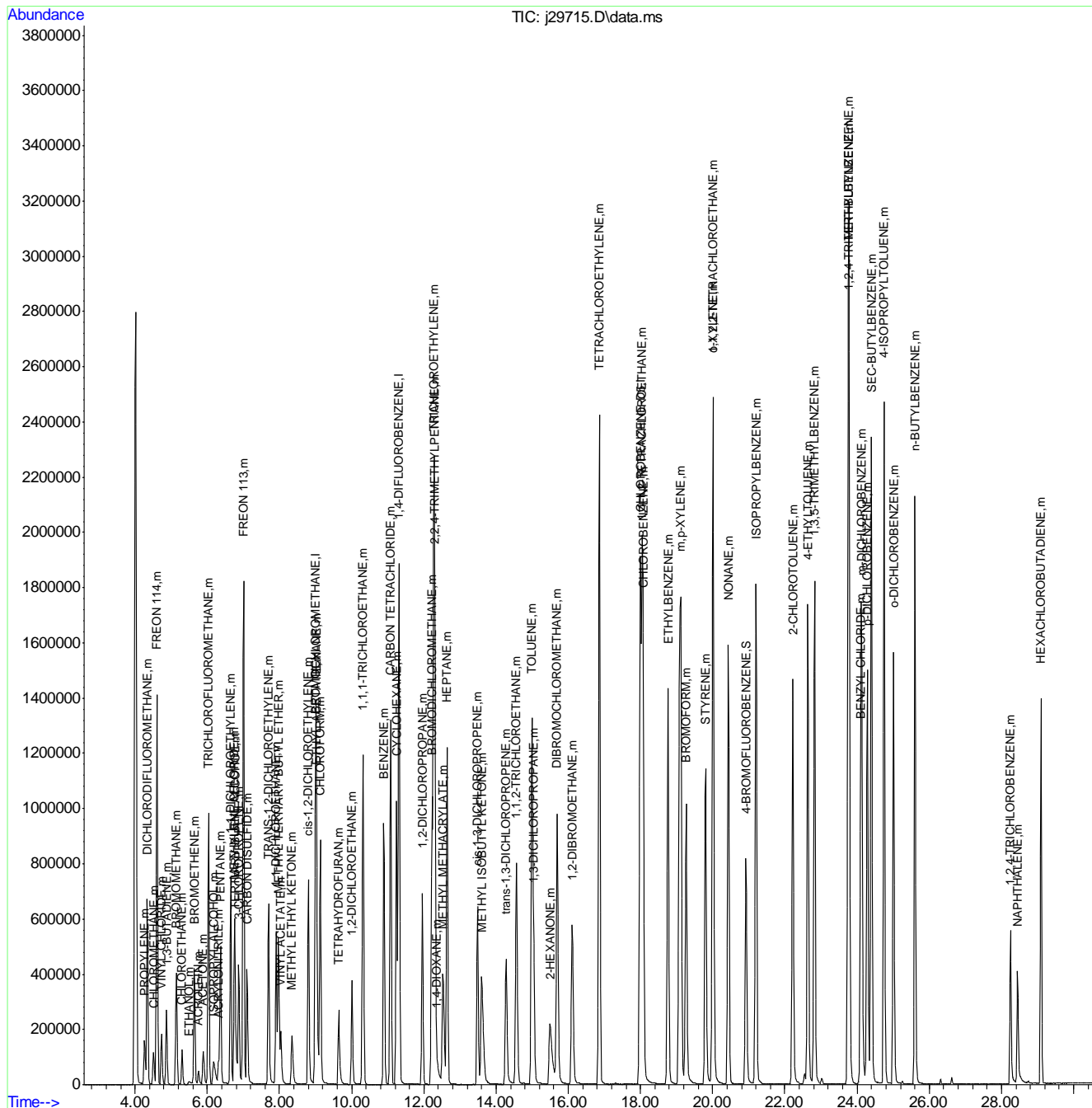
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
43) 2,2,4-TRIMETHYLPENTANE	12.303	57	2168110	9.84	PPBV	99
44) 1,4-DIOXANE	12.358	88	221025	9.25	PPBV #	100
45) METHYL METHACRYLATE	12.528	41	327097	9.13	PPBV #	41
46) HEPTANE	12.643	43	627086	9.54	PPBV	85
47) METHYL ISOBUTYL KETONE	13.605	43	649507	9.15	PPBV	89
48) cis-1,3-DICHLOROPROPENE	13.483	75	685873	8.89	PPBV #	78
49) TOLUENE	14.992	92	964851	9.21	PPBV	98
50) trans-1,3-DICHLOROPROPENE	14.274	75	610342	8.82	PPBV	94
51) 1,1,2-TRICHLOROETHANE	14.560	83	492596	9.09	PPBV	99
52) 1,3-DICHLOROPROPANE	15.040	76	719761	9.30	PPBV	100
54) 2-HEXANONE	15.491	43	539464	10.47	PPBV	88
55) TETRACHLOROETHYLENE	16.859	164	978386	10.63	PPBV	96
56) DIBROMOCHLOROMETHANE	15.691	129	1156984	10.59	PPBV	100
57) 1,2-DIBROMOETHANE	16.111	107	904378	10.49	PPBV	100
58) 1,1,1,2-TETRACHLOROETHANE	18.046	131	751846	9.93	PPBV #	40
59) CHLOROBENZENE	18.076	112	1416704	9.86	PPBV	99
60) ETHYLBENZENE	18.764	91	2090415	10.57	PPBV	100
61) m,p-XYLENE	19.110	106	1734152	21.54	PPBV	100
62) o-XYLENE	20.011	106	871059	10.93	PPBV	100
63) STYRENE	19.804	104	1223160	10.96	PPBV	100
64) NONANE	20.436	43	949542	10.52	PPBV	90
65) BROMOFORM	19.268	173	1010573	9.85	PPBV	99
67) 1,1,2,2-TETRACHLOROETHANE	20.011	83	1142640	10.77	PPBV	99
68) ISOPROPYLBENZENE	21.203	105	2392758	10.79	PPBV	100
69) 2-CHLOROTOLUENE	22.219	91	1654976	10.60	PPBV	97
70) 4-ETHYLTOLUENE	22.639	105	2183013	11.19	PPBV	100
71) 1,3,5-TRIMETHYLBENZENE	22.821	105	1991438	10.78	PPBV	99
72) TERT-BUTYLBENZENE	23.758	119	2100350	11.10	PPBV	99
73) 1,2,4-TRIMETHYLBENZENE	23.776	105	1988551	10.46	PPBV	94
74) m-DICHLOROBENZENE	24.129	146	1243912	9.90	PPBV	99
75) BENZYL CHLORIDE	24.099	91	957284	10.48	PPBV	99
76) p-DICHLOROBENZENE	24.281	146	1231053	9.68	PPBV	99
77) SEC-BUTYLBENZENE	24.397	105	2775849	11.15	PPBV	99
78) 4-ISOPROPYLTOLUENE	24.750	119	2268406	10.49	PPBV	99
79) o-DICHLOROBENZENE	25.011	146	1078937	9.66	PPBV	98
80) n-BUTYLBENZENE	25.608	91	1789227	10.38	PPBV	99
81) HEXACHLOROBUTADIENE	29.099	225	377152	9.63	PPBV	100
82) 1,2,4-TRICHLOROBENZENE	28.248	180	323458	10.53	PPBV	99
83) NAPHTHALENE	28.449	128	616360	10.35	PPBV	98

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\J150125\
Data File : j29715.D
Acq On : 25 Jan 2015 5:41 pm
Operator : akina
Sample : ccl1510-10(m407)
Misc : ms33716,msj1511,,,,,1
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Jan 25 18:25:37 2015
Quant Method : C:\msdchem\1\methods\J150122T.M
Quant Title : T015 by GCMS w/DB-1 60 m X .25 mm ID 1.0 um
QLast Update : Fri Jan 23 13:48:53 2015
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\J150125\
 Data File : j29715a.D
 Acq On : 25 Jan 2015 5:41 pm
 Operator : akina
 Sample : ICV1510-10(m407)
 Misc : ms33716,msj1511,,,,,1
 ALS Vial : 2 Sample Multiplier: 1

Quant Time: Jan 25 18:25:37 2015

Quant Method : C:\msdchem\1\methods\J150122T.M

Quant Title : T015 by GCMS w/DB-1 60 m X .25 mm ID 1.0 um

QLast Update : Fri Jan 23 13:48:53 2015

Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) BROMOCHLOROMETHANE	8.993	128	522824	10.00	PPBV	# 0.00
37) 1,4-DIFLUOROBENZENE	11.311	114	2587659	10.00	PPBV	0.00
53) CHLOROBENZENE-D5	17.997	82	1164861	10.00	PPBV	# 0.00

System Monitoring Compounds

66) 4-BROMOFLUOROBENZENE 20.923 95 556109 4.25 PPBV 0.00
 Spiked Amount 5.000 Range 50 - 129 Recovery = 85.00%

Target Compounds

						Qvalue
2) DICHLORODIFLUOROMETHANE	4.339	85	993942	7.40	PPBV	99
3) PROPYLENE	4.260	41	134478	7.23	PPBV	98
4) FREON 114	4.607	85	1042624	8.68	PPBV	99
5) CHLOROMETHANE	4.510	50	201187	8.15	PPBV	98
6) VINYL CHLORIDE	4.735	62	298137	8.46	PPBV	99
7) 1,3-BUTADIENE	4.869	39	148854	9.06	PPBV	# 76
8) BROMOMETHANE	5.142	94	415331	8.82	PPBV	99
9) CHLOROETHANE	5.301	64	157509	9.53	PPBV	96
10) ACROLEIN	5.751	56	67142	9.15	PPBV	98
11) TRICHLOROFLUOROMETHANE	6.031	101	1174454	8.86	PPBV	100
12) ISOPROPYL ALCOHOL	6.177	45	306212	9.00	PPBV	98
13) ACETONE	5.885	43	244368	8.82	PPBV	86
14) ACRYLONITRILE	6.310	53	142547	9.50	PPBV	96
15) PENTANE	6.365	42	227152	9.24	PPBV	94
16) 1,1-DICHLOROETHYLENE	6.645	96	455400	9.35	PPBV	89
17) CARBON DISULFIDE	7.101	76	931606	8.76	PPBV	95
18) ETHANOL	5.489	45	44637	8.48	PPBV	# 91
19) BROMOETHENE	5.641	106	442738	9.25	PPBV	99
20) METHYLENE CHLORIDE	6.748	84	387319	9.45	PPBV	85
21) 3-CHLOROPROPENE	6.870	39	228376	9.53	PPBV	# 82
22) FREON 113	7.004	151	943615	9.59	PPBV	97
23) TRANS-1,2-DICHLOROETHY...	7.697	96	424371	10.17	PPBV	92
24) TERTIARY BUTYL ALCOHOL	6.767	59	494314	9.11	PPBV	87
25) METHYL TERTIARY BUTYL ...	7.971	73	833273	9.25	PPBV	98
26) TETRAHYDROFURAN	9.638	42	244520	9.28	PPBV	81
27) HEXANE	9.018	57	513331	9.70	PPBV	89
28) VINYL ACETATE	8.038	43	417494	8.83	PPBV	93
29) 1,1-DICHLOROETHANE	7.904	63	688557	10.11	PPBV	99
30) METHYL ETHYL KETONE	8.342	43	373034	9.08	PPBV	85
31) cis-1,2-DICHLOROETHYLENE	8.805	96	549399	10.22	PPBV	94
32) ETHYL ACETATE	9.030	43	684799	10.21	PPBV	# 98
33) CHLOROFORM	9.127	83	1054214	9.69	PPBV	98
34) 1,1,1-TRICHLOROETHANE	10.313	97	1107622	9.70	PPBV	98
35) CARBON TETRACHLORIDE	11.080	117	1196908	9.64	PPBV	100
36) 1,2-DICHLOROETHANE	10.009	62	469773	9.01	PPBV	98
38) BENZENE	10.891	78	1315935	8.94	PPBV	98
39) CYCLOHEXANE	11.244	84	660887	9.15	PPBV	96
40) TRICHLOROETHYLENE	12.272	95	838185	9.89	PPBV	98
41) 1,2-DICHLOROPROPANE	11.962	63	434315	9.03	PPBV	96
42) BROMODICHLOROMETHANE	12.218	83	1082396	9.68	PPBV	100

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\J150125\
 Data File : j29715a.D
 Acq On : 25 Jan 2015 5:41 pm
 Operator : akina
 Sample : ICV1510-10(m407)
 Misc : ms33716,msj1511,,,,,1
 ALS Vial : 2 Sample Multiplier: 1

Quant Time: Jan 25 18:25:37 2015

Quant Method : C:\msdchem\1\methods\J150122T.M

Quant Title : T015 by GCMS w/DB-1 60 m X .25 mm ID 1.0 um

QLast Update : Fri Jan 23 13:48:53 2015

Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
43) 2,2,4-TRIMETHYLPENTANE	12.303	57	2168110	9.84	PPBV	99
44) 1,4-DIOXANE	12.358	88	221025	9.25	PPBV #	100
45) METHYL METHACRYLATE	12.528	41	327097	9.13	PPBV #	41
46) HEPTANE	12.643	43	627086	9.54	PPBV	85
47) METHYL ISOBUTYL KETONE	13.605	43	649507	9.15	PPBV	89
48) cis-1,3-DICHLOROPROPENE	13.483	75	685873	8.89	PPBV #	78
49) TOLUENE	14.992	92	964851	9.21	PPBV	98
50) trans-1,3-DICHLOROPROPENE	14.274	75	610342	8.82	PPBV	94
51) 1,1,2-TRICHLOROETHANE	14.560	83	492596	9.09	PPBV	99
52) 1,3-DICHLOROPROPANE	15.040	76	719761	9.30	PPBV	100
54) 2-HEXANONE	15.491	43	539464	10.47	PPBV	88
55) TETRACHLOROETHYLENE	16.859	164	978386	10.63	PPBV	96
56) DIBROMOCHLOROMETHANE	15.691	129	1156984	10.59	PPBV	100
57) 1,2-DIBROMOETHANE	16.111	107	904378	10.49	PPBV	100
58) 1,1,1,2-TETRACHLOROETHANE	18.046	131	751846	9.93	PPBV #	40
59) CHLOROBENZENE	18.076	112	1416704	9.86	PPBV	99
60) ETHYLBENZENE	18.764	91	2090415	10.57	PPBV	100
61) m,p-XYLENE	19.110	106	1734152	21.54	PPBV	100
62) o-XYLENE	20.011	106	871059	10.93	PPBV	100
63) STYRENE	19.804	104	1223160	10.96	PPBV	100
64) NONANE	20.436	43	949542	10.52	PPBV	90
65) BROMOFORM	19.268	173	1010573	9.85	PPBV	99
67) 1,1,2,2-TETRACHLOROETHANE	20.011	83	1142640	10.77	PPBV	99
68) ISOPROPYLBENZENE	21.203	105	2392758	10.79	PPBV	100
69) 2-CHLOROTOLUENE	22.219	91	1654976	10.60	PPBV	97
70) 4-ETHYLTOLUENE	22.639	105	2183013	11.19	PPBV	100
71) 1,3,5-TRIMETHYLBENZENE	22.821	105	1991438	10.78	PPBV	99
72) TERT-BUTYLBENZENE	23.758	119	2100350	11.10	PPBV	99
73) 1,2,4-TRIMETHYLBENZENE	23.776	105	1988551	10.46	PPBV	94
74) m-DICHLOROBENZENE	24.129	146	1243912	9.90	PPBV	99
75) BENZYL CHLORIDE	24.099	91	957284	10.48	PPBV	99
76) p-DICHLOROBENZENE	24.281	146	1231053	9.68	PPBV	99
77) SEC-BUTYLBENZENE	24.397	105	2775849	11.15	PPBV	99
78) 4-ISOPROPYLTOLUENE	24.750	119	2268406	10.49	PPBV	99
79) o-DICHLOROBENZENE	25.011	146	1078937	9.66	PPBV	98
80) n-BUTYLBENZENE	25.608	91	1789227	10.38	PPBV	99
81) HEXACHLOROBUTADIENE	29.099	225	377152	9.63	PPBV	100
82) 1,2,4-TRICHLOROBENZENE	28.248	180	323458	10.53	PPBV	99
83) NAPHTHALENE	28.449	128	616360	10.35	PPBV	98

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\J150209\
Data File : j29932.D
Acq On : 9 Feb 2015 6:26 pm
Operator : AkinA
Sample : CC1510-10(m399)
Misc : ms33838,msj1520,,,,,1
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Feb 10 08:14:45 2015
Quant Method : C:\msdchem\1\methods\J150122T.M
Quant Title : T015 by GCMS w/DB-1 60 m X .25 mm ID 1.0 um
QLast Update : Fri Jan 23 13:48:53 2015
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) BROMOCHLOROMETHANE	8.987	128	407749m	10.00	PPBV	-0.01
37) 1,4-DIFLUOROBENZENE	11.299	114	2070589	10.00	PPBV	-0.01
53) CHLOROBENZENE-D5	17.985	82	980156	10.00	PPBV	# 0.00

System Monitoring Compounds						
66) 4-BROMOFLUOROBENZENE	20.917	95	440139	4.00	PPBV	0.00
Spiked Amount	5.000	Range	50 - 129	Recovery	=	80.00%

Target Compounds						Qvalue
2) DICHLORODIFLUOROMETHANE	4.333	85	916651	8.75	PPBV	98
3) PROPYLENE	4.254	41	102510	7.06	PPBV	99
4) FREON 114	4.601	85	854922	9.13	PPBV	95
5) CHLOROMETHANE	4.504	50	150671	7.83	PPBV	98
6) VINYL CHLORIDE	4.729	62	228921	8.33	PPBV	99
7) 1,3-BUTADIENE	4.863	39	104757	8.18	PPBV #	74
8) BROMOMETHANE	5.136	94	333530	9.08	PPBV	99
9) CHLOROETHANE	5.295	64	108665	8.43	PPBV	95
10) ACROLEIN	5.745	56	45109	7.89	PPBV	99
11) TRICHLOROFLUOROMETHANE	6.031	101	1027218	9.94	PPBV	100
12) ISOPROPYL ALCOHOL	6.164	45	223065	8.40	PPBV	98
13) ACETONE	5.879	43	171871	7.95	PPBV	89
14) ACRYLONITRILE	6.304	53	99304	8.49	PPBV	94
15) PENTANE	6.359	42	159792	8.34	PPBV	91
16) 1,1-DICHLOROETHYLENE	6.639	96	360063	9.48	PPBV	87
17) CARBON DISULFIDE	7.095	76	746994	9.01	PPBV	97
18) ETHANOL	5.489	45	32511	7.92	PPBV #	95
19) BROMOETHENE	5.635	106	358192	9.59	PPBV	100
20) METHYLENE CHLORIDE	6.748	84	285060	8.91	PPBV	83
21) 3-CHLOROPROPENE	6.864	39	164316	8.79	PPBV #	88
22) FREON 113	6.998	151	777885	10.14	PPBV	98
23) TRANS-1,2-DICHLOROETHY...	7.691	96	320687	9.86	PPBV	90
24) TERTIARY BUTYL ALCOHOL	6.755	59	360781	8.53	PPBV	87
25) METHYL TERTIARY BUTYL ...	7.965	73	614559	8.75	PPBV	96
26) TETRAHYDROFURAN	9.638	42	164176	7.99	PPBV	76
27) HEXANE	9.018	57	365457	8.85	PPBV	89
28) VINYL ACETATE	8.032	43	326163	8.84	PPBV	93
29) 1,1-DICHLOROETHANE	7.898	63	513872	9.67	PPBV	99
30) METHYL ETHYL KETONE	8.342	43	267485	8.35	PPBV	85
31) cis-1,2-DICHLOROETHYLENE	8.793	96	416175	9.92	PPBV	92
32) ETHYL ACETATE	9.030	43	475380	9.09	PPBV #	97
33) CHLOROFORM	9.121	83	819338	9.66	PPBV	98
34) 1,1,1-TRICHLOROETHANE	10.307	97	910915	10.23	PPBV	98
35) CARBON TETRACHLORIDE	11.074	117	1059099	10.94	PPBV	100
36) 1,2-DICHLOROETHANE	10.003	62	385063	9.47	PPBV	99
38) BENZENE	10.885	78	1036459	8.80	PPBV	98
39) CYCLOHEXANE	11.238	84	513244	8.88	PPBV	92
40) TRICHLOROETHYLENE	12.260	95	649029	9.57	PPBV	98
41) 1,2-DICHLOROPROPANE	11.950	63	336565	8.75	PPBV	99
42) BROMODICHLOROMETHANE	12.212	83	869189	9.72	PPBV	100

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\J150209\
 Data File : j29932.D
 Acq On : 9 Feb 2015 6:26 pm
 Operator : AkinA
 Sample : CC1510-10(m399)
 Misc : ms33838,msj1520,,,,,1
 ALS Vial : 1 Sample Multiplier: 1

Quant Time: Feb 10 08:14:45 2015

Quant Method : C:\msdchem\1\methods\J150122T.M

Quant Title : T015 by GCMS w/DB-1 60 m X .25 mm ID 1.0 um

QLast Update : Fri Jan 23 13:48:53 2015

Response via : Initial Calibration

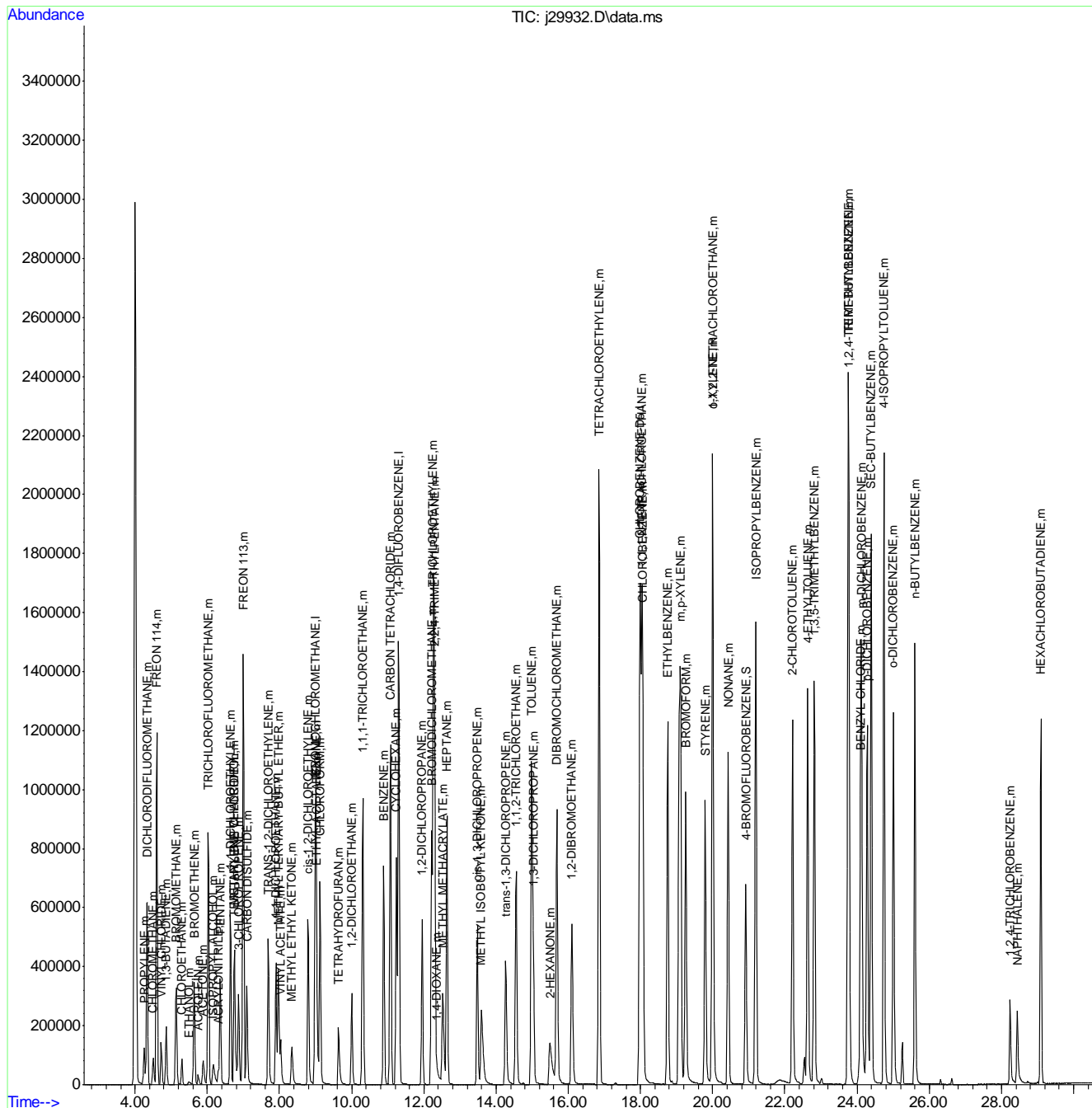
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
43) 2,2,4-TRIMETHYLPENTANE	12.297	57	1561515	8.85	PPBV	99
44) 1,4-DIOXANE	12.364	88	149720	7.83	PPBV #	100
45) METHYL METHACRYLATE	12.522	41	235362	8.21	PPBV #	33
46) HEPTANE	12.637	43	441725	8.39	PPBV #	80
47) METHYL ISOBUTYL KETONE	13.593	43	409316	7.20	PPBV	86
48) cis-1,3-DICHLOROPROPENE	13.483	75	563235	9.12	PPBV #	76
49) TOLUENE	14.986	92	780022	9.30	PPBV	98
50) trans-1,3-DICHLOROPROPENE	14.268	75	513907	9.28	PPBV	92
51) 1,1,2-TRICHLOROETHANE	14.554	83	398560	9.19	PPBV	99
52) 1,3-DICHLOROPROPANE	15.028	76	575381	9.29	PPBV	99
54) 2-HEXANONE	15.491	43	345916	7.98	PPBV	85
55) TETRACHLOROETHYLENE	16.859	164	849089	10.96	PPBV	98
56) DIBROMOCHLOROMETHANE	15.685	129	1034660	11.26	PPBV	100
57) 1,2-DIBROMOETHANE	16.099	107	778749	10.73	PPBV	100
58) 1,1,1,2-TETRACHLOROETHANE	18.034	131	680688	10.69	PPBV #	40
59) CHLOROBENZENE	18.064	112	1220917	10.09	PPBV	97
60) ETHYLBENZENE	18.757	91	1723780	10.36	PPBV	99
61) m,p-XYLENE	19.104	106	1416338	20.91	PPBV	98
62) o-XYLENE	19.999	106	721104	10.75	PPBV	98
63) STYRENE	19.792	104	992477	10.57	PPBV	99
64) NONANE	20.430	43	630584	8.30	PPBV	86
65) BROMOFORM	19.256	173	972146	11.26	PPBV	100
67) 1,1,2,2-TETRACHLOROETHANE	19.999	83	986721	11.06	PPBV	99
68) ISOPROPYLBENZENE	21.197	105	2028597	10.87	PPBV	99
69) 2-CHLOROTOLUENE	22.213	91	1351921	10.29	PPBV	99
70) 4-ETHYLTOLUENE	22.633	105	1715254	10.44	PPBV	100
71) 1,3,5-TRIMETHYLBENZENE	22.815	105	1524460	9.81	PPBV	100
72) TERT-BUTYLBENZENE	23.758	119	1698244	10.66	PPBV	99
73) 1,2,4-TRIMETHYLBENZENE	23.770	105	1381222	8.63	PPBV	94
74) m-DICHLOROBENZENE	24.123	146	1066320	10.09	PPBV	99
75) BENZYL CHLORIDE	24.093	91	930140	11.70	PPBV	98
76) p-DICHLOROBENZENE	24.281	146	1034511	9.67	PPBV	99
77) SEC-BUTYLBENZENE	24.391	105	2279886	10.88	PPBV	100
78) 4-ISOPROPYLTOLUENE	24.744	119	1928708	10.60	PPBV	99
79) o-DICHLOROBENZENE	25.005	146	933260	9.93	PPBV	99
80) n-BUTYLBENZENE	25.601	91	1286664	8.87	PPBV	100
81) HEXACHLOROBUTADIENE	29.093	225	363113	11.02	PPBV	100
82) 1,2,4-TRICHLOROBENZENE	28.242	180	189818	7.94	PPBV	98
83) NAPHTHALENE	28.443	128	427954	8.91	PPBV	97

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\J150209\
Data File : j29932.D
Acq On : 9 Feb 2015 6:26 pm
Operator : AkinA
Sample : CC1510-10(m399)
Misc : ms33838,msj1520,,,,,1
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Feb 10 08:14:45 2015
Quant Method : C:\msdchem\1\methods\J150122T.M
Quant Title : T015 by GCMS w/DB-1 60 m X .25 mm ID 1.0 um
QLast Update : Fri Jan 23 13:48:53 2015
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\J150210\
 Data File : j29958.D
 Acq On : 10 Feb 2015 6:01 pm
 Operator : AkinA
 Sample : CC1510-10(m399)
 Misc : ms33838,msj1521,,,,,1
 ALS Vial : 1 Sample Multiplier: 1

Quant Time: Feb 10 18:33:07 2015

Quant Method : C:\msdchem\1\methods\J150122T.M

Quant Title : T015 by GCMS w/DB-1 60 m X .25 mm ID 1.0 um

QLast Update : Fri Jan 23 13:48:53 2015

Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) BROMOCHLOROMETHANE	8.993	128	372814	10.00	PPBV	# 0.00
37) 1,4-DIFLUOROBENZENE	11.305	114	1750987	10.00	PPBV	0.00
53) CHLOROBENZENE-D5	17.985	82	965502	10.00	PPBV	# 0.00

System Monitoring Compounds

66) 4-BROMOFLUOROBENZENE 20.917 95 618159 5.70 PPBV 0.00
 Spiked Amount 5.000 Range 50 - 129 Recovery = 114.00%

Target Compounds

Qvalue

2) DICHLORODIFLUOROMETHANE	4.333	85	1094576	11.43	PPBV	98
3) PROPYLENE	4.254	41	117728	8.87	PPBV	97
4) FREON 114	4.601	85	932139	10.89	PPBV	96
5) CHLOROMETHANE	4.504	50	177967	10.12	PPBV	98
6) VINYL CHLORIDE	4.729	62	259191	10.31	PPBV	98
7) 1,3-BUTADIENE	4.862	39	118176	10.09	PPBV	# 81
8) BROMOMETHANE	5.136	94	368709	10.98	PPBV	99
9) CHLOROETHANE	5.294	64	103185	8.75	PPBV	96
10) ACROLEIN	5.745	56	48975	9.36	PPBV	98
11) TRICHLOROFLUOROMETHANE	6.031	101	1116566	11.82	PPBV	100
12) ISOPROPYL ALCOHOL	6.170	45	231453	9.54	PPBV	94
13) ACETONE	5.878	43	203067	10.27	PPBV	92
14) ACRYLONITRILE	6.304	53	101500	9.49	PPBV	97
15) PENTANE	6.359	42	161617	9.22	PPBV	92
16) 1,1-DICHLOROETHYLENE	6.645	96	355109	10.22	PPBV	91
17) CARBON DISULFIDE	7.095	76	769571	10.15	PPBV	98
18) ETHANOL	5.483	45	31648	8.43	PPBV	# 92
19) BROMOETHENE	5.635	106	368841	10.80	PPBV	99
20) METHYLENE CHLORIDE	6.748	84	274784	9.40	PPBV	84
21) 3-CHLOROPROPENE	6.864	39	152512	8.92	PPBV	91
22) FREON 113	6.998	151	763185	10.88	PPBV	98
23) TRANS-1,2-DICHLOROETHY...	7.691	96	303356	10.20	PPBV	92
24) TERTIARY BUTYL ALCOHOL	6.754	59	395241	10.22	PPBV	90
25) METHYL TERTIARY BUTYL ...	7.965	73	674970	10.51	PPBV	96
26) TETRAHYDROFURAN	9.626	42	194660	10.36	PPBV	79
27) HEXANE	9.018	57	351834	9.32	PPBV	91
28) VINYL ACETATE	8.032	43	349542	10.36	PPBV	93
29) 1,1-DICHLOROETHANE	7.904	63	452502	9.32	PPBV	99
30) METHYL ETHYL KETONE	8.336	43	290850	9.93	PPBV	85
31) cis-1,2-DICHLOROETHYLENE	8.799	96	396261	10.33	PPBV	94
32) ETHYL ACETATE	9.024	43	527436	11.03	PPBV	# 97
33) CHLOROFORM	9.127	83	816280	10.53	PPBV	98
34) 1,1,1-TRICHLOROETHANE	10.307	97	922344	11.33	PPBV	98
35) CARBON TETRACHLORIDE	11.074	117	1095757	12.38	PPBV	100
36) 1,2-DICHLOROETHANE	10.003	62	402918	10.84	PPBV	99
38) BENZENE	10.891	78	997133	10.01	PPBV	98
39) CYCLOHEXANE	11.238	84	496549	10.16	PPBV	93
40) TRICHLOROETHYLENE	12.266	95	659190	11.50	PPBV	99
41) 1,2-DICHLOROPROPANE	11.956	63	359614	11.05	PPBV	98
42) BROMODICHLOROMETHANE	12.218	83	865850	11.44	PPBV	100

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\J150210\
 Data File : j29958.D
 Acq On : 10 Feb 2015 6:01 pm
 Operator : AkinA
 Sample : CC1510-10(m399)
 Misc : ms33838,msj1521,,,,,1
 ALS Vial : 1 Sample Multiplier: 1

Quant Time: Feb 10 18:33:07 2015

Quant Method : C:\msdchem\1\methods\J150122T.M

Quant Title : T015 by GCMS w/DB-1 60 m X .25 mm ID 1.0 um

QLast Update : Fri Jan 23 13:48:53 2015

Response via : Initial Calibration

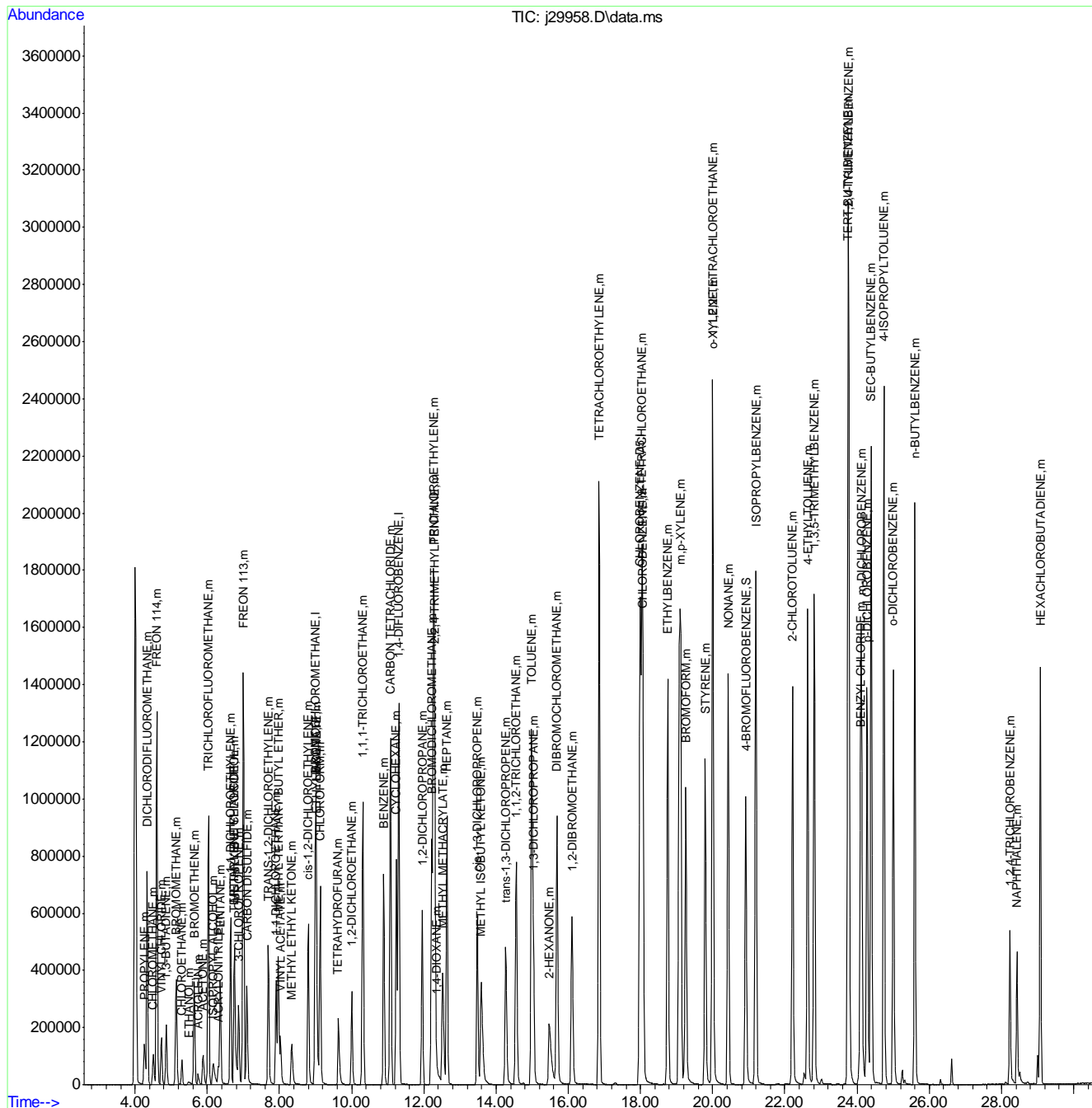
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
43) 2,2,4-TRIMETHYLPENTANE	12.297	57	1554364	10.42	PPBV	99
44) 1,4-DIOXANE	12.339	88	205657	12.72	PPBV #	100
45) METHYL METHACRYLATE	12.522	41	289228	11.92	PPBV #	40
46) HEPTANE	12.637	43	450671	10.13	PPBV	82
47) METHYL ISOBUTYL KETONE	13.586	43	558383	11.62	PPBV	89
48) cis-1,3-DICHLOROPROPENE	13.483	75	591518	11.33	PPBV #	78
49) TOLUENE	14.986	92	860637	12.14	PPBV	98
50) trans-1,3-DICHLOROPROPENE	14.268	75	559543	11.95	PPBV	93
51) 1,1,2-TRICHLOROETHANE	14.554	83	438181	11.94	PPBV	99
52) 1,3-DICHLOROPROPANE	15.028	76	659672	12.60	PPBV	99
54) 2-HEXANONE	15.472	43	460860	10.79	PPBV	90
55) TETRACHLOROETHYLENE	16.859	164	834663	10.94	PPBV	97
56) DIBROMOCHLOROMETHANE	15.685	129	1047996	11.58	PPBV	100
57) 1,2-DIBROMOETHANE	16.105	107	832125	11.64	PPBV	100
58) 1,1,1,2-TETRACHLOROETHANE	18.039	131	731522	11.66	PPBV #	40
59) CHLOROBENZENE	18.070	112	1313178	11.02	PPBV	99
60) ETHYLBENZENE	18.757	91	1924279	11.74	PPBV	100
61) m,p-XYLENE	19.104	106	1617902	24.25	PPBV	100
62) o-XYLENE	20.004	106	816695	12.36	PPBV	98
63) STYRENE	19.792	104	1111576	12.02	PPBV	100
64) NONANE	20.430	43	797179	10.65	PPBV	88
65) BROMOFORM	19.256	173	975971	11.48	PPBV	99
67) 1,1,2,2-TETRACHLOROETHANE	19.998	83	1042232	11.86	PPBV	100
68) ISOPROPYLBENZENE	21.197	105	2224662	12.10	PPBV	100
69) 2-CHLOROTOLUENE	22.213	91	1486091	11.49	PPBV	99
70) 4-ETHYLTOLUENE	22.633	105	1998891	12.36	PPBV	100
71) 1,3,5-TRIMETHYLBENZENE	22.815	105	1816494	11.87	PPBV	100
72) TERT-BUTYLBENZENE	23.752	119	1968412	12.55	PPBV	100
73) 1,2,4-TRIMETHYLBENZENE	23.770	105	1831096	11.62	PPBV	96
74) m-DICHLOROBENZENE	24.123	146	1157288	11.12	PPBV	99
75) BENZYL CHLORIDE	24.093	91	911035	11.65	PPBV	99
76) p-DICHLOROBENZENE	24.275	146	1109250	10.52	PPBV	99
77) SEC-BUTYLBENZENE	24.391	105	2594080	12.57	PPBV	100
78) 4-ISOPROPYLTOLUENE	24.744	119	2168828	12.10	PPBV	100
79) o-DICHLOROBENZENE	25.005	146	1014275	10.95	PPBV	99
80) n-BUTYLBENZENE	25.601	91	1629689	11.41	PPBV	100
81) HEXACHLOROBUTADIENE	29.081	225	405674	12.50	PPBV	100
82) 1,2,4-TRICHLOROBENZENE	28.236	180	287926	11.13	PPBV	98
83) NAPHTHALENE	28.430	128	622613	12.05	PPBV	98

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\J150210\
Data File : j29958.D
Acq On : 10 Feb 2015 6:01 pm
Operator : AkinA
Sample : CC1510-10(m399)
Misc : ms33838,msj1521,,,,,1
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Feb 10 18:33:07 2015
Quant Method : C:\msdchem\1\methods\J150122T.M
Quant Title : TO15 by GCMS w/DB-1 60 m X .25 mm ID 1.0 um
QLast Update : Fri Jan 23 13:48:53 2015
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\Q150210\
 Data File : Q29635.D
 Acq On : 10 Feb 2015 9:08 pm
 Operator : akina
 Sample : ic1286-0.005
 Misc : ms33846,msq1286,,,,,1
 ALS Vial : 3 Sample Multiplier: 1

Quant Time: Feb 11 09:18:11 2015
 Quant Method : C:\msdchem\1\METHODS\Q150210\FULLSIM.M
 Quant Title : T015 by GCMS w/DB-1 60 m X .25 mm ID 1.0 um
 QLast Update : Tue Feb 10 13:39:18 2015
 Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) BROMOCHLOROMETHANE	9.222	128	1354509	10.00	PPBV	# 0.00
37) 1,4-DIFLUOROBENZENE	11.882	114	6492570	10.00	PPBV	0.00
53) CHLOROBENZENE-D5	18.931	82	1995099	10.00	PPBV	# 0.00

System Monitoring Compounds

66) 4-BROMOFLUOROBENZENE	21.463	95	751325	6.98	PPBV	0.00
Spiked Amount	5.000	Range	50 - 129	Recovery	=	139.60%#

Target Compounds						Qvalue
13) ACETONE	5.677	43	7927	0.04	PPBV	86
18) ETHANOL	5.170	45	31268m	0.17	PPBV	
22) FREON 113	6.931	151	1150	0.00	PPBV #	75
31) cis-1,2-DICHLOROETHYLENE	9.002	96	1035	0.00	PPBV #	80
34) 1,1,1-TRICHLOROETHANE	10.728	97	1581	0.00	PPBV	97
38) BENZENE	11.365	78	5677m	0.01	PPBV	
40) TRICHLOROETHYLENE	12.916	95	3192	0.01	PPBV #	65
46) HEPTANE	13.395	43	2493	0.01	PPBV #	1
49) TOLUENE	15.857	92	3963	0.01	PPBV #	1
55) TETRACHLOROETHYLENE	17.819	164	2644	0.01	PPBV #	1
59) CHLOROBENZENE	19.013	112	3849	0.01	PPBV #	29
60) ETHYLBENZENE	19.664	91	34562	0.01	PPBV #	65
61) m,p-XYLENE	19.953	106	5170	0.02	PPBV #	1
62) o-XYLENE	20.731	106	2624	0.01	PPBV #	1

(#) = qualifier out of range (m) = manual integration (+) = signals summed

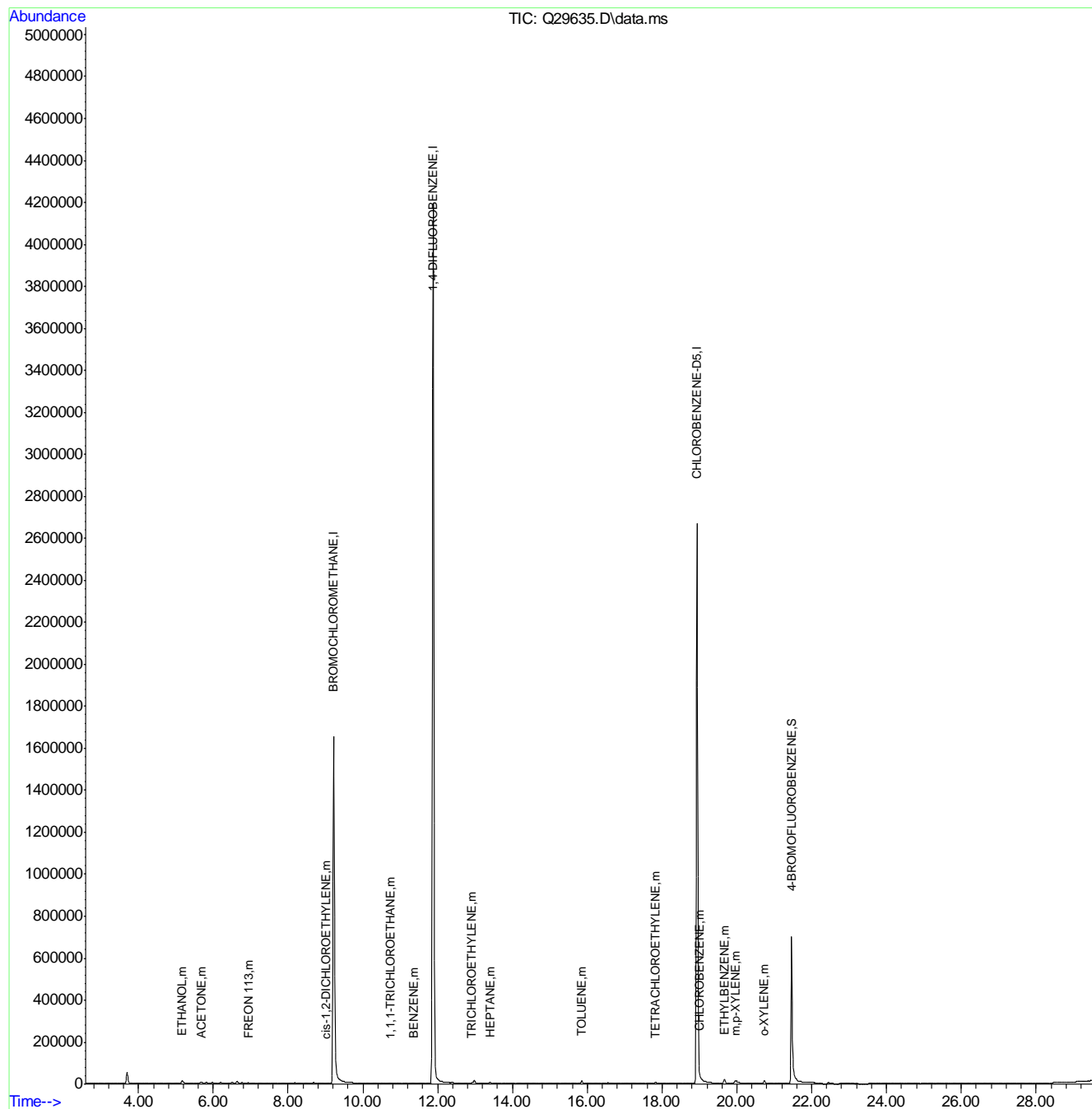
7.7.13

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Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\Q150210\
Data File : Q29635.D
Acq On : 10 Feb 2015 9:08 pm
Operator : akina
Sample : icl1286-0.005
Misc : ms33846,msq1286,,,,,1
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Feb 11 09:18:11 2015
Quant Method : C:\msdchem\1\METHODS\Q150210FULLSIM.M
Quant Title : T015 by GCMS w/DB-1 60 m X .25 mm ID 1.0 um
QLast Update : Tue Feb 10 13:39:18 2015
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\Q150210\
 Data File : Q29636.D
 Acq On : 10 Feb 2015 9:51 pm
 Operator : akina
 Sample : ic1286-0.02
 Misc : ms33846,msq1286,,,,,1
 ALS Vial : 3 Sample Multiplier: 1

Quant Time: Feb 11 09:15:01 2015
 Quant Method : C:\msdchem\1\METHODS\Q150210FULLSIM.M
 Quant Title : T015 by GCMS w/DB-1 60 m X .25 mm ID 1.0 um
 QLast Update : Tue Feb 10 13:39:18 2015
 Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)

Internal Standards						
1) BROMOCHLOROMETHANE	9.229	128	1246976	10.00	PPBV	# 0.01
37) 1,4-DIFLUOROBENZENE	11.890	114	5794797	10.00	PPBV	0.00
53) CHLOROBENZENE-D5	18.941	82	1862888	10.00	PPBV	# 0.00
System Monitoring Compounds						
66) 4-BROMOFLUOROBENZENE	21.464	95	716700	7.13	PPBV	0.00
Spiked Amount	5.000	Range	50 - 129	Recovery	=	142.60%#
Target Compounds						
						Qvalue
13) ACETONE	5.716	43	18973m	0.10	PPBV	
18) ETHANOL	5.228	45	52124m	0.31	PPBV	
22) FREON 113	6.950	151	5726	0.01	PPBV	# 77
31) cis-1,2-DICHLOROETHYLENE	9.016	96	4789	0.02	PPBV	91
34) 1,1,1-TRICHLOROETHANE	10.728	97	8497	0.02	PPBV	94
38) BENZENE	11.373	78	18219m	0.04	PPBV	
40) TRICHLOROETHYLENE	12.924	95	8649	0.03	PPBV	# 70
46) HEPTANE	13.395	43	7205	0.03	PPBV	# 1
49) TOLUENE	15.857	92	14797m	0.04	PPBV	
55) TETRACHLOROETHYLENE	17.828	164	9533	0.03	PPBV	# 1
59) CHLOROBENZENE	19.013	112	20024m	0.04	PPBV	
60) ETHYLBENZENE	19.673	91	120247	0.04	PPBV	# 64
61) m,p-XYLENE	19.990	106	21891	0.07	PPBV	# 1
62) o-XYLENE	20.740	106	10855	0.04	PPBV	# 1

(#) = qualifier out of range (m) = manual integration (+) = signals summed

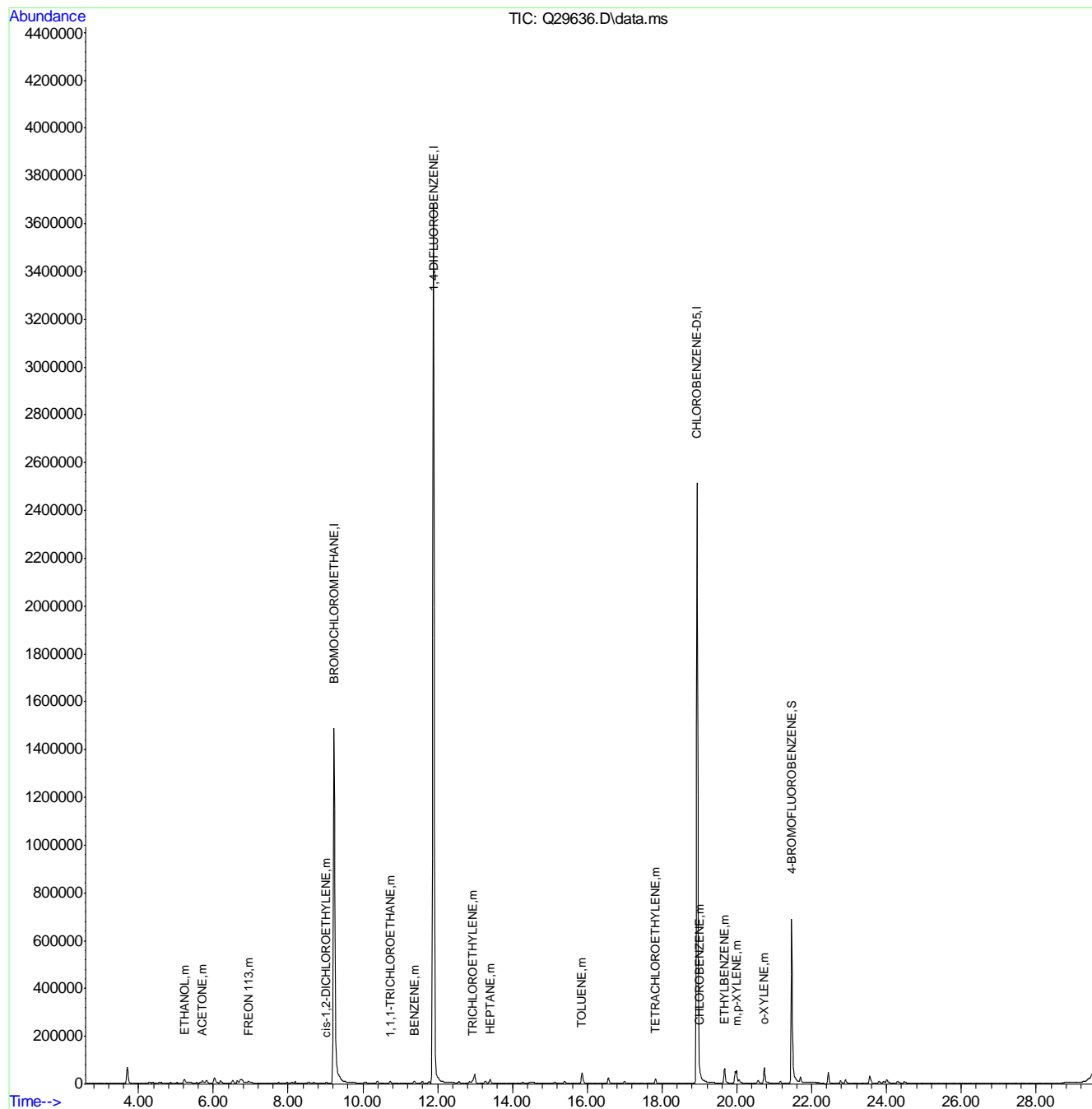
7.7.14

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Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\Q150210\
Data File : Q29636.D
Acq On : 10 Feb 2015 9:51 pm
Operator : akina
Sample : icl1286-0.02
Misc : ms33846,msq1286,,,,,1
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Feb 11 09:15:01 2015
Quant Method : C:\msdchem\1\METHODS\Q150210FULLSIM.M
Quant Title : T015 by GCMS w/DB-1 60 m X .25 mm ID 1.0 um
QLast Update : Tue Feb 10 13:39:18 2015
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\Q150210\
Data File : Q29637.D
Acq On : 10 Feb 2015 10:34 pm
Operator : akina
Sample : ic1286-0.05
Misc : ms33846,msq1286,,,,,1
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Feb 11 09:08:39 2015
Quant Method : C:\msdchem\1\METHODS\Q150210\FULLSIM.M
Quant Title : T015 by GCMS w/DB-1 60 m X .25 mm ID 1.0 um
QLast Update : Tue Feb 10 13:39:18 2015
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) BROMOCHLOROMETHANE	9.222	128	1268185	10.00	PPBV	# 0.00
37) 1,4-DIFLUOROBENZENE	11.882	114	5887482	10.00	PPBV	0.00
53) CHLOROBENZENE-D5	18.931	82	1920877	10.00	PPBV	# 0.00

System Monitoring Compounds						
66) 4-BROMOFLUOROBENZENE	21.463	95	781418	7.54	PPBV	0.00
Spiked Amount	5.000	Range	50 - 129	Recovery	=	150.80%#

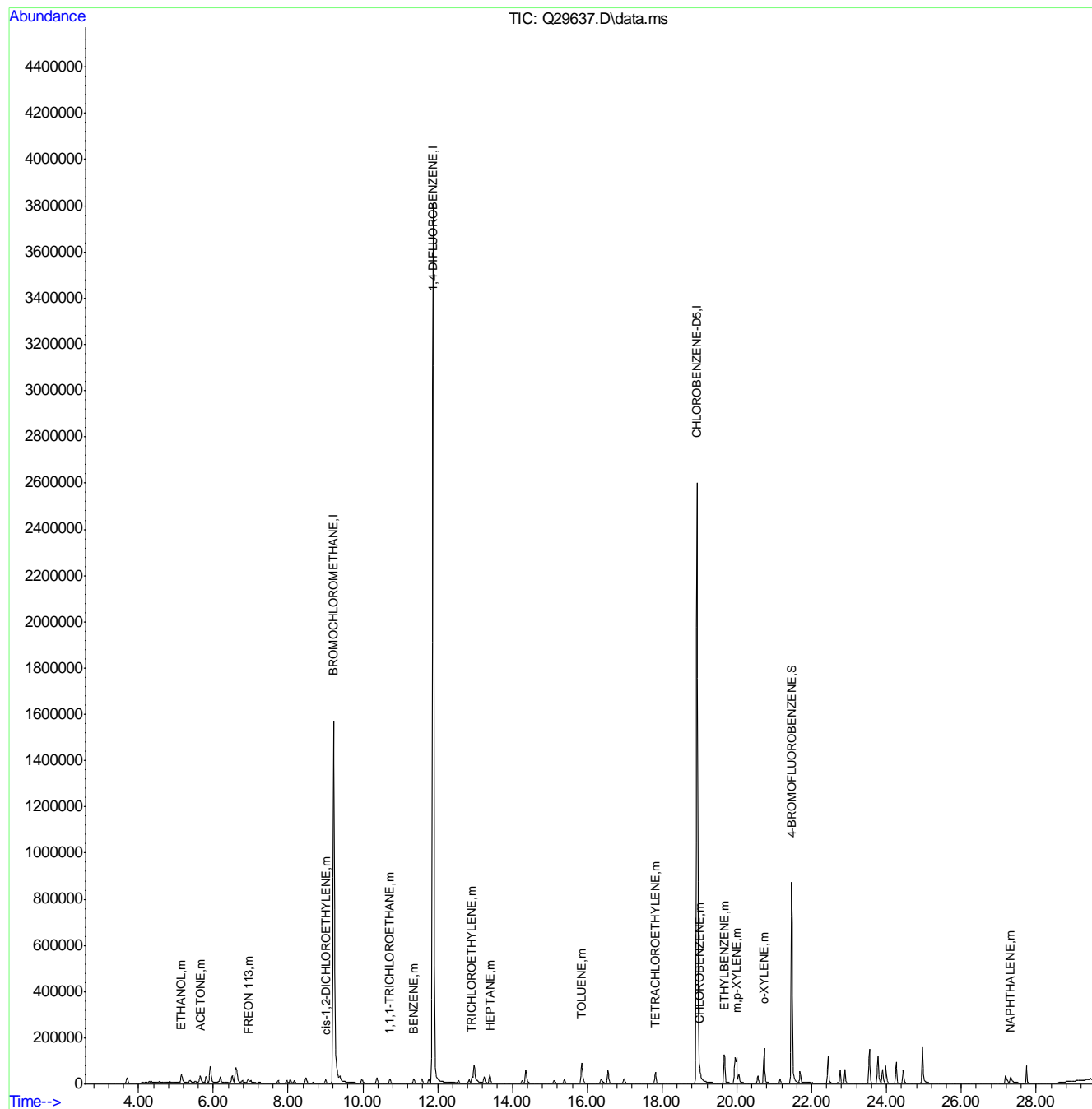
Target Compounds						Qvalue
13) ACETONE	5.649	43	46905	0.24	PPBV	89
18) ETHANOL	5.151	45	106000	0.62	PPBV #	62
22) FREON 113	6.940	151	12751	0.03	PPBV #	76
31) cis-1,2-DICHLOROETHYLENE	9.009	96	11541	0.06	PPBV #	88
34) 1,1,1-TRICHLOROETHANE	10.721	97	20133	0.05	PPBV	96
38) BENZENE	11.365	78	40331	0.08	PPBV #	81
40) TRICHLOROETHYLENE	12.916	95	21488	0.07	PPBV #	70
46) HEPTANE	13.395	43	15175	0.06	PPBV #	1
49) TOLUENE	15.857	92	28363	0.08	PPBV #	1
55) TETRACHLOROETHYLENE	17.819	164	20960	0.06	PPBV #	1
59) CHLOROBENZENE	19.013	112	42696	0.08	PPBV #	75
60) ETHYLBENZENE	19.664	91	241920	0.08	PPBV #	64
61) m,p-XYLENE	19.989	106	46774	0.15	PPBV #	1
62) o-XYLENE	20.731	106	23378	0.08	PPBV #	1
83) NAPHTHALENE	27.319	128	73313	0.39	PPBV	99

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\Q150210\
Data File : Q29637.D
Acq On : 10 Feb 2015 10:34 pm
Operator : akina
Sample : ic1286-0.05
Misc : ms33846,msq1286,,,,,1
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Feb 11 09:08:39 2015
Quant Method : C:\msdchem\1\METHODS\Q150210FULLSIM.M
Quant Title : T015 by GCMS w/DB-1 60 m X .25 mm ID 1.0 um
QLast Update : Tue Feb 10 13:39:18 2015
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\Q150210\
 Data File : Q29638.D
 Acq On : 10 Feb 2015 11:20 pm
 Operator : akina
 Sample : icl286-0.1
 Misc : ms33846,msq1286,,,,,1
 ALS Vial : 3 Sample Multiplier: 1

Quant Time: Feb 11 08:45:57 2015
 Quant Method : C:\msdchem\1\METHODS\Q150210\FULLSIM.M
 Quant Title : T015 by GCMS w/DB-1 60 m X .25 mm ID 1.0 um
 QLast Update : Tue Feb 10 13:39:18 2015
 Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)

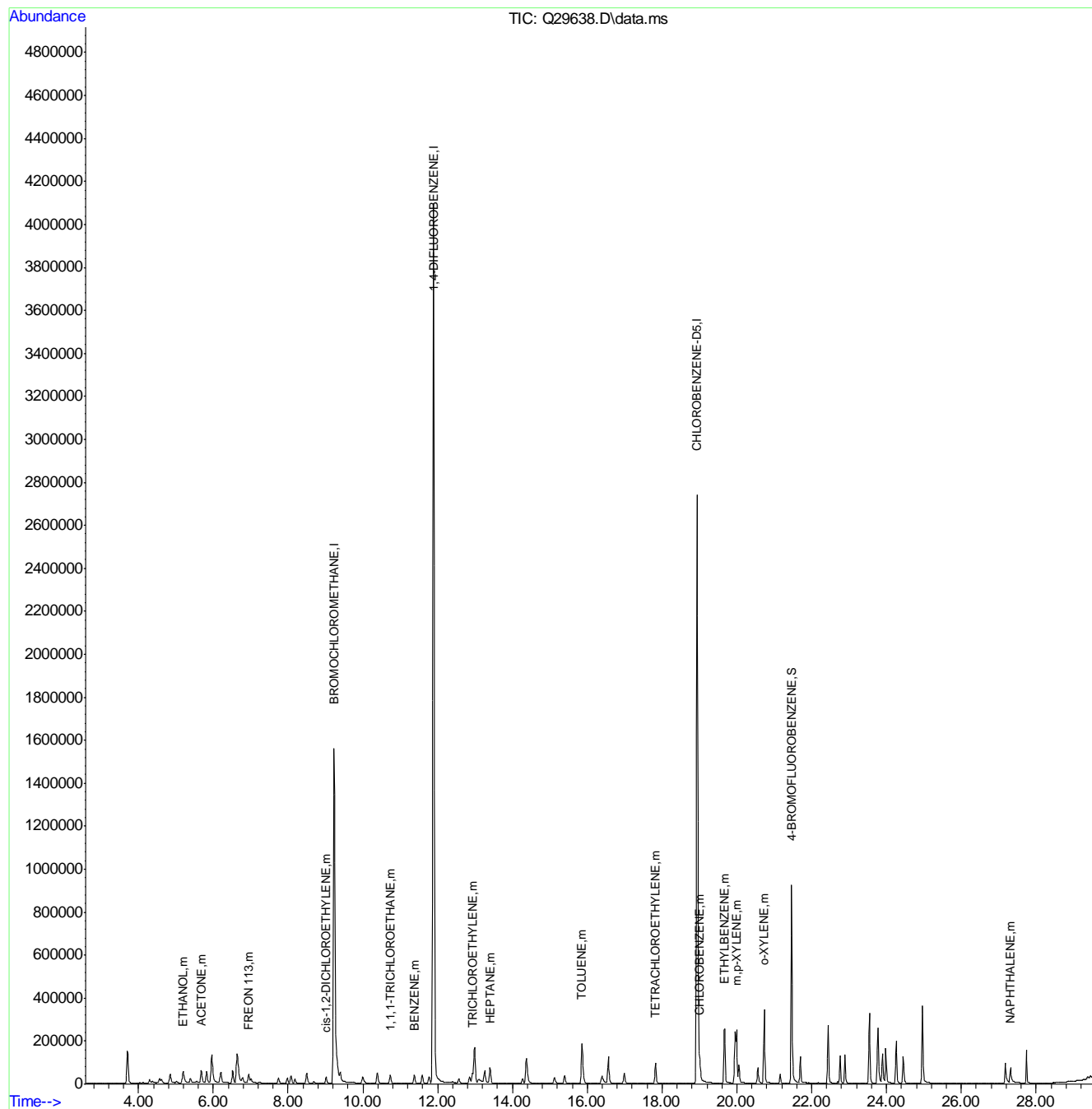
Internal Standards						
1) BROMOCHLOROMETHANE	9.236	128	1301781	10.00	PPBV	# 0.02
37) 1,4-DIFLUOROBENZENE	11.890	114	6250595	10.00	PPBV	0.00
53) CHLOROBENZENE-D5	18.940	82	1960771	10.00	PPBV	# 0.00
System Monitoring Compounds						
66) 4-BROMOFLUOROBENZENE	21.463	95	805225	7.61	PPBV	0.00
Spiked Amount	5.000	Range	50 - 129	Recovery	=	152.20%#
Target Compounds						
						Qvalue
13) ACETONE	5.677	43	93633	0.47	PPBV	90
18) ETHANOL	5.189	45	181589m	1.03	PPBV	
22) FREON 113	6.950	151	30907	0.08	PPBV	# 78
31) cis-1,2-DICHLOROETHYLENE	9.016	96	23941	0.11	PPBV	89
34) 1,1,1-TRICHLOROETHANE	10.735	97	42684	0.11	PPBV	95
38) BENZENE	11.372	78	80592	0.16	PPBV	# 84
40) TRICHLOROETHYLENE	12.924	95	38680	0.12	PPBV	# 70
46) HEPTANE	13.402	43	30599	0.12	PPBV	# 1
49) TOLUENE	15.857	92	59101	0.16	PPBV	# 1
55) TETRACHLOROETHYLENE	17.828	164	42633	0.12	PPBV	# 1
59) CHLOROBENZENE	19.013	112	89965m	0.17	PPBV	
60) ETHYLBENZENE	19.673	91	513282	0.16	PPBV	# 64
61) m,p-XYLENE	19.989	106	102128	0.33	PPBV	# 1
62) o-XYLENE	20.731	106	51187	0.17	PPBV	# 1
83) NAPHTHALENE	27.314	128	149676	0.79	PPBV	99

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\Q150210\
Data File : Q29638.D
Acq On : 10 Feb 2015 11:20 pm
Operator : akina
Sample : icl286-0.1
Misc : ms33846,msq1286,,,,,1
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Feb 11 08:45:57 2015
Quant Method : C:\msdchem\1\METHODS\Q150210FULLSIM.M
Quant Title : T015 by GCMS w/DB-1 60 m X .25 mm ID 1.0 um
QLast Update : Tue Feb 10 13:39:18 2015
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\Q150210\
 Data File : Q29640.D
 Acq On : 11 Feb 2015 12:45 am
 Operator : akina
 Sample : ic1286-0.25
 Misc : ms33846,msq1286,,,,,1
 ALS Vial : 4 Sample Multiplier: 1

Quant Time: Feb 11 09:38:13 2015
 Quant Method : C:\msdchem\1\METHODS\Q150210\FULLSIM.M
 Quant Title : T015 by GCMS w/DB-1 60 m X .25 mm ID 1.0 um
 QLast Update : Tue Feb 10 13:39:18 2015
 Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)

Internal Standards						
1) BROMOCHLOROMETHANE	9.222	128	1269924	10.00	PPBV	# 0.00
37) 1,4-DIFLUOROBENZENE	11.882	114	6103269	10.00	PPBV	0.00
53) CHLOROBENZENE-D5	18.932	82	1936007	10.00	PPBV	# 0.00
System Monitoring Compounds						
66) 4-BROMOFLUOROBENZENE	21.464	95	818268	7.83	PPBV	0.00
Spiked Amount	5.000	Range	50 - 129	Recovery	=	156.60%#
Target Compounds						
						Qvalue
13) ACETONE	5.649	43	71446	0.37	PPBV	90
18) ETHANOL	5.151	45	89810m	0.52	PPBV	
22) FREON 113	6.940	151	73557	0.18	PPBV	# 76
31) cis-1,2-DICHLOROETHYLENE	9.009	96	59943	0.29	PPBV	89
34) 1,1,1-TRICHLOROETHANE	10.728	97	117068	0.30	PPBV	95
38) BENZENE	11.365	78	174632	0.35	PPBV	# 86
40) TRICHLOROETHYLENE	12.916	95	87799	0.27	PPBV	# 68
46) HEPTANE	13.395	43	78625	0.31	PPBV	# 1
49) TOLUENE	15.857	92	127886	0.36	PPBV	# 1
55) TETRACHLOROETHYLENE	17.819	164	105530	0.29	PPBV	# 1
59) CHLOROBENZENE	19.013	112	194491	0.36	PPBV	# 73
60) ETHYLBENZENE	19.664	91	1163756	0.38	PPBV	# 64
61) m,p-XYLENE	19.990	106	223536	0.73	PPBV	# 1
62) o-XYLENE	20.731	106	112434	0.38	PPBV	# 1
83) NAPHTHALENE	27.359	128	15424m	0.08	PPBV	

(#) = qualifier out of range (m) = manual integration (+) = signals summed

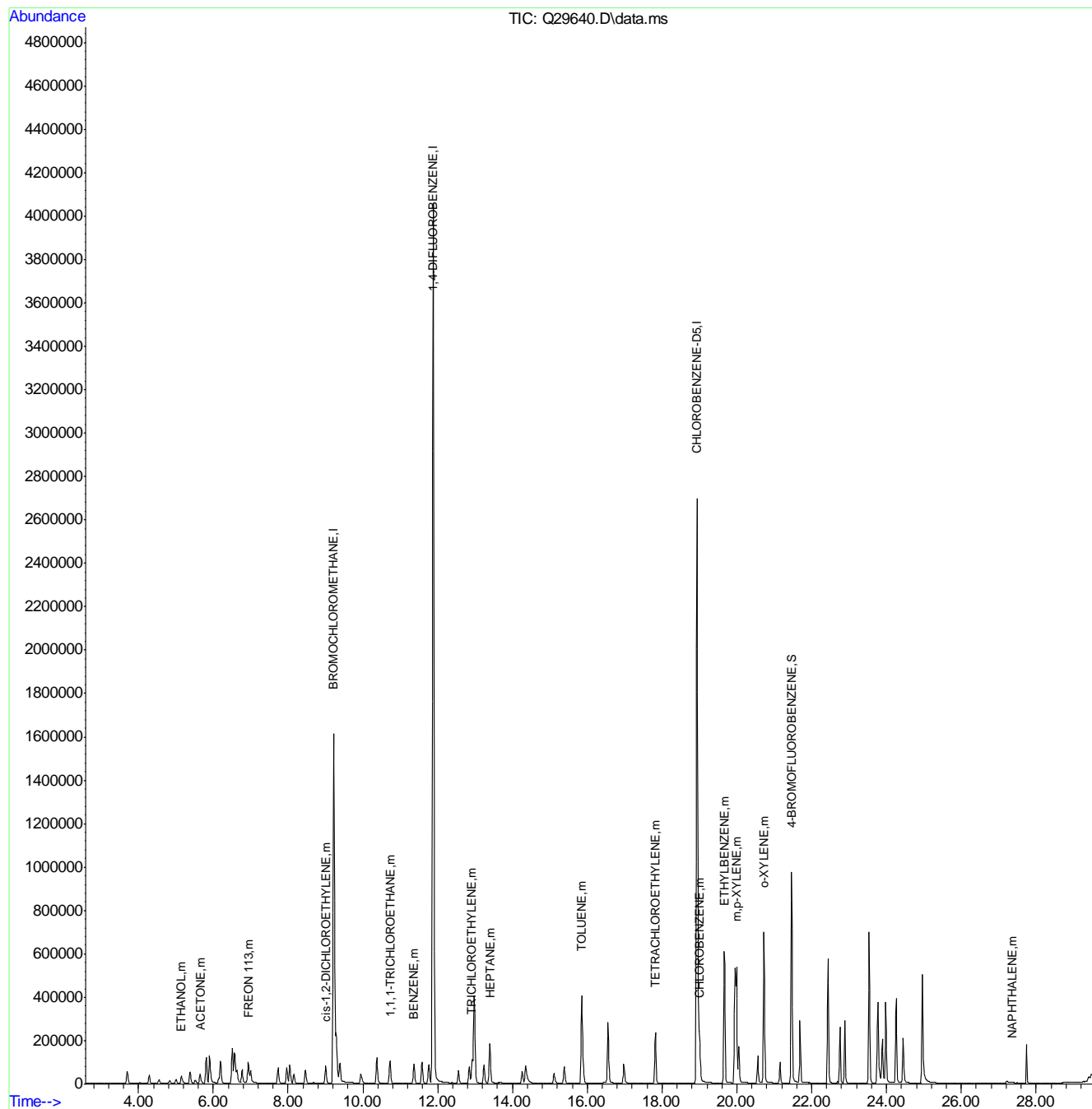
7.7.17

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Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\Q150210\
Data File : Q29640.D
Acq On : 11 Feb 2015 12:45 am
Operator : akina
Sample : icl286-0.25
Misc : ms33846,msq1286,,,,,1
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Feb 11 09:38:13 2015
Quant Method : C:\msdchem\1\METHODS\Q150210FULLSIM.M
Quant Title : T015 by GCMS w/DB-1 60 m X .25 mm ID 1.0 um
QLast Update : Tue Feb 10 13:39:18 2015
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\Q150210\
 Data File : Q29641.D
 Acq On : 11 Feb 2015 1:27 am
 Operator : akina
 Sample : iccl286-0.5
 Misc : ms33846,msq1286,,,,,1
 ALS Vial : 4 Sample Multiplier: 1

Quant Time: Feb 11 08:54:45 2015
 Quant Method : C:\msdchem\1\METHODS\Q150210\FULLSIM.M
 Quant Title : TO15 by GCMS w/DB-1 60 m X .25 mm ID 1.0 um
 QLast Update : Tue Feb 10 13:39:18 2015
 Response via : Initial Calibration

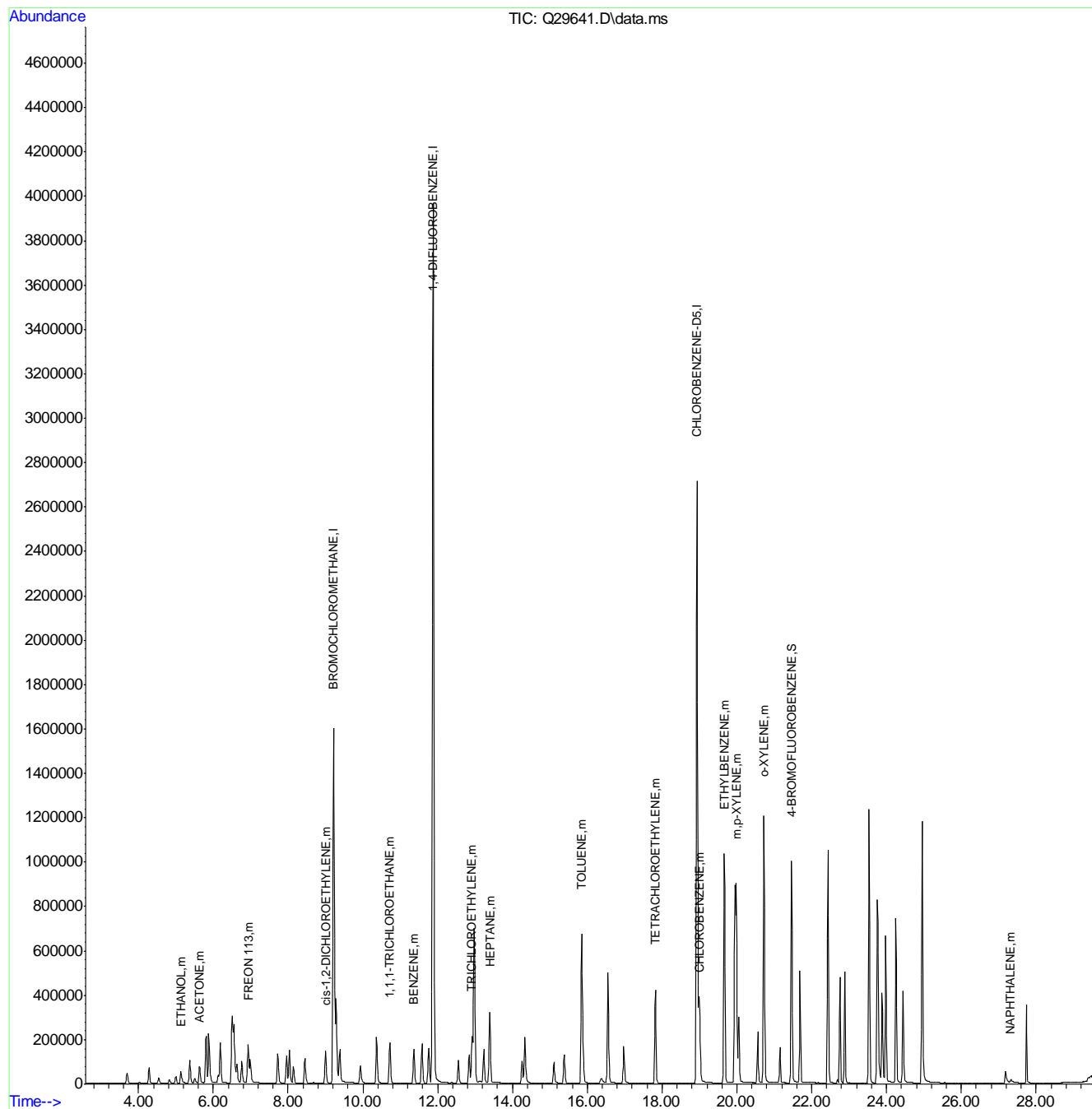
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) BROMOCHLOROMETHANE	9.222	128	1253988	10.00	PPBV	# 0.00
37) 1,4-DIFLUOROBENZENE	11.882	114	5963381	10.00	PPBV	0.00
53) CHLOROBENZENE-D5	18.932	82	1916088	10.00	PPBV	# 0.00
System Monitoring Compounds						
66) 4-BROMOFLUOROBENZENE	21.464	95	825983	7.99	PPBV	0.00
Spiked Amount	5.000	Range	50 - 129	Recovery	=	159.80%#
Target Compounds						
					Qvalue	
13) ACETONE	5.630	43	121124	0.64	PPBV	90
18) ETHANOL	5.132	45	140139	0.82	PPBV	# 62
22) FREON 113	6.931	151	129500	0.33	PPBV	# 76
31) cis-1,2-DICHLOROETHYLENE	9.002	96	105836	0.51	PPBV	89
34) 1,1,1-TRICHLOROETHANE	10.721	97	205211	0.53	PPBV	95
38) BENZENE	11.365	78	293842	0.60	PPBV	# 86
40) TRICHLOROETHYLENE	12.916	95	160776	0.51	PPBV	# 69
46) HEPTANE	13.395	43	134116	0.54	PPBV	# 1
49) TOLUENE	15.848	92	214245	0.62	PPBV	# 1
55) TETRACHLOROETHYLENE	17.819	164	185131	0.51	PPBV	# 1
59) CHLOROBENZENE	19.013	112	330658	0.62	PPBV	# 73
60) ETHYLBENZENE	19.664	91	1943972	0.64	PPBV	# 64
61) m,p-XYLENE	19.990	106	381232	1.26	PPBV	# 1
62) o-XYLENE	20.731	106	193371	0.66	PPBV	# 1
83) NAPHTHALENE	27.325	128	55343m	0.30	PPBV	

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\Q150210\
Data File : Q29641.D
Acq On : 11 Feb 2015 1:27 am
Operator : akina
Sample : icc1286-0.5
Misc : ms33846,msq1286,,,,,1
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Feb 11 08:54:45 2015
Quant Method : C:\msdchem\1\METHODS\Q150210FULLSIM.M
Quant Title : T015 by GCMS w/DB-1 60 m X .25 mm ID 1.0 um
QLast Update : Tue Feb 10 13:39:18 2015
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\Q150210\
 Data File : Q29642.D
 Acq On : 11 Feb 2015 2:10 am
 Operator : akina
 Sample : icl286-20
 Misc : ms33846,msq1286,,,,,1
 ALS Vial : 5 Sample Multiplier: 1

Quant Time: Feb 11 08:51:25 2015
 Quant Method : C:\msdchem\1\METHODS\Q150210FULLSIM.M
 Quant Title : TO15 by GCMS w/DB-1 60 m X .25 mm ID 1.0 um
 QLast Update : Tue Feb 10 13:39:18 2015
 Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) BROMOCHLOROMETHANE	9.229	128	1450635	10.00	PPBV	# 0.01
37) 1,4-DIFLUOROBENZENE	11.890	114	6720756	10.00	PPBV	0.00
53) CHLOROBENZENE-D5	18.941	82	2342258	10.00	PPBV	# 0.00

System Monitoring Compounds

66) 4-BROMOFLUOROBENZENE	21.464	95	982703	7.77	PPBV	0.00
Spiked Amount	5.000	Range	50 - 129	Recovery	=	155.40%#

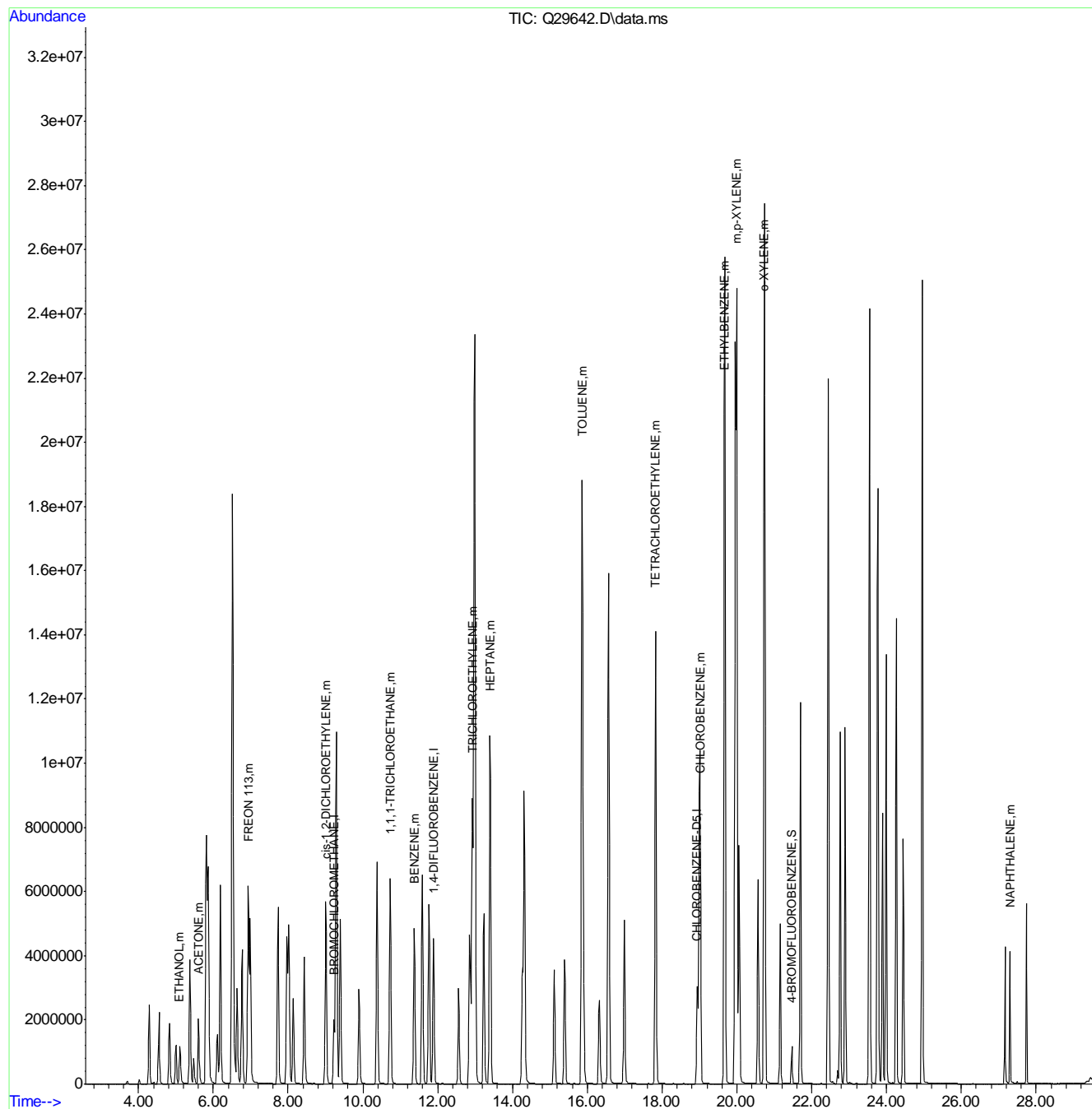
Target Compounds						Qvalue
13) ACETONE	5.601	43	3349760	15.23	PPBV	89
18) ETHANOL	5.104	45	3014391m	15.32	PPBV	
22) FREON 113	6.940	151	4746775	10.38	PPBV #	76
31) cis-1,2-DICHLOROETHYLENE	9.016	96	4088276	17.13	PPBV	88
34) 1,1,1-TRICHLOROETHANE	10.735	97	7476030	16.83	PPBV	95
38) BENZENE	11.373	78	9421458	17.01	PPBV #	87
40) TRICHLOROETHYLENE	12.924	95	5767529	16.10	PPBV #	70
46) HEPTANE	13.402	43	4501165	16.15	PPBV #	1
49) TOLUENE	15.866	92	6328841	16.38	PPBV #	1
55) TETRACHLOROETHYLENE	17.828	164	6369543	14.42	PPBV #	1
59) CHLOROBENZENE	19.022	112	9331740	14.36	PPBV #	74
60) ETHYLBENZENE	19.664	91	46418038	12.45	PPBV #	66
61) m,p-XYLENE	19.999	106	10277138	27.82	PPBV #	1
62) o-XYLENE	20.740	106	5035048	14.05	PPBV #	1
83) NAPHTHALENE	27.303	128	4425158	19.55	PPBV	99

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\Q150210\
Data File : Q29642.D
Acq On : 11 Feb 2015 2:10 am
Operator : akina
Sample : ic1286-20
Misc : ms33846,msq1286,,,,,1
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Feb 11 08:51:25 2015
Quant Method : C:\msdchem\1\METHODS\Q150210FULLSIM.M
Quant Title : TO15 by GCMS w/DB-1 60 m X .25 mm ID 1.0 um
QLast Update : Tue Feb 10 13:39:18 2015
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\Q150210\
 Data File : Q29644.D
 Acq On : 11 Feb 2015 9:13 am
 Operator : akina
 Sample : icl286-5
 Misc : ms33846,msq1286,,,,,1
 ALS Vial : 4 Sample Multiplier: 1

Quant Time: Feb 11 09:50:47 2015
 Quant Method : C:\msdchem\1\METHODS\Q150210\FULLSIM.M
 Quant Title : T015 by GCMS w/DB-1 60 m X .25 mm ID 1.0 um
 QLast Update : Wed Feb 11 09:48:15 2015
 Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)

Internal Standards						
1) BROMOCHLOROMETHANE	9.222	128	1358443	10.00	PPBV	# 0.00
37) 1,4-DIFLUOROBENZENE	11.882	114	6273945	10.00	PPBV	0.00
53) CHLOROBENZENE-D5	18.931	82	2130073	10.00	PPBV	# 0.00
System Monitoring Compounds						
66) 4-BROMOFLUOROBENZENE	21.463	95	910422	5.25	PPBV	0.00
Spiked Amount	5.000	Range	50 - 129	Recovery	=	105.00%
Target Compounds						Qvalue
13) ACETONE	5.610	43	1110544	1.46	PPBV	90
18) ETHANOL	5.113	45	1411948	0.70	PPBV	# 61
22) FREON 113	6.940	151	1952116	6.99	PPBV	# 76
31) cis-1,2-DICHLOROETHYLENE	9.009	96	1102161	4.70	PPBV	89
34) 1,1,1-TRICHLOROETHANE	10.728	97	2043427	4.85	PPBV	95
38) BENZENE	11.364	78	2783112	3.52	PPBV	# 87
40) TRICHLOROETHYLENE	12.916	95	1551624	3.75	PPBV	# 69
46) HEPTANE	13.394	43	1299668	3.92	PPBV	# 1
49) TOLUENE	15.857	92	1983759	3.44	PPBV	# 1
55) TETRACHLOROETHYLENE	17.819	164	1796998	3.93	PPBV	# 1
59) CHLOROBENZENE	19.012	112	3098377	3.67	PPBV	# 74
60) ETHYLBENZENE	19.664	91	17746736	3.38	PPBV	# 64
61) m,p-XYLENE	19.989	106	3572081	7.35	PPBV	# 1
62) o-XYLENE	20.731	106	1824996	3.75	PPBV	# 1
83) NAPHTHALENE	27.297	128	3091059	4.24	PPBV	99

(#) = qualifier out of range (m) = manual integration (+) = signals summed

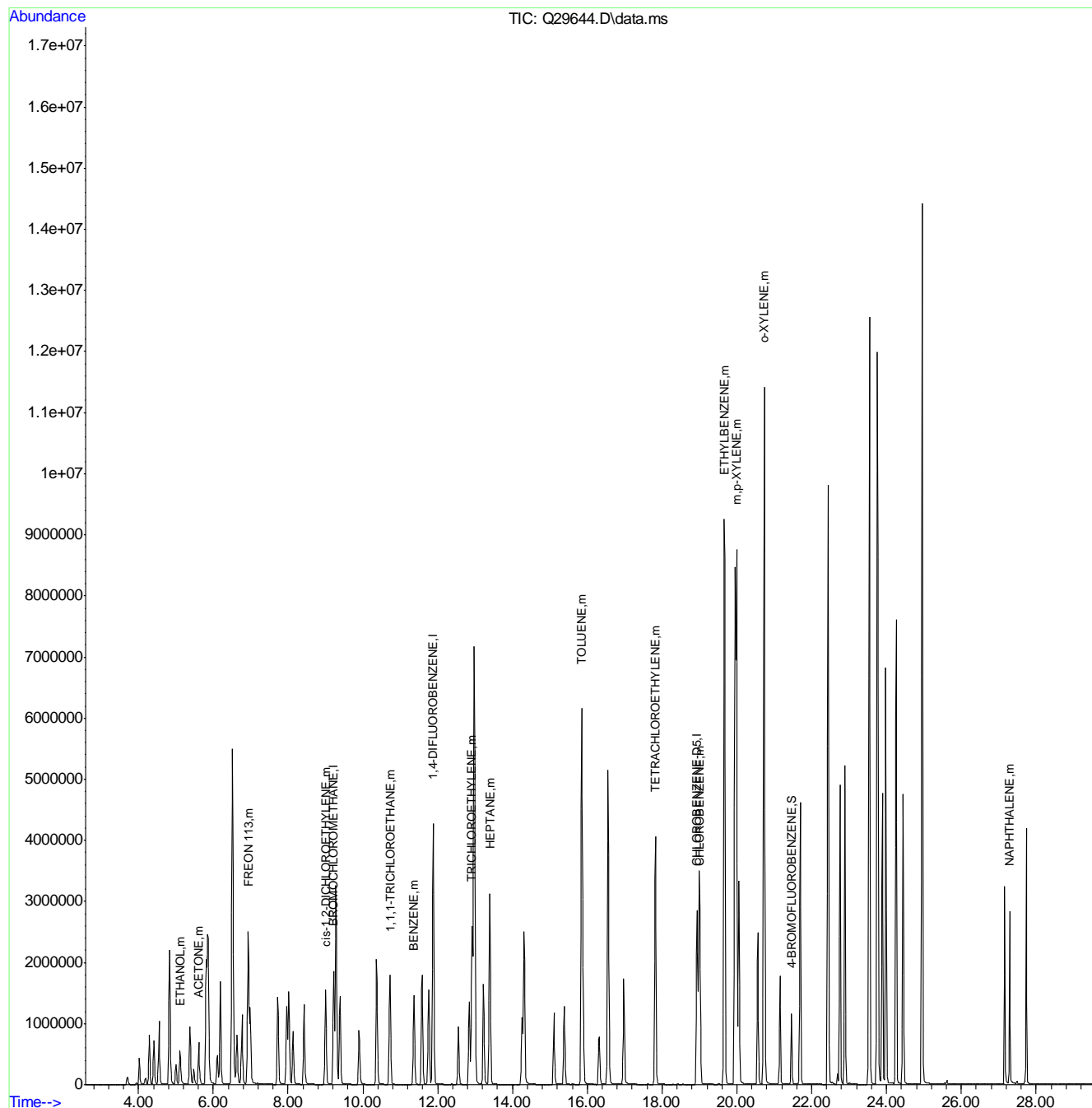
7.7.20

7

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\Q150210\
Data File : Q29644.D
Acq On : 11 Feb 2015 9:13 am
Operator : akina
Sample : ic1286-5
Misc : ms33846,msq1286,,,,,1
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Feb 11 09:50:47 2015
Quant Method : C:\msdchem\1\METHODS\Q150210FULLSIM.M
Quant Title : T015 by GCMS w/DB-1 60 m X .25 mm ID 1.0 um
QLast Update : Wed Feb 11 09:48:15 2015
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\Q150210\
 Data File : Q29645.D
 Acq On : 11 Feb 2015 10:14 am
 Operator : akina
 Sample : CC1286-0.5(m398)
 Misc : ms33846,msq1286,,,,,1
 ALS Vial : 5 Sample Multiplier: 1

Quant Time: Feb 11 10:48:43 2015
 Quant Method : C:\msdchem\1\METHODS\Q150210\FULLSIM.M
 Quant Title : T015 by GCMS w/DB-1 60 m X .25 mm ID 1.0 um
 QLast Update : Wed Feb 11 09:56:19 2015
 Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) BROMOCHLOROMETHANE	9.222	128	1274252	10.00	PPBV	# 0.00
37) 1,4-DIFLUOROBENZENE	11.882	114	5860759	10.00	PPBV	0.00
53) CHLOROBENZENE-D5	18.931	82	1870577	10.00	PPBV	# 0.00

System Monitoring Compounds						
66) 4-BROMOFLUOROBENZENE	21.454	95	761299	4.96	PPBV	0.00
Spiked Amount	5.000	Range	50 - 129	Recovery	=	99.20%

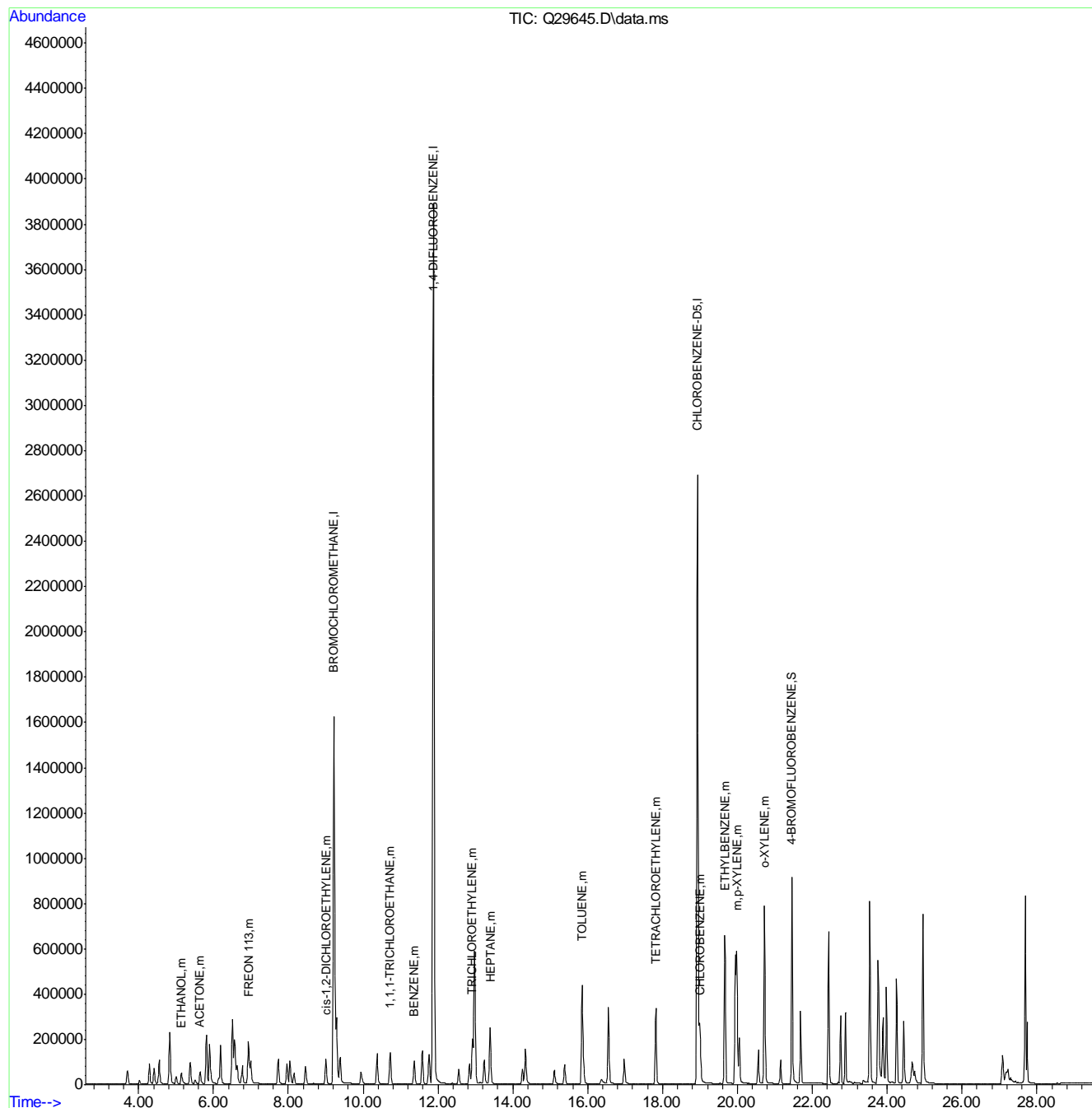
Target Compounds						Qvalue
13) ACETONE	5.639	43	87582	0.14	PPBV	90
18) ETHANOL	5.141	45	129204	0.25	PPBV	# 62
22) FREON 113	6.940	151	142446	0.39	PPBV	# 76
31) cis-1,2-DICHLOROETHYLENE	9.009	96	81183	0.37	PPBV	89
34) 1,1,1-TRICHLOROETHANE	10.721	97	156489	0.40	PPBV	95
38) BENZENE	11.365	78	196594	0.25	PPBV	# 86
40) TRICHLOROETHYLENE	12.916	95	151211	0.40	PPBV	# 68
46) HEPTANE	13.394	43	104130	0.33	PPBV	# 1
49) TOLUENE	15.848	92	138017	0.25	PPBV	# 1
55) TETRACHLOROETHYLENE	17.819	164	145514	0.35	PPBV	# 1
59) CHLOROBENZENE	19.013	112	219648	0.29	PPBV	# 74
60) ETHYLBENZENE	19.664	91	1246127	0.26	PPBV	# 64
61) m,p-XYLENE	19.989	106	243529	0.55	PPBV	# 1
62) o-XYLENE	20.731	106	122757	0.28	PPBV	# 1

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\Q150210\
Data File : Q29645.D
Acq On : 11 Feb 2015 10:14 am
Operator : akina
Sample : CC1286-0.5(m398)
Misc : ms33846,msq1286,,,,,1
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Feb 11 10:48:43 2015
Quant Method : C:\msdchem\1\METHODS\Q150210FULLSIM.M
Quant Title : T015 by GCMS w/DB-1 60 m X .25 mm ID 1.0 um
QLast Update : Wed Feb 11 09:56:19 2015
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\Q150210\
 Data File : Q29645a.D
 Acq On : 11 Feb 2015 10:14 am
 Operator : akina
 Sample : icv1286-0.5(m398)
 Misc : ms33846,msq1286,,,,,1
 ALS Vial : 5 Sample Multiplier: 1

Quant Time: Feb 11 10:48:43 2015
 Quant Method : C:\msdchem\1\METHODS\Q150210\FULLSIM.M
 Quant Title : T015 by GCMS w/DB-1 60 m X .25 mm ID 1.0 um
 QLast Update : Wed Feb 11 09:56:19 2015
 Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) BROMOCHLOROMETHANE	9.222	128	1274252	10.00	PPBV	# 0.00
37) 1,4-DIFLUOROBENZENE	11.882	114	5860759	10.00	PPBV	0.00
53) CHLOROBENZENE-D5	18.931	82	1870577	10.00	PPBV	# 0.00
System Monitoring Compounds						
66) 4-BROMOFLUOROBENZENE	21.454	95	761299	4.96	PPBV	0.00
Spiked Amount	5.000	Range	50 - 129	Recovery	=	99.20%
Target Compounds						
						Qvalue
13) ACETONE	5.639	43	87582	0.14	PPBV	90
18) ETHANOL	5.141	45	129204	0.25	PPBV	# 62
22) FREON 113	6.940	151	142446	0.39	PPBV	# 76
31) cis-1,2-DICHLOROETHYLENE	9.009	96	81183	0.37	PPBV	89
34) 1,1,1-TRICHLOROETHANE	10.721	97	156489	0.40	PPBV	95
38) BENZENE	11.365	78	196594	0.25	PPBV	# 86
40) TRICHLOROETHYLENE	12.916	95	151211	0.40	PPBV	# 68
46) HEPTANE	13.394	43	104130	0.33	PPBV	# 1
49) TOLUENE	15.848	92	138017	0.25	PPBV	# 1
55) TETRACHLOROETHYLENE	17.819	164	145514	0.35	PPBV	# 1
59) CHLOROBENZENE	19.013	112	219648	0.29	PPBV	# 74
60) ETHYLBENZENE	19.664	91	1246127	0.26	PPBV	# 64
61) m,p-XYLENE	19.989	106	243529	0.55	PPBV	# 1
62) o-XYLENE	20.731	106	122757	0.28	PPBV	# 1

(#) = qualifier out of range (m) = manual integration (+) = signals summed

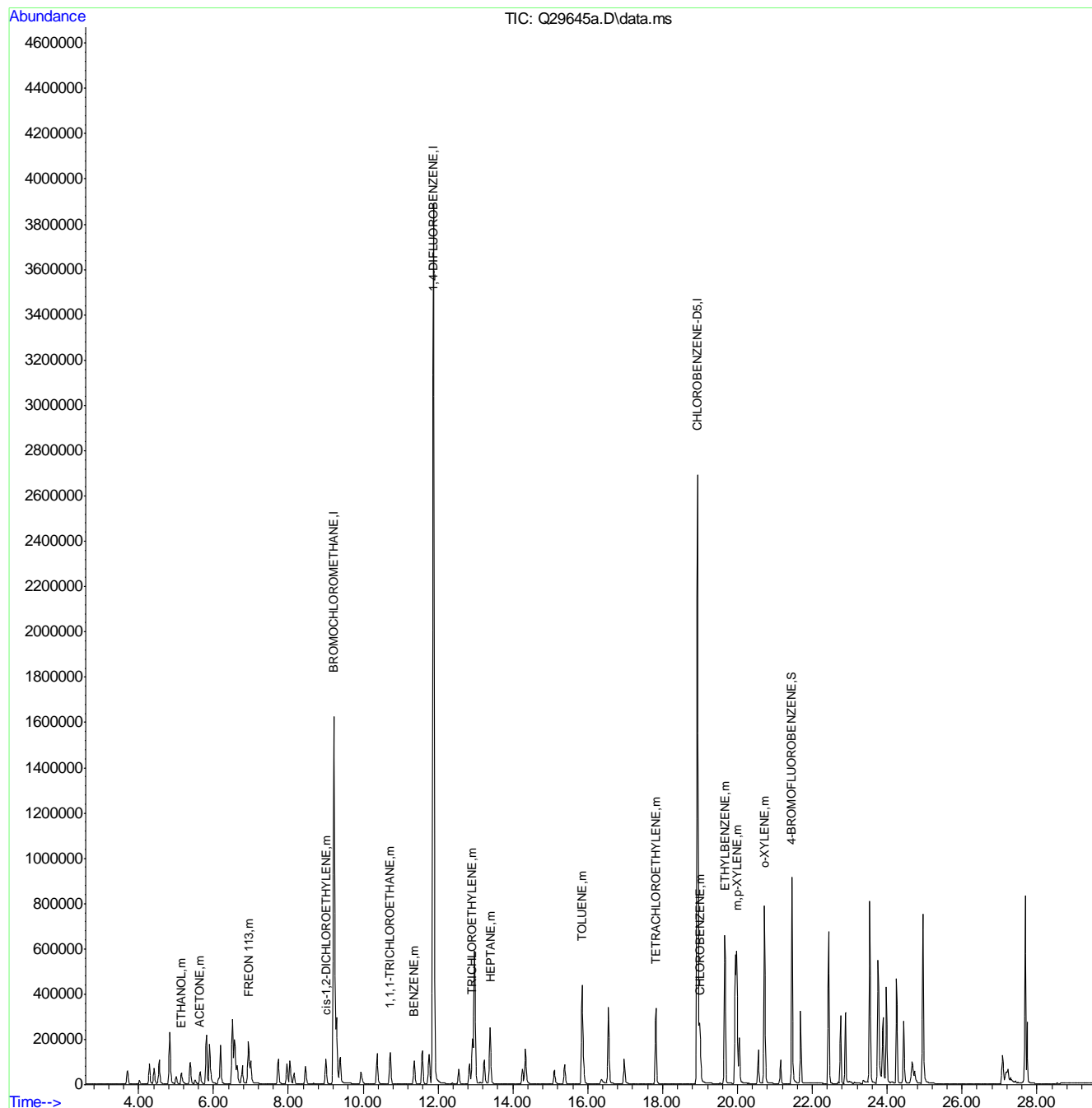
7.7.22

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Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\Q150210\
Data File : Q29645a.D
Acq On : 11 Feb 2015 10:14 am
Operator : akina
Sample : icv1286-0.5(m398)
Misc : ms33846,msq1286,,,,,1
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Feb 11 10:48:43 2015
Quant Method : C:\msdchem\1\METHODS\Q150210FULLSIM.M
Quant Title : T015 by GCMS w/DB-1 60 m X .25 mm ID 1.0 um
QLast Update : Wed Feb 11 09:56:19 2015
Response via : Initial Calibration



MS Analysis Log

Instrument: GCMS J

BATCH DATA	
DATE	1/22/15
BATCH ID	MSJ1510
ANALYST	SA

ALS DATA	
METHOD	VT015
ACQ METHOD	TEST 015
QC FILE	

GC/MS DATA	
METHOD	J15012215
SEQ	J15012215
ICAL	

STANDARD DATA		
LOT#	DESCRIPTION	CONC
MSA 2543	Int std / 015	40/20 ppbv
MSA 2543	015 STD	40
MSA 2543	015 STD	2 *

Sequence Verified: SA

DATA FILE	SAMPLE ID	CANISTER SERIAL #	TEST	WORK GROUP	ALS	VOL SAMPLE	DIL FACT.	COMMENTS
J29697	01std	M131	VT015	MSA2543	2	100	N/A	- test std
98	01std	M407		MSA2543	3	100	N/A	- test std
* 99	Pnk	M023		N/A	4	400	N/A	
J296700	Pnk				4	+	N/A	
701	1C1510-0.1	M434	VT015	MSA2545	6	20		- not used
702	0.2				6	40		
703	0.5				6	100		- Run Analyzed
704	1C1510-2	M131		MSA2543	7	20		
705	0.5				7	50		
706	1C1510-10				7	100		- poor purge
707	1C1510-20				7	200		
708	30					300		
709	40	M131			4	400		
710	Pnk	M023	VT015	N/A	4	400	N/A	
711	Pnk				4	400		
712	1C1510-10	M131		MSA2543	7	100		
713	1C1510-0.5	M434		MSA2545	6	100		

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MS004-02 (2/7/06)

MS Analysis Log

Instrument: GCMS J

BATCH DATA	
DATE	1/25-1/26/15
BATCH ID	M3J511
ANALYST	AK

ALS DATA	
METHOD	VT015
ACQ METHOD	TEGTO15
QC FILE	

GC/MS DATA	
METHOD	J150125T.M
SEQ	J150125S
ICAL	101229715A

STANDARD DATA		
LOT#	DESCRIPTION	CONC
MSA 12481	Int std / GR	40/20 ppbv
12544	TS15 LCS	40 ↓

Sequence Verified: 1/26/15

DATA FILE	SAMPLE ID	CANISTER SERIAL #	TEST	WORK GROUP	ALS	VOL SAMPLE	DIL FACT.	COMMENTS
J29714	BAK		VT015	NA	1	400	NA	
715	cc1510-10	m407	VT015	MSA2544	2	100	NA	10v/BS
16	BAK	m181		NA	1	400	1	
17	MR/SC	m181	↓	↓	1	400	1	cp1593
18	MC36325-1	m421	VT015 SL	MS33766	2	20	20	OVERALL
19	MC36382-1	m036		MS33716	3	200	2	OK
J29720	MC36382-3	m225			4	400	1	
21	↓ -3	m225	↓	↓	4	20	20	
22	MC36483-1	m256	VT015 SL	MS33766	6	400	1	OVERALL ETOH
23	↓ -7	m256			6	20	20	
24	↓ -2	m248			7	400	1	OVERALL ETOH
25	↓ -2	↓			7	20	20	
26	↓ -3	m230			8	400	1	
27	↓ -3	↓	↓	↓	8	20	20	
28	SCC	m171	VT015		9	400	1	cp1594
29	SCC	m004			10			cp1595
J29730	SCC	m239			11			cp1596
31	SCC	m196			12			cp1597
32	SCC	m424			13			cp1598
33	SCC	m280	8		14	↓	↓	cp1599
34	SCC	m222	VT015		15	400	1	cp1600
35	MC36325-1	m421	VT015 SL		2	400	1	
36	MC36483-3	m230			8	400	1	Dup
37	MC36483-1	m256	↓		6	40	10	NO ETOH Recovery
38	↓ -2	m248	↓		4	80	5	NO ETOH Recovery
39	MC36481-1	m211	VT015 SL		14	400	1	BTEX and MTBS only
J29740	↓ -2	m013	↓		15	↓	1	↓
J29741	↓ -3	m400	↓		16	↓	1	↓
J29742	SCC	m146	VT015		1	400	1	cp1609
43	SCC	m210	↓	↓	2	400	1	cp1601

MS Analysis Log

Instrument: GCMS J

BATCH DATA	
DATE	2/9/15
BATCH ID	MSJ1520
ANALYST	AA

ALS DATA	
METHOD	VTOIS
ACQ METHOD	TESTTOIS
QC FILE	

GC/MS DATA	
METHOD	J1501327
SEQ	J150209
ICAL	ICVJ297154

STANDARD DATA		
LOT#	DESCRIPTION	CONC
12481	Int Std / Smr	4020 ppbv
12556	TOIS LCS	4020 ppbv

Sequence Verified: 2/10/15 AA

DATA FILE	SAMPLE ID	CANISTER SERIAL #	TEST	WORK GROUP	ALS	VOL SAMPLE	DIL FACT.	COMMENTS
J29932	CC1510-10	M399	VTOIS	MSA2556	1	100	N/A	/BS
33	Bus			N/A	2	400	N/A	
34	SCC	A583						CP1605
35	MB / sc	M421	↓	↓	3	↓	↓	CP1613
36	MC36587-1	M418	VTOIS	MS3838	4	400	1	
37	-2	M186			6	400	1	-RR LCN Internal
38	-3	A400*			7	80	5	*NJ CAN -RR STR ✓
* 39	4	M197			8			
J29940	-5	A415*			9	↓		*NJ CAN
41	* -6	M428			10	80	↓	↓ CFI
42	MC36588-1	M429			11	20	20	-RR STR
43	-2	*			12	20	20	*TEST AMER CAN, OVERCAL OK
44	-3	M456			13	20	20	-RR STR
45	-4	M182			14			
46	-5	M451			15			CFI
47	* -6	M454	↓		16	↓	↓	↓
48	MC36556-5	M238	VTOIS STD		1	400	1	
49	-4	M160			2			
J29950	-3	M283			3			-OVERCAL ✓
51	-2	M275			4	↓	↓	
52	* -1	M001	↓		6	400	1	
* 53	MC36556-3	M283	VTOIS STD	↓	3	20	20	
J29954	-1	M001		MS3838	6	40	10	
55	* 400	M160			2	400	1	
56	MC36587-3	A400	↓	↓	7	↓	1	
J29957	MC36556-3	M283	*	↓	3	80	5	16:12

2/10/15 AA

MS Analysis Log

Instrument: GCMS J

BATCH DATA	
DATE	2/10/15
BATCH ID	MSJ 1521
ANALYST	KA

ALS DATA	
METHOD	VTOIS
ACQ METHOD	TESTOIS
QC FILE	

GC/MS DATA	
METHOD	J1501221
SEQ	J15021015
ICAL	KV J29715A

STANDARD DATA		
LOT#	DESCRIPTION	CONC
3481	mt std / snk	40/20 ppbv
3556	TOLIS CCS	90

Sequence Verified: 2/11/15 KA

DATA FILE	SAMPLE ID	CANISTER SERIAL #	TEST	WORK GROUP	ALS	VOL SAMPLE	DIL FACT.	COMMENTS
J29958	C1510-10	M399	VTOIS	N/A	1	100	N/A	/BS
↓ 59	BULK			N/A	1	400		
J29960	Bulk/SC	M308			2			cp1607
61	MB/SC	M114	*		2			cp1606
62	MC36587-2	M186	VTOIS SL	MS33838	3	800	1	
63	MC36624-1	M164	VTOIS SL		4	20	20	
64	↓ -2	M096			6	20	20	
65	MC36638-1	M007			7	400	1	-RR to conf in
66	↓ -2	M016			8	400	1	
67	MC36587-5	A415	VTOIS SL		9			
68	↓ -6	M428			10			↓ internal
69	MC36638-4	M429			11			
J29970	MC36638-3	M006			12	400		
71	MC36588-3	M456			13			
72	↓ -4	M182			14			
73	↓ -5	M451			15		X	↓ internal
74	↓ -6	M454			16	400	1	
75	MC36638-2	M016	VTOIS SL		8		1	DUP
76	↓ -1	M007			7		1	
77	MC36588-3	M456	VTOIS SL		13	400	2	ERR x2 (X) = NOT NEEDED
78	MC36587-3	A400			1	400		
79	↓ -4	M197	*		2	400	1	ETOH
J29980	MC36638-4	M161	VTOIS		3	400	1	
81	MC36587-4	M197	VTOIS SL		2	400	2	ETOH NOT SEEN
82	MC36624-1	A405	VTOIS SL	*	4	200	400	RR, ↑ tetra
J29983	↓ -2	M096		MS33838	6	20	60	
J29984	MC36638-3	M026	VTOIS SL		12	400	1	DUP
J29985	MC36624-1	A405	VTOIS SL		4	80	1000	

MS004-02 (2/7/06)

QA Review: 32

MS Analysis Log

Instrument: GCMS Q

BATCH DATA	
DATE	2/10/15
BATCH ID	MSQ1286
ANALYST	JA

T015 FullSIM

ALS DATA	
METHOD	T0151M
ACQ METHOD	
QC FILE	

Q150210 FullSIM

GC/MS DATA	
METHOD	
SEQ	Q150210.5
ICAL	ICVQ129645A

STANDARD DATA		
LOT#	DESCRIPTION	CONC
2481	Int Std / OMR	40/20 ppbW
2557	SIM Std	40
2558	SIM Std	5
2559	SIM LCS	0.1

Sequence Verified: 2/12/15 JA

DATA FILE	SAMPLE ID	CANISTER SERIAL #	TEST	WORK GROUP	ALS	VOL SAMPLE	DIL FACT.	COMMENTS
Q29628	test 10 std	M131	T015 FullSIM	MSA2557	2	100	N/A	
↓ 29	5 std	M131	↓		2			
Q29630	BLK		T015		1	400		
31	test 0.05	M157	T015 FullSIM	MSA2558	3	200		
32	test 0.02	↓		↓	3	80		
33	BLK		T015		1	400		
34	RFB		*		1	400		
35	IC1286-0.005	M157	T015 FullSIM	MSA2559	3	20	N/A	
36	IC1286-0.02	↓		↓	3	80		
37	↓ -0.05	↓		↓	3	200		
38	↓ -0.1	M157		MSA2559	3	400		
39	IC1286-0.5	M401		MSA2558	4	40		not reported
Q29640	IC1286-0.25	↓		↓	4	20		
41	IC1286-0.5	↓		↓	4	40		reported
42	IC1286-2.0	M131		MSA2557	5	200		
43	BLK			N/A	1	400		
44	IC1286-5	M401		MSA2558	4	400		
45	IC1286-2.5	M398	T015 FullSIM	MSA2550	4	40		ICV/BS
46	BLK	M312		N/A	1	400	1	
47	MB	M312		↓	1	400	1	
48	MC36556-1A	M001		MS33846	2	200	2	
49	-3A	M283		↓	3	40	10	
Q29650	-2A	M275			4	400	1	
51	-4A	M160			5	400	1	
52	-5A	M238			6	400	1	
53	-2A	M275			4	400	1	Dup
54	-1A	M001			2	40	10	
Q29655	-3A	M283	↓	↓	3	400	1	

2/12/15 JA

MS004-02 (2/7/06)

QA Review:

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