

2020 Annual Vapor Intrusion Monitoring Report for Building No. 1

Former Macbeth Kollmorgen Corporate Site
617 Little Britain Road New Windsor, Orange County, New York. NYSDEC Site Number: 3-36-037

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2020 Vapor Intrusion Annual Monitoring Report for Building No. 1

Former Macbeth Kollmorgen Corporate Site 617 Little Britain Road New Windsor, Orange County, New York. NYSDEC Site Number: 3-36-037

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1. INTRODUCTION

As requested by the New York State Department of Environmental Conservation (NYSDEC) and the New York State Department of Health (NYSDOH), ERM Consulting & Engineering, Inc. (ERM) conducted annual soil vapor intrusion (SVI) monitoring on behalf of Fortive in January 2020 at the former Macbeth-Kollmorgen Corporate Site (the Site) located at 617 Little Britain Road in New Windsor, New York. The Site is known as NYSDEC Site No. 3-36-037. The May 2011 Site Management Plan (SMP) requires the monitoring of sub-slab vapor at the Site following completion of remedial action. 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 from Site compounds of concern previously detected in sub-slab vapor samples.

The vapor intrusion investigation conducted in December 2006 confirmed that indoor air quality was consistent with NYSDOH background levels and therefore was not a concern. However, using the matrices provided in the NYSDOH (2006) Guidance for Evaluating Soil Vapor Intrusion in the New York trichloroethene (TCE), tetrachloroethene (PCE), and/or 1,1,1-trichloroethane (1,1,1-TCA) were present in sub-slab vapor samples at concentrations that required continued monitoring of sub-slab vapor at two (2) locations. Active mitigation was not required based on the concentrations of TCE, PCE, and 1,1,1-TCA present in sub-slab vapor.

In May 2017, the NYSDOH updated the Soil Vapor/Indoor Air Matrices with three newly revised and renamed Soil Vapor / Indoor Air Decision Matrices. These new SVI decision matrices supersede those provided in the October 2006 final guidance and subsequent updates to the guidance, and are used for evaluation of data in this report.

2. VAPOR INTRUSION INVESTIGATION - JANUARY 2020

The vapor intrusion investigation conducted in January 2020 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 Industries, a manufacturer of corrugated products, including partitions and point of purchase displays. The former Quality Packaging and Pratt Quality was purchased by Pratt Industries in 2015 and is now known as Pratt Industries. The operations at the facility are largely unchanged since the 2019 sampling event.

2.1 Product Inventory and Facility Operations

Prior to sampling, ERM reviewed and completed the NYSDOH Indoor Air Quality Questionnaire and Building Inventory form with Mr. Steve Chichkov of Pratt Industries. The NYSDOH Indoor Air Quality Questionnaire and Building Inventory form is included as **Appendix A** of this report. 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 (March 2019).

In particular, the product inventory documents the materials used by the current operator and/or present at the facility while the sampling activities are being conducted. Pratt Industries 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 using counter, stacker, and partition assembler equipment. Pratt Industries indicated that they use water-based inks and glues to create labels on their products.

On 30 January 2020, ERM personnel conducted a visual reconnaissance of the operational areas to identify materials present. Twenty (20) different products were observed during the building survey and are documented in **Appendix A**. **Table 1** presents all of the chemicals, along with their CAS Registry Numbers, listed on the Safety Data Sheets (SDSs) for products observed on-Site. Among the seventy-six (76) chemicals listed in products used on-Site, fifteen (15) of them are included on the TO-15 analytical list.

Based on ERM's observations and information provided by Pratt Industries, the primary products used and stored at the facility are a water-based printing ink called J.M. Fry Solarflex printing ink, Specialty Adhesives and Coatings Spec Bond and Super Bio Clean 5G.

Printing inks are stored in sealed 5-gallon buckets near sampling points SG-2 and IA-2. Several 55-gallon drums containing Specialty Adhesives and Coatings Spec Bond were present near the SG-2 / IA-2 location. The container label for Specialty Adhesives and Coatings Spec Bond states contents may contain vinyl acetate; however, the SDS did not list vinyl acetate as a chemical in the product. This could be due to the age of the material stored on-site compared to the SDS (i.e., older products may have contained vinyl acetate).

2.2 Soil Vapor and Indoor Air Sampling

On 30 January 2020, 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 (AA-2 and AA-3) were paired with the sub-slab samples (indoor air sample AA-2 was collected adjacent to SG-2 and AA-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 30 January 2020, sub-slab vapor samples were collected over an 8-hour time period from SG-2 and SG-3 within the main building. Pursuant to the NYSDOH guidance, the soil vapor samples were collected using batch certified 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-liter per minute. Before sampling, a helium leak tracer test was performed to check the integrity of the seal at each sampling location (to confirm the sub-slab vapor sample was not cross contaminated with indoor air.

Helium Leak Tracer Test

A helium leak tracer test was performed at each location prior to sampling to confirm the integrity of the seal around the tubing. Laboratory-grade helium, a Model MGD-2002 Multi-Gas Leak Locater, a plastic shroud, and hydraulic cement were used for the leak tracer test. Sample dedicated Teflon™ tubing was attached to the barbed 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 to prevent the helium from escaping. The tubing extending from below the slab through the shroud 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 enriching the void space within the shroud with helium, the helium detector was connected to the tubing to measure the helium concentration within the shroud. After sufficient concentration was measured within the shroud (typically 10 percent [%]), the helium detector was reconnected to the sealed sub-slab vapor tubing to check if the helium had infiltrated through the cement seal into the ground. 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.

Sample Collection and Analysis

Before sampling, the initial pressure of each SUMMA® canister was recorded in inches of mercury (Hg). The initial pressures of the SUMMA® canisters were 30.5 inches of Hg for SG-2 and 30 inches of Hg for SG-3. The post-sampling pressures for each SUMMA® canister was 10.5 inches of Hg for SG-2 and 9 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, labeling of the SUMMA® canisters was completed and the canisters were transported via laboratory courier under chain-of-custody protocols to SGS North America, Inc.'s laboratory (NYSDEC Certification No. 10983, NYSDOH ID# 10983) in Dayton, New Jersey (SGS). The sub-slab vapor samples were analyzed via United States Environmental Protection Agency (USEPA) Method TO-15.

2.2.2 Indoor Air Sample Collection

On 30 January 2020, two (2) indoor air samples (AA-2 and AA-3) were collected at the Site. Each sample was collected adjacent to a corresponding soil gas sample location (SG-2 and SG-3). The indoor air samples were collected to assess indoor air at the locations where chlorinated volatile organic compounds (CVOCs) had been detected in the sub-slab vapor samples. AA-2 was collected adjacent to SG-2, and AA-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 over an 8-hour time period 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-liter per minute. The SUMMA® canisters were stationed so that the sample would be collected from a height of approximately five (5) feet above ground surface. The initial pressures of the SUMMA® canisters were measured as 28 inches of Hg in AA-2 and >30 inches of Hg in AA-3 canisters. The post-

sampling pressures recorded for each SUMMA® canister was 10.5 inches of Hg for AA-2 and 11 inches of Hg for AA-3. The Canister Sampling Field Data Sheets are provided in **Appendix B**.

Once sample collection was complete, labeling of the canisters were completed and the indoor air SUMMA® canisters were transported via laboratory courier to SGS under chain-of-custody protocols. The indoor air samples were analyzed via USEPA Method TO-15

3. INDOOR AIR AND SUB-SLAB VAPOR RESULTS AND DATA EVALUATION

The following sections summarize the results of sub-slab vapor and indoor air sampling conducted on 30 January 2020. The analytical data are summarized in **Table 2**. As discussed previously, in May 2017 the NYSDOH updated the Soil Vapor/Indoor Air Matrices that are used to determine the minimum actions that are recommended to address the current exposures related to sub-slab vapor intrusion. A summary of historical compounds of concern is presented in **Table 3**.

The updated NYSDOH Soil Vapor/Indoor Air Matrices A, B, and C were used to evaluate the eight (8) applicable compounds, even if the compounds were not historical compounds of concern at the Site. Matrix A was used to evaluate TCE, cis-1,2-Dichloroethene (cis-1,2-DCE), 1,1-Dichloroethene (1,1-DCE), and carbon tetrachloride. Matrix B was used to evaluate PCE, 1,1,1-TCA, and methylene chloride. Matrix C was used to evaluate vinyl chloride. These matrix comparisons are presented as **Table 4** through **Table 11** and are discussed in **Sections 3.1** through **3.8**, below.

Of the thirty-three (33) compounds detected in the indoor air samples, fourteen (14) were found to be included in products used on-Site. No VOCs or CVOCs were detected in indoor air samples (AA-2 and AA-3) at concentrations above the NYSDOH AGVs or Occupational Safety and Health Administration (OSHA) Permissible Exposure Limit (PEL) time-weighted averages (TWA).

The laboratory analytical report for the samples is included in **Appendix C**. The results of the sub-slab vapor and indoor air sampling follow.

3.1 Trichloroethene (TCE)

TCE was detected in sub-slab vapor at SG-2 at a concentration of 11 µg/m^3 and not detected in the corresponding indoor air sample (AA-2). TCE was detected in sub-slab vapor at SG-3 at a concentration of 0.64 µg/m^3 and not detected in the corresponding indoor air sample (AA-3). The TCE concentrations detected in the sub-slab at these locations during the January 2020 sampling event are similar to or lower than previous sampling events (**Table 3**). Additionally, as shown on **Table 1**, two (2) products containing TCE are used on-Site and are documented in **Appendix A**. No further action (NFA) is recommended for TCE at SG-2/AA-2 and SG-3/AA-3 based on the comparison of sub-slab vapor and indoor air concentrations to NYSDOH Matrix A (**Table 4**).

3.2 Tetrachloroethene (PCE)

PCE was detected in the sub-slab vapor at SG-2 at a concentration of 0.54 µg/m^3 and not detected in the corresponding indoor air sample (AA-2). PCE was also detected in the sub-slab vapor at SG-3 at a concentration of 435 µg/m^3 and the in corresponding indoor air sample (AA-3) at a concentration of 0.21 µg/m^3. The PCE concentrations detected in the sub-slab at these locations during the January 2020 sampling event are similar to or lower than previous sampling events (**Table 3**). NFA is recommended for PCE at SG-2/AA-2 and SG-3/AA-3, based on the comparison of sub-slab vapor and indoor air concentrations to NYSDOH Matrix B (**Table 5**).

3.3 1,1,1-Trichoroethane (1,1,1-TCA)

1,1,1-TCA was detected in sub-slab vapor at concentrations of 243 µg/m^3 and 66.6 µg/m^3 at locations SG-2 and SG-3, respectively. 1,1,1-TCA was not detected in either of the corresponding indoor air samples (AA-2 and AA-3) above the reporting limit of 0.44 µg/m^3. The 1,1,1-TCA concentrations detected in the sub-slab at these locations during the January 2020 sampling event are similar to or lower than previous sampling events (**Table 3**). NFA is recommended for 1,1,1-TCA at SG-2/AA-2 and SG-3/AA-3 based on the comparison of sub-slab vapor and indoor air and concentrations to NYSDOH Matrix B (**Table 6**).

3.4 cis-1,2-Dichloroethene (cis-1,2-DCE)

Cis-1,2-Dichloroethene (cis-1,2-DCE) was not detected above the reporting limit in the sub-slab vapor at SG-2 or SG-3, or their corresponding indoor air samples, AA-2 and AA-3. NFA is recommended for cis-1,2-DCE based on the comparison to NYSDOH Matrix A (**Table 7**).

3.5 1,1-Dichloroethene (1,1-DCE)

1,1-Dichloroethene (1,1-DCE) was not detected above the reporting limit in the sub-slab vapor at SG-2 or SG-3, or their corresponding indoor air samples, AA-2 or AA-3. NFA is recommended for 1,1-DCE based on the comparison to NYSDOH Matrix A (**Table 8**).

3.6 Carbon Tetrachloride

Carbon tetrachloride was not detected above the reporting limit in the sub-slab vapor at SG-3 or the corresponding location at AA-3; however, it was detected in sub slab vapor at SG-2 and the corresponding indoor air sample (AA-2) at concentrations of 1.8 and 0.75 µg/m^3, respectively. This compound has not historically been a compound of concern at the Site. NFA is recommended for carbon tetrachloride at SG-2 and SG-3 based on comparison to NYSDOH Matrix A (**Table 9**).

3.7 Methylene Chloride

Methylene chloride was not detected in the sub-slab vapor at SG-2 or SG-3 above the reporting limit of 0.69 µg/m^3. However, this compound was detected in the corresponding indoor air samples, AA-2 and AA-3 at concentrations of 3.3 and 0.83 µg/m^3, respectively. Methylene chloride has not historically been a compound of concern at the Site. NFA is recommended for methylene chloride at SG-2 and SG-3 based on comparison of concentrations detected in sub-slab vapor and indoor air to NYSDOH Matrix B (**Table 10**).

3.8 Vinyl Chloride

Vinyl chloride was not detected above the reporting limit in the sub-slab vapor samples at SG-2 or SG-3, or their corresponding indoor air samples (AA-2 or AA-3) and has not historically been a compound of concern at the Site. NFA is recommended for vinyl chloride based on comparison of the results to NYSDOH Matrix C (**Table 11**).

3.9 Historical Matrix Comparison

An historical summary (since the beginning of monitoring in December 2006) of the compound-specific matrix recommendations using the current NYSDOH Soil Vapor / Indoor Air Decision Matrices, is provided in **Table 12**. All results at all locations have been “No Further Action” since January of 2014, with the exception of PCE at SG-2/AA-02 in 2015 and 2019, and cis-1,2-DCE at SG-2/AA-02 in 2019. The PCE results at SG-2/AA-02 in 2019 resulted in a recommendation of “Monitor”, which was performed in 2020 and the result was “No Further Action”. The cis-1,2-DCE results at SG-2/AA-02 in 2019 resulted in

a recommendation of “Identify Sources and Resample or Mitigate”. The 2020 chemical inventory did not identify any indoor sources of cis-1,2-DCE, however resampling in 2020 was performed and the result was “No Further Action”.

4. TREND ANALYSIS

The concentrations of CVOCs in sub-slab and indoor air samples were evaluated using a statistical software package called R. The data used in this analysis consists of samples from December 2006 to January 2020 collected at locations AA-02, AA-03, SG-2, and SG-3. The data were reviewed to manage non-detect values and evaluate outliers, and trends were evaluated using the Mann Kendall test.

4.1 Data Handling

This section describes the data included in this evaluation, the handling censored values, and handling of anomalous data points. Descriptive statistics were run initially for every unique combination of: location and chemical name (referred to as Group from hereon). There were 32 unique Groups.

4.1.1 Non-Detects

Non-detects (NDs) commonly reported in environmental monitoring data are statistically known as “left censored” measurements because the concentration of any ND can only be estimated. NDs are assumed to fall between zero and the reporting limit (USEPA 2009). USEPA (2015) offers a number of options for handling non-detected values, including Kaplan-Meier estimators, Regression on Order Statistics, and replacement with surrogate values. The appropriate handling of NDs depends on the statistical test being used and will be discussed in the following sections as appropriate.

Multiple reporting limits were found for several Groups. Of the 32 unique Groups, two of them had different reporting limits for the same analyte and location. Additionally, maximum reporting limits were found to be greater than detected values for 8 of the Groups.

4.1.2 Outlier Analysis

Statistical outliers are extreme (large or small) values within a dataset that numerically deviate a significant amount from the rest of the values, and are not representative of the population from which they are drawn (USEPA 2009). The presence of outliers may distort statistics if used in calculations. USEPA guidance (2009) recommends performing a careful quality check of the data to identify any anomalous values. Once found, it can be determined whether outliers represent actual extreme values or are errors as a result of (i) inconsistent or erroneous sampling and analytical methods, or (ii) transcription errors (USEPA 2009). Consistent with USEPA (2015) guidance, for the purpose of the identification of high outliers, outlier evaluations were performed on detected data only using both statistical and visual techniques.

4.1.2.1 Statistical outlier testing

Statistical outiler tests were performed using Dixon's test for datasets with fewer than 25 values and Rosner's test for datasets with 25 or more values (USEPA 2015). When the data distribution was normal, statistical outlier testing was performed on untransformed data. When data were lognormally distributed, data were log-transformed before the outlier test was conducted to meet the assumption of normality of the test (USEPA 2009, 2015). Data with no discernible distribution (NDD) had outlier tests conducted on both untransformed and log-transformed data. A data point was considered a statistical outlier if it was found in the outside of the lower and upper tail of the distribution and is significant at an α of 0.05.

4.1.2.2 Visual Outlier Assessment

A useful visual assessment is to graph the data as a quantile-quantile probability plot (**Appendix D**). Probability plots can also indicate the presence of possible outlier values that do not follow the basic pattern of the data and can show the presence of significant positive or negative skewness (USEPA

2009). When viewing QQ plots, data points that fall outside of the 95 percent confidence limits are considered potential visual outliers. As with the statistical outlier testing, data will be transformed as needed before visual outliers are identified.

4.1.2.3 Decision Framework for the Inclusion/Exclusion of Outlier Value

Consistent with guidance (USEPA 2009) and standard practices, statistical methods alone (e.g., Dixon's Test or Rosner's test) were not used to determine the exclusion of a statistical outlier. Data points were considered for exclusion if they met the following visual and statistical criteria:

- For normally distributed data, a data point was identified as a visual and statistical outlier using raw, untransformed data;
- For lognormally distributed data, a data point was identified as a visual and statistical outlier using log-transformed data; and
- For data with no discernible distribution, a data point identified as a visual and statistical outlier using either untransformed or log-transformed data.

Outliers were not excluded if it was ND or if the Group had fewer than five detected values.

4.2 Trend Testing Approach

A Mann Kendall test was used to detect changes in concentrations over time. The Mann Kendall Test is a non-parametric method that tests the following null hypothesis (USEPA 2009):

- Null Hypothesis (Ho): No monotonic trend exists.
- Alternative Hypothesis (Ha): A monotonic trend exists.

A monotonic upward (or downward) trend means that the variable consistently increases (or decreases) through time, but the trend may or may not be linear. The Mann-Kendall test is based on the premise that the lack of monotonic trend should correspond to a time series plot fluctuating randomly about a constant median with no visually apparent upward or downward pattern (Helsel and Hirsch 2002). Significantly increasing or decreasing trends (τ) are identified at a significant level (α) of less than or equal to 0.05. τ^2 can be used like an R^2 value to estimate how much variance in y is explained by x (i.e., what proportion of the variability in concentration is explained by time). With the specified 95% confidence, significantly increasing or decreasing trends are identified with p-values as follows:

Tau	p-value	Conclusion	Trend
Positive	p <= 0.05	Ho Rejected	Increasing
Negative	p <= 0.05	Ho Rejected	Decreasing
Positive or Negative	p > 0.05	Ho Accepted	Stable

4.2.1 Data Constraints

Guidance recommends that trend tests be performed with at least eight detected data points to ensure a reasonable amount of confidence in results (USEPA 2009, p. 17-24). However, it is mathematically possible to carry out the test with five detected samples. The consequences of using the minimum sample size is that there is a greater chance of concluding that there is no trend when, in fact there is a trend (USEPA 2009). To avoid the introduction of excessive uncertainty, Mann Kendall tests were not performed if a dataset contained more than 50 percent ND values.

Consistent with guidance, in cases where the frequency of detection was greater than 50 percent, NDs were substituted with a constant that is below the lowest detected value (Helsel and Hirsch 2002). This ensures that all NDs are "tied" and that changing reporting limits have limited influence on whether trends are detected (USEPA 2009, Helsel and Hirsch 2002). NDs were chosen to be substituted with a value of zero for the trend analysis.

4.3 Results

4.3.1 Outlier Analysis

As discussed in Section 4.2.2, both statistical and visual outlier tests were performed on the dataset. Two data points were identified as both statistical and visual outliers, as follows:

- TCE in SG-2, sampled in 2006-Dec with a concentration of 860 ug/m^3
- PCE in SG-3, sampled in 2006-Dec with a concentration of 6000 ug/m^3

These values are identified as red data points in the QQ Plots (**Appendix D**) and the time series plots (**Appendix E**) but were removed from subsequent statistical analysis. **Table 13** summarizes the outlier testing.

4.3.2 Descriptive Statistics

Descriptive statistics were calculated for all Groups and can be found in **Table 14**. Non-detects were substituted with a value of half the reporting limit for calculations. The descriptive statistics highlight a number of relevant characteristics about the datasets, including:

- There are a total of 32 Groups (four unique wells and eight unique analytes).
- 28 Groups have detection rates greater than or equal to 50 percent.
- Two Groups have 100 percent non-detects.
- Nine Groups have 100 percent detects.
- Nine Groups follow a normal distribution (using Shapiro-Wilks Normality Test) and 16 Groups follow a log-normal distribution. The remaining 7 Groups have no discernible distribution.

4.3.3 Trend Results

Trend tests were calculated with 95% confidence for all Groups that met the minimum data requirements of at least 5 detected values and 50% detection frequency. A full report of the Mann Kendall trend test results and time series plots can be found in **Table 15** and **Appendix E**. The following summarize the results of the trend analysis:

- 23 Groups met the data requirements of the trend test. Of those:
- No Groups had a significant increasing trend,
- Six Groups had a significant decreasing trend,
- 17 Groups had no significant trend (i.e., concentrations were stable over time).

Time series scatterplots are provided in **Appendix E** for each Group. Although detection limits for each sample is plotted to allow visual assessment of changing detection limits over time, zeros were substituted for NDs in the Mann Kendall analysis. Any identified outliers are also included on the figure for reference, but were not used in the Mann Kendall analysis.

For Groups with significant trend, a visual of the linear fit is provided on the graph. The Mann Kendall is a correlation test and does not provide an estimate of the slope and y-intercept. A parametric test was used to provide a visual guide only.

5. CONCLUSIONS AND RECOMMENDATIONS

5.1 Conclusions

After the initial sub-slab vapor and indoor air sampling event conducted in December 2006, this Site has been sampled annually since 2008. The indoor air VOC and CVOC concentrations have been compared to the OSHA 8-hour TWA, NYSDOH Air Guidance Values, and the May 2017 Soil Vapor/Indoor Air decision matrices, as appropriate. The following conclusions and recommendations were drawn based on the sub-slab vapor and indoor air sampling completed in January 2020 (**Table 2** and **Table 3**):

TCE, PCE, and 1,1,1-TCA were detected in sub-slab soil vapor points SG-2 and/or SG-3 during the January 2020 sampling event. These compounds have historically been present in soil vapor at the Site and were evaluated against their respective NYSDOH Matrix. The following conclusions were drawn based on the data results:

- TCE: NFA is recommended for TCE based on the concentrations detected in sub-slab vapor and indoor air and comparison to NYSDOH Matrix A (**Table 4**).
- PCE: NFA is recommended for PCE based on the concentrations detected in sub-slab vapor and indoor air and comparison to NYSDOH Matrix B (**Table 5**).
- 1,1,1-TCA: NFA is recommended for 1,1,1-TCA based on the concentrations detected in sub-slab vapor and indoor air and comparison to NYSDOH Matrix B (**Table 6**).

Based on the data evaluation, cis-1,2-DCE (**Table 7**) 1,1- DCE (**Table 8**) and vinyl chloride (**Table 11**) were eliminated from further evaluation because neither the sub-slab vapor or indoor air results were detected above the reporting limits.

Carbon tetrachloride (Matrix A, **Table 9**) and methylene chloride (Matrix B, **Table 10**) were detected during the January 2020 sampling event. Although these compounds are not historically compounds of concern at the Site, each was compared to the NYSDOH May 2017 decision matrices and NFA was recommended for each of these compounds based on the NYSDOH Matrix used.

A review of what the recommendations would have been using the current NYSDOH Soil Vapor / Indoor Air Decision Matrices, for each compound, since the beginning of monitoring in December 2006, showed the majority of the recommendations were for “No Further Action”. In addition, all result from 2020 resulted in a recommendation of “No Further Action”.

The Mann Kendall trend tests revealed that no Groups had a significant increasing trend, six Groups had a significant decreasing trend, and 17 Groups had no significant trend. These results demonstrate that the concentrations of CVOCs in sub slab soil gas and indoor air have been stable or decreasing over time, and provide justification for discontinuing vapor sampling at the Site.

5.2 Recommendations

As discussed in the previous sections, when the indoor air and sub-slab vapor data are compared to the current NYSDOH decision matrices, No Further Action is recommended for all compounds detected (**Table 12**).

The SMP requires post-remedial action monitoring of sub-slab vapor at the Site and specifies that the sub-slab vapor samples SG-2 and SG-3 will be sampled annually until the vapor levels meet the NYSDOH AGVs. The SMP states that sampling may be modified with the approval of the NYSDEC. Based on the results of the January 2020 vapor intrusion investigation, no additional soil vapor and indoor air evaluation is recommended for SG-2/AA-2 and SG-3/AA-3. After NYSDEC approval of the changes to the monitoring plan, ERM will revise the SMP to reflect these changes.

6. REFERENCES

Helsel and Hirsch. 2002. *Statistical Methods in Water Resources.* Chapter A3. U.S. Department of the Interior, U.S. Geological Survey.

USEPA. 2009. *Statistical Analysis of Groundwater Monitoring Data at RCRA Facilities.* Unified Guidance. EPA/530/R/09/007. Office of Resource Conservation and Recovery. Washington, D.C.

USEPA. 2014. *National Functional Guidelines for Superfund Organic Methods Data Review.* USEPA 540-R-014-002. OSWER 9355.0-132. August.

USEPA. 2015. *ProUCL Version 5.1.002 Technical Guide: Statistical Software for Environmental Applications for Data Sets with and without Nondetect Observations.* Publication EPA/600/R-07/041, October.

TABLES

Table 1
Chemicals Present Near Sampling Points

CAS Registration Number	Chemical Name	Product
75-37-6	1,1-Difluoroethane	QD Contact Cleaner
95-63-6	1,2,4-Trimethylbenzene	Rustoleum PTOUCH2X +SSPR 6PK GLOSS WHITE, HPERF LSPR 6PK STRIPE BLUE STRIPING, Klean Strip Paint Thinner
68037-01-4	1-Decene, homopolymer, hydrogenated	Food Grade Anti-Seize & Lubricating Compound
108-65-6	1-Methoxy-2-Propyl Acetate	Rustoleum PTOUCH2X +SSPR 6PK GLOSS WHITE
111-90-0	2-(2-ethoxyethoxy) - Ethanol	FF Prem Plus GCMI 103 Yellow (ED.X), SF St. Patrick's Green, FF Prem Plus GCMI 21 Green (ED.X), SF Phillips Blue
540-84-1	2,2,4-Trimethylpentane	QD Contact Cleaner
75-83-2	2,2-Dimethylbutane	QD Contact Cleaner
128-39-2	2,6-DI-TERT-BUTYLPHENOL	MOBIL DTE OIL LIGHT
107-83-5	2-Methylpentane	QD Contact Cleaner
67-64-1	2-Propanone	Oatey PVC Heavy Duty Clear or Gray Cement
67-64-1	Acetone	Rustoleum PVTLBL SSPR 12PK QUICK FLAT BLACK, Rustoleum PTOUCH2X +SSPR 6PK GLOSS WHITE, Dry Moly Lube, Carb + Choke Cleaner, SLIP Plate Chain & Cable Aerosol, 3M(TM) Spray-Mount(TM) Artist's Adhesive 6064, 6065, HPERF LSPR 6PK STRIPE BLUE STRIPING, A00725 ICM WHT LTHM GRS ICA725 16net11, Oatey Clear Cleaner
68551-13-3	Alcohols, C12-15, ethoxylated propoxylated	GOJO® NATURAL* ORANGE™ Pumice Hand Cleaner
64742-89-8	Aliphatic Hydrocarbon	Rustoleum PVTLBL SSPR 12PK QUICK FLAT BLACK, HPERF LSPR 6PK STRIPE BLUE STRIPING
112-80-1	Aliphatic organic acid	Tap Magic ProTap Metal Cutting Fluid
112-62-9	Aliphatic organic ester	Tap Magic ProTap Metal Cutting Fluid
21645-51-2	Aluminum Trihydrate	TOPCOAT MB Plus
64742-95-6	Aromatic Hydrocarbon	Rustoleum PVTLBL SSPR 12PK QUICK FLAT BLACK, Rustoleum PTOUCH2X +SSPR 6PK GLOSS WHITE, HPERF LSPR 6PK STRIPE BLUE STRIPING
25550-14-5	Benzene, Ethylmethyl-	Klean Strip Paint Thinner
103-65-1	Benzene, Propyl- (N-Propylbenzene)	Klean Strip Paint Thinner
25551-13-7	Benzene, Trimethyl-	Klean Strip Paint Thinner
16470-29-5	C.I. 220 Optical Brightener	Marking Ink
471-34-1	Calcium Carbonate	Food Grade Anti-Seize & Lubricating Compound
1333-86-4	Carbon Black	Rustoleum PVTLBL SSPR 12PK QUICK FLAT BLACK
124-38-9	Carbon Dioxide	Chain and Cable Lube, A07311 ZEP PRO NF SLVT DGRS R12201 20N20, Carb + Choke Cleaner, Car Quest Carb & Choke Cleaner, WD-40 Motor Medic Thrust Starting Fluid
64742-05-1	Coke (Petroleum), calcined	SLIP Plate Chain & Cable Aerosol
112945-52-5	Colloidal silicon dioxide	Oatey PVC Heavy Duty Clear or Gray Cement
108-94-1	Cyclohexanone	Oatey PVC Heavy Duty Clear or Gray Cement, Oatey Clear Cleaner
75-09-2	Dichloromethane	Car Quest Carb & Choke Cleaner
111-46-6	diethylene glycol	Roll-on Stamp Pad Inker
616-38-6	Dimethyl Carbonate	Rustoleum PTOUCH2X +SSPR 6PK GLOSS WHITE
60-29-7	Ethan, 1,1'-OXYBIS-	Motor Medic Thrust Starting Fluid
141-43-5	Ethanolamine	SF PH Adjuster (#1000 Solution), FF Prem Plus GCMI 103 Yellow (ED.X), FF Prem Plus GCMI 21 Green (ED.X)
9007-33-4	Ethanolamine	Super Bioclean 5G, Super Special Blade Clean 3G
141-78-6	ethyl acetate	Barge AP
64-17-5	Ethyl Alcohol	Klean Strip Denatured Alcohol
100-41-4	Ethylbenzene	Rustoleum PVTLBL SSPR 12PK QUICK FLAT BLACK, Rustoleum PTOUCH2X +SSPR 6PK GLOSS WHITE, Car Quest Carb & Choke Cleaner, HPERF LSPR 6PK STRIPE BLUE STRIPING
111-76-2	Ethylene Glycol Monobutyl Ether	Rustoleum PVTLBL SSPR 12PK QUICK FLAT BLACK, Rustoleum PTOUCH2X +SSPR 6PK GLOSS WHITE, SF St. Patrick's Green, SF Phillips Blue
56-81-5	Glycerol/Glycerine	Marking Ink, Roll-on Stamp Pad Inker
142-82-5	Heptane	Dry Moly Lube, Barge AP, SLIP Plate Chain & Cable Aerosol, Motor Medic Thrust Starting Fluid
64742-49-0	Heptane Isomers	Rustoleum PVTLBL SSPR 12PK QUICK FLAT BLACK, Rustoleum PTOUCH2X +SSPR 6PK GLOSS WHITE, QD Contact Cleaner, 3M(TM) Spray-Mount(TM) Artist's Adhesive 6064, 6065, HPERF LSPR 6PK STRIPE BLUE STRIPING
426260-76-6	Heptane, branched, cyclic and linear	Dry Moly Lube, A00725 ICM WHT LTHM GRS ICA725 16net11
110-54-3	Hexane	QD Contact Cleaner
64742-53-6	Hydrotreated light naphthenic petroleum distillates	Chain and Cable Lube, WD-40, Motor Medic Thrust Starting Fluid
14807-96-6	Hydrous Magnesium Silicate	Rustoleum PVTLBL SSPR 12PK QUICK FLAT BLACK, Food Grade Anti-Seize & Lubricating Compound
75-28-5	Isobutane	3M(TM) Spray-Mount(TM) Artist's Adhesive 6064, 6065
67-63-0	Isopropyl Alcohol	QD Contact Cleaner, Dry Moly Lube,
1317-65-3	Limestone	HPERF LSPR 6PK STRIPE BLUE STRIPING
5989-27-5	Limonene	GOJO® NATURAL* ORANGE™ Pumice Hand Cleaner
64742-86-8	Liquified Petroleum Gas	HPERF LSPR 6PK STRIPE BLUE STRIPING
67-56-1	Methanol	Klean Strip Denatured Alcohol
78-93-3	Methyl ethyl ketone	Oatey PVC Heavy Duty Clear or Gray Cement, Oatey Clear Cleaner

Table 1
Chemicals Present Near Sampling Points

1317-33-5	Molybdenum disulphide	Dry Moly Lube
64742-82-1	Naptha (petroleum, hydrodesulfurized heavy	Klean Strip Paint Thinner
106-97-8	n-Butane	Rustoleum PVTLBL SSPR 12PK QUICK FLAT BLACK, Rustoleum PTOUCH2X +SSPR 6PK GLOSS WHITE, Dry Moly Lube, SLIP Plate Chain & Cable Aerosol, A00725 ICM WHT LTHM GRS ICA725 16net11
123-86-4	n-Butyl Acetate	Rustoleum PTOUCH2X +SSPR 6PK GLOSS WHITE
64742-46-9	Petroleum Base Oil	WD-40
64742-54-7	Petroleum Base Oil	WD-40
64742-65-0	Petroleum Base Oil	WD-40
64742-71-8	Petroleum Base Oil	WD-40
64742-52-5	Petroleum Oil	SLIP Plate Chain & Cable Aerosol, Motor Medic Thrust Starting Fluid
25322-68-3	polyethylene glycol	Roll-on Stamp Pad Inker
0009003-13-8	Polypropylene glycol, monobutyl ether	Pallube 32P
9002-86-2	Polyvinyl chloride	Oatey PVC Heavy Duty Clear or Gray Cement
74-98-6	Propane	Rustoleum PVTLBL SSPR 12PK QUICK FLAT BLACK, Rustoleum PTOUCH2X +SSPR 6PK GLOSS WHITE, Dry Moly Lube, SLIP Plate Chain & Cable Aerosol, 3M(TM) Spray-Mount(TM) Artist's Adhesive 6064, 6065, A00725 ICM WHT LTHM GRS ICA725 16net11
5131-66-8	Propylene Glycol Monobutyl Ether	Rustoleum PTOUCH2X +SSPR 6PK GLOSS WHITE
64742-88-7	Solvent Naphta (petroleum), Medium Aliph.	Dry Moly Lube, HPERF LSPR 6PK STRIPE BLUE STRIPING
8052-41-3	Stoddard Solvents	Klean Strip Paint Thinner
64742-47-8	Synthetic Isoparaffinic Hydrocarbon	Chain and Cable Lube, Rustoleum PVTLBL SSPR 12PK QUICK FLAT BLACK, Carb + Choke Cleaner, WD-40, Klean Strip Paint Thinner, A00725 ICM WHT LTHM GRS ICA725 16net11,
109-99-9	Tetrahydrofuran	Oatey PVC Heavy Duty Clear or Gray Cement
13463-67-7	Titanium Dioxide	Rustoleum PTOUCH2X +SSPR 6PK GLOSS WHITE, TOPCOAT MB Plus, HPERF LSPR 6PK STRIPE BLUE STRIPING
108-88-3	Toluene	Barge AP, Carb + Choke Cleaner, Car Quest Carb & Choke Cleaner, HPERF LSPR 6PK STRIPE BLUE STRIPING
79-01-6	Trichloroethylene	A07311 ZEP PRO NF SLVT DGRS R12201 20N20, Aerosolve II Aerosol
8042-47-5	White Mineral Oil	Food Grade Anti-Seize & Lubricating Compound
1330-20-7	Xylenes	Rustoleum PVTLBL SSPR 12PK QUICK FLAT BLACK, Rustoleum PTOUCH2X +SSPR 6PK GLOSS WHITE, Car Quest Carb & Choke Cleaner, HPERF LSPR 6PK STRIPE BLUE STRIPING, Klean Strip Paint Thinner
138265-88-0	Zinc Borate	TOPCOAT MB Plus
1314-13-2	Zinc oxide	Food Grade Anti-Seize & Lubricating Compound

Table 2
January 2020 Vapor Intrusion Sampling Results
Macbeth - Kollmorgen Corporate Site New Windsor, New York

Client Sample ID:		NYSDOH Air Guidance Values[1]	OSHA TWA PEL[2]	SG-2-013020	AA-2-013020	SG-3-013020	AA-3-013020
Lab Sample ID:				JD2616-1	JD2616-2	JD2616-3	JD2616-4
Date Sampled:				1/30/2020	1/30/2020	1/30/2020	1/30/2020
Matrix:				Soil Vapor	Indoor Air	Soil Vapor	Indoor Air
MS Volatiles (TO-15) - ug/m3							
Acetone	ug/m3	-	2400000	17	5.5	7.1	11
1,3-Butadiene	ug/m3	-	250	<0.44	<0.35	<0.44	<0.35
Benzene	ug/m3	-	-	0.8	0.86	<0.64	1.4
Bromodichloromethane	ug/m3	-	-	<0.67	<0.54	<0.67	<0.54
Bromoform	ug/m3	-	5000	<0.41	<0.33	<0.41	<0.33
Bromomethane	ug/m3	-	80000	<0.78	<0.62	<0.78	<0.62
Bromoethene	ug/m3	-	-	<0.87	<0.70	<0.87	<0.70
Benzyl Chloride	ug/m3	-	5000	<1.0	<0.82	<1.0	<0.82
Carbon disulfide	ug/m3	-	3130	0.31 J	<0.50	0.53 J	<0.50
Chlorobenzene	ug/m3	-	350000	<0.92	<0.74	<0.92	<0.74
Chloroethane	ug/m3	-	2600000	<0.53	<0.42	<0.53	<0.42
Chloroform	ug/m3	-	240000	0.59 J	<0.78	<0.98	<0.78
Chloromethane	ug/m3	-	80000	0.27 J	1.9	<0.41	1.3
3-Chloropropene	ug/m3	-	3000	<0.63	<0.50	<0.63	<0.50
2-Chlorotoluene	ug/m3	-	-	<1.0	<0.83	<1.0	<0.83
Carbon tetrachloride	ug/m3	-	2000	1.8	0.75	<0.25	<0.20
Cyclohexane	ug/m3	-	1050000	<0.69	<0.55	<0.69	0.38 J
1,1-Dichloroethane	ug/m3	-	400000	<0.81	<0.65	<0.81	<0.65
1,1-Dichloroethylene	ug/m3	-	-	<0.16	<0.13	<0.16	<0.13
1,2-Dibromoethane	ug/m3	-	1000	<0.77	<0.61	<0.77	<0.61
1,2-Dichloroethane	ug/m3	-	3000	<0.81	<0.65	<0.81	<0.65
1,2-Dichloropropane	ug/m3	-	350000	<0.92	<0.74	<0.92	<0.74
1,4-Dioxane	ug/m3	-	360000	<0.72	<0.58	<0.72	<0.58
Dichlorodifluoromethane	ug/m3	-	4960000	7.4	3.9	49	2.4
Dibromochloromethane	ug/m3	-	-	<0.85	<0.68	<0.85	<0.68
trans-1,2-Dichloroethylene	ug/m3	-	-	<0.79	<0.63	<0.79	<0.63
cis-1,2-Dichloroethylene	ug/m3	-	-	<0.16	<0.13	<0.16	<0.13
cis-1,3-Dichloropropene	ug/m3	-	-	<0.91	<0.73	<0.91	<0.73
m-Dichlorobenzene	ug/m3	-	-	<0.60	<0.48	<0.60	<0.48
o-Dichlorobenzene	ug/m3	-	300000	<0.24	<0.19	<0.24	<0.19
p-Dichlorobenzene	ug/m3	-	450000	<0.60	<0.48	<0.60	<0.48
trans-1,3-Dichloropropene	ug/m3	-	-	<0.91	<0.73	<0.91	<0.73
Ethanol	ug/m3	-	1900000	11	8.3	1.8	15
Ethylbenzene	ug/m3	-	435000	1.9	<0.69	0.61 J	0.83
Ethyl Acetate	ug/m3	-	1400000	1.7	<0.58	2.2	2.9
4-Ethyltoluene	ug/m3	-	-	1.6	<0.79	<0.98	0.88
Freon 113	ug/m3	-	7600000	550	0.77	51	<0.61
Freon 114	ug/m3	-	7000000	<0.70	<0.56	<0.70	<0.56
Heptane	ug/m3	-	2000000	1.1	<0.66	<0.82	0.82
Hexachlorobutadiene	ug/m3	-	-	<0.96	<0.77	<0.96	<0.77
Hexane	ug/m3	-	1800000	0.92	1.6	0.35 J	0.7
2-Hexanone	ug/m3	-	410000	<0.82	<0.65	<0.82	<0.65
Isopropyl Alcohol	ug/m3	-	980000	2.9	<0.39	2.9	5.2
Methylene chloride	ug/m3	60	86640	<0.69	3.3	<0.69	0.83
Methyl ethyl ketone	ug/m3	-	590000	2	0.65	0.83	1.6
Methyl Isobutyl Ketone	ug/m3	-	410000	0.98	<0.66	<0.82	6.6
Methyl Tert Butyl Ether	ug/m3	-	-	<0.72	<0.58	<0.72	<0.58
Methylmethacrylate	ug/m3	-	-	<0.82	<0.66	<0.82	<0.66
Propylene	ug/m3	-	-	<0.86	<0.69	<0.86	<0.69
Styrene	ug/m3	-	212990	0.64 J	<0.68	<0.85	<0.68
1,1,1-Trichloroethane	ug/m3	-	1900000	243	<0.44	66.6	<0.44
1,1,2,2-Tetrachloroethane	ug/m3	-	35000	<0.69	<0.55	<0.69	<0.55
1,1,2-Trichloroethane	ug/m3	-	45000	<0.55	<0.44	<0.55	<0.44
1,2,4-Trichlorobenzene	ug/m3	-	-	<0.74	<0.59	<0.74	<0.59
1,2,4-Trimethylbenzene	ug/m3	-	-	4.4	<0.79	2	3.1
1,3,5-Trimethylbenzene	ug/m3	-	-	1.2	<0.79	<0.98	1
2,2,4-Trimethylpentane	ug/m3	-	-	0.79 J	<0.75	<0.93	0.43 J

Table 2
January 2020 Vapor Intrusion Sampling Results
Macbeth - Kollmorgen Corporate Site New Windsor, New York

Client Sample ID:		NYSDOH Air Guidance Values[1]	OSHA TWA PEL[2]	SG-2-013020	AA-2-013020	SG-3-013020	AA-3-013020
Lab Sample ID:				JD2616-1	JD2616-2	JD2616-3	JD2616-4
Date Sampled:				1/30/2020	1/30/2020	1/30/2020	1/30/2020
Matrix:				Soil Vapor	Indoor Air	Soil Vapor	Indoor Air
Tertiary Butyl Alcohol	ug/m3	-	300000	<0.61	<0.49	<0.61	0.39 J
Tetrachloroethylene	ug/m3	30	25000	0.54	<0.22	435	0.21 J
Tetrahydrofuran	ug/m3	-	590000	<0.59	<0.47	<0.59	<0.47
Toluene	ug/m3	-	3770	6	0.75	1.7	11
Trichloroethylene	ug/m3	2	25000	11	<0.17	0.64	<0.17
Trichlorofluoromethane	ug/m3	-	5600000	21	5	19	2
Vinyl chloride	ug/m3	-	-	<0.10	<0.082	<0.10	<0.082
Vinyl Acetate	ug/m3	-	-	<0.70	<0.56	1.4	0.91
m,p-Xylene	ug/m3	-	435000	7.8	0.48 J	2.2	2.9
o-Xylene	ug/m3	-	435000	3	<0.69	0.83 J	1.1
Xylenes (total)	ug/m3	-	-	11	0.48 J	3	4

Notes:

1. NYSDOH Air Guidance Values: New York State Department of Health Air Guidance Values - Updated August 2015 - APPLICABLE TO INDOOR AIR ONLY.

2. OSHA TWA PEL: Occupational Safety and Health Administration Time Weighted Average Permissible Exporsure Limit - APPLICABLE TO INDOOR AIR ONLY.

- : NYSDOH Indoor Air Guidance Value or OSHA PEL does not exist

< : Compound Not Detected at the Reporting Limit

Table 3

Summary of CVOC Concentrations in Sub-Slab Vapor 2006 to 2020

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)	CVOC Concentration (January 2013)
		µg/m3	µg/m3	µg/m3	µg/m3	µg/m3	µg/m3	µg/m3	µg/m3
SG-2	TCE	2	860	8.17	5.27	2.74	8.6	6.45	8.01
	PCE	30	8.1	24.3	4.61	3.39	0.814	0.543	17.9
	1,1,1-TCA	-	93	29.2	175	131	309	309	222
	Total Targeted CVOCs	-	961.1	61.67	184.88	137.13	318.41	315.99	247.91
SG-3	TCE	2	5.4	< 2.69	3.01	<5.37	1.45	1.13	1.02
	PCE	30	6,000	501	448	454	830	558	525
	1,1,1-TCA		480	161	222	167	249	116	140
	Total Targeted CVOCs	-	6,485	662	673.01	621	1,080.45	675.13	666.02

Sample ID	Compound	Table 3.1 NYSDOH Air Guideline Value (AGV)	CVOC Concentration (January 2014)	CVOC Concentration (January 2015)	CVOC Concentration (January 2016)	CVOC Concentration (January 2017)	CVOC Concentration (January 2018)	CVOC Concentration (March 2019)	CVOC Concentration (January 2020)
		µg/m3	µg/m3	µg/m3	µg/m3	µg/m3	µg/m3	µg/m3	µg/m3
SG-2	TCE	2	4.6	6.4	5.9	5.9	6.4	3.90	11.0
	PCE	30	3.3	0.34	0.62	2.6	1.3	2.5	0.5
	1,1,1-TCA	-	228	242	195	216	226	174	243.0
	Total Targeted CVOCs	-	235.90	248.74	201.52	224.50	233.7	180.4	254.5
SG-3	TCE	2	0.59	0.86	1	0.91	1.5	< 0.86	0.6
	PCE	30	540	1,010	639	314	338	146	435.0
	1,1,1-TCA		190	115	128	96	61.7	46	66.6
	Total Targeted CVOCs	-	730.59	1125.86	768	410.91	401.2	192.9	502.2

Notes:

VOC = Volatile organic compounds

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 VOCs in indoor and outdoor air. Final NYSDOH CEH BEEI Soil Vapor Intrusion Guidance, October 2006

Table 4
Comparison of TCE Results to Soil Vapor/Indoor Air Matrix A
January 2020 Vapor Intrusion Sampling Results Former Macbeth – Kollmorgen Corporate Site
New Windsor, New York

Matrix A - Trichloroethene (TCE)		**Indoor Air Concentration of Compound (µg/m³)**		
01/30/2020 Sample Results (µg/m³)	**Sub-slab Vapor Concentration of Compound (µg/m³)**	< 0.2	0.2 to < 1	1 and above
AA-2 = < 0.17 SG-2 = 11	< 6	1. No further action	2. No further action	3. Identify Source(s) and Resample or Mitigate
	6 to < 60	**4. No further action**	5. MONITOR	6. MITIGATE
	60 and above	7. MITIGATE	8. MITIGATE	9. MITIGATE
Matrix A Trichloroethene (TCE)		**Indoor Air Concentration of Compound (µg/m³)**		
01/30/2020 Sample Results (µg/m³)	**Sub-slab Vapor Concentration of Compound (µg/m³)**	< 0.2	0.2 to < 1	1 and above
AA-3 = 0.17 SG-3 = 0.64	< 6	**1. No further action**	2. No further action	3. Identify Source(s) and Resample or Mitigate
	6 to < 60	4. No further action	5. MONITOR	6. MITIGATE
	60 and above	7. MITIGATE	8. MITIGATE	9. MITIGATE

Notes:
Bold indicates recommended action
< : Result not detected above the Reporting Limit
SG: Sub-slab vapor sample
AA: Indoor Air Sample
µg/m³ : micrograms per cubic meter
No Further Action – No additional action is recommended to address human exposures (Soil Vapor/Indoor Air Matrix A, NYSDOH, May 2017).
Source: NYSDOH Guidance for Evaluating Soil Vapor Intrusion in the State of New York, October 2006
NYSDOH Updates to Soil Vapor / Indoor Air Decision Matrices May 2017

Table 5
Comparison of PCE Results to Soil Vapor/Indoor Air Matrix B Results
January 2020 Vapor Intrusion Sampling Results Former Macbeth – Kollmorgen Corporate Site
New Windsor, New York

Matrix B - Tetrachloroethene (PCE)		**Indoor Air Concentration of Compound (µg/m³)**		
01/30/2020 Sample Results (µg/m³)	**Sub-slab Vapor Concentration of Compound (µg/m³)**	< 3	3 to < 10	10 and above
AA-2 = < 0.22 SG-2 = 0.54	< 100	**1. No further action**	2. No further action	3. Identify Source(s) and Resample or Mitigate
	100 to < 1,000	4. No further action	5. MONITOR	6. MITIGATE
	1,000 and above	7. MITIGATE	8. MITIGATE	9. MITIGATE
Matrix B - Tetrachloroethene (PCE)		**Indoor Air Concentration of Compound (µg/m³)**		
01/30/2020 Sample Results (µg/m³)	**Sub-slab Vapor Concentration of Compound (µg/m³)**	< 3	3 to < 10	10 and above
AA-3 = 0.21	< 100	1. No further action	2. No further action	3. Identify Source(s) and Resample or Mitigate
SG-3 = 435 	100 to < 1,000	**4. No further action**	5. MONITOR	6. MITIGATE
	1,000 and above	7. MITIGATE	8. MITIGATE	9. MITIGATE

Notes:
Bold indicates recommended action
SG: Sub-slab vapor sample
AA: Indoor Air Sample
µg/m³ : micrograms per cubic meter
No Further Action – No additional action is recommended to address human exposures (Soil Vapor/Indoor Air Matrix A, NYSDOH, May 2017).
Source: NYSDOH Guidance for Evaluating Soil Vapor Intrusion in the State of New York, October, 2006
NYSDOH Updates to Soil Vapor / Indoor Air Decision Matrices May, 2017

Table 6
Comparison of 1,1,1-Trichloroethane Results to Soil Vapor/Indoor Air Matrix B
January 2020 Vapor Intrusion Sampling Results Former Macbeth – Kollmorgen Corporate Site
New Windsor, New York

Matrix B - 1,1,1-Trichloroethane		**Indoor Air Concentration of Compound (µg/m³)**		
01/30/2020 Sample Results (µg/m³)	**Sub-slab Vapor Concentration of Compound (µg/m³)**	< 3	3 to < 10	10 and above
	< 100	1. No further action	2. No further action	3. Identify Source(s) and Resample or Mitigate
AA-2 = < 0.44 SG-2 = 243	100 to < 1,000	**4. No further action**	5. MONITOR	6. MITIGATE
	1,000 and above	7. MITIGATE	8. MITIGATE	9. MITIGATE
Matrix B - 1,1,1-Trichloroethane		**Indoor Air Concentration of Compound (µg/m³)**		
01/30/2020 Sample Results (µg/m³)	**Sub-slab Vapor Concentration of Compound (µg/m³)**	< 3	3 to < 10	10 and above
AA-3 = < 0.44 SG-3 = 66.6	< 100	**1. No further action**	2. No further action	3. Identify Source(s) and Resample or Mitigate
	100 to < 1,000	4. No further action	5. MONITOR	6. MITIGATE
	1,000 and above	7. MITIGATE	8. MITIGATE	9. MITIGATE

Notes:
Bold indicates recommended action
< : Result not detected above the Reporting Limit
SG: Sub-slab vapor sample
AA: Indoor Air Sample
µg/m³ : micrograms per cubic meter
No Further Action – No additional action is recommended to address human exposures (Soil Vapor/Indoor Air Matrix A, NYSDOH, May 2017).
Source: NYSDOH Guidance for Evaluating Soil Vapor Intrusion in the State of New York, October, 2006
NYSDOH Updates to Soil Vapor / Indoor Air Decision Matrices May, 2017

Table 7
Comparison of cis-1,2-Dichloroethene (cis-1,2-DCE) Results to Soil Vapor/Indoor Air Matrix A
January 2020 Vapor Intrusion Sampling Results Former Macbeth – Kollmorgen Corporate Site
New Windsor, New York

Matrix A - cis-1,2-Dichloroethene		**Indoor Air Concentration of Compound (µg/m³)**		
01/30/2020 Sample Results (µg/m³)	**Sub-slab Vapor Concentration of Compound (µg/m³)**	< 0.2	0.2 to < 1	1 and above
AA-2 = < 0.13 SG-2 = < 0.16	< 6	**1. No further action**	2. No further action	3. Identify Source(s) and Resample or Mitigate
	6 to < 60	4. No further action	5. MONITOR	6. MITIGATE
	60 and above	7. MITIGATE	8. MITIGATE	9. MITIGATE
Matrix A - cis-1,2-Dichloroethene		**Indoor Air Concentration of Compound (µg/m³)**		
01/30/2020 Sample Results (µg/m³)	**Sub-slab Vapor Concentration of Compound (µg/m³)**	< 0.2	0.2 to < 1	1 and above
AA-3 = < 0.13 SG-3 = < 0.16	< 6	**1. No further action**	2. No further action	3. Identify Source(s) and Resample or Mitigate
	6 to < 60	4. No further action	5. MONITOR	6. MITIGATE
	60 and above	7. MITIGATE	8. MITIGATE	9. MITIGATE

Notes:
Bold indicates recommended action
< : Result not detected above the Reporting Limit
SG: Sub-slab vapor sample
AA: Indoor Air Sample
µg/m³ : micrograms per cubic meter
No Further Action – No additional action is recommended to address human exposures (Soil Vapor/Indoor Air Matrix A, NYSDOH, May 2017).
Source: NYSDOH Guidance for Evaluating Soil Vapor Intrusion in the State of New York, October 2006
NYSDOH Updates to Soil Vapor / Indoor Air Decision Matrices May 2017

Table 8
Comparison of 1,1-Dichloroethene (1,1-DCE) Results to Soil Vapor/Indoor Air Matrix A
January 2020 Vapor Intrusion Sampling Results Former Macbeth – Kollmorgen Corporate Site
New Windsor, New York

Matrix A - 1,1-Dichloroethene		**Indoor Air Concentration of Compound (µg/m³)**		
01/30/2020 Sample Results (µg/m³)	**Sub-slab Vapor Concentration of Compound (µg/m³)**	< 0.2	0.2 to < 1	1 and above
AA-2 = < 0.13 SG-2 = < 0.16	< 6	**1. No further action**	2. No further action	3. Identify Source(s) and Resample or Mitigate
	6 to < 60	4. No further action	5. MONITOR	6. MITIGATE
	60 and above	7. MITIGATE	8. MITIGATE	9. MITIGATE
Matrix A - 1,1-Dichloroethene		**Indoor Air Concentration of Compound (µg/m³)**		
01/30/2020 Sample Results (µg/m³)	**Sub-slab Vapor Concentration of Compound (µg/m³)**	< 0.2	0.2 to < 1	1 and above
AA-3 = < 0.13 SG-3 = < 0.16	< 6	**1. No further action**	2. No further action	3. Identify Source(s) and Resample or Mitigate
	6 to < 60	4. No further action	5. MONITOR	6. MITIGATE
	60 and above	7. MITIGATE	8. MITIGATE	9. MITIGATE

Notes:
Bold indicates recommended action
< : Result not detected above the Reporting Limit
SG: Sub-slab vapor sample
AA: Indoor Air Sample
µg/m³ : micrograms per cubic meter
No Further Action – No additional action is recommended to address human exposures (Soil Vapor/Indoor Air Matrix A, NYSDOH, May 2017).
Source: NYSDOH Guidance for Evaluating Soil Vapor Intrusion in the State of New York, October 2006
NYSDOH Updates to Soil Vapor / Indoor Air Decision Matrices May 2017

Table 9
Comparison of Carbon Tetrachloride Results to Soil Vapor/Indoor Air Matrix A
January 2020 Vapor Intrusion Sampling Results Former Macbeth – Kollmorgen Corporate Site
New Windsor, New York

Matrix A - Carbon Tetrachloride		**Indoor Air Concentration of Compound (µg/m³)**		
01/30/2020 Sample Results (µg/m³)	**Sub-slab Vapor Concentration of Compound (µg/m³)**	< 0.2	0.2 to < 1	1 and above
AA-2 = 0.75 SG-2 = 1.8	< 6	**1. No further action**	2. No further action	3. Identify Sources (s) and resample or mitigate
	6 to < 60	4. No further action	5. MONITOR	6. MITIGATE
	60 and above	7. MITIGATE	8. MITIGATE	9. MITIGATE
Matrix A - Carbon Tetrachloride		**Indoor Air Concentration of Compound (µg/m³)**		
01/30/2020 Sample Results (µg/m³)	**Sub-slab Vapor Concentration of Compound (µg/m³)**	< 0.2	0.2 to < 1	1 and above
AA-3 = < 0.2 SG-3 = < 0.25	< 6	**1. No further action**	2. No further action	3. Identify Sources (s) and resample or mitigate
	6 to < 60	4. No further action	5. MONITOR	6. MITIGATE
	60 and above	7. MITIGATE	8. MITIGATE	9. MITIGATE

Notes:
Bold indicates recommended action
< : Result not detected above the Reporting Limit
SG: Sub-slab vapor sample
AA: Indoor Air Sample
µg/m³ : micrograms per cubic meter
No Further Action – No additional action is recommended to address human exposures (Soil Vapor/Indoor Air Matrix A, NYSDOH, May 2017).
Source: NYSDOH Guidance for Evaluating Soil Vapor Intrusion in the State of New York, October 2006
NYSDOH Updates to Soil Vapor / Indoor Air Decision Matrices May 2017

Table 10
Comparison of Methylene Chloride Results to Soil Vapor/Indoor Air Matrix B
January 2020 Vapor Intrusion Sampling Results Former Macbeth – Kollmorgen Corporate Site
New Windsor, New York

Matrix B - Methylene Chloride		**Indoor Air Concentration of Compound (µg/m³)**		
01/30/2020 Sample Results (µg/m³)	**Sub-slab Vapor Concentration of Compound (µg/m³)**	< 3	3 to < 10	10 and above
AA-2 = 3.3 SG-2 = < 0.69	< 100	**1. No further action**	2. No further action	3. Identify Sources (s) and resample or mitigate
	100 to < 1,000	4. No further action	5. MONITOR	6. MITIGATE
	1,000 and above	7. MITIGATE	8. MITIGATE	9. MITIGATE
Matrix B - Methylene Chloride		**Indoor Air Concentration of Compound (µg/m³)**		
01/30/2020 Sample Results (µg/m³)	**Sub-slab Vapor Concentration of Compound (µg/m³)**	< 3	3 to < 10	10 and above
AA-3 = 0.83 SG-3 = < 0.69	< 100	**1. No further action**	2. No further action	3. Identify Sources (s) and resample or mitigate
	100 to < 1,000	4. No further action	5. MONITOR	6. MITIGATE
	1,000 and above	7. MITIGATE	8. MITIGATE	9. MITIGATE

Notes:
Bold indicates recommended action
< : Result not detected above the Reporting Limit
SG: Sub-slab vapor sample
AA: Indoor Air Sample
µg/m³ : micrograms per cubic meter
No Further Action – No additional action is recommended to address human exposures (Soil Vapor/Indoor Air Matrix A, NYSDOH, May 2017).
Source: NYSDOH Guidance for Evaluating Soil Vapor Intrusion in the State of New York, October 2006
NYSDOH Updates to Soil Vapor / Indoor Air Decision Matrices May 2017

Table 11
Comparison of Vinyl Chloride Results to Soil Vapor/Indoor Air Matrix C
January 2020 Vapor Intrusion Sampling Results Former Macbeth – Kollmorgen Corporate Site
New Windsor, New York

Matrix C - Vinyl Chloride		**Indoor Air Concentration of Compound (µg/m³)**	
01/30/2020 Sample Results (µg/m³)	**Sub-slab Vapor Concentration of Compound (µg/m³)**	< 0.2	0.2 and above
AA-2 = < 0.082	< 6	**1. No further action**	2. Identify Sources (s) and resample or mitigate
SG-2 = < 0.1			
	6 to < 60	3 Monitor	4. MITIGATE
	60 and above	5. MITIGATE	6 MITIGATE
Matrix C - Vinyl Chloride		**Indoor Air Concentration of Compound (µg/m³)**	
01/30/2020 Sample Results (µg/m³)	**Sub-slab Vapor Concentration of Compound (µg/m³)**	< 0.2	0.2 and above
AA-3 = < 0.082	< 6	**1. No further action**	2. Identify Sources (s) and resample or mitigate
SG-3 = < 0.1			
	6 to < 60	3 Monitor	4. MITIGATE
	60 and above	5. MITIGATE	6 MITIGATE

Notes:
Bold indicates recommended action
< : Result not detected above the Reporting Limit
SG: Sub-slab vapor sample
AA: Indoor Air Sample
µg/m³ : micrograms per cubic meter
No Further Action – No additional action is recommended to address human exposures (Soil Vapor/Indoor Air Matrix A, NYSDOH, May 2017).
Source: NYSDOH Guidance for Evaluating Soil Vapor Intrusion in the State of New York, October 2006
NYSDOH Updates to Soil Vapor / Indoor Air Decision Matrices May 2017

Table 12
Historical Matrix Comparison
Macbeth - Kollmorgen Corporate Site New Windsor, New York

Compound	CVOC Concentration (December 2006)		CVOC Concentration (February 2008)		CVOC Concentration (February 2009)		CVOC Concentration (January 2010)		CVOC Concentration (January 2011)		CVOC Concentration (January 2012)		CVOC Concentration (January 2013)		CVOC Concentration (January 2014)		CVOC Concentration (January 2015)		CVOC Concentration (January 2016)	
	SG-2	AA-02	SG-2	AA-02	SG-2	AA-02	SG-2	AA-02	SG-2	AA-02	SG-2	AA-02	SG-2	AA-02	SG-2	AA-02	SG-2	AA-02	SG-2	AA-02
TCE	860.00	NA	8.17	2.68	5.27	0.48	2.74	2.69	8.60	0.48	6.45	0.22	8.01	0.21	4.60	0.05	6.40	0.11	5.90	0.21
Cis 1,2-DCE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.28	0.28	0.37	0.37	0.79	0.79
1,1-DCE	18.00	NA	23.80	1.74	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbon Tetrachloride	NA	NA	NA	NA	1.45	0.63	NA	NA	3.02	0.63	2.01	0.63	2.20	0.63	2.10	0.58	2.80	0.82	1.60	0.25
PCE	8.10	NA	24.30	3.39	4.61	1.36	3.39	3.39	0.81	0.41	0.54	0.24	17.90	42.70	3.30	0.66	0.34	0.20	0.62	0.26
1,1,1-TCA	93.00	NA	29.20	2.73	175.00	1.09	131.00	2.73	309.00	1.09	211.00	1.09	222.00	1.09	228.00	0.44	242.00	0.11	195.00	0.55
Methylene Chloride	NA	NA	1.98	1.98	2.64	2.22	5.38	9.80	11.30	7.77	0.89	1.16	1.24	1.59	0.80	0.80	0.42	0.42	0.69	1.30
Vinyl Chloride	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	SG-3	AA-03	SG-3	AA-03	SG-3	AA-03	SG-3	AA-03	SG-3	AA-03	SG-3	AA-03	SG-3	AA-03	SG-3	AA-03	SG-3	AA-03	SG-3	AA-03
TCE	5.40	NA	2.69	2.68	3.01	0.48	5.37	2.69	1.45	0.22	1.13	0.22	1.02	0.21	0.59	0.07	0.86	0.05	1.00	0.21
Cis 1,2-DCE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.28	0.28	0.37	0.37	0.79	0.79
1,1-DCE	28.00	NA	2.05	1.74	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbon Tetrachloride	NA	NA	NA	NA	1.26	0.63	NA	NA	0.63	0.63	0.63	0.63	0.63	0.63	0.58	0.58	0.82	0.82	0.25	0.25
PCE	6000.00	NA	501.00	3.39	448.00	1.63	454.00	3.39	830.00	0.95	558.00	0.24	525.00	15.70	540.00	0.66	1010.00	0.16	639.00	1.20
1,1,1-TCA	480.00	NA	161.00	2.73	222.00	1.09	167.00	2.73	249.00	1.09	116.00	1.09	140.00	1.09	190.00	0.44	115.00	0.11	128.00	0.55
Methylene Chloride	NA	NA	1.98	1.98	2.64	2.15	5.00	2.95	1.67	7.77	1.09	1.79	1.24	1.55	0.31	0.73	0.42	0.42	0.69	0.69
Vinyl Chloride	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Notes:

	No Further Action
	Monitor
	Mitigate
	Identify Sources and Resample or Mitigate

CVOC = Chlorinated volatile organic compounds

TCE = Trichloroethene

Cis 1,2-DCE = Cis 1,2-Dichloroethene

1,1-DCE = 1,1,-Dichloroethene

PCE = Tetrachloroethene

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

NA = Compound Not Analyzed

All Concentrations in µg/m3 - micrograms per cubic meter

Table 3.1 - NYSDOH Air Guideline Values only apply to concentrations of VOCs in indoor and outdoor air. Final NYSDOH CEH BEEI Soil Vapor Intrusion Guidance, October 2006

Non Detects are presented at reporting limits.

Table 12
Historical Matrix Comparison
Macbeth - Kollmorgen Corporate Site New Windsor, New York

Compound	CVOC Concentration (January 2017)		CVOC Concentration (January 2018)		CVOC Concentration (March 2019)		CVOC Concentration (January 2020)	
	SG-2	AA-02	SG-2	AA-02	SG-2	AA-02	SG-2	AA-02
TCE	5.90	0.21	6.40	0.17	3.90	0.54	11.00	0.17
Cis 1,2-DCE	0.79	0.79	0.63	0.13	0.63	0.13	0.16	0.13
1,1-DCE	NA	NA	0.63	0.13	0.63	0.13	0.16	0.13
Carbon Tetrachloride	2.10	0.25	1.00	0.49	1.00	0.52	1.80	0.75
PCE	2.60	0.45	1.30	0.22	2.50	4.50	0.54	0.22
1,1,1-TCA	216.00	0.55	226.00	0.44	174.00	0.44	243.00	0.44
Methylene Chloride	0.94	0.69	2.80	1.80	2.80	1.50	0.69	3.30
Vinyl Chloride	NA	NA	0.41	0.08	0.41	0.08	0.10	0.08
	SG-3	AA-03	SG-3	AA-03	SG-3	AA-03	SG-3	AA-03
TCE	0.91	0.21	1.50	0.75	0.86	0.97	0.64	0.17
Cis 1,2-DCE	0.79	0.79	0.32	0.13	0.63	2.90	0.16	0.13
1,1-DCE	NA	NA	0.32	0.13	0.63	0.13	0.16	0.13
Carbon Tetrachloride	0.25	0.25	0.50	0.46	1.00	0.49	0.25	0.20
PCE	314.00	0.42	338.00	0.33	146.00	3.90	435.00	0.21 J
1,1,1-TCA	96.00	0.55	61.70	0.44	46.00	0.44	66.60	0.44
Methylene Chloride	3.80	0.69	1.60	0.56	2.80	6.30	0.69	0.83
Vinyl Chloride	NA	NA	0.20	0.08	0.41	0.08	0.10	0.08

Matrix A - TCE, Cis DCE, 11 DCE and Carbon Tetrachloride			
	< 0.2	0.2-1	> 1
< 6	No Further Action	No Further Action	Identify Sources and Resample or Mitigate
6-60	No Further Action	Monitor	Mitigate
> 60	Mitigate	Mitigate	Mitigate

Matrix B - PCE, 111 TCA and Methylene Chloride			
	< 3	3-10	> 10
< 100	No Further Action	No Further Action	Identify Sources and Resample or Mitigate
100-1000	No Further Action	Monitor	Mitigate
> 1000	Mitigate	Mitigate	Mitigate

Matrix C - Vinyl Chloride		
	< 0.2	> 0.2
< 6	No Further Action	Identify Sources and Resample or Mitigate
6-60	Monitor	Mitigate
> 60	Mitigate	Mitigate

Notes:

No Further Action
Monitor
Mitigate
Identify Sources and Resample or Mitigate

CVOC = Chlorinated volatile organic compounds
TCE = Trichloroethene
Cis 1,2-DCE = Cis 1,2-Dichloroethene
1,1-DCE = 1,1,-Dichloroethene
PCE = Tetrachloroethene
1,1,1-TCA = 1,1,1-Trichloroethane
NA = Compound Not Analyzed
All Concentrations in µg/m3 - micrograms per cubic meter
Table 3.1 - NYSDOH Air Guideline Values only apply to concentrations of VOCs in indoor and outdoor air. Final NYSDOH CEH BEEI Soil Vapor Intrusion Guidance, October 2006
Non Detects are presented at reporting limits.

Table 13
Outlier Summary
Macbeth-Kollmorgan Corporate Site New Windsor, New York

Location	Sample	Date	Analyte	Units	Detect	Concentration	Log Statistical Outlier	Log Visual Outlier	Lognormal Outlier	Statistical Outlier	Visual Outlier	Normal Outlier	Distribution	Final Outlier Decision
AA-02	AA-02_2008-02-01	2/1/2008	1,1-DCE	ug/m^3	TRUE	1.74							NDD	
AA-02	AA-02_2018-01-01	1/1/2018	1,1-DCE	ug/m^3	FALSE	0.13							NDD	
AA-02	AA-02_2019-03-01	3/1/2019	1,1-DCE	ug/m^3	FALSE	0.13							NDD	
AA-02	AA-02_2020-01-01	1/1/2020	1,1-DCE	ug/m^3	FALSE	0.13							NDD	
AA-02	AA-02_2008-02-01	2/1/2008	1,1,1-TCA	ug/m^3	TRUE	2.73		X		X	X	X	Lognormal	
AA-02	AA-02_2009-02-01	2/1/2009	1,1,1-TCA	ug/m^3	TRUE	1.09		X			X		Lognormal	
AA-02	AA-02_2010-01-01	1/1/2010	1,1,1-TCA	ug/m^3	TRUE	2.73				X	X	X	Lognormal	
AA-02	AA-02_2011-01-01	1/1/2011	1,1,1-TCA	ug/m^3	TRUE	1.09							Lognormal	
AA-02	AA-02_2012-01-01	1/1/2012	1,1,1-TCA	ug/m^3	TRUE	1.09							Lognormal	
AA-02	AA-02_2013-01-01	1/1/2013	1,1,1-TCA	ug/m^3	TRUE	1.09							Lognormal	
AA-02	AA-02_2014-01-01	1/1/2014	1,1,1-TCA	ug/m^3	FALSE	0.44							Lognormal	
AA-02	AA-02_2015-01-01	1/1/2015	1,1,1-TCA	ug/m^3	TRUE	0.11		X					Lognormal	
AA-02	AA-02_2016-01-01	1/1/2016	1,1,1-TCA	ug/m^3	TRUE	0.55							Lognormal	
AA-02	AA-02_2017-01-01	1/1/2017	1,1,1-TCA	ug/m^3	TRUE	0.55							Lognormal	
AA-02	AA-02_2018-01-01	1/1/2018	1,1,1-TCA	ug/m^3	FALSE	0.44							Lognormal	
AA-02	AA-02_2019-03-01	3/1/2019	1,1,1-TCA	ug/m^3	FALSE	0.44							Lognormal	
AA-02	AA-02_2020-01-01	1/1/2020	1,1,1-TCA	ug/m^3	FALSE	0.44							Lognormal	
AA-02	AA-02_2009-02-01	2/1/2009	Carbon Tetrachloride	ug/m^3	TRUE	0.63							NDD	
AA-02	AA-02_2011-01-01	1/1/2011	Carbon Tetrachloride	ug/m^3	TRUE	0.629		X			X		NDD	
AA-02	AA-02_2012-01-01	1/1/2012	Carbon Tetrachloride	ug/m^3	TRUE	0.629							NDD	
AA-02	AA-02_2013-01-01	1/1/2013	Carbon Tetrachloride	ug/m^3	TRUE	0.63							NDD	
AA-02	AA-02_2014-01-01	1/1/2014	Carbon Tetrachloride	ug/m^3	TRUE	0.58							NDD	
AA-02	AA-02_2015-01-01	1/1/2015	Carbon Tetrachloride	ug/m^3	TRUE	0.82		X			X		NDD	
AA-02	AA-02_2016-01-01	1/1/2016	Carbon Tetrachloride	ug/m^3	FALSE	0.25							NDD	
AA-02	AA-02_2017-01-01	1/1/2017	Carbon Tetrachloride	ug/m^3	FALSE	0.25							NDD	
AA-02	AA-02_2018-01-01	1/1/2018	Carbon Tetrachloride	ug/m^3	TRUE	0.49		X			X		NDD	
AA-02	AA-02_2019-03-01	3/1/2019	Carbon Tetrachloride	ug/m^3	TRUE	0.52		X			X		NDD	
AA-02	AA-02_2020-01-01	1/1/2020	Carbon Tetrachloride	ug/m^3	TRUE	0.75		X			X		NDD	
AA-02	AA-02_2014-01-01	1/1/2014	Cis 1,2-DCE	ug/m^3	TRUE	0.28							Lognormal	
AA-02	AA-02_2015-01-01	1/1/2015	Cis 1,2-DCE	ug/m^3	TRUE	0.37							Lognormal	
AA-02	AA-02_2016-01-01	1/1/2016	Cis 1,2-DCE	ug/m^3	TRUE	0.79							Lognormal	
AA-02	AA-02_2017-01-01	1/1/2017	Cis 1,2-DCE	ug/m^3	TRUE	0.79							Lognormal	
AA-02	AA-02_2018-01-01	1/1/2018	Cis 1,2-DCE	ug/m^3	FALSE	0.13							Lognormal	
AA-02	AA-02_2019-03-01	3/1/2019	Cis 1,2-DCE	ug/m^3	FALSE	0.13							Lognormal	
AA-02	AA-02_2020-01-01	1/1/2020	Cis 1,2-DCE	ug/m^3	FALSE	0.13							Lognormal	
AA-02	AA-02_2008-02-01	2/1/2008	Methylene Chloride	ug/m^3	TRUE	1.98							Lognormal	
AA-02	AA-02_2009-02-01	2/1/2009	Methylene Chloride	ug/m^3	TRUE	2.22							Lognormal	
AA-02	AA-02_2010-01-01	1/1/2010	Methylene Chloride	ug/m^3	TRUE	9.8		X		X	X	X	Lognormal	
AA-02	AA-02_2011-01-01	1/1/2011	Methylene Chloride	ug/m^3	TRUE	7.77		X		X	X	X	Lognormal	
AA-02	AA-02_2012-01-01	1/1/2012	Methylene Chloride	ug/m^3	TRUE	1.16							Lognormal	
AA-02	AA-02_2013-01-01	1/1/2013	Methylene Chloride	ug/m^3	TRUE	1.59							Lognormal	
AA-02	AA-02_2014-01-01	1/1/2014	Methylene Chloride	ug/m^3	TRUE	0.8							Lognormal	
AA-02	AA-02_2015-01-01	1/1/2015	Methylene Chloride	ug/m^3	TRUE	0.42							Lognormal	
AA-02	AA-02_2016-01-01	1/1/2016	Methylene Chloride	ug/m^3	TRUE	1.3							Lognormal	
AA-02	AA-02_2017-01-01	1/1/2017	Methylene Chloride	ug/m^3	TRUE	0.69							Lognormal	
AA-02	AA-02_2018-01-01	1/1/2018	Methylene Chloride	ug/m^3	TRUE	1.8							Lognormal	
AA-02	AA-02_2019-03-01	3/1/2019	Methylene Chloride	ug/m^3	TRUE	1.5							Lognormal	
AA-02	AA-02_2020-01-01	1/1/2020	Methylene Chloride	ug/m^3	TRUE	3.3					X		Lognormal	
AA-02	AA-02_2008-02-01	2/1/2008	PCE	ug/m^3	TRUE	3.39							Lognormal	

Table 13
Outlier Summary
Macbeth-Kollmorgan Corporate Site New Windsor, New York

Location	Sample	Date	Analyte	Units	Detect	Concentration	Log Statistical Outlier	Log Visual Outlier	Lognormal Outlier	Statistical Outlier	Visual Outlier	Normal Outlier	Distribution	Final Outlier Decision
AA-02	AA-02_2009-02-01	2/1/2009	PCE	ug/m^3	TRUE	1.36							Lognormal	
AA-02	AA-02_2010-01-01	1/1/2010	PCE	ug/m^3	TRUE	3.39							Lognormal	
AA-02	AA-02_2011-01-01	1/1/2011	PCE	ug/m^3	TRUE	0.407							Lognormal	
AA-02	AA-02_2012-01-01	1/1/2012	PCE	ug/m^3	TRUE	0.237							Lognormal	
AA-02	AA-02_2013-01-01	1/1/2013	PCE	ug/m^3	TRUE	42.7				X	X	X	Lognormal	
AA-02	AA-02_2014-01-01	1/1/2014	PCE	ug/m^3	TRUE	0.66							Lognormal	
AA-02	AA-02_2015-01-01	1/1/2015	PCE	ug/m^3	TRUE	0.2							Lognormal	
AA-02	AA-02_2016-01-01	1/1/2016	PCE	ug/m^3	TRUE	0.26							Lognormal	
AA-02	AA-02_2017-01-01	1/1/2017	PCE	ug/m^3	TRUE	0.45							Lognormal	
AA-02	AA-02_2018-01-01	1/1/2018	PCE	ug/m^3	FALSE	0.22							Lognormal	
AA-02	AA-02_2019-03-01	3/1/2019	PCE	ug/m^3	TRUE	4.5							Lognormal	
AA-02	AA-02_2020-01-01	1/1/2020	PCE	ug/m^3	FALSE	0.22							Lognormal	
AA-02	AA-02_2008-02-01	2/1/2008	TCE	ug/m^3	TRUE	2.68		X		X	X	X	Lognormal	
AA-02	AA-02_2009-02-01	2/1/2009	TCE	ug/m^3	TRUE	0.48							Lognormal	
AA-02	AA-02_2010-01-01	1/1/2010	TCE	ug/m^3	TRUE	2.69		X		X	X	X	Lognormal	
AA-02	AA-02_2011-01-01	1/1/2011	TCE	ug/m^3	TRUE	0.484							Lognormal	
AA-02	AA-02_2012-01-01	1/1/2012	TCE	ug/m^3	TRUE	0.215							Lognormal	
AA-02	AA-02_2013-01-01	1/1/2013	TCE	ug/m^3	TRUE	0.21							Lognormal	
AA-02	AA-02_2014-01-01	1/1/2014	TCE	ug/m^3	TRUE	0.054							Lognormal	
AA-02	AA-02_2015-01-01	1/1/2015	TCE	ug/m^3	TRUE	0.11							Lognormal	
AA-02	AA-02_2016-01-01	1/1/2016	TCE	ug/m^3	TRUE	0.21							Lognormal	
AA-02	AA-02_2017-01-01	1/1/2017	TCE	ug/m^3	TRUE	0.21							Lognormal	
AA-02	AA-02_2018-01-01	1/1/2018	TCE	ug/m^3	FALSE	0.17							Lognormal	
AA-02	AA-02_2019-03-01	3/1/2019	TCE	ug/m^3	TRUE	0.54							Lognormal	
AA-02	AA-02_2020-01-01	1/1/2020	TCE	ug/m^3	FALSE	0.17							Lognormal	
AA-02	AA-02_2018-01-01	1/1/2018	Vinyl Chloride	ug/m^3	FALSE	0.082							NDD	
AA-02	AA-02_2019-03-01	3/1/2019	Vinyl Chloride	ug/m^3	FALSE	0.082							NDD	
AA-02	AA-02_2020-01-01	1/1/2020	Vinyl Chloride	ug/m^3	FALSE	0.082							NDD	
AA-03	AA-03_2008-02-01	2/1/2008	1,1-DCE	ug/m^3	TRUE	1.74							NDD	
AA-03	AA-03_2018-01-01	1/1/2018	1,1-DCE	ug/m^3	FALSE	0.13							NDD	
AA-03	AA-03_2019-03-01	3/1/2019	1,1-DCE	ug/m^3	FALSE	0.13							NDD	
AA-03	AA-03_2020-01-01	1/1/2020	1,1-DCE	ug/m^3	FALSE	0.13							NDD	
AA-03	AA-03_2008-02-01	2/1/2008	1,1,1-TCA	ug/m^3	TRUE	2.73		X		X	X	X	Lognormal	
AA-03	AA-03_2009-02-01	2/1/2009	1,1,1-TCA	ug/m^3	TRUE	1.09		X			X		Lognormal	
AA-03	AA-03_2010-01-01	1/1/2010	1,1,1-TCA	ug/m^3	TRUE	2.73				X	X	X	Lognormal	
AA-03	AA-03_2011-01-01	1/1/2011	1,1,1-TCA	ug/m^3	TRUE	1.09							Lognormal	
AA-03	AA-03_2012-01-01	1/1/2012	1,1,1-TCA	ug/m^3	TRUE	1.09							Lognormal	
AA-03	AA-03_2013-01-01	1/1/2013	1,1,1-TCA	ug/m^3	TRUE	1.09							Lognormal	
AA-03	AA-03_2014-01-01	1/1/2014	1,1,1-TCA	ug/m^3	FALSE	0.44							Lognormal	
AA-03	AA-03_2015-01-01	1/1/2015	1,1,1-TCA	ug/m^3	TRUE	0.11		X					Lognormal	
AA-03	AA-03_2016-01-01	1/1/2016	1,1,1-TCA	ug/m^3	TRUE	0.55							Lognormal	
AA-03	AA-03_2017-01-01	1/1/2017	1,1,1-TCA	ug/m^3	TRUE	0.55							Lognormal	
AA-03	AA-03_2018-01-01	1/1/2018	1,1,1-TCA	ug/m^3	FALSE	0.44							Lognormal	
AA-03	AA-03_2019-03-01	3/1/2019	1,1,1-TCA	ug/m^3	FALSE	0.44							Lognormal	
AA-03	AA-03_2020-01-01	1/1/2020	1,1,1-TCA	ug/m^3	FALSE	0.44							Lognormal	
AA-03	AA-03_2009-02-01	2/1/2009	Carbon Tetrachloride	ug/m^3	TRUE	0.63							NDD	
AA-03	AA-03_2011-01-01	1/1/2011	Carbon Tetrachloride	ug/m^3	TRUE	0.629							NDD	
AA-03	AA-03_2012-01-01	1/1/2012	Carbon Tetrachloride	ug/m^3	TRUE	0.629							NDD	
AA-03	AA-03_2013-01-01	1/1/2013	Carbon Tetrachloride	ug/m^3	TRUE	0.63							NDD	
AA-03	AA-03_2014-01-01	1/1/2014	Carbon Tetrachloride	ug/m^3	TRUE	0.58							NDD	

Table 13
Outlier Summary
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Location	Sample	Date	Analyte	Units	Detect	Concentration	Log Statistical Outlier	Log Visual Outlier	Lognormal Outlier	Statistical Outlier	Visual Outlier	Normal Outlier	Distribution	Final Outlier Decision
AA-03	AA-03_2015-01-01	1/1/2015	Carbon Tetrachloride	ug/m^3	TRUE	0.82		X			X		NDD	
AA-03	AA-03_2016-01-01	1/1/2016	Carbon Tetrachloride	ug/m^3	FALSE	0.25							NDD	
AA-03	AA-03_2017-01-01	1/1/2017	Carbon Tetrachloride	ug/m^3	FALSE	0.25							NDD	
AA-03	AA-03_2018-01-01	1/1/2018	Carbon Tetrachloride	ug/m^3	TRUE	0.46		X					NDD	
AA-03	AA-03_2019-03-01	3/1/2019	Carbon Tetrachloride	ug/m^3	TRUE	0.49		X			X		NDD	
AA-03	AA-03_2020-01-01	1/1/2020	Carbon Tetrachloride	ug/m^3	FALSE	0.2							NDD	
AA-03	AA-03_2014-01-01	1/1/2014	Cis 1,2-DCE	ug/m^3	TRUE	0.28							Lognormal	
AA-03	AA-03_2015-01-01	1/1/2015	Cis 1,2-DCE	ug/m^3	TRUE	0.37							Lognormal	
AA-03	AA-03_2016-01-01	1/1/2016	Cis 1,2-DCE	ug/m^3	TRUE	0.79							Lognormal	
AA-03	AA-03_2017-01-01	1/1/2017	Cis 1,2-DCE	ug/m^3	TRUE	0.79							Lognormal	
AA-03	AA-03_2018-01-01	1/1/2018	Cis 1,2-DCE	ug/m^3	FALSE	0.13							Lognormal	
AA-03	AA-03_2019-03-01	3/1/2019	Cis 1,2-DCE	ug/m^3	TRUE	2.9		X		X	X	X	Lognormal	
AA-03	AA-03_2020-01-01	1/1/2020	Cis 1,2-DCE	ug/m^3	FALSE	0.13							Lognormal	
AA-03	AA-03_2008-02-01	2/1/2008	Methylene Chloride	ug/m^3	TRUE	1.98							Lognormal	
AA-03	AA-03_2009-02-01	2/1/2009	Methylene Chloride	ug/m^3	TRUE	2.15							Lognormal	
AA-03	AA-03_2010-01-01	1/1/2010	Methylene Chloride	ug/m^3	TRUE	2.95							Lognormal	
AA-03	AA-03_2011-01-01	1/1/2011	Methylene Chloride	ug/m^3	TRUE	7.77				X	X	X	Lognormal	
AA-03	AA-03_2012-01-01	1/1/2012	Methylene Chloride	ug/m^3	TRUE	1.79							Lognormal	
AA-03	AA-03_2013-01-01	1/1/2013	Methylene Chloride	ug/m^3	TRUE	1.55							Lognormal	
AA-03	AA-03_2014-01-01	1/1/2014	Methylene Chloride	ug/m^3	TRUE	0.73							Lognormal	
AA-03	AA-03_2015-01-01	1/1/2015	Methylene Chloride	ug/m^3	TRUE	0.42							Lognormal	
AA-03	AA-03_2016-01-01	1/1/2016	Methylene Chloride	ug/m^3	TRUE	0.69							Lognormal	
AA-03	AA-03_2017-01-01	1/1/2017	Methylene Chloride	ug/m^3	TRUE	0.69							Lognormal	
AA-03	AA-03_2018-01-01	1/1/2018	Methylene Chloride	ug/m^3	TRUE	0.56							Lognormal	
AA-03	AA-03_2019-03-01	3/1/2019	Methylene Chloride	ug/m^3	TRUE	6.3				X	X	X	Lognormal	
AA-03	AA-03_2020-01-01	1/1/2020	Methylene Chloride	ug/m^3	TRUE	0.83							Lognormal	
AA-03	AA-03_2008-02-01	2/1/2008	PCE	ug/m^3	TRUE	3.39							Lognormal	
AA-03	AA-03_2009-02-01	2/1/2009	PCE	ug/m^3	TRUE	1.63							Lognormal	
AA-03	AA-03_2010-01-01	1/1/2010	PCE	ug/m^3	TRUE	3.39							Lognormal	
AA-03	AA-03_2011-01-01	1/1/2011	PCE	ug/m^3	TRUE	0.95							Lognormal	
AA-03	AA-03_2012-01-01	1/1/2012	PCE	ug/m^3	TRUE	0.237							Lognormal	
AA-03	AA-03_2013-01-01	1/1/2013	PCE	ug/m^3	TRUE	15.7				X	X	X	Lognormal	
AA-03	AA-03_2014-01-01	1/1/2014	PCE	ug/m^3	TRUE	0.66							Lognormal	
AA-03	AA-03_2015-01-01	1/1/2015	PCE	ug/m^3	TRUE	0.16							Lognormal	
AA-03	AA-03_2016-01-01	1/1/2016	PCE	ug/m^3	TRUE	1.2							Lognormal	
AA-03	AA-03_2017-01-01	1/1/2017	PCE	ug/m^3	TRUE	0.42							Lognormal	
AA-03	AA-03_2018-01-01	1/1/2018	PCE	ug/m^3	TRUE	0.33							Lognormal	
AA-03	AA-03_2019-03-01	3/1/2019	PCE	ug/m^3	TRUE	3.9							Lognormal	
AA-03	AA-03_2020-01-01	1/1/2020	PCE	ug/m^3	TRUE	0.21							Lognormal	
AA-03	AA-03_2008-02-01	2/1/2008	TCE	ug/m^3	TRUE	2.68				X	X	X	Lognormal	
AA-03	AA-03_2009-02-01	2/1/2009	TCE	ug/m^3	TRUE	0.48							Lognormal	
AA-03	AA-03_2010-01-01	1/1/2010	TCE	ug/m^3	TRUE	2.69				X	X	X	Lognormal	
AA-03	AA-03_2011-01-01	1/1/2011	TCE	ug/m^3	TRUE	0.215							Lognormal	
AA-03	AA-03_2012-01-01	1/1/2012	TCE	ug/m^3	TRUE	0.215		X			X		Lognormal	
AA-03	AA-03_2013-01-01	1/1/2013	TCE	ug/m^3	TRUE	0.21							Lognormal	
AA-03	AA-03_2014-01-01	1/1/2014	TCE	ug/m^3	TRUE	0.07							Lognormal	
AA-03	AA-03_2015-01-01	1/1/2015	TCE	ug/m^3	TRUE	0.047							Lognormal	
AA-03	AA-03_2016-01-01	1/1/2016	TCE	ug/m^3	TRUE	0.21							Lognormal	
AA-03	AA-03_2017-01-01	1/1/2017	TCE	ug/m^3	TRUE	0.21							Lognormal	
AA-03	AA-03_2018-01-01	1/1/2018	TCE	ug/m^3	TRUE	0.75							Lognormal	

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Location	Sample	Date	Analyte	Units	Detect	Concentration	Log Statistical Outlier	Log Visual Outlier	Lognormal Outlier	Statistical Outlier	Visual Outlier	Normal Outlier	Distribution	Final Outlier Decision
AA-03	AA-03_2019-03-01	3/1/2019	TCE	ug/m^3	TRUE	0.97							Lognormal	
AA-03	AA-03_2020-01-01	1/1/2020	TCE	ug/m^3	FALSE	0.17							Lognormal	
AA-03	AA-03_2018-01-01	1/1/2018	Vinyl Chloride	ug/m^3	FALSE	0.082							NDD	
AA-03	AA-03_2019-03-01	3/1/2019	Vinyl Chloride	ug/m^3	FALSE	0.082							NDD	
AA-03	AA-03_2020-01-01	1/1/2020	Vinyl Chloride	ug/m^3	FALSE	0.082							NDD	
SG-2	SG-2_2006-12-01	12/1/2006	1,1-DCE	ug/m^3	TRUE	18							Lognormal	
SG-2	SG-2_2008-02-01	2/1/2008	1,1-DCE	ug/m^3	TRUE	23.8							Lognormal	
SG-2	SG-2_2018-01-01	1/1/2018	1,1-DCE	ug/m^3	TRUE	0.63							Lognormal	
SG-2	SG-2_2019-03-01	3/1/2019	1,1-DCE	ug/m^3	TRUE	0.63							Lognormal	
SG-2	SG-2_2020-01-01	1/1/2020	1,1-DCE	ug/m^3	FALSE	0.16							Lognormal	
SG-2	SG-2_2006-12-01	12/1/2006	1,1,1-TCA	ug/m^3	TRUE	93	X	X	X		X		Normal	
SG-2	SG-2_2008-02-01	2/1/2008	1,1,1-TCA	ug/m^3	TRUE	29.2	X	X	X		X		Normal	
SG-2	SG-2_2009-02-01	2/1/2009	1,1,1-TCA	ug/m^3	TRUE	175							Normal	
SG-2	SG-2_2010-01-01	1/1/2010	1,1,1-TCA	ug/m^3	TRUE	131		X			X		Normal	
SG-2	SG-2_2011-01-01	1/1/2011	1,1,1-TCA	ug/m^3	TRUE	309							Normal	
SG-2	SG-2_2012-01-01	1/1/2012	1,1,1-TCA	ug/m^3	TRUE	211							Normal	
SG-2	SG-2_2013-01-01	1/1/2013	1,1,1-TCA	ug/m^3	TRUE	222							Normal	
SG-2	SG-2_2014-01-01	1/1/2014	1,1,1-TCA	ug/m^3	TRUE	228							Normal	
SG-2	SG-2_2015-01-01	1/1/2015	1,1,1-TCA	ug/m^3	TRUE	242							Normal	
SG-2	SG-2_2016-01-01	1/1/2016	1,1,1-TCA	ug/m^3	TRUE	195							Normal	
SG-2	SG-2_2017-01-01	1/1/2017	1,1,1-TCA	ug/m^3	TRUE	216							Normal	
SG-2	SG-2_2018-01-01	1/1/2018	1,1,1-TCA	ug/m^3	TRUE	226							Normal	
SG-2	SG-2_2019-03-01	3/1/2019	1,1,1-TCA	ug/m^3	TRUE	174							Normal	
SG-2	SG-2_2020-01-01	1/1/2020	1,1,1-TCA	ug/m^3	TRUE	243							Normal	
SG-2	SG-2_2009-02-01	2/1/2009	Carbon Tetrachloride	ug/m^3	TRUE	1.45							Normal	
SG-2	SG-2_2011-01-01	1/1/2011	Carbon Tetrachloride	ug/m^3	TRUE	3.02							Normal	
SG-2	SG-2_2012-01-01	1/1/2012	Carbon Tetrachloride	ug/m^3	TRUE	2.01							Normal	
SG-2	SG-2_2013-01-01	1/1/2013	Carbon Tetrachloride	ug/m^3	TRUE	2.2							Normal	
SG-2	SG-2_2014-01-01	1/1/2014	Carbon Tetrachloride	ug/m^3	TRUE	2.1							Normal	
SG-2	SG-2_2015-01-01	1/1/2015	Carbon Tetrachloride	ug/m^3	TRUE	2.8					X		Normal	
SG-2	SG-2_2016-01-01	1/1/2016	Carbon Tetrachloride	ug/m^3	TRUE	1.6							Normal	
SG-2	SG-2_2017-01-01	1/1/2017	Carbon Tetrachloride	ug/m^3	TRUE	2.1							Normal	
SG-2	SG-2_2018-01-01	1/1/2018	Carbon Tetrachloride	ug/m^3	TRUE	1							Normal	
SG-2	SG-2_2019-03-01	3/1/2019	Carbon Tetrachloride	ug/m^3	TRUE	1		X					Normal	
SG-2	SG-2_2020-01-01	1/1/2020	Carbon Tetrachloride	ug/m^3	TRUE	1.8							Normal	
SG-2	SG-2_2014-01-01	1/1/2014	Cis 1,2-DCE	ug/m^3	TRUE	0.28							Normal	
SG-2	SG-2_2015-01-01	1/1/2015	Cis 1,2-DCE	ug/m^3	TRUE	0.37							Normal	
SG-2	SG-2_2016-01-01	1/1/2016	Cis 1,2-DCE	ug/m^3	TRUE	0.79							Normal	
SG-2	SG-2_2017-01-01	1/1/2017	Cis 1,2-DCE	ug/m^3	TRUE	0.79							Normal	
SG-2	SG-2_2018-01-01	1/1/2018	Cis 1,2-DCE	ug/m^3	TRUE	0.63							Normal	
SG-2	SG-2_2019-03-01	3/1/2019	Cis 1,2-DCE	ug/m^3	TRUE	0.63							Normal	
SG-2	SG-2_2020-01-01	1/1/2020	Cis 1,2-DCE	ug/m^3	FALSE	0.16							Normal	
SG-2	SG-2_2008-02-01	2/1/2008	Methylene Chloride	ug/m^3	TRUE	1.98							Lognormal	
SG-2	SG-2_2009-02-01	2/1/2009	Methylene Chloride	ug/m^3	TRUE	2.64							Lognormal	
SG-2	SG-2_2010-01-01	1/1/2010	Methylene Chloride	ug/m^3	TRUE	5.38				X	X	X	Lognormal	
SG-2	SG-2_2011-01-01	1/1/2011	Methylene Chloride	ug/m^3	TRUE	11.3				X	X	X	Lognormal	
SG-2	SG-2_2012-01-01	1/1/2012	Methylene Chloride	ug/m^3	TRUE	0.893							Lognormal	
SG-2	SG-2_2013-01-01	1/1/2013	Methylene Chloride	ug/m^3	TRUE	1.24							Lognormal	
SG-2	SG-2_2014-01-01	1/1/2014	Methylene Chloride	ug/m^3	TRUE	0.8							Lognormal	
SG-2	SG-2_2015-01-01	1/1/2015	Methylene Chloride	ug/m^3	TRUE	0.42							Lognormal	

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SG-2	SG-2_2016-01-01	1/1/2016	Methylene Chloride	ug/m^3	FALSE	0.69							Lognormal	
SG-2	SG-2_2017-01-01	1/1/2017	Methylene Chloride	ug/m^3	TRUE	0.94							Lognormal	
SG-2	SG-2_2018-01-01	1/1/2018	Methylene Chloride	ug/m^3	TRUE	2.8							Lognormal	
SG-2	SG-2_2019-03-01	3/1/2019	Methylene Chloride	ug/m^3	TRUE	2.8							Lognormal	
SG-2	SG-2_2020-01-01	1/1/2020	Methylene Chloride	ug/m^3	FALSE	0.69							Lognormal	
SG-2	SG-2_2006-12-01	12/1/2006	PCE	ug/m^3	TRUE	8.1				X	X	X	Lognormal	
SG-2	SG-2_2008-02-01	2/1/2008	PCE	ug/m^3	TRUE	24.3				X	X	X	Lognormal	
SG-2	SG-2_2009-02-01	2/1/2009	PCE	ug/m^3	TRUE	4.61							Lognormal	
SG-2	SG-2_2010-01-01	1/1/2010	PCE	ug/m^3	TRUE	3.39							Lognormal	
SG-2	SG-2_2011-01-01	1/1/2011	PCE	ug/m^3	TRUE	0.814							Lognormal	
SG-2	SG-2_2012-01-01	1/1/2012	PCE	ug/m^3	TRUE	0.543							Lognormal	
SG-2	SG-2_2013-01-01	1/1/2013	PCE	ug/m^3	TRUE	17.9				X	X	X	Lognormal	
SG-2	SG-2_2014-01-01	1/1/2014	PCE	ug/m^3	TRUE	3.3							Lognormal	
SG-2	SG-2_2015-01-01	1/1/2015	PCE	ug/m^3	TRUE	0.34							Lognormal	
SG-2	SG-2_2016-01-01	1/1/2016	PCE	ug/m^3	TRUE	0.62							Lognormal	
SG-2	SG-2_2017-01-01	1/1/2017	PCE	ug/m^3	TRUE	2.6							Lognormal	
SG-2	SG-2_2018-01-01	1/1/2018	PCE	ug/m^3	TRUE	1.3							Lognormal	
SG-2	SG-2_2019-03-01	3/1/2019	PCE	ug/m^3	TRUE	2.5							Lognormal	
SG-2	SG-2_2020-01-01	1/1/2020	PCE	ug/m^3	TRUE	0.54							Lognormal	
SG-2	SG-2_2006-12-01	12/1/2006	TCE	ug/m^3	TRUE	860	X	X	X	X	X	X	NDD	X
SG-2	SG-2_2008-02-01	2/1/2008	TCE	ug/m^3	TRUE	8.17							NDD	
SG-2	SG-2_2009-02-01	2/1/2009	TCE	ug/m^3	TRUE	5.27							NDD	
SG-2	SG-2_2010-01-01	1/1/2010	TCE	ug/m^3	TRUE	2.74							NDD	
SG-2	SG-2_2011-01-01	1/1/2011	TCE	ug/m^3	TRUE	8.6							NDD	
SG-2	SG-2_2012-01-01	1/1/2012	TCE	ug/m^3	TRUE	6.45							NDD	
SG-2	SG-2_2013-01-01	1/1/2013	TCE	ug/m^3	TRUE	8.01							NDD	
SG-2	SG-2_2014-01-01	1/1/2014	TCE	ug/m^3	TRUE	4.6							NDD	
SG-2	SG-2_2015-01-01	1/1/2015	TCE	ug/m^3	TRUE	6.4							NDD	
SG-2	SG-2_2016-01-01	1/1/2016	TCE	ug/m^3	TRUE	5.9							NDD	
SG-2	SG-2_2017-01-01	1/1/2017	TCE	ug/m^3	TRUE	5.9							NDD	
SG-2	SG-2_2018-01-01	1/1/2018	TCE	ug/m^3	TRUE	6.4							NDD	
SG-2	SG-2_2019-03-01	3/1/2019	TCE	ug/m^3	TRUE	3.9							NDD	
SG-2	SG-2_2020-01-01	1/1/2020	TCE	ug/m^3	TRUE	11							NDD	
SG-2	SG-2_2018-01-01	1/1/2018	Vinyl Chloride	ug/m^3	TRUE	0.41							NDD	
SG-2	SG-2_2019-03-01	3/1/2019	Vinyl Chloride	ug/m^3	TRUE	0.41							NDD	
SG-2	SG-2_2020-01-01	1/1/2020	Vinyl Chloride	ug/m^3	FALSE	0.1							NDD	
SG-3	SG-3_2006-12-01	12/1/2006	1,1-DCE	ug/m^3	TRUE	28							Lognormal	
SG-3	SG-3_2008-02-01	2/1/2008	1,1-DCE	ug/m^3	TRUE	2.05							Lognormal	
SG-3	SG-3_2018-01-01	1/1/2018	1,1-DCE	ug/m^3	TRUE	0.32							Lognormal	
SG-3	SG-3_2019-03-01	3/1/2019	1,1-DCE	ug/m^3	TRUE	0.63							Lognormal	
SG-3	SG-3_2020-01-01	1/1/2020	1,1-DCE	ug/m^3	FALSE	0.16							Lognormal	
SG-3	SG-3_2006-12-01	12/1/2006	1,1,1-TCA	ug/m^3	TRUE	480				X	X	X	Lognormal	
SG-3	SG-3_2008-02-01	2/1/2008	1,1,1-TCA	ug/m^3	TRUE	161							Lognormal	
SG-3	SG-3_2009-02-01	2/1/2009	1,1,1-TCA	ug/m^3	TRUE	222							Lognormal	
SG-3	SG-3_2010-01-01	1/1/2010	1,1,1-TCA	ug/m^3	TRUE	167							Lognormal	
SG-3	SG-3_2011-01-01	1/1/2011	1,1,1-TCA	ug/m^3	TRUE	249							Lognormal	
SG-3	SG-3_2012-01-01	1/1/2012	1,1,1-TCA	ug/m^3	TRUE	116							Lognormal	
SG-3	SG-3_2013-01-01	1/1/2013	1,1,1-TCA	ug/m^3	TRUE	140							Lognormal	
SG-3	SG-3_2014-01-01	1/1/2014	1,1,1-TCA	ug/m^3	TRUE	190							Lognormal	
SG-3	SG-3_2015-01-01	1/1/2015	1,1,1-TCA	ug/m^3	TRUE	115							Lognormal	

Table 13
Outlier Summary
Macbeth-Kollmorgan Corporate Site New Windsor, New York

Location	Sample	Date	Analyte	Units	Detect	Concentration	Log Statistical Outlier	Log Visual Outlier	Lognormal Outlier	Statistical Outlier	Visual Outlier	Normal Outlier	Distribution	Final Outlier Decision
SG-3	SG-3_2016-01-01	1/1/2016	1,1,1-TCA	ug/m^3	TRUE	128							Lognormal	
SG-3	SG-3_2017-01-01	1/1/2017	1,1,1-TCA	ug/m^3	TRUE	96							Lognormal	
SG-3	SG-3_2018-01-01	1/1/2018	1,1,1-TCA	ug/m^3	TRUE	61.7							Lognormal	
SG-3	SG-3_2019-03-01	3/1/2019	1,1,1-TCA	ug/m^3	TRUE	46							Lognormal	
SG-3	SG-3_2020-01-01	1/1/2020	1,1,1-TCA	ug/m^3	TRUE	66.6							Lognormal	
SG-3	SG-3_2009-02-01	2/1/2009	Carbon Tetrachloride	ug/m^3	TRUE	1.26					X		Normal	
SG-3	SG-3_2011-01-01	1/1/2011	Carbon Tetrachloride	ug/m^3	TRUE	0.629							Normal	
SG-3	SG-3_2012-01-01	1/1/2012	Carbon Tetrachloride	ug/m^3	TRUE	0.629							Normal	
SG-3	SG-3_2013-01-01	1/1/2013	Carbon Tetrachloride	ug/m^3	TRUE	0.63							Normal	
SG-3	SG-3_2014-01-01	1/1/2014	Carbon Tetrachloride	ug/m^3	TRUE	0.58							Normal	
SG-3	SG-3_2015-01-01	1/1/2015	Carbon Tetrachloride	ug/m^3	TRUE	0.82							Normal	
SG-3	SG-3_2016-01-01	1/1/2016	Carbon Tetrachloride	ug/m^3	FALSE	0.25							Normal	
SG-3	SG-3_2017-01-01	1/1/2017	Carbon Tetrachloride	ug/m^3	FALSE	0.25							Normal	
SG-3	SG-3_2018-01-01	1/1/2018	Carbon Tetrachloride	ug/m^3	TRUE	0.5							Normal	
SG-3	SG-3_2019-03-01	3/1/2019	Carbon Tetrachloride	ug/m^3	TRUE	1							Normal	
SG-3	SG-3_2020-01-01	1/1/2020	Carbon Tetrachloride	ug/m^3	FALSE	0.25							Normal	
SG-3	SG-3_2014-01-01	1/1/2014	Cis 1,2-DCE	ug/m^3	TRUE	0.28							Normal	
SG-3	SG-3_2015-01-01	1/1/2015	Cis 1,2-DCE	ug/m^3	TRUE	0.37							Normal	
SG-3	SG-3_2016-01-01	1/1/2016	Cis 1,2-DCE	ug/m^3	TRUE	0.79							Normal	
SG-3	SG-3_2017-01-01	1/1/2017	Cis 1,2-DCE	ug/m^3	TRUE	0.79				X			Normal	
SG-3	SG-3_2018-01-01	1/1/2018	Cis 1,2-DCE	ug/m^3	TRUE	0.32							Normal	
SG-3	SG-3_2019-03-01	3/1/2019	Cis 1,2-DCE	ug/m^3	TRUE	0.63							Normal	
SG-3	SG-3_2020-01-01	1/1/2020	Cis 1,2-DCE	ug/m^3	FALSE	0.16							Normal	
SG-3	SG-3_2008-02-01	2/1/2008	Methylene Chloride	ug/m^3	TRUE	1.98							Normal	
SG-3	SG-3_2009-02-01	2/1/2009	Methylene Chloride	ug/m^3	TRUE	2.64							Normal	
SG-3	SG-3_2010-01-01	1/1/2010	Methylene Chloride	ug/m^3	TRUE	5							Normal	
SG-3	SG-3_2011-01-01	1/1/2011	Methylene Chloride	ug/m^3	TRUE	1.67							Normal	
SG-3	SG-3_2012-01-01	1/1/2012	Methylene Chloride	ug/m^3	TRUE	1.09							Normal	
SG-3	SG-3_2013-01-01	1/1/2013	Methylene Chloride	ug/m^3	TRUE	1.24							Normal	
SG-3	SG-3_2014-01-01	1/1/2014	Methylene Chloride	ug/m^3	TRUE	0.31							Normal	
SG-3	SG-3_2015-01-01	1/1/2015	Methylene Chloride	ug/m^3	TRUE	0.42		X					Normal	
SG-3	SG-3_2016-01-01	1/1/2016	Methylene Chloride	ug/m^3	FALSE	0.69							Normal	
SG-3	SG-3_2017-01-01	1/1/2017	Methylene Chloride	ug/m^3	TRUE	3.8							Normal	
SG-3	SG-3_2018-01-01	1/1/2018	Methylene Chloride	ug/m^3	TRUE	1.6							Normal	
SG-3	SG-3_2019-03-01	3/1/2019	Methylene Chloride	ug/m^3	TRUE	2.8							Normal	
SG-3	SG-3_2020-01-01	1/1/2020	Methylene Chloride	ug/m^3	FALSE	0.69							Normal	
SG-3	SG-3_2006-12-01	12/1/2006	PCE	ug/m^3	TRUE	6000	X	X	X	X	X	X	NDD	X
SG-3	SG-3_2008-02-01	2/1/2008	PCE	ug/m^3	TRUE	501							NDD	
SG-3	SG-3_2009-02-01	2/1/2009	PCE	ug/m^3	TRUE	448							NDD	
SG-3	SG-3_2010-01-01	1/1/2010	PCE	ug/m^3	TRUE	454							NDD	
SG-3	SG-3_2011-01-01	1/1/2011	PCE	ug/m^3	TRUE	830		X			X		NDD	
SG-3	SG-3_2012-01-01	1/1/2012	PCE	ug/m^3	TRUE	558							NDD	
SG-3	SG-3_2013-01-01	1/1/2013	PCE	ug/m^3	TRUE	525							NDD	
SG-3	SG-3_2014-01-01	1/1/2014	PCE	ug/m^3	TRUE	540							NDD	
SG-3	SG-3_2015-01-01	1/1/2015	PCE	ug/m^3	TRUE	1010		X			X		NDD	
SG-3	SG-3_2016-01-01	1/1/2016	PCE	ug/m^3	TRUE	639							NDD	
SG-3	SG-3_2017-01-01	1/1/2017	PCE	ug/m^3	TRUE	314							NDD	
SG-3	SG-3_2018-01-01	1/1/2018	PCE	ug/m^3	TRUE	338		X					NDD	
SG-3	SG-3_2019-03-01	3/1/2019	PCE	ug/m^3	TRUE	146		X					NDD	
SG-3	SG-3_2020-01-01	1/1/2020	PCE	ug/m^3	TRUE	435							NDD	

Table 13
Outlier Summary
Macbeth-Kollmorgan Corporate Site New Windsor, New York

Location	Sample	Date	Analyte	Units	Detect	Concentration	Log Statistical Outlier	Log Visual Outlier	Lognormal Outlier	Statistical Outlier	Visual Outlier	Normal Outlier	Distribution	Final Outlier Decision
SG-3	SG-3_2006-12-01	12/1/2006	TCE	ug/m^3	TRUE	5.4		X		X	X	X	Lognormal	
SG-3	SG-3_2008-02-01	2/1/2008	TCE	ug/m^3	FALSE	2.69							Lognormal	
SG-3	SG-3_2009-02-01	2/1/2009	TCE	ug/m^3	TRUE	3.01		X		X	X	X	Lognormal	
SG-3	SG-3_2010-01-01	1/1/2010	TCE	ug/m^3	FALSE	5.37							Lognormal	
SG-3	SG-3_2011-01-01	1/1/2011	TCE	ug/m^3	TRUE	1.45							Lognormal	
SG-3	SG-3_2012-01-01	1/1/2012	TCE	ug/m^3	TRUE	1.13							Lognormal	
SG-3	SG-3_2013-01-01	1/1/2013	TCE	ug/m^3	TRUE	1.02							Lognormal	
SG-3	SG-3_2014-01-01	1/1/2014	TCE	ug/m^3	TRUE	0.59							Lognormal	
SG-3	SG-3_2015-01-01	1/1/2015	TCE	ug/m^3	TRUE	0.86							Lognormal	
SG-3	SG-3_2016-01-01	1/1/2016	TCE	ug/m^3	TRUE	1							Lognormal	
SG-3	SG-3_2017-01-01	1/1/2017	TCE	ug/m^3	TRUE	0.91							Lognormal	
SG-3	SG-3_2018-01-01	1/1/2018	TCE	ug/m^3	TRUE	1.5							Lognormal	
SG-3	SG-3_2019-03-01	3/1/2019	TCE	ug/m^3	FALSE	0.86							Lognormal	
SG-3	SG-3_2020-01-01	1/1/2020	TCE	ug/m^3	TRUE	0.64							Lognormal	
SG-3	SG-3_2018-01-01	1/1/2018	Vinyl Chloride	ug/m^3	TRUE	0.2							Normal	
SG-3	SG-3_2019-03-01	3/1/2019	Vinyl Chloride	ug/m^3	TRUE	0.41							Normal	
SG-3	SG-3_2020-01-01	1/1/2020	Vinyl Chloride	ug/m^3	FALSE	0.1							Normal	

Notes
NDD: No Discernible Distribution
Outer tests were performed on detected data only.
Statistical outliers were determined using a Dixon's test for N < 25 and with Rosner's test for N > 25.
Visual outliers were identified if they fall above the confidence envelope on the QQ plot.
Data points were considered potential outliers if they were both statistical and visual outliers.
NDD wells had data points considered as potential outliers if they were either a normal or lognormal outlier.
[Blank] data distribution indicates that the well data did not have enough detected data points for outlier analysis.
Lognormally distributed data was first log-transformed before visual and statistical outlier tests were performed.
Normal data distribution indicates that the well data was directly used for statistical and visual outlier tests.
NDD indicates that both the untransformed and transformed data were examined with statistical and visual outlier tests.
0' indicates that the data point was a statistical and visual outlier but was retained after review by the project team.

Table 14
Descriptive Statistics
Macbeth-Kollmorgan Corporate Site New Windsor, New York

Location	chemical_name	Units	N	Num Detects	Num ND	Percent Detects	Min RL	Max RL	Min Detect	Median	Mean	Max Detect	SD	CV	Distribution
AA-02	1,1-DCE	ug/m^3	4	1	3	25.00%	0.13	0.13	1.74	0.065	0.4838	1.74	0.8375	173.13%	NDD
AA-02	1,1,1-TCA	ug/m^3	13	9	4	69.23%	0.44	0.44	0.11	0.55	0.9162	2.73	0.8924	97.41%	Lognormal
AA-02	Carbon Tetrachloride	ug/m^3	11	9	2	81.82%	0.25	0.25	0.49	0.629	0.5389	0.82	0.2244	41.64%	NDD
AA-02	Cis 1,2-DCE	ug/m^3	7	4	3	57.14%	0.13	0.13	0.28	0.28	0.3464	0.79	0.3256	93.99%	Lognormal
AA-02	Methylene Chloride	ug/m^3	13	13	0	100.00%			0.42	1.59	2.641	9.8	2.855	108.13%	Lognormal
AA-02	PCE	ug/m^3	13	11	2	84.62%	0.22	0.22	0.2	0.45	4.444	42.7	11.59	260.85%	Lognormal
AA-02	TCE	ug/m^3	13	11	2	84.62%	0.17	0.17	0.054	0.21	0.6195	2.69	0.9307	150.24%	Lognormal
AA-02	Vinyl Chloride	ug/m^3	3	0	3	0.00%	0.082	0.082		0.041	0.041		0	0.00%	NDD
AA-03	1,1-DCE	ug/m^3	4	1	3	25.00%	0.13	0.13	1.74	0.065	0.4838	1.74	0.8375	173.13%	NDD
AA-03	1,1,1-TCA	ug/m^3	13	9	4	69.23%	0.44	0.44	0.11	0.55	0.9162	2.73	0.8924	97.41%	Lognormal
AA-03	Carbon Tetrachloride	ug/m^3	11	8	3	72.73%	0.2	0.25	0.46	0.58	0.4744	0.82	0.2473	52.13%	NDD
AA-03	Cis 1,2-DCE	ug/m^3	7	5	2	71.43%	0.13	0.13	0.28	0.37	0.7514	2.9	0.9941	132.29%	Lognormal
AA-03	Methylene Chloride	ug/m^3	13	13	0	100.00%			0.42	1.55	2.185	7.77	2.3	105.25%	Lognormal
AA-03	PCE	ug/m^3	13	13	0	100.00%			0.16	0.95	2.475	15.7	4.192	169.37%	Lognormal
AA-03	TCE	ug/m^3	13	12	1	92.31%	0.17	0.17	0.047	0.215	0.6794	2.69	0.9305	136.97%	Lognormal
AA-03	Vinyl Chloride	ug/m^3	3	0	3	0.00%	0.082	0.082		0.041	0.041		0	0.00%	NDD
SG-2	1,1-DCE	ug/m^3	5	4	1	80.00%	0.16	0.16	0.63	0.63	8.628	23.8	11.39	132.02%	Lognormal
SG-2	1,1,1-TCA	ug/m^3	14	14	0	100.00%			29.2	213.5	192.4	309	70.01	36.38%	Normal
SG-2	Carbon Tetrachloride	ug/m^3	11	11	0	100.00%			1	2.01	1.916	3.02	0.6454	33.68%	Normal
SG-2	Cis 1,2-DCE	ug/m^3	7	6	1	85.71%	0.16	0.16	0.28	0.63	0.51	0.79	0.2717	53.28%	Normal
SG-2	Methylene Chloride	ug/m^3	13	11	2	84.62%	0.69	0.69	0.42	1.24	2.453	11.3	3.018	123.05%	Lognormal
SG-2	PCE	ug/m^3	14	14	0	100.00%			0.34	2.55	5.061	24.3	7.222	142.69%	Lognormal
SG-2	TCE	ug/m^3	13	13	0	100.00%			2.74	6.4	6.411	11	2.168	33.81%	Normal
SG-2	Vinyl Chloride	ug/m^3	3	2	1	66.67%	0.1	0.1	0.41	0.41	0.29	0.41	0.2078	71.67%	NDD
SG-3	1,1-DCE	ug/m^3	5	4	1	80.00%	0.16	0.16	0.32	0.63	6.216	28	12.2	196.29%	Lognormal
SG-3	1,1,1-TCA	ug/m^3	14	14	0	100.00%			46	134	159.9	480	109.5	68.51%	Lognormal
SG-3	Carbon Tetrachloride	ug/m^3	11	8	3	72.73%	0.25	0.25	0.5	0.629	0.5839	1.26	0.3648	62.48%	Normal
SG-3	Cis 1,2-DCE	ug/m^3	7	6	1	85.71%	0.16	0.16	0.28	0.37	0.4657	0.79	0.2742	58.87%	Normal
SG-3	Methylene Chloride	ug/m^3	13	11	2	84.62%	0.69	0.69	0.31	1.6	1.788	5	1.449	81.08%	Normal
SG-3	PCE	ug/m^3	13	13	0	100.00%			146	501	518.3	1010	220.7	42.59%	Normal
SG-3	TCE	ug/m^3	14	11	3	78.57%	0.86	5.37	0.59	1.075	1.569	5.4	1.328	84.65%	Lognormal
SG-3	Vinyl Chloride	ug/m^3	3	2	1	66.67%	0.1	0.1	0.2	0.2	0.22	0.41	0.1808	82.20%	Normal

Notes
Data file input: MK Dataset_20200713DW.xlsx
Data date range: 2006-12-01 to 2020-01-01
Non-detects were substituted with a value of half the reporting limit for calculations
N: number of data points
Num ND: number of non-detected data points
Min RL: The minimum reporting limit value
Max RL: The maximum reporting limit value
SD: Standard Deviation
CV: Coefficient of Variation (standard deviation divided by the mean)
Normal: the data fit a normal distribution
Lognormal: the data fit a lognormal distribution
NDD: No discernible distribution

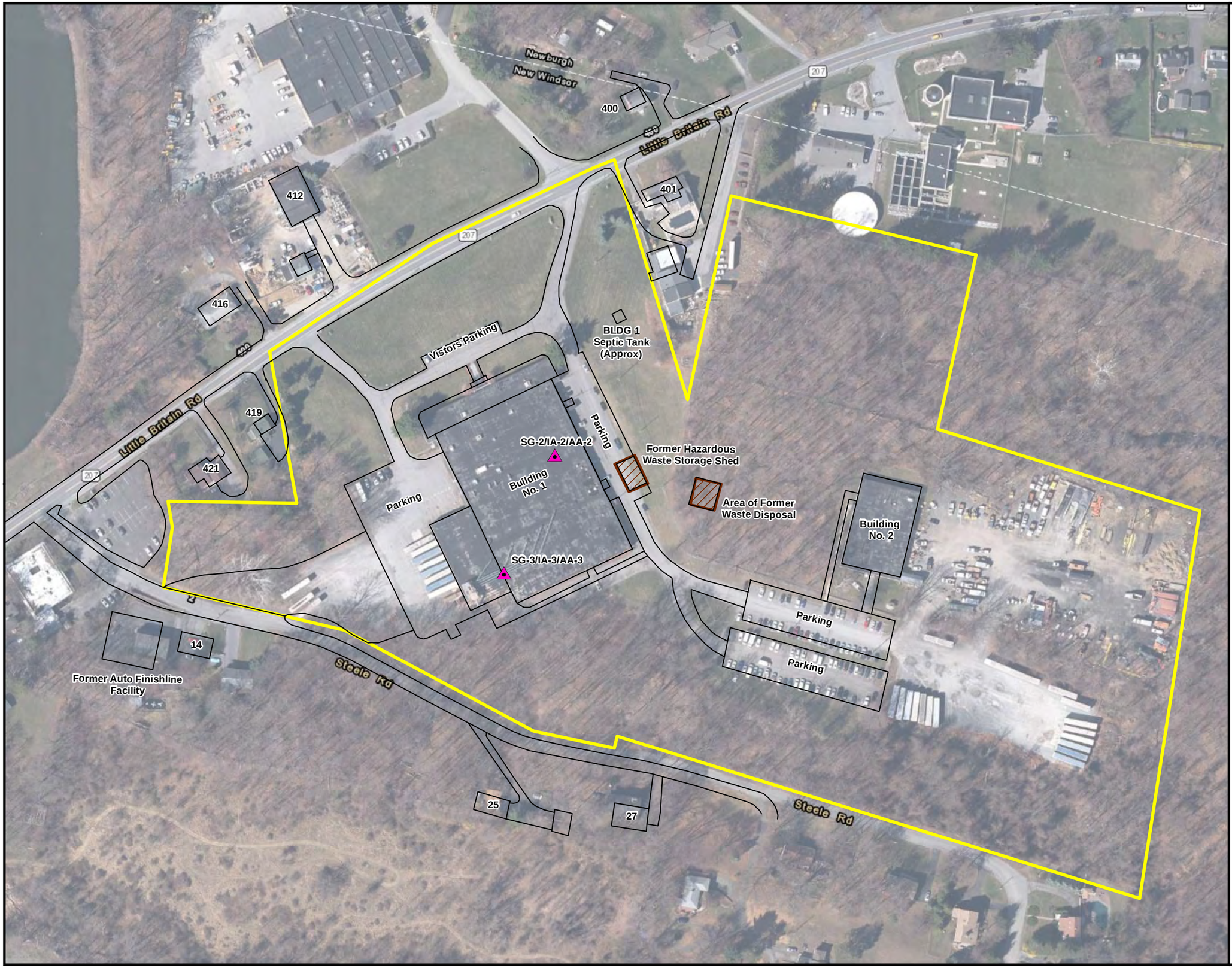
Table 15
Mann Kendall Test for Trends
Macbeth-Kollmorgan Corporate Site New Windsor, New York

Location	chemical_name	N	Num Detects	Percent Detects	Meet Data Reqs	p-value	tau2	tau	Trend
AA-02	1,1-DCE	4	1	25.00%	No				
AA-02	1,1,1-TCA	13	9	69.23%	Yes	<0.001	0.542	-0.736	Decreasing
AA-02	Carbon Tetrachloride	11	9	81.82%	Yes	0.432	0.035	-0.187	Stable
AA-02	Cis 1,2-DCE	7	4	57.14%	No				
AA-02	Methylene Chloride	13	13	100.00%	Yes	0.367	0.0421	-0.205	Stable
AA-02	PCE	13	11	84.62%	Yes	0.0864	0.132	-0.364	Stable
AA-02	TCE	13	11	84.62%	Yes	0.0138	0.277	-0.526	Decreasing
AA-02	Vinyl Chloride	3	0	0.00%	No				
AA-03	1,1-DCE	4	1	25.00%	No				
AA-03	1,1,1-TCA	13	9	69.23%	Yes	<0.001	0.542	-0.736	Decreasing
AA-03	Carbon Tetrachloride	11	8	72.73%	Yes	0.0394	0.246	-0.496	Decreasing
AA-03	Cis 1,2-DCE	7	5	71.43%	Yes	0.878	0.00251	0.0501	Stable
AA-03	Methylene Chloride	13	13	100.00%	Yes	0.0763	0.14	-0.374	Stable
AA-03	PCE	13	13	100.00%	Yes	0.126	0.104	-0.323	Stable
AA-03	TCE	13	12	92.31%	Yes	0.0848	0.136	-0.369	Stable
AA-03	Vinyl Chloride	3	0	0.00%	No				
SG-2	1,1-DCE	5	4	80.00%	No				
SG-2	1,1,1-TCA	14	14	100.00%	Yes	0.0617	0.148	0.385	Stable
SG-2	Carbon Tetrachloride	11	11	100.00%	Yes	0.183	0.0991	-0.315	Stable
SG-2	Cis 1,2-DCE	7	6	85.71%	Yes	0.878	0.00251	-0.0501	Stable
SG-2	Methylene Chloride	13	11	84.62%	Yes	0.178	0.0816	-0.286	Stable
SG-2	PCE	14	14	100.00%	Yes	0.0193	0.223	-0.473	Decreasing
SG-2	TCE	13	13	100.00%	Yes	0.806	0.0027	-0.052	Stable
SG-2	Vinyl Chloride	3	2	66.67%	No				
SG-3	1,1-DCE	5	4	80.00%	No				
SG-3	1,1,1-TCA	14	14	100.00%	Yes	<0.001	0.479	-0.692	Decreasing
SG-3	Carbon Tetrachloride	11	8	72.73%	Yes	0.133	0.129	-0.359	Stable
SG-3	Cis 1,2-DCE	7	6	85.71%	Yes	0.761	0.00952	-0.0976	Stable
SG-3	Methylene Chloride	13	11	84.62%	Yes	0.16	0.0881	-0.297	Stable
SG-3	PCE	13	13	100.00%	Yes	0.367	0.0421	-0.205	Stable
SG-3	TCE	14	11	78.57%	Yes	0.226	0.0604	-0.246	Stable
SG-3	Vinyl Chloride	3	2	66.67%	No				

Notes

Data file input: MK Dataset_20200713DW.xlsx
Data date range: 2006-12-01 to 2020-01-01
Non-detects were substituted with a value of zero for trend analysis
N: number of data points
Meet Data Reqs: trend tests were performed only if the dataset had >=5 detected values and >=50 percent detects.
tau2: tau^2, measure of linear model fit
tau: Kendall's tau statistic
p-value: A two-sided p-value describing the probability of the H0 being true (a=0.05)

FIGURES





Legend

- Sub-Slab/Indoor Sample Location
- Soil Excavation Area (1989 Investigation)
- Approximate Property Boundary

NOTES:

1. Aerial Imagery: ESRI World Imagery Reproduced under license in ArcGIS 10.7
2. Site layout provided by H2M Engineer

N

0 75 150 300 Feet

Figure 1
VI Sample Location Map
Former Macbeth/Kollmorgen
NYDEC Site No. 3-36-037
617 Little Britain Road
New Windsor, New York
May 2020

ERM

J:\Projects\Portvel_MXD\Figure1-VISampleLocationsMap_20191107.mxd - steven.vickery - 5/20/2020

APPENDIX A INDOOR AIR QUALITY AND PRODUCT INVENTORY, & SDS SHEETS

Product Inventory Photo Log






RUST-OLEUM
CORPORATION
11 Hawthorn Pkwy., Vernon Hills, IL
1-800-481-4785
rustoleum.com


Quick
COLOR
FAST DRYING
ALL PURPOSE
SPRAY ENAMEL
NET WT. 10 OZ. 283 g


ROC SALES INC.
11 Hawthorn Pkwy., Vernon Hills, IL 60061
Made in USA
M5735


BERNZOMATIC
FASTER HEAT TRANSFER THAN PROPANE!
MAP/Pro
PREMIUM TORCH FUEL
DANGER•PELIGRO
EXTREMELY FLAMMABLE
FIRE/EXPLOSION HAZARD
CONTENTS UNDER PRESSURE
CARBON MONOXIDE HAZARD
EXTREMADAMENTE INFLAMABLE
PELIGRO DE INCENDIO/EXPLOSION
CONTENIDO BAJO PRESION
PELIGRO DE MONOXIDO DE CARBONO
NET WEIGHT•PESO NETO 14.1 oz. / 400 g


Made in the USA with global components
Hecho en los EEUU a partir de componentes
de distintas partes del mundo
WORTHINGTON
©2014 Worthington
Cylinder Corporation
Columbus, Ohio 43085


WORK IT LIKE A PRO
BLASTER
SINCE 1957
INDUSTRIAL SIZE
• Rusted nuts, bolts, pipe threads, etc.
THE ORIGINAL NUT & BOLT BUSTER
BREAKS LOOSE FASTER
PB
POWERFUL RUST
PENETRATING
CATALYST
PART #128-PB 1 U.S. GALLON 3.8 LITERS


Klean Strip
Klean-Strip® Odorless Mineral Spirits
is a premium, highly refined solvent formula which effectively thins and blends well into oil-based paint, stain and varnish. It is very low odor and dries with no residue and is an excellent cleaner for brushes and equipment.
DIRECTIONS FOR USE:
IMPORTANT:
STORAGE:
DISPOSAL:
DANGER! HARMFUL OR FATAL IF SWALLOWED. EYE IRRITANT. COMBUSTIBLE!
barr.

3


Klean Strip
#1
Odorless
Mineral Spirits
DILUYENTE DE PETRÓLEO SIN OLOR
CLEANS UP INTERIOR JOBS
Thins Oil- based Paint, Stain & Varnish
Cleans Brushes, Equipment
& Paint Splatters
DANGER! HARMFUL OR FATAL IF SWALLOWED. EYE IRRITANT. COMBUSTIBLE.
ONE GALLON 3.785 LITERS
¡PELIGRO! NOCIVO O LETAL SI SE INGIERE. IRRITANTE DE LOS OJOS. COMBUSTIBLE.


RUST-OLEUM
INDUSTRIAL BRANDS


RUST-OLEUM
HIGH PERFORMANCE
Inverted Striping Paint
Pintura Para Rayar
Peinture de Lignage
Durable, Long-Lasting Stripes
Fast Drying


Zep
INDUSTRIAL PURPLE
DEGREASER
128


ZEP® CONCENTRATED INDUSTRIAL PURPLE DEGREASER & CLEANER
LIMPIADOR Y DESENGRASANTE CONCENTRADO INDUSTRIAL PURPLE DE ZEP®
Industrial settings create industrial levels of grease on machinery and surfaces. Pros know that the powerful solvents in Industrial Purple Degreaser & Cleaner destroy grease with a low-foaming, easy-to-rinse formula.
For use on: Heavy machinery, engine parts, construction equipment, fiberglass, unfinished concrete, masonry and asphalt
Not for use on: Painted surfaces, aluminum, brass, chrome, copper, marble, slate, granite, natural stone, wood and other alkaline sensitive surfaces as damage may occur
Spray/mop on surface
Wait 3-5 minutes
Wipe & Rinse
This concentrated product must be diluted as directed prior to use.
NOTE: Always test product in an inconspicuous area prior to use and allow to dry to determine compatibility.
Directions: LIGHT SOILS: Dilute 5 fl. oz. per gallon of water.
HEAVY SOILS: Dilute 20 fl. oz. per gallon of water.
Spray or apply to surface with mop or brush. Allow contact time of 3 - 5 minutes. Rinse thoroughly and allow to dry. Second applications may be required for some soils. Do not allow product to dry on surface before rinsing.
CONTAINS Sodium Hydroxide and 2-Butoxyethanol. Avoid contact with eyes, skin and mucous membranes. Avoid breathing vapors or spray mists. Use only with adequate ventilation. Wear safety goggles and chemical resistant gloves and shoes when handling. Overexposure to this product by inhalation or absorption can produce central nervous system depression resulting in headache, nausea, and/or dizziness. DO NOT swallow this product. Wash thoroughly after use.
MADE IN USA
FIRST AID: EYES: Immediately flush eyes with plenty of water for at least 15 minutes. Get medical attention immediately. SKIN: Flush skin with plenty of water. Get medical attention immediately. INHALATION: Get to fresh air. If irritation persists, get medical attention. INGESTION: DO NOT induce vomiting. If person is conscious, give plenty of water to drink. Get medical attention immediately.
HANDLING AND STORAGE: Keep container closed when not in use. Store in a cool, dry, well-ventilated place. Do not reuse empty container.
KEEP OUT OF REACH OF CHILDREN AND PETS.
FOR EMERGENCY MEDICAL ASSISTANCE, CALL YOUR LOCAL POISON CONTROL CENTER OR 1-877-541-2016.
*Si usted no lee inglés, no use este producto hasta que le etiqueta le haya sido explicada ampliamente.
ALSO TRY ZEP® HEAVY DUTY FOAMING CITRUS DEGREASER. IT CLINGS TO VERTICAL SURFACES FOR A DEEPER CLEAN ON HARD TO REACH AREAS.
ZEP® PRO TIP:
When cleaning oil stains from concrete floors, make sure to scrub the stain using a stiff bristle brush.


TAP
MAGIC
PRO TAP
PROFESSIONAL QUALITY
CUTTING FLUID
BIODEGRADABLE
Aluminum
Magnesium
Copper
Bronze
Brass
Titanium
Cobalt
Nickel
Cast Iron
CAUTION: CONTENTS UNDER PRESSURE
Net Wt. 12 oz. (340g)
Part No. 3001PPL


TAP MAGIC PROTAP
DIRECTIONS FOR USE
DRILLING
MILLING
THREADING
BROACHING
BORING
TURNING
TAPPING
SAWING
CAUTION
PHYSICIAN
KEEP OUT OF REACH OF CHILDREN
TRY OUR OTHER TAP MAGIC FORMULAS
The Steco Corporation
800-643-8026 • 501-375-5644
www.tapmagic.com


BLASTER
AIR
TOOL
LUBRICANT


BioClean5G


SUPER IMPROVED
NEW TECHNOLOGY
LIQUITEX BASIS INK
IN SECONDS
SUPER
BioClean5G
New generation chemical technology - The best just got better
DESCRIPTION:
Super BioClean 5G is specially formulated for cleaning of water based inks and soils from plates and rollers in print factories.
DIRECTIONS:
SUPER BIOCLEAN 5G
WARNING
SAFETY:
NFPA

Structure Sampling Questionnaire and Building Inventory

New York State Department of Environmental Conservation

Site Name: Former Macbeth Kollmorgen Corporate Site Site Code: 3-36-037 Operable Unit: 01

Building Code: Building Name:

Address: 617 Little Britain Rd Apt/Suite No:

City: New Windsor State: NY Zip: 12553 County: Orange

Contact Information

Preparer's Name: Daniel D'Arcy Phone No: (631)756-8900

Preparer's Affiliation: ERM Company Code: ERMLI

Purpose of Investigation: Annual VI Sampling Date of Inspection: 01/30/2020

Contact Name: Jack Barrata Affiliation: MANAGER

Phone No: (845) 565-9300 Alt. Phone No: Email: Jack@qualitycarton.com

Number of Occupants (total): Number of Children:

☐ Occupant Interviewed? ☒ Owner Occupied? ☒ Owner Interviewed?

Owner Name (if different): Owner Phone:

Owner Mailing Address:

Building Details

Bldg Type (Res/Com/Ind/Mixed): COMMERCIAL/MIXED Bldg Size (S/M/L): MEDIUM

If Commercial or Industrial Facility, Select Operations: MANUFACTURING

If Residential Select Structure Type:

Number of Floors: 1 Approx. Year Construction: 1936 ☒ Building Insulated? ☐ Attached Garage?

Describe Overall Building 'Tightness' and Airflows(e.g., results of smoke tests):

Foundation Description

Foundation Type: NO BASEMENT/SLAB Foundation Depth (bgs): Unit: FEET

Foundation Floor Material: POURED CONCRETE

Foundation Wall Material: CONCRETE BLOCK

Foundation Floor Thickness: Foundation Wall Thickness: Unit: INCHES

☒ Floor penetrations? Describe Floor Penetrations: Pits for cleaning

☐ Wall penetrations? Describe Wall Penetrations:

Basement is: Basement is: ☒ Sumps/Drains? Water In Sump?: NO

Describe Foundation Condition (cracks, seepage, etc.) : Small cracks in concrete floor.

☐ Radon Mitigation System Installed? ☐ VOC Mitigation System Installed? ☐ Mitigation System On?

Heating / Cooling / Ventilation Systems

Heating System: HOT WATER BASEBOARD Heat Fuel Type: GAS ☐ Central A/C Present?

Vented Appliances

Water Heater Fuel Type: Clothes Dryer Fuel Type:

Water Htr Vent Location: Dryer Vent Location:

Structure Sampling Questionnaire and Building Inventory

New York State Department of Environmental Conservation

PRODUCT INVENTORY

Building Name: _____ Bldg Code: _____ Date: _____

Bldg Address: 617 Little Britain Rd Apt/Suite No: _____

Bldg City/State/Zip: New Windsor NY, 12553

Make and Model of PID: Mini RAE 3000 Date of Calibration: _____

Location	Product Name/Description	Size (oz)	Condition *	Chemical Ingredients	PID Reading	COC Y/N?
A	SprayOn Silicone	10	U	See SDS	0.0	☐
A	Rustoleum Ultra Cover	12	U	See SDS	0.0	☐
A	TAP Magic	12	U	See SDS	0.0	☐
B	J. M. Fry Ink	5 gal	U/UO	See SDS	0.0	☐
C	3006-1500 Adhesive	Drum	U/UO	See SDS	0.0	☐
A	Quick Color Spray Paint	10	UO	See SDS	0.0	☐
A	Blaster Penetrating Catalyst	11oz / 1 g	U	See SDS	0.0	☐
B	Spec Melt Hot Melt Adhesive H	Boxes	U/UO	See SDS	**0.0**	☐
A	Odorless Mineral Spirits	1 gal	U	See SDS	0.0	☐
A	WD-40	1 Gal	U/UO	See SDS	0.0	☐
A	Oatley PVC Cement	8	U	See SDS	0.0	☐
A	Oatley PVC Clear Cleaner	8	U	See SDS	0.0	☐
A	Denatured Alcohol	1 gal	U	See SDS	0.0	☐
A	Mobil Almo 525 Air Tool Oil	32	U/UO	See SDS	0.0	☐
A	Mobil Grease XHP 222	14oz / 5g	U/UO	See SDS	0.0	☐
A	Viking Drill ultra S/P Lube	4	U	See SDS	0.0	☐

* 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.

Product Inventory Complete? Yes Were there any elevated PID readings taken on site? No ☐ Products with COC?

Structure Sampling Questionnaire and Building Inventory

New York State Department of Environmental Conservation

Site Name: Former Macbeth Kollmorgen Corporate Site Site Code: 3-36-037 Operable Unit: 01

Building Code: Building Name:

Address: 617 Little Britain Rd Apt/Suite No:

City: New Windsor State: NY Zip: 12553 County: Orange

Factors Affecting Indoor Air Quailty

Frequency Basement/Lowest Level is Occupied?: Floor Material: CEMENT

☐ Inhabited? ☐ HVAC System On? ☒ Bathroom Exhaust Fan? ☐ Kitchen Exhaust Fan?

Alternate Heat Source: NONE ☐ Is there smoking in the building?

☐ Air Fresheners? Description/Location of Air Freshener:

☒ Cleaning Products Used Recently?: Description of Cleaning Products: Janitorial

☐ Cosmetic Products Used Recently?: Description of Cosmetic Products:

☐ New Carpet or Furniture? Location of New Carpet/Furniture:

☐ Recent Dry Cleaning? Location of Recently Dry Cleaned Fabrics:

☐ Recent Painting/Staining? Location of New Painting:

☐ Solvent or Chemical Odors? Describe Odors (if any):

☒ Do Any Occupants Use Solvents At Work? If So, List Solvents Used: For Equipment Maintenance- See Inventory

☐ Recent Pesticide/Rodenticide? Description of Last Use:

Describe Any Household Activities (chemical use,/storage, unvented appliances, hobbies, etc.) That May Affect Indoor Air Quality:

Janitorial Products used on bathrooms. Solvents stored on site and used for equipment maintenance as needed.

☐ Any Prior Testing For Radon? If So, When?:

☐ Any Prior Testing For VOCs? If So, When?:

Sampling Conditions

Weather Conditions: PARTLY CLOUDY Outdoor Temperature: 28 °F

Current Building Use: MANUFACTURING Barometric Pressure: 29.82 in(hg)

Product Inventory Complete? Yes ☐ Building Questionnaire Completed?

Structure Sampling Questionnaire and Building Inventory

New York State Department of Environmental Conservation

Building Code: _____ Address: 617 Little Britain Rd New Windsor, NY 12553

Sampling Information

Sampler Name(s): Daniel D'Arcy

Sampler Company Code: ERMLI

Sample Collection Date: 01/30/2020

Date Samples Sent To Lab: 01/31/2020

Sample Chain of Custody Number: TM-012222-184

Outdoor Air Sample Location ID:

SUMMA Canister Information

Sample ID:	SG-2-013020	AA-2-013020	SG-3-013020	AA-3-013020	
Location Code:	SG-2	AA-2	SG-3	AA-3	
Location Type:	SUBSLAB	FIRST FLOOR	SUBSLAB	FIRST FLOOR	
Canister ID:	A993	A1050	A369	A892	
Regulator ID:	MC233	FC123	FC686	FC133	
Matrix:	Subslab Soil Vap	Indoor Air	Subslab Soil	Indoor Air	
Sampling Method:	SUMMA AIR SAMPLI	SUMMA AIR SA	SUMMA AIR SA	SUMMA AIR SA	

Sampling Area Info

Slab Thickness (inches):					
Sub-Slab Material:					
Sub-Slab Moisture:					
Seal Type:	UNKNOWN		UNKNOWN		
Seal Adequate?:	☒	☐	☒	☐	☐

Sample Times and Vacuum Readings

Sample Start Date/Time:	01/30/2020 9:40	01/30/2020 9	01/30/2020 9	01/30/2020 9	
Vacuum Gauge Start:	30.5	28	30	32	
Sample End Date/Time:	01/30/2020 17:4	01/30/2020 1	01/30/2020 1	01/30/2020 1	
Vacuum Gauge End:	10.5	10.5	9	11	
Sample Duration (hrs):	8	8	8	8	
Vacuum Gauge Unit:	in(hg)	in(hg)	in(hg)	in(hg)	

Sample QA/QC Readings

Vapor Port Purge:	☒	☐	☒	☐	☐
Purge PID Reading:	0.2		0.2		
Purge PID Unit:	ppm		ppm		
Tracer Test Pass:	☒	☐	☒	☐	☐

Sample start and end times should be entered using the following format: MM/DD/YYYY HH:MM

Structure Sampling Questionnaire and Building Inventory

New York State Department of Environmental Conservation

LOWEST BUILDING LEVEL LAYOUT SKETCH

Please click the box with the blue border below to upload a sketch of the lowest building level .
The sketch should be in a standard image format (.jpg, .png, .tiff)

Clear Image

Design Sketch

Design Sketch Guidelines and Recommended Symbology

- Identify and label the locations of all sub-slab, indoor air, and outdoor air samples on the layout sketch.
- Measure the distance of all sample locations from identifiable features, and include on the layout sketch.
- Identify room use (bedroom, living room, den, kitchen, etc.) on the layout sket
- Identify the locations of the following features on the layout sketch, using the appropriate symbols:

B or **F**	Boiler or Furnace	o	Other floor or wall penetrations (label appropriately)
HW	Hot Water Heater	**xxxxxxx**	Perimeter Drains (draw inside or outside outer walls as appropriate)
FP	Fireplaces	**######**	Areas of broken-up concrete
WS	Wood Stoves	● SS-1	Location & label of sub-slab samples
W/D	Washer / Dryer	● IA-1	Location & label of indoor air samples
S	Sumps	● OA-1	Location & label of outdoor air samples
@	Floor Drains	● PFET-1	Location and label of any pressure field test holes.

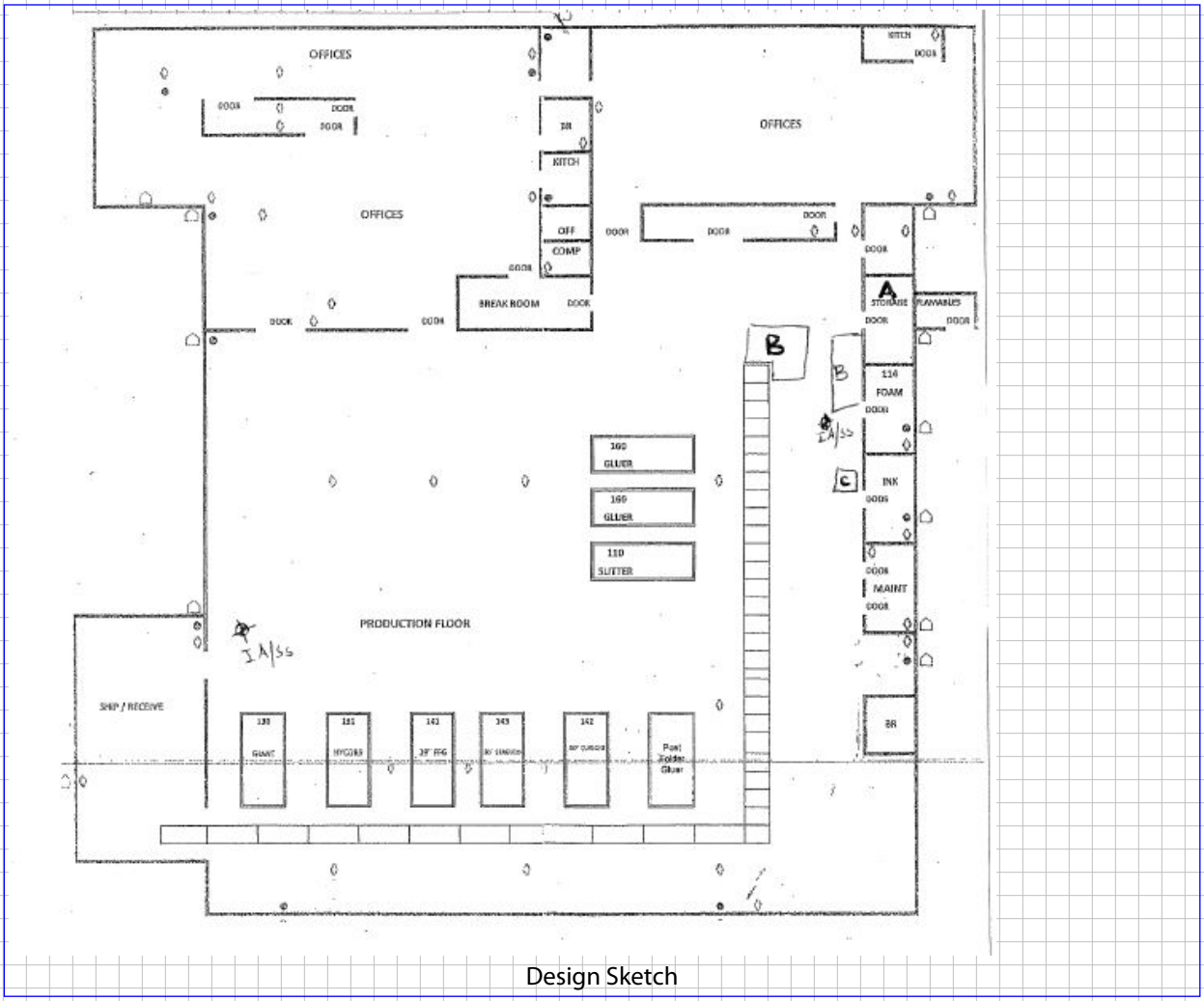
Structure Sampling Questionnaire and Building Inventory

New York State Department of Environmental Conservation

FIRST FLOOR BUILDING LAYOUT SKETCH

Please click the box with the blue border below to upload a sketch of the first floor of the building.
The sketch should be in a standard image format (.jpg, .png, .tiff)

Clear Image



Design Sketch

Design Sketch Guidelines and Recommended Symbology

- Identify and label the locations of all sub-slab, indoor air, and outdoor air samples on the layout sketch.
- Measure the distance of all sample locations from identifiable features, and include on the layout sketch.
- Identify room use (bedroom, living room, den, kitchen, etc.) on the layout sketch
- Identify the locations of the following features on the layout sketch, using the appropriate symbols:

B or **F**	Boiler or Furnace	o	Other floor or wall penetrations (label appropriately)
HW	Hot Water Heater	**xxxxxxx**	Perimeter Drains (draw inside or outside outer walls as appropriate)
FP	Fireplaces	**######**	Areas of broken-up concrete
WS	Wood Stoves	● SS-1	Location & label of sub-slab samples
W/D	Washer / Dryer	● IA-1	Location & label of indoor air samples
S	Sumps	● OA-1	Location & label of outdoor air samples
@	Floor Drains	● PFET-1	Location and label of any pressure field test holes.

Structure Sampling Questionnaire and Building Inventory

New York State Department of Environmental Conservation

OUTDOOR PLOT LAYOUT SKETCH

Please click the box with the blue border below to upload a sketch of the outdoor plot of the building as well as the surrounding area. The sketch should be in a standard image format (.jpg, .png, .tiff)

Clear Image

Design Sketch

Design Sketch Guidelines and Recommended Symbology

- Identify and label the locations of all sub-slab, indoor air, and outdoor air samples on the layout sketch.
- Measure the distance of all sample locations from identifiable features, and include on the layout sketch.
- Identify room use (bedroom, living room, den, kitchen, etc.) on the layout sket
- Identify the locations of the following features on the layout sketch, using the appropriate symbols:

B or **F**	Boiler or Furnace	o	Other floor or wall penetrations (label appropriately)
HW	Hot Water Heater	**xxxxxxx**	Perimeter Drains (draw inside or outside outer walls as appropriate)
FP	Fireplaces	**######**	Areas of broken-up concrete
WS	Wood Stoves	● SS-1	Location & label of sub-slab samples
W/D	Washer / Dryer	● IA-1	Location & label of indoor air samples
S	Sumps	● OA-1	Location & label of outdoor air samples
@	Floor Drains	● PFET-1	Location and label of any pressure field test holes.



1. Company and Product Identification

1.1	Identification – Product Name:	**Super Bioclean 5G**
1.2	Other means of identification	NA
	Synonym:	NA
1.3	Recommended Use Of The Chemical and Restrictions On Use:	Cleaning agent
1.4	Name, Address, And Telephone Number Of The Manufacturer, Or Other Responsible Party:	**Clean Print Chemicals**
		1590 N. Roberts Rd #201 Kennesaw, GA 30144
	Competent Person email address	NA
1.5	24 Hour Emergency No.:	770-425-3353 800-222-1222 (24-Hr, CHEMTREC)

2. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW: This product is a clear, green liquid with pine odor. Repeated exposure may cause skin dryness or cracking or minor irritation. The product is not flammable. Depending on the duration of over-exposure, breathing vapors may headache or dizziness, respiratory tract irritation. Thermal decomposition of this product may produce irritating vapors and toxic gases (e.g. carbon monoxide and carbon dioxide). Emergency responders must wear personal protective equipment (and have appropriate fire-extinguishing protection) suitable for the situation to which they are responding.

Physical Hazards Summary	Not classifiable
Potential Health Hazards Summary	Skin irritation, Category 2 Serious eye irritation, Category 2A
Potential Ecological Effects Summary	Not classifiable

2.1	Classification Of Product	
	U.S. OSHA classification	Skin irritation, Category 2 Serious eye irritation, Category 2A
	Classification as per EC 1272/2008 (CLP/GHS)	Skin irritation, Category 2 Serious eye irritation, Category 2
	Hazardous Materials Information System (HMIS) Rating	**Health** 1 **Flammability** 0 **Physical Hazard** 0 **Protective Equipment** C

		Chronic Health Hazard	
2.2	Label Elements OSHA/GHS		
	Signal Word	**WARNING**	
	Hazard Statements	H315 H319	Causes skin irritation Causes serious eye irritation
	Precautionary Statements: Prevention	P264 P280	Wash thoroughly after handling Wear protective gloves/protective clothing/eye protection/face protection
	Precautionary Statements: Response	P305+P351+P338+P310 P337+P313 P302+P352 P321 P363	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 advice/attention IF ON SKIN wash with soap and water Specific treatment: See first aid section on this SDS Wash contaminated clothing before reuse
	Precautionary statements: Storage		
	Precautionary Statements: Disposal	P501	Dispose of contents/container in accordance with all federal, state and local regulation
	Hazard pictograms		
2.3	Unclassified Hazards	None	
2.4	Ingredients with unknown acute toxicity	None	

3. COMPOSITION and INFORMATION ON INGREDIENTS

Chemical name **CAS #** **EINECS #**	**% w/w**	**US OSHA**	**GHS/EU CLP**
Proprietary blend of surfactants, fragrances and enzymes	<10%	Flammable liquid, Category 3 Acute toxicity, Oral, Category 4 Acute toxicity, Inhal, Category 4 Acute toxicity, Dermal, Category 4 Skin irritation, Category 2 Eye irritation, Category 2A Aspiration toxicity, Category 1 Acute aquatic toxicity, Category 2 Chronic aquatic toxicity, Category 2 Respiratory sensitization , Category 1	Flammable liquid, Category 3 (H226) Acute toxicity, Oral, Category 4 (H302) Acute toxicity, Inhal, Category 4 (H332) Acute toxicity, Dermal, Category 4 (H312) Skin irritation, Category 2 (H315) Eye irritation, Category 2 (H319) Aspiration toxicity, Category 1 (H304) Acute aquatic toxicity, Category 2 (H401) Chronic aquatic toxicity, Category 2 (H411) Respiratory sensitization, Category 1 (H334)
Proprietary blend of solvents	<20%	Flammable liquid, Category 4 Acute toxicity, Oral, Category 4 Acute toxicity, Inhal, Category 4 Acute toxicity, Dermal, Category 4 Skin irritation, Category 2 Eye irritation, Category 2A	Acute toxicity, Oral, Category 4 (H302) Acute toxicity, Inhal, Category 4 (H332) Acute toxicity, Dermal, Category 4 (H312) Skin irritation, Category 2 (H315) Eye irritation, Category 2 (H319)
Ethanolamine (CAS 9007-33-4)	<5%	Flammable liquid, Category 4 Acute toxicity, Oral, Category 4	Acute toxicity, Oral, Category 4 (H302) Acute toxicity, Inhal, Category 4 (H332)

		Acute toxicity, Inhal, Category 4 Acute toxicity, Dermal, Category 4 Skin corrosion, Category 1 Serious eye damage, Category 1 Specific target organ toxicity, Single exposure (Resp), Category 3 Acute aquatic toxicity, Category 2 Chronic aquatic toxicity, Category 3	Acute toxicity, Dermal, Category 4 (H312) Skin corrosion, Category 1 (H314) Serious eye damage, Category 1 (H318) Specific target organ toxicity, Single exposure (Resp), Category 3 (H335) Acute aquatic toxicity, Category 2 (H401) Chronic aquatic toxicity, Category 3 (H412)
Water	Bulk	Not classifiable	Not classifiable

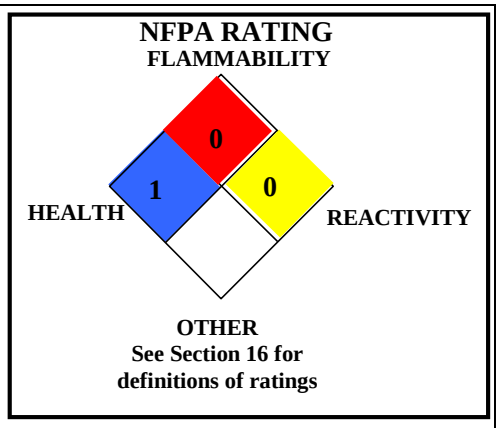
See Section 16 for Definitions of Terms Used.

The manufacturer claims Trade Secret Information as defined in 29CFR1910.1200 Appendix E and 29CFR1910.1200(i). All hazards have been accounted for in this product's hazard classification.

4. FIRST-AID MEASURES

4.1	Description of Necessary Measures	
	Skin exposure:	If this product contaminates the skin, immediately begin decontamination with running water. Remove exposed or contaminated clothing, taking care not to contaminate eyes. Victim should seek immediate medical attention if any adverse exposure symptoms develop or irritation persists.
	Eye exposure:	If this product enters the eyes, open victim's eyes while under gently running water. Use sufficient force to open eyelids. Have victim "roll" eyes. Minimum flushing is for 15 minutes. Seek medical attention immediately.
	Inhalation:	If this product is inhaled, remove victim to fresh air and place in a position comfortable for breathing. If necessary, use artificial respiration to support vital functions. Remove or cover gross contamination to avoid exposure to rescuers.
	Ingestion:	If this product is swallowed, CALL POISION CENTER or PHYSICIAN FOR MOST CURRENT INFORMATION. DO NOT INDUCE VOMITING. Have victim rinse mouth with water, if conscious. Never induce vomiting or give a diluent (e.g., water) to someone who is unconscious, having convulsions, or unable to swallow. If contaminated individual is convulsing, maintain an open airway and obtain immediate medical attention.
4.2	Most Important Symptoms/Effects:	Immediate: Symptoms of skin and eye contact may include redness and irritation. Ingestion may cause stomach pains, cramps, and gastritis. Delayed: Prolonged or repeated skin overexposure to this product may cause dermatitis (dry, red skin).
4.3	Indication Of Immediate Medical Attention And Special Treatment Needed, If Necessary:	None known. **TARGET ORGANS:** Acute: Eyes and Skin
Victims of chemical exposure must be taken for medical attention if any adverse effects occur. Rescuers should be taken for medical attention if necessary. Take a copy of label and SDS to physician or health professional with victim.		

5. FIRE-FIGHTING MEASURES

	Flammable properties	Not classifiable as flammable 
		Flash Point °C (°F): > 200 °F (> 93.3 °C)
		Autoignition Temperature °C (°F): Not evaluated
		Flammable Limits (in air by volume, %): Not evaluated
5.1	Suitable And Unsuitable Extinguishing Media:	This material should not contribute to the intensity of a fire. Use extinguishing material suitable for ordinary combustibles. Water spray YES Carbon dioxide YES Foam YES Dry chemical YES Halon YES Other
5.2	Specific Hazards Arising From Chemical:	When involved in a fire, this material may decompose and produce irritating fumes and toxic gases (e.g., carbon monoxide, carbon dioxide) Explosion Sensitivity to Mechanical Impact: None. Explosion Sensitivity to Static Discharge: Vapors are not expected to ignite
5.3	Special Protective Equipment And Precautions For Fire-Fighters:	Incipient fire responders should wear eye protection. Structural firefighters must wear Self-Contained Breathing Apparatus and full protective equipment. Move containers from fire area if it can be done without risk to personnel. If possible, prevent runoff water from entering storm drains, bodies of water, or other environmentally sensitive areas.

6. ACCIDENTAL RELEASE MEASURES

6.1	Personal Precautions	Uncontrolled releases should be responded to only by trained personnel using pre-planned procedures. Proper protective equipment should be used. In case of a spill, clear the affected area and protect people.
	Protective equipment	For small releases (< 20 liters, 5 gallons), clean up spilled liquid wearing gloves, goggles, face shield, and suitable body protection. Absorb with earth, sand or other non-combustible material and transfer to containers for proper disposal. The minimum Personal Protective Equipment recommended for response to non-incidental releases (more than 20 liters or 5 gallons) should be: triple-gloves (neoprene gloves over nitrile gloves), chemical resistant suit and boots. Prevent further leak/release if it is safe to do so. Do not let the product enter drains.
	Emergency procedures	Eliminate all ignition sources. Stop leak if you can do so without risk.
6.2	Methods and Materials for Containment and Cleaning Up	Use absorbent material for cleaning up spills. Collect spilled material for proper disposal. Decontaminate the area thoroughly. Place all spill residues in a suitable container. Dispose of in accordance with applicable U.S. Federal,

		State, or local procedures, or appropriate local standards (see Section 13, Disposal Considerations).

7. HANDLING and STORAGE

7.1	Precautions for Safe Handling	All employees who handle this material should be trained to handle it safely. Open containers carefully on a stable surface. Ensure all connections are tight before transfer. Empty containers may contain residual liquid; therefore, empty containers should be handled with care. Keep away from ignition sources; no smoking. As with all chemicals, avoid getting this product ON YOU or IN YOU. Wash thoroughly after handling this product. Do not eat or drink while handling this material. Remove contaminated clothing promptly. During equipment maintenance follow practices indicated in Section 6 (Accidental Release Measures) to decontaminate equipment or clean-up small spills. Make certain that application equipment is locked and tagged-out safely if necessary. Collect all rinsates and residual material and dispose of according to applicable U.S. Federal, State, or local procedures or appropriate local standards.
7.2	Conditions For Safe Storage	Keep containers tightly closed. Store individual containers out of direct sunlight. Tanks should be stored away from intense heat or direct sunlight. Avoid freezing. Store away from incompatible materials. Storage and use areas should be covered with impervious materials. Keep container tightly closed when not in use. If appropriate, post warning signs in storage and use areas. Inspect all incoming containers before storage, to ensure containers are properly labeled and not damaged.
	Incompatibilities	Oxidizers, strong oxidizing acids.

8. EXPOSURE CONTROLS - PERSONAL PROTECTION

8.1 Control Parameters

CHEMICAL NAME	CAS #	% w/w	EXPOSURE LIMITS IN AIR					
			ACGIH-TLV		OSHA-PEL (NIOSH)			OTHER
			TWA ppm	STEL ppm	TWA ppm	STEL ppm	IDLH ppm	ppm
Proprietary blend of surfactants, fragrances and enzymes	NA	<10%	NA	NA	NA(NA)	NA(NA)	NA	
Proprietary blend of solvents	NA	<20%	NA	NA	NA(NA)	NA(NA)	NA	
Ethanolamine	9007-33-4	<5%	3	6	3(3)	NA(6)	NA	
No occupational exposure limits have been established for this product. Efforts should be made to limit exposure to prevent injury			None of the other components contribute significant additional hazards at the concentration present in this product. All pertinent hazard information has been provided in this document, per the requirements of the Federal Occupational Safety and Health Administration Standard (29 CFR 1910.1200), U.S. State equivalent Standards and Canadian Workplace Hazardous Materials Identification System Standards (CPR 4).					

8.2	Appropriate Engineering Controls.	Use with adequate ventilation to ensure exposure levels are maintained below the limits provided in this Section or as low as reasonably achievable. Ensure eyewash/safety shower stations are available near areas where this product is used.
8.3	Personal Protective Equipment Respiratory protection:	None needed under normal conditions of use. Use NIOSH approved respirators if ventilation is inadequate to control mists or vapor. If respiratory protection is needed, use only protection authorized in the U.S. Federal OSHA Standard (29 CFR 1910.134), applicable U.S. State regulations, or the applicable local standards. Oxygen levels below 19.5% are considered IDLH by OSHA. In such atmospheres, use of a full-face piece pressure/demand SCBA or a full-face piece, supplied air respirator with auxiliary self-contained air supply is required under OSHA's Respiratory Protection Standard (29 CFR 1910.134-1998).
	Eye protection:	Use approved safety goggles or safety glasses, as described in OSHA 29 CFR 1910.133. Splash goggles with a face shield may be needed if splash hazards exist.

	Hand protection:	Wear chemical impervious gloves (e.g., Solvex™, Neoprene, Nitrile).
	Body protection:	None normally needed. If needed, use body protection appropriate for task (e.g., Tyvek suit, rubber apron) to protect from splashes and sprays. Nomex coveralls are recommended for handling bulk product.

9. PHYSICAL and CHEMICAL PROPERTIES

Appearance	This product is a clear, green liquid.		
Odor	Pine-like	Odor Threshold	NE
Melting Point °C (°F)	Not evaluated	pH	11
Initial Boiling Point °C (°F)	179 °C (354 °F)	Boiling Point Range °C (°F)	Not evaluated
Flammability	Not flammable	Evaporation Rate (n-butyl acetate = 1)	Not evaluated
Vapor Density (air = 1)	Not evaluated	Vapor Pressure mm Hg @ 20°C:	Not evaluated
Solubility (in water)	Soluble	Relative density (water = 1)	1.0
Viscosity	Not evaluated	Oil-Water Partition Coefficient	NE
VOC	6.2g/L (0.052lb/gal)	HAP	5.1g/L (0.042lb/gal)
How To Detect This Substance (Warning Properties):	Pine like odor.		

10. STABILITY and REACTIVITY

10.1	Reactivity	Not considered reactive.
10.2	Chemical Stability	Stable under normal use and storage.
10.3	Possibility of hazardous reactions	Hazardous polymerization will not occur.
10.4	Conditions to avoid	Avoid mixing with incompatible materials.
10.5	Incompatible Materials	Strong oxidizers, Strong acids.
10.6	Hazardous Decomposition Products	Thermal decomposition of this product may generate carbon monoxide and carbon dioxide.

11. TOXICOLOGICAL INFORMATION

11.1 Toxicology Information

Note: This product has not been evaluated for its toxicity as a whole.

Component	Oral LD_{50} (mg/kg)	Dermal LD_{50} (mg/kg)	Inhalation LC_{50} (mg/m^3)	Skin Irritation	Serious eye damage
Proprietary blend of surfactants, fragrances and enzymes	No data available	No data available	No data available	YES	Irritation
Proprietary blend of solvents	No data available	No data available	No data available	YES	Irritation
Ethanolamine	1089 mg/kg (Rat)	1015 mg/kg (Rabbit)	No data available	YES	YES

11.2: Carcinogenicity (IARC, ACGIH, NTP, OSHA)

None of the components are listed as carcinogenic by IARC, ACGIH, NTP or OSHA

11.3: Reproductive toxicity:

None of the components of this product are listed as reproductive toxins on the California Proposition 65 List.

12. ECOLOGICAL INFORMATION

ALL WORK PRACTICES MUST BE AIMED AT ELIMINATING ENVIRONMENTAL CONTAMINATION.

12.1 Ecological Information

Note: This product has not been evaluated for its ecologic impact as a whole.

Component	Toxicity to fish	Toxicity to daphnia	Bioaccumulation	Solubility	Biodegradability
Proprietary blend of surfactants, fragrances and enzymes	No data available	No data available	No data available	No data available	Readily biodegradable
Proprietary blend of solvents	No data available	No data available	Not expected	Soluble	Readily biodegradable
Ethanolamine	150 mg/L (LC50, 96 hr, carp)	65 mg/L (EC 50, 48 hr)	No data available	Soluble	Readily biodegradable

12.2	Persistence and Degradability	This product is expected to be readily biodegradable
12.3	Bioaccumulative Potential	This product is not expected to bioaccumulate
12.4	Mobility in Soil	When spilled onto soil, this product is expected to evaporate slowly.
12.5	Other Adverse Ecological Effects	This product may be harmful to aquatic life if large volumes of it are released into an aquatic environment.

13. DISPOSAL CONSIDERATIONS

	Preparing Wastes of this Product for Disposal	Waste disposal must be in accordance with appropriate U.S. Federal, State, and local regulations or with local regulations.
	Disposal of Contaminated Packaging	Cleaned containers can be recycled or disposed of as non-contaminated waste, if authorized by your local authorities. Dispose of containers as required by local regulations.
	U.S. EPA Waste Number	D002

14. TRANSPORT INFORMATION

THIS MATERIAL IS HAZARDOUS AS DEFINED BY 49 CFR 172.101 BY THE U.S. DEPARTMENT OF TRANSPORTATION.
ALWAYS CONSULT LATEST REGULATIONS PRIOR TO SHIPPING FOR CHANGES!

US Domestic

14.1	UN Number	Not dangerous goods
14.2	UN Proper Shipping Name	
14.3	Transport Hazard Class(es)	
	Transport label(s) required	
14.4	Packing Group	
14.5	Marine Pollutant	
	NA Emergency Response Guide Number (2012)	
	Reportable Quantity (RQ)	

International Air Transport Association

14.6	UN Number	Not dangerous goods
	UN Proper Shipping Name	
	Transport Hazard Class(es)	
	Transport label(s) required	
	Packing Group	
	Marine Pollutant	
	Packaging Instructions	

International Maritime Organization

14.7	UN Number	Not dangerous goods
	UN Proper Shipping Name	
	Transport Hazard Class(es)	
	Transport label(s) required	
	Packing Group	
	Marine Pollutant	
	NA Emergency Response Guide Number (2012)	

15. SAFETY, HEALTH and ENVIRONMENTAL REGULATIONS SPECIFIC FOR THE PRODUCT

PROGRAM	Super Bioclean 5G
Clean Air Act Hazardous Air Pollutants	NO
Safe Drinking Water Act	NO
RCRA F, K, P, U or D-lists	NO
SARA 302 EHS RQ	NO
SARA 302 EHS TPQ	NO
CERCLA RQ (lbs)	NO
SARA 313 LISTED	NO
SARA 311/312 ACUTE	YES
SARA 311/312 CHRONIC	NO
SARA 311/312 FIRE	NO

SARA 311/312 PRESSURE	NO
SARA 311/312 REACTIVITY	NO
EPA EXTREMELY HAZARDOUS SUBSTANCE	NO
PEL	NO
PSM	NO
DHS CFATS STQ (Flammable Release)	NO
DEA Controlled Substances	NO
DSL	NOTE 1
NDSL	NOTE 1
REACH Pre-registered List	NOTE 1
TSCA (Public)	NOTE 1
European Inventory of Existing Commercial Chemical Substances (EINECS)	NO
EU No-Longer Polymers List (NLP)	NO
EEC Classification Packaging, and Labeling of Dangerous Substances(Annex 1)	YES
Philippines	NE
Japan	NE
Australia	NOTE 2
Korea	NE
China	NE
New Zealand Inventory of Chemicals	NE

NOTE 1: Some components of this product are listed in the Canadian DSL/NDSL, REACH and US TSCA publicly available list.
NOTE 2: Not hazardous under NOHSC: 1008(2004), 3rd Edition.

16. OTHER INFORMATION

16.1	Original Preparation	14 November 2016
16.2	**Revision History**	**1.0: 14 February 2017**
16.3	Prepared by	Christopher Bright 2/530 Boundary Road Derrimut
16.4	Date of Printing	February 16, 2017

DEFINITIONS OF TERMS

16.5	A large number of abbreviations and acronyms appear on a MSDS. Some of these which are commonly used include the following:	
	Section 2	**GHS**: Global Harmonization System **OSHA:** U.S. Occupational Safety and Health Administration. **CLP**: Classification and Packaging **WHMIS**: Workplace Hazardous Materials Information System **STOT**: Specific Target Organ Toxicity
	Section 3	**CAS #:** Chemical Abstract Service index number **EINECS #:** European Chemical Substances Information System index number
	Section 5	**NFPA:** Nation Fire Protection Association **Health Hazard: 0** (material that on exposure under fire conditions would offer no hazard beyond that of ordinary combustible materials); **1** (materials that on exposure under fire conditions could cause irritation or minor residual injury); **2** (materials that

		on intense or continued exposure under fire conditions could cause temporary incapacitation or possible residual injury); **3** (materials that can on short exposure could cause serious temporary or residual injury); **4** (materials that under very short exposure could cause death or major residual injury). **Flammability Hazard** **Reactivity Hazard:** Refer to definitions for "Hazardous Materials Identification System". **Flash Point**: Minimum temperature at which a liquid gives off sufficient vapors to form an ignitable mixture with air. **Autoignition Temperature:** The minimum temperature required to initiate combustion in air with no other source of ignition. **LEL:** The lowest percent of vapor in air, by volume, that will explode or ignite in the presence of an ignition source. **UEL**: The highest percent of vapor in air, by volume, that will explode or ignite in the presence of an ignition source.
	Section 8	**ACGIH** - American Conference of Governmental Industrial Hygienists, a professional association which establishes exposure limits. **TLV** - Threshold Limit Value - an airborne concentration of a substance which represents conditions under which it is generally believed that nearly all workers may be repeatedly exposed without adverse effect. The duration must be considered, including the 8-hour Time Weighted Average **(TWA)**, the 15-minute Short Term Exposure Limit, and the instantaneous Ceiling Level **(C)**. Skin absorption effects must also be considered **PEL** - Permissible Exposure Limit - This exposure value means exactly the same as a TLV, except that it is enforceable by OSHA. The OSHA Permissible Exposure Limits are based in the 1989 PELs and the June, 1993 Air Contaminants Rule (Federal Register: 58: 35338-35351 and 58: 40191). Both the current PELs and the vacated PELs are indicated. The phrase, "Vacated 1989 PEL," is placed next to the PEL which was vacated by Court Order. **IDLH** - Immediately Dangerous to Life and Health - This level represents a concentration from which one can escape within 30-minutes without suffering escape-preventing or permanent injury. **The DFG - MAK** is the Republic of Germany's Maximum Exposure Level, similar to the U.S. PEL. **NIOSH** is the National Institute of Occupational Safety and Health, which is the research arm of the U.S. **O**ccupational **S**afety and **H**ealth **A**dministration (**OSHA**). NIOSH issues exposure guidelines called **R**ecommended **E**xposure **L**evels (**REL**s). When no exposure guidelines are established, an entry of **NE (Not Established)** is made for reference.
	Section 11	**LD_{50}** : Lethal Dose (solids & liquids) which kills 50% of the exposed animals; **LC_{50}** : Lethal Concentration (gases) which kills 50% of the exposed animals; **ppm:** Concentration expressed in parts of material per million parts of air or water; **mg/m^3** : Concentration expressed in weight of substance per volume of air; **mg/kg:** Quantity of material, by weight, administered to a test subject, based on their body weight in kg **IARC** - the International Agency for Research on Cancer; **NTP** - the National Toxicology Program, **RTECS** - the Registry of Toxic Effects of Chemical Substances, **OSHA** and **CAL/OSHA**. IARC and NTP rate chemicals on a scale of decreasing potential to cause human cancer with rankings from 1 to 4. Subrankings (2A, 2B, etc.) are also used. **TDLo**, the lowest dose to cause a symptom and **TCLo** the lowest concentration to cause a symptom; **TDo**, **LDLo**, and **LDo**, or **TC**, **TCo**, **LCLo**, and **LCo**, the lowest dose (or concentration) to cause lethal or toxic effects. **BEI** - Biological Exposure Indices, represent the levels of determinants which are most likely to be observed in specimens collected from a healthy worker who has been exposed to chemicals to the same extent as a worker with inhalation exposure to the TLV.
	Section 12	**LC_{50}:** The lowest concentration in water which kills 50% of the test subjects. **EC_{50}:** The Effect Concentration in water at which 50% of the test species if affected.
	Section 13	**US EPA Hazardous Waste Codes**: refer to 40 CFR 261.20
	Section 14	**DOT**: US Department of Transportation **IATA**: International Air Transport Association **IMO**: International Maritime Organization **MARPOL:** International Convention for the Prevention of Pollution From Ships, 1973 as modified by the Protocol of 1978 **IBC Code** : Merchant Shipping Code
	Section 15	**RCRA**: US Resource Conservation and Recovery Act **SARA:** US Superfund Amendments and Reauthorization Act **PSM**: US OSHA Process Safety Management **CFATS:** US Department of Homeland Security Chemical Facility Anti-terrorism Standard **DSL:** Canadian Domestic Substances List **NDSL:** Canadian Non-Domestic Substances List **REACH**: European Registration, Evaluation, Authorization and Restriction of Chemicals list **TSCA:** US Toxic Substances Control Act

H Phrases

H225: Highly flammable liquid and vapor

H226: Flammable liquid and vapor

H304: May be fatal if swallowed and enters airways

H314: Causes severe skin burns and eye damage

H315: Causes skin irritation

H317: May cause an allergic skin reaction

H318: Causes serious eye damage

H335: May case respiratory irritation

H401: Toxic to aquatic life

H402: Harmful to aquatic life

H412: Harmful to aquatic life with long lasting effects

Chain and Cable Lube

Safety Data Sheet

according to the Hazard Communication Standard (CFR29 1910.1200) HazCom 2012

Date of issue: 11/09/2016 Revision date: 11/30/2016 Version: 1.0

SECTION 1: Identification

1.1. Identification

Product name : Chain and Cable Lube

Product code : 16-CCL

1.2. Relevant identified uses of the substance or mixture and uses advised against

Use of the substance/mixture : Multi-Purpose Lubricant

1.3. Details of the supplier of the safety data sheet

Manufacturer
The Blaster Corporation
8500 Sweet Valley Drive
Valley View, Ohio 44125 - USA
T (216) 901-5800 - F (216) 901-5801
www.blastercorp.com

1.4. Emergency telephone number

Emergency number : ChemTel 800-255-3924

SECTION 2: Hazard(s) identification

2.1. Classification of the substance or mixture

GHS-US classification

Flam. Aerosol 2

Dissolved gas

Asp. Tox. 1

2.2. Label elements

GHS-US labelling

Hazard pictograms (GHS-US) :



GHS02 GHS04 GHS08

Signal word (GHS-US) : Danger

Hazard statements (GHS-US) : Flammable aerosol. Contains gas under pressure; may explode if heated. May be fatal if swallowed and enters airways.

Precautionary statements (GHS-US) : Keep away from heat/sparks/open flames/hot surfaces. - No smoking. Do not spray on an open flame or other ignition source. Pressurized container: Do not pierce or burn, even after use. If swallowed: Immediately call a poison center/doctor. Do NOT induce vomiting. Store locked up. Store in a well-ventilated place. Protect from sunlight. Do not expose to temperatures exceeding 50 °C/122 °F. Dispose of contents/container in accordance with local, regional, national and/or international regulation.

2.3. Other hazards

No additional information available

2.4. Unknown acute toxicity (GHS US)

Not applicable

SECTION 3: Composition/information on ingredients

3.1. Substances

Not applicable

NEXREG

3.2. Mixtures

Name	Product identifier	%
Distillates, petroleum, hydrotreated light naphthenic	(CAS No) 64742-53-6	50 - 60
Petroleum distillates, hydrotreated light	(CAS No) 64742-47-8	40 - 50
Carbon dioxide	(CAS No) 124-38-9	1 - 4

***Chemical name, CAS number and/or exact concentration have been withheld as a trade secret**

SECTION 4: First aid measures

4.1. Description of first aid measures

First-aid measures after inhalation : If breathing is difficult, remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical advice/attention if you feel unwell.

First-aid measures after skin contact : If irritation occurs, flush skin with plenty of water. Get medical attention if irritation persists.

First-aid measures after eye contact : In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. If easy to do, remove contact lenses, if worn. If irritation persists, get medical attention.

First-aid measures after ingestion : IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician. Do NOT induce vomiting.

4.2. Most important symptoms and effects, both acute and delayed

Symptoms/injuries after inhalation : May cause respiratory irritation.

Symptoms/injuries after skin contact : May cause skin irritation. Symptoms may include redness, drying, defatting and cracking of the skin.

Symptoms/injuries after eye contact : May cause eye irritation. Symptoms may include discomfort or pain, excess blinking and tear production, with possible redness and swelling.

Symptoms/injuries after ingestion : May be fatal if swallowed and enters airways. This product may be aspirated into the lungs and cause chemical pneumonitis. May cause stomach distress, nausea or vomiting.

4.3. Indication of any immediate medical attention and special treatment needed

Symptoms may not appear immediately. In case of accident or if you feel unwell, seek medical advice immediately (show the label or SDS where possible).

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media : Carbon dioxide, dry chemical, halons or foam.

Unsuitable extinguishing media : Do not use water jet.

5.2. Special hazards arising from the substance or mixture

Fire hazard : Flammable aerosol. Products of combustion may include, and are not limited to: oxides of carbon and oxides of nitrogen.

Explosion hazard : Heat may build pressure, rupturing closed containers, spreading fire and increasing risk of burns and injuries.

Reactivity : No dangerous reaction known under conditions of normal use.

5.3. Advice for firefighters

Firefighting instructions : DO NOT fight fire when fire reaches explosives. Evacuate area.

Protection during firefighting : Keep upwind of fire. Wear full fire fighting turn-out gear (full Bunker gear) and respiratory protection (SCBA). Vapors may be heavier than air and may travel along the ground to a distant ignition source and flash back. Use water spray to keep fire-exposed containers cool.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

General measures : Use personal protection recommended in Section 8. Isolate the hazard area and deny entry to unnecessary and unprotected personnel. Isolate from fire, if possible, without unnecessary risk. Remove ignition sources. Use special care to avoid static electric charges.

6.1.1. For non-emergency personnel

No additional information available

6.1.2. For emergency responders

No additional information available

6.2. Environmental precautions

No additional information available

NEXREG

6.3. Methods and material for containment and cleaning up

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).

Methods for cleaning up : Scoop up material and place in a disposal container. Provide ventilation.

6.4. Reference to other sections

See section 8 for further information on protective clothing and equipment and section 13 for advice on waste disposal.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Additional hazards when processed : Hazardous waste due to potential risk of explosion. Pressurized container: Do not pierce or burn, even after use.

Precautions for safe handling : Do not spray on an open flame or other ignition source. Keep away from sources of ignition - No smoking. Use non-sparking tools. Use explosion-proof equipment. Take precautionary measures against static discharge. Avoid contact with skin and eyes. Do not swallow. Do not breathe gas, fumes, vapor or spray. When using do not eat, drink or smoke. Use only outdoors or in a well-ventilated area. Do not pierce or burn, even after use.

Hygiene measures : Launder contaminated clothing before reuse. Wash hands before eating, drinking, or smoking.

7.2. Conditions for safe storage, including any incompatibilities

Technical measures : Proper grounding procedures to avoid static electricity should be followed.

Storage conditions : Keep locked up and out of reach of children. Do not expose to temperatures exceeding 50 °C/ 122 °F. Store away from direct sunlight or other heat sources. Keep in fireproof place.

Storage area : Store in a well-ventilated place.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Distillates, petroleum, hydrotreated light naphthenic (64742-53-6)

Not applicable

Petroleum distillates, hydrotreated light (64742-47-8)

Not applicable

Carbon dioxide (124-38-9)

ACGIH	ACGIH TWA (ppm)	5000 ppm
ACGIH	ACGIH STEL (ppm)	30000 ppm
OSHA	OSHA PEL (TWA) (mg/m³)	9000 mg/m³
OSHA	OSHA PEL (TWA) (ppm)	5000 ppm

8.2. Exposure controls

Appropriate engineering controls : Use ventilation adequate to keep exposures (airborne levels of dust, fume, vapor, etc.) below recommended exposure limits.

Hand protection : Wear chemically resistant protective gloves.

Eye protection : Safety glasses or goggles are recommended when using product.

Skin and body protection : Wear suitable protective clothing.

Respiratory protection : In case of insufficient ventilation, wear suitable respiratory equipment. 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.

Environmental exposure controls : Maintain levels below Community environmental protection thresholds.

Other information : Do not eat, smoke or drink where material is handled, processed or stored. Wash hands carefully before eating or smoking. Handle according to established industrial hygiene and safety practices.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state : Liquid

Appearance : Hazy Liquid. Aerosol.

Colour : Milky

NEXREG

Odour	:	Mild aliphatic
Odour threshold	:	No data available
pH	:	No data available
Melting point	:	No data available
Freezing point	:	No data available
Boiling point	:	380 °F / 193°C
Flash point	:	148 °F / 64 °C
Relative evaporation rate (butylacetate=1)	:	No data available
Flammability (solid, gas)	:	Flammable aerosol.
Vapor pressure	:	No data available
Relative vapor density at 20 °C	:	No data available
Relative density	:	0.84
Solubility	:	No data available
Partition coefficient n-octanol/water	:	No data available
Auto-ignition temperature	:	No data available
Decomposition temperature	:	No data available
Viscosity, kinematic	:	No data available
Viscosity, dynamic	:	No data available
Explosive limits	:	No data available
Explosive properties	:	No data available
Oxidising properties	:	No data available

9.2. Other information

Heat of Combustion	:	49.7 kJ/g
Flame Projection	:	0 inches
Flashback	:	None

SECTION 10: Stability and reactivity

10.1. Reactivity

No dangerous reaction known under conditions of normal use.

10.2. Chemical stability

Stable under normal storage conditions. Flammable aerosol. Contents under pressure. Container may explode if heated. Do not puncture. Do not burn. Extreme risk of explosion by shock, friction, fire or other sources of ignition.

10.3. Possibility of hazardous reactions

No dangerous reaction known under conditions of normal use.

10.4. Conditions to avoid

Sources of ignition. Heat. Incompatible materials.

10.5. Incompatible materials

Strong oxidizing agents.

10.6. Hazardous decomposition products

May include, and are not limited to: oxides of carbon and oxides of nitrogen.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity : Not classified.

Chain and Cable Lube	
LD50 oral rat	> 2000 mg/kg (Calculated Acute Toxicity Estimate)
LD50 dermal rabbit	> 2000 mg/kg (Calculated Acute Toxicity Estimate)
LC50 inhalation rat	> 5 mg/l/4h (Calculated Acute Toxicity Estimate)

Petroleum distillates, hydrotreated light (64742-47-8)	
LD50 oral rat	> 5000 mg/kg

NEXREG

Petroleum distillates, hydrotreated light (64742-47-8)	
LD50 dermal rabbit	> 2000 mg/kg
LC50 inhalation rat	> 5.2 mg/l/4h

Skin corrosion/irritation : Not classified.
Serious eye damage/irritation : Not classified.
Respiratory or skin sensitisation : Not classified.
Germ cell mutagenicity : Not classified.
Carcinogenicity : Not classified.
Reproductive toxicity : Not classified.
Specific target organ toxicity (single exposure) : Not classified.
Specific target organ toxicity (repeated exposure) : Not classified.
Aspiration hazard : May be fatal if swallowed and enters airways.
Symptoms/injuries after inhalation : May cause respiratory irritation.
Symptoms/injuries after skin contact : May cause skin irritation. Symptoms may include redness, drying, defatting and cracking of the skin.
Symptoms/injuries after eye contact : May cause eye irritation. Symptoms may include discomfort or pain, excess blinking and tear production, with possible redness and swelling.
Symptoms/injuries after ingestion : May be fatal if swallowed and enters airways. This product may be aspirated into the lungs and cause chemical pneumonitis. May cause stomach distress, nausea or vomiting.
Other information : Likely routes of exposure: ingestion, inhalation, skin and eye.

SECTION 12: Ecological information

12.1. Toxicity

Ecology - general : May be toxic to aquatic life.

Distillates, petroleum, hydrotreated light naphthenic (64742-53-6)	
LC50 fish 1	> 5000 mg/l (Exposure time: 96 h - Species: Oncorhynchus mykiss)
EC50 Daphnia 1	> 1000 mg/l (Exposure time: 48 h - Species: Daphnia magna)

Petroleum distillates, hydrotreated light (64742-47-8)	
LC50 fish 1	45 mg/l (Exposure time: 96 h - Species: Pimephales promelas [flow-through])
LC50 fish 2	2.2 mg/l (Exposure time: 96 h - Species: Lepomis macrochirus [static])

12.2. Persistence and degradability

Chain and Cable Lube	
Persistence and degradability	Not established.

12.3. Bioaccumulative potential

Chain and Cable Lube	
Bioaccumulative potential	Not established.

Petroleum distillates, hydrotreated light (64742-47-8)	
BCF fish 1	61 - 159

Carbon dioxide (124-38-9)	
BCF fish 1	(no bioaccumulation)

12.4. Mobility in soil

No additional information available

12.5. Other adverse effects

Effect on the global warming : No known effects from this product.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Waste disposal recommendations : This material must be disposed of in accordance with all local, state, provincial, and federal regulations. The generation of waste should be avoided or minimized wherever possible.

Additional information : Flammable vapours may accumulate in the container.

SECTION 14: Transport information

Department of Transportation (DOT)

In accordance with DOT

Transport document description : UN1950 Aerosols (flammable, (each not exceeding 1 L capacity)), 2.1

UN-No.(DOT) : UN1950

Proper Shipping Name (DOT) : Aerosols
flammable, (each not exceeding 1 L capacity)

Class (DOT) : 2.1 - Class 2.1 - Flammable gas 49 CFR 173.115

Hazard labels (DOT) : 2.1 - Flammable gas



Other information : No supplementary information available.

Special transport precautions : Do not handle until all safety precautions have been read and understood.

SECTION 15: Regulatory information

15.1. US Federal regulations

All components of this product are listed, or excluded from listing, on the United States Environmental Protection Agency Toxic Substances Control Act (TSCA) inventory.

15.2. International regulations

No additional information available

15.3. US State regulations

California Proposition 65 - This product does not contain any substances known to the state of California to cause cancer, developmental and/or reproductive harm

Carbon dioxide (124-38-9)
U.S. - New Jersey - Right to Know Hazardous Substance List
U.S. - Pennsylvania - RTK (Right to Know) List

SECTION 16: Other information

Date of issue : 11/09/2016

Revision date : 11/30/2016

Other information : None.

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.

Safety Data Sheet

RUST-OLEUM CORPORATION
* Trusted Quality Since 1921 *
www.rustoleum.com

1. Identification

Product Name: PVTLBL SSPR 12PK QUICKC FLAT BLACK
Revision Date: 11/4/2015

Product Identifier: J2853812
Supercedes Date: 9/3/2015

Product Use/Class: Topcoat/Aerosols

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

Emergency Telephone: 24 Hour Hotline: 847-367-7700

2. Hazard Identification

Classification

Symbol(s) of Product



Signal Word
Danger

Possible Hazards
85% of the mixture consists of ingredient(s) of unknown acute toxicity.

GHS HAZARD STATEMENTS

Acute Toxicity, Inhalation, category 4	H332	Harmful if inhaled.
Carcinogenicity, category 1B	H350	May cause cancer.
Compressed Gas	H280	Contains gas under pressure; may explode if heated.
Eye Irritation, category 2	H319	Causes serious eye irritation.
Flammable Aerosol, category 1	H222	Extremely flammable aerosol.
Germ Cell Mutagenicity, category 1B	H340	May cause genetic defects.
STOT, repeated exposure, category 2	H373	May cause damage to organs through prolonged or repeated exposure.
STOT, single exposure, category 3, NE	H336	May cause drowsiness or dizziness.

GHS LABEL PRECAUTIONARY STATEMENTS

P201	Obtain special instructions before use.
P210	Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. NO SMOKING.
P211	Do not spray on an open flame or other ignition source.
P251	Do not pierce or burn, even after use.
P260	Do not breathe dust, fumes, gases, mists, vapors, or spray.
P281	Use personal protective equipment as required.
P305+P351+P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P308+P313	IF exposed or concerned: Get medical advice/attention.

P312	Call a POISON CENTER or doctor/physician if you feel unwell.
P337+P313	If eye irritation persists: Get medical advice/attention.
P403+P233	Store in a well-ventilated place. Keep container tightly closed.
P410+P403	Protect from sunlight. Store in a well-ventilated place.
P410+P412	Protect from sunlight. Do not expose to temperatures exceeding 50°C / 122°F.

3. Composition/Information On Ingredients

HAZARDOUS SUBSTANCES

Chemical Name	CAS-No.	Wt.% Range	GHS Symbols	GHS Statements
Acetone	67-64-1	25-50	GHS02-GHS07	H225-319-332-336
Propane	74-98-6	10-25	GHS04	H280
n-Butane	106-97-8	10-25	GHS04	H280
Hydrous Magnesium Silicate	14807-96-6	2.5-10	No Information	No Information
Xylene (mixed isomers)	1330-20-7	2.5-10	GHS02-GHS07	H226-315-319-332
Hydrotreated Light Distillate	64742-47-8	2.5-10	GHS08	H304
Naphtha, Petroleum, Hydrotreated Light	64742-49-0	1.0-2.5	GHS08	H304-340-350
Ethylbenzene	100-41-4	1.0-2.5	GHS02-GHS07-GHS08	H225-304-332-373
Aliphatic Hydrocarbon	64742-89-8	1.0-2.5	GHS08	H304-340-350
Carbon Black	1333-86-4	0.1-1.0	No Information	No Information
Solvent Naphtha, Light Aromatic	64742-95-6	0.1-1.0	GHS07-GHS08	H304-332-340-350
Ethylene Glycol Monobutyl Ether	111-76-2	0.1-1.0	GHS06	H302-310-315-319-330

4. First-aid Measures

FIRST AID - EYE CONTACT: Immediately flush eyes with plenty of water for at least 15 minutes holding eyelids open. Get medical attention. Do NOT allow rubbing of eyes or keeping eyes closed.

FIRST AID - SKIN CONTACT: Wash skin with soap and water. Remove contaminated clothing. Get medical attention if irritation develops or persists.

FIRST AID - INHALATION: Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get immediate medical attention. Do NOT use mouth-to-mouth resuscitation. 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. If swallowed, get medical attention.

5. Fire-fighting Measures

EXTINGUISHING MEDIA: Alcohol Film Forming Foam, Carbon Dioxide, Dry Chemical, Dry Sand, 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 due to buildup of steam. 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. Keep containers tightly closed. Isolate from heat, electrical equipment, sparks and open flame. Perforation of the pressurized container may cause bursting of the can. No unusual fire or explosion hazards noted.

SPECIAL FIREFIGHTING PROCEDURES: Water may be used to cool closed containers to prevent pressure buildup and possible autoignition or explosion. Full protective equipment including self-contained breathing apparatus should be used. Evacuate area and fight fire from a safe distance. Use water spray to keep fire-exposed containers cool. Containers may explode when heated.

6. Accidental Release Measures

STEPS TO BE TAKEN IF MATERIAL IS RELEASED OR SPILLED: Contain spilled liquid with sand or earth. DO NOT use combustible materials such as sawdust. Isolate the hazard area and deny entry to unnecessary and unprotected personnel. Remove all sources of ignition, ventilate area and remove with inert absorbent and non-sparking tools. Dispose of according to local, state (provincial) and federal regulations. Do not incinerate closed containers. Ventilate area, isolate spilled material, and remove with inert absorbent. Dispose of contaminated absorbent, container, and unused contents in accordance with local, state, and federal regulations.

7. Handling and Storage

HANDLING: Wash thoroughly after handling. Wash hands before eating. Remove contaminated clothing and launder before reuse. Use only in a well-ventilated area. Use only with adequate ventilation. Follow all MSDS/label precautions even after container is emptied because it may retain product residues. Avoid breathing fumes, vapors, or mist. Avoid contact with eyes, skin and clothing.

STORAGE: Store in a dry, well ventilated place. Keep container tightly closed when not in use. Keep containers tightly closed. Isolate from heat, electrical equipment, sparks and open flame. Contents under pressure. Do not store above 120 ° F. Store large quantities in buildings designed and protected for storage of NFPA Class I flammable liquids. Keep away from heat, sparks, flame and sources of ignition. Contents under pressure. Do not expose to heat or store above 120 ° F. Avoid excess heat. Product should be stored in tightly sealed containers and protected from heat, moisture, and foreign materials.

8. Exposure Controls/Personal Protection

Chemical Name	CAS-No.	Weight % Less Than	ACGIH TLV-TWA	ACGIH TLV-STEL	OSHA PEL-TWA	OSHA PEL-CEILING
Acetone	67-64-1	40.0	250 ppm	500 ppm	1000 ppm	N.E.
Propane	74-98-6	25.0	N.E.	N.E.	1000 ppm	N.E.
n-Butane	106-97-8	15.0	N.E.	1000 ppm	N.E.	N.E.
Hydrous Magnesium Silicate	14807-96-6	10.0	2 mg/m3	N.E.	N.E.	N.E.
Xylene (mixed isomers)	1330-20-7	10.0	100 ppm	150 ppm	100 ppm	N.E.
Hydrotreated Light Distillate	64742-47-8	5.0	N.E.	N.E.	N.E.	N.E.
Naphtha, Petroleum, Hydrotreated Light	64742-49-0	5.0	N.E.	N.E.	N.E.	N.E.
Ethylbenzene	100-41-4	5.0	20 ppm	N.E.	100 ppm	N.E.
Aliphatic Hydrocarbon	64742-89-8	5.0	N.E.	N.E.	N.E.	N.E.
Carbon Black	1333-86-4	1.0	3 mg/m3	N.E.	3.5 mg/m3	N.E.
Solvent Naphtha, Light Aromatic	64742-95-6	1.0	N.E.	N.E.	N.E.	N.E.
Ethylene Glycol Monobutyl Ether	111-76-2	1.0	20 ppm	N.E.	50 ppm	N.E.

PERSONAL PROTECTION

ENGINEERING CONTROLS: Use process enclosures, local exhaust ventilation, or other engineering controls to control airborne levels below recommended exposure limits. Use explosion-proof ventilation equipment. Provide general dilution of local exhaust ventilation in volume and pattern to keep TLV of hazardous ingredients below acceptable limits. Prevent build-up of vapors by opening all doors and windows to achieve cross-ventilation.

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 organic vapor cartridge or canister may be permissible under certain circumstances where airborne concentrations are expected to exceed exposure limits.

SKIN PROTECTION: Use gloves to prevent prolonged skin contact. Use impervious gloves to prevent skin contact and absorption of this material through the skin. Nitrile or Neoprene gloves may afford adequate skin protection.

EYE PROTECTION: Use safety eyewear designed to protect against splash of liquids.

OTHER PROTECTIVE EQUIPMENT: Refer to safety supervisor or industrial hygienist for further guidance regarding types of personal protective equipment and their applications. 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. Remove contaminated clothing immediately and launder before reuse.

9. Physical and Chemical Properties

Appearance:	Aerosolized Mist	**Physical State:**	Liquid
Odor:	Solvent Like	**Odor Threshold:**	N.E.
Relative Density:	0.711	**pH:**	N.A.
Freeze Point, °C:	N.D.	**Viscosity:**	N.D.
Solubility in Water:	Slight	**Partition Coefficient, n-octanol/ water:**	N.D.
Decompostion Temp., °C:	N.D.		
Boiling Range, °C:	-24 - 204	**Explosive Limits, vol%:**	0.9 - 13.0
Flammability:	Supports Combustion	**Flash Point, °C:**	-96
Evaporation Rate:	Faster than Ether	**Auto-ignition Temp., °C:**	N.D.
Vapor Density:	Heavier than Air	**Vapor Pressure:**	N.D.

(See "Other information" Section for abbreviation legend)

10. Stability and Reactivity

CONDITIONS TO AVOID: Avoid temperatures above 120°F (49°C). Avoid contact with strong acid and strong bases. Avoid all possible sources of ignition.

INCOMPATIBILITY: Incompatible with strong oxidizing agents, strong acids and strong alkalies.

HAZARDOUS DECOMPOSITION: By open flame, carbon monoxide and carbon dioxide. When heated to decomposition, it emits acrid smoke and irritating fumes. Contains solvents which may form carbon monoxide, carbon dioxide, and formaldehyde.

HAZARDOUS POLYMERIZATION: Will not occur under normal conditions.

STABILITY: This product is stable under normal storage conditions.

11. Toxicological information

EFFECTS OF OVEREXPOSURE - EYE CONTACT: Causes Serious Eye Irritation

EFFECTS OF OVEREXPOSURE - SKIN CONTACT: Substance may cause slight skin irritation. May cause skin irritation. Allergic reactions are possible. Prolonged or repeated contact may cause skin irritation.

EFFECTS OF OVEREXPOSURE - INHALATION: Harmful if inhaled. High gas, vapor, mist or dust concentrations may be harmful if inhaled. Avoid breathing fumes, spray, vapors, or mist. High vapor concentrations are irritating to the eyes, nose, throat and lungs. Prolonged or excessive inhalation may cause respiratory tract irritation.

EFFECTS OF OVEREXPOSURE - INGESTION: Harmful if swallowed. Aspiration hazard if swallowed; can enter lungs and cause damage.

EFFECTS OF OVEREXPOSURE - CHRONIC HAZARDS: May cause central nervous system disorder (e.g., narcosis involving a loss of coordination, weakness, fatigue, mental confusion, and blurred vision) and/or damage. High concentrations may lead to central nervous system effects (drowsiness, dizziness, nausea, headaches, paralysis, 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. 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. IARC lists Ethylbenzene as a possible human carcinogen (group 2B).

PRIMARY ROUTE(S) OF ENTRY: Eye Contact, Ingestion, Inhalation, Skin Absorption, Skin Contact

ACUTE TOXICITY VALUES

The acute effects of this product have not been tested. Data on individual components are tabulated below:

CAS-No.	Chemical Name	Oral LD50	Dermal LD50	Vapor LC50
67-64-1	Acetone	5800 mg/kg Rat	N.I.	50.1 mg/L Rat
74-98-6	Propane	N.I.	N.I.	658 mg/L Rat
106-97-8	n-Butane	N.I.	N.I.	658 mg/L Rat
14807-96-6	Hydrous Magnesium Silicate	6000	N.I.	30
1330-20-7	Xylene (mixed isomers)	3500 mg/kg Rat	>4350 mg/kg Rabbit	29.08 mg/L Rat

64742-47-8	Hydrotreated Light Distillate	>5000 mg/kg Rat	>2000 mg/kg Rabbit	>5000 mg/L Rat
64742-49-0	Naphtha, Petroleum, Hydrotreated Light	>5000 mg/kg Rat	>3160 mg/kg Rabbit	>4951 mg/L Rat
100-41-4	Ethylbenzene	3500 mg/kg Rat	15400 mg/kg Rabbit	17.2 mg/L Rat
64742-89-8	Aliphatic Hydrocarbon	N.I.	3000 mg/kg Rabbit	N.I.
1333-86-4	Carbon Black	>15400 mg/kg Rat	N.I.	N.I.
64742-95-6	Solvent Naphtha, Light Aromatic	8400 mg/kg Rat	>2000 mg/kg Rabbit	N.I.
111-76-2	Ethylene Glycol Monobutyl Ether	470 mg/kg Rat	99 mg/kg Rabbit	N.I.

N.I. - No Information

12. Ecological Information

ECOLOGICAL INFORMATION: Product is a mixture of listed components. Product is a mixture of listed components.

13. Disposal Information

DISPOSAL INFORMATION: Dispose of material in accordance to local, state, and federal regulations and ordinances. Do not allow to enter waterways, wastewater, soil, storm drains or sewer systems.

14. Transport Information

	Domestic (USDOT)	International (IMDG)	Air (IATA)	TDG (Canada)
UN Number:	N.A.	1950	1950	N.A.
Proper Shipping Name:	Paint Products in Limited Quantities	Aerosols	Aerosols	Paint Products in Limited Quantities
Hazard Class:	N.A.	2.1	2.1	N.A.
Packing Group:	N.A.	N.A.	N.A.	N.A.
Limited Quantity:	Yes	Yes	Yes	Yes

15. Regulatory Information

U.S. Federal Regulations:

CERCLA - SARA Hazard Category

This product has been reviewed according to the EPA 'Hazard Categories' promulgated under Sections 311 and 312 of the Superfund Amendment and Reauthorization Act of 1986 (SARA Title III) and is considered, under applicable definitions, to meet the following categories:

Fire Hazard, Pressure Hazard, Acute Health Hazard, Chronic Health Hazard

Sara Section 313:

This product contains the following substances subject to the reporting requirements of Section 313 of Title III of the Superfund Amendment and Reauthorization Act of 1986 and 40 CFR part 372:

Chemical Name	CAS-No.
Xylene (mixed isomers)	1330-20-7
Ethylbenzene	100-41-4
Ethylene Glycol Monobutyl Ether	111-76-2

Toxic Substances Control Act:

This product contains the following chemical substances subject to the reporting requirements of TSCA 12(b) if exported from the United States:

No TSCA 12(b) components exist in this product.

16. Other Information

HMIS RATINGS

Health:	2*	**Flammability:**	4	**Physical Hazard:**	0	**Personal Protection:**	X

NFPA RATINGS

Health:	2	**Flammability:**	4	**Instability**	0

VOLATILE ORGANIC COMPOUNDS, g/L: 540

SDS REVISION DATE: 11/4/2015

REASON FOR REVISION: Product Composition Changed
Substance and/or Product Properties Changed in Section(s):
02 - Hazard Identification
Statement(s) Changed

Legend: N.A. - Not Applicable, N.E. - Not Established, N.D. - Not Determined

Rust-Oleum Corporation believes, to the best of its knowledge, information and belief, the information contained herein to be accurate and reliable as of the date of this safety data sheet. However, because the conditions of handling, use, and storage of these materials are beyond our control, we assume no responsibility or liability for personal injury or property damage incurred by the use of these materials. Rust-Oleum Corporation makes no warranty, expressed or implied, regarding the accuracy or reliability of the data or results obtained from their use. All materials may present unknown hazards and should be used with caution. The information and recommendations in this material safety data sheet are offered for the users' consideration and examination. It is the responsibility of the user to determine the final suitability of this information and to comply with all applicable international, federal, state, and local laws and regulations.

Safety Data Sheet

RUST-OLEUM CORPORATION
* Trusted Quality Since 1921 *
www.rustoleum.com

1. Identification

Product Name: PTOUCH 2X +SSPR 6PK GLOSS WHITE

Revision Date: 12/14/2016

Product Identifier: 249090

Supercedes Date: 12/7/2016

Product Use/Class: Topcoat/Aerosols

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

Emergency Telephone: 24 Hour Hotline: 847-367-7700

2. Hazard Identification

Classification

Symbol(s) of Product



Signal Word
Danger

Possible Hazards
27% of the mixture consists of ingredient(s) of unknown acute toxicity.

GHS HAZARD STATEMENTS

Carcinogenicity, category 1B	H350	May cause cancer.
Compressed Gas	H280	Contains gas under pressure; may explode if heated.
Eye Irritation, category 2	H319	Causes serious eye irritation.
Flammable Aerosol, category 1	H222	Extremely flammable aerosol.
Germ Cell Mutagenicity, category 1B	H340	May cause genetic defects.
STOT, single exposure, category 3, NE	H336	May cause drowsiness or dizziness.

GHS LABEL PRECAUTIONARY STATEMENTS

P201	Obtain special instructions before use.
P210	Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P211	Do not spray on an open flame or other ignition source.
P251	Do not pierce or burn, even after use.
P261	Avoid breathing dust/fume/gas/mist/vapours/spray.
P264	Wash hands thoroughly after handling.
P271	Use only outdoors or in a well-ventilated area.
P280	Wear protective gloves/protective clothing/eye protection/face protection.
P304+P340	IF INHALED: Remove person to fresh air and keep comfortable for breathing.

P305+P351+P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P308+P313	IF exposed or concerned: Get medical advice/attention.
P312	Call a POISON CENTER or doctor/physician if you feel unwell.
P337+P313	If eye irritation persists: Get medical advice/attention.
P403+P233	Store in a well-ventilated place. Keep container tightly closed.
P405	Store locked up.
P410+P403	Protect from sunlight. Store in a well-ventilated place.
P410+P412	Protect from sunlight. Do no expose to temperatures exceeding 50°C/ 122°F.
P501	Dispose of contents/container in accordance with local, regional and national regulations.

3. Composition/Information On Ingredients

HAZARDOUS SUBSTANCES

Chemical Name	CAS-No.	Wt.% Range	GHS Symbols	GHS Statements
Propane	74-98-6	10-25	GHS04	H280
Acetone	67-64-1	10-25	GHS02-GHS07	H225-319-332-336
Titanium Dioxide	13463-67-7	10-25	Not Available	Not Available
n-Butane	106-97-8	2.5-10	GHS04	H280
n-Butyl Acetate	123-86-4	2.5-10	GHS02-GHS07	H226-336
Naphtha, Petroleum, Hydrotreated Light	64742-49-0	2.5-10	GHS08	H304
Dimethyl Carbonate	616-38-6	2.5-10	GHS02	H225
1-Methoxy-2-Propyl Acetate	108-65-6	2.5-10	GHS02	H226
Xylenes (o-, m-, p- isomers)	1330-20-7	1.0-2.5	GHS02-GHS07	H226-315-319-332
Solvent Naphtha, Light Aromatic	64742-95-6	1.0-2.5	GHS07-GHS08	H304-332-340-350
1,2,4-Trimethylbenzene	95-63-6	1.0-2.5	GHS02-GHS07-GHS08	H226-304-315-319-332-335
Propylene Glycol Monobutyl Ether	5131-66-8	1.0-2.5	GHS07	H302-315-319
Ethylbenzene	100-41-4	0.1-1.0	GHS02-GHS07-GHS08	H225-304-332-351-373
Ethylene Glycol Monobutyl Ether	111-76-2	0.1-1.0	GHS07	H302-312-315-319-332

4. First-aid Measures

FIRST AID - EYE CONTACT: Immediately flush eyes with plenty of water for at least 15 minutes holding eyelids open. Get medical attention. Do NOT allow rubbing of eyes or keeping eyes closed.

FIRST AID - SKIN CONTACT: Wash skin with soap and water. Remove contaminated clothing. Get medical attention if irritation develops or persists.

FIRST AID - INHALATION: Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get immediate medical attention. Do NOT use mouth-to-mouth resuscitation. 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. If swallowed, get medical attention.

5. Fire-fighting Measures

EXTINGUISHING MEDIA: Alcohol Film Forming Foam, Carbon Dioxide, Dry Chemical, Dry Sand, 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 due to buildup of steam. 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. Keep containers tightly closed. Isolate from heat, electrical equipment, sparks and open flame. Perforation of the pressurized container may cause bursting of the can. No unusual fire or explosion hazards noted.

SPECIAL FIREFIGHTING PROCEDURES: Water may be used to cool closed containers to prevent pressure buildup and possible autoignition or explosion. Full protective equipment including self-contained breathing apparatus should be used. Evacuate area and fight fire from a safe distance. Use water spray to keep fire-exposed containers cool. Containers may explode when heated.

6. Accidental Release Measures

STEPS TO BE TAKEN IF MATERIAL IS RELEASED OR SPILLED: Contain spilled liquid with sand or earth. DO NOT use combustible materials such as sawdust. Isolate the hazard area and deny entry to unnecessary and unprotected personnel. Remove all sources of ignition, ventilate area and remove with inert absorbent and non-sparking tools. Dispose of according to local, state (provincial) and federal regulations. Do not incinerate closed containers. Ventilate area, isolate spilled material, and remove with inert absorbent. Dispose of contaminated absorbent, container, and unused contents in accordance with local, state, and federal regulations.

7. Handling and Storage

HANDLING: Wash thoroughly after handling. Wash hands before eating. Remove contaminated clothing and launder before reuse. Use only in a well-ventilated area. Use only with adequate ventilation. Follow all MSDS/label precautions even after container is emptied because it may retain product residues. Avoid breathing fumes, vapors, or mist. Avoid contact with eyes, skin and clothing.

STORAGE: Store in a dry, well ventilated place. Keep container tightly closed when not in use. Keep containers tightly closed. Isolate from heat, electrical equipment, sparks and open flame. Contents under pressure. Do not store above 120 ° F. Store large quantities in buildings designed and protected for storage of NFPA Class I flammable liquids. Keep away from heat, sparks, flame and sources of ignition. Contents under pressure. Do not expose to heat or store above 120 ° F. Avoid excess heat. Product should be stored in tightly sealed containers and protected from heat, moisture, and foreign materials.

8. Exposure Controls/Personal Protection

Chemical Name	CAS-No.	Weight % Less Than	ACGIH TLV-TWA	ACGIH TLV-STEL	OSHA PEL-TWA	OSHA PEL-CEILING
Propane	74-98-6	20.0	N.E.	N.E.	1000 ppm	N.E.
Acetone	67-64-1	20.0	250 ppm	500 ppm	1000 ppm	N.E.
Titanium Dioxide	13463-67-7	15.0	10 mg/m3	N.E.	15 mg/m3	N.E.
n-Butane	106-97-8	10.0	N.E.	1000 ppm	N.E.	N.E.
n-Butyl Acetate	123-86-4	10.0	50 ppm	150 ppm	150 ppm	N.E.
Naphtha, Petroleum, Hydrotreated Light	64742-49-0	10.0	N.E.	N.E.	N.E.	N.E.
Dimethyl Carbonate	616-38-6	10.0	N.E.	N.E.	N.E.	N.E.
1-Methoxy-2-Propyl Acetate	108-65-6	5.0	N.E.	N.E.	N.E.	N.E.
Xylenes (o-, m-, p- isomers)	1330-20-7	5.0	100 ppm	150 ppm	100 ppm	N.E.
Solvent Naphtha, Light Aromatic	64742-95-6	5.0	N.E.	N.E.	N.E.	N.E.
1,2,4-Trimethylbenzene	95-63-6	5.0	N.E.	N.E.	N.E.	N.E.
Propylene Glycol Monobutyl Ether	5131-66-8	5.0	N.E.	N.E.	N.E.	N.E.
Ethylbenzene	100-41-4	1.0	20 ppm	N.E.	100 ppm	N.E.
Ethylene Glycol Monobutyl Ether	111-76-2	1.0	20 ppm	N.E.	50 ppm	N.E.

PERSONAL PROTECTION

ENGINEERING CONTROLS: Use process enclosures, local exhaust ventilation, or other engineering controls to control airborne levels below recommended exposure limits. Use explosion-proof ventilation equipment. Provide general dilution of local exhaust ventilation in volume and pattern to keep TLV of hazardous ingredients below acceptable limits. Prevent build-up of vapors by opening all doors and windows to achieve cross-ventilation.

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 organic vapor cartridge or canister may be permissible under certain circumstances where airborne concentrations are expected to exceed exposure limits.

SKIN PROTECTION: Use gloves to prevent prolonged skin contact. Use impervious gloves to prevent skin contact and absorption of this material through the skin. Nitrile or Neoprene gloves may afford adequate skin protection.

EYE PROTECTION: Use safety eyewear designed to protect against splash of liquids.

OTHER PROTECTIVE EQUIPMENT: Refer to safety supervisor or industrial hygienist for further guidance regarding types of personal protective equipment and their applications. 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. Remove contaminated clothing immediately and launder before reuse.

9. Physical and Chemical Properties

Appearance:	Aerosolized Mist	**Physical State:**	Liquid
Odor:	Solvent Like	**Odor Threshold:**	N.E.
Relative Density:	0.830	**pH:**	N.E.
Freeze Point, °C:	N.D.	**Viscosity:**	N.D.
Solubility in Water:	Slight	**Partition Coefficient, n-octanol/water:**	N.D.
Decompostion Temp., °C:	N.D.		
Boiling Range, °C:	-37 - 175	**Explosive Limits, vol%:**	0.9 - 13.0
Flammability:	Supports Combustion	**Flash Point, °C:**	-96
Evaporation Rate:	Faster than Ether	**Auto-ignition Temp., °C:**	N.D.
Vapor Density:	Heavier than Air	**Vapor Pressure:**	N.D.

(See "Other information" Section for abbreviation legend)

10. Stability and Reactivity

CONDITIONS TO AVOID: Avoid temperatures above 120°F (49°C). Avoid contact with strong acid and strong bases. Avoid all possible sources of ignition.

INCOMPATIBILITY: Incompatible with strong oxidizing agents, strong acids and strong alkalies.

HAZARDOUS DECOMPOSITION: By open flame, carbon monoxide and carbon dioxide. When heated to decomposition, it emits acrid smoke and irritating fumes. Contains solvents which may form carbon monoxide, carbon dioxide, and formaldehyde.

HAZARDOUS POLYMERIZATION: Will not occur under normal conditions.

STABILITY: This product is stable under normal storage conditions.

11. Toxicological information

EFFECTS OF OVEREXPOSURE - EYE CONTACT: Causes Serious Eye Irritation

EFFECTS OF OVEREXPOSURE - SKIN CONTACT: Substance may cause slight skin irritation. May cause skin irritation. Allergic reactions are possible. Prolonged or repeated contact may cause skin irritation.

EFFECTS OF OVEREXPOSURE - INHALATION: Harmful if inhaled. High gas, vapor, mist or dust concentrations may be harmful if inhaled. Avoid breathing fumes, spray, vapors, or mist. High vapor concentrations are irritating to the eyes, nose, throat and lungs. Prolonged or excessive inhalation may cause respiratory tract irritation.

EFFECTS OF OVEREXPOSURE - INGESTION: Harmful if swallowed. Aspiration hazard if swallowed; can enter lungs and cause damage.

EFFECTS OF OVEREXPOSURE - CHRONIC HAZARDS: May cause central nervous system disorder (e.g., narcosis involving a loss of coordination, weakness, fatigue, mental confusion, and blurred vision) and/or damage. High concentrations may lead to central nervous system effects (drowsiness, dizziness, nausea, headaches, paralysis, 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. IARC lists Ethylbenzene as a possible human carcinogen (group 2B). Contains Titanium Dioxide. Titanium Dioxide is listed as a Group 2B-"Possibly carcinogenic to humans" by IARC. No significant exposure to Titanium Dioxide is thought to occur during the use of products in which Titanium Dioxide is bound to other materials, such as in paints 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 Titanium Dioxide in the formula. (Ref: IARC Monograph, Vol. 93,

2010)

PRIMARY ROUTE(S) OF ENTRY: Eye Contact, Ingestion, Inhalation, Skin Absorption, Skin Contact

ACUTE TOXICITY VALUES

The acute effects of this product have not been tested. Data on individual components are tabulated below:

CAS-No.	Chemical Name	Oral LD50	Dermal LD50	Vapor LC50
74-98-6	Propane	N.I.	N.I.	658 mg/L Rat
67-64-1	Acetone	5800 mg/kg Rat	>15700 mg/kg Rabbit	50.1 mg/L Rat
13463-67-7	Titanium Dioxide	>10000 mg/kg Rat	2500 mg/kg	N.I.
106-97-8	n-Butane	N.I.	N.I.	658 mg/L Rat
123-86-4	n-Butyl Acetate	10768 mg/kg Rat	>17600 mg/kg Rabbit	> 21 mg/L Rat
64742-49-0	Naphtha, Petroleum, Hydrotreated Light	>5000 mg/kg Rat	>3160 mg/kg Rabbit	>4951 mg/L Rat
616-38-6	Dimethyl Carbonate	13000 mg/kg Rat	>5000 mg/kg Rabbit	140 mg/L Rat
108-65-6	1-Methoxy-2-Propyl Acetate	8532 mg/kg Rat	>5000 mg/kg Rabbit	N.I.
1330-20-7	Xylenes (o-, m-, p- isomers)	3500 mg/kg Rat	>4350 mg/kg Rabbit	29.08 mg/L Rat
64742-95-6	Solvent Naphtha, Light Aromatic	8400 mg/kg Rat	>2000 mg/kg Rabbit	N.I.
95-63-6	1,2,4-Trimethylbenzene	3280 mg/kg Rat	>3160 mg/kg Rabbit	18 mg/L Rat
5131-66-8	Propylene Glycol Monobutyl Ether	1900 mg/kg Rat	N.I.	N.I.
100-41-4	Ethylbenzene	3500 mg/kg Rat	15400 mg/kg Rabbit	17.4 mg/L Rat
111-76-2	Ethylene Glycol Monobutyl Ether	470 mg/kg Rat	1,060 mg/kg Rabbit	11 mg/L

N.I. - No Information

12. Ecological Information

ECOLOGICAL INFORMATION: Product is a mixture of listed components. Product is a mixture of listed components.

13. Disposal Information

DISPOSAL INFORMATION: Dispose of material in accordance to local, state, and federal regulations and ordinances. Do not allow to enter waterways, wastewater, soil, storm drains or sewer systems.

14. Transport Information

	Domestic (USDOT)	International (IMDG)	Air (IATA)	TDG (Canada)
UN Number:	N.A.	1950	1950	N.A.
Proper Shipping Name:	Paint Products in Limited Quantities	Aerosols	Aerosols	Paint Products in Limited Quantities
Hazard Class:	N.A.	2.1	2.1	N.A.
Packing Group:	N.A.	N.A.	N.A.	N.A.
Limited Quantity:	Yes	Yes	Yes	Yes

15. Regulatory Information

U.S. Federal Regulations:

CERCLA - SARA Hazard Category

This product has been reviewed according to the EPA 'Hazard Categories' promulgated under Sections 311 and 312 of the Superfund Amendment and Reauthorization Act of 1986 (SARA Title III) and is considered, under applicable definitions, to meet the following categories:

Fire Hazard, Pressure Hazard, Acute Health Hazard, Chronic Health Hazard

Sara Section 313:

This product contains the following substances subject to the reporting requirements of Section 313 of Title III of the Superfund Amendment and Reauthorization Act of 1986 and 40 CFR part 372:

Chemical Name	CAS-No.
Dimethyl Carbonate	616-38-6
Xylenes (o-, m-, p- isomers)	1330-20-7
1,2,4-Trimethylbenzene	95-63-6
Ethylbenzene	100-41-4
Ethylene Glycol Monobutyl Ether	111-76-2

Toxic Substances Control Act:

This product contains the following chemical substances subject to the reporting requirements of TSCA 12(b) if exported from the United States:

Chemical Name	CAS-No.
n-Nonane	111-84-2

16. Other Information

HMIS RATINGS

Health: 2* **Flammability:** 4 **Physical Hazard:** 0 **Personal Protection:** X

NFPA RATINGS

Health: 2 **Flammability:** 4 **Instability** 0

VOLATILE ORGANIC COMPOUNDS, g/L: 568

SDS REVISION DATE: 12/14/2016

REASON FOR REVISION: Regulatory Formula Source Changed
Product Composition Changed
Substance and/or Product Properties Changed in Section(s):
02 - Hazard Identification
16 - Other Information
Statement(s) Changed

Legend: N.A. - Not Applicable, N.E. - Not Established, N.D. - Not Determined

Rust-Oleum Corporation believes, to the best of its knowledge, information and belief, the information contained herein to be accurate and reliable as of the date of this safety data sheet. However, because the conditions of handling, use, and storage of these materials are beyond our control, we assume no responsibility or liability for personal injury or property damage incurred by the use of these materials. Rust-Oleum Corporation makes no warranty, expressed or implied, regarding the accuracy or reliability of the data or results obtained from their use. All materials may present unknown hazards and should be used with caution. The information and recommendations in this material safety data sheet are offered for the users' consideration and examination. It is the responsibility of the user to determine the final suitability of this information and to comply with all applicable international, federal, state, and local laws and regulations.

CleanPrint Chemicals

SAFETY DATA SHEET

1. Company and Product Identification

1.1	Identification – Product Name:	**Super Special Blade Clean 3G**
1.2	Other means of identification	NA
	Synonym:	NA
1.3	Recommended Use Of The Chemical and Restrictions On Use:	Cleaning agent
1.4	Name, Address, And Telephone Number Of The Manufacturer, Or Other Responsible Party:	**Clean Print Chemicals**
		C.A.T 2/530 Boundary Rd, Derrimut Vic Australia 3030 Ph: +61 383532328
	Competent Person email address	NA
1.5	24 Hour Emergency No.:	770-425-3353 800-222-1222 (24-Hr, CHEMTREC)

2. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW: This product is a clear, pink liquid with pine odor. Repeated exposure may cause skin dryness or cracking or minor irritation. The product is not flammable. Depending on the duration of over-exposure, breathing vapors may headache or dizziness, respiratory tract irritation. Thermal decomposition of this product may produce irritating vapors and toxic gases (e.g. carbon monoxide and carbon dioxide). Emergency responders must wear personal protective equipment (and have appropriate fire-extinguishing protection) suitable for the situation to which they are responding.

Physical Hazards Summary	Not classifiable
Potential Health Hazards Summary	Skin irritation, Category 2 Eye Irritation, Category 2A
Potential Ecological Effects Summary	Not classifiable

2.1	Classification Of Product	
	U.S. OSHA classification	Skin irritation, Category 2 Eye irritation, Category 2A
	Classification as per EC 1272/2008 (CLP/GHS)	Skin irritation, Category 2 Eye irritation, Category 2
	Hazardous Materials Information System (HMIS) Rating	**Health** 1 **Flammability** 0 **Physical Hazard** 0

		Protective Equipment	**C**
		Chronic Health Hazard	
2.2	Label Elements OSHA/GHS		
	Signal Word	**WARNING**	
	Hazard Statements	H315 H319	Causes skin irritation Causes serious eye irritation
	Precautionary Statements: Prevention	P264 P280	Wash thoroughly after handling Wear protective gloves/protective clothing/eye protection/face protection
	Precautionary Statements: Response	P305+P351+P338 P337+P313 P302+P352 P321 P363	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 advice/attention IF ON SKIN wash with soap and water Specific treatment: See first aid section on this SDS Wash contaminated clothing before reuse
	Precautionary statements: Storage		
	Precautionary Statements: Disposal	P501	Dispose of contents/container in accordance with all federal, state and local regulation
	Hazard pictograms		
2.3	Unclassified Hazards	None	
2.4	Ingredients with unknown acute toxicity	None	

3. COMPOSITION and INFORMATION ON INGREDIENTS

Chemical name	% w/w	US OSHA	GHS/EU CLP

CAS # EINECS #			
Proprietary blend of surfactants, fragrances and enzymes	<10%	Flammable liquid, Category 3 Acute toxicity, Oral, Category 4 Acute toxicity, Inhal, Category 4 Acute toxicity, Dermal, Category 4 Skin irritation, Category 2 Eye irritation, Category 2A Aspiration toxicity, Category 1 Acute aquatic toxicity, Category 2 Chronic aquatic toxicity, Category 2	Flammable liquid, Category 3 (H226) Acute toxicity, Oral, Category 4 (H302) Acute toxicity, Inhal, Category 4 (H332) Acute toxicity, Dermal, Category 4 (H312) Skin irritation, Category 2 (H315) Eye irritation, Category 2 (H319) Aspiration toxicity, Category 1 (H304) Acute aquatic toxicity, Category 2 (H401) Chronic aquatic toxicity, Category 2 (H411)
Proprietary blend of solvents	<20%	Flammable liquid, Category 4 Acute toxicity, Oral, Category 4 Acute toxicity, Inhal, Category 4 Acute toxicity, Dermal, Category 4 Skin irritation, Category 2 Eye irritation, Category 2A	Acute toxicity, Oral, Category 4 (H302) Acute toxicity, Inhal, Category 4 (H332) Acute toxicity, Dermal, Category 4 (H312) Skin irritation, Category 2 (H315) Eye irritation, Category 2 (H319)
Ethanolamine (CAS 9007-33-4)	<5%	Flammable liquid, Category 4 Acute toxicity, Oral, Category 4 Acute toxicity, Inhal, Category 4 Acute toxicity, Dermal, Category 4 Skin corrosion, Category 1 Serious eye damage, Category 1 Specific target organ toxicity, Single exposure (Resp), Category 3 Acute aquatic toxicity, Category 2 Chronic aquatic toxicity, Category 3	Acute toxicity, Oral, Category 4 (H302) Acute toxicity, Inhal, Category 4 (H332) Acute toxicity, Dermal, Category 4 (H312) Skin corrosion, Category 1 (H314) Serious eye damage, Category 1 (H318) Specific target organ toxicity, Single exposure (Resp), Category 3 (H335) Acute aquatic toxicity, Category 2 (H401) Chronic aquatic toxicity, Category 3 (H412)
Water	Bulk	Not classifiable	Not classifiable

See Section 16 for Definitions of Terms Used.

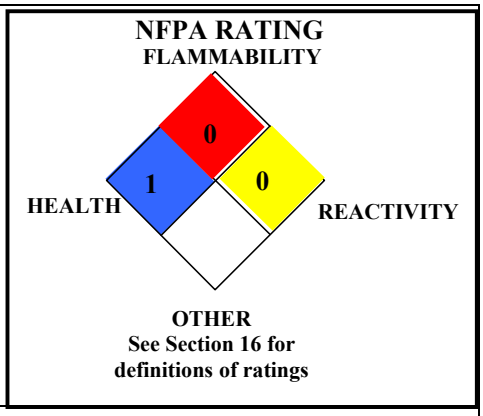
The manufacturer claims Trade Secret Information as defined in 29CFR1910.1200 Appendix E and 29CFR1910.1200(i). All hazards have been accounted for in this product's hazard classification.

4. FIRST-AID MEASURES

4.1	Description of Necessary Measures	
	Skin exposure:	If this product contaminates the skin, immediately begin decontamination with running water. Remove exposed or contaminated clothing, taking care not to contaminate eyes. Victim should seek immediate medical attention if any adverse exposure symptoms develop or irritation persists.
	Eye exposure:	If this product enters the eyes, open victim's eyes while under gently running water. Use sufficient force to open eyelids. Have victim "roll" eyes. Minimum flushing is for 15 minutes. Seek medical attention immediately.
	Inhalation:	If this product is inhaled, remove victim to fresh air and place in a position comfortable for breathing. If necessary, use artificial respiration to support vital functions. Remove or cover gross contamination to avoid exposure to rescuers.
	Ingestion:	If this product is swallowed, CALL POISION CENTER or PHYSICIAN FOR MOST CURRENT INFORMATION. DO NOT INDUCE VOMITING. Have victim rinse mouth with water, if conscious. Never induce vomiting or give a diluent (e.g., water) to someone who is unconscious, having convulsions, or unable to swallow. If contaminated individual is convulsing, maintain an open airway and obtain immediate medical attention.
4.2	Most Important Symptoms/Effects:	Symptoms of skin and eye contact may include redness and irritation. Ingestion may cause stomach pains, cramps, and gastritis. Delayed: Prolonged or repeated skin overexposure to this product may cause dermatitis (dry, red skin).
4.3	Indication Of Immediate Medical Attention And Special Treatment Needed, If Necessary:	None known. **TARGET ORGANS:** Acute: Eyes and Skin
Victims of chemical exposure must be taken for medical attention if any adverse effects occur. Rescuers should be taken for medical		

attention if necessary. Take a copy of label and SDS to physician or health professional with victim.

5. FIRE-FIGHTING MEASURES

	Flammable properties	Not classifiable as flammable 
		Flash Point °C (°F): > 200 °F (> 93.3 °C)
		Autoignition Temperature °C (°F): Not evaluated
		Flammable Limits (in air by volume, %): Not evaluated
5.1	Suitable And Unsuitable Extinguishing Media:	This material should not contribute to the intensity of a fire. Use extinguishing material suitable for ordinary combustibles. Water spray YES Carbon dioxide YES Foam YES Dry chemical YES Halon YES Other
5.2	Specific Hazards Arising From Chemical:	When involved in a fire, this material may decompose and produce irritating fumes and toxic gases (e.g., carbon monoxide, carbon dioxide) Explosion Sensitivity to Mechanical Impact: None. Explosion Sensitivity to Static Discharge: Vapors are not expected to ignite
5.3	Special Protective Equipment And Precautions For Fire-Fighters:	Incipient fire responders should wear eye protection. Structural firefighters must wear Self-Contained Breathing Apparatus and full protective equipment. Move containers from fire area if it can be done without risk to personnel. If possible, prevent runoff water from entering storm drains, bodies of water, or other environmentally sensitive areas.

6. ACCIDENTAL RELEASE MEASURES

6.1	Personal Precautions	Uncontrolled releases should be responded to only by trained personnel using pre-planned procedures. Proper protective equipment should be used. In case of a spill, clear the affected area and protect people.
	Protective equipment	For small releases (< 20 liters, 5 gallons), clean up spilled liquid wearing gloves, goggles and suitable body protection. Absorb with earth, sand or other non-combustible material and transfer to containers for proper disposal. The minimum Personal Protective Equipment recommended for response to non-incidental releases (more than 20 liters or 5 gallons) should be: triple-gloves (neoprene gloves over nitrile gloves), chemical resistant suit and boots. Prevent further leak/release if it is safe to do so. Do not let the product enter drains.
	Emergency procedures	Eliminate all ignition sources. Stop leak if you can do so without risk.

6.2	Methods and Materials for Containment and Cleaning Up	Use absorbent material for cleaning up spills. Collect spilled material for proper disposal. Decontaminate the area thoroughly. Place all spill residues in a suitable container. Dispose of in accordance with applicable U.S. Federal, State, or local procedures, or appropriate local standards (see Section 13, Disposal Considerations).

7. HANDLING and STORAGE

7.1	Precautions for Safe Handling	All employees who handle this material should be trained to handle it safely. Open containers carefully on a stable surface. Ensure all connections are tight before transfer. Empty containers may contain residual liquid; therefore, empty containers should be handled with care. Keep away from ignition sources; no smoking. As with all chemicals, avoid getting this product ON YOU or IN YOU. Wash thoroughly after handling this product. Do not eat or drink while handling this material. Remove contaminated clothing promptly. During equipment maintenance follow practices indicated in Section 6 (Accidental Release Measures) to decontaminate equipment or clean-up small spills. Make certain that application equipment is locked and tagged-out safely if necessary. Collect all rinsates and residual material and dispose of according to applicable U.S. Federal, State, or local procedures or appropriate local standards.
7.2	Conditions For Safe Storage	Keep containers tightly closed. Store individual containers out of direct sunlight. Tanks should be stored away from intense heat or direct sunlight. Avoid freezing. Store away from incompatible materials. Storage and use areas should be covered with impervious materials. Keep container tightly closed when not in use. If appropriate, post warning signs in storage and use areas. Inspect all incoming containers before storage, to ensure containers are properly labeled and not damaged.
	Incompatibilities	Oxidizers, strong oxidizing acids.

8. EXPOSURE CONTROLS - PERSONAL PROTECTION

8.1	Control Parameters

CHEMICAL NAME	CAS #	% w/w	EXPOSURE LIMITS IN AIR					
			ACGIH-TLV		OSHA-PEL (NIOSH)			OTHER
			TWA ppm	STEL ppm	TWA ppm	STEL ppm	IDLH ppm	ppm
Proprietary blend of surfactants, fragrances and enzymes	NA	<10%	NA	NA	NA9NA)	NA(NA)	NA	
Proprietary blend of solvents	NA	<20%	NA	NA	NA(NA)	NA(NA)	NA	
Ethanolamine	9007-33-4	<5%	3	6	3(3)	NA(6)	NA	
No occupational exposure limits have been established for this product. Efforts should be made to limit exposure to prevent injury			None of the other components contribute significant additional hazards at the concentration present in this product. All pertinent hazard information has been provided in this document, per the requirements of the Federal Occupational Safety and Health Administration Standard (29 CFR 1910.1200), U.S. State equivalent Standards and Canadian Workplace Hazardous Materials Identification System Standards (CPR 4).					

8.2	Appropriate Engineering Controls.	Use with adequate ventilation to ensure exposure levels are maintained below the limits provided in this Section or as low as reasonably achievable. Ensure eyewash/safety shower stations are available near areas where this product is used.
8.3	Personal Protective Equipment Respiratory protection:	None needed under normal conditions of use. Use NIOSH approved respirators if ventilation is inadequate to control mists or vapor. If respiratory protection is needed, use only protection authorized in the U.S. Federal OSHA Standard (29 CFR 1910.134), applicable U.S. State regulations, or the applicable local standards. Oxygen levels below 19.5% are considered IDLH by OSHA. In such atmospheres, use of a full-face piece pressure/demand SCBA or a full-face piece, supplied air respirator with auxiliary self-contained air supply is required under OSHA's Respiratory Protection Standard (29 CFR 1910.134-1998).
	Eye protection:	Use approved safety goggles or safety glasses, as described in OSHA 29 CFR 1910.133. Splash goggles with a face shield may be needed if splash hazards exist.
	Hand protection:	Wear chemical impervious gloves (e.g., Solvex™, Neoprene, Nitrile).
	Body protection:	None normally needed. If needed, use body protection appropriate for task (e.g., Tyvek suit, rubber apron) to protect from splashes and sprays. Nomex coveralls are recommended for handling bulk product.

9. PHYSICAL and CHEMICAL PROPERTIES

Appearance	This product is a clear, pink liquid.		
Odor	Pine-like	Odor Threshold	NE
Melting Point °C (°F)	Not evaluated	pH	11
Initial Boiling Point °C (°F)	179 °C (354 °F)	Boiling Point Range °C (°F)	Not evaluated
Flammability	Not flammable	Evaporation Rate (n-butyl acetate = 1)	Not evaluated
Vapor Density (air = 1)	Not evaluated	Vapor Pressure mm Hg @ 20°C:	Not evaluated
Solubility (in water)	Soluble	Relative density (water = 1)	1.0
Viscosity	Not evaluated	Oil-Water Partition Coefficient	NE
VOC	6.2g/L (0.052lb/gal)	HAP	5.1g/L (0.042lb/gal)
How To Detect This Substance (Warning Properties):	Pine like odor.		

10. STABILITY and REACTIVITY

10.1	Reactivity	Not considered reactive.

10.2	Chemical Stability	Stable under normal use and storage.
10.3	Possibility of hazardous reactions	Hazardous polymerization will not occur.
10.4	Conditions to avoid	Avoid mixing with incompatible materials.
10.5	Incompatible Materials	Strong oxidizers, Strong acids.
10.6	Hazardous Decomposition Products	Thermal decomposition of this product may generate carbon monoxide and carbon dioxide.

11. TOXICOLOGICAL INFORMATION

11.1 Toxicology Information

Note: This product has not been evaluated for its toxicity as a whole.

Component	Oral LD_{50} (mg/kg)	Dermal LD_{50} (mg/kg)	Inhalation LC_{50} (mg/m^3)	Skin Irritation	Serious eye damage
Proprietary blend of surfactants, fragrances and enzymes	No data available	No data available	No data available	YES	Irritation
Proprietary blend of solvents	No data available	No data available	No data available	YES	Irritation
Ethanolamine	1089 mg/kg (Rat)	1015 mg/kg (Rabbit)	No data available	YES	YES

11.2: Carcinogenicity (IARC, ACGIH, NTP, OSHA)

None of the components are listed as carcinogenic by IARC, ACGIH, NTP or OSHA

11.3: Reproductive toxicity:

None of the components of this product are listed as reproductive toxins on the California Proposition 65 List.

12. ECOLOGICAL INFORMATION

12.1 Ecological Information

Note: This product has not been evaluated for its ecologic impact as a whole.

Component	Toxicity to fish	Toxicity to daphnia	Bioaccumulation	Solubility	Biodegradability
Proprietary blend of surfactants, fragrances and enzymes	No data available	No data available	No data available	No data available	Readily biodegradable
Proprietary blend of solvents	No data available	No data available	Not expected	Soluble	Readily biodegradable
Ethanolamine	150 mg/L (LC50, 96 hr, carp)	65 mg/L (EC 50, 48 hr)	No data available	Soluble	Readily biodegradable

12.2	Persistence and Degradability	This product is expected to be readily biodegradable
12.3	Bioaccumulative Potential	This product is not expected to bioaccumulate
12.4	Mobility in Soil	When spilled onto soil, this product is expected to evaporate slowly.
12.5	Other Adverse Ecological Effects	This product may be harmful to aquatic life if large volumes of it are released into an aquatic environment.

13. DISPOSAL CONSIDERATIONS

	Preparing Wastes of this Product for Disposal	Waste disposal must be in accordance with appropriate U.S. Federal, State, and local regulations or with local regulations.
	Disposal of Contaminated Packaging	Cleaned containers can be recycled or disposed of as non-contaminated waste, if authorized by your local authorities. Dispose of containers as required by local regulations.
	U.S. EPA Waste Number	

14. TRANSPORT INFORMATION

THIS MATERIAL IS HAZARDOUS AS DEFINED BY 49 CFR 172.101 BY THE U.S. DEPARTMENT OF TRANSPORTATION. ALWAYS CONSULT LATEST REGULATIONS PRIOR TO SHIPPING FOR CHANGES!

US Domestic

14.1	UN Number	Not dangerous goods
14.2	UN Proper Shipping Name	
14.3	Transport Hazard Class(es)	
	Transport label(s) required	
14.4	Packing Group	
14.5	Marine Pollutant	
	NA Emergency Response Guide Number (2012)	
	Reportable Quantity (RQ)	

International Air Transport Association

14.6	UN Number	Not dangerous goods
	UN Proper Shipping Name	
	Transport Hazard Class(es)	
	Transport label(s) required	
	Packing Group	
	Marine Pollutant	
	Packaging Instructions	

International Maritime Organization

14.7	UN Number	Not dangerous goods
	UN Proper Shipping Name	
	Transport Hazard Class(es)	
	Transport label(s) required	
	Packing Group	
	Marine Pollutant	
	NA Emergency Response Guide Number (2012)	

15. SAFETY, HEALTH and ENVIRONMENTAL REGULATIONS SPECIFIC FOR THE PRODUCT

PROGRAM	Super Special Blade Clean 3G
Clean Air Act Hazardous Air Pollutants	NO
Safe Drinking Water Act	NO
RCRA F, K, P, U or D-lists	NO
SARA 302 EHS RQ	NO
SARA 302 EHS TPQ	NO
CERCLA RQ (lbs)	NO
SARA 313 LISTED	NO
SARA 311/312 ACUTE	YES
SARA 311/312 CHRONIC	NO
SARA 311/312 FIRE	NO
SARA 311/312 PRESSURE	NO
SARA 311/312	NO

REACTIVITY	
EPA EXTREMELY HAZARDOUS SUBSTANCE	NO
PEL	NO
PSM	NO
DHS CFATS STQ (Flammable Release)	NO
DEA Controlled Substances	NO
DSL	NOTE 1
NDSL	NOTE 1
REACH Pre-registered List	NOTE 1
TSCA (Public)	NOTE 1
European Inventory of Existing Commercial Chemical Substances (EINECS)	NO
EU No-Longer Polymers List (NLP)	NO
EEC Classification Packaging, and Labeling of Dangerous Substances(Annex 1)	YES
Philippines	NE
Japan	NE
Australia	NOTE 2
Korea	NE
China	NE
New Zealand Inventory of Chemicals	NE

NOTE 1: Some components of this product are listed in the Canadian DSL/NDSL, REACH and US TSCA publicly available list.
NOTE 2: Not hazardous under NOHSC:1008(2004), 3rd Edition.

16. OTHER INFORMATION

16.1	Original Preparation	14 November 2016
16.2	Revision History	1.1: 11 February2017
16.3	Prepared by	C.I. Bright 2/530 Boundary Rd Derrimut 3030
16.4	Date of Printing	February 21, 2017

DEFINITIONS OF TERMS

16.5	A large number of abbreviations and acronyms appear on a MSDS. Some of these which are commonly used include the following:	
	Section 2	**GHS**: Global Harmonization System **OSHA:** U.S. Occupational Safety and Health Administration. **CLP**: Classification and Packaging **WHMIS**: Workplace Hazardous Materials Information System **STOT**: Specific Target Organ Toxicity
	Section 3	**CAS #:** Chemical Abstract Service index number **EINECS #:** European Chemical Substances Information System index number
	Section 5	**NFPA:** Nation Fire Protection Association **Health Hazard: 0** (material that on exposure under fire conditions would offer no hazard beyond that of ordinary combustible materials); **1** (materials that on exposure under fire conditions could cause irritation or minor residual injury); **2** (materials that on intense or continued exposure under fire conditions could cause temporary incapacitation or possible residual injury); **3** (materials that can on short exposure could cause serious temporary or residual injury); **4** (materials that under very short exposure could cause death or major residual injury). **Flammability Hazard** **Reactivity Hazard:** Refer to definitions for "Hazardous Materials Identification System". **Flash Point**: Minimum temperature at which a liquid gives off sufficient vapors to form an ignitable mixture with air. **Autoignition Temperature:** The minimum temperature required to initiate combustion in air with no other source of ignition. **LEL:** The lowest percent of vapor in air, by volume, that will explode or ignite in the presence of an ignition source. **UEL**: The highest percent of vapor in air, by volume, that will explode or ignite in the presence of an ignition source.
	Section 8	**ACGIH** - American Conference of Governmental Industrial Hygienists, a professional association which establishes exposure limits. **TLV -** Threshold Limit Value - an airborne concentration of a substance which represents conditions under which it is generally believed that nearly all workers may be repeatedly exposed without adverse effect. The duration must be considered, including the 8-hour Time Weighted Average **(TWA)**, the 15-minute Short Term Exposure Limit, and the instantaneous Ceiling Level **(C)**. Skin absorption effects must also be considered **PEL -** Permissible Exposure Limit - This exposure value means exactly the same as a TLV, except that it is enforceable by OSHA. The OSHA Permissible Exposure Limits are based in the 1989 PELs and the June, 1993 Air Contaminants Rule (Federal Register: 58: 35338-35351 and 58: 40191). Both the current PELs and the vacated PELs are indicated. The phrase, "Vacated 1989 PEL," is placed next to the PEL which was vacated by Court Order. **IDLH -** Immediately Dangerous to Life and Health **-** This level represents a concentration from which one can escape within 30-minutes without suffering escape-preventing or permanent injury. **The DFG - MAK** is the Republic of Germany's Maximum Exposure Level, similar to the U.S. PEL. **NIOSH** is the National Institute of Occupational Safety and Health, which is the research arm of the U.S. **O**ccupational **S**afety and **H**ealth **A**dministration (**OSHA**). NIOSH issues exposure guidelines called **R**ecommended **E**xposure **L**evels (**REL**s). When no exposure guidelines are established, an entry of **NE (Not Established)** is made for reference.
	Section 11	**LD_{50}** : Lethal Dose (solids & liquids) which kills 50% of the exposed animals; **LC_{50}** : Lethal Concentration (gases) which kills 50% of the exposed animals; **ppm:** Concentration expressed in parts of material per million parts of air or water; **mg/m^3** : Concentration expressed in weight of substance per volume of air; **mg/kg:** Quantity of material, by weight, administered to a test subject, based on their body weight in kg **IARC** - the International Agency for Research on Cancer; **NTP** - the National Toxicology Program, **RTECS** - the Registry of Toxic Effects of Chemical Substances, **OSHA** and **CAL/OSHA**. IARC and NTP rate chemicals on a scale of decreasing potential to cause human cancer with rankings from 1 to 4. Subrankings (2A, 2B, etc.) are also used. **TDLo**, the lowest dose to cause a symptom and **TCLo** the lowest concentration to cause a symptom; **TDo**, **LDLo**, and **LDo**, or **TC**, **TCo**, **LCLo**, and **LCo**, the lowest dose (or concentration) to cause lethal or toxic effects. **BEI** - Biological Exposure Indices, represent the levels of determinants which are most likely to be observed in specimens collected from a healthy worker who has been exposed to chemicals to the same extent as a worker with inhalation exposure to the TLV.
	Section 12	**LC_{50}:** The lowest concentration in water which kills 50% of the test subjects. **EC_{50}:** The Effect Concentration in water at which 50% of the test species if affected.
	Section 13	**US EPA Hazardous Waste Codes**: refer to 40 CFR 261.20
	Section 14	**DOT**: US Department of Transportation **IATA**: International Air Transport Association **IMO**: International Maritime Organization **MARPOL:** International Convention for the Prevention of Pollution From Ships, 1973 as modified by the Protocol of 1978 **IBC Code** : Merchant Shipping Code

	Section 15	**RCRA**: US Resource Conservation and Recovery Act **SARA:** US Superfund Amendments and Reauthorization Act **PSM**: US OSHA Process Safety Management **CFATS:** US Department of Homeland Security Chemical Facility Anti-terrorism Standard **DSL:** Canadian Domestic Substances List **NDSL:** Canadian Non-Domestic Substances List **REACH**: European Registration, Evaluation, Authorization and Restriction of Chemicals list **TSCA:** US Toxic Substances Control Act

H Phrases

H225: Highly flammable liquid and vapor

H226: Flammable liquid and vapor

H304: May be fatal if swallowed and enters airways

H314: Causes severe skin burns and eye damage

H315: Causes skin irritation

H317: May cause an allergic skin reaction

H318: Causes serious eye damage

H335: May case respiratory irritation

H401: Toxic to aquatic life

H402: Harmful to aquatic life

H412: Harmful to aquatic life with long lasting effects

Safety Data Sheet
PALLUBE 32P

SDS Revision Date: 05/02/2015

1. Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier

Product Identity PALLUBE 32P

Alternate Names

1.2. Relevant identified uses of the substance or mixture and uses advised against

Intended use See Technical Data Sheet.

Application Method See Technical Data Sheet.

1.3. Details of the supplier of the safety data sheet

Company Name

Sullivan-Palatek, Inc.
1201 West US Highway 20
Michigan City, IN 46360
USA

Emergency

CHEMTREC (USA) (800) 424-9300

Customer Service: Sullivan-Palatek Phone: (800) 438-6203
Fax: (219) 809-0203

2. Hazard identification of the product

2.1. Classification of the substance or mixture

No applicable GHS categories.

2.2. Label elements

Using the Toxicity Data listed in section 11 and 12 the product is labeled as follows.

No applicable GHS categories.

[Prevention]:

No GHS prevention statements

[Response]:

No GHS response statements

[Storage]:

No GHS storage statements

[Disposal]:

No GHS disposal statements

3. Composition/information on ingredients

This product is considered a mixture.

Ingredient/Chemical Designations	Weight %	GHS Classification	Notes
Polypropylene glycol, monobutyl ether **CAS Number: 0009003-13-8**	**50 - 75**	**Not Classified**	

[1] Substance classified with a health or environmental hazard.
[2] Substance with a workplace exposure limit.
[3] PBT-substance or vPvB-substance.
*The full texts of the phrases are shown in Section 16.

This formulation is considered a trade secret and specific chemical identity and exact percentage (concentration) of composition may have been withheld. Trade secrets are allowable per paragraph (i) of 29 CFR 1910.1200 as long as specific chemical identity and exact percentage composition are available and will be provided to health professionals, employees, or designated representatives in accordance with applicable provisions of paragraph (i).

4. First aid measures

4.1. Description of first aid measures

General In all cases of doubt, or when symptoms persist, seek medical attention. Never give anything by mouth to an unconscious person.

Inhalation Remove to fresh air, keep patient warm and at rest. If breathing is irregular or stopped, give artificial respiration. If unconscious place in the recovery position and obtain immediate medical attention. Give nothing by mouth.

Eyes Irrigate copiously with clean water for at least 15 minutes, holding the eyelids apart and seek medical attention.

Skin Remove contaminated clothing. Wash skin thoroughly with soap and water or use a recognized skin cleanser.

Ingestion If swallowed obtain immediate medical attention. Keep at rest. Do NOT induce vomiting.

4.2. Most important symptoms and effects, both acute and delayed

Overview No specific symptom data available. See section 2 for further details.

5. Fire-fighting measures

5.1. Extinguishing media

Dry chemical, foam, carbon dioxide or water spray.

5.2. Special hazards arising from the substance or mixture

Hazardous decomposition: None under normal use.

5.3. Advice for fire-fighters

In the event of fire, wear full protective clothing and NIOSH Approved Self-contained breathing apparatus with full face piece operated in the pressure demand or other positive pressure mode. Move container from fire area if it can be done without risk. Use water to keep fire exposed containers cool and disperse vapors.

ERG Guide No. ----

6. Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Evacuate personnel to safe areas. Use personal protective equipment.

6.2. Environmental precautions

Do not allow spills to enter drains or waterways.

Use good personal hygiene practices. Wash hands before eating, drinking, smoking or using toilet. Promptly remove soiled clothing and wash thoroughly before reuse.

6.3. Methods and material for containment and cleaning up

Use a non-combustible material like vermiculite, sand or earth to soak up product and place in a container for later disposal. Dike for disposal and cover with wet sand or earth.

7. Handling and storage

7.1. Precautions for safe handling

See section 2 for further details.

7.2. Conditions for safe storage, including any incompatibilities

Handle containers carefully to prevent damage and spillage.

Store in a cool dry place.

Keep containers tightly closed.

Incompatible materials: Incompatible with strong oxidizing agents

See section 2 for further details.

7.3. Specific end use(s)

No data available.

8. Exposure controls and personal protection

8.1. Control parameters

Exposure

CAS No.	Ingredient	Source	Value
0009003-13-8	Polypropylene glycol, monobutyl ether	OSHA	No Established Limit
		ACGIH	No Established Limit
		NIOSH	No Established Limit
		Supplier	No Established Limit

Carcinogen Data

CAS No.	Ingredient	Source	Value
0009003-13-8	Polypropylene glycol, monobutyl ether	OSHA	Select Carcinogen: No
		NTP	Known: No; Suspected: No
		IARC	Group 1: No; Group 2a: No; Group 2b: No; Group 3: No; Group 4: No;

8.2. Exposure controls

Respiratory	If workers are exposed to concentrations above the exposure limit they must use the appropriate, certified respirators.
Eyes	Safety glasses with side shields
Skin	Overalls which cover the body, arms and legs should be worn. Skin should not be exposed. All parts of the body should be washed after contact.
Engineering Controls	Provide adequate ventilation. Where reasonably practicable this should be achieved by the use of local exhaust ventilation and good general extraction. If these are not sufficient to maintain concentrations of particulates and any vapor below occupational exposure limits suitable respiratory protection must be worn.
Other Work Practices	Use good personal hygiene practices. Wash hands before eating, drinking, smoking or using toilet. Promptly remove soiled clothing and wash thoroughly before reuse.

9. Physical and chemical properties

Appearance	Clear and bright Liquid
Odor	Mild
Odor threshold	Not Measured
pH	Not Measured
Melting point / freezing point	Pour Point -48 C
Initial boiling point and boiling range	Not Measured
Flash Point	220 C
Evaporation rate (Ether = 1)	Not Measured
Flammability (solid, gas)	Not Applicable
Upper/lower flammability or explosive limits	**Lower Explosive Limit:** Not Measured **Upper Explosive Limit:** Not Measured
Vapor pressure (Pa)	Not Measured
Vapor Density	Not Measured
Specific Gravity	0.98
Solubility in Water	Not Measured
Partition coefficient n-octanol/water (Log Kow)	Not Measured
Auto-ignition temperature	366 C
Decomposition temperature	Not Measured
Viscosity (cSt)	40.0 @ 40C
VOC %	Not Measured

9.2. Other information

No other relevant information.

10. Stability and reactivity

10.1. Reactivity

Hazardous Polymerization will not occur.

10.2. Chemical stability

Stable under normal circumstances.

10.3. Possibility of hazardous reactions

No data available.

10.4. Conditions to avoid

None known

10.5. Incompatible materials

Incompatible with strong oxidizing agents

10.6. Hazardous decomposition products

None under normal use.

11. Toxicological information

Acute toxicity

Product is safe for intended use based on the formulation, testing results and the long history of safe consumer use.

Ingredient	Oral LD50, mg/kg	Skin LD50, mg/kg	Inhalation Vapor LD50, mg/L/4hr	Inhalation Dust/Mist LD50, mg/L/4hr	Inhalation Gas LD50, ppm
Polypropylene glycol, monobutyl ether - (9003-13-8)	9,100.00, Rat - Category: NA	No data available	No data available	No data available	No data available

Note: When no route specific LD50 data is available for an acute toxin, the converted acute toxicity point estimate was used in the calculation of the product's ATE (Acute Toxicity Estimate).

Classification	Category	Hazard Description
Acute toxicity (oral)	---	Not Applicable
Acute toxicity (dermal)	---	Not Applicable
Acute toxicity (inhalation)	---	Not Applicable
Skin corrosion/irritation	---	Not Applicable
Serious eye damage/irritation	---	Not Applicable
Respiratory sensitization	---	Not Applicable
Skin sensitization	---	Not Applicable
Germ cell mutagenicity	---	Not Applicable
Carcinogenicity	---	Not Applicable
Reproductive toxicity	---	Not Applicable
STOT-single exposure	---	Not Applicable
STOT-repeated exposure	---	Not Applicable
Aspiration hazard	---	Not Applicable

12. Ecological information

12.1. Toxicity

Aquatic Ecotoxicity

Ingredient	96 hr LC50 fish, mg/l	48 hr EC50 crustacea, mg/l	ErC50 algae, mg/l

Polypropylene glycol, monobutyl ether - (9003-13-8)	Not Available	Not Available	Not Available

12.2. Persistence and degradability

There is no data available on the preparation itself.

12.3. Bioaccumulative potential

Not Measured

12.4. Mobility in soil

No data available.

12.5. Results of PBT and vPvB assessment

This product contains no PBT/vPvB chemicals.

12.6. Other adverse effects

No data available.

13. Disposal considerations

13.1. Waste treatment methods

Observe all federal, state and local regulations when disposing of this substance.

14. Transport information

	DOT (Domestic Surface Transportation)	IMO / IMDG (Ocean Transportation)	ICAO/IATA
14.1. UN number	Not Applicable	Not Regulated	Not Regulated
14.2. UN proper shipping name	Not Regulated	Not Regulated	Not Regulated
14.3. Transport hazard class(es)	**DOT Hazard Class:** Not Applicable **DOT Label:** ---	**IMDG:** Not Applicable **Sub Class:** Not Applicable	**Air Class:** Not Applicable
14.4. Packing group	Not Applicable	Not Applicable	Not Applicable

14.5. Environmental hazards

IMDG Marine Pollutant: No

14.6. Special precautions for user

No further information

15. Regulatory information

Regulatory Overview	The regulatory data in Section 15 is not intended to be all-inclusive, only selected regulations are represented.
Toxic Substance Control Act (TSCA)	All components of this material are either listed or exempt from listing on the TSCA Inventory.
WHMIS Classification	Not Regulated
US EPA Tier II Hazards	**Fire:** No **Sudden Release of Pressure:** No

Reactive: No
Immediate (Acute): No
Delayed (Chronic): No

EPCRA 311/312 Chemicals and RQs:
To the best of our knowledge, there are no chemicals at levels which require reporting under this statute.

EPCRA 302 Extremely Hazardous :
To the best of our knowledge, there are no chemicals at levels which require reporting under this statute.

EPCRA 313 Toxic Chemicals:
To the best of our knowledge, there are no chemicals at levels which require reporting under this statute.

Proposition 65 - Carcinogens (>0.0%):
To the best of our knowledge, there are no chemicals at levels which require reporting under this statute.

Proposition 65 - Developmental Toxins (>0.0%):
To the best of our knowledge, there are no chemicals at levels which require reporting under this statute.

Proposition 65 - Female Repro Toxins (>0.0%):
To the best of our knowledge, there are no chemicals at levels which require reporting under this statute.

Proposition 65 - Male Repro Toxins (>0.0%):
To the best of our knowledge, there are no chemicals at levels which require reporting under this statute.

N.J. RTK Substances (>1%) :
To the best of our knowledge, there are no chemicals at levels which require reporting under this statute.

Penn RTK Substances (>1%) :
To the best of our knowledge, there are no chemicals at levels which require reporting under this statute.

16. Other information

The information and recommendations contained herein are based upon data believed to be correct. However, no guarantee or warranty of any kind, expressed or implied, is made with respect to the information contained herein. We accept no responsibility and disclaim all liability for any harmful effects which may be caused by exposure to our products. Customers/users of this product must comply with all applicable health and safety laws, regulations, and orders.

The full text of the phrases appearing in section 3 is: None

This is the first version in the GHS SDS format. Listings of changes from previous versions in other formats are not applicable.

The information provided on the SDS is a correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guide for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered as a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other material or in any process, unless specified in the text.

End of Document

VALCO MELTON™

MATERIAL SAFETY DATA SHEET

Section I: COMPANY INFORMATION AND PRODUCT IDENTIFICATION

490 Circle Freeway Dr., Cincinnati, OH 45246
Phone: 513-874-6550; Fax: 513-874-3612
www.ValcoMelton.com

MSDS FORM: **VCI0026**
MSDS current as of: **6/05/2012**

EMERGENCY TELEPHONE NUMBER: CALL INFOTRAC AT 1-800-535-5053
PRODUCT INFORMATION NUMBER: (513) 874-6550

PRODUCT NAME:	**MARKING INK**
PRODUCT NUMBER:	**WHL-300X10**
PRODUCT PART NUMBER(S):	**713XX059**
CHEMICAL FAMILY:	**FLUORESCENT BRIGHTENER 220 CAS# 16470-24-9**
SYNONYM NAME(S):	**UV OPTICAL BRIGHTENER SOLUTION**

Section II: HAZARD(S) IDENTIFICATION

CLASSIFICATION: **NON-HAZARDOUS**

Section III: HAZARDOUS INGREDIENTS COMPOSITION

HMIS CODES: RECOMMENDED HMIS III RATING: 110A

Section IV: FIRST-AID MEASURES

FIRST AID PROCEDURES:

EYE:	**Immediately flush eyes with water for 15 minutes. Lift upper and lower lids. Get medical attention immediately.**
SKIN:	**None.**
INHALATION:	**None.**
INGESTION:	**None.**

Section V: FIRE AND EXPLOSION HAZARD DATA

AUTO IGNITION:	UNKNOWN
FLASH POINT:	> 250 Degrees F Method: TAGLIBUE CLOSED TESTER/TAG CLOSED TESTER
UPPER EXPLOSIVE LIMIT (%):	N/A
LOWER EXPLOSIVE LIMIT (%):	N/A
EXTINGUISHING MEDIA:	DRY CHEMICAL, CO2
SPECIAL FIRE FIGHTING PROCEDURES:	ALCOHOL FOAM SELF-CONTAINED BREATHING APPARATUS TO PROTECT AGAINST POTENTIALLY TOXIC AND IRRITATING FUMES.
FIRE AND EXPLOSION HAZARDS:	NEGLIGIBLE FIRE HAZARD WHEN EXPOSED TO HEAT OR FLAME.
NFPA FLAMMABILITY HAZARD CLASS:	1 = Slight

Section VI: SPILL AND LEAK PROCEDURES

SPILL AND/OR LEAK PROCEDURES:	SOAK UP WITH ABSORBANT MATERIAL. AREA CAN BE WASHED WITH WATER. COLLECT WASH WATER. DO NOT FLUSH INTO PUBLIC SEWER OR WATERWAY.

Section VII: HANDLING AND STORAGE PRECAUTIONS CONTROL MEASURES

STORAGE TEMPERATURE:	0 - 100 DEGREES F
HANDLING/STORAGE:	KEEP FROM FREEZING. KEEP IN VENTILATED AREA MINIMIZE CONTACT WITH ATMOSPHERIC AIR AVOID BREATHING VAPORS AVOID EATING OR SMOKING AROUND OPEN CONTAINERS.

Section VIII: PERSONAL PROTECTIVE EQUIPMENT, RECOMMENDATIONS

CONDITIONS UNDER WHICH PPE REQUIRED:	NORMAL WORK CONDITIONS
EYE PROTECTION REQUIREMENTS:	SAFETY GLASSES W/SIDE PROTECTOR SHIELDS, CHEMICAL GOGGLES
GLOVE REQUIREMENTS:	NOT REQUIRED, SUGGEST RUBBER GLOVES
CLOTHING REQUIREMENTS:	NOT REQUIRED SUGGEST LONG SLEEVES, LONG LEGGED PANTS
CHANGE/REMOVAL OF CLOTHING:	NOT REQUIRED
WASH REQUIREMENTS:	NOT REQUIRED
RESPIRATOR REQUIREMENTS:	NOT REQUIRED
VENTILATION REQUIREMENTS:	LOCAL, GENERAL

Section IX: PHYSICAL/CHEMICAL CHARACTERISTICS

PURE MATERIAL OR MIXTURE:	MIXTURE
PHYSICAL FORM:	LIQUID
APPEARANCE/PHYSICAL DESCRIPTION:	NON-HAZARDOUS AQUEOUS UV MARKING SOLUTION
pH AS IS:	7.5
BOILING POINT:	212 DEGREES F
MELTING/FREEZING POINT:	32 DEGREES F
SOLUBILITY IN WATER:	MISCIBLE
SPECIFIC GRAVITY (WATER = 1):	1.01
BULK DENSITY:	8.4lb/gal
VOLATILE BY VOLIUME:	NOT DETERMINED
EVAPORATION RATE:	>1 WATER
VAPOR PRESSURE (mmHg):	NOT DETERMIINED
VAPOR DENSITY (Air = 1):	NOT DETERMINED
VOLATILE ORGANIC COMPOUNDS:	NOT DETERMINED

Section X: REACTIVITY DATA

STABILITY:	STABLE
INCOMPATIBILITIES:	WATER REACTIVE MATERIALS.
NFPA REACTIVITY HAZARD CLASS:	0 = INSIGNIFICANT
HAZARDOUS DECOMPOSITION PRODUCTS:	NONE
HAZARDOUS POLYMERIZATION:	WILL NOT OCCUR

Section XI: HEALTH EFFECTS/HAZARD DATA - TOXICITY

SHORT TERM EFFECTS OF EXPOSURE:

ROUTE OF ENTRY:	INHALATION
ACUTE EFFECTS:	NO HAZARD IN NORMAL USAGE.
ROUTE OF ENTRY:	INGESTION
ACUTE EFFECTS:	NO HAZARD IN NORMAL USAGE.
ROUTE OF ENTRY:	SKIN CONTACT
ACUTE EFFECTS:	NO HAZARD IN NORMAL USAGE.
ROUTE OF ENTRY:	EYE CONTACT
ACUTE EFFECTS:	NO HAZARD IN NORMAL USAGE.

LONG TERM EFFECTS: **None.**

SPECIAL HEALTH EFFECTS: **None.**

TOXICOLOGY INFORMATION: **Non-Toxic**

Section XII: ECOLOGICAL CONSIDERATIONS

Material is Food Packaging Grade, ref.: FDA 21CFR175.105
DO NOT FLUSH INTO PUBLIC SEWER OR WATERWAY.

Section XIII: DISPOSAL

WATER DISPOSAL METHODS:	IN ACCORDANCE WITH, AND, OBSERVING ALL LOCAL, STATE, AND FEDERAL REGULATIONS.

Section XIV: SHIPPING AND TRANSPORT INFORMATION

DOT SHIPPING NAME:	INK
DOT HAZARD CLASS:	NONHAZARDOUS
DOT REPORTABILITY QUANTITY:	NOT NOTED

Section XV: OTHER REGULATORY/MISCELLANEOUS

TSCA:	ALL COMPONENTS ARE ON THE TSCA INVENTORY.
FDA	21CFR175.105
SARA/TITLE III:	BASED ON THE DATA AVAILABLE, THIS MATERIAL CONTAINS NO SUBSTANCE AT OR ABOVE REPORTING THRESHOLD, PER SECTION 313.

Section XV-A OTHER REGULATORY/MISCELLANEOUS NON-HAZARDOUS INGREDIENTS

CHEMICAL	CAS NO.	Wt %	EXPOSURE LIMITS
WATER	**7732-18-5**	**PROPRIETARY**	**NSRL**
C.I. 220 OPTICAL BRIGHTENER	**16470-24-9**	**PROPRIETARY**	**NSRL**
GLYCEROL	**56-81-5**	**PROPRIETARY**	**NSRL**

Section XVI: DISCLAIMER

TO THE BEST OF THE KNOWLEDGE OF THE MANAGEMENT AND EMPLOYEES OF VALCO CINCINNATI, INC., THE INFORMATION CONTAINED HEREIN IS ACCURATE; OBTAINED FROM SOURCES BELIEVED TO BE ACCURATE. SINCE THE CONDITIONS AND METHODS OF USE OF THIS PRODUCT IS BEYOND THE CONTROL OF VALCO CINCINNATI, INC., AND IT'S AGENTS, VALCO CINCINNATI, INC. DISCLAIMS ALL LIABILITY ARISING FROM THE USE, AND/OR MISUSE, OF THIS PRODUCT AND THE INFORMATION CONTAINED THEREIN.

Notes:
This data is furnished gratuitously independent of sale of the product and only for your investigation and independent verification while data is believed to be correct. Valco Cincinnati shall in no event be liable or responsible for damages whatsoever, directly or indirectly, resulting from the publication or use of or reliance upon data contained herein. No warranty, either implied or expressed, of merchantability of fitness or of any nature with respect to the product or to the data is made herein. You are urged to obtain data sheets for Valco Cincinnati materials you buy, process, use or distribute, and are encouraged to advise anyone working with or exposed to such materials of the information contained herein.

Sources:
1. Dangerous Properties of Industrial Material
2. Condensed Chemical Dictionary
3. Handbook of Toxic Hazardous Chemicals and Carcinogens
4. TLV's and Biological Exposure Indices for 1985-86
5. Director's List of Hazardous Substances
6. Title 29 CFR Parts 1900 to 1910
7. Documentation of TLV's and BEI's
8. Guidelines for the Selection of Chemical Protective Clothing
9. Emergency Response Guidebook

SAFETY DATA SHEET

1. Identification

Product identifier	**QD® Contact Cleaner**
Other means of identification	
Product code	02130
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	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. May cause damage to organs (central nervous system, eyes, skin, upper respiratory tract) through prolonged or repeated exposure. Suspected of damaging fertility. 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.
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

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

Components	Type	Value
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
		385 ppm
	TWA	350 mg/m3
		75 ppm
2,2-Dimethylbutane (CAS 75-83-2)	Ceiling	1800 mg/m3
		510 ppm
	TWA	350 mg/m3
		100 ppm
2-Methylpentane (CAS 107-83-5)	Ceiling	1800 mg/m3
		510 ppm
	TWA	350 mg/m3
		100 ppm
Isopropyl alcohol (CAS 67-63-0)	STEL	1225 mg/m3
		500 ppm
	TWA	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-Hexanedion, 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.

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

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.
Ingestion	Droplets of the product aspirated into the lungs through ingestion or vomiting may cause a serious chemical pneumonia.
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.

Product	Species	Test Results
QD® Contact Cleaner		
Acute		
Dermal		
LD50	Rabbit	2807 mg/kg estimated
Inhalation		
LC50	Rat	29004 ppm, 4 hours estimated
		30 mg/l, 4 hours estimated
Oral		
LD50	Rat	21092 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.

IARC Monographs. Overall Evaluation of Carcinogenicity

Not available.

US. National Toxicology Program (NTP) Report on Carcinogens

Not available.

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			
Acute			
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

IMDG

UN number	UN1950
UN proper shipping name	AEROSOLS, LIMITED QUANTITY
Transport hazard class(es)	
Class	2
Subsidiary risk	-
Packing group	Not applicable.
Environmental hazards	
Marine pollutant	No.
EmS	F-D, S-U
Special precautions for user	Read safety instructions, SDS and emergency procedures before handling.

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	No.
ERG Code	10L
Special precautions for user	Read safety instructions, SDS and emergency procedures before handling.
Other information	
Passenger and cargo aircraft	Allowed with restrictions.
Cargo aircraft only	Allowed with restrictions.

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.

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

Not listed.

SARA 304 Emergency release notification

Not regulated.

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)	Listed.
n-Hexane (CAS 110-54-3)	Listed.

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.

FEMA Priority Substances Respiratory Health and Safety in the Flavor Manufacturing Workplace

Isopropyl alcohol (CAS 67-63-0) Low priority

Food and Drug Administration (FDA) Not regulated.

Superfund Amendments and Reauthorization Act of 1986 (SARA)

Section 311/312 Hazard categories
Immediate Hazard - Yes
Delayed Hazard - Yes
Fire Hazard - Yes
Pressure Hazard - Yes
Reactivity Hazard - No

SARA 302 Extremely hazardous substance No

US state regulations

US. California. Candidate Chemicals List. Safer Consumer Products Regulations (Cal. Code Regs, tit. 22, 69502.3, subd. (a))

2,2,4-Trimethylpentane (CAS 540-84-1)
Isopropyl alcohol (CAS 67-63-0)
Naphtha (petroleum), hydrotreated light (CAS 64742-49-0)
n-Hexane (CAS 110-54-3)

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

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

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

Not listed.

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

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

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. Pennsylvania Worker and Community Right-to-Know Law

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
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

Revision date 09-28-2015

Prepared by Allison Cho

Version # 02

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 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).

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		
Dermal		
LD50	Rabbit	9027.8184 mg/kg estimated
Inhalation		
LC50	Rat	25927.2324 ppm, 4 hours estimated
		1108.0551 mg/l, 4 hours estimated
Oral		
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
Acute			
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			
Acute			
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.

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 Hazard categories Immediate Hazard - Yes
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

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

Benzene (CAS 71-43-2)	Listed: December 26, 1997

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 **Food Grade Anti-Seize & Lubricating Compound**

Other means of identification

Product code SL35905, SL35906

Recommended use Anti-seize 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 Not classified.

Health hazards Not classified.

Environmental hazards Hazardous to the aquatic environment, long-term hazard — Category 3

OSHA defined hazards Not classified.

Label elements

Hazard symbol None.

Signal word None.

Hazard statement Harmful to aquatic life with long lasting effects.

Precautionary statement

Prevention Use with adequate ventilation. Open doors and windows or use other means to ensure a fresh air supply during use. Observe good industrial hygiene practices. Avoid release to the environment.

Response Wash hands after handling.

Storage Store away from incompatible materials.

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	%
Calcium carbonate		1317-65-3	20 - 30
1-Decene, homopolymer, hydrogenated		68037-01-4	10 - 20
White mineral oil		8042-47-5	10 - 20
Talc (not containing asbestos fibers)		14807-96-6	5 - 10
Zinc oxide		1314-13-2	1 - 3

Chemical name	Common name and synonyms	CAS number	%
Titanium dioxide		13463-67-7	< 1

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

4. First-aid measures

Inhalation	If breathing is difficult, remove to fresh air and keep at rest in a position comfortable for breathing. Call a physician if symptoms develop or persist.
Skin contact	Remove and isolate contaminated clothing and shoes. Wash off immediately with soap and plenty of water. Get medical attention if irritation develops and persists. Wash contaminated clothing before reuse.
Eye contact	Immediately flush eyes with plenty of water for at least 15 minutes. Get medical attention if irritation develops and persists.
Ingestion	Rinse mouth. Drink plenty of water. Never give anything by mouth to a victim who is unconscious or is having convulsions. Do not induce vomiting without advice from poison control center. Get medical advice/attention if you feel unwell.
Most important symptoms/effects, acute and delayed	Direct contact with eyes may cause temporary irritation.
Indication of immediate medical attention and special treatment needed	Treat symptomatically.
General information	Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves.

5. Fire-fighting measures

Suitable extinguishing media	Foam. Dry chemicals. Carbon dioxide (CO2).
Unsuitable extinguishing media	Do not use water jet as an extinguisher, as this will spread the fire.
Specific hazards arising from the chemical	During fire, gases hazardous to health may be formed.
Special protective equipment and precautions for firefighters	Self-contained breathing apparatus and full protective clothing must be worn in case of fire.
Fire-fighting equipment/instructions	Cool containers exposed to heat with water spray and remove container, if no risk is involved.
General fire hazards	No unusual fire or explosion hazards noted.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures	Keep unnecessary personnel away. Keep people away from and upwind of spill/leak. Wear appropriate protective equipment and clothing during clean-up. Ensure adequate ventilation. 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	Stop the flow of material, if this is without risk. Prevent product from entering drains. Following product recovery, flush area with water. Never return spills to original containers for re-use. 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.

7. Handling and storage

Precautions for safe handling	Avoid prolonged or repeated contact with skin. Use only in well-ventilated areas. Wear appropriate personal protective equipment. Observe good industrial hygiene practices. Avoid release to the environment. For product usage instructions, please see the product label.
Conditions for safe storage, including any incompatibilities	Keep away from heat and sources of ignition. Store in original tightly closed container. 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
Calcium carbonate (CAS 1317-65-3)	PEL	5 mg/m3	Respirable fraction.
		15 mg/m3	Total dust.
Titanium dioxide (CAS 13463-67-7)	PEL	15 mg/m3	Total dust.
White mineral oil (CAS 8042-47-5)	PEL	5 mg/m3	Mist.
Zinc oxide (CAS 1314-13-2)	PEL	5 mg/m3	Respirable fraction.
		5 mg/m3	Fume.
		15 mg/m3	Total dust.

US. OSHA Table Z-3 (29 CFR 1910.1000)

Components	Type	Value	Form
Talc (not containing asbestos fibers) (CAS 14807-96-6)	TWA	0.3 mg/m3	Total dust.
		0.1 mg/m3	Respirable.
		20 mppcf	
		2.4 mppcf	Respirable.

US. ACGIH Threshold Limit Values

Components	Type	Value	Form
Talc (not containing asbestos fibers) (CAS 14807-96-6)	TWA	2 mg/m3	Respirable fraction.
Titanium dioxide (CAS 13463-67-7)	TWA	10 mg/m3	
White mineral oil (CAS 8042-47-5)	TWA	5 mg/m3	Inhalable fraction.
Zinc oxide (CAS 1314-13-2)	STEL	10 mg/m3	Respirable fraction.
	TWA	2 mg/m3	Respirable fraction.

US. NIOSH: Pocket Guide to Chemical Hazards

Components	Type	Value	Form
Calcium carbonate (CAS 1317-65-3)	TWA	5 mg/m3	Respirable.
		10 mg/m3	Total
Talc (not containing asbestos fibers) (CAS 14807-96-6)	TWA	2 mg/m3	Respirable.
White mineral oil (CAS 8042-47-5)	STEL	10 mg/m3	Mist.
	TWA	5 mg/m3	Mist.
Zinc oxide (CAS 1314-13-2)	Ceiling	15 mg/m3	Dust.
	STEL	10 mg/m3	Fume.
	TWA	5 mg/m3	Dust.
		5 mg/m3	Fume.

Biological limit values No biological exposure limits noted for the ingredient(s).

Exposure guidelines Occupational Exposure Limits are not relevant to the current physical form of the product.

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. Eye wash facilities and emergency shower must be available when handling this product.

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).

Other	Wear suitable protective clothing.
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	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	Semi-solid paste.
Color	White.
Odor	Petroleum.
Odor threshold	Not available.
pH	Neutral.
Melting point/freezing point	> 449.6 °F (> 232 °C)
Initial boiling point and boiling range	> 500 °F (> 260 °C)
Flash point	> 449.6 °F (> 232 °C) Cleveland Open Cup
Evaporation rate	Slow.
Flammability (solid, gas)	Not available.
Upper/lower flammability or explosive limits	
Flammability limit - lower (%)	Not available.
Flammability limit - upper (%)	Not available.
Vapor pressure	< 0.01 kPa
Vapor density	> 5 (air = 1)
Relative density	1.18
Solubility (water)	Negligible.
Partition coefficient (n-octanol/water)	Not available.
Auto-ignition temperature	> 500 °F (> 260 °C)
Decomposition temperature	Not available.
Viscosity (kinematic)	Not available.
Percent volatile	41 % 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	Contact with incompatible materials.
Incompatible materials	Acids. Strong oxidizing agents. Fluorine.
Hazardous decomposition products	Carbon oxides. Hydrocarbon fumes and smoke. Halogenated materials. Heavy metal compounds.

11. Toxicological information

Information on likely routes of exposure	
Inhalation	Prolonged inhalation may be harmful.
Skin contact	Prolonged skin contact may cause temporary irritation.

Eye contact	Direct contact with eyes may cause temporary irritation.
Ingestion	Expected to be a low ingestion hazard.
Symptoms related to the physical, chemical and toxicological characteristics	Direct contact with eyes may cause temporary irritation.

Information on toxicological effects

Acute toxicity

Product	Species	Test Results
Food Grade Anti-Seize & Lubricating Compound		
Acute		
Dermal		
LD50	Rabbit	8771 mg/kg estimated
Inhalation		
LC50	Rat	37 mg/l estimated
Oral		
LD50	Rat	2385 mg/kg Acute Toxicity Estimate
Chronic		
Oral		
LD50	Rat	36603 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 a respiratory sensitizer.
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	Not likely, due to the form of the product.

IARC Monographs. Overall Evaluation of Carcinogenicity

White mineral oil (CAS 8042-47-5) 3 Not classifiable as to carcinogenicity to humans.

US. National Toxicology Program (NTP) Report on Carcinogens

Not available.

Reproductive toxicity	This product is not expected to cause reproductive or developmental effects.
Specific target organ toxicity - single exposure	Not classified.
Specific target organ toxicity - repeated exposure	Not classified.
Aspiration hazard	Not an aspiration hazard.
Chronic effects	Prolonged exposure may cause chronic effects.

12. Ecological information

Ecotoxicity Harmful to aquatic life with long lasting effects.

Product		Species	Test Results
Food Grade Anti-Seize & Lubricating Compound			
Aquatic			
Acute			
Crustacea	EC50	Daphnia	6.5275 mg/l, 48 hours estimated
Fish	LC50	Fish	73.3333 ppm, 96 hours estimated

Components		Species	Test Results
Talc (not containing asbestos fibers) (CAS 14807-96-6)			
Aquatic			
Acute			
Fish	LC50	Zebra danio (Danio rerio)	> 100 g/l, 96 hours
Titanium dioxide (CAS 13463-67-7)			
Acute			
Other	EC50	Pseudokirchnerella subcapitata	5.83 mg/l, 72 hours
Chronic			
Other	NOEC	Pseudokirchnerella subcapitata	0.984 mg/l, 72 hours
Aquatic			
Acute			
Crustacea	LC50	Ceriodaphnia dubia	3 mg/l, 48 hours
		Water flea (Daphnia magna)	5.5 ppm, 48 hours
Fish	LC50	Fathead minnow (Pimephales promelas)	1000 mg/l, 96 hours
Zinc oxide (CAS 1314-13-2)			
Aquatic			
Acute			
Crustacea	EC50	Water flea (Daphnia magna)	0.098 mg/l, 48 hours
Fish	LC50	Rainbow trout,donaldson trout (Oncorhynchus mykiss)	1.1 ppm, 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

Bioconcentration factor (BCF)

Titanium dioxide	352

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 This product is not a RCRA hazardous waste (See 40 CFR Part 261.20 – 261.33). Empty containers may be recycled. Collect and reclaim or dispose in sealed containers at licensed waste disposal site. Dispose in accordance with all applicable regulations.

Hazardous waste code Not regulated.

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

Not regulated as dangerous goods.

IATA

Not regulated as dangerous goods.

IMDG

Not regulated as dangerous goods.

15. Regulatory information

US federal regulations This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

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

Not regulated.

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

Not listed.

SARA 304 Emergency release notification

Not regulated.

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

Zinc oxide (CAS 1314-13-2)

CERCLA Hazardous Substance List (40 CFR 302.4)

Zinc oxide (CAS 1314-13-2) Listed.

CERCLA Hazardous Substances: Reportable quantity

Not listed.

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)

Not regulated.

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 Hazard categories
Immediate Hazard - No
Delayed Hazard - No
Fire Hazard - No
Pressure Hazard - No
Reactivity Hazard - No

SARA 302 Extremely hazardous substance No

US state regulations

US. California. Candidate Chemicals List. Safer Consumer Products Regulations (Cal. Code Regs, tit. 22, 69502.3, subd. (a))

Talc (not containing asbestos fibers) (CAS 14807-96-6)
Titanium dioxide (CAS 13463-67-7)

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

Calcium carbonate (CAS 1317-65-3)
Talc (not containing asbestos fibers) (CAS 14807-96-6)
Zinc oxide (CAS 1314-13-2)
White mineral oil (CAS 8042-47-5)

US. Massachusetts RTK - Substance List

Calcium carbonate (CAS 1317-65-3)
Talc (not containing asbestos fibers) (CAS 14807-96-6)
White mineral oil (CAS 8042-47-5)
Zinc oxide (CAS 1314-13-2)

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

Zinc oxide (CAS 1314-13-2)
Diphenylamine (CAS 122-39-4)
Calcium carbonate (CAS 1317-65-3)
Polytetrafluoroethylene (CAS 9002-84-0)
Talc (not containing asbestos fibers) (CAS 14807-96-6)
White mineral oil (CAS 8042-47-5)

US. Rhode Island RTK

Zinc oxide (CAS 1314-13-2)

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)) 0 %

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

State

Consumer products This product is regulated as an Anti-seize Lubricant (non-aerosol). This product is compliant for use in all 50 states.

VOC content (CA) 0 %

VOC content (OTC) 0 %

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)	No
Canada	Non-Domestic Substances List (NDSL)	Yes
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)	Yes
New Zealand	New Zealand Inventory	No
Philippines	Philippine Inventory of Chemicals and Chemical Substances (PICCS)	No
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 07-21-2015

Prepared by Allison Cho

Version # 01

Further information Not available.

HMIS® ratings Health: 1
Flammability: 1
Physical hazard: 0
Personal protection: B

NFPA ratings Health: 1
Flammability: 1
Instability: 0

NFPA ratings



Disclaimer 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.

SECTION 1. PRODUCT AND COMPANY IDENTIFICATION

Material name : A07311 ZEP PRO NF SLVT DGRS R12201 20N20

Material number : 000000000001040807

Manufacturer or supplier's details

Company : Zep Inc.

Address : 1310 Seaboard Industrial Blvd., NW
Atlanta, GA 30318

Telephone : 404-352-1680

Emergency telephone numbers

For SDS Information	:	Compliance Services 1-877-428-9937
For a Medical Emergency	:	877-541-2016 Toll Free - All Calls Recorded
For a Transportation Emergency	:	CHEMTREC: 800-424-9300 - All Calls Recorded. In the District of Columbia 202-483-7616

SECTION 2. HAZARDS IDENTIFICATION

Emergency Overview

Appearance	Aerosol containing a compressed gas
Colour	colourless
Odour	mild

GHS Classification

Gases under pressure : Compressed gas
Skin irritation : Category 2
Eye irritation : Category 2A
Carcinogenicity : Category 1A
Specific target organ toxicity - single exposure : Category 3 (Central nervous system)

GHS Label element

Hazard pictograms :



Signal word : Danger

Hazard statements : H280 Contains gas under pressure; may explode if heated.
H315 Causes skin irritation.
H319 Causes serious eye irritation.
H336 May cause drowsiness or dizziness.
H350 May cause cancer.

Precautionary statements : **Prevention:**
P201 Obtain special instructions before use.

P202 Do not handle until all safety precautions have been read and understood.
P261 Avoid breathing dust/ fume/ gas/ mist/ vapours/ spray.
P264 Wash skin thoroughly after handling.
P271 Use only outdoors or in a well-ventilated area.
P280 Wear eye protection/ face protection.
P280 Wear protective gloves.
P281 Use personal protective equipment as required.
Response:
P302 + P352 IF ON SKIN: Wash with plenty of soap and water.
P304 + P340 + P312 IF INHALED: 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.
P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P308 + P313 IF exposed or concerned: Get medical advice/ attention.
P332 + P313 If skin irritation occurs: Get medical advice/ attention.
P337 + P313 If eye irritation persists: Get medical advice/ attention.
P362 Take off contaminated clothing and wash before reuse.
Storage:
P405 Store locked up.
P410 + P403 Protect from sunlight. Store in a well-ventilated place.
Disposal:
P501 Dispose of contents/container in accordance with local regulation.

Potential Health Effects

Carcinogenicity:

IARC	Group 1: Carcinogenic to humans	
	trichloroethylene	79-01-6
ACGIH	Suspected human carcinogen	
	trichloroethylene	79-01-6
OSHA	No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.	
NTP	Reasonably anticipated to be a human carcinogen	
	trichloroethylene	79-01-6

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance / Mixture : Mixture

Hazardous components

Chemical Name	CAS-No.	Concentration [%]
trichloroethylene	79-01-6	>= 90 - <= 100
carbon dioxide	124-38-9	>= 1 - < 5

SECTION 4. FIRST AID MEASURES

General advice	:	Move out of dangerous area. Show this safety data sheet to the doctor in attendance. Do not leave the victim unattended.
If inhaled	:	Remove person to fresh air. If signs/symptoms continue, get medical attention.
In case of skin contact	:	If skin irritation persists, call a physician. Wash off immediately with plenty of water for at least 15 minutes. If on clothes, remove clothes.
In case of eye contact	:	Remove contact lenses. Protect unharmed eye. Keep eye wide open while rinsing. If eye irritation persists, consult a specialist. Rinse immediately with plenty of water for at least 15 minutes.
If swallowed	:	DO NOT induce vomiting unless directed to do so by a physician or poison control center. Keep respiratory tract clear. Never give anything by mouth to an unconscious person. If symptoms persist, call a physician. Take victim immediately to hospital.

SECTION 5. FIREFIGHTING MEASURES

Suitable extinguishing media	:	Dry chemical Water spray jet Alcohol-resistant foam Carbon dioxide (CO2)
Unsuitable extinguishing media	:	High volume water jet
Specific hazards during firefighting	:	Do not allow run-off from fire fighting to enter drains or water courses.
Hazardous combustion products	:	Carbon dioxide (CO2) Carbon monoxide Smoke Chlorine compounds
Specific extinguishing methods	:	Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
Further information	:	Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations. Collect contaminated fire extinguishing water separately. This must not be discharged into drains. Prevent fire extinguishing water from contaminating surface water or the ground water system. For safety reasons in case of fire, cans should be stored

separately in closed containments.

Special protective equipment for firefighters	:	Wear self-contained breathing apparatus for firefighting if necessary.

SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures	:	Use personal protective equipment. Ensure adequate ventilation. Refer to protective measures listed in sections 7 and 8. Beware of vapours accumulating to form explosive concentrations. Vapours can accumulate in low areas. Evacuate personnel to safe areas. Remove all sources of ignition.
Environmental precautions	:	Prevent further leakage or spillage. Clean contaminated floors and objects thoroughly while observing environmental regulations.
Methods and materials for containment and cleaning up	:	Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder, sawdust).

SECTION 7. HANDLING AND STORAGE

Advice on safe handling	:	Avoid exposure - obtain special instructions before use. Avoid contact with skin and eyes. For personal protection see section 8. Smoking, eating and drinking should be prohibited in the application area. Provide sufficient air exchange and/or exhaust in work rooms. Always replace cap after use. Dispose of rinse water in accordance with local and national regulations. Do not breathe vapours or spray mist. Take precautionary measures against static discharges.
Conditions for safe storage	:	BEWARE: Aerosol is pressurized. Keep away from direct sun exposure and temperatures over 50 °C. Do not open by force or throw into fire even after use. Do not spray on flames or red-hot objects. Observe label precautions. Keep in a dry, cool and well-ventilated place. Electrical installations / working materials must comply with the technological safety standards. No smoking.
Materials to avoid	:	Oxidizing agents Keep away from metals.

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Components with workplace control parameters

Components	CAS-No.	Value type (Form of exposure)	Control parameters / Permissible concentration	Basis
trichloroethylene	79-01-6	TWA	10 ppm	ACGIH
		STEL	25 ppm	ACGIH
		TWA	100 ppm	OSHA Z-2
		CEIL	200 ppm	OSHA Z-2
		Peak	300 ppm	OSHA Z-2
		TWA	50 ppm 270 mg/m3	OSHA P0
		STEL	200 ppm 1,080 mg/m3	OSHA P0
carbon dioxide	124-38-9	TWA	5,000 ppm	ACGIH
		STEL	30,000 ppm	ACGIH
		TWA	5,000 ppm 9,000 mg/m3	NIOSH REL
		ST	30,000 ppm 54,000 mg/m3	NIOSH REL
		TWA	5,000 ppm 9,000 mg/m3	OSHA Z-1
		TWA	10,000 ppm 18,000 mg/m3	OSHA P0
		STEL	30,000 ppm 54,000 mg/m3	OSHA P0

Biological occupational exposure limits

Component	CAS-No.	Control parameters	Biological specimen	Sampling time	Permissible concentration	Basis
TRICHLOROETHENE	79-01-6	Trichloroacetic acid	Urine	End of shift at end of workweek	15 mg/l	ACGIH BEI
TRICHLOROETHENE		Trichloroethanol	In blood	End of shift at end of workweek	0.5 mg/l	ACGIH BEI
TRICHLOROETHENE		Trichloroethylene	In blood	End of shift at end of workweek		ACGIH BEI
TRICHLOROETHENE		Trichloroethylene	In end-exhaled air	End of shift at end of workweek		ACGIH BEI

Personal protective equipment

Respiratory protection : Use respiratory protection unless adequate local exhaust ventilation is provided or exposure assessment demonstrates that exposures are within recommended exposure guidelines.

Hand protection		
Remarks	:	The suitability for a specific workplace should be discussed with the producers of the protective gloves.
Eye protection	:	Ensure that eyewash stations and safety showers are close to the workstation location. Tightly fitting safety goggles
Skin and body protection	:	impervious clothing Choose body protection according to the amount and concentration of the dangerous substance at the work place.
Hygiene measures	:	When using do not eat or drink. When using do not smoke. Wash hands before breaks and at the end of workday.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	:	Aerosol containing a compressed gas
Colour	:	colourless
Odour	:	mild
Odour Threshold	:	no data available
pH	:	not applicable
Melting point/freezing point	:	no data available
Boiling point	:	87.22 °C
Flash point	:	not applicable
Evaporation rate	:	< 1
Flammability (solid, gas)	:	The product is not flammable.
Upper explosion limit	:	not applicable
Lower explosion limit	:	not applicable
Vapour pressure	:	not applicable
Relative vapour density	:	no data available
Density	:	1.46 g/cm3
Solubility(ies)		
Water solubility	:	insoluble
Solubility in other solvents	:	not determined
Partition coefficient: n-octanol/water	:	no data available
Auto-ignition temperature	:	not determined

Thermal decomposition	:	no data available
Viscosity		
Viscosity, kinematic	:	no data available
Heat of combustion	:	6.98 kJ/g

SECTION 10. STABILITY AND REACTIVITY

Reactivity	:	Stable
Chemical stability	:	Stable under normal conditions.
Possibility of hazardous reactions	:	Vapours may form explosive mixture with air. No decomposition if stored and applied as directed.
Conditions to avoid	:	Heat, flames and sparks. Extremes of temperature and direct sunlight.
Incompatible materials	:	Oxidizing agents Light and/or alkaline metals
Hazardous decomposition products	:	Carbon monoxide, carbon dioxide and unburned hydrocarbons (smoke). Phosgene Hydrogen chloride gas

SECTION 11. TOXICOLOGICAL INFORMATION

Acute toxicity

Product:

Acute oral toxicity	:	Acute toxicity estimate : > 5,000 mg/kg Method: Calculation method

Components:

trichloroethylene:

Acute oral toxicity	:	LD50 Oral rat: 4,920 mg/kg
Acute inhalation toxicity	:	LC50 mouse: 8450 ppm Exposure time: 4 h
Acute dermal toxicity	:	LD50 Dermal rabbit: > 20,000 mg/kg

Skin corrosion/irritation

Product:

Remarks: May cause skin irritation in susceptible persons.

Serious eye damage/eye irritation

Product:

Remarks: Eye irritation

Respiratory or skin sensitisation

no data available

Germ cell mutagenicity

no data available

Carcinogenicity

no data available

Reproductive toxicity

no data available

trichloroethylene:
carbon dioxide:

STOT - single exposure

no data available

STOT - repeated exposure

no data available

Aspiration toxicity

no data available

Further information

Product:

Remarks: no data available

SECTION 12. ECOLOGICAL INFORMATION

Ecotoxicity

no data available

Persistence and degradability

no data available

Bioaccumulative potential

Product:

Partition coefficient: n-octanol/water : Remarks: no data available

Components:
trichloroethylene :

Partition coefficient: n-octanol/water	:	log Pow: 2.29

Mobility in soil

no data available

Other adverse effects

no data available

Product:

Regulation	40 CFR Protection of Environment; Part 82 Protection of Stratospheric Ozone - CAA Section 602 Class I Substances
Remarks	This product neither contains, nor was manufactured with a Class I or Class II ODS as defined by the U.S. Clean Air Act Section 602 (40 CFR 82, Subpt. A, App.A + B).

Additional ecological information	:	no data available

SECTION 13. DISPOSAL CONSIDERATIONS

Disposal methods

Waste from residues	:	The product should not be allowed to enter drains, water courses or the soil. Do not contaminate ponds, waterways or ditches with chemical or used container. Dispose of in accordance with local regulations.
Contaminated packaging	:	Empty remaining contents. Dispose of as unused product. Do not re-use empty containers. Do not burn, or use a cutting torch on, the empty drum.

SECTION 14. TRANSPORT INFORMATION

Transportation Regulation: 49 CFR (USA):
ORM-D, CONSUMER COMMODITY

Transportation Regulation: IMDG (Vessel):
UN1950, AEROSOLS, NON-FLAMMABLE, 2.2, - Limited quantity

Transportation Regulation: IATA (Cargo Air):
UN1950, AEROSOLS, NON-FLAMMABLE, 2.2, - Limited quantity

Transportation Regulation: IATA (Passenger Air):
UN1950, AEROSOLS, NON-FLAMMABLE, 2.2, - Limited quantity

Transportation Regulation: TDG (Canada):
UN1950, AEROSOLS, NON-FLAMMABLE, 2.2, - Limited quantity

SECTION 15. REGULATORY INFORMATION

EPCRA - Emergency Planning and Community Right-to-Know Act

CERCLA Reportable Quantity

Components	CAS-No.	Component RQ (lbs)	Calculated product RQ (lbs)
trichloroethylene	79-01-6	100	103

SARA 304 Extremely Hazardous Substances Reportable Quantity

This material does not contain any components with a section 304 EHS RQ.

SARA 311/312 Hazards : Acute Health Hazard
Chronic Health Hazard
Sudden Release of Pressure Hazard

SARA 302 : SARA 302: No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

SARA 313 : The following components are subject to reporting levels established by SARA Title III, Section 313:
trichloroethylene 79-01-6 96.83 %

California Prop 65 WARNING! This product contains a chemical known to the State of California to cause cancer.
trichloroethylene 79-01-6

The components of this product are reported in the following inventories:

TSCA	On TSCA Inventory
DSL	This product contains one or several components that are not on the Canadian DSL nor NDSL.
AICS	Not in compliance with the inventory
NZIoC	Not in compliance with the inventory
PICCS	Not in compliance with the inventory
IECSC	Not in compliance with the inventory

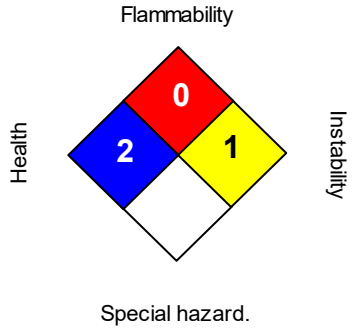
Inventory Acronym and Validity Area Legend:

AICS (Australia), DSL (Canada), IECSC (China), REACH (European Union), ENCS (Japan), ISHL (Japan), KECI (Korea), NZIoC (New Zealand), PICCS (Philippines), TSCA (USA)

SECTION 16. OTHER INFORMATION

Further information

NFPA:



HMIS III:

HEALTH	2
FLAMMABILITY	0
PHYSICAL HAZARD	2

0 = not significant, 1 =Slight,
2 = Moderate, 3 = High
4 = Extreme, * = Chronic

OSHA GHS Label Information:

Hazard pictograms :



Signal word : **Danger:**

Hazard statements : Contains gas under pressure; may explode if heated. Causes skin irritation. Causes serious eye irritation. May cause drowsiness or dizziness. May cause cancer.

Precautionary statements :

Prevention: Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Avoid breathing dust/ fume/ gas/ mist/ vapours/ spray. Wash skin thoroughly after handling. Use only outdoors or in a well-ventilated area. Wear eye protection/ face protection. Wear protective gloves. Use personal protective equipment as required.
Response: IF ON SKIN: Wash with plenty of soap and water. IF INHALED: 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. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. IF exposed or concerned: Get medical advice/ attention. If skin irritation occurs: Get medical advice/ attention. If eye irritation persists: Get medical advice/ attention. Take off contaminated clothing and wash before reuse.
Storage: Store locked up. Protect from sunlight. Store in a well-ventilated place.
Disposal: Dispose of contents/container in accordance with local regulation.

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Zep Inc. markets products under well recognized and established brand names such as Zep®, Zep Commercial®,Zep Professional®, Enforcer®, National Chemical™, Selig™, Misty®, Next Dimension™, Petro®, i-Chem®, TimeMist®, TimeWick™, MicrobeMax®, Country Vet®, Konk®, Original Bike Spirits®, Blue Coral®, Black Magic®, Rain-X®, Niagara National™, FC Forward Chemicals®,Rexodan®, Mykal™, and a number of private labeled brands.

ZEP MANUFACTURING COMPANY

ISSUE DATE: 02/14/00 AEROSOLVE II AEROSOL
SUPERSEDES: 04/21/00 PRODUCT NUMBER: 0181
Aerosol Solvent Degreaser

SECTION I - EMERGENCY CONTACTS

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 - HAZARDOUS INGREDIENTS

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 - HEALTH HAZARD DATA

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

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.

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

MSDS No: 170-43

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

0530 A

Section 1 - Product Identification

Product Name: Roll-On Stamp Pad Inker

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.

FLUIDS

Tap 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.
.

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 compli¬ance 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
Contact • MSDSs • Part Numbers • Full Catalog

STECO CORP -- TAP MAGIC PROTAP CUTTING FLUID,8858,EP-XTRA,10016 E -- 9150-01-373-5788

========== Product Identification ==========

Product ID:TAP MAGIC PROTAP CUTTING FLUID,8858,EP-XTRA,10016 E
MSDS Date:03/31/1992
FSC:9150
NIIN:01-373-5788
MSDS Number: CCVVG
=== Responsible Party ===
Company Name:STECO CORP
Address:2880 CANTRELL ROAD
Box:2288
City:LITTLE ROCK
State:AR
ZIP:72203-2288
Country:US
Info Phone Num:800-648-8026 FAX: 501-374-4278
Emergency Phone Num:501-375-5644
Preparer's Name:ASA L. MORTON
CAGE:17781
=== Contractor Identification ===
Company Name:INDUSTRIAL SUPPLY CORP
Address:1905 WESTWOOD AVE
Box:6356
City:RICHMOND
State:VA
ZIP:23230
Country:US
Phone:804-355-8041
CAGE:6A908
Company Name:STECO CORP
Address:2330 CANTRELL ROAD
Box:2238
City:LITTLE ROCK
State:AR
ZIP:72203
Country:US
Phone:800-643-8026
CAGE:17781

========== Composition/Information on Ingredients ==========

Ingred Name:OLEIC ACID/ALIPHATIC ORGANIC ACID
CAS:112-80-1
RTECS #:RG2275000
Fraction by Wt: >75%
Other REC Limits:NONE RECOMMENDED

Ingred Name:OLEIC ACID, METHYL ESTER, CIS-/EMEREST
(2301/2801)/ALIPHATIC ORGANIC ESTER
CAS:112-62-9
RTECS #:RK0895000
Fraction by Wt: <15%
Other REC Limits:NONE RECOMMENDED
OSHA PEL:15 MG/M3 TDUST

ACGIH TLV:10 MG/M3 TDUST; 9596

Ingred Name:ORGANIC POLYOLS
Fraction by Wt: <10%
Other REC Limits:NONE RECOMMENDED

========== Hazards Identification ==========

LD50 LC50 Mixture:TLV FOR OIL MIST IS 5 MG/M3.
Routes of Entry: Inhalation:NO Skin:NO Ingestion:NO
Reports of Carcinogenicity:NTP:NO IARC:NO OSHA:NO
Health Hazards Acute and Chronic:TARGET ORGANS:EYES, SKIN, RESPIRATORY AND GI TRACTS. ACUTE- EYES:MAY CAUSE PAIN AND IRRITATION. SKIN:PROLONGED OR REPEATED CONTACT MAY CAUSE IRRITATION. INHALE:MISTS MAY IRRITATE EYES AND RESPIRATORY TRACT. ORAL:MAY CAUSE IRRITATION OF GASTROINTESTINAL TRACT, HEADACHE, DROWSINESS, FATIGUE. CHRONIC- UNKNOWN.
Explanation of Carcinogenicity:NONE
Effects of Overexposure:IRRITATION, NAUSEA, VOMITING, HEADACHE, DROWSINESS, FATIGUE, PAIN, TEARING
Medical Cond Aggravated by Exposure:INDIVIDUALS WITH PRE-EXISTING SKIN DISORDERS MAY BE MORE SUCCEPTIBLE TO THE EFFECTS FROM EXPOSURE TO THIS PRODUCT.

========== First Aid Measures ==========

First Aid:GET MEDICAL ATTENTION IF SYMPTOMS PERSIST. INHALATION:REMOVE TO FRESH AIR. PROVIDE CPR/OXYGEN IF NEEDED. EYE:FLUSH WITH WATER FOR 15 MINUTES, HOLDING EYELIDS OPEN. SKIN:WASH WITH SOAP AND WATER. INGES TION:DO NOT INDUCE VOMITING. GET IMMEDIATE MEDICAL HELP.

========== Fire Fighting Measures ==========

Flash Point Method:PMCC
Flash Point:370F,188C
Autoignition Temp:Autoignition Temp Text:685F
Lower Limits:1.0
Upper Limits:15
Extinguishing Media:USE CARBON DIOXIDE, SAND, FOAM/DRY CHEMICAL. WATER SPRAY MAY BE USED TO KEEP FIRE EXPOSED CONTAINERS COOL.
Fire Fighting Procedures:WEAR PROTECTIVE CLOTHING AND NIOSH-APPROVED SELF-CONTAINED BREATHING APPARATUS.
Unusual Fire/Explosion Hazard:NONE

========== Accidental Release Measures ==========

Spill Release Procedures:ABSORB SPILL WITH INERT MATERIAL SUCH AS SAND OR VERMICULITE. PLACE IN PROPER CONTAINERS FOR DISPOSAL. DO NOT ALLOW SPILL TO ENTER DRAINS, SEWERS OR WATERWAYS.
Neutralizing Agent:NOT RELEVANT

========== Handling and Storage ==========

Handling and Storage Precautions:STORE IN A COOL, DRY PLACE, AWAY FROM INCOMPATIBLE MATERIALS. KEEP CONTAINER TIGHTLY CLOSED. KEEP OUT OF REACH OF CHILDREN.

Other Precautions:DO NOT GET IN EYES, ON SKIN OR ON CLOTHING. WASH THOROUGHLY AFTER HANDLING. AVOID BREATHING OIL MIST. DISCARD LUBRICANT-SOAKED SHOES. REMOVE LUBRICANT-SOAKED CLOTHING AND LAUNDER BEFORE RE-USE.

========== Exposure Controls/Personal Protection ==========

Respiratory Protection:NO SPECIAL REQUIREMENTS UNDER ORDINARY CONDITIONS OF USE AND WITH ADEQUATE VENTILATION. IF EXCESSIVE MISTING (>5 MG/M3), USE NIOSH APPROVED ORGANIC VAPOR RESPIRATOR (REFER TO 29 CFR 1910.134).
Ventilation:WHEN USE CONDITIONS ARE LIKELY TO RESULT IN EXCESSIVE MISTING (>5 MG/M3), PROVIDE ADEQUATE LOCAL VENTILATION.
Protective Gloves:NEOPRENE FOR REPEATED CONTACT
Eye Protection:SAFETY GLASSES/CHEMICAL SPLASH GOGGLES
Other Protective Equipment:EYE WASH STATION & SAFETY SHOWER
Work Hygienic Practices:OBSERVE GOOD INDUSTRIAL HYGIENE PRACTICES AND RECOMMENDED PROCEDURES. WASH THOROUGHLY BEFORE EATING, DRINKING/SMOKING.
Supplemental Safety and Health
FORMULA CHANGED. FOR PREVIOUS FORMULATIONS, SEE PNI A, B OR C, SAME NSN.

========== Physical/Chemical Properties ==========

HCC:V6
NRC/State Lic Num:NOT RELEVANT
Boiling Pt:B.P. Text:680 - 1000F
Vapor Pres:<1 @ 75F
Vapor Density:>5
Spec Gravity:0.894
Evaporation Rate & Reference:<0.01 (N-BUTYL ACETATE=1)
Solubility in Water:<1% (INSOLUBLE)
Appearance and Odor:YELLOW LIQUID - PLEASANT ODOR
Percent Volatiles by Volume:<1

========== Stability and Reactivity Data ==========

Stability Indicator/Materials to Avoid:YES
STRONG OXIDIZING AGENTS SUCH AS NITRATES, PERCHLORATES, PLASTICS SYNTHETIC RUBBERS
Stability Condition to Avoid:MOISTURE, EXCESSIVE HEAT, OPEN FLAMES, IGNITION SOURCES

========== Disposal Considerations ==========

Waste Disposal Methods:DISPOSE OF IN ACCORDANCE WITH ALL LOCAL, STATE AND FEDERAL REGULATIONS. RECOMMENDED METHODS: INCINERATION, RECYCLING. CONTAINS NO ENVIRONMENTALLY HAZARDOUS SUBSTANCE. BIODEGRADABLE.

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assume responsibility for the suitability of this information to their particular situation.

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, CO_2, 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	**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. **OSHA PEL Z2 (United States, 2/2013).** AMP: 500 ppm 10 minutes. CEIL: 300 ppm TWA: 200 ppm 8 hours. **ACGIH TLV (United States, 4/2014).** TWA: 20 ppm 8 hours.
Heptane	**ACGIH TLV (United States, 4/2014).** STEL: 2050 mg/m³ 15 minutes. STEL: 500 ppm 15 minutes. TWA: 1640 mg/m³ 8 hours.

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 cm^2/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	Rat	49 g/m³	4 hours
	LD50 Oral	Rat	636 mg/kg	-
Heptane	LC50 Inhalation Gas.	Rat	48000 ppm	4 hours
	LC50 Inhalation Vapor	Rat	103 g/m³	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	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
Heptane	Acute LC50 375000 µg/L Fresh water	Fish - Oreochromis mossambicus	96 hours
Ethyl acetate	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 Ethyl acetate	108-88-3 141-78-6	Listed Listed	U220 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	**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. **Remarks** SMALL QUANTITY (1 gallon or less): ORM-D; CONSUMER COMMODITY	The marine pollutant mark is not required when transported in sizes of ≤5 L or ≤5 kg. **Emergency schedules (EmS)** F-E, S-D	The environmentally hazardous substance mark may appear if required by other transportation regulations.

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 (b) Hazardous Air Pollutants (HAPs) : Listed

Clean Air Act Section 602 Class I Substances : Not listed

Clean Air Act Section 602 Class II Substances : Not listed

DEA List I Chemicals (Precursor Chemicals) : Not listed

DEA List II Chemicals (Essential Chemicals) : Listed

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 **DOT 24 HR EMERGENCY RESPONSE NUMBER: CHEMTREC (800) 424-9300**	NOTICE: JUDGEMENT BASED ON INDIRECT TEST DATA

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** (H2O=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
SPECIAL FIRE FIGHTING PROCEDURES: Self-contained breathing apparatus.

EXTINGUISHER MEDIA: Foam, dry chemical, carbon dioxide, water.

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, CO2.

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

1. Identification

Product identifier **Car Quest Carb & Choke Cleaner**

Other means of identification

SDS number 1035

Part No. 1035

Tariff code 3814.00.2000

Recommended use Carburetor Cleaner

Recommended restrictions None known.

Manufacturer/Importer/Supplier/Distributor information

Manufacturer

Company name RSC Chemical Solutions

Address 600 Radiator Road
Indian Trail, NC 28079
United States

Telephone Customer Service: (704) 821-7643
Technical: (704) 684-1811

Website www.rscbrands.com

E-mail Not available.

Emergency phone number Emergency Telephone: (303) 623-5716
Emergency Contact: RMPDC (877-740-5015)

2. Hazard(s) identification

Physical hazards	Flammable aerosols	Category 1
Health hazards	Acute toxicity, oral	Category 4
	Acute toxicity, inhalation	Category 4
	Skin corrosion/irritation	Category 2
	Serious eye damage/eye irritation	Category 2A
	Carcinogenicity	Category 2
	Reproductive toxicity (the unborn child)	Category 2
	Specific target organ toxicity, repeated exposure	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. Harmful if swallowed. Causes skin irritation. Causes serious eye irritation. Harmful if inhaled. Harmful if inhaled. Suspected of causing cancer. Suspected of damaging the unborn child. Causes damage to organs 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. Pressurized container: Do not pierce or burn, even after use. Do not breathe gas. Do not breathe mist or vapor. Wash thoroughly after handling. Do not eat, drink or smoke when using this product. Use only outdoors or in a well-ventilated area. Avoid release to the environment. Wear protective gloves/protective clothing/eye protection/face protection.
Response	If swallowed: Call a poison center/doctor if you feel unwell. If on skin: Wash with plenty of water. If inhaled: Remove person to fresh air and keep comfortable for breathing. If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If exposed or concerned: Get medical advice/attention. Call a poison center/doctor if you feel unwell. Rinse mouth. If skin irritation occurs: Get medical advice/attention. If eye irritation persists: Get medical advice/attention. Take off contaminated clothing and wash before reuse. Collect spillage.
Storage	Store locked up. Protect from sunlight. Do not expose to temperatures exceeding 50°C/122°F.
Disposal	Dispose of contents/container in accordance with local/regional/national/international regulations.
Hazard(s) not otherwise classified (HNOC)	None known.
Supplemental information	3% of the mixture consists of component(s) of unknown acute oral toxicity. 3% of the mixture consists of component(s) of unknown acute inhalation toxicity. % of the mixture consists of component(s) of unknown acute inhalation toxicity. 65.74% of the mixture consists of component(s) of unknown acute hazards to the aquatic environment. 65.74% of the mixture consists of component(s) of unknown long-term hazards to the aquatic environment.

3. Composition/information on ingredients

Mixtures

Chemical name	Common name and synonyms	CAS number	%
DICHLOROMETHANE		75-09-2	60 - < 70
BENZENE, DIMETHYL		1330-20-7	10 - < 20
BENZENE, METHYL-		108-88-3	10 - < 20
Carbon Dioxide		124-38-9	1 - < 3
ETHYLBENZENE		100-41-4	1 - < 3

*Designates that a 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. Oxygen or artificial respiration if needed. Call a POISON CENTER or doctor/physician if you feel unwell.
Skin contact	Wash off with soap and water. Get medical attention if irritation develops and persists.
Eye contact	Rinse with water. Get medical attention if irritation develops and persists.
Ingestion	Rinse mouth. Get medical attention if symptoms occur.
Most important symptoms/effects, acute and delayed	Dizziness. Nausea. Severe eye irritation. Symptoms may include stinging, tearing, redness, swelling, and blurred vision. Skin irritation. May cause redness and pain. Prolonged exposure may cause chronic effects.
Indication of immediate medical attention and special treatment needed	Provide general supportive measures and treat symptomatically. Keep victim warm. Keep victim under observation. Symptoms may be delayed.
General information	IF exposed or concerned: Get medical advice/attention. If you feel unwell, seek medical advice (show the label where possible). 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	Powder. Foam. Carbon dioxide (CO2).
Unsuitable extinguishing media	Do not use water jet as an extinguisher, as this will spread the fire.
Specific hazards arising from the chemical	Contents under pressure. Pressurized container may explode 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	Move containers from fire area if you can do so without risk. 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 containers from fire area if you can do so without risk. Use water spray to cool unopened containers. In the event of fire and/or explosion do not breathe fumes.
General fire hazards	Extremely flammable aerosol.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures	Keep unnecessary personnel away. Keep people away from and upwind of spill/leak. Wear appropriate protective equipment and clothing during clean-up. Do not breathe mist or vapor. Do not breathe gas. 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	Refer to attached safety data sheets and/or instructions for use. Keep combustibles (wood, paper, oil, etc.) away from spilled material. Isolate area until gas has dispersed. 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 leak if you can do so without risk. Move the cylinder to a safe and open area if the leak is irreparable. Cover with plastic sheet to prevent spreading. Absorb in vermiculite, dry sand or earth and place into containers. Following product recovery, flush area with 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 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.

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. All equipment used when handling the product must be grounded. Do not re-use empty containers. Do not breathe mist or vapor. Do not breathe gas. Avoid contact with eyes, skin, and clothing. Avoid prolonged exposure. Do not taste or swallow. When using, do not eat, drink or smoke. Pregnant or breastfeeding women must not handle this product. Should be handled in closed systems, if possible. Use only outdoors or in a well-ventilated area. Wear appropriate personal protective equipment. Wash hands thoroughly after handling. Avoid release to the environment. Observe good industrial hygiene practices.
Conditions for safe storage, including any incompatibilities	Level 1 Aerosol. Store locked up. 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. Keep out of the reach of children. Store away from incompatible materials (see Section 10 of the SDS).

8. Exposure controls/personal protection

Occupational exposure limits

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

Components	Type	Value
DICHLOROMETHANE (CAS 75-09-2)	STEL	125 ppm
	TWA	25 ppm

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

Components	Type	Value
BENZENE, DIMETHYL (CAS 1330-20-7)	PEL	435 mg/m3
		100 ppm

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

Components	Type	Value
Carbon Dioxide (CAS 124-38-9)	PEL	9000 mg/m3
		5000 ppm
ETHYLBENZENE (CAS 100-41-4)	PEL	435 mg/m3
		100 ppm

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

Components	Type	Value
BENZENE, METHYL- (CAS 108-88-3)	Ceiling	300 ppm
	TWA	200 ppm

US. ACGIH Threshold Limit Values

Components	Type	Value
BENZENE, DIMETHYL (CAS 1330-20-7)	STEL	150 ppm
	TWA	100 ppm
BENZENE, METHYL- (CAS 108-88-3)	TWA	20 ppm
Carbon Dioxide (CAS 124-38-9)	STEL	30000 ppm
	TWA	5000 ppm
DICHLOROMETHANE (CAS 75-09-2)	TWA	50 ppm
ETHYLBENZENE (CAS 100-41-4)	TWA	20 ppm

US. NIOSH: Pocket Guide to Chemical Hazards

Components	Type	Value
BENZENE, METHYL- (CAS 108-88-3)	STEL	560 mg/m3
		150 ppm
	TWA	375 mg/m3
		100 ppm
Carbon Dioxide (CAS 124-38-9)	STEL	54000 mg/m3
		30000 ppm
	TWA	9000 mg/m3
		5000 ppm
ETHYLBENZENE (CAS 100-41-4)	STEL	545 mg/m3
		125 ppm
	TWA	435 mg/m3
		100 ppm

Biological limit values

ACGIH Biological Exposure Indices

Components	Value	Determinant	Specimen	Sampling Time
BENZENE, DIMETHYL (CAS 1330-20-7)	1.5 g/g	Methylhippuric acids	Creatinine in urine	*
BENZENE, METHYL- (CAS 108-88-3)	0.3 mg/g	o-Cresol, with hydrolysis	Creatinine in urine	*
	0.03 mg/l	Toluene	Urine	*
	0.02 mg/l	Toluene	Blood	*
DICHLOROMETHANE (CAS 75-09-2)	0.3 mg/l	Dichloromethane	Urine	*

ACGIH Biological Exposure Indices

Components	Value	Determinant	Specimen	Sampling Time
ETHYLBENZENE (CAS 100-41-4)	0.15 g/g	Sum of mandelic acid and phenylglyoxylic acid	Creatinine in urine	*

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

Exposure guidelines

US - California OELs: Skin designation

BENZENE, METHYL- (CAS 108-88-3) Can be absorbed through the skin.

US - Minnesota Haz Subs: Skin designation applies

BENZENE, METHYL- (CAS 108-88-3) Skin designation applies.

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. Eye wash facilities and emergency shower must be available when handling this product.

Individual protection measures, such as personal protective equipment

Eye/face protection Chemical respirator with organic vapor cartridge and full facepiece.

Skin protection

Hand protection Wear appropriate chemical resistant gloves. Suitable gloves can be recommended by the glove supplier.

Other Wear appropriate chemical resistant clothing. Use of an impervious apron is recommended.

Respiratory protection Chemical respirator with organic vapor cartridge and full facepiece.

Thermal hazards Wear appropriate thermal protective clothing, when necessary.

General hygiene considerations When using do not smoke. 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 and chemical properties

Appearance Clear.

Physical state Liquid, Gas.

Form Aerosol.

Color Colorless

Odor Typical Hydrocarbon/Chlorinated

Odor threshold Not available.

pH Not available.

Melting point/freezing point -139 °F (-95 °C) estimated

Initial boiling point and boiling range Not available.

Flash point None

Evaporation rate Not available.

Flammability (solid, gas) Not applicable. Not available.

Upper/lower flammability or explosive limits

Flammability limit - lower (%) 1.3 % estimated

Flammability limit - upper (%) 7 % estimated

Explosive limit - lower (%) Not available.

Explosive limit - upper (%) Not available.

Vapor pressure 579.94 hPa estimated

Vapor density Not available.

Relative density	Not available.
Solubility(ies)	
Solubility (water)	Not available.
Partition coefficient (n-octanol/water)	Not available.
Auto-ignition temperature	896 °F (480 °C) estimated
Decomposition temperature	Not available.
Viscosity	< 1 cSt
Other information	
Density	9.44 lbs/gal estimated
Explosive properties	Not explosive.
Flame extension	> 31 in
Flammability (flash back)	No
Heat of combustion (NFPA 30B)	10.92 kJ/g estimated
Oxidizing properties	Not oxidizing.
Percent volatile	97 % estimated
Specific gravity	1.13 estimated
VOC (Weight %)	44 % w/w

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	Hazardous polymerization does not occur.
Conditions to avoid	Contact with incompatible materials.
Incompatible materials	Strong acids. Strong oxidizing agents. Halogens.
Hazardous decomposition products	No hazardous decomposition products are known.

11. Toxicological information

Information on likely routes of exposure

Inhalation	Harmful if inhaled. May cause damage to organs through prolonged or repeated exposure by inhalation.
Skin contact	Causes skin irritation.
Eye contact	Causes serious eye irritation.
Ingestion	Harmful if swallowed.
Symptoms related to the physical, chemical and toxicological characteristics	Dizziness. Nausea. Severe eye irritation. Symptoms may include stinging, tearing, redness, swelling, and blurred vision. Skin irritation. May cause redness and pain.

Information on toxicological effects

Acute toxicity Harmful if inhaled. Harmful if swallowed.

Components	Species	Test Results
BENZENE, DIMETHYL (CAS 1330-20-7)		
Acute		
Dermal		
LD50	Rabbit	> 43 g/kg
Inhalation		
LC50	Mouse	3907 mg/l, 6 Hours
	Rat	6350 mg/l, 4 Hours
Oral		
LD50	Mouse	1590 mg/kg

Components	Species	Test Results
	Rat	3523 - 8600 mg/kg
BENZENE, METHYL- (CAS 108-88-3)		
Acute		
Dermal		
LD50	Rabbit	12124 mg/kg
		14.1 ml/kg
Inhalation		
LC50	Mouse	5320 ppm, 8 Hours
		400 ppm, 24 Hours
	Rat	26700 ppm, 1 Hours
		12200 ppm, 2 Hours
		8000 ppm, 4 Hours
Oral		
LD50	Rat	2.6 g/kg
DICHLOROMETHANE (CAS 75-09-2)		
Acute		
Inhalation		
LC50	Guinea pig	11600 ppm, 6 Hours
		40.2 mg/l, 6 Hours
	Mouse	14400 ppm, 7 Hours
		56.23 mg/l, 7 Hours
		51.5 mg/l, 2 Hours
		49.1 mg/l, 6 Hours
	Rat	2000 mg/l, 15 Minutes
		88 mg/l, 900 Days
		79 mg/l, 2 Hours
		52 mg/l, 6 Hours
LD50	Mouse	16000 ppm, 7 Hours
Oral		
LD50	Rat	1600 mg/kg
ETHYLBENZENE (CAS 100-41-4)		
Acute		
Dermal		
LD50	Rabbit	17800 mg/kg
Oral		
LD50	Rat	3500 mg/kg

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

Skin corrosion/irritation Causes skin irritation.

Serious eye damage/eye irritation Causes serious eye irritation.

Respiratory or skin sensitization

Respiratory sensitization Not a respiratory sensitizer.

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 Suspected of causing cancer.

IARC Monographs. Overall Evaluation of Carcinogenicity

BENZENE, DIMETHYL (CAS 1330-20-7)	3 Not classifiable as to carcinogenicity to humans.
BENZENE, METHYL- (CAS 108-88-3)	3 Not classifiable as to carcinogenicity to humans.

DICHLOROMETHANE (CAS 75-09-2) 2A Probably carcinogenic to humans.
ETHYLBENZENE (CAS 100-41-4) 2B Possibly carcinogenic to humans.

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

DICHLOROMETHANE (CAS 75-09-2) Cancer

US. National Toxicology Program (NTP) Report on Carcinogens

DICHLOROMETHANE (CAS 75-09-2) Reasonably Anticipated to be a Human Carcinogen.

Reproductive toxicity Components in this product have been shown to cause birth defects and reproductive disorders in laboratory animals. Suspected of damaging the unborn child.

Specific target organ toxicity - single exposure Not classified.

Specific target organ toxicity - repeated exposure Causes damage to organs through prolonged or repeated exposure.

Aspiration hazard Not an aspiration hazard.

Chronic effects Causes damage to organs through prolonged or repeated exposure. Prolonged inhalation may be harmful. Prolonged exposure may cause chronic effects.

12. Ecological information

Ecotoxicity Toxic to aquatic life with long lasting effects.

Components		Species	Test Results
BENZENE, DIMETHYL (CAS 1330-20-7)			
Aquatic			
Fish	LC50	Bluegill (Lepomis macrochirus)	7.711 - 9.591 mg/l, 96 hours
BENZENE, METHYL- (CAS 108-88-3)			
Aquatic			
Crustacea	EC50	Water flea (Daphnia magna)	5.46 - 9.83 mg/l, 48 hours
Fish	LC50	Coho salmon,silver salmon (Oncorhynchus kisutch)	8.11 mg/l, 96 hours
DICHLOROMETHANE (CAS 75-09-2)			
Aquatic			
Crustacea	EC50	Water flea (Daphnia magna)	1250 mg/l, 48 hours
Fish	LC50	Fathead minnow (Pimephales promelas)	140.8 - 277.8 mg/l, 96 hours
ETHYLBENZENE (CAS 100-41-4)			
Aquatic			
Crustacea	EC50	Water flea (Daphnia magna)	1.37 - 4.4 mg/l, 48 hours
Fish	LC50	Fathead minnow (Pimephales promelas)	7.5 - 11 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

Partition coefficient n-octanol / water (log Kow)

BENZENE, DIMETHYL	3.12 - 3.2
BENZENE, METHYL-	2.73
DICHLOROMETHANE	1.25
ETHYLBENZENE	3.15

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

Local disposal regulations Dispose in accordance with all applicable regulations.

Hazardous waste code	The waste code should be assigned in discussion between the user, the producer and the waste disposal company.
Waste from residues / unused products	Dispose of in accordance with local regulations. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe manner (see: Disposal instructions).
Contaminated packaging	Since emptied containers may retain product residue, follow label warnings even after container is emptied. Empty containers should be taken to an approved waste handling site for recycling or disposal. Do not re-use empty containers.

14. Transport information

DOT

UN number	Not available.
UN proper shipping name	Consumer Commodity
Transport hazard class(es)	
Class	ORM-D
Subsidiary risk	-
Label(s)	3
Packing group	Not applicable.
Environmental hazards	
Marine pollutant	Yes
Special precautions for user	Read safety instructions, SDS and emergency procedures before handling.
Special provisions	IB2, T4, TP1
Packaging exceptions	150
Packaging non bulk	202
Packaging bulk	242

IATA

UN number	UN1950
UN proper shipping name	Aerosol, flammable
Transport hazard class(es)	
Class	2
Subsidiary risk	6.1(PGIII)
Packing group	Not applicable.
Environmental hazards	Yes
Special precautions for user	Read safety instructions, SDS and emergency procedures before handling.
Other information	
Passenger and cargo aircraft	Forbidden.
Cargo aircraft only	Forbidden.

IMDG

UN number	UN1950
UN proper shipping name	Aerosols
Transport hazard class(es)	
Class	2
Subsidiary risk	6.1(PGIII)
Packing group	Not applicable.
Environmental hazards	
Marine pollutant	Yes
EmS	Not available.
Special precautions for user	Read safety instructions, SDS and emergency procedures before handling.

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

IATA; IMDG



Marine pollutant



General information IMDG Regulated Marine Pollutant. DOT 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.

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

Not regulated.

CERCLA Hazardous Substance List (40 CFR 302.4)

BENZENE, DIMETHYL (CAS 1330-20-7)	Listed.
BENZENE, METHYL- (CAS 108-88-3)	Listed.
DICHLOROMETHANE (CAS 75-09-2)	Listed.
ETHYLBENZENE (CAS 100-41-4)	Listed.

SARA 304 Emergency release notification

Not regulated.

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

DICHLOROMETHANE (CAS 75-09-2)	Cancer
	Heart
	Central nervous system
	Liver
	Skin irritation
	Eye irritation

Superfund Amendments and Reauthorization Act of 1986 (SARA)

Hazard categories Immediate Hazard - Yes
Delayed Hazard - Yes
Fire Hazard - Yes
Pressure Hazard - No
Reactivity Hazard - No

SARA 302 Extremely hazardous substance

Not listed.

SARA 311/312 Hazardous chemical No

SARA 313 (TRI reporting)

Chemical name	CAS number	% by wt.
DICHLOROMETHANE	75-09-2	60 - < 70
BENZENE, DIMETHYL	1330-20-7	10 - < 20
BENZENE, METHYL-	108-88-3	10 - < 20
ETHYLBENZENE	100-41-4	1 - < 3

Other federal regulations

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

BENZENE, DIMETHYL (CAS 1330-20-7)
BENZENE, METHYL- (CAS 108-88-3)
DICHLOROMETHANE (CAS 75-09-2)
ETHYLBENZENE (CAS 100-41-4)

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

Not regulated.

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

BENZENE, METHYL- (CAS 108-88-3)	6594

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

BENZENE, METHYL- (CAS 108-88-3)	35 %WV

DEA Exempt Chemical Mixtures Code Number

BENZENE, METHYL- (CAS 108-88-3)	594

US state regulations

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

Not listed.

US. California. Candidate Chemicals List. Safer Consumer Products Regulations (Cal. Code Regs, tit. 22, 69502.3, subd. (a))

BENZENE, DIMETHYL (CAS 1330-20-7)
BENZENE, METHYL- (CAS 108-88-3)
DICHLOROMETHANE (CAS 75-09-2)
ETHYLBENZENE (CAS 100-41-4)

US. Massachusetts RTK - Substance List

BENZENE, DIMETHYL (CAS 1330-20-7)
BENZENE, METHYL- (CAS 108-88-3)
Carbon Dioxide (CAS 124-38-9)
DICHLOROMETHANE (CAS 75-09-2)
ETHYLBENZENE (CAS 100-41-4)

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

BENZENE, DIMETHYL (CAS 1330-20-7)
BENZENE, METHYL- (CAS 108-88-3)
Carbon Dioxide (CAS 124-38-9)
DICHLOROMETHANE (CAS 75-09-2)
ETHYLBENZENE (CAS 100-41-4)

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

BENZENE, DIMETHYL (CAS 1330-20-7)
BENZENE, METHYL- (CAS 108-88-3)
Carbon Dioxide (CAS 124-38-9)
DICHLOROMETHANE (CAS 75-09-2)
ETHYLBENZENE (CAS 100-41-4)

US. Rhode Island RTK

BENZENE, DIMETHYL (CAS 1330-20-7)
BENZENE, METHYL- (CAS 108-88-3)
DICHLOROMETHANE (CAS 75-09-2)
ETHYLBENZENE (CAS 100-41-4)

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

DICHLOROMETHANE (CAS 75-09-2)	Listed: April 1, 1988
ETHYLBENZENE (CAS 100-41-4)	Listed: June 11, 2004

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

BENZENE, METHYL- (CAS 108-88-3)	Listed: January 1, 1991

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

BENZENE, METHYL- (CAS 108-88-3)	Listed: August 7, 2009

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
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)	Yes
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 05-19-2015

Revision date 05-19-2015

Version # 02

Disclaimer The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

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

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

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

Product Code: 90995F MSDS
Product Name: FF GCMI 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

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 RESPONSIBLILITY 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

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 %
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

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

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		

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

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.

Product Code: M-000028
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,

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/gl
pH: 10.5-12.2
WEIGHT PER GALLON: 8.40 lb/gl
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.

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 RESPONSIBLILITY 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

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 %
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

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

Product Code: M-007508
Product Name: FF PREM PLUS GCMI 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

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 RESPONSIBLILITY 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

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 %
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

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

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

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 RESPONSIBLILITY 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

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 %
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

Product Code: M-007506
Product Name: FF PREM PLUS GCMI 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

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

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 RESPONSIBLILITY 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

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 %
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

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

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

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

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 RESPONSIBLILITY 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.

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
VAPOR PRESSURE - N/A
VAPOR DENSITY - N/A
SOLUBILITY IN WATER - INSOLUBLE
APPEARANCE AND ODOR - AMBER AND LOW ODOR

SPECIFIC GRAVITY – 0.92
MELTING POINT - 190 – 230
EVAPORATION RATE - N/A

SECTION IV - FIRE AND EXPLOSION HAZARD DATA

DOT CATEGORY - NON FLAMMABLE
EXTINGUISHING MEDIA - CO_2

FLASH POINT - 450F

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

Safety Data Sheet



1 - Identification

Product Name: WD-40 Multi-Use Product Aerosol ***NOT FOR SALE IN CALIFORNIA*** **Product Use: Lubricant, Penetrant, Drives Out Moisture, Removes and Protects Surfaces From Corrosion** **Restrictions on Use: None identified** **SDS Date Of Preparation: 07/20/2014**	**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)**

2 – Hazards Identification

Hazcom 2012/GHS Classification:
Flammable Aerosol Category 1
Gas Under Pressure: Compressed Gas
Aspiration Toxicity Category 1

Note: This product is a consumer product and is labeled in accordance with the US Consumer Product Safety Commission regulations which take precedence over OSHA Hazard Communication labeling. The actual container label will not include the label elements below. The labeling below applies to industrial/professional products.

Label Elements:



DANGER!
Extremely Flammable Aerosol.
Contains gas under pressure; may explode if heated.
May be fatal if swallowed and enters airways.

Prevention
Keep away from heat, sparks, open flames, hot surfaces – No smoking.
Do not spray on an open flame or other ignition source.
Pressurized container: Do not pierce or burn, even after use.

Response
IF SWALLOWED: Immediately call a POISON CENTER or physician. Do NOT induce vomiting.

Storage
Store locked up.
Protect from sunlight. Do not expose to temperatures exceeding 50°C/122°F. Store in a well-ventilated place.

Disposal
Dispose of contents and container in accordance with local and national regulations.

3 - Composition/Information on Ingredients

Ingredient	CAS #	Weight Percent	US Hazcom 2012/ GHS Classification
Aliphatic Hydrocarbon	64742-47-8	45-50	Flammable Liquid Category 3

			Aspiration Toxicity Category 1
Petroleum Base Oil	64742-56-9 64742-65-0 64742-53-6 64742-54-7 64742-71-8	<25	Not Hazardous
LVP Aliphatic Hydrocarbon	64742-47-8	12-18	Aspiration Toxicity Category 1
Carbon Dioxide	124-38-9	2-3	Simple Asphyxiant Gas Under Pressure, Compressed Gas
Non-Hazardous Ingredients	Mixture	<10	Not Hazardous

Note: The exact percentages are a trade secret.

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.
Signs and Symptoms of Exposure: May cause eye and respiratory irritation. Inhalation may cause coughing, headache and dizziness. Skin contact may cause drying of the skin.
Indication of Immediate Medical Attention/Special Treatment Needed: Immediate medical attention is needed for ingestion.

5 – Fire Fighting Measures

Suitable (and unsuitable) 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.
Specific Hazards Arising from the Chemical: 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. Combustion will produce oxides of carbon and hydrocarbons.
Special Protective Equipment and Precautions for Fire-Fighters: 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.

6 – Accidental Release Measures

Personal Precautions, Protective Equipment and Emergency Procedures: Wear appropriate protective clothing (see Section 8). Eliminate all sources of ignition and ventilate area.
Methods and Materials for Containment/Cleanup: 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

Precautions for Safe 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.

Conditions for Safe 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. Store away from oxidizers.

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
Appropriate 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
Appropriate 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

Appearance:	Light amber liquid	Flammable Limits: (Solvent Portion)	LEL: 0.6% UEL: 8%
Odor:	Mild petroleum odor	Vapor Pressure:	95-115 PSI @ 70°F
Odor Threshold:	Not established	Vapor Density:	Greater than 1 (air=1)
pH:	Not Applicable	Relative Density:	0.8 – 0.82 @ 60°F
Melting/Freezing Point	Not established	Solubilities:	Insoluble in water
Boiling Point/Range:	361 - 369°F (183 - 187°C)	Partition Coefficient; n-octanol/water:	Not established
Flash Point:	122°F (49°C) Tag Closed Cup (concentrate)	Autoignition Temperature:	Not established
Evaporation Rate:	Not established	Decomposition Temperature:	Not established
Flammability (solid, gas)	Flammable Aerosol	Viscosity:	2.79-2.96 cSt @ 100°F
VOC:	412 grams/liter (49.5%)	Pour Point:	-63°C (-81.4°F) ASTM D-97

10 – Stability and Reactivity

Reactivity: Not reactive under normal conditions
Chemical Stability: Stable

Possibility of Hazardous Reactions: May react with strong oxidizers generating heat.
Conditions to Avoid: Avoid heat, sparks, flames and other sources of ignition. Do not puncture or incinerate containers.
Incompatible Materials: Strong oxidizing agents.
Hazardous Decomposition Products: Carbon monoxide and carbon dioxide.

11 – Toxicological Information

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.
Carcinogen Status: None of the components are listed as a carcinogen or suspect carcinogen by IARC, NTP, ACGIH or OSHA.
Reproductive Toxicity: None of the components is considered a reproductive hazard.

Numerical Measures of Toxicity:
The oral toxicity of this product is estimated to be greater than 5,000 mg/kg and the dermal toxicity greater than 2,000 mg/kg based on an assessment of the ingredients. This product is not classified as toxic by established criteria. It is an aspiration hazard.

12 – Ecological Information

Ecotoxicity: No specific aquatic toxicity data is currently available, however components of this product are not expected to be harmful to aquatic organisms
Persistence and Degradability: Component are readily biodegradable.
Bioaccumulative Potential: Bioaccumulation is not expected based on an assessment of the ingredients.
Mobility in Soil: No data available
Other Adverse Effects: None known

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. Do not puncture or incinerate containers, even empty. Dispose in accordance with federal, state, and local regulations.

14 – Transportation Information_

DOT Surface Shipping Description:
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.
VOC Regulations: This product complies with the consumer product VOC limits of the US EPA and states adopting the OTC VOC rules but does not comply with CARB.
California Safe Drinking Water and Toxic Enforcement Act (Proposition 65): This product does not contain chemicals regulated under California Proposition 65.
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 A (Compressed gas), 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)

Revision Date: July 20, 2014 Supersedes: May 23, 2014

Revision Summary: Convert to Hazcom 2012. Changes in all sections.

Prepared by: Industrial Health & Safety Consultants, Inc. Shelton, CT, USA

APPROVED By: I. Kowalski Regulatory Affairs Dept.

5049000/No.0015205

GAF
Safety Data Sheet
SDS # 1049
SDS Date: December 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:	1 Campus Drive, Parsippany, NJ 07054
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
Health	2	**Health**	2
Flammable	*0*	***Flammable***	*0*
Reactive	0	**Reactive**	0
Special Hazards	-	**Personal Protection**	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 cuase 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 IDENTIFICAITON 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/m3 – resp. 15 mg/m3 – total	3 mg/m3 – resp. 10 mg/m3 – total	REL: 5 mg/m3 – resp., 10 mg/m3 – 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 MEASRURES

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, CO_2, 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

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: September 2013

CHANGES SINCE PREVIOUS SDS: Headquarters Address Change.

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.

Safety Data Sheet

Section 1: Identification of the Substance/Mixture and of the Company/Undertaking

1.1 Product identifier

Product Name • **SLIP Plate Chain & Cable Aerosol**

1.2 Relevant identified uses of the substance or mixture and uses advised against

Relevant identified use(s) • Dry film lubricant

1.3 Details of the supplier of the safety data sheet

Manufacturer • Superior Graphite

10 S. Riverside Plaza
Chicago, IL 60606
United States

Telephone (General) • 312-559-2999 - (8-5 CST, M-F)

1.4 Emergency telephone number

Manufacturer • 1-800-424-9300 - For Hazardous Materials [or Dangerous Goods] Incident Spill, Leak, Fire, Exposure, or Accident Call CHEMTREC Day or Night

Manufacturer • +1 703-527-3887 - Outside USA and Canada (collect calls accepted)

Section 2: Hazards Identification

EU/EEC

According to Regulation (EC) No 1272/2008 (CLP)/REACH 1907/2006 [amended by 453/2010]
According to EU Directive 67/548/EEC (DSD) or 1999/45/EC (DPD)

2.1 Classification of the substance or mixture

CLP • Flammable Aerosols 1 - H222
Skin Irritation 2 - H315
Specific Target Organ Toxicity Single Exposure 3: Narcotic Effects - H336
Specific Target Organ Toxicity Repeated Exposure 2 - H373
Hazardous to the aquatic environment Chronic 2 - H411
EUH066

DSD/DPD • Extremely Flammable (F+)
Harmful (Xn)
Dangerous to the Environment (N)
R12, R48/20, R66, R67, R51, R53

2.2 Label Elements

CLP

DANGER



Hazard statements

- H222 - Extremely flammable aerosol
- H315 - Causes skin irritation
- H336 - May cause drowsiness or dizziness
- H373 - May cause damage to organs - Lungs through prolonged or repeated exposure via Inhalation
- H411 - Toxic to aquatic life with long lasting effects
- EUH066 - Repeated exposure may cause skin dryness or cracking.

Precautionary statements

Prevention

- P210 - Keep away from heat, sparks, open flames and/or hot surfaces. - No smoking.
- P211 - Do not spray on an open flame or other ignition source.
- P251 - Pressurized container: Do not pierce or burn, even after use.
- P260 - Do not breathe mist/vapours/spray.
- P264 - Wash thoroughly after handling.
- P271 - Use only outdoors or in a well-ventilated area.
- P273 - Avoid release to the environment.
- P280 - Wear protective gloves .

Response

- P304+P340 - IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
- P312 - Call a POISON CENTER or doctor/physician if you feel unwell.
- P302+P352 - IF ON SKIN: Wash with plenty of soap and water.
- P362 - Take off contaminated clothing and wash before reuse.
- P332+P313 - If skin irritation occurs: Get medical advice/attention.
- P321 - Specific treatment, see supplemental first aid information.
- P314 - Get medical advice/attention if you feel unwell.
- P391 - Collect spillage.

Storage/Disposal

- P403+P233 - Store in a well-ventilated place. Keep container tightly closed.
- P410+P412 - Protect from sunlight. Do not expose to temperatures exceeding 50ºC/122ºF.
- P405 - Store locked up.
- P501 - Dispose of content and/or container in accordance with local, regional, national, and/or international regulations.

DSD/DPD



Risk phrases

- R12 - Extremely flammable.
- R48/20 - Harmful: danger of serious damage to health by prolonged exposure through inhalation.
- R66 - Repeated exposure may cause skin dryness or cracking.
- R67 - Vapours may cause drowsiness and dizziness.
- R51 - Toxic to aquatic organisms.
- R53 - May cause long-term adverse effects in the aquatic environment.

Safety phrases

- S9 - Keep container in a well ventilated place
- S16 - Keep away from sources of ignition - No Smoking.
- S57 - Use appropriate containment to avoid environmental contamination.

2.3 Other Hazards

CLP

- According to Regulation (EC) No. 1272/2008 (CLP) this material is considered hazardous.

DSD/DPD

- According to European Directive 1999/45/EC this material is considered dangerous.

United States (US)

According to OSHA 29 CFR 1910.1200 HCS

2.1 Classification of the substance or mixture

OSHA HCS 2012

- Flammable Aerosols 1 - H222
  Skin Irritation 2 - H315
  Eye Irritation 2 - H319
  Specific Target Organ Toxicity Single Exposure 3: Narcotic Effects - H336
  Specific Target Organ Toxicity Repeated Exposure 1 - H372

2.2 Label elements

OSHA HCS 2012

DANGER



Hazard statements

- Extremely flammable aerosol - H222
  Causes skin irritation - H315
  Causes serious eye irritation - H319
  May cause drowsiness or dizziness - H336
  Causes damage to organs - Lungs through prolonged or repeated exposure via Inhalation - H372

Precautionary statements

Prevention

- Keep away from heat, sparks, open flames and/or hot surfaces. - No smoking. - P210
  Do not spray on an open flame or other ignition source. - P211
  Pressurized container: Do not pierce or burn, even after use. - P251
  Do not breathe mist/vapours/spray. - P260
  Wash thoroughly after handling. - P264
  Do not eat, drink or smoke when using this product. - P270
  Use only outdoors or in a well-ventilated area. - P271
  Wear eye/face protection , . - P280
  Wear protective gloves . - P280

Response

- IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. - P304+P340
  Call a POISON CENTER or doctor/physician if you feel unwell. - P312
  If on skin: Wash with plenty of water .
  Take off contaminated clothing and wash before reuse. - P362
  If skin irritation occurs: Get medical advice/attention. - P332+P313
  Specific treatment, see supplemental first aid information. - P321
  IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. - P305+P351+P338
  If eye irritation persists: Get medical advice/attention. - P337+P313
  IF exposed or concerned: Get medical advice/attention. - P308+P313
  Get medical advice/attention if you feel unwell. - P314

Storage/Disposal

- Store in a well-ventilated place. Keep container tightly closed. - P403+P233
  Protect from sunlight. Do not expose to temperatures exceeding 50ºC/122ºF. - P410+P412
  Store locked up. - P405
  Dispose of content and/or container in accordance with local, regional, national, and/or international regulations. - P501

2.3 Other hazards

OSHA HCS 2012

- Under United States Regulations (29 CFR 1910.1200 - Hazard Communication Standard), this product is considered hazardous.

Canada

According to WHMIS

2.1 Classification of the substance or mixture

WHMIS

- Flammable Aerosols - B5
  Other Toxic Effects - D2A
  Other Toxic Effects - D2B

2.2 Label elements

WHMIS



- Flammable Aerosols - B5
  Other Toxic Effects - D2A
  Other Toxic Effects - D2B

2.3 Other hazards

WHMIS

- In Canada, the product mentioned above is considered hazardous under the Workplace Hazardous Materials Information System (WHMIS).

Section 3 - Composition/Information on Ingredients

3.1 Substances

- Material does not meet the criteria of a substance in accordance with Regulation (EC) No 1272/2008.

3.2 Mixtures

Composition					
Chemical Name	**Identifiers**	**%**	**LD50/LC50**	**Classifications According to Regulation/Directive**	**Comments**
Hydrotreated heavy naphthenic distillates (petroleum) (Highly Refined)	**CAS:**64742-52-5 **EC Number:**265-155-0 **EU Index:**649-465-00-7	< 70%	Ingestion/Oral-Rat LD50 • >5000 mg/kg Skin-Rabbit LD50 • >2000 mg/kg	**EU DSD/DPD:** Annex VI, Table 3.2: Carc.Cat.2 R45 (Note L) **EU CLP:** Annex VI, Table 3.1: Carc. 1B; H350 (Note L) **OSHA HCS 2012:** Skin Irrit. 2	Contains <3% DMSO therefore carcinogen classification does not apply
Heptane	**CAS:**142-82-5 **EC Number:**205-563-8 **EU Index:**601-008-00-2	< 20%	Inhalation-Rat LC50 • 103 g/m³ 4 Hour(s)	**EU DSD/DPD:** Annex VI, Table 3.2: F R11 Xi R38 N R50-53 Xn R65 R67 **EU CLP:** Annex VI, Table 3.1: Flam. Liq. 2, H225; Asp. Tox. 1, H304; Skin Irrit. 2, H315; STOT SE 3: Narc., H336; Aquatic Acute 1, H400; Aquatic Chronic 1, H410 **OSHA HCS 2012:** Flam. Liq. 2; Skin Irrit. 2; Eye Irrit. 2; Asp. Tox. 1; STOT SE 3: Narc.	NDA
Coke (petroleum), calcined	**CAS:**64743-05-1 **EC Number:**265-210-9	< 10%	NDA	**EU DSD/DPD:** Self Classified: T R48/20 **EU CLP:** Self Classified: STOT RE 1 (Lungs, Inhl), H372 **OSHA HCS 2012:** STOT RE 1 (Lungs, Inhl)	NDA
Acetone	**CAS:**67-64-1 **EC Number:**200-662-2 **EU Index:**606-001-00-8	< 10%	Ingestion/Oral-Rat LD50 • 5800 mg/kg Inhalation-Rat LC50 • 50100 mg/m³	**EU DSD/DPD:** Annex VI, Table 3.2: F R11 Xi R36 R66 R67 **EU CLP:** Annex VI, Table 3.1: Flam. Liq. 2, H226; Eye Irrit. 2, H319; STOT SE 3: Narc., H336; EUH066 **OSHA HCS 2012:** Flam. Liq. 2; Eye Irrit. 2, STOT SE 3: Narc.	NDA
	CAS:74-98-6 **EC**			**EU DSD/DPD:** Annex VI, Table 3.2: F+; R12	

Propane	**Number:**200-827-9 **EU Index:**601-003-00-5	< 6%	NDA	**EU CLP:** Annex VI, Table 3.1: Flam. Gas 1, H220; Press. Gas - Comp., H280 **OSHA HCS 2012:** Flam. Gas 1; Press. Gas - Comp.; Simp. Asphyx.	NDA
Butane	**CAS:**106-97-8 **EC Number:**203-448-7 **EU Index:**601-004-00-0	< 6%	Inhalation-Rat LC50 • 658 g/m³ 4 Hour(s)	**EU DSD/DPD:** Annex VI, Table 3.2: F+ R12 **EU CLP:** Annex VI, Table 3.1: Flam. Gas 1, H220; Press. Gas - Comp., H280 **OSHA HCS 2012:** Flam. Gas 1; Press. Gas - Comp.; Simp. Asphyx.	NDA

Section 4 - First Aid Measures

4.1 Description of first aid measures

Inhalation
- IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. If signs/symptoms continue, get medical attention. Administer oxygen if breathing is difficult. Give artificial respiration if victim is not breathing.

Skin
- In case of contact with substance, immediately flush skin with running water for at least 20 minutes. For minor skin contact, avoid spreading material on unaffected skin. Get medical attention immediately if symptoms occur.

Eye
- In case of contact with substance, immediately flush eyes with running water for at least 20 minutes. If eye irritation persists: Get medical advice/attention.

Ingestion
- If swallowed, DO NOT induce vomiting. Get medical attention.

4.2 Most important symptoms and effects, both acute and delayed

- Refer to Section 11 - Toxicological Information.

4.3 Indication of any immediate medical attention and special treatment needed

Notes to Physician
- All treatments should be based on observed signs and symptoms of distress in the patient. Consideration should be given to the possibility that overexposure to materials other than this product may have occurred.

Section 5 - Firefighting Measures

5.1 Extinguishing media

Suitable Extinguishing Media
- LARGE FIRE: Water spray, fog or regular foam.
  SMALL FIRES: Dry chemical, CO2, water spray or regular foam.

Unsuitable Extinguishing Media
- No data available

5.2 Special hazards arising from the substance or mixture

Unusual Fire and Explosion Hazards
- Closed containers may explode from internal pressure build-up when exposed to extreme heat and discharge contents.
  Vapors may travel to source of ignition and flash back.
  Vapors may form explosive mixtures with air.
  Overexposure to decomposition products may cause a health hazard. Symptoms may not be immediately apparent. Obtain medical attention.

Hazardous Combustion Products
- On burning, may release carbon dioxide and carbon monoxide.

5.3 Advice for firefighters

- Structural firefighters' protective clothing provides limited protection in fire situations ONLY; it is not effective in spill situations where direct contact with the substance is possible.
  Wear chemical protective clothing that is specifically recommended by the manufacturer. It may provide little or no thermal protection.

Wear positive pressure self-contained breathing apparatus (SCBA).
Water may be used to cool containers to prevent pressure build-up and explosion when exposed to extreme heat.

Section 6 - Accidental Release Measures

6.1 Personal precautions, protective equipment and emergency procedures

Personal Precautions

- Do not touch or walk through spilled material. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Ventilate enclosed areas.

Emergency Procedures

- ELIMINATE all ignition sources (no smoking, flares, sparks or flames in immediate area). As an immediate precautionary measure, isolate spill or leak area for at least 50 meters (150 feet) in all directions. Keep unauthorized personnel away. Stay upwind. Ventilate closed spaces before entering. Keep out of low areas.

6.2 Environmental precautions

- Prevent entry into waterways and sewers.

6.3 Methods and material for containment and cleaning up

Containment/Clean-up Measures

- Clean up area with absorbent material and place in closed containers for disposal. Wash floor with soap and water.

6.4 Reference to other sections

- Refer to Section 8 - Exposure Controls/Personal Protection and Section 13 - Disposal Considerations.

Section 7 - Handling and Storage

7.1 Precautions for safe handling

Handling

- Keep away from heat and ignition sources – No Smoking. Take precautionary measures against static charges. All equipment used when handling the product must be grounded. Do not puncture or incinerate (burn) cans. Do not stick a pin, nail or any other sharp object into opening on top of can. Use only with adequate ventilation. Use good safety and industrial hygiene practices. Wear appropriate personal protective equipment, avoid direct contact. Do not breathe (dust, vapor or spray mist) Avoid contact with eyes, skin and clothing. Do not use near ignition sources such as sparks or open flames. Do not cut, drill or weld on containers. Even empty containers may contain residue that will support a flame or explode when exposed to a spark, flame or other source of ignition. Do not eat, drink or smoke when using this product. After handling wash hands thoroughly.

7.2 Conditions for safe storage, including any incompatibilities

Storage

- Store in a cool, dry, well-ventilated place. Keep away from heat, sparks, and flame. Do not store at temperatures >120º F

7.3 Specific end use(s)

- Refer to Section 1.2 - Relevant identified uses.

Section 8 - Exposure Controls/Personal Protection

8.1 Control parameters

Exposure Limits/Guidelines				
	Result	**ACGIH**	**NIOSH**	**OSHA**
Propane (74-98-6)	TWAs	1000 ppm TWA (listed under Aliphatic hydrocarbon gases: Alkane C1-4)	1000 ppm TWA; 1800 mg/m3 TWA	1000 ppm TWA; 1800 mg/m3 TWA

Butane (106-97-8)	STELs	1000 ppm STEL	Not established	Not established
	TWAs	Not established	800 ppm TWA; 1900 mg/m3 TWA	Not established
Acetone (67-64-1)	TWAs	500 ppm TWA	250 ppm TWA; 590 mg/m3 TWA	1000 ppm TWA; 2400 mg/m3 TWA
	STELs	750 ppm STEL	Not established	Not established
Heptane (142-82-5)	TWAs	400 ppm TWA (listed under Heptane, all isomers)	85 ppm TWA; 350 mg/m3 TWA	500 ppm TWA; 2000 mg/m3 TWA
	STELs	500 ppm STEL (listed under Heptane, all isomers)	Not established	Not established
	Ceilings	Not established	440 ppm Ceiling (15 min); 1800 mg/m3 Ceiling (15 min)	Not established

8.2 Exposure controls

Engineering Measures/Controls

- Good general ventilation 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

Respiratory

- Follow the OSHA respirator regulations found in 29 CFR 1910.134 or European Standard EN 149. Use a NIOSH/MSHA or European Standard EN 149 approved respirator if exposure limits are exceeded or symptoms are experienced.

Eye/Face

- Wear safety goggles.

Skin/Body

- Wear protective clothing and gloves.

Environmental Exposure Controls

- Controls should be engineered to prevent release to the environment, including procedures to prevent spills, atmospheric release and release to waterways.

Key to abbreviations

ACGIH = American Conference of Governmental Industrial Hygiene
NIOSH = National Institute of Occupational Safety and Health
OSHA = Occupational Safety and Health Administration
STEL = Short Term Exposure Limits are based on 15-minute exposures
TWA = Time-Weighted Averages are based on 8h/day, 40h/week exposures

Section 9 - Physical and Chemical Properties

9.1 Information on Physical and Chemical Properties

Material Description			
Physical Form	Aerosol	Appearance/Description	Aerosol
Color	Data lacking	Odor	Data lacking
Odor Threshold	Data lacking		
General Properties			
Boiling Point	Data lacking	Melting Point	Data lacking
Decomposition Temperature	Data lacking	pH	Data lacking
Specific Gravity/Relative Density	Data lacking	Water Solubility	Negligible
Viscosity	Data lacking	Explosive Properties	Data lacking
Oxidizing Properties:	Data lacking		
Volatility			
Vapor Pressure	Data lacking	Vapor Density	Data lacking
Evaporation Rate	Data lacking		
Flammability			
Flash Point	221 C (430 F)	UEL	Data lacking
LEL	Data lacking	Autoignition	Data lacking

Flammability (solid, gas)	Data lacking		
Environmental			
Octanol/Water Partition coefficient	Data lacking		

9.2 Other Information

- No additional physical and chemical parameters noted.

Section 10: Stability and Reactivity

10.1 Reactivity

- No dangerous reaction known under conditions of normal use.

10.2 Chemical stability

- Stable

10.3 Possibility of hazardous reactions

- Hazardous polymerization will not occur.

10.4 Conditions to avoid

- Heat, sparks, open flames. Incompatible materials.

10.5 Incompatible materials

- Strong oxidizing agents, acids, and alkalis.

10.6 Hazardous decomposition products

- On burning may release carbon dioxide and carbon monoxide.

Section 11 - Toxicological Information

11.1 Information on toxicological effects

Components		
Hydrotreated heavy naphthenic distillates (petroleum) (Highly Refined) (< 70%)	64742-52-5	**Acute Toxicity:** Ingestion/Oral-Rat LD50 • >5000 mg/kg; Skin-Rabbit LD50 • >2000 mg/kg; **Irritation:** Skin-Rabbit • 500 mg • Severe irritation
Coke (petroleum), calcined (< 10%)	64743-05-1	**Acute Toxicity:** Inhalation-Rat LC50 • >30.7 mg/m³ 6 Hour(s)
Heptane (< 20%)	142-82-5	**Acute Toxicity:** Inhalation-Rat LC50 • 103 g/m³ 4 Hour(s)
Acetone (< 10%)	67-64-1	**Acute Toxicity:** Ingestion/Oral-Rat LD50 • 5800 mg/kg; Inhalation-Rat LC50 • 50100 mg/m³; **Irritation:** Eye-Rabbit • 20 mg • Severe irritation; Skin-Rabbit • 395 mg-Open • Mild irritation; **Reproductive:** Inhalation-Rat TCLo • 11000 ppm (6-19D preg); *Reproductive Effects:Specific Developmental Abnormalities*:**Other developmental abnormalities**
Butane (< 6%)	106-97-8	**Acute Toxicity:** Inhalation-Rat LC50 • 658 g/m³ 4 Hour(s)

GHS Properties	Classification
Acute toxicity	**EU/CLP** • Data lacking **OSHA HCS 2012** • Data lacking

Aspiration Hazard	**EU/CLP** • Data lacking **OSHA HCS 2012** • Data lacking
Carcinogenicity	**EU/CLP** • Data lacking **OSHA HCS 2012** • Data lacking
Germ Cell Mutagenicity	**EU/CLP** • Data lacking **OSHA HCS 2012** • Data lacking
Skin corrosion/Irritation	**EU/CLP** • Skin Irritation 2 **OSHA HCS 2012** • Skin Irritation 2
Skin sensitization	**EU/CLP** • Data lacking **OSHA HCS 2012** • Data lacking
STOT-RE	**EU/CLP** • Specific Target Organ Toxicity Repeated Exposure 2 **OSHA HCS 2012** • Specific Target Organ Toxicity Repeated Exposure 1
STOT-SE	**EU/CLP** • Specific Target Organ Toxicity Single Exposure 3: Narcotic Effects **OSHA HCS 2012** • Specific Target Organ Toxicity Single Exposure 3: Narcotic Effects
Toxicity for Reproduction	**EU/CLP** • Data lacking **OSHA HCS 2012** • Data lacking
Respiratory sensitization	**EU/CLP** • Data lacking **OSHA HCS 2012** • Data lacking
Serious eye damage/Irritation	**EU/CLP** • Data lacking **OSHA HCS 2012** • Eye Irritation 2

Potential Health Effects

Inhalation

Acute (Immediate)
- May affect the central nervous system. Symptoms may include dizziness, drowsiness, lethargy, coma and death.

Chronic (Delayed)
- Repeated and prolonged inhalation may result in impaired lung function. Repeated or proplonged exposure may cause hyperactive reflexes, peripheral neuropathy, ataxia, personality changes, tremors, headaches, emotional liability, cognitive dysfunction and memory loss. Toluene abuse or sniffing may cause liver, kidney and central nervous system damage. Toluene may also cause sensitization to epinephrine or other adrenalin like agents.

Skin

Acute (Immediate)
- Causes skin irritation.

Chronic (Delayed)
- Contact may dry the skin prolonged contact may cause irritation. Solvent action can dry and defate the skin causing skin to crack, leading to dermatitis.

Eye

Acute (Immediate)
- Causes serious eye irritation.

Chronic (Delayed)
- No data available

Ingestion

Acute (Immediate)
- Under normal conditions of use, no health effects are expected.

Chronic (Delayed)
- No data available

Key to abbreviations

LC = Lethal Concentration
LD = Lethal Dose
TC = Toxic Concentration

Section 12 - Ecological Information

12.1 Toxicity

- This product contains a component that is potentially toxic to aquatic organisms and may have long lasting effects to the aquatic environment.

12.2 Persistence and degradability

- Material data lacking.

12.3 Bioaccumulative potential

- Material data lacking.

12.4 Mobility in Soil

- Material data lacking.

12.5 Results of PBT and vPvB assessment

- No PBT and vPvB assessment has been conducted.

12.6 Other adverse effects

- No studies have been found.

Section 13 - Disposal Considerations

13.1 Waste treatment methods

Product waste
- Dispose of content and/or container in accordance with local, regional, national, and/or international regulations.

Packaging waste
- Dispose of content and/or container in accordance with local, regional, national, and/or international regulations.

Section 14 - Transport Information

	14.1 UN number	14.2 UN proper shipping name	14.3 Transport hazard class(es)	14.4 Packing group	14.5 Environmental hazards
DOT	NDA	Consumer Commodity, ORM-D	NDA	NDA	NDA
TDG	NDA	Consumer Commodity, ORM-D	NDA	NDA	NDA
IMO/IMDG	UN1950	AEROSOLS	2.1	NDA	NDA
IATA/ICAO	UN1950	Aerosols	2.1	NDA	NDA

14.6 Special precautions for user
- None specified.

14.7 Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code
- Data lacking.

Section 15 - Regulatory Information

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

SARA Hazard Classifications
- Acute, Chronic, Fire, Pressure(Sudden Release of)

Inventory					
Component	**CAS**	**Canada DSL**	**Canada NDSL**	**EU EINECS**	**EU ELNICS**
Acetone	67-64-1	Yes	No	Yes	No
Butane	106-97-8	Yes	No	Yes	No
Coke (petroleum), calcined	64743-05-1	Yes	No	Yes	No
Heptane	142-82-5	Yes	No	Yes	No
Hydrotreated heavy naphthenic distillates (petroleum) (Highly Refined)	64742-52-5	Yes	No	Yes	No
Propane	74-98-6	Yes	No	Yes	No

Canada

Labor

Canada - WHMIS - Classifications of Substances

• Acetone	67-64-1	B2, D2B
• Hydrotreated heavy naphthenic distillates (petroleum) (Highly Refined)	64742-52-5	Not Listed
• Heptane	142-82-5	B2, D2B
• Propane	74-98-6	A, B1
• Butane	106-97-8	A, B1
• Coke (petroleum), calcined	64743-05-1	Not Listed

Canada - WHMIS - Ingredient Disclosure List

• Acetone	67-64-1	1 %
• Hydrotreated heavy naphthenic distillates (petroleum) (Highly Refined)	64742-52-5	Not Listed
• Heptane	142-82-5	1 %
• Propane	74-98-6	Not Listed
• Butane	106-97-8	1 %
• Coke (petroleum), calcined	64743-05-1	Not Listed

Environment

Canada - 2004 NPRI (National Pollutant Release Inventory)

• Acetone	67-64-1	Not Listed
• Hydrotreated heavy naphthenic distillates (petroleum) (Highly Refined)	64742-52-5	Not Listed
• Heptane	142-82-5	Not Listed
• Propane	74-98-6	Part 5 Substance
• Butane	106-97-8	Not Listed
• Coke (petroleum), calcined	64743-05-1	Not Listed

Canada - 2005 NPRI (National Pollutant Release Inventory)

• Acetone	67-64-1	Not Listed
• Hydrotreated heavy naphthenic distillates (petroleum) (Highly Refined)	64742-52-5	Not Listed
• Heptane	142-82-5	Not Listed
• Propane	74-98-6	Part 5 Substance
• Butane	106-97-8	Not Listed
• Coke (petroleum), calcined	64743-05-1	Not Listed

Canada - CEPA - Greenhouse Gases Subject to Mandatory Reporting

• Acetone	67-64-1	Not Listed
• Hydrotreated heavy naphthenic distillates (petroleum) (Highly Refined)	64742-52-5	Not Listed

• Heptane	142-82-5	Not Listed
• Propane	74-98-6	Not Listed
• Butane	106-97-8	Not Listed
• Coke (petroleum), calcined	64743-05-1	Not Listed

Canada - CEPA - Priority Substances List

• Acetone	67-64-1	Not Listed
• Hydrotreated heavy naphthenic distillates (petroleum) (Highly Refined)	64742-52-5	Not Listed
• Heptane	142-82-5	Not Listed
• Propane	74-98-6	Not Listed
• Butane	106-97-8	Not Listed
• Coke (petroleum), calcined	64743-05-1	Not Listed

Canada - DWQ (Drinking Water Quality) - IMACs

• Acetone	67-64-1	Not Listed
• Hydrotreated heavy naphthenic distillates (petroleum) (Highly Refined)	64742-52-5	Not Listed
• Heptane	142-82-5	Not Listed
• Propane	74-98-6	Not Listed
• Butane	106-97-8	Not Listed
• Coke (petroleum), calcined	64743-05-1	Not Listed

Other

Canada - Accelerated Reduction/Elimination of Toxics (ARET)

• Acetone	67-64-1	Not Listed
• Hydrotreated heavy naphthenic distillates (petroleum) (Highly Refined)	64742-52-5	Not Listed
• Heptane	142-82-5	Not Listed
• Propane	74-98-6	Not Listed
• Butane	106-97-8	Not Listed
• Coke (petroleum), calcined	64743-05-1	Not Listed

Canada New Brunswick

Environment

Canada - New Brunswick - Ozone Depleting Substances - Schedule A

• Acetone	67-64-1	Not Listed
• Hydrotreated heavy naphthenic distillates (petroleum) (Highly Refined)	64742-52-5	Not Listed
• Heptane	142-82-5	Not Listed
• Propane	74-98-6	Not Listed
• Butane	106-97-8	Not Listed
• Coke (petroleum), calcined	64743-05-1	Not Listed

Canada - New Brunswick - Ozone Depleting Substances - Schedule B

• Acetone	67-64-1	Not Listed
• Hydrotreated heavy naphthenic distillates (petroleum) (Highly Refined)	64742-52-5	Not Listed
• Heptane	142-82-5	Not Listed
• Propane	74-98-6	Not Listed
• Butane	106-97-8	Not Listed
• Coke (petroleum), calcined	64743-05-1	Not Listed

Europe

Other

EU - Hazardous Substances Restricted or Prohibited in Electrical Equipment (2011/65/EU) (RoHS)

• Acetone	67-64-1	Not Listed
• Hydrotreated heavy naphthenic distillates (petroleum) (Highly Refined)	64742-52-5	Not Listed

• Heptane	142-82-5	Not Listed
• Propane	74-98-6	Not Listed
• Butane	106-97-8	Not Listed
• Coke (petroleum), calcined	64743-05-1	Not Listed

Japan

Environment

Inventory - Japan - Industrial Safety and Health Law Substances (ISHL)

• Acetone	67-64-1	Not Listed
• Hydrotreated heavy naphthenic distillates (petroleum) (Highly Refined)	64742-52-5	Not Listed
• Heptane	142-82-5	Not Listed
• Propane	74-98-6	Not Listed
• Butane	106-97-8	Not Listed
• Coke (petroleum), calcined	64743-05-1	Not Listed

Other

Japan - Chemical Substance Control Law (CSCL) - Monitoring Chemical Substances

• Acetone	67-64-1	Not Listed
• Hydrotreated heavy naphthenic distillates (petroleum) (Highly Refined)	64742-52-5	Not Listed
• Heptane	142-82-5	Not Listed
• Propane	74-98-6	Not Listed
• Butane	106-97-8	Not Listed
• Coke (petroleum), calcined	64743-05-1	Not Listed

Japan - Poisonous and Deleterious Substances - Substances Not Considered Deleterious

• Acetone	67-64-1	Not Listed
• Hydrotreated heavy naphthenic distillates (petroleum) (Highly Refined)	64742-52-5	Not Listed
• Heptane	142-82-5	Not Listed
• Propane	74-98-6	Not Listed
• Butane	106-97-8	Not Listed
• Coke (petroleum), calcined	64743-05-1	Not Listed

Japan - Poisonous and Deleterious Substances - Substances Not Considered Poisonous

• Acetone	67-64-1	Not Listed
• Hydrotreated heavy naphthenic distillates (petroleum) (Highly Refined)	64742-52-5	Not Listed
• Heptane	142-82-5	Not Listed
• Propane	74-98-6	Not Listed
• Butane	106-97-8	Not Listed
• Coke (petroleum), calcined	64743-05-1	Not Listed

United States

Labor

U.S. - OSHA - Process Safety Management - Highly Hazardous Chemicals

• Acetone	67-64-1	Not Listed
• Hydrotreated heavy naphthenic distillates (petroleum) (Highly Refined)	64742-52-5	Not Listed
• Heptane	142-82-5	Not Listed
• Propane	74-98-6	Not Listed
• Butane	106-97-8	Not Listed
• Coke (petroleum), calcined	64743-05-1	Not Listed

U.S. - OSHA - Specifically Regulated Chemicals

• Acetone	67-64-1	Not Listed
• Hydrotreated heavy naphthenic distillates (petroleum) (Highly Refined)	64742-52-5	Not Listed

• Heptane	142-82-5	Not Listed
• Propane	74-98-6	Not Listed
• Butane	106-97-8	Not Listed
• Coke (petroleum), calcined	64743-05-1	Not Listed

Environment

U.S. - CAA (Clean Air Act) - 1990 Hazardous Air Pollutants

• Acetone	67-64-1	Not Listed
• Hydrotreated heavy naphthenic distillates (petroleum) (Highly Refined)	64742-52-5	Not Listed
• Heptane	142-82-5	Not Listed
• Propane	74-98-6	Not Listed
• Butane	106-97-8	Not Listed
• Coke (petroleum), calcined	64743-05-1	Not Listed

U.S. - CERCLA/SARA - Hazardous Substances and their Reportable Quantities

• Acetone	67-64-1	5000 lb final RQ; 2270 kg final RQ
• Hydrotreated heavy naphthenic distillates (petroleum) (Highly Refined)	64742-52-5	Not Listed
• Heptane	142-82-5	Not Listed
• Propane	74-98-6	Not Listed
• Butane	106-97-8	Not Listed
• Coke (petroleum), calcined	64743-05-1	Not Listed

U.S. - CERCLA/SARA - Radionuclides and Their Reportable Quantities

• Acetone	67-64-1	Not Listed
• Hydrotreated heavy naphthenic distillates (petroleum) (Highly Refined)	64742-52-5	Not Listed
• Heptane	142-82-5	Not Listed
• Propane	74-98-6	Not Listed
• Butane	106-97-8	Not Listed
• Coke (petroleum), calcined	64743-05-1	Not Listed

U.S. - CERCLA/SARA - Section 302 Extremely Hazardous Substances EPCRA RQs

• Acetone	67-64-1	Not Listed
• Hydrotreated heavy naphthenic distillates (petroleum) (Highly Refined)	64742-52-5	Not Listed
• Heptane	142-82-5	Not Listed
• Propane	74-98-6	Not Listed
• Butane	106-97-8	Not Listed
• Coke (petroleum), calcined	64743-05-1	Not Listed

U.S. - CERCLA/SARA - Section 302 Extremely Hazardous Substances TPQs

• Acetone	67-64-1	Not Listed
• Hydrotreated heavy naphthenic distillates (petroleum) (Highly Refined)	64742-52-5	Not Listed
• Heptane	142-82-5	Not Listed
• Propane	74-98-6	Not Listed
• Butane	106-97-8	Not Listed
• Coke (petroleum), calcined	64743-05-1	Not Listed

U.S. - CERCLA/SARA - Section 313 - Emission Reporting

• Acetone	67-64-1	Not Listed
• Hydrotreated heavy naphthenic distillates (petroleum) (Highly Refined)	64742-52-5	Not Listed
• Heptane	142-82-5	Not Listed
• Propane	74-98-6	Not Listed
• Butane	106-97-8	Not Listed
• Coke (petroleum), calcined	64743-05-1	Not Listed

U.S. - CERCLA/SARA - Section 313 - PBT Chemical Listing

• Acetone	67-64-1	Not Listed
• Hydrotreated heavy naphthenic distillates (petroleum) (Highly Refined)	64742-52-5	Not Listed
• Heptane	142-82-5	Not Listed
• Propane	74-98-6	Not Listed
• Butane	106-97-8	Not Listed
• Coke (petroleum), calcined	64743-05-1	Not Listed

United States - California

Environment

U.S. - California - Proposition 65 - Carcinogens List

• Acetone	67-64-1	Not Listed
• Hydrotreated heavy naphthenic distillates (petroleum) (Highly Refined)	64742-52-5	Not Listed
• Heptane	142-82-5	Not Listed
• Propane	74-98-6	Not Listed
• Butane	106-97-8	Not Listed
• Coke (petroleum), calcined	64743-05-1	Not Listed

U.S. - California - Proposition 65 - Developmental Toxicity

• Acetone	67-64-1	Not Listed
• Hydrotreated heavy naphthenic distillates (petroleum) (Highly Refined)	64742-52-5	Not Listed
• Heptane	142-82-5	Not Listed
• Propane	74-98-6	Not Listed
• Butane	106-97-8	Not Listed
• Coke (petroleum), calcined	64743-05-1	Not Listed

U.S. - California - Proposition 65 - Maximum Allowable Dose Levels (MADL)

• Acetone	67-64-1	Not Listed
• Hydrotreated heavy naphthenic distillates (petroleum) (Highly Refined)	64742-52-5	Not Listed
• Heptane	142-82-5	Not Listed
• Propane	74-98-6	Not Listed
• Butane	106-97-8	Not Listed
• Coke (petroleum), calcined	64743-05-1	Not Listed

U.S. - California - Proposition 65 - No Significant Risk Levels (NSRL)

• Acetone	67-64-1	Not Listed
• Hydrotreated heavy naphthenic distillates (petroleum) (Highly Refined)	64742-52-5	Not Listed
• Heptane	142-82-5	Not Listed
• Propane	74-98-6	Not Listed
• Butane	106-97-8	Not Listed
• Coke (petroleum), calcined	64743-05-1	Not Listed

U.S. - California - Proposition 65 - Reproductive Toxicity - Female

• Acetone	67-64-1	Not Listed
• Hydrotreated heavy naphthenic distillates (petroleum) (Highly Refined)	64742-52-5	Not Listed
• Heptane	142-82-5	Not Listed
• Propane	74-98-6	Not Listed
• Butane	106-97-8	Not Listed
• Coke (petroleum), calcined	64743-05-1	Not Listed

U.S. - California - Proposition 65 - Reproductive Toxicity - Male

• Acetone	67-64-1	Not Listed
• Hydrotreated heavy naphthenic distillates (petroleum) (Highly Refined)	64742-52-5	Not Listed

• Heptane	142-82-5	Not Listed
• Propane	74-98-6	Not Listed
• Butane	106-97-8	Not Listed
• Coke (petroleum), calcined	64743-05-1	Not Listed

United States - Rhode Island

Labor

U.S. - Rhode Island - Hazardous Substance List

• Acetone	67-64-1	Toxic; Flammable
• Hydrotreated heavy naphthenic distillates (petroleum) (Highly Refined)	64742-52-5	Not Listed
• Heptane	142-82-5	Toxic; Flammable
• Propane	74-98-6	Toxic; Flammable
• Butane	106-97-8	Toxic; Flammable
• Coke (petroleum), calcined	64743-05-1	Not Listed

15.2 Chemical Safety Assessment

- No Chemical Safety Assessment has been carried out.

Section 16 - Other Information

Relevant Phrases (code & full text)

- H220 - Extremely flammable gas
  H225 - Highly flammable liquid and vapour
  H226 - Flammable liquid and vapour
  H280 - Contains gas under pressure; may explode if heated
  H304 - May be fatal if swallowed and enters airways
  H319 - Causes serious eye irritation
  H350 - May cause cancer.
  H372 - Causes damage to organs through prolonged or repeated exposure.
  H400 - Very toxic to aquatic life
  H410 - Very toxic to aquatic life with long lasting effects

  R11 - Highly flammable.
  R36 - Irritating to eyes.
  R38 - Irritating to skin.
  R45 - May cause cancer.
  R50 - Very toxic to aquatic organisms.
  R53 - May cause long-term adverse effects in the aquatic environment.
  R65 - Harmful: may cause lung damage if swallowed.

Last Revision Date

- 22/September/2014

Preparation Date

- 22/September/2014

Disclaimer/Statement of Liability

- 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.

Key to abbreviations

NDA = No data available

Safety Data Sheet

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SECTION 1: Identification

1.1. Product identifier
3M(TM) Spray-Mount(TM) Artist's Adhesive 6064, 6065

Product Identification Numbers

ID Number	UPC	ID Number	UPC
62-4662-2926-7	000-21200-96470-1	62-4662-4827-5	000-21200-30060-8
62-4662-4828-3	000-21200-31366-0	62-4662-4829-1	000-21200-30060-8
70-0050-1482-7	500-21200-30060-3	70-0050-1806-7	500-51141-23992-2
70-0050-8169-3	500-21200-30060-3	70-0050-8838-3	500-51141-23992-2
70-0052-7864-6		H0-0017-2522-7	

1.2. Recommended use and restrictions on use

Recommended use
Adhesive

1.3. Supplier's details

MANUFACTURER:	3M
DIVISION:	Stationery and Office Supplies Division
ADDRESS:	3M Center, St. Paul, MN 55144-1000, USA
Telephone:	1-888-3M HELPS (1-888-364-3577)

1.4. Emergency telephone number
1-800-364-3577 or (651) 737-6501 (24 hours)

SECTION 2: Hazard identification

2.1. Hazard classification
Flammable Aerosol: Category 1.
Gas Under Pressure: Liquefied gas.
Serious Eye Damage/Irritation: Category 2A.
Simple Asphyxiant.
Specific Target Organ Toxicity (single exposure): Category 1.
Specific Target Organ Toxicity (central nervous system): Category 3.

2.2. Label elements
Signal word

Danger

Symbols
Flame | Exclamation mark | Health Hazard |

Pictograms



Hazard Statements
Extremely flammable aerosol.
Contains gas under pressure; may explode if heated.

Causes serious eye irritation.
May cause drowsiness or dizziness.
May displace oxygen and cause rapid suffocation.

Causes damage to organs:
cardiovascular system |

Precautionary Statements
General:
Keep out of reach of children.

Prevention:
Keep away from heat/sparks/open flames/hot surfaces. - No smoking.
Do not spray on an open flame or other ignition source.
Pressurized container: Do not pierce or burn, even after use.
Do not breathe dust/fume/gas/mist/vapors/spray.
Use only outdoors or in a well-ventilated area.
Wear eye/face protection.
Do not eat, drink or smoke when using this product.
Wash thoroughly after handling.

Response:
IF INHALED: Remove person to fresh air and keep comfortable for breathing.
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 advice/attention.
IF exposed: Call a POISON CENTER or doctor/physician.
Specific treatment (see Notes to Physician on this label).

Storage:
Protect from sunlight. Do not expose to temperatures exceeding 50C/122F.
Store in a well-ventilated place. Keep container tightly closed.
Store locked up.

Disposal:
Dispose of contents/container in accordance with applicable local/regional/national/international regulations.

Notes to Physician:
Exposure may increase myocardial irritability. Do not administer sympathomimetic drugs unless absolutely necessary.

2.3. Hazards not otherwise classified
None.

SECTION 3: Composition/information on ingredients

Ingredient	C.A.S. No.	% by Wt
ACETONE	67-64-1	30 - 40 Trade Secret *
HEPTANE ISOMERS	64742-49-0	20 - 30 Trade Secret *
ISOBUTANE	75-28-5	20 - 30 Trade Secret *
PROPANE	74-98-6	7 - 13 Trade Secret *
NON-VOLATILE COMPONENTS - N.J. TRADE SECRET REGISTRY NO. 04499600-6201P++	Trade Secret*	5 - 10 Trade Secret *

*The specific chemical identity and/or exact percentage (concentration) of this composition has been withheld as a trade secret.

SECTION 4: First aid measures

4.1. Description of first aid measures

Inhalation:
Remove person to fresh air. Get medical attention.

Skin Contact:
Wash with soap and water. If signs/symptoms develop, get medical attention.

Eye Contact:
Immediately flush with large amounts of water. Remove contact lenses if easy to do. Continue rinsing. Get medical attention.

If Swallowed:
Rinse mouth. If you feel unwell, get medical attention.

4.2. Most important symptoms and effects, both acute and delayed
See Section 11.1. Information on toxicological effects.

4.3. Indication of any immediate medical attention and special treatment required
Exposure may increase myocardial irritability. Do not administer sympathomimetic drugs unless absolutely necessary.

SECTION 5: Fire-fighting measures

5.1. Suitable extinguishing media
Use a fire fighting agent suitable for the surrounding fire.

5.2. Special hazards arising from the substance or mixture
Closed containers exposed to heat from fire may build pressure and explode.

Hazardous Decomposition or By-Products

Substance	Condition
Aldehydes	During Combustion
Carbon monoxide	During Combustion
Carbon dioxide	During Combustion

5.3. Special protective actions for fire-fighters
Water may not effectively extinguish fire; however, it should be used to keep fire-exposed containers and surfaces cool and prevent explosive rupture.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures
Evacuate area. Keep away from heat/sparks/open flames/hot surfaces. - No smoking. Use only non-sparking tools. Ventilate the area with fresh air. Warning! A motor could be an ignition source and could cause flammable gases or vapors in the spill area to burn or explode. Refer to other sections of this SDS for information regarding physical and health hazards, respiratory protection, ventilation, and personal protective equipment.

6.2. Environmental precautions
Avoid release to the environment.

6.3. Methods and material for containment and cleaning up
If possible, seal leaking container. Place leaking containers in a well-ventilated area, preferably an operating exhaust hood, or if necessary outdoors on an impermeable surface until appropriate packaging for the leaking container or its contents is available. Contain spill. Cover spill area with a fire-extinguishing foam. An appropriate 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 physical, health, or environmental hazard. Collect as much of the spilled material as possible using non-sparking tools. Place in a metal container approved for transportation by appropriate authorities. 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 SDS. Seal the container. Dispose of collected material as soon as possible.

SECTION 7: Handling and storage

7.1. Precautions for safe handling
Do not use in a confined area with minimal air exchange. Keep out of reach of children. Keep away from heat/sparks/open flames/hot surfaces. - No smoking. Do not spray on an open flame or other ignition source. Do not pierce or burn, even after use. Do not breathe dust/fume/gas/mist/vapors/spray. Do not get in eyes, on skin, or on clothing. Do not eat, drink or smoke when using this product. Wash thoroughly after handling. Avoid contact with oxidizing agents (eg. chlorine, chromic acid etc.)

7.2. Conditions for safe storage including any incompatibilities
Store in a well-ventilated place. Protect from sunlight. Do not expose to temperatures exceeding 50C/122F. Store away from heat. Store away from acids. Store away from oxidizing agents.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Occupational exposure limits
If a component is disclosed in section 3 but does not appear in the table below, an occupational exposure limit is not available for the component.

Ingredient	C.A.S. No.	Agency	Limit type	Additional Comments
HEPTANE ISOMERS	64742-49-0	CMRG	TWA:50 ppm	
ACETONE	67-64-1	ACGIH	TWA:250 ppm;STEL:500 ppm	A4: Not class. as human carcin
ACETONE	67-64-1	OSHA	TWA:2400 mg/m3(1000 ppm)	
PROPANE	74-98-6	ACGIH	Limit value not established:	
PROPANE	74-98-6	OSHA	TWA:1800 mg/m3(1000 ppm)	
ISOBUTANE	75-28-5	ACGIH	STEL:1000 ppm	

Natural gas	75-28-5	ACGIH	Limit value not established:	

ACGIH : American Conference of Governmental Industrial Hygienists
AIHA : American Industrial Hygiene Association
CMRG : Chemical Manufacturer's Recommended Guidelines
OSHA : United States Department of Labor - Occupational Safety and Health Administration
TWA: Time-Weighted-Average
STEL: Short Term Exposure Limit
CEIL: Ceiling

8.2. Exposure controls

8.2.1. Engineering controls
Do not remain in area where available oxygen may be reduced. Use general dilution ventilation and/or local exhaust ventilation to control airborne exposures to below relevant Exposure Limits and/or control dust/fume/gas/mist/vapors/spray. If ventilation is not adequate, use respiratory protection equipment.

8.2.2. Personal protective equipment (PPE)

Eye/face protection

Select and use eye/face protection to prevent contact based on the results of an exposure assessment. The following eye/face protection(s) are recommended:
Indirect Vented Goggles

Skin/hand protection
Select and use gloves and/or protective clothing approved to relevant local standards to prevent skin contact based on the results of an exposure assessment. Selection should be based on use factors such as exposure levels, concentration of the substance or mixture, frequency and duration, physical challenges such as temperature extremes, and other use conditions. Consult with your glove and/or protective clothing manufacturer for selection of appropriate compatible gloves/protective clothing.
Gloves made from the following material(s) are recommended: Butyl Rubber

Respiratory protection

In case of inadequate ventilation wear respiratory protection. An exposure assessment may be needed to decide if a respirator is required. If a respirator is needed, use respirators as part of a full respiratory protection program. Based on the results of the exposure assessment, select from the following respirator type(s) to reduce inhalation exposure:
Half facepiece or full facepiece supplied-air respirator
Organic vapor respirators may have short service life.

For questions about suitability for a specific application, consult with your respirator manufacturer.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

General Physical Form:	Liquid
Specific Physical Form:	Aerosol
Odor, Color, Grade:	Mild Solvent Odor/Clear-light yellow
Odor threshold	*No Data Available*
pH	*Not Applicable*
Melting point	*Not Applicable*
Boiling Point	*Not Applicable*
Flash Point	-50.00 ºF [*Test Method:* Tagliabue Closed Cup] [*Details:* CONDITIONS: Propellant]
Evaporation rate	*No Data Available*
Flammability (solid, gas)	Not Applicable
Flammable Limits(LEL)	Approximately 1.85 % volume

Flammable Limits(UEL)	Approximately 9.9 % volume
Vapor Density	*No Data Available*
Density	0.673 g/ml
Specific Gravity	0.673 [*Ref Std:* WATER=1]
Solubility in Water	Negligible
Solubility- non-water	*No Data Available*
Partition coefficient: n-octanol/ water	*No Data Available*
Autoignition temperature	*No Data Available*
Decomposition temperature	*No Data Available*
Viscosity	*Not Applicable*
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]

SECTION 10: Stability and reactivity

10.1. Reactivity
This material may be reactive with certain agents under certain conditions - see the remaining headings in this section.

10.2. Chemical stability
Stable.

10.3. Possibility of hazardous reactions
Hazardous polymerization will not occur.

10.4. Conditions to avoid
Heat
Sparks and/or flames

10.5. Incompatible materials
None known.

10.6. Hazardous decomposition products

Substance	Condition
None known.	

Refer to section 5.2 for hazardous decomposition products during combustion.

SECTION 11: Toxicological information

The information below may not be consistent with the material classification in Section 2 if specific ingredient classifications are mandated by a competent authority. In addition, toxicological data on ingredients may not be reflected in the material classification and/or the signs and symptoms of exposure, because an ingredient may be present below the threshold for labeling, an ingredient may not be available for exposure, or the data may not be relevant to the material as a whole.

11.1. Information on Toxicological effects

Signs and Symptoms of Exposure

Based on test data and/or information on the components, this material may produce the following health effects:

Inhalation:
Intentional concentration and inhalation may be harmful or fatal.

Simple Asphyxiation: Signs/symptoms may include increased heart rate, rapid respirations, drowsiness, headache, incoordination, altered judgement, nausea, vomiting, lethargy, seizures, coma, and may be fatal.

Respiratory Tract Irritation: Signs/symptoms may include cough, sneezing, nasal discharge, headache, hoarseness, and nose and throat pain.

May cause additional health effects (see below).

Skin Contact:
Mild Skin Irritation: Signs/symptoms may include localized redness, swelling, itching, and dryness.

Eye Contact:
Severe Eye Irritation: Signs/symptoms may include significant redness, swelling, pain, tearing, cloudy appearance of the cornea, and impaired vision.

Ingestion:
Gastrointestinal Irritation: Signs/symptoms may include abdominal pain, stomach upset, nausea, vomiting and diarrhea.

May cause additional health effects (see below).

Additional Health Effects:

Single exposure may cause 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.

Single exposure, above recommended guidelines, may cause:
Cardiac Sensitization: Signs/symptoms may include irregular heartbeat (arrhythmia), faintness, chest pain, and may be fatal.

Toxicological Data
If a component is disclosed in section 3 but does not appear in a table below, either no data are available for that endpoint or the data are not sufficient for classification.

Acute Toxicity

Name	Route	Species	Value
Overall product	Dermal		No data available; calculated ATE > 5,000 mg/kg
Overall product	Inhalation-Vapor(4 hr)		No data available; calculated ATE > 50 mg/l
Overall product	Ingestion		No data available; calculated ATE > 5,000 mg/kg
ACETONE	Dermal	Rabbit	LD50 > 15,688 mg/kg
ACETONE	Inhalation-Vapor (4 hours)	Rat	LC50 76 mg/l
ACETONE	Ingestion	Rat	LD50 5,800 mg/kg
ISOBUTANE	Inhalation-Gas (4 hours)	Rat	LC50 276,000 ppm
HEPTANE ISOMERS	Dermal	Rabbit	LD50 > 3,160 mg/kg
HEPTANE ISOMERS	Inhalation-Vapor (4 hours)	Rat	LC50 > 14.7 mg/l
HEPTANE ISOMERS	Ingestion	Rat	LD50 > 5,000 mg/kg
PROPANE	Inhalation-Gas (4 hours)	Rat	LC50 > 200,000 ppm

NON-VOLATILE COMPONENTS - N.J. TRADE SECRET REGISTRY NO. 04499600-6201P++	Dermal		LD50 estimated to be > 5,000 mg/kg
NON-VOLATILE COMPONENTS - N.J. TRADE SECRET REGISTRY NO. 04499600-6201P++	Ingestion		LD50 estimated to be 2,000 - 5,000 mg/kg

ATE = acute toxicity estimate

Skin Corrosion/Irritation

Name	Species	Value
ACETONE	Mouse	Minimal irritation
ISOBUTANE	Professional judgement	No significant irritation
HEPTANE ISOMERS	Rabbit	Irritant
PROPANE	Rabbit	Minimal irritation
NON-VOLATILE COMPONENTS - N.J. TRADE SECRET REGISTRY NO. 04499600-6201P++	Professional judgement	No significant irritation

Serious Eye Damage/Irritation

Name	Species	Value
ACETONE	Rabbit	Severe irritant
ISOBUTANE	Professional judgement	No significant irritation
HEPTANE ISOMERS	Rabbit	Mild irritant
PROPANE	Rabbit	Mild irritant

Skin Sensitization

Name	Species	Value
HEPTANE ISOMERS	Guinea pig	Not sensitizing
NON-VOLATILE COMPONENTS - N.J. TRADE SECRET REGISTRY NO. 04499600-6201P++	Professional judgement	Not sensitizing

Respiratory Sensitization

For the component/components, either no data are currently available or the data are not sufficient for classification.

Germ Cell Mutagenicity

Name	Route	Value
ACETONE	In vivo	Not mutagenic
ACETONE	In Vitro	Some positive data exist, but the data are not sufficient for classification
ISOBUTANE	In Vitro	Not mutagenic
HEPTANE ISOMERS	In Vitro	Not mutagenic
PROPANE	In Vitro	Not mutagenic

Carcinogenicity

Name	Route	Species	Value
ACETONE	Not Specified	Multiple animal species	Not carcinogenic
HEPTANE ISOMERS	Inhalation	Mouse	Some positive data exist, but the data are not sufficient for classification

Reproductive Toxicity

Reproductive and/or Developmental Effects

Name	Route	Value	Species	Test Result	Exposure Duration
ACETONE	Ingestion	Some positive male reproductive data exist, but the data are not sufficient for classification	Rat	NOAEL 1,700 mg/kg/day	13 weeks
ACETONE	Inhalation	Some positive developmental data exist, but the data are not sufficient for classification	Rat	NOAEL 5.2 mg/l	during organogenesis

Target Organ(s)

Specific Target Organ Toxicity - single exposure

Name	Route	Target Organ(s)	Value	Species	Test Result	Exposure Duration
ACETONE	Inhalation	central nervous system depression	May cause drowsiness or dizziness	Human	NOAEL Not available	
ACETONE	Inhalation	respiratory irritation	Some positive data exist, but the data are not sufficient for classification	Human	NOAEL Not available	
ACETONE	Inhalation	immune system	Some positive data exist, but the data are not sufficient for classification	Human	NOAEL 1.19 mg/l	6 hours
ACETONE	Inhalation	liver	Some positive data exist, but the data are not sufficient for classification	Guinea pig	NOAEL Not available	
ACETONE	Ingestion	central nervous system depression	May cause drowsiness or dizziness	Human	NOAEL Not available	poisoning and/or abuse
ISOBUTANE	Inhalation	cardiac sensitization	Causes damage to organs	Multiple animal species	NOAEL Not available	
ISOBUTANE	Inhalation	central nervous system depression	May cause drowsiness or dizziness	Human and animal	NOAEL Not available	
ISOBUTANE	Inhalation	respiratory irritation	All data are negative	Mouse	NOAEL Not available	
HEPTANE ISOMERS	Inhalation	central nervous system depression	May cause drowsiness or dizziness	Human and animal	NOAEL Not available	
HEPTANE ISOMERS	Inhalation	respiratory irritation	Some positive data exist, but the data are not sufficient for classification		NOAEL Not available	
HEPTANE ISOMERS	Ingestion	central nervous system depression	May cause drowsiness or dizziness	Professional judgement	NOAEL Not available	
PROPANE	Inhalation	cardiac sensitization	Causes damage to organs	Human	NOAEL Not available	
PROPANE	Inhalation	central nervous system depression	May cause drowsiness or dizziness	Human	NOAEL Not available	
PROPANE	Inhalation	respiratory irritation	All data are negative	Human	NOAEL Not available	

Specific Target Organ Toxicity - repeated exposure

Name	Route	Target Organ(s)	Value	Species	Test Result	Exposure Duration
ACETONE	Dermal	eyes	Some positive data exist, but the data are not sufficient for classification	Guinea pig	NOAEL Not available	3 weeks
ACETONE	Inhalation	hematopoietic system	Some positive data exist, but the data are not sufficient for classification	Human	NOAEL 3 mg/l	6 weeks
ACETONE	Inhalation	immune system	Some positive data exist, but the data are not sufficient for classification	Human	NOAEL 1.19 mg/l	6 days

ACETONE	Inhalation	kidney and/or bladder	Some positive data exist, but the data are not sufficient for classification	Guinea pig	NOAEL 119 mg/l	not available
ACETONE	Inhalation	heart | liver	All data are negative	Rat	NOAEL 45 mg/l	8 weeks
ACETONE	Ingestion	kidney and/or bladder	Some positive data exist, but the data are not sufficient for classification	Rat	NOAEL 900 mg/kg/day	13 weeks
ACETONE	Ingestion	heart	Some positive data exist, but the data are not sufficient for classification	Rat	NOAEL 2,500 mg/kg/day	13 weeks
ACETONE	Ingestion	hematopoietic system	Some positive data exist, but the data are not sufficient for classification	Rat	NOAEL 200 mg/kg/day	13 weeks
ACETONE	Ingestion	liver	Some positive data exist, but the data are not sufficient for classification	Mouse	NOAEL 3,896 mg/kg/day	14 days
ACETONE	Ingestion	eyes	All data are negative	Rat	NOAEL 3,400 mg/kg/day	13 weeks
ACETONE	Ingestion	respiratory system	All data are negative	Rat	NOAEL 2,500 mg/kg/day	13 weeks
ACETONE	Ingestion	muscles	All data are negative	Rat	NOAEL 2,500 mg/kg	13 weeks
ACETONE	Ingestion	skin | bone, teeth, nails, and/or hair	All data are negative	Mouse	NOAEL 11,298 mg/kg/day	13 weeks
ISOBUTANE	Inhalation	kidney and/or bladder	Some positive data exist, but the data are not sufficient for classification	Rat	NOAEL 4,500 ppm	13 weeks

Aspiration Hazard

Name	Value
HEPTANE ISOMERS	Aspiration hazard

Please contact the address or phone number listed on the first page of the SDS for additional toxicological information on this material and/or its components.

SECTION 12: Ecological information

Ecotoxicological information

Please contact the address or phone number listed on the first page of the SDS for additional ecotoxicological information on this material and/or its components.

Chemical fate information

Please contact the address or phone number listed on the first page of the SDS for additional chemical fate information on this material and/or its components.

SECTION 13: Disposal considerations

13.1. Disposal methods

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

Dispose of completely cured (or polymerized) material in a permitted industrial waste facility. As a disposal alternative, incinerate uncured product in a permitted waste incineration facility. Facility must be capable of handling aerosol cans. If no other disposal options are available, waste product that has been completely cured or polymerized may be placed in a landfill properly designed for industrial waste. Empty drums/barrels/containers used for transporting and handling hazardous chemicals (chemical substances/mixtures/preparations classified as Hazardous as per applicable regulations) shall be considered, stored, treated & disposed of as hazardous wastes unless otherwise defined by applicable waste regulations.

Consult with the respective regulating authorities to determine the available treatment and disposal facilities.

EPA Hazardous Waste Number (RCRA): D001 (Ignitable)

SECTION 14: Transport Information

For Transport Information, please visit http://3M.com/Transportinfo or call 1-800-364-3577 or 651-737-6501.

SECTION 15: Regulatory information

15.1. US Federal Regulations
Contact 3M for more information.

311/312 Hazard Categories:

Fire Hazard - Yes Pressure Hazard - Yes Reactivity Hazard - No Immediate Hazard - Yes Delayed Hazard - No

15.2. State Regulations
Contact 3M for more information.

15.3. Chemical Inventories
The components of this product are in compliance with the chemical notification requirements of TSCA.

Contact 3M for more information.

15.4. International Regulations
Non hazardous according to WHMIS criteria.

Contact 3M for more information.

This SDS has been prepared to meet the U.S. OSHA Hazard Communication Standard, 29 CFR 1910.1200.

SECTION 16: Other information

NFPA Hazard Classification
Health: 3 **Flammability:** 4 **Instability:** 0 **Special Hazards:** None
Aerosol Storage Code: 3

National Fire Protection Association (NFPA) hazard ratings are designed for use by emergency response personnel to address the hazards that are presented by short-term, acute exposure to a material under conditions of fire, spill, or similar emergencies. Hazard ratings are primarily based on the inherent physical and toxic properties of the material but also include the toxic properties of combustion or decomposition products that are known to be generated in significant quantities.

HMIS Hazard Classification
Health: *3 **Flammability:** 4 **Physical Hazard:** 0 **Personal Protection:** X - See PPE section.

Hazardous Material Identification System (HMIS® IV) hazard ratings are designed to inform employees of chemical hazards in the workplace. These ratings are based on the inherent properties of the material under expected conditions of normal use and are not intended for use in emergency situations. HMIS® IV ratings are to be used with a fully implemented HMIS® IV program. HMIS® is a registered mark of the American Coatings Association (ACA).

Document Group: 22-0411-3 **Version Number:** 3.00

Issue Date: 01/20/16 **Supercedes Date:** 10/15/14

DISCLAIMER: The information in this Safety Data Sheet (SDS) is believed to be correct as of the date issued. 3M MAKES NO WARRANTIES, EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, ANY IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE OR COURSE OF PERFORMANCE OR USAGE OF TRADE. User is responsible for determining whether the 3M product is fit for a particular purpose and suitable for user's method of use or application. Given the variety of factors that can affect the use and application of a 3M product, some of which are uniquely within the user's knowledge and control, it is essential that the user evaluate the 3M product to determine whether it is fit for a particular purpose and suitable for user's method of use or application.

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Safety Data Sheet

RUST-OLEUM CORPORATION
* Trusted Quality Since 1921 *
www.rustoleum.com

1. Identification

Product Name: HPERF LSPR 6PK STRIPE BLUE STRIPING
Revision Date: 9/4/2014

Product Identifier: 2326838
Supercedes Date: New SDS

Product Use/Class: Striping Paint/Aerosols

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

Emergency Telephone: 24 Hour Hotline: 847-367-7700

2. Hazard Identification

EMERGENCY OVERVIEW: Harmful if swallowed. Extremely flammable liquid and vapor. Vapors may cause flash fire or explosion. Contents Under Pressure. Harmful if inhaled. May affect the brain or nervous system causing dizziness, headache or nausea. May cause eye, skin, or respiratory tract irritation. KEEP OUT OF REACH OF CHILDREN. Harmful if inhaled. Causes eye irritation. Use ventilation necessary to keep exposures below recommended exposure limits, if any. Vapor Harmful. Causes Eye, Skin, Nose, and Throat Irritation.

Classification

Symbol(s) of Product



Signal Word
Danger

GHS HAZARD STATEMENTS

Flammable Aerosol, category 1	H222	Extremely flammable aerosol.
Flammable Liquid, category 1	H224	Extremely flammable liquid and vapour.
Acute Toxicity, Oral, category 5	H303	May be harmful if swallowed.
Acute Toxicity, Dermal, category 5	H313	May be harmful in contact with skin.
Skin Irritation, category 2	H315	Causes skin irritation.
Eye Irritation, category 2	H319	Causes serious eye irritation.
Acute Toxicity, Inhalation, category 4	H332	Harmful if inhaled.
STOT, single exposure, category 3, RTI	H335	May cause respiratory irritation.
STOT, single exposure, category 3, NE	H336	May cause drowsiness or dizziness.
Aspiration Hazard, category 2	H305	May be harmful if swallowed and enters airways.
Eye Irritation, category 2B	H320	Causes eye irritation.
Flammable Aerosol, category 1	H280	Contains gas under pressure; may explode if heated

GHS PRECAUTIONARY STATEMENTS

P211	Do not spray on an open flame or other ignition source.
P220	Keep/Store away from clothing/…/combustible materials.

P235	Keep cool.
P251	Pressurized container: Do not pierce or burn, even after use.
P375	Fight fire remotely due to the risk of explosion.
P102	Keep out of reach of children.
P103	Read label before use.
P202	Do not handle until all safety precautions have been read and understood.
P234	Keep only in original container.
P260	Do not breathe dust/fume/gas/mist/vapours/spray.
P261	Avoid breathing dust/fume/gas/mist/vapours/spray.
P262	Do not get in eyes, on skin, or on clothing.
P264	Wash … thoroughly after handling.
P270	Do not eat, drink or smoke when using this product.
P271	Use only outdoors or in a well-ventilated area.
P273	Avoid release to the environment.
P280	Wear protective gloves/protective clothing/eye protection/face protection.
P281	Use personal protective equipment as required.
P285	In case of inadequate ventilation wear respiratory protection.
P312	Call a POISON CENTER or doctor/physician if you feel unwell.
P351	Rinse cautiously with water for several minutes.
P374	Fight fire with normal precautions from a reasonable distance.
P402	Store in a dry place.
P210	Keep away from heat/sparks/open flames/hot surfaces. – No smoking.
P410+P412	Protect from sunlight. Do no expose to temperatures exceeding 50°C/ 122°F.
P240	Ground/bond container and receiving equipment.
P241	Use explosion-proof electrical/ventilating/lighting/…/ equipment.
P242	Use only non-sparking tools.
P243	Take precautionary measures against static discharge.
P303+P361+P353	IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.
P370+P378	In case of fire: Use … for extinction.
P403+P235	Store in a well-ventilated place. Keep cool.
P501	Dispose of contents/container to …
P321	Specific treatment (see … on this label).
P352	Wash with plenty of soap and water.
P362	Take off contaminated clothing and wash before reuse.
P332+P313	If skin irritation occurs: Get medical advice/attention.
P305+P351+P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P337+P313	If eye irritation persists: Get medical advice/attention.
P304+P340	IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
P405	Store locked up.
P403+P233	Store in a well-ventilated place. Keep container tightly closed.
P302+P350	IF ON SKIN: Gently wash with plenty of soap and water.

3. Composition/Information On Ingredients

HAZARDOUS SUBSTANCES

Chemical Name	CAS-No.	Wt.% Range	GHS Symbols	GHS Statements
Limestone	1317-65-3	25-50		
Liquefied Petroleum Gas	68476-86-8	10-25		
Aliphatic Hydrocarbon	64742-89-8	2.5-10		
Titanium Dioxide	13463-67-7	2.5-10		
Toluene	108-88-3	2.5-10	GHS02-GHS07	H225-302-332
Naphtha, Petroleum, Hydrotreated Light	64742-49-0	2.5-10		
Acetone	67-64-1	2.5-10	GHS02	H225
Mineral Spirits	64742-88-7	2.5-10	GHS06	H331

Xylene	1330-20-7	1.0-2.5	GHS02	H226
Solvent Naptha, Light Aromatic	64742-95-6	1.0-2.5		
1,2,4-Trimethylbenzene	95-63-6	1.0-2.5	GHS02	H226
Ethylbenzene	100-41-4	0.1-1.0	GHS02-GHS07	H225-332

The text for GHS Hazard Statements shown above (if any) is given in the "16. Other Information" section.

4. First-aid Measures

FIRST AID - EYE CONTACT: Immediately flush eyes with plenty of water for at least 15 minutes holding eyelids open. Get medical attention. Do NOT allow rubbing of eyes or keeping eyes closed.

FIRST AID - SKIN CONTACT: Wash skin with soap and water. Remove contaminated clothing. 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. Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get immediate medical attention. Do NOT use mouth-to-mouth resuscitation.

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. If swallowed, get medical attention.

5. Fire-fighting Measures

EXTINGUISHING MEDIA: Alcohol Film Forming Foam, Carbon Dioxide, Dry Chemical, 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. Keep containers tightly closed. Isolate from heat, electrical equipment, sparks and open flame. Perforation of the pressurized container may cause bursting of the can. Closed containers may explode when exposed to extreme heat due to buildup of steam. No unusual fire or explosion hazards noted.

SPECIAL FIREFIGHTING PROCEDURES: Evacuate area and fight fire from a safe distance. Full protective equipment including self-contained breathing apparatus should be used. Water may be used to cool closed containers to prevent pressure buildup and possible autoignition or explosion. Use water spray to keep fire-exposed containers cool. Containers may explode when heated.

6. Accidental Release Measures

STEPS TO BE TAKEN IF MATERIAL IS RELEASED OR SPILLED: Contain spilled liquid with sand or earth. DO NOT use combustible materials such as sawdust. Remove all sources of ignition, ventilate area and remove with inert absorbent and non-sparking tools. Dispose of according to local, state (provincial) and federal regulations. Do not incinerate closed containers. Isolate the hazard area and deny entry to unnecessary and unprotected personnel. Ventilate area, isolate spilled material, and remove with inert absorbent. Dispose of contaminated absorbent, container, and unused contents in accordance with local, state, and federal regulations.

7. Handling and Storage

HANDLING: Wash thoroughly after handling. Wash hands before eating. Use only in a well-ventilated area. Follow all MSDS/label precautions even after container is emptied because it may retain product residues. Avoid breathing fumes, vapors, or mist. Remove contaminated clothing and launder before reuse. Use only with adequate ventilation. Avoid contact with eyes, skin and clothing.

STORAGE: Keep containers tightly closed. Isolate from heat, electrical equipment, sparks and open flame. Contents under pressure. Do not store above 120 ° F. Store large quantities in buildings designed and protected for storage of NFPA Class I flammable liquids. Contents under pressure. Do not expose to heat or store above 120 ° F. Product should be stored in tightly sealed containers and protected from heat, moisture, and foreign materials. Store in a dry, well ventilated place. Keep container tightly closed when not in use. Keep away from heat, sparks, flame and sources of ignition. Avoid excess heat.

8. Exposure Controls/Personal Protection

Chemical Name	CAS-No.	Weight % Less Than	ACGIH TLV-TWA	ACGIH TLV-STEL	OSHA PEL-TWA	OSHA PEL-CEILING
Limestone	1317-65-3	30.0	5 mg/m3 (NIOSH, Respirable Dust)	N.E.	15 mg/m3 [Total Dust]	N.E.
Liquefied Petroleum Gas	68476-86-8	25.0	N.E.	N.E.	N.E.	N.E.
Aliphatic Hydrocarbon	64742-89-8	10.0	100 ppm	N.E.	100 ppm	N.E.
Titanium Dioxide	13463-67-7	10.0	10 mg/m3	N.E.	15 mg/m3 [Total Dust]	N.E.

Toluene	108-88-3	10.0	20 ppm	N.E.	200 ppm	300 ppm
Naphtha, Petroleum, Hydrotreated Light	64742-49-0	5.0	200 mg/m3	N.E.	N.E.	N.E.
Acetone	67-64-1	5.0	500 ppm	750 ppm	1000 ppm	N.E.
Mineral Spirits	64742-88-7	5.0	100 ppm	N.E.	100 ppm	N.E.
Xylene	1330-20-7	5.0	100 ppm	150 ppm	100 ppm	N.E.
Solvent Naptha, Light Aromatic	64742-95-6	5.0	N.E.	N.E.	N.E.	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	20 ppm	125 ppm	100 ppm	N.E.

PERSONAL PROTECTION

ENGINEERING CONTROLS: Use process enclosures, local exhaust ventilation, or other engineering controls to control airborne levels below recommended exposure limits. Use explosion-proof ventilation equipment. Prevent build-up of vapors by opening all doors and windows to achieve cross-ventilation. Provide general dilution of local exhaust ventilation in volume and pattern to keep TLV of hazardous ingredients below acceptable limits.

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 organic vapor cartridge or canister may be permissible under certain circumstances where airborne concentrations are expected to exceed exposure limits.

SKIN PROTECTION: Use impervious gloves to prevent skin contact and absorption of this material through the skin. Nitrile or Neoprene gloves may afford adequate skin protection. Use gloves to prevent prolonged skin contact.

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. Refer to safety supervisor or industrial hygienist for further guidance regarding types of personal protective equipment and their applications.

HYGIENIC PRACTICES: Wash thoroughly with soap and water before eating, drinking or smoking. Remove contaminated clothing immediately and launder before reuse.

9. Physical and Chemical Properties

Appearance:	Aerosolized Mist	**Physical State:**	Liquid
Odor:	Solvent Like	**Odor Threshold:**	N.E.
Relative Density:	0.957	**pH:**	N.A.
Freeze Point, °C:	N.D.	**Viscosity:**	N.D.
Solubility in Water:	Slight	**Partition Coefficient, n-octanol/ water:**	No Information
Decompostion Temp., °C:	No Information		
Boiling Range, °C:	-34 - 415	**Explosive Limits, vol%:**	0.7 - 13.0
Flammability:	Supports Combustion	**Flash Point, °C:**	-105
Evaporation Rate:	Faster than Ether	**Auto-ignition Temp., °C:**	No Information
Vapor Density:	Heavier than Air	**Vapor Pressure:**	N.D.

(See "Other information" Section for abbreviation legend)

10. Stability and Reactivity

CONDITIONS TO AVOID: Avoid temperatures above 120 ° F. Avoid all possible sources of ignition. Avoid contact with strong acid and strong bases.

INCOMPATIBILITY: Incompatible with strong oxidizing agents, strong acids and strong alkalies.

HAZARDOUS DECOMPOSITION: By open flame, carbon monoxide and carbon dioxide. When heated to decomposition, it emits acrid smoke and irritating fumes. Contains solvents which may form carbon monoxide, carbon dioxide, and formaldehyde.

HAZARDOUS POLYMERIZATION: Will not occur under normal conditions.

STABILITY: This product is stable under normal storage conditions.

11. Toxicological information

EFFECTS OF OVEREXPOSURE - EYE CONTACT: Causes Serious Eye Irritation

EFFECTS OF OVEREXPOSURE - SKIN CONTACT: May be absorbed through the skin in harmful amounts. Substance may cause slight skin irritation. Prolonged or repeated contact may cause skin irritation. May cause skin irritation. Allergic reactions are possible.

EFFECTS OF OVEREXPOSURE - INHALATION: Harmful if inhaled. High gas, vapor, mist or dust concentrations may be harmful if inhaled. Avoid breathing fumes, spray, vapors, or mist. High vapor concentrations are irritating to the eyes, nose, throat and lungs.

Prolonged or excessive inhalation may cause respiratory tract irritation.

EFFECTS OF OVEREXPOSURE - INGESTION: Aspiration hazard if swallowed; can enter lungs and cause damage. Harmful if swallowed.

EFFECTS OF OVEREXPOSURE - CHRONIC HAZARDS: IARC lists Ethylbenzene as a possible human carcinogen (group 2B). 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. Contains Titanium Dioxide. Titanium Dioxide is listed as a Group 2B-"Possibly carcinogenic to humans" by IARC. No significant exposure to Titanium Dioxide is thought to occur during the use of products in which Titanium Dioxide is bound to other materials, such as in paints 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 Titanium Dioxide in the formula. (Ref: IARC Monograph, Vol. 93, 2010)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. High concentrations may lead to central nervous system effects (drowsiness, dizziness, nausea, headaches, paralysis, and blurred vision) and/or damage.

PRIMARY ROUTE(S) OF ENTRY: Eye Contact, Ingestion, Inhalation, Skin Absorption, Skin Contact

ACUTE TOXICITY VALUES

The acute effects of this product have not been tested. Data on individual components are tabulated below:

CAS-No.	Chemical Name	Oral LD50	Dermal LD50	Vapor LC50
64742-89-8	Aliphatic Hydrocarbon	N.I.	3000 mg/kg Rabbit	N.I.
13463-67-7	Titanium Dioxide	>10000 mg/kg Rat	N.I.	N.I.
108-88-3	Toluene	636 mg/kg Rat	8390 mg/kg Rabbit	12.5 mg/L Rat
64742-49-0	Naphtha, Petroleum, Hydrotreated Light	>5000 mg/kg Rat	>3160 mg/kg Rabbit	N.I.
64742-88-7	Mineral Spirits	>5000 mg/kg Rat	3000 mg/kg Rabbit	>5.28 mg/L Rat
1330-20-7	Xylene	4300 mg/kg Rat	N.I.	47635 mg/L Rat
64742-95-6	Solvent Naptha, Light Aromatic	N.I.	>2000 mg/kg Rabbit	N.I.
95-63-6	1,2,4-Trimethylbenzene	3280 mg/kg Rat	>3160 mg/kg Rabbit	N.I.
100-41-4	Ethylbenzene	3500 mg/kg Rat	15354 mg/kg Rabbit	17.2 mg/L Rat

N.I. - No Information

12. Ecological Information

ECOLOGICAL INFORMATION: Product is a mixture of listed components. Product is a mixture of listed components.

13. Disposal Information

DISPOSAL INFORMATION: Dispose of material in accordance to local, state, and federal regulations and ordinances. Do not allow to enter waterways, wastewater, soil, storm drains or sewer systems.

14. Transport Information

	Domestic (USDOT)	International (IMDG)	Air (IATA)	TDG (Canada)
UN Number:	N.A.	1950	1950	N.A.
Proper Shipping Name:	Paint Products in Limited Quantities	Aerosols	Aerosols	Paint Products in Limited Quantities
Hazard Class:	N.A.	2.1	2.1	N.A.
Packing Group:	N.A.	N.A.	N.A.	N.A.
Limited Quantity:	Yes	Yes	Yes	Yes

15. Regulatory Information

U.S. Federal Regulations:

CERCLA - SARA Hazard Category

This product has been reviewed according to the EPA 'Hazard Categories' promulgated under Sections 311 and 312 of the Superfund Amendment and Reauthorization Act of 1986 (SARA Title III) and is considered, under applicable definitions, to meet the following categories:

Fire Hazard, Pressure Hazard, Acute Health Hazard, Chronic Health Hazard

Sara Section 313:

This product contains the following substances subject to the reporting requirements of Section 313 of Title III of the Superfund Amendment and Reauthorization Act of 1986 and 40 CFR part 372:

Chemical Name	CAS-No.
Toluene	108-88-3
Xylene	1330-20-7
1,2,4-Trimethylbenzene	95-63-6
Ethylbenzene	100-41-4

Toxic Substances Control Act:

This product contains the following chemical substances subject to the reporting requirements of TSCA 12(B) if exported from the United States:

No TSCA components exist in this product.

Inventory Information

Country	Value
USA (TSCA)	No Information
Canada (DSL)	No Information
Mexico(INSQ)	No Information
Europe (EINECS)	No Information
Japan (ENCS)	No Information
Philippines (PICCS)	No Information
China (IECSC)	No Information
Australia (AICS)	No Information
Korea (KECI)	No Information
New Zealand (NZIOC)	No Information

No Information

CALIFORNIA PROPOSITION 65:

Warning: This products contains a substance known to the State of California to cause cancer.

Chemical Name	CAS-No.
Titanium Dioxide	13463-67-7
Ethylbenzene	100-41-4

CALIFORNIA PROPOSITION 65 REPRODUCTIVE TOXINS

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

Chemical Name	CAS-No.
Toluene	108-88-3

International Regulations:

CANADIAN WHMIS:

This SDS has been prepared in compliance with Controlled Product Regulations except for the use of the 16 headings.

16. Other Information

HMIS RATINGS

Health:	2*	**Flammability:**	4	**Physical Hazard:**	0	**Personal Protection:**	X

CANADIAN WHMIS CLASS: B2 D2A

NFPA RATINGS

Health:	2	**Flammability:**	4	**Instability**	0

VOLATILE ORGANIC COMPOUNDS, g/L: 518

MSDS REVISION DATE: 9/4/2014

REASON FOR REVISION: No Information

Legend: N.A. - Not Applicable, N.E. - Not Established, N.D. - Not Determined

Text for GHS Hazard Statements shown in Section 3 describing each ingredient:

H225	Highly flammable liquid and vapour.
H226	Flammable liquid and vapour.
H302	Harmful if swallowed.
H331	Toxic if inhaled.
H332	Harmful if inhaled.

Icons for GHS Pictograms shown in Section 3 describing each ingredient:

GHS02



GHS06



GHS07



Rust-Oleum Corporation believes, to the best of its knowledge, information and belief, the information contained herein to be accurate and reliable as of the date of this safety data sheet. However, because the conditions of handling, use, and storage of these materials are beyond our control, we assume no responsibility or liability for personal injury or property damage incurred by the use of these materials. Rust-Oleum Corporation makes no warranty, expressed or implied, regarding the accuracy or reliability of the data or results obtained from their use. All materials may present unknown hazards and should be used with caution. The information and recommendations in this material safety data sheet are offered for the users' consideration and examination. It is the responsibility of the user to determine the final suitability of this information and to comply with all applicable international, federal, state, and local laws and regulations.

SAFETY DATA SHEET

SECTION 1 PRODUCT AND COMPANY IDENTIFICATION

PRODUCT

Product Name: **MOBIL DTE OIL LIGHT**
Product Description: Base Oil and Additives
Product Code: 201560501560, 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 or 703-527-3887 CHEMTREC
Product Technical Information	800-662-4525, 800-947-9147
MSDS Internet Address	http://www.exxon.com, http://www.mobil.com

SECTION 2 HAZARDS IDENTIFICATION

This material is not hazardous according to regulatory guidelines (see (M)SDS Section 15).

Other hazard information:

HAZARD NOT OTHERWISE CLASSIFIED (HNOC): None as defined under 29 CFR 1900.1200.

PHYSICAL / CHEMICAL HAZARDS

No significant hazards.

HEALTH HAZARDS

High-pressure injection under skin may cause serious damage. Excessive exposure may result in eye, skin, or respiratory irritation.

ENVIRONMENTAL HAZARDS

No significant hazards.

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 3 COMPOSITION / INFORMATION ON INGREDIENTS

This material is defined as a mixture.

Hazardous Substance(s) or Complex Substance(s) required for disclosure

Name	CAS#	Concentration*	GHS Hazard Codes
2,6-DI-TERT-BUTYLPHENOL	128-39-2	0.1 - < 1%	H315, H319(2A), H400(M factor 1), H410(M factor 1)

* All concentrations are percent by weight unless material is a gas. Gas concentrations are in percent by volume.

As per paragraph (i) of 29 CFR 1910.1200, formulation is considered a trade secret and specific chemical identity and exact percentage (concentration) of composition may have been withheld. Specific chemical identity and exact percentage composition will be provided to health professionals, employees, or designated representatives in accordance with applicable provisions of paragraph (i).

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 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: Oxides of carbon, Smoke, Fume, Incomplete combustion products, Sulfur oxides, Aldehydes

FLAMMABILITY PROPERTIES

Flash Point [Method]: >200°C (392°F) [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.

PROTECTIVE MEASURES

Avoid contact with spilled material. See Section 5 for fire fighting information. See the Hazard Identification Section for Significant Hazards. See Section 4 for First Aid Advice. See Section 8 for advice on the minimum requirements for personal protective equipment. Additional protective measures may be necessary, depending on the specific circumstances and/or the expert judgment of the emergency responders.

For emergency responders: Respiratory protection: respiratory protection will be necessary only in special cases, e.g., formation of mists. Half-face or full-face respirator with filter(s) for dust/organic vapor or Self Contained Breathing Apparatus (SCBA) can be used depending on the size of spill and potential level of exposure. If the exposure cannot be completely characterized or an oxygen deficient atmosphere is possible or anticipated, SCBA is recommended. Work gloves that are resistant to hydrocarbons are recommended. Gloves made of polyvinyl acetate (PVA) are not water-resistant and are not suitable for emergency use. Chemical goggles are recommended if splashes or contact with eyes is possible. Small spills: normal antistatic work clothes are usually adequate. Large spills: full body suit of chemical resistant, antistatic material is recommended.

SPILL MANAGEMENT

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. Material can accumulate static charges which may cause an electrical spark (ignition source). When the material is handled in bulk, an electrical spark could ignite any flammable vapors from liquids or residues that may be present (e.g., during switch-loading operations). Use proper bonding and/or ground procedures. However, bonding and grounds may not eliminate the hazard from static accumulation. Consult local applicable standards for guidance. Additional references include American Petroleum Institute 2003 (Protection Against Ignitions Arising out of Static, Lightning and Stray Currents) or National Fire Protection Agency 77 (Recommended Practice on Static Electricity) or CENELEC CLC/TR 50404 (Electrostatics - Code of practice for the avoidance of hazards due to static electricity).

Static Accumulator: This material is a static accumulator.

STORAGE

The container choice, for example storage vessel, may effect static accumulation and dissipation. 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 (inhalable fraction), 5 mg/m³ - OSHA PEL.

NOTE: Limits/standards shown for guidance only. Follow applicable regulations.

No biological limits allocated.

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 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

Comply with applicable environmental regulations limiting discharge to air, water and soil. Protect the environment by applying appropriate control measures to prevent or limit emissions.

SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES

Note: Physical and chemical properties are provided for safety, health and environmental considerations only and may not fully represent product specifications. Contact the Supplier for additional information.

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
Flammability (Solid, Gas): N/A
Flash Point [Method]: >200°C (392°F) [ASTM D-92]
Flammable Limits (Approximate volume % in air): LEL: 0.9 UEL: 7.0
Autoignition Temperature: N/D
Boiling Point / Range: > 316°C (600°F)
Decomposition Temperature: N/D
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
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 100°C
Oxidizing Properties: See Hazards Identification Section.

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

REACTIVITY: See sub-sections below.

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.

POSSIBILITY OF HAZARDOUS REACTIONS: Hazardous polymerization will not occur.

SECTION 11 TOXICOLOGICAL INFORMATION

INFORMATION ON TOXICOLOGICAL EFFECTS

Hazard Class	Conclusion / Remarks
Inhalation	
Acute Toxicity: No end point data for material.	Minimally Toxic. Based on assessment of the components.
Irritation: No end point data for material.	Negligible hazard at ambient/normal handling temperatures.
Ingestion	
Acute Toxicity: No end point data for material.	Minimally Toxic. Based on assessment of the components.
Skin	
Acute Toxicity: No end point data for material.	Minimally Toxic. Based on assessment of the components.
Skin Corrosion/Irritation: No end point data for material.	Negligible irritation to skin at ambient temperatures. Based on assessment of the components.
Eye	
Serious Eye Damage/Irritation: No end point data for material.	May cause mild, short-lasting discomfort to eyes. Based on assessment of the components.
Sensitization	
Respiratory Sensitization: No end point data for material.	Not expected to be a respiratory sensitizer.
Skin Sensitization: No end point data for material.	Not expected to be a skin sensitizer. Based on assessment of the components.
Aspiration: Data available.	Not expected to be an aspiration hazard. Based on

	physico-chemical properties of the material.
Germ Cell Mutagenicity: No end point data for material.	Not expected to be a germ cell mutagen. Based on assessment of the components.
Carcinogenicity: No end point data for material.	Not expected to cause cancer. Based on assessment of the components.
Reproductive Toxicity: No end point data for material.	Not expected to be a reproductive toxicant. Based on assessment of the components.
Lactation: No end point data for material.	Not expected to cause harm to breast-fed children.
Specific Target Organ Toxicity (STOT)	
Single Exposure: No end point data for material.	Not expected to cause organ damage from a single exposure.
Repeated Exposure: No end point data for material.	Not expected to cause organ damage from prolonged or repeated exposure. Based on assessment of the components.

OTHER INFORMATION

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.

The following ingredients are cited on the lists below: None.

--REGULATORY LISTS SEARCHED--

1 = NTP CARC	3 = IARC 1	5 = IARC 2B
2 = NTP SUS	4 = IARC 2A	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. Protect the environment. Dispose of used oil at designated sites. Minimize skin contact. Do not mix used oils with solvents, brake fluids or coolants.

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, corrositivity 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 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

Marine Pollutant: No

AIR (IATA): Not Regulated for Air Transport

SECTION 15 REGULATORY INFORMATION

OSHA HAZARD COMMUNICATION STANDARD: This material is not considered hazardous in accordance with OSHA HazCom 2012, 29 CFR 1910.1200.

Listed or exempt from listing/notification on the following chemical inventories: AICS, DSL, IECSC, PICCS, TSCA

EPCRA SECTION 302: 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
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	

Code key: CARC=Carcinogen; REPRO=Reproductive

SECTION 16 OTHER INFORMATION

N/D = Not determined, N/A = Not applicable

KEY TO THE H-CODES CONTAINED IN SECTION 3 OF THIS DOCUMENT (for information only):
H315: Causes skin irritation; Skin Corr/Irritation, Cat 2
H319(2A): Causes serious eye irritation; Serious Eye Damage/Irr, Cat 2A
H400: Very toxic to aquatic life; Acute Env Tox, Cat 1
H410: Very toxic to aquatic life with long lasting effects; Chronic Env Tox, Cat 1

THIS SAFETY DATA SHEET CONTAINS THE FOLLOWING REVISIONS:
Updates made in accordance with implementation of GHS requirements.

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MHC: 0B, 0B, 0, 0, 0, 0 PPEC: A

DGN: 2007057XUS (538877)

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SAFETY DATA SHEET
Klean Strip Paint Thinner

Printed: 04/20/2015
Revision: 04/20/2015
Supersedes Revision: 09/08/2014

1. PRODUCT AND COMPANY IDENTIFICATION

Product Name: Klean Strip Paint Thinner

Company Name: W. M. Barr
2105 Channel Avenue
Memphis, TN 38113

Phone Number: (901)775-0100

Web site address: www.wmbarr.com

Emergency Contact: 3E 24 Hour Emergency Contact (800)451-8346
Information: W.M. Barr Customer Service (800)398-3892

Intended Use: Paint, stain, and varnish thinning.

Synonyms: CKPT94402, GKPT94002B, DKPT94403CA, EKPT94401, GKPT94002, GKPT94002P, GKPT94002T, GKPT94400, GPT1KS, PA12779, QKPT94003, QKPT94203, QPT1KS, GKPTDP

Additional Information This product is regulated by the United States Consumer Product Safety Commission and is subject to certain labeling requirements under the Federal Hazardous Substances Act. These requirements differ from the classification criteria and hazard information required for safety data sheets (SDS). The product label also includes other important information, including directions for use, and should always be read in its entirety prior to using the product.

2. HAZARDS IDENTIFICATION

Flammable Liquids, Category 3
Skin Corrosion/Irritation, Category 2
Serious Eye Damage/Eye Irritation, Category 2B
Toxic To Reproduction, Category 2
Specific Target Organ Toxicity (single exposure), Category 3
Specific Target Organ Toxicity (repeated exposure), Category 2
Aspiration Toxicity, Category 1



GHS Signal Word: **Danger**

GHS Hazard Phrases:
H226: Flammable liquid and vapor.
H304: May be fatal if swallowed and enters airways.
H315: Causes skin irritation.
H320: Causes eye irritation.
H335: May cause respiratory irritation.
H336: May cause drowsiness or dizziness.
H361: Suspected of damaging fertility or the unborn child if inhaled.
H373: May cause damage to cardiovascular sytem and central nervous system through prolonged or repeated exposure.

GHS Precaution Phrases:
P201: Obtain special instructions before use.
P202: Do not handle until all safety precautions have been read and understood.
P210: Keep away from heat/sparks/open flames/hot surfaces. - No smoking.
P233: Keep container tightly closed.
P240: Ground/bond container and receiving equipment.
P241: Use explosion-proof electrical/ventilating/lighting equipment.
P242: Use only non-sparking tools.
P243: Take precautionary measures against static discharge.
P260: Do not breathe gas/mist/vapors/spray.
P264: Wash hands thoroughly after handling.

P271: Use only outdoors or in a well-ventilated area.
P280: Wear protective gloves/protective clothing/eye protection/face protection.
P281: Use personal protective equipment as required.
P235: Keep cool.

GHS Response Phrases:

P301+310: IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician.
P302+352: IF ON SKIN: Wash with plenty of soap and water.
P303+361+353: IF ON SKIN (or hair): Remove/take off immediately all contaminated clothing. Rinse skin with water/shower.
P304+340: IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
P305+351+338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P308+313: IF exposed or concerned: Get medical attention/advice.
P312: Call a POISON CENTER or doctor/physician if you feel unwell.
P314: Get medical attention/advice if you feel unwell.
P321: Specific treatment see label.
P331: Do NOT induce vomiting.
P332+313: If skin irritation occurs, get medical advice/attention.
P337+313: If eye irritation persists, get medical advice/attention.
P362: Take off contaminated clothing and wash before re-use.
P370+378: In case of fire, use dry chemical powder to extinguish.

GHS Storage and Disposal Phrases:

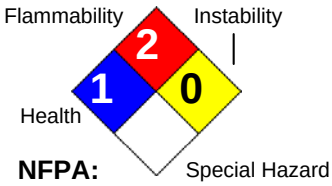
P403+233: Store container tightly closed in well-ventilated place.
P405: Store locked up.
P501: Dispose of contents/container according to local, state and federal regulations.

Hazard Rating System:

HMIS:

HEALTH	* 1
FLAMMABILITY	2
PHYSICAL	0
PPE	

NFPA:



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.

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.

Medical Conditions Generally Aggravated By Exposure: Diseases of the skin, eyes, liver, kidneys, central nervous system and respiratory system.

3. COMPOSITION/INFORMATION ON INGREDIENTS

CAS #	Hazardous Components (Chemical Name)	Concentration	RTECS #
64742-47-8	Hydrotreated light distillate (petroleum)	<=100.0 %	OA5504000
64742-82-1	Naphtha (petroleum), hydrodesulfurized heavy	<=100.0 %	NA
8052-41-3	Stoddard solvent {Mineral spirits; Aliphatic Petroleum Distillates; White spirits}	<=95.0 %	WJ8925000
25550-14-5	Benzene, Ethylmethyl-	<=1.5 %	NA
25551-13-7	Benzene, Trimethyl-	<=1.5 %	DC3220000
95-63-6	1,2,4-Trimethylbenzene {Pseudocumene}	<=1.0 %	DC3325000
1330-20-7	Xylene (mixed isomers) {Benzene, dimethyl-}	<=1.0 %	ZE2100000
103-65-1	Benzene, Propyl- {N-Propylbenzene}	<=1.0 %	DA8750000

Additional Chemical Information Ingredients vary due to multiple blends and/or raw material suppliers

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.

If spontaneous vomiting is about to occur,place victim's head below knees. If victim is drowsy or unconscious, place on the left side with head down. Never give anything by mouth to a person who is not fully conscious. Do not leave victim unattended. Seek medical attention immediately.

Signs and Symptoms Of Exposure: Inhalation, ingestion, and dermal are possible routes of exposure.

Note to Physician: Call your local poison control center for further information.

Inhalation: Inhalation overexposure can produce toxic effects. Monitor for respiratory distress. If cough or difficulty in breathing develops, evaluate for upper respiratory tract inflammation, bronchitis, and pneumonitis. Administer supplemental oxygen with assisted ventilation as required.

Ingestion: If ingested, this material presents a significant aspiration and chemical

pneumonitis hazard. Induction of emesis is not recommended. Consider activated charcoal and/or gastric lavage. If patient is obtunded, protect the airway by cuffed endotracheal intubation or by placement of the body in a Trendelenburg and left lateral decubitus position.

5. FIRE FIGHTING MEASURES

NFPA Class II

Flash Pt: > 100.00 F

Explosive Limits: LEL: 0.5 UEL: 6

Autoignition Pt: No data.

Suitable Extinguishing Media: Use carbon dioxide, dry chemical powder, or foam.

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: Combustible Liquid.

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.

A static electrical charge can accumulate when this material is flowing through pipes, nozzles or filters, and when it is agitated. A static spark discharge can ignite accumulated vapors particularly during dry weather conditions. Always use proper bonding and grounding procedures.

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

CAS #	Partial Chemical Name	OSHA TWA	ACGIH TWA	Other Limits
64742-47-8	Hydrotreated light distillate (petroleum)	No data.	TLV: 200 mg/m3	No data.
64742-82-1	Naphtha (petroleum), hydrodesulfurized heavy	No data.	No data.	No data.
8052-41-3	Stoddard solvent {Mineral spirits; Aliphatic Petroleum Distillates; White spirits}	PEL: 500 ppm	TLV: 100 ppm	No data.
25550-14-5	Benzene, Ethylmethyl-	No data.	No data.	No data.
25551-13-7	Benzene, Trimethyl-	No data.	TLV: 25 ppm	No data.
95-63-6	1,2,4-Trimethylbenzene {Pseudocumene}	No data.	No data.	No data.
1330-20-7	Xylene (mixed isomers) {Benzene, dimethyl-}	PEL: 100 ppm	TLV: 100 ppm STEL: 150 ppm	No data.
103-65-1	Benzene, Propyl- {N-Propylbenzene}	No data.	No data.	No data.

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. 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.

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.

Work/Hygienic/Maintenance Practices: 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.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical States:	[ ] Gas [X] Liquid [ ] Solid
Appearance and Odor:	Water White / Free and Clear
Melting Point:	No data.
Boiling Point:	318.00 F - 385.00 F
Autoignition Pt:	No data.
Flash Pt:	> 100.00 F
Explosive Limits:	LEL: 0.5 UEL: 6
Specific Gravity (Water = 1):	0.78
Vapor Pressure (vs. Air or mm Hg):	0.3 MM HG at 68.0 F
Vapor Density (vs. Air = 1):	5 Air = 1
Evaporation Rate:	No data.
Solubility in Water:	No data.
Solubility Notes:	Very slightly soluble in cold water.
Percent Volatile:	100.0 % by weight.
VOC / Volume:	778.0000 G/L

10. STABILITY AND REACTIVITY

Stability:	Unstable [ ] Stable [X]
Conditions To Avoid - Instability:	No data available.
Incompatibility - Materials To Avoid:	Incompatible with strong acids, alkalies, and oxidizers such as liquid chlorine and oxygen.
Hazardous Decomposition Or Byproducts:	Decomposition may produce carbon monoxide and carbon dioxide.
Possibility of Hazardous Reactions:	Will occur [ ] Will not occur [X]
Conditions To Avoid - Hazardous Reactions:	No data available.

11. TOXICOLOGICAL INFORMATION

Toxicological Information: Refer to section 2 for acute and chronic effects.

CAS# 25551-13-7:
Standard Draize Test, Skin, Species: Rabbit, 500.0 MG, 24 H, Moderate.
Result:
Kidney, Ureter, Bladder: Changes in liver weight.
Endocrine: Changes in thymus weight.
Immunological Including Allergic: Decreased immune response.
- "Sbornik Vysledku Toxixologickeho Vysetreni Latek A Pripravku," , Institut Pro Vychovu Vedoucicn P, Marhold, J.V., Institut Pro Vychovu Vedoucicn, Pracovniku Chemickeho, Prumyclu Praha Czechoslovakia, Vol/p/yr: -,24, 1972

Standard Draize Test, Eyes, Species: Rabbit, 500.0 MG, 24 H, Mild.
Result:
Kidney, Ureter, Bladder: Changes in liver weight.
Kidney, Ureter, Bladder: Changes in bladder weight.
Nutritional and Gross Metabolic:Weight loss or decreased weight gain.
- "Sbornik Vysledku Toxixologickeho Vysetreni Latek A Pripravku," , Institut Pro Vychovu Vedoucicn P, Marhold, J.V., Institut Pro Vychovu Vedoucicn, Pracovniku Chemickeho,

Prumyclu Praha Czechoslovakia, Vol/p/yr: -,24, 1972

CAS# 1330-20-7:
Acute toxicity, LC50, Inhalation, Rat, 5000. PPM, 4 H.
Result:
Behavioral: Muscle contraction or spasticity.
Lungs, Thorax, or Respiration:Other changes.
- Raw Material Data Handbook, Vol.1: Organic Solvents, 1974., National Assoc. of Printing Ink Research Institute, Francis McDonald Sinclair Memorial Labor, Lehigh Univ., Bethlehem, PA 18015, Vol/p/yr: 1,123, 1974

Standard Draize Test, Eyes, Species: Rabbit, 5.000 MG, 24 H, Severe.
Result:
Behavioral: General anesthetic.
Behavioral: Somnolence (general depressed activity).
Behavioral: Irritability.
- "Sbornik Vysledku Toxixologickeho Vysetreni Latek A Pripravku," , Institut Pro Vychovu Vedoucicn P, Marhold, J.V., Institut Pro Vychovu Vedoucicn, Pracovniku Chemickeho, Prumyclu Praha Czechoslovakia, Vol/p/yr: -,24, 1972

CAS #	Hazardous Components (Chemical Name)	NTP	IARC	ACGIH	OSHA
64742-47-8	Hydrotreated light distillate (petroleum)	n.a.	n.a.	A4	n.a.
64742-82-1	Naphtha (petroleum), hydrodesulfurized heavy	n.a.	n.a.	n.a.	n.a.
8052-41-3	Stoddard solvent {Mineral spirits; Aliphatic Petroleum Distillates; White spirits}	n.a.	n.a.	n.a.	n.a.
25550-14-5	Benzene, Ethylmethyl-	n.a.	n.a.	n.a.	n.a.
25551-13-7	Benzene, Trimethyl-	n.a.	n.a.	n.a.	n.a.
95-63-6	1,2,4-Trimethylbenzene {Pseudocumene}	n.a.	n.a.	n.a.	n.a.
1330-20-7	Xylene (mixed isomers) {Benzene, dimethyl-}	n.a.	3	A4	n.a.
103-65-1	Benzene, Propyl- {N-Propylbenzene}	n.a.	n.a.	n.a.	n.a.

12. ECOLOGICAL INFORMATION

No data available.

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: Paint Related Material, Exempt Combustible Liquid per 49 CFR 173.150(f)
DOT Hazard Class:
UN/NA Number:

Additional Transport Information: The supplier may apply one of the following exceptions: Combustible Liquid, Consumer Commodity, Limited Quantity, Viscous Liquid, Does Not Sustain Combustion, or others, as allowed under 49CFR Hazmat Regulations. Please consult 49CFR Subchapter C to ensure that subsequent shipments comply with these exceptions.

15. REGULATORY INFORMATION

EPA SARA (Superfund Amendments and Reauthorization Act of 1986) Lists

CAS #	Hazardous Components (Chemical Name)	S. 302 (EHS)	S. 304 RQ	S. 313 (TRI)
64742-47-8	Hydrotreated light distillate (petroleum)	No	No	No
64742-82-1	Naphtha (petroleum), hydrodesulfurized heavy	No	No	No
8052-41-3	Stoddard solvent {Mineral spirits; Aliphatic Petroleum Distillates; White spirits}	No	No	No
25550-14-5	Benzene, Ethylmethyl-	No	No	No
25551-13-7	Benzene, Trimethyl-	No	No	No
95-63-6	1,2,4-Trimethylbenzene {Pseudocumene}	No	No	Yes
1330-20-7	Xylene (mixed isomers) {Benzene, dimethyl-}	No	Yes 100 LB	Yes
103-65-1	Benzene, Propyl- {N-Propylbenzene}	No	No	No

This material meets the EPA 'Hazard Categories' defined for SARA Title III Sections 311/312 as indicated:	[X] Yes [ ] No	Acute (immediate) Health Hazard
	[X] Yes [ ] No	Chronic (delayed) Health Hazard
	[X] Yes [ ] No	Fire Hazard
	[ ] Yes [X] No	Sudden Release of Pressure Hazard
	[ ] Yes [X] No	Reactive Hazard

CAS #	Hazardous Components (Chemical Name)	Other US EPA or State Lists
64742-47-8	Hydrotreated light distillate (petroleum)	CAA HAP,ODC: No; CWA NPDES: No; TSCA: Yes - Inventory; CA PROP.65: No
64742-82-1	Naphtha (petroleum), hydrodesulfurized heavy	CAA HAP,ODC: No; CWA NPDES: No; TSCA: Yes - Inventory; CA PROP.65: No
8052-41-3	Stoddard solvent {Mineral spirits; Aliphatic Petroleum Distillates; White spirits}	CAA HAP,ODC: No; CWA NPDES: No; TSCA: Yes - Inventory; CA PROP.65: No
25550-14-5	Benzene, Ethylmethyl-	CAA HAP,ODC: No; CWA NPDES: No; TSCA: Yes - Inventory, 4 Test; CA PROP.65: No
25551-13-7	Benzene, Trimethyl-	CAA HAP,ODC: No; CWA NPDES: No; TSCA: Yes - Inventory; CA PROP.65: No
95-63-6	1,2,4-Trimethylbenzene {Pseudocumene}	CAA HAP,ODC: No; CWA NPDES: No; TSCA: Yes - Inventory; CA PROP.65: No
1330-20-7	Xylene (mixed isomers) {Benzene, dimethyl-}	CAA HAP,ODC: HAP; CWA NPDES: Yes; TSCA: Yes - Inventory; CA PROP.65: No
103-65-1	Benzene, Propyl- {N-Propylbenzene}	CAA HAP,ODC: No; CWA NPDES: No; TSCA: Yes - Inventory, 12(b); CA PROP.65: No

Regulatory Information Statement:	All components of this material are listed on the TSCA Inventory or are exempt.

16. OTHER INFORMATION

Revision Date:	04/20/2015
Preparer Name:	W.M. Barr and Company, Inc. (901)775-0100
Additional Information About This Product:	No data available.
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.

SAFETY DATA SHEET
Klean Strip Denatured Alcohol

Printed: 04/13/2015
Revision: 04/13/2015
Supersedes Revision: 09/10/2014

1. PRODUCT AND COMPANY IDENTIFICATION

Product Name: Klean Strip Denatured Alcohol

Company Name: W. M. Barr
2105 Channel Avenue
Memphis, TN 38113

Phone Number: (901)775-0100

Web site address: www.wmbarr.com

Emergency Contact: 3E 24 Hour Emergency Contact (800)451-8346
Information: W.M. Barr Customer Service (800)398-3892

Intended Use: Cleans glass and is used as a fuel for marine stoves

Synonyms: CSL26, GSL26, QSL26, QSL26W

Additional Information This product is regulated by the United States Consumer Product Safety Commission and is subject to certain labeling requirements under the Federal Hazardous Substances Act. These requirements differ from the classification criteria and hazard information required for safety data sheets (SDS). The product label also includes other important information, including directions for use, and should always be read in its entirety prior to using the product.

2. HAZARDS IDENTIFICATION

Flammable Liquids, Category 2
Acute Toxicity: Oral, Category 3
Acute Toxicity: Skin, Category 3
Acute Toxicity: Inhalation, Category 3
Specific Target Organ Toxicity (single exposure), Category 1



GHS Signal Word: **Danger**

GHS Hazard Phrases:
H225: Highly flammable liquid and vapor.
H301: Toxic if swallowed.
H311: Toxic in contact with skin.
H331: Toxic if inhaled.
H370: Causes damage to organs.

GHS Precaution Phrases:
P210: Keep away from heat/sparks/open flames/hot surfaces. - No smoking.
P233: Keep container tightly closed.
P240: Ground/bond container and receiving equipment.
P241: Use explosion-proof electrical/ventilating/lighting equipment.
P242: Use only non-sparking tools.
P243: Take precautionary measures against static discharge.
P260: Do not breathe gas/mist/vapors/spray.
P264: Wash hands thoroughly after handling.
P270: Do not eat, drink or smoke when using this product.
P271: Use only outdoors or in a well-ventilated area.
P280: Wear protective gloves/protective clothing/eye protection/face protection.
P235: Keep cool.

GHS Response Phrases:
P301+310: IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician.
P302+352: IF ON SKIN: Wash with plenty of soap and water.
P303+361+353: IF ON SKIN (or hair): Remove/take off immediately all contaminated clothing. Rinse skin with water/shower.
P304+340: IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.

P307+311: IF exposed: Call a POISON CENTER or doctor/physician.
P311: Call a POISON CENTER or doctor/physician.
P330: Rinse mouth.
P361: Remove/Take off immediately all contaminated clothing.
P363: Wash contaminated clothing before reuse.
P370+378: In case of fire, use dry chemical powder to extinguish.

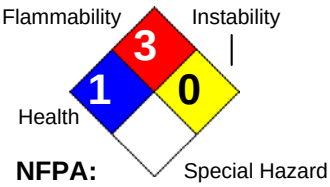
GHS Storage and Disposal Phrases:
P403+233: Store container tightly closed in well-ventilated place.
P405: Store locked up.
P501: Dispose of contents/container to local, state and federal regulations.

Hazard Rating System:

HMIS:

HEALTH	*	2
FLAMMABILITY		3
PHYSICAL		0
PPE		X

NFPA:



OSHA Regulatory Status: This material is classified as hazardous under OSHA regulations.

Potential Health Effects (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 or blurry 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 inhalation.

Chronic Exposure Effects:
May cause symptoms listed under inhalation, dizziness, fatigue, tremors, permanent central nervous system changes, blindness, pancreatic damage, and death.

Target Organs:
Liver, kidneys, pancreas, heart, lungs, brain, central nervous system, eyes

Medical Conditions Generally Aggravated By Exposure: Diseases of the liver, skin, lung, kidney, central nervous system, pancreas, and heart; asthma; inflammatory or fibrotic pulmonary disease; any preexisting condition sensitive to a decrease in available oxygen, such as chronic lung disease, coronary artery disease, or anemias

3. COMPOSITION/INFORMATION ON INGREDIENTS

CAS #	Hazardous Components (Chemical Name)	Concentration	RTECS #
64-17-5	Ethyl alcohol {Ethanol}	30.0 -50.0 %	KQ6300000
67-56-1	Methanol {Methyl alcohol; Carbinol; Wood alcohol}	40.0 -60.0 %	PC1400000

Additional Chemical Information Specific percentage of composition is being withheld as a trade secret.

4. FIRST AID MEASURES

Emergency and First Aid Procedures:

Skin:
Immediately begin washing the skin thoroughly with large amounts of water and mild soap, if available, while removing contaminated clothing. Seek medical attention if irritation persists.

Eyes:
Immediately begin to flush eyes with water, remove any contact lens. Continue to flush the eyes for at least 15 minutes, then seek immediate medical attention.

Inhalation:
Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get immediate medical attention.

Ingestion:
If swallowed, do NOT induce vomiting. Seek immediate medical attention. Call a physician, hospital emergency room, or poison control center immediately. Never give anything by mouth to an unconscious person.

Signs and Symptoms Of Exposure: See Potential Health Affects

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

OSHA Class IB

Flash Pt: 45.00 F Method Used: Setaflash Closed Cup (Rapid Setaflash)

Explosive Limits: LEL: No data. UEL: No data.

Autoignition Pt: No data.

Suitable Extinguishing Media: Use carbon dioxide, dry powder, or alcohol resistant foam.

Unsuitable Extinguishing Media: Water may be ineffective. Solid streams of water will likely spread the fire.

Fire Fighting Instructions: 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.

Flammable Properties and Hazards: Vapors are heavier than air. Vapor may travel considerable distance to source of ignition and flash back.

Flammability Classification:

6. ACCIDENTAL RELEASE MEASURES

Steps To Be Taken In Case Material Is Released Or Spilled:

Vapors are heavier than air. Vapors may cause flash fire or ignite explosively.

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. Use non-sparking tools. Use proper bonding and grounding methods for all equipment and processes. Keep out of waterways and bodies of water. Be cautious of vapors collecting in small enclosed spaces, sewers, low lying areas, confined spaces, etc.

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.

Do not use this product near any source of heat or open flame, furnace areas, pilot lights, stoves, etc.

Do not use in small enclosed spaces, such as basements and bathrooms where vapors can accumulate. Vapors can accumulate and explode if ignited.

Do not use this product if the work area is not well ventilated. Use only with adequate ventilation to prevent build up of vapors.

Do not spread this product over large surface areas because fire and health safety risks will increase dramatically.

Use proper bonding and grounding when transferring material. Be aware of static electricity generation when handling material.

Precautions To Be Taken in Storing:

Keep container tightly closed when not in use. Store in a cool, dry place. Do not store near any source of heat or open flame, furnace areas, pilot lights, stoves, etc.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

CAS #	Partial Chemical Name	OSHA TWA	ACGIH TWA	Other Limits
64-17-5	Ethyl alcohol {Ethanol}	PEL: 1000 ppm	TLV: 1000 ppm	No data.
67-56-1	Methanol {Methyl alcohol; Carbinol; Wood alcohol}	PEL: 200 ppm	TLV: 200 ppm STEL: 250 ppm	No data.

Respiratory Equipment (Specify Type): For use in areas with inadequate ventilation or fresh air, wear a properly maintained and properly fitted NIOSH approved respirator for organic solvent vapors.

For OSHA controlled work places and other regular users - Use only with adequate ventilation under engineered air control systems designed to prevent exceeding the appropriate TLV.

A dust mask does not provide protection against vapors.

Eye Protection: Chemical splash goggles should be worn to prevent eye contact.

Protective Gloves: Wear gloves with as much resistance to the chemical ingredients as possible. Glove materials such as nitrile, natural rubber, and neoprene will provide protection. Glove selection should be based on chemicals being used and conditions of use. Consult your glove supplier for additional information. Gloves contaminated with product should be discarded and not reused.

Other Protective Clothing: Various application methods can dictate the use of additional protective safety equipment, such as impermeable aprons, etc., to minimize exposure.

Engineering Controls (Ventilation etc.): Use process enclosures, local exhaust ventilation, or other engineering controls to control airborne levels below recommended exposure limits.

Use only with adequate ventilation to prevent buildup of vapors. Do not use in areas where vapors can accumulate and concentrate, such as basements, bathrooms or small enclosed areas. Whenever possible, use outdoors in an open air area. If using indoors open all windows and doors and maintain 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 and move to fresh air.

Work/Hygienic/Maintenance Practices: Wash hands thoroughly after use and before eating, drinking, smoking, or using the restroom.

Do not eat, drink, or smoke in the work area.

Discard any clothing or other protective equipment that cannot be decontaminated.

Facilities storing or handling this material should be equipped with an emergency eyewash and safety shower.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical States:	[ ] Gas [X] Liquid [ ] Solid
Appearance and Odor:	Water white, alcohol odor
Melting Point:	No data.
Boiling Point:	147.00 F
Autoignition Pt:	No data.
Flash Pt:	45.00 F Method Used: Setaflash Closed Cup (Rapid Setaflash)
Explosive Limits:	LEL: No data. UEL: No data.
Specific Gravity (Water = 1):	0.7934 - 0.8108
Density:	6.646 LB/GL
Vapor Pressure (vs. Air or mm Hg):	76 MM HG at 68.0 F
Vapor Density (vs. Air = 1):	> 1
Evaporation Rate:	> 1
Solubility in Water:	No data.
Percent Volatile:	100.0 % by weight.
VOC / Volume:	793.0000 G/L

10. STABILITY AND REACTIVITY

Stability:	Unstable [ ] Stable [X]
Conditions To Avoid - Instability:	No data available.
Incompatibility - Materials To Avoid:	Incompatible with strong oxidizing agents, strong acids, reactive metals, halogens, strong inorganic acids, and aldehydes.
Hazardous Decomposition Or Byproducts:	Decomposition may produce carbon monoxide and carbon dioxide.
Possibility of Hazardous Reactions:	Will occur [ ] Will not occur [X]
Conditions To Avoid - Hazardous Reactions:	No data available.

11. TOXICOLOGICAL INFORMATION

Toxicological Information: This product has not been tested as a whole. Refer to section 2 for acute and chronic effects.

Carcinogenicity/Other Information:
IARC 1 - Carcinogenic to Humans
IARC 2B - Possibly Carcinogenic to Humans
ACGIH A4 - Not Classifiable as a Human Carcinogen.

IARC has determined that the consumption of alcoholic beverages is casually related to the occurrence of malignant tumors of the oral cavity, pharynx, larynx, esophagus, and liver in humans. The carcinogenic response attributed to drinking alcoholic beverages has not be verified in studies with laboratory animals. Established uses of denatured ethanol and non-beverage use of pure ethanol are not considered to pose any significant cancer hazard.

CAS #	Hazardous Components (Chemical Name)	NTP	IARC	ACGIH	OSHA
64-17-5	Ethyl alcohol {Ethanol}	n.a.	1	A4	n.a.
67-56-1	Methanol {Methyl alcohol; Carbinol; Wood alcohol}	n.a.	n.a.	n.a.	n.a.

12. ECOLOGICAL INFORMATION

General Ecological Information: This product has not been tested as a whole.

13. DISPOSAL CONSIDERATIONS

Waste Disposal Method: Dispose in accordance with applicable local, state, and federal regulations.

14. TRANSPORT INFORMATION

LAND TRANSPORT (US DOT):

DOT Proper Shipping Name: Alcohols, n.o.s. (Ethyl Alcohol, Methanol)
DOT Hazard Class: 3 FLAMMABLE LIQUID
UN/NA Number: UN1987 **Packing Group:** II



Additional Transport Information: The shipper / supplier may apply one of the following exceptions: Combustible Liquid, Consumer Commodity, Limited Quantity, Viscous Liquid, Does Not Sustain Combustion, or others, as allowed under 49CFR Hazmat Regulations. Please consult 49CFR Subchapter C to ensure that subsequent shipments comply with these exceptions.

15. REGULATORY INFORMATION

EPA SARA (Superfund Amendments and Reauthorization Act of 1986) Lists

CAS #	Hazardous Components (Chemical Name)	S. 302 (EHS)	S. 304 RQ	S. 313 (TRI)
64-17-5	Ethyl alcohol {Ethanol}	No	No	No
67-56-1	Methanol {Methyl alcohol; Carbinol; Wood alcohol}	No	Yes 5000 LB	Yes

This material meets the EPA 'Hazard Categories' defined for SARA Title III Sections 311/312 as indicated:	[X] Yes [ ] No	Acute (immediate) Health Hazard
	[X] Yes [ ] No	Chronic (delayed) Health Hazard
	[X] Yes [ ] No	Fire Hazard
	[ ] Yes [X] No	Sudden Release of Pressure Hazard
	[ ] Yes [X] No	Reactive Hazard

CAS #	Hazardous Components (Chemical Name)	Other US EPA or State Lists
64-17-5	Ethyl alcohol {Ethanol}	CAA HAP,ODC: No; CWA NPDES: No; TSCA: Yes - Inventory; CA PROP.65: No
67-56-1	Methanol {Methyl alcohol; Carbinol; Wood alcohol}	CAA HAP,ODC: HAP; CWA NPDES: No; TSCA: Yes - Inventory; CA PROP.65: Yes

Regulatory Information Statement:	All components of this material are listed on the TSCA Inventory or are exempt.

16. OTHER INFORMATION

Revision Date:	04/13/2015
Preparer Name:	W.M. Barr EHS Dept (901)775-0100
Additional Information About This Product:	No data available.
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.

SECTION 1. PRODUCT AND COMPANY IDENTIFICATION

Material name : A00725 ICM WHT LTHM GRS ICA725 16net11

Material number : 000000000001026140

Manufacturer or supplier's details

Company : Zep Inc.

Address : 1310 Seaboard Industrial Blvd., NW
Atlanta, GA 30318

Telephone : 404-352-1680

Emergency telephone numbers

For SDS Information	:	Compliance Services 1-877-428-9937
For a Medical Emergency	:	877-541-2016 Toll Free - All Calls Recorded
For a Transportation Emergency	:	CHEMTREC: 800-424-9300 - All Calls Recorded. In the District of Columbia 202-483-7616

SECTION 2. HAZARDS IDENTIFICATION

Emergency Overview

Appearance	Aerosol containing a liquefied gas
Colour	white
Odour	solvent-like

GHS Classification

Flammable aerosols : Category 1
Gases under pressure : Liquefied gas
Skin irritation : Category 2
Eye irritation : Category 2A
Specific target organ toxicity - single exposure : Category 3 (Central nervous system)

GHS Label element

Hazard pictograms :



Signal word : Danger

Hazard statements : H222 Extremely flammable aerosol.
H280 Contains gas under pressure; may explode if heated.
H315 Causes skin irritation.
H319 Causes serious eye irritation.
H336 May cause drowsiness or dizziness.

Precautionary statements : **Prevention:**
P210 Keep away from heat, hot surfaces, sparks, open flames

and other ignition sources. No smoking.
P211 Do not spray on an open flame or other ignition source.
P251 Pressurized container: Do not pierce or burn, even after use.
P261 Avoid breathing dust/ fume/ gas/ mist/ vapours/ spray.
P264 Wash skin thoroughly after handling.
P271 Use only outdoors or in a well-ventilated area.
P280 Wear eye protection/ face protection.
P280 Wear protective gloves.
Response:
P302 + P352 IF ON SKIN: Wash with plenty of soap and water.
P304 + P340 + P312 IF INHALED: 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.
P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P332 + P313 If skin irritation occurs: Get medical advice/ attention.
P337 + P313 If eye irritation persists: Get medical advice/ attention.
P362 Take off contaminated clothing and wash before reuse.
Storage:
P403 + P233 Store in a well-ventilated place. Keep container tightly closed.
P405 Store locked up.
P410 + P412 Protect from sunlight. Do not expose to temperatures exceeding 50 °C/ 122 °F.
Disposal:
P501 Dispose of contents/container in accordance with local regulation.

Potential Health Effects

Carcinogenicity:

IARC	No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.
ACGIH	No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH.
OSHA	No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.
NTP	No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Hazardous components

Chemical Name	CAS-No.	Concentration [%]

Distillates (petroleum), hydrotreated light	64742-47-8	>= 20 - < 30
acetone	67-64-1	>= 10 - < 20
Heptane, branched, cyclic and linear	426260-76-6	>= 10 - < 20
propane	74-98-6	>= 10 - < 20
butane	106-97-8	>= 10 - < 20

SECTION 4. FIRST AID MEASURES

General advice : Move out of dangerous area.
Show this safety data sheet to the doctor in attendance.
Do not leave the victim unattended.

If inhaled : Consult a physician after significant exposure.
If unconscious place in recovery position and seek medical advice.

In case of skin contact : Wash off immediately with plenty of water for at least 15 minutes.
If on clothes, remove clothes.
If skin irritation persists, call a physician.

In case of eye contact : Remove contact lenses.
Protect unharmed eye.
Keep eye wide open while rinsing.
If eye irritation persists, consult a specialist.
If in eyes, rinse with water for 15 minutes.

If swallowed : Keep respiratory tract clear.
Never give anything by mouth to an unconscious person.
If symptoms persist, call a physician.
DO NOT induce vomiting unless directed to do so by a physician or poison control center.

SECTION 5. FIREFIGHTING MEASURES

Suitable extinguishing media : Alcohol-resistant foam
Carbon dioxide (CO2)
Dry chemical

Unsuitable extinguishing media : High volume water jet

Specific hazards during firefighting : Do not allow run-off from fire fighting to enter drains or water courses.

Hazardous combustion products : Carbon dioxide (CO2)
Carbon monoxide
Smoke

Specific extinguishing methods : Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

Further information : Collect contaminated fire extinguishing water separately. This must not be discharged into drains.
Fire residues and contaminated fire extinguishing water must

be disposed of in accordance with local regulations.
For safety reasons in case of fire, cans should be stored separately in closed containments.
Use a water spray to cool fully closed containers.

Special protective equipment for firefighters : Wear self-contained breathing apparatus for firefighting if necessary.

SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures : Use personal protective equipment.
Ensure adequate ventilation.
Remove all sources of ignition.
Evacuate personnel to safe areas.
Beware of vapours accumulating to form explosive concentrations. Vapours can accumulate in low areas.

Environmental precautions : Prevent product from entering drains.
Prevent further leakage or spillage if safe to do so.
If the product contaminates rivers and lakes or drains inform respective authorities.

Methods and materials for containment and cleaning up : Sweep up or vacuum up spillage and collect in suitable container for disposal.
Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder, sawdust).

SECTION 7. HANDLING AND STORAGE

Advice on safe handling : For personal protection see section 8.
Smoking, eating and drinking should be prohibited in the application area.
Take precautionary measures against static discharges.
Provide sufficient air exchange and/or exhaust in work rooms.
Open drum carefully as content may be under pressure.
Dispose of rinse water in accordance with local and national regulations.
Always replace cap after use.
Do not breathe vapours or spray mist.

Conditions for safe storage : BEWARE: Aerosol is pressurized. Keep away from direct sun exposure and temperatures over 50 °C. Do not open by force or throw into fire even after use. Do not spray on flames or red-hot objects.
No smoking.
Observe label precautions.
Electrical installations / working materials must comply with the technological safety standards.
Keep in a dry, cool and well-ventilated place.

Materials to avoid : Oxidizing agents

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Components with workplace control parameters

Components	CAS-No.	Value type (Form of exposure)	Control parameters / Permissible concentration	Basis
Distillates (petroleum), hydrotreated light	64742-47-8	TWA	500 ppm 2,000 mg/m3	OSHA Z-1
		TWA	400 ppm 1,600 mg/m3	OSHA P0
acetone	67-64-1	TWA	500 ppm	ACGIH
		STEL	750 ppm	ACGIH
		TWA	250 ppm 590 mg/m3	NIOSH REL
		TWA	1,000 ppm 2,400 mg/m3	OSHA Z-1
		TWA	750 ppm 1,800 mg/m3	OSHA P0
		STEL	1,000 ppm 2,400 mg/m3	OSHA P0
Heptane, branched, cyclic and linear	426260-76-6	TWA	85 ppm 350 mg/m3	NIOSH REL
		C	440 ppm 1,800 mg/m3	NIOSH REL
		TWA	500 ppm 2,000 mg/m3	OSHA Z-1
		TWA	400 ppm 1,600 mg/m3	OSHA P0
		STEL	500 ppm 2,000 mg/m3	OSHA P0
propane	74-98-6	TWA	1,000 ppm	ACGIH
		TWA	1,000 ppm 1,800 mg/m3	NIOSH REL
		TWA	1,000 ppm 1,800 mg/m3	OSHA Z-1
		TWA	1,000 ppm 1,800 mg/m3	OSHA P0
butane	106-97-8	TWA	800 ppm 1,900 mg/m3	NIOSH REL
		TWA	800 ppm 1,900 mg/m3	OSHA P0

Biological occupational exposure limits

Component	CAS-No.	Control parameters	Biological specimen	Sampling time	Permissible concentration	Basis
2-PROPANONE	67-64-1	Acetone	Urine	End of shift (As soon as possible after exposure ceases)	50 mg/l	ACGIH BEI

Personal protective equipment

Respiratory protection	:	In case of insufficient ventilation, wear suitable respiratory equipment.
Hand protection		
Remarks	:	The suitability for a specific workplace should be discussed with the producers of the protective gloves.
Eye protection	:	Eye wash bottle with pure water Tightly fitting safety goggles Wear face-shield and protective suit for abnormal processing problems.
Skin and body protection	:	impervious clothing Choose body protection according to the amount and concentration of the dangerous substance at the work place.
Hygiene measures	:	Wash hands before breaks and at the end of workday. When using do not smoke. When using do not eat or drink.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	:	Aerosol containing a liquefied gas
Colour	:	white
Odour	:	solvent-like
pH	:	not applicable
Melting point/freezing point	:	no data available
Boiling point	:	not applicable
Flash point	:	not applicable
Evaporation rate	:	no data available
Flammability (solid, gas)	:	Extremely flammable aerosol.
Upper explosion limit	:	no data available
Lower explosion limit	:	no data available
Vapour pressure	:	no data available
Density	:	0.77 g/cm3
Solubility(ies)		
Water solubility	:	partly soluble
Partition coefficient: n-octanol/water	:	no data available
Auto-ignition temperature	:	not determined
Thermal decomposition	:	no data available

Viscosity

Viscosity, kinematic	:	no data available
Heat of combustion	:	32.91 kJ/g

SECTION 10. STABILITY AND REACTIVITY

Reactivity	:	Stable
Chemical stability	:	Stable under normal conditions.
Possibility of hazardous reactions	:	No decomposition if stored and applied as directed. Vapours may form explosive mixture with air.
Conditions to avoid	:	Heat, flames and sparks. Extremes of temperature and direct sunlight.
Incompatible materials	:	Oxidizing agents Oxygen
Hazardous decomposition products	:	Carbon oxides

SECTION 11. TOXICOLOGICAL INFORMATION

Acute toxicity

Components:

Distillates (petroleum), hydrotreated light:

Acute oral toxicity	:	LD50 rat: > 5,000 mg/kg
Acute inhalation toxicity	:	LC50 rat: > 4.6 mg/l Exposure time: 6 h
Acute dermal toxicity	:	LD50 rat: > 2,000 mg/kg

acetone:

Acute oral toxicity	:	LD50 rat: 5,800 mg/kg
Acute inhalation toxicity	:	LC50 rat: 132 mg/l Exposure time: 3 h
		LC50 rat: 50.1 mg/l
Acute dermal toxicity	:	LD50 guinea pig: > 7,426 mg/kg

LD50 rabbit: > 7,426 mg/kg

propane:
Acute inhalation toxicity : LC50 mouse: 1,237 mg/l
Exposure time: 2 h

LC50 rat: 658 mg/l
Exposure time: 4 h

LC50 rat: 1,355 mg/l

butane:
Acute inhalation toxicity : LC50 mouse: 1,237 mg/l
Exposure time: 2 h

LC50 rat: 1,355 mg/l

Skin corrosion/irritation

Product:

Remarks: Irritating to skin.

Serious eye damage/eye irritation

Product:

Remarks: Severe eye irritation

Respiratory or skin sensitisation

no data available

Germ cell mutagenicity

no data available

Carcinogenicity

no data available

Reproductive toxicity

no data available

Distillates (petroleum), hydrotreated light:
acetone:
Heptane, branched, cyclic and linear:
propane:
butane:

STOT - single exposure

no data available

STOT - repeated exposure

no data available

Aspiration toxicity

no data available

Further information

Product:

Remarks: Symptoms of overexposure may be headache, dizziness, tiredness, nausea and vomiting., Concentrations substantially above the TLV value may cause narcotic effects., Solvents may degrease the skin.

Components:
Distillates (petroleum), hydrotreated light:
Remarks: no data available

SECTION 12. ECOLOGICAL INFORMATION

Ecotoxicity

no data available

Persistence and degradability

no data available

Bioaccumulative potential

Product:

Partition coefficient: n-octanol/water	:	Remarks: no data available

Components:
butane :

Partition coefficient: n-octanol/water	:	Pow: 2.89

Mobility in soil

no data available

Other adverse effects

no data available

Product:

Regulation	40 CFR Protection of Environment; Part 82 Protection of Stratospheric Ozone - CAA Section 602 Class I Substances
Remarks	This product neither contains, nor was manufactured with a Class I or Class II ODS as defined by the U.S. Clean Air Act Section 602 (40 CFR 82, Subpt. A, App.A + B).

Additional ecological information	:	An environmental hazard cannot be excluded in the event of unprofessional handling or disposal., Toxic to aquatic life., Harmful to aquatic life with long lasting effects.

Components:

Distillates (petroleum), hydrotreated light :

Additional ecological information : no data available

SECTION 13. DISPOSAL CONSIDERATIONS

Disposal methods

Waste from residues : Do not dispose of waste into sewer.
Do not contaminate ponds, waterways or ditches with chemical or used container.
Dispose of in accordance with local regulations.
The product should not be allowed to enter drains, water courses or the soil.

Contaminated packaging : Empty remaining contents.
Dispose of as unused product.
Do not re-use empty containers.
Do not burn, or use a cutting torch on, the empty drum.

SECTION 14. TRANSPORT INFORMATION

Transportation Regulation: 49 CFR (USA):
ORM-D, CONSUMER COMMODITY

Transportation Regulation: IMDG (Vessel):
UN1950, AEROSOLS, 2.1, - Limited quantity

Transportation Regulation: IATA (Cargo Air):
UN1950, Aerosols, flammable, 2.1, - Limited quantity

Transportation Regulation: IATA (Passenger Air):
UN1950, Aerosols, flammable, 2.1, - Limited quantity

Transportation Regulation: TDG (Canada):
UN1950, AEROSOLS, 2.1, - Limited quantity

SECTION 15. REGULATORY INFORMATION

EPCRA - Emergency Planning and Community Right-to-Know Act

CERCLA Reportable Quantity

Components	CAS-No.	Component RQ (lbs)	Calculated product RQ (lbs)
acetone	67-64-1	5000	*

*: Calculated RQ exceeds reasonably attainable upper limit.

SARA 304 Extremely Hazardous Substances Reportable Quantity

This material does not contain any components with a section 304 EHS RQ.

SARA 311/312 Hazards	:	Fire Hazard Sudden Release of Pressure Hazard Acute Health Hazard
SARA 302	:	SARA 302: No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.
SARA 313	:	SARA 313: This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.
California Prop 65		This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.

The components of this product are reported in the following inventories:

TSCA	On TSCA Inventory
DSL	This product contains one or several components that are not on the Canadian DSL nor NDSL.
AICS	Not in compliance with the inventory
NZIoC	Not in compliance with the inventory
PICCS	Not in compliance with the inventory
IECSC	Not in compliance with the inventory

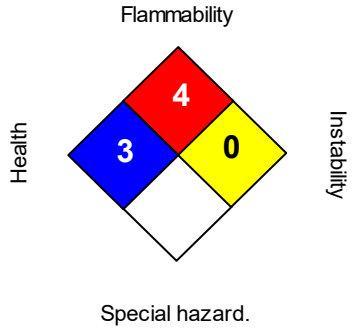
Inventory Acronym and Validity Area Legend:

AICS (Australia), DSL (Canada), IECSC (China), REACH (European Union), ENCS (Japan), ISHL (Japan), KECI (Korea), NZIoC (New Zealand), PICCS (Philippines), TSCA (USA)

SECTION 16. OTHER INFORMATION

Further information

NFPA:



HMIS III:

HEALTH	3
FLAMMABILITY	4
PHYSICAL HAZARD	2

0 = not significant, 1 =Slight,
2 = Moderate, 3 = High
4 = Extreme, * = Chronic

OSHA GHS Label Information:

Hazard pictograms :



Signal word : **Danger:**

Hazard statements : Extremely flammable aerosol. Contains gas under pressure; may explode if heated. Causes skin irritation. Causes serious eye irritation. May cause drowsiness or dizziness.

Precautionary statements :

Prevention: Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Do not spray on an open flame or other ignition source. Pressurized container: Do not pierce or burn, even after use. Avoid breathing dust/ fume/ gas/ mist/ vapours/ spray. Wash skin thoroughly after handling. Use only outdoors or in a well-ventilated area. Wear eye protection/ face protection. Wear protective gloves.

Response: IF ON SKIN: Wash with plenty of soap and water. IF INHALED: 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. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If skin irritation occurs: Get medical advice/ attention. If eye irritation persists: Get medical advice/ attention. Take off contaminated clothing and wash before reuse.

Storage: Store in a well-ventilated place. Keep container tightly closed. Store locked up. Protect from sunlight. Do not expose to temperatures exceeding 50 °C/ 122 °F.

Disposal: Dispose of contents/container in accordance with local regulation.

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 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. Users should make their own investigations to determine the suitability and applicability of the information for their particular purposes. This SDS has been prepared by the Compliance Services organization supporting this manufacturer, supplier or distributor.

Zep Inc. markets products under well recognized and established brand names such as Zep®, Zep Commercial®,Zep Professional®, Enforcer®, National Chemical™, Selig™, Misty®, Next Dimension™, Petro®, i-Chem®, TimeMist®, TimeWick™, MicrobeMax®, Country Vet®, Konk®, Original Bike Spirits®, Blue Coral®, Black Magic®, Rain-X®, Niagara National™, FC Forward Chemicals®,Rexodan®, Mykal™, and a number of private labeled brands.

SAFETY DATA SHEET

GOJO® NATURAL* ORANGE™ Pumice Hand Cleaner

Version	Revision Date:	MSDS Number:	Date of last issue: -
1.0	03/02/2015	68057-00001	Date of first issue: 03/02/2015

SECTION 1. IDENTIFICATION

Product name : GOJO® NATURAL* ORANGE™ Pumice Hand Cleaner

Manufacturer or supplier's details

Company name of supplier : GOJO Industries, Inc.

Address : One GOJO Plaza, Suite 500
Akron OH 44311

Telephone : 1 (330) 255-6000

Emergency telephone : 1-800-424-9300 CHEMTREC

Recommended use of the chemical and restrictions on use

Recommended use : Skin-care

Restrictions on use : This is a personal care or cosmetic product that is safe for consumers and other users under normal and reasonably foreseeable use. Cosmetics and consumer products, specifically defined by regulations around the world, are exempt from the requirement of an SDS for the consumer. While this material is not considered hazardous, this SDS contains valuable information critical to the safe handling and proper use of the product for industrial workplace conditions as well as unusual and unintended exposures such as large spills. This SDS should be retained and available for employees and other users of this product. For specific intended-use guidance, please refer to the information provided on the package or instruction sheet.

SECTION 2. HAZARDS IDENTIFICATION

GHS Classification

Eye irritation : Category 2A

GHS Label element

Hazard pictograms :



Signal Word : Warning

Hazard Statements : H319 Causes serious eye irritation.

Precautionary Statements : **Prevention:**

P264 Wash skin thoroughly after handling.
P280 Wear eye protection/ face protection.
Response:
P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P337 + P313 If eye irritation persists: Get medical advice/ attention.

Other hazards

None known.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance / Mixture : Mixture

Hazardous ingredients

Chemical Name	CAS-No.	Concentration (%)
1-Methyl 4-(1-Methylethenyl) Cyclohexene	5989-27-5	>= 5 - < 10
Alcohols, C12-15, ethoxylated propoxylated	68551-13-3	>= 1 - < 5

SECTION 4. FIRST AID MEASURES

General advice : In the case of accident or if you feel unwell, seek medical advice immediately.
When symptoms persist or in all cases of doubt seek medical advice.

If inhaled : If inhaled, remove to fresh air.
Get medical attention if symptoms occur.

In case of skin contact : Wash with water and soap as a precaution.
Get medical attention if symptoms occur.

In case of eye contact : In case of contact, immediately flush eyes with plenty of water for at least 15 minutes.
If easy to do, remove contact lens, if worn.
Get medical attention.

If swallowed : If swallowed, DO NOT induce vomiting.
Get medical attention if symptoms occur.
Rinse mouth thoroughly with water.

Most important symptoms and effects, both acute and delayed : Causes serious eye irritation.

Protection of first-aiders : First Aid responders should pay attention to self-protection, and use the recommended personal protective equipment when the potential for exposure exists.

Notes to physician	:	Treat symptomatically and supportively.

SECTION 5. FIRE-FIGHTING MEASURES

Suitable extinguishing media	:	Water spray Alcohol-resistant foam Dry chemical Carbon dioxide (CO2)
Unsuitable extinguishing media	:	None known.
Specific hazards during fire fighting	:	Exposure to combustion products may be a hazard to health.
Hazardous combustion products	:	Carbon oxides
Specific extinguishing methods	:	Use extinguishing measures that are appropriate to local circumstances and the surrounding environment. Use water spray to cool unopened containers. Remove undamaged containers from fire area if it is safe to do so. Evacuate area.
Special protective equipment for fire-fighters	:	In the event of fire, wear self-contained breathing apparatus. Use personal protective equipment.

SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures	:	Use personal protective equipment. Follow safe handling advice and personal protective equipment recommendations.
Environmental precautions	:	Discharge into the environment must be avoided. Prevent further leakage or spillage if safe to do so. Prevent spreading over a wide area (e.g. by containment or oil barriers). Retain and dispose of contaminated wash water. Local authorities should be advised if significant spillages cannot be contained.
Methods and materials for containment and cleaning up	:	Soak up with inert absorbent material. For large spills, provide diking or other appropriate containment to keep material from spreading. If diked material can be pumped, store recovered material in appropriate container. Clean up remaining materials from spill with suitable absorbent. Local or national regulations may apply to releases and disposal of this material, as well as those materials and items

employed in the cleanup of releases. You will need to determine which regulations are applicable.
Sections 13 and 15 of this SDS provide information regarding certain local or national requirements.

SECTION 7. HANDLING AND STORAGE

Technical measures	:	See Engineering measures under EXPOSURE CONTROLS/PERSONAL PROTECTION section.
Local/Total ventilation	:	Use only with adequate ventilation.
Advice on safe handling	:	Avoid inhalation of vapor or mist. Do not swallow. Do not get in eyes. Avoid prolonged or repeated contact with skin. Handle in accordance with good industrial hygiene and safety practice. Take care to prevent spills, waste and minimize release to the environment.
Conditions for safe storage	:	Keep in properly labeled containers. Store in accordance with the particular national regulations.
Materials to avoid	:	Do not store with the following product types: Strong oxidizing agents

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Ingredients with workplace control parameters

Contains no substances with occupational exposure limit values.

Hazardous components without workplace control parameters

Ingredients	CAS-No.
1-Methyl 4-(1-Methylethenyl) Cyclohexene	5989-27-5
Alcohols, C12-15, ethoxylated propoxylated	68551-13-3

Engineering measures : Ensure adequate ventilation, especially in confined areas.
Minimize workplace exposure concentrations.
Dust formation may be relevant in the processing of this product. In addition to substance-specific OELs, general limitations of concentrations of particulates in the air at workplaces have to be considered in workplace risk assessment. Relevant limits include: OSHA PEL for Particulates Not Otherwise Regulated of 15 mg/m3 - total dust, 5 mg/m3 - respirable fraction; and ACGIH TWA for Particles (insoluble or poorly soluble) Not Otherwise Specified of 3 mg/m3 - respirable particles, 10 mg/m3 - inhalable particles.

Personal protective equipment

Respiratory protection	:	General and local exhaust ventilation is recommended to maintain vapor exposures below recommended limits. Where concentrations are above recommended limits or are unknown, appropriate respiratory protection should be worn. Follow OSHA respirator regulations (29 CFR 1910.134) and use NIOSH/MSHA approved respirators. Protection provided by air purifying respirators against exposure to any hazardous chemical is limited. Use a positive pressure air supplied respirator if there is any potential for uncontrolled release, exposure levels are unknown, or any other circumstance where air purifying respirators may not provide adequate protection.
Hand protection Material	:	Impervious gloves
Remarks	:	Choose gloves to protect hands against chemicals depending on the concentration specific to place of work. Breakthrough time is not determined for the product. Change gloves often! For special applications, we recommend clarifying the resistance to chemicals of the aforementioned protective gloves with the glove manufacturer. Wash hands before breaks and at the end of workday.
Eye protection	:	Wear the following personal protective equipment: Safety goggles
Skin and body protection	:	Select appropriate protective clothing based on chemical resistance data and an assessment of the local exposure potential. Skin contact must be avoided by using impervious protective clothing (gloves, aprons, boots, etc).
Hygiene measures	:	Ensure that eye flushing systems and safety showers are located close to the working place. When using do not eat, drink or smoke. Wash contaminated clothing before re-use.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	:	liquid
Color	:	gray, opaque
Odor	:	citrus
Odor Threshold	:	No data available

pH	:	5.0 - 8.0
Melting point/freezing point	:	No data available
Initial boiling point and boiling range	:	95 °C
Flash point	:	> 100 °C
Evaporation rate	:	No data available
Flammability (solid, gas)	:	Not applicable
Upper explosion limit	:	No data available
Lower explosion limit	:	No data available
Vapor pressure	:	No data available
Relative vapor density	:	No data available
Density	:	1.0390 g/cm3
Solubility(ies)		
Water solubility	:	soluble
Partition coefficient: n-octanol/water	:	Not applicable
Autoignition temperature	:	No data available
Decomposition temperature	:	The substance or mixture is not classified self-reactive.
Viscosity		
Viscosity, kinematic	:	10,000 - 50,000 mm2/s (20 °C)
Explosive properties	:	Not explosive
Oxidizing properties	:	The substance or mixture is not classified as oxidizing.

SECTION 10. STABILITY AND REACTIVITY

Reactivity	:	Not classified as a reactivity hazard.
Chemical stability	:	Stable under normal conditions.
Possibility of hazardous reactions	:	Can react with strong oxidizing agents.
Conditions to avoid	:	None known.

Incompatible materials	:	Oxidizing agents
Hazardous decomposition products	:	No hazardous decomposition products are known.

SECTION 11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure
Inhalation
Skin contact
Ingestion
Eye contact

Acute toxicity

Not classified based on available information.

Ingredients:

1-Methyl 4-(1-Methylethenyl) Cyclohexene:

Acute oral toxicity	:	LD50 (Rat): > 2,000 mg/kg Assessment: The substance or mixture has no acute oral toxicity Remarks: Based on data from similar materials

Alcohols, C12-15, ethoxylated propoxylated:

Acute oral toxicity	:	LD50 (Rat): > 5,000 mg/kg Remarks: Based on data from similar materials
Acute inhalation toxicity	:	LC50 (Rat): > 1.6 mg/l Exposure time: 4 h Test atmosphere: dust/mist Assessment: The substance or mixture has no acute inhalation toxicity Remarks: Based on data from similar materials
Acute dermal toxicity	:	LD50 (Rat): > 2,000 mg/kg Assessment: The substance or mixture has no acute dermal toxicity Remarks: Based on data from similar materials

Skin corrosion/irritation

Not classified based on available information.

Product:

Result: No skin irritation

Ingredients:

1-Methyl 4-(1-Methylethenyl) Cyclohexene:
Species: Rabbit
Result: Skin irritation

Alcohols, C12-15, ethoxylated propoxylated:
Species: Rabbit
Method: OECD Test Guideline 404

Result: No skin irritation
Remarks: Based on data from similar materials

Serious eye damage/eye irritation

Causes serious eye irritation.

Ingredients:

1-Methyl 4-(1-Methylethenyl) Cyclohexene:
Species: Rabbit
Result: No eye irritation

Alcohols, C12-15, ethoxylated propoxylated:
Result: Irreversible effects on the eye
Remarks: Based on data from similar materials

Respiratory or skin sensitization

Skin sensitization: Not classified based on available information.
Respiratory sensitization: Not classified based on available information.

Product:

Assessment: Does not cause skin sensitization.

Ingredients:

1-Methyl 4-(1-Methylethenyl) Cyclohexene:
Test Type: Local lymph node assay (LLNA)
Routes of exposure: Skin contact
Species: Mouse
Result: positive

Assessment: Probability or evidence of skin sensitization in humans

Alcohols, C12-15, ethoxylated propoxylated:
Test Type: Maximization Test (GPMT)
Routes of exposure: Skin contact
Species: Guinea pig
Method: OECD Test Guideline 406
Result: negative
Remarks: Based on data from similar materials

Germ cell mutagenicity

Not classified based on available information.

Ingredients:

1-Methyl 4-(1-Methylethenyl) Cyclohexene:

Genotoxicity in vitro	:	Test Type: In vitro mammalian cell gene mutation test Result: negative
Genotoxicity in vivo	:	Test Type: Transgenic rodent somatic cell gene mutation assay Species: Rat Application Route: Ingestion

Result: negative

Alcohols, C12-15, ethoxylated propoxylated:

Genotoxicity in vitro : Test Type: Bacterial reverse mutation assay (AMES)
Result: negative
Remarks: Based on data from similar materials

Genotoxicity in vivo : Test Type: Mutagenicity (in vivo mammalian bone-marrow cytogenetic test, chromosomal analysis)
Species: Rat
Application Route: Ingestion
Result: negative
Remarks: Based on data from similar materials

Carcinogenicity

Not classified based on available information.

Ingredients:

1-Methyl 4-(1-Methylethenyl) Cyclohexene:
Species: Mouse
Application Route: Ingestion
Exposure time: 103 weeks
Result: negative

IARC	No ingredient of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.
OSHA	No ingredient of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.
NTP	No ingredient of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

Reproductive toxicity

Not classified based on available information.

Ingredients:

Alcohols, C12-15, ethoxylated propoxylated:

Effects on fertility : Test Type: Two-generation reproduction toxicity study
Species: Rat
Application Route: Skin contact
Result: negative
Remarks: Based on data from similar materials

Effects on fetal development : Test Type: Two-generation reproduction toxicity study
Species: Rat
Application Route: Skin contact
Result: negative
Remarks: Based on data from similar materials

STOT-single exposure

Not classified based on available information.

STOT-repeated exposure

Not classified based on available information.

Repeated dose toxicity

Ingredients:

1-Methyl 4-(1-Methylethenyl) Cyclohexene:
Species: Rat
NOAEL: 600 mg/kg
Application Route: Ingestion
Exposure time: 13 w

Alcohols, C12-15, ethoxylated propoxylated:
Species: Rat
NOAEL: 500 mg/kg
Application Route: Ingestion
Exposure time: 90 d
Remarks: Based on data from similar materials

Aspiration toxicity

Not classified based on available information.

Ingredients:

1-Methyl 4-(1-Methylethenyl) Cyclohexene:
The substance or mixture is known to cause human aspiration toxicity hazards or has to be regarded as if it causes a human aspiration toxicity hazard.

SECTION 12. ECOLOGICAL INFORMATION

Ecotoxicity

Ingredients:

1-Methyl 4-(1-Methylethenyl) Cyclohexene:

Toxicity to fish	:	LC50 (Pimephales promelas (fathead minnow)): 0.72 mg/l Exposure time: 96 h
Toxicity to daphnia and other aquatic invertebrates	:	EC50 (Daphnia magna (Water flea)): 0.36 mg/l Exposure time: 48 h
Toxicity to algae	:	ErC50 (Desmodesmus subspicatus (green algae)): 150 mg/l Exposure time: 72 h Test substance: Water Accommodated Fraction Remarks: Based on data from similar materials
M-Factor (Acute aquatic toxicity)	:	1

Alcohols, C12-15, ethoxylated propoxylated:

Toxicity to fish	:	LC50 (Scophthalmus maximus (turbot)): 3.1 mg/l

Exposure time: 96 h
Remarks: Based on data from similar materials

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): 0.14 mg/l
Exposure time: 48 h
Remarks: Based on data from similar materials

Toxicity to algae : EC50 (Pseudokirchneriella subcapitata (green algae)): 0.75 mg/l
Exposure time: 72 h
Remarks: Based on data from similar materials

M-Factor (Acute aquatic toxicity) : 1

Toxicity to bacteria : EC50 (Pseudomonas putida): > 10,000 mg/l
Exposure time: 16.9 h
Remarks: Based on data from similar materials

Persistence and degradability

Ingredients:

1-Methyl 4-(1-Methylethenyl) Cyclohexene:
Biodegradability : Result: Readily biodegradable.
Biodegradation: 80 %
Exposure time: 28 d
Remarks: Based on data from similar materials

Alcohols, C12-15, ethoxylated propoxylated:
Biodegradability : Result: Readily biodegradable.
Biodegradation: 80 - 88 %
Exposure time: 28 d
Remarks: Based on data from similar materials

Bioaccumulative potential

Ingredients:

1-Methyl 4-(1-Methylethenyl) Cyclohexene:
Partition coefficient: n-octanol/water : log Pow: 4.38

Mobility in soil

No data available

Other adverse effects

No data available

SECTION 13. DISPOSAL CONSIDERATIONS

Disposal methods

Waste from residues : Dispose of in accordance with local regulations.

Contaminated packaging	:	Dispose of as unused product. Empty containers should be taken to an approved waste handling site for recycling or disposal.

SECTION 14. TRANSPORT INFORMATION

International Regulation

UNRTDG

UN number	:	UN 3082
Proper shipping name	:	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (1-Methyl 4-(1-Methylethenyl) Cyclohexene)
Class	:	9
Packing group	:	III
Labels	:	9

IATA-DGR

UN/ID No.	:	UN 3082
Proper shipping name	:	Environmentally hazardous substance, liquid, n.o.s. (1-Methyl 4-(1-Methylethenyl) Cyclohexene)
Class	:	9
Packing group	:	III
Labels	:	Miscellaneous
Packing instruction (cargo aircraft)	:	964
Packing instruction (passenger aircraft)	:	964

IMDG-Code

UN number	:	UN 3082
Proper shipping name	:	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (1-Methyl 4-(1-Methylethenyl) Cyclohexene)
Class	:	9
Packing group	:	III
Labels	:	9
EmS Code	:	F-A, S-F
Marine pollutant	:	yes

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Not applicable for product as supplied.

Domestic regulation

49 CFR

UN/ID/NA number	:	UN 3082
Proper shipping name	:	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (1-Methyl 4-(1-Methylethenyl) Cyclohexene)
Class	:	9

Packing group	:	III
Labels	:	CLASS 9
ERG Code	:	171
Marine pollutant	:	yes (1-Methyl 4-(1-Methylethenyl) Cyclohexene)
Remarks	:	Shipment by ground under DOT is non-regulated; however it may be shipped per the applicable hazard classification to facilitate multi-modal transport involving ICAO (IATA) or IMO.

SECTION 15. REGULATORY INFORMATION

EPCRA - Emergency Planning and Community Right-to-Know

CERCLA Reportable Quantity

This material does not contain any components with a CERCLA RQ.

SARA 304 Extremely Hazardous Substances Reportable Quantity

This material does not contain any components with a section 304 EHS RQ.

SARA 311/312 Hazards : Acute Health Hazard

SARA 302 : No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

SARA 313 : This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

US State Regulations

Pennsylvania Right To Know

Water	7732-18-5	70 - 90 %
Pumice	1332-09-8	5 - 10 %
1-Methyl 4-(1-Methylethenyl) Cyclohexene	5989-27-5	5 - 10 %

New Jersey Right To Know

Water	7732-18-5	70 - 90 %
Pumice	1332-09-8	5 - 10 %
1-Methyl 4-(1-Methylethenyl) Cyclohexene	5989-27-5	5 - 10 %
Alcohols, C12-15, ethoxylated propoxylated	68551-13-3	1 - 5 %

California Prop 65 This product does not contain any chemicals known to the State of California to cause cancer, birth, or any other reproductive defects.

The ingredients of this product are reported in the following inventories:

REACH : All ingredients (pre-)registered or exempt.

TSCA : All chemical substances in this product are either listed on the TSCA Inventory or are in compliance with a TSCA Inventory

exemption.

DSL : All chemical substances in this product comply with the CEPA 1999 and NSNR and are on or exempt from listing on the Canadian Domestic Substances List (DSL).

AICS : All ingredients listed or exempt.

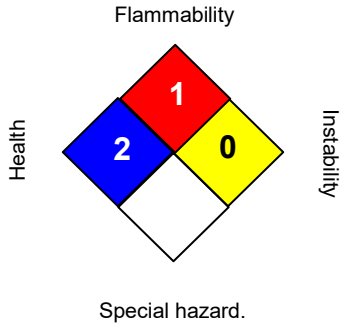
Inventories

AICS (Australia), DSL (Canada), IECSC (China), REACH (European Union), ENCS (Japan), ISHL (Japan), KECI (Korea), NZIoC (New Zealand), PICCS (Philippines), TCSI (Taiwan), TSCA (USA)

SECTION 16. OTHER INFORMATION

Further information

NFPA:



HMIS III:

HEALTH	2
FLAMMABILITY	1
PHYSICAL HAZARD	0

0 = not significant, 1 =Slight,
2 = Moderate, 3 = High
4 = Extreme, * = Chronic

Sources of key data used to compile the Material Safety Data Sheet : Internal technical data, data from raw material SDSs, OECD eChem Portal search results and European Chemicals Agency, http://echa.europa.eu/

Revision Date : 03/02/2015

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and shall not be considered a warranty or quality specification of any type. The information provided relates only to the specific material identified at the top of this SDS and may not be valid when the SDS material is used in combination with any other materials or in any process, unless specified in the text. Material users should review the information and recommendations in the specific context of their intended manner of handling, use, processing and storage, including an assessment of the appropriateness of the SDS material in the user's end product, if applicable.

US / Z8

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 Procedures:	Dike if necessary, contain spill with inert absorbent and transfer to containers for disposal. Keep spilled product out of sewers, watersheds or water systems.
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	Type	Value
Isopropyl Alcohol (CAS 67-63-0)	BEI	40 mg/l

US. ACGIH Threshold Limit Values

Components	Type	Value
Carbon Dioxide (CAS 124-38-9)	STEL	30000 ppm
	TWA	5000 ppm
Isopropyl Alcohol (CAS 67-63-0)	STEL	400 ppm
	TWA	200 ppm

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

Components	Type	Value
Carbon Dioxide (CAS 124-38-9)	PEL	9000 mg/m3
		5000 ppm
Isopropyl Alcohol (CAS 67-63-0)	PEL	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		
Dermal		
LD50	Rat	2237 mg/kg
Inhalation		
LC50	Rat	1371.2346 mg/l, 3 Hours, estimated
		6 mg/l/4h
Oral		
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
Error:	XPS format error (19,4,330)

SAFETY DATA SHEET

1. Identification

Product number	1000000940
Product identifier	**JET FORCE WASP & HORNET KILLER**
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 #	01
Recommended use	PESTICIDE
Recommended restrictions	None known.

2. Hazard(s) identification

Physical hazards	Flammable aerosols	Category 1
Health hazards	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. May be fatal if swallowed and enters airways.
Precautionary statement	
Prevention	Keep away from heat/sparks/open flames/hot surfaces. - No smoking. Do not spray on an open flame or other ignition source. Pressurized container: Do not pierce or burn, even after use. Avoid release to the environment.
Response	If swallowed: Immediately call a poison center/doctor. Do NOT induce vomiting. Collect spillage.
Storage	Store locked up. Protect from sunlight. Do not expose to temperatures exceeding 50°C/122°F.
Disposal	Dispose of contents/container in accordance with local/regional/national/international regulations.
Hazard(s) not otherwise classified (HNOC)	None known.
Supplemental information	None.

3. Composition/information on ingredients

Mixtures

Chemical name	Common name and synonyms	CAS number	%
Distillates (Petroleum), Hydrotreated Light		64742-47-8	80 - 90
Carbon Dioxide		124-38-9	2.5 - 10
Isopropyl Alcohol		67-63-0	2.5 - 10
d-Phenothrin		26002-80-2	0.1 - 1

Chemical name	Common name and synonyms	CAS number	%
Tetramethrin		7696-12-0	0.1 - 1
Other components below reportable levels			1 - 2.5

#: This substance has workplace exposure limit(s).
vPvB: very persistent and very bioaccumulative substance.
PBT: persistent, bioaccumulative and toxic substance.
*Designates that a specific chemical identity and/or percentage of composition has been withheld as a trade secret.

4. First-aid measures

Inhalation If symptoms develop move victim to fresh air. Get medical attention if symptoms persist.

Skin contact Wash off with soap and water. 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 Aspiration may cause pulmonary edema and pneumonitis.

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 Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves.

5. Fire-fighting measures

Suitable extinguishing media Alcohol resistant foam. Water fog. Dry chemical powder. Dry chemicals. Carbon dioxide (CO2).

Unsuitable extinguishing media Do not use water jet as an extinguisher, as this will spread the fire.

Specific hazards arising from the chemical Contents under pressure. Pressurized container may explode when exposed to heat or flame.

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 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 containers from fire area if you can do so without risk. In the event of fire and/or explosion do not breathe fumes.

General fire hazards Extremely flammable aerosol.

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. Wear appropriate protective equipment and clothing during clean-up. 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 Refer to attached safety data sheets and/or instructions for use. Keep combustibles (wood, paper, oil, etc.) away from spilled material. 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. Cover with plastic sheet to prevent spreading. Absorb in vermiculite, dry sand or earth and place into containers. Prevent entry into waterways, sewer, basements or confined areas. Following product recovery, flush area with 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 SDS.

Environmental precautions Avoid release to the environment. Inform appropriate managerial or supervisory personnel of all environmental releases. Prevent further leakage or spillage if safe to do so. Avoid discharge into drains, water courses or onto the ground.

7. Handling and storage

Precautions for safe handling

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. Avoid prolonged or repeated contact with skin. Avoid prolonged exposure. 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.

Conditions for safe storage, including any incompatibilities

Level 3 Aerosol.

Store locked up. 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 away from incompatible materials (see Section 10 of the SDS). Level 3 Aerosol.

8. Exposure controls/personal protection

Occupational exposure limits

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

Components	Type	Value
Carbon Dioxide (CAS 124-38-9)	PEL	9000 mg/m3
		5000 ppm
Isopropyl Alcohol (CAS 67-63-0)	PEL	980 mg/m3
		400 ppm

US. ACGIH Threshold Limit Values

Components	Type	Value
Carbon Dioxide (CAS 124-38-9)	STEL	30000 ppm
	TWA	5000 ppm
Isopropyl Alcohol (CAS 67-63-0)	STEL	400 ppm
	TWA	200 ppm

US. NIOSH: Pocket Guide to Chemical Hazards

Components	Type	Value
Carbon Dioxide (CAS 124-38-9)	STEL	54000 mg/m3
		30000 ppm
	TWA	9000 mg/m3
		5000 ppm
Isopropyl Alcohol (CAS 67-63-0)	STEL	1225 mg/m3
		500 ppm
	TWA	980 mg/m3
		400 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	*

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

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

Face shield is recommended. Wear safety glasses with side shields (or goggles).

Hand protection	Wear appropriate chemical resistant gloves.
Skin protection	
Other	Wear suitable protective clothing.
Respiratory protection	If permissible levels are exceeded use NIOSH mechanical filter / organic vapor cartridge or an air-supplied respirator.
Thermal hazards	Wear appropriate thermal protective clothing, when necessary.
General hygiene considerations	When using do not 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	Gas.
Form	Aerosol.
Color	Colorless.
Odor	Solvent.
Odor threshold	Not available.
pH	Not available.
Melting point/freezing point	Not available.
Initial boiling point and boiling range	180.5 °F (82.5 °C) estimated
Flash point	228.2 °F (109.0 °C) estimated
Evaporation rate	Not available.
Flammability (solid, gas)	Not available.
Upper/lower flammability or explosive limits	
Flammability limit - lower (%)	0.5 % estimated
Flammability limit - upper (%)	Not available.
Explosive limit - lower (%)	Not available.
Explosive limit - upper (%)	Not available.
Vapor pressure	90 - 110 psig @70F estimated
Vapor density	Not available.
Relative density	Not available.
Solubility(ies)	
Solubility (water)	Not available.
Partition coefficient (n-octanol/water)	Not available.
Auto-ignition temperature	421 °F (216.11 °C) estimated
Decomposition temperature	Not available.
Viscosity	Not available.
Other information	
Specific gravity	0.826 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	Hazardous polymerization does not occur.
Conditions to avoid	Avoid temperatures exceeding the flash point. Contact with incompatible materials.
Incompatible materials	Acids. Strong oxidizing agents. Isocyanates. Chlorine.
Hazardous decomposition products	No hazardous decomposition products are known.

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	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	Aspiration may cause pulmonary edema and pneumonitis.

Information on toxicological effects

Acute toxicity May be fatal if swallowed and enters airways.

Product	Species	Test Results
JET FORCE WASP & HORNET KILLER (CAS Mixture)		
Acute		
Dermal		
LD50	Rat	2237 mg/kg
Inhalation		
LC50	Rat	6 mg/l/4h
Oral		
LD50	Rat	

Components	Species	Test Results
Distillates (Petroleum), Hydrotreated Light (CAS 64742-47-8)		
Acute		
Dermal		
LD50	Rabbit	> 2000 mg/kg
		> 2000 mg/kg, 24 Hours
Inhalation		
LC50	Rat	> 7.5 mg/l, 6 Hours
		> 4.6 mg/l, 4 Hours
Oral		
LD50	Rat	> 5000 mg/kg
Isopropyl Alcohol (CAS 67-63-0)		
Acute		
Dermal		
LD50	Rabbit	16.4 ml/kg, 24 Hours
Inhalation		
LC50	Rat	> 10000 ppm, 6 Hours
Oral		
LD50	Rat	5.84 g/kg
Tetramethrin (CAS 7696-12-0)		
Acute		
Oral		
LD50	Rat	4640 mg/kg

* 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 or skin sensitization

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.

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

Not listed.

Reproductive toxicity This product is not expected to cause reproductive or developmental effects.

Specific target organ toxicity - single exposure Not classified.

Specific target organ toxicity - repeated exposure Not classified.

Aspiration hazard May be fatal if swallowed and enters airways.

Chronic effects Prolonged inhalation may be harmful.

12. Ecological information

Ecotoxicity Toxic to aquatic life with long lasting effects.

Product		Species	Test Results
JET FORCE WASP & HORNET KILLER (CAS Mixture)			
Aquatic			
Algae	IC50	Algae	11769 mg/L, 72 Hours
Crustacea	EC50	Daphnia	629 mg/L, 48 Hours
Fish	LC50	Fish	48.7193 mg/L, 96 Hours
Components		**Species**	**Test Results**
Distillates (Petroleum), Hydrotreated Light (CAS 64742-47-8)			
Aquatic			
Fish	LC50	Rainbow trout,donaldson trout (Oncorhynchus mykiss)	2.9 mg/l, 96 hours
Isopropyl Alcohol (CAS 67-63-0)			
Aquatic			
Algae	IC50	Algae	1000.0001 mg/L, 72 Hours
Crustacea	EC50	Daphnia	13299 mg/L, 48 Hours
Fish	LC50	Bluegill (Lepomis macrochirus)	> 1400 mg/l, 96 hours
Tetramethrin (CAS 7696-12-0)			
Aquatic			
Fish	LC50	Carp (Cyprinus carpio)	0.095 - 0.16 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)

Isopropyl Alcohol	0.05
Tetramethrin	4.73

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

Local disposal regulations Dispose in accordance with all applicable regulations.

Hazardous waste code	The waste code should be assigned in discussion between the user, the producer and the waste disposal company.
Waste from residues / unused products	Dispose of in accordance with local regulations. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe manner (see: Disposal instructions).
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. Do not re-use empty containers.

14. Transport information

DOT

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

This product meets the exception requirements of section 173.306 as a limited quantity and may be shipped as a limited quantity. Until 12/31/2020, the "Consumer Commodity - ORM-D" marking may still be used in place of the new limited quantity diamond mark for packages of UN 1950 Aerosols. Limited quantities require the limited quantity diamond mark on cartons after 12/31/20 and may be used now in place of the "Consumer Commodity ORM-D" marking and both may be displayed concurrently.

IATA

UN number	UN1950
UN proper shipping name	Aerosols, flammable
Transport hazard class(es)	
Class	2.1
Subsidiary risk	-
Label(s)	2.1
Packing group	Not applicable.
Environmental hazards	Yes
Special precautions for user	Read safety instructions, SDS and emergency procedures before handling. Read safety instructions, SDS and emergency procedures before handling.
Other information	
Passenger and cargo aircraft	Forbidden.
Cargo aircraft only	Forbidden.
Packaging Exceptions	LTD QTY

IMDG

UN number	UN1950
UN proper shipping name	AEROSOLS
Transport hazard class(es)	
Class	2.1
Subsidiary risk	-
Label(s)	2.1
Packing group	Not applicable.
Environmental hazards	
Marine pollutant	Yes
EmS	Not available.
Special precautions for user	Read safety instructions, SDS and emergency procedures before handling. Read safety instructions, SDS and emergency procedures before handling.
Packaging Exceptions	LTD QTY
Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code	Not applicable.

IATA; IMDG



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.

CERCLA Hazardous Substance List (40 CFR 302.4)

Not listed.

SARA 304 Emergency release notification

Not regulated.

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

Not listed.

Superfund Amendments and Reauthorization Act of 1986 (SARA)

Hazard categories

Immediate Hazard - Yes
Delayed Hazard - No
Fire Hazard - Yes
Pressure Hazard - No
Reactivity Hazard - No

SARA 302 Extremely hazardous substance

Not listed.

SARA 311/312 Hazardous chemical

No

SARA 313 (TRI reporting)

Chemical name	CAS number	% by wt.
d-Phenothrin	26002-80-2	0.1 - 1
Tetramethrin	7696-12-0	0.1 - 1

Other federal regulations

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)

Not regulated.

Safe Drinking Water Act (SDWA)

Not regulated.

Hazard statement This chemical is a pesticide product registered by the United States Environmental Protection Agency and is subject to certain labeling requirements under federal pesticide law. These requirements differ from the classification criteria and hazard information required for safety data sheets (SDS), and for workplace labels of non-pesticide chemicals. The pesticide label also includes other important information, including directions for use.

CAUTION!
Harmful if absorbed through skin.
Moderately irritating to the eyes.

US state regulations

US. Massachusetts RTK - Substance List

Carbon Dioxide (CAS 124-38-9)
Isopropyl Alcohol (CAS 67-63-0)

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

Carbon Dioxide (CAS 124-38-9)
d-Phenothrin (CAS 26002-80-2)
Isopropyl Alcohol (CAS 67-63-0)
Tetramethrin (CAS 7696-12-0)

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

Carbon Dioxide (CAS 124-38-9)
Isopropyl Alcohol (CAS 67-63-0)

US. Rhode Island RTK

d-Phenothrin (CAS 26002-80-2)
Isopropyl Alcohol (CAS 67-63-0)
Tetramethrin (CAS 7696-12-0)

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.

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)	No
Canada	Non-Domestic Substances List (NDSL)	No
China	Inventory of Existing Chemical Substances in China (IECSC)	Yes
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)	No
New Zealand	New Zealand Inventory	Yes
Philippines	Philippine Inventory of Chemicals and Chemical Substances (PICCS)	No
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 01-26-2015
Version # 01

Disclaimer

The information in the sheet was written based on the best knowledge and experience currently available. The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text. We 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.

SAFETY DATA SHEET

1. Identification

Product identifier **Motor Medic Thrust Starting Fluid**

Other means of identification

SDS number M3815

Part No. M3815

Tariff code 2909.11.0000

Recommended use Starting Fluid

Recommended restrictions None known.

Manufacturer/Importer/Supplier/Distributor information

Manufacturer

Company name RSC Chemical Solutions

Address 600 Radiator Road
Indian Trail, NC 28079
United States

Telephone Customer Service: (704) 821-7643
Technical: (704) 684-1811

Website www.rscbrands.com

E-mail sds@rscbrands.com

Emergency phone number Emergency Telephone: (303) 623-5716
Emergency Contact: RMPDC (877-740-5015)

2. Hazard(s) identification

Physical hazards	Flammable aerosols	Category 1
Health hazards	Acute toxicity, oral	Category 4
	Skin corrosion/irritation	Category 2
	Serious eye damage/eye irritation	Category 2B
	Carcinogenicity	Category 1B
	Specific target organ toxicity, single exposure	Category 3 narcotic effects
	Specific target organ toxicity, repeated exposure	Category 2
Environmental hazards	Hazardous to the aquatic environment, acute hazard	Category 1
	Hazardous to the aquatic environment, long-term hazard	Category 1

OSHA defined hazards Not classified.

Label elements



Signal word Danger

Hazard statement Extremely flammable aerosol. Harmful if swallowed. Causes skin irritation. Causes eye irritation. May cause drowsiness or dizziness. May cause cancer. Very toxic to aquatic life. Very 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. Pressurized container: Do not pierce or burn, even after use. Avoid breathing mist or vapor. Wash thoroughly after handling. Do not eat, drink or smoke when using this product. Use only outdoors or in a well-ventilated area. Avoid release to the environment. Wear protective gloves/protective clothing/eye protection/face protection.
Response	If swallowed: Call a poison center/doctor if you feel unwell. If on skin: Wash with plenty of water. If inhaled: Remove person to fresh air and keep comfortable for breathing. If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If exposed or concerned: Get medical advice/attention. Call a poison center/doctor if you feel unwell. Rinse mouth. If skin irritation occurs: Get medical advice/attention. If eye irritation persists: Get medical advice/attention. Take off contaminated clothing and wash before reuse. Collect spillage.
Storage	Store in a well-ventilated place. Keep container tightly closed. Store locked up. Protect from sunlight. Do not expose to temperatures exceeding 50°C/122°F.
Disposal	Dispose of contents/container in accordance with local/regional/national/international regulations.
Hazard(s) not otherwise classified (HNOC)	None known.
Supplemental information	81.58% of the mixture consists of component(s) of unknown acute oral toxicity. 26.34% of the mixture consists of component(s) of unknown acute hazards to the aquatic environment. 26.34% of the mixture consists of component(s) of unknown long-term hazards to the aquatic environment.

3. Composition/information on ingredients

Mixtures

Chemical name	Common name and synonyms	CAS number	%
Heptane		142-82-5	70 - < 80
ETHANE, 1,1'-OXYBIS-		60-29-7	10 - < 20
Carbon Dioxide		124-38-9	5 - < 10
Distillates (petroleum), Hydrotreated Light Naphthenic		64742-53-6	< 1
Hydrotreated Heavy Naphthenic Distillate (petroleum)		64742-52-5	< 1

*Designates that a 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	Remove contaminated clothing. Wash with plenty of soap and water. If skin irritation occurs: Get medical advice/attention. Wash contaminated clothing before reuse.
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	Rinse mouth. If vomiting occurs, keep head low so that stomach content doesn't get into the lungs. Get medical advice/attention if you feel unwell.
Most important symptoms/effects, acute and delayed	May cause drowsiness and dizziness. Headache. Nausea, vomiting. Irritation of eyes. Exposed individuals may experience eye tearing, redness, and discomfort. Skin irritation. May cause redness and pain.
Indication of immediate medical attention and special treatment needed	Provide general supportive measures and treat symptomatically. Keep victim warm. 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	Powder. Alcohol resistant foam. Carbon dioxide (CO2).
Unsuitable extinguishing media	Do not use water jet as an extinguisher, as this will spread the fire.

Specific hazards arising from the chemical	Contents under pressure. Pressurized container may explode 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	Move containers from fire area if you can do so without risk. 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 containers from fire area if you can do so without risk. In the event of fire and/or explosion do not breathe fumes.
General fire hazards	Extremely flammable aerosol.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures	Keep unnecessary personnel away. Keep people away from and upwind of spill/leak. Wear appropriate protective equipment and clothing during clean-up. Avoid breathing mist or vapor. 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	Refer to attached safety data sheets and/or instructions for use. 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 leak if you can do so without risk. Move the cylinder to a safe and open area if the leak is irreparable. Cover with plastic sheet to prevent spreading. Absorb in vermiculite, dry sand or earth and place into containers. Following product recovery, flush area with 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 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.

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. All equipment used when handling the product must be grounded. Do not re-use empty containers. Avoid breathing mist or vapor. Avoid contact with eyes, skin, and clothing. Avoid prolonged exposure. Do not taste or swallow. When using, do not eat, drink or smoke. 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.
Conditions for safe storage, including any incompatibilities	Level 3 Aerosol. Store locked up. 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. Keep out of the reach of children. 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
Carbon Dioxide (CAS 124-38-9)	PEL	9000 mg/m3 5000 ppm	
Distillates (petroleum), Hydrotreated Light Naphthenic (CAS 64742-53-6)	PEL	5 mg/m3 2000 mg/m3	Mist.

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

Components	Type	Value	Form
		500 ppm	
ETHANE, 1,1'-OXYBIS- (CAS 60-29-7)	PEL	1200 mg/m3	
		400 ppm	
Heptane (CAS 142-82-5)	PEL	2000 mg/m3	
		500 ppm	
Hydrotreated Heavy Naphthenic Distillate (petroleum) (CAS 64742-52-5)	PEL	5 mg/m3	Mist.
		2000 mg/m3	
		500 ppm	

US. ACGIH Threshold Limit Values

Components	Type	Value	Form
Carbon Dioxide (CAS 124-38-9)	STEL	30000 ppm	
	TWA	5000 ppm	
Distillates (petroleum), Hydrotreated Light Naphthenic (CAS 64742-53-6)	TWA	5 mg/m3	Inhalable fraction.
ETHANE, 1,1'-OXYBIS- (CAS 60-29-7)	STEL	500 ppm	
	TWA	400 ppm	
Heptane (CAS 142-82-5)	STEL	500 ppm	
	TWA	400 ppm	
Hydrotreated Heavy Naphthenic Distillate (petroleum) (CAS 64742-52-5)	TWA	5 mg/m3	Inhalable fraction.

US. NIOSH: Pocket Guide to Chemical Hazards

Components	Type	Value	Form
Carbon Dioxide (CAS 124-38-9)	STEL	54000 mg/m3	
		30000 ppm	
	TWA	9000 mg/m3	
		5000 ppm	
Distillates (petroleum), Hydrotreated Light Naphthenic (CAS 64742-53-6)	Ceiling	1800 mg/m3	
	STEL	10 mg/m3	Mist.
Heptane (CAS 142-82-5)	Ceiling	1800 mg/m3	
		440 ppm	
	TWA	350 mg/m3	
		85 ppm	
Hydrotreated Heavy Naphthenic Distillate (petroleum) (CAS 64742-52-5)	Ceiling	1800 mg/m3	
	STEL	10 mg/m3	Mist.

Biological limit values No biological exposure limits noted for the ingredient(s).

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. Eye wash facilities and emergency shower must be available when handling this product.

Individual protection measures, such as personal protective equipment

Eye/face protection	Chemical respirator with organic vapor cartridge and full facepiece.
Skin protection	
Hand protection	Wear appropriate chemical resistant gloves. Suitable gloves can be recommended by the glove supplier.
Other	Wear appropriate chemical resistant clothing. Use of an impervious apron is recommended.
Respiratory protection	Chemical respirator with organic vapor cartridge and full facepiece.
Thermal hazards	Wear appropriate thermal protective clothing, when necessary.
General hygiene considerations	When using do not smoke. 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 and chemical properties

Appearance	Liquid. Clear.
Physical state	Liquid.
Form	Aerosol.
Color	Colorless
Odor	Ester-like.
Odor threshold	Not available.
pH	Not available.
Melting point/freezing point	-189.94 °F (-123.3 °C) estimated
Initial boiling point and boiling range	-109.3 °F (-78.5 °C) estimated
Flash point	-1.0 °F (-18.3 °C) Tag Closed Cup
Evaporation rate	Not available.
Flammability (solid, gas)	Not applicable.
Upper/lower flammability or explosive limits	
Flammability limit - lower (%)	1.9 % estimated
Flammability limit - upper (%)	36.5 % estimated
Explosive limit - lower (%)	Not available.
Explosive limit - upper (%)	Not available.
Vapor pressure	4083.55 hPa estimated
Vapor density	Not available.
Relative density	Not available.
Solubility(ies)	
Solubility (water)	Partial Solubility
Partition coefficient (n-octanol/water)	Not available.
Auto-ignition temperature	320 °F (160 °C) estimated
Decomposition temperature	Not available.
Viscosity	Not available.
Other information	
Density	5.75 lbs/gal
Explosive properties	Not explosive.
Flammability class	Flammable IA estimated
Heat of combustion (NFPA 30B)	30.83 kJ/g estimated
Oxidizing properties	Not oxidizing.
Percent volatile	18.42 % estimated
Specific gravity	0.69

VOC (Weight %)	93 %

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	Avoid temperatures exceeding the flash point. Contact with incompatible materials.
Incompatible materials	Strong oxidizing agents. Aluminum.
Hazardous decomposition products	No hazardous decomposition products are known.

11. Toxicological information

Information on likely routes of exposure

Inhalation	May cause drowsiness and dizziness. Headache. Nausea, vomiting. Prolonged inhalation may be harmful.
Skin contact	Causes skin irritation.
Eye contact	Causes eye irritation.
Ingestion	Harmful if swallowed.
Symptoms related to the physical, chemical and toxicological characteristics	Headache. May cause drowsiness and dizziness. Nausea, vomiting. Irritation of eyes. Exposed individuals may experience eye tearing, redness, and discomfort. Skin irritation. May cause redness and pain.

Information on toxicological effects

Acute toxicity Harmful if swallowed. Narcotic effects.

Components	Species	Test Results
ETHANE, 1,1'-OXYBIS- (CAS 60-29-7)		
Acute		
Inhalation		
LC50	Rat	32000 ppm, 4 Hours
Oral		
LD50	Rat	3230 - 3920 mg/kg
Heptane (CAS 142-82-5)		
Acute		
Inhalation		
LC50	Rat	103 mg/l, 4 Hours
LD50	Mouse	75 mg/l, 2 Hours

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

Skin corrosion/irritation	Causes skin irritation.
Serious eye damage/eye irritation	Causes eye irritation.

Respiratory or skin sensitization

Respiratory sensitization	Not a respiratory sensitizer.
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	May cause cancer.

IARC Monographs. Overall Evaluation of Carcinogenicity

ETHANE, 1,1'-OXYBIS- (CAS 60-29-7) 3 Not classifiable as to carcinogenicity to humans.

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

Not listed.

US. National Toxicology Program (NTP) Report on Carcinogens

Distillates (petroleum), Hydrotreated Light Naphthenic (CAS 64742-53-6) Known To Be Human Carcinogen.

Hydrotreated Heavy Naphthenic Distillate (petroleum) (CAS 64742-52-5)	Known To Be Human Carcinogen.

Reproductive toxicity This product is not expected to cause reproductive or developmental effects.

Specific target organ toxicity - single exposure May cause drowsiness and dizziness.

Specific target organ toxicity - repeated exposure Not classified.

Aspiration hazard Not an aspiration hazard.

Chronic effects Prolonged inhalation may be harmful.

12. Ecological information

Ecotoxicity Very toxic to aquatic life with long lasting effects.

Components		Species	Test Results
ETHANE, 1,1'-OXYBIS- (CAS 60-29-7)			
Aquatic			
Fish	LC50	Fathead minnow (Pimephales promelas)	2560 mg/l, 96 hours
Heptane (CAS 142-82-5)			
Aquatic			
Fish	LC50	Mozambique tilapia (Tilapia mossambica)	375 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

Partition coefficient n-octanol / water (log Kow)	
ETHANE, 1,1'-OXYBIS-	0.89
Heptane	4.66

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

Local disposal regulations Dispose in accordance with all applicable regulations.

Hazardous waste code The waste code should be assigned in discussion between the user, the producer and the waste disposal company.

Waste from residues / unused products Dispose of in accordance with local regulations. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe manner (see: Disposal instructions).

Contaminated packaging Since emptied containers may retain product residue, follow label warnings even after container is emptied. Empty containers should be taken to an approved waste handling site for recycling or disposal. Do not re-use empty containers.

14. Transport information

DOT

UN number Not available.

UN proper shipping name Consumer Commodity

Transport hazard class(es)

Class ORM-D

Subsidiary risk -

Packing group Not applicable.

Environmental hazards

Marine pollutant Yes

Special precautions for user Read safety instructions, SDS and emergency procedures before handling.

Special provisions	T75, TP5
Packaging exceptions	306
Packaging non bulk	304
Packaging bulk	314, 315

IATA

UN number	UN1950
UN proper shipping name	Aerosols, Flammable (Starting Fluid)
Transport hazard class(es)	
Class	2.1
Subsidiary risk	-
Packing group	Not applicable.
Environmental hazards	Yes
ERG Code	9L
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 (ILimited QtY)
Transport hazard class(es)	
Class	2.1
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.

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

IATA; IMDG



Marine pollutant



General information IMDG Regulated Marine Pollutant. DOT 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.

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

Not regulated.

CERCLA Hazardous Substance List (40 CFR 302.4)

ETHANE, 1,1'-OXYBIS- (CAS 60-29-7)	Listed.
Heptane (CAS 142-82-5)	Listed.

SARA 304 Emergency release notification

Not regulated.

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

Not listed.

Superfund Amendments and Reauthorization Act of 1986 (SARA)

Hazard categories

Immediate Hazard - Yes
Delayed Hazard - Yes
Fire Hazard - Yes
Pressure Hazard - No
Reactivity Hazard - No

SARA 302 Extremely hazardous substance

Not listed.

SARA 311/312 Hazardous chemical No

SARA 313 (TRI reporting)

Not regulated.

Other federal regulations

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)

ETHANE, 1,1'-OXYBIS- (CAS 60-29-7)

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

ETHANE, 1,1'-OXYBIS- (CAS 60-29-7)	6584

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

ETHANE, 1,1'-OXYBIS- (CAS 60-29-7)	35 %WV

DEA Exempt Chemical Mixtures Code Number

ETHANE, 1,1'-OXYBIS- (CAS 60-29-7)	6584

US state regulations

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

Not listed.

US. California. Candidate Chemicals List. Safer Consumer Products Regulations (Cal. Code Regs, tit. 22, 69502.3, subd. (a))

Distillates (petroleum), Hydrotreated Light Naphthenic (CAS 64742-53-6)
Hydrotreated Heavy Naphthenic Distillate (petroleum) (CAS 64742-52-5)

US. Massachusetts RTK - Substance List

Carbon Dioxide (CAS 124-38-9)
Distillates (petroleum), Hydrotreated Light Naphthenic (CAS 64742-53-6)
ETHANE, 1,1'-OXYBIS- (CAS 60-29-7)
Heptane (CAS 142-82-5)
Hydrotreated Heavy Naphthenic Distillate (petroleum) (CAS 64742-52-5)

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

Carbon Dioxide (CAS 124-38-9)
ETHANE, 1,1'-OXYBIS- (CAS 60-29-7)
Heptane (CAS 142-82-5)

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

Carbon Dioxide (CAS 124-38-9)
ETHANE, 1,1'-OXYBIS- (CAS 60-29-7)
Heptane (CAS 142-82-5)

US. Rhode Island RTK

ETHANE, 1,1'-OXYBIS- (CAS 60-29-7)

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.

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
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 05-07-2015

Revision date 11-03-2015

Version # 05

HMIS® ratings Health: 2*
Flammability: 4
Physical hazard: 0

NFPA ratings Health: 2
Flammability: 4
Instability: 0

NFPA ratings



Disclaimer The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

Revision Information Physical & Chemical Properties: Multiple Properties
Transport Information: Material Transportation Information

SAFETY DATA SHEET

1. Identification

Product identifier **Oatey PVC Heavy Duty Clear or Gray Cement**

Other means of identification

SDS number 1102E

Synonyms Part Numbers: Clear 30850, 30863, 30876(TV), 30882, 31008(TV), 31011, 31950, 31951, 31952, 31953 Gray 30349, 31093, 31094, 31095, 31105, 31118, 31978, 31979, 31980, 31981, 32050, 32051, 32052, 32210, 32211

Recommended use Joining PVC Pipes

Recommended restrictions None known.

Manufacturer/Importer/Supplier/Distributor information

Company Name Oatey Co.

Address 4700 West 160th St.
Cleveland, OH 44135

Telephone 216-267-7100

E-mail info@oatey.com

Transport Emergency Chemtrec 1-800-424-9300 (Outside the US 1-703-527-3887)

Emergency First Aid 1-877-740-5015

Contact person MSDS Coordinator

2. Hazard(s) identification

Physical hazards	Flammable liquids	Category 2
Health hazards	Acute toxicity, oral	Category 4
	Skin corrosion/irritation	Category 2
	Serious eye damage/eye irritation	Category 2A
	Specific target organ toxicity, single exposure	Category 3 respiratory tract irritation
	Specific target organ toxicity, single exposure	Category 3 narcotic effects
	Aspiration hazard	Category 1

OSHA defined hazards Not classified.

Label elements



Signal word Danger

Hazard statement Highly flammable liquid and vapor. Harmful if swallowed. May be fatal if swallowed and enters airways. Causes skin irritation. Causes serious eye irritation. May cause respiratory irritation. May cause drowsiness or dizziness.

Precautionary statement

Prevention Keep away from heat/sparks/open flames/hot surfaces. - No smoking. Use only outdoors or in a well-ventilated area. Keep container tightly closed. Ground/bond container and receiving equipment. Use explosion-proof electrical/ventilating/lighting equipment. Use only non-sparking tools. Take precautionary measures against static discharge. Avoid breathing mist or vapor. Wash thoroughly after handling. Do not eat, drink or smoke when using this product. Wear protective gloves/protective clothing/eye protection/face protection.

Response Rinse mouth. Do NOT induce vomiting. If skin irritation occurs: Get medical advice/attention. If eye irritation persists: Get medical advice/attention. Take off contaminated clothing and wash before reuse. In case of fire: Use appropriate media to extinguish.

Storage Store in a well-ventilated place. Keep container tightly closed. Keep cool. Store locked up.

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

Hazard(s) not otherwise classified (HNOC)

Frequent or prolonged contact may defat and dry the skin, leading to discomfort and dermatitis. May form explosive peroxides. Contains a chemical classified by the US EPA as a suspected possible carcinogen.

Supplemental information

Not applicable.

3. Composition/information on ingredients

Mixtures

Chemical name	CAS number	%
Furan, Tetrahydro-	109-99-9	30-60
2-Propanone	67-64-1	10-30
Cyclohexanone	108-94-1	10-30
Polyvinyl chloride	9002-86-2	10-30
Methyl ethyl ketone	78-93-3	5-10
Colloidal silicon dioxide	112945-52-5	1-5

*Designates that a 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

Take off immediately all contaminated clothing. Wash with plenty of soap and water. If skin irritation occurs: Get medical advice/attention. Take off contaminated clothing and wash before reuse.

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. If eye irritation persists: Get medical advice/attention.

Ingestion

Call a physician or poison control center immediately. Do not induce vomiting. If vomiting occurs, keep head low so that stomach content doesn't get into the lungs. Aspiration may cause pulmonary edema and pneumonitis.

Most important symptoms/effects, acute and delayed

Symptoms may include stinging, tearing, redness, swelling, and blurred vision. Skin irritation. Vapors have a narcotic effect and may cause headache, fatigue, dizziness and nausea. May cause redness and pain.

Indication of immediate medical attention and special treatment needed

Provide general supportive measures and treat symptomatically. Thermal burns: Flush with water immediately. While flushing, remove clothes which do not adhere to affected area. Call an ambulance. Continue flushing during transport to hospital. In case of shortness of breath, give oxygen. Keep victim warm. Keep victim under observation. Symptoms may be delayed.

General information

Take off all contaminated clothing immediately. 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. Wash contaminated clothing before reuse.

5. Fire-fighting measures

Suitable extinguishing media

Alcohol resistant foam. Water fog. Dry chemical powder. Carbon dioxide (CO2).

Unsuitable extinguishing media

Do not use water jet as an extinguisher, as this will spread the fire.

Specific hazards arising from the chemical

Vapors may form explosive mixtures with air. Vapors may travel considerable distance to a source of ignition and flash back. During fire, gases hazardous to health may be formed.

Special protective equipment and precautions for firefighters

Self-contained breathing apparatus and full protective clothing must be worn in case of fire.

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.

Specific methods

Use standard firefighting procedures and consider the hazards of other involved materials.

General fire hazards

Highly flammable liquid and vapor. This product contains tetrahydrofuran that may form explosive organic peroxide when exposed to air or light or with age.

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. Eliminate all ignition sources (no smoking, flares, sparks, or flames in immediate area). Wear appropriate protective equipment and clothing during clean-up. Avoid inhalation of vapors or mists. 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). Take precautionary measures against static discharge. Use only non-sparking tools. Keep combustibles (wood, paper, oil, etc.) away from spilled material.

Large Spills: Stop the flow of material, if this is without risk. Dike the spilled material, where this is possible. Cover with plastic sheet to prevent spreading. Use a non-combustible material like vermiculite, sand or earth to soak up the product and place into a container for later disposal. Use water spray to reduce vapors or divert vapor cloud drift. Prevent entry into waterways, sewer, basements or confined areas. Following product recovery, flush area with water.

Small Spills: Wipe up with absorbent material (e.g. cloth, fleece). Clean surface thoroughly to remove residual contamination.

Never return spills to original containers for re-use. For waste disposal, see section 13 of the SDS.

Environmental precautions

Avoid discharge into drains, water courses or onto the ground.

7. Handling and storage

Precautions for safe handling

Vapors may form explosive mixtures with air. Do not handle, store or open near an open flame, sources of heat or sources of ignition. Protect material from direct sunlight. Take precautionary measures against static discharges. All equipment used when handling the product must be grounded. Use non-sparking tools and explosion-proof equipment. Do not taste or swallow. Avoid breathing mist or vapor. Avoid contact with skin. Avoid contact with eyes. Avoid prolonged exposure. Avoid contact with clothing. Provide adequate ventilation. Wear appropriate personal protective equipment. Observe good industrial hygiene practices. When using, do not eat, drink or smoke. Wash hands thoroughly after handling.

Conditions for safe storage, including any incompatibilities

Store locked up. Keep away from heat, sparks and open flame. Prevent electrostatic charge build-up by using common bonding and grounding techniques. Store in original tightly closed container. Store in a cool, dry place out of direct sunlight. Store in a well-ventilated place. Store away from incompatible materials (see Section 10 of the SDS). Keep in an area equipped with sprinklers.

8. Exposure controls/personal protection

Occupational exposure limits

U.S. - OSHA

Components	Type	Value	Form
Colloidal silicon dioxide (CAS 112945-52-5)	TWA	0.8 mg/m3	Unspecified.
		20 mppcf	Unspecified.

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

Components	Type	Value
Polyvinyl chloride (CAS 9002-86-2)	STEL	5 ppm
	TWA	1 ppm

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

Components	Type	Value	Form
2-Propanone (CAS 67-64-1)	PEL	2400 mg/m3	
		1000 ppm	
Cyclohexanone (CAS 108-94-1)	PEL	200 mg/m3	
		50 ppm	
Furan, Tetrahydro- (CAS 109-99-9)	PEL	590 mg/m3	
		200 ppm	

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

Components	Type	Value	Form
Methyl ethyl ketone (CAS 78-93-3)	PEL	590 mg/m3	
		200 ppm	
Polyvinyl chloride (CAS 9002-86-2)	PEL	5 mg/m3	Respirable fraction.
		15 mg/m3	Total dust.

US. OSHA Table Z-3 (29 CFR 1910.1000)

Components	Type	Value
Colloidal silicon dioxide (CAS 112945-52-5)	TWA	0.8 mg/m3
		20 mppcf

US. ACGIH Threshold Limit Values

Components	Type	Value	Form
2-Propanone (CAS 67-64-1)	STEL	750 ppm	
	TWA	500 ppm	
Cyclohexanone (CAS 108-94-1)	STEL	50 ppm	
	TWA	20 ppm	
Furan, Tetrahydro- (CAS 109-99-9)	STEL	100 ppm	
	TWA	50 ppm	
Methyl ethyl ketone (CAS 78-93-3)	STEL	300 ppm	
	TWA	200 ppm	
Polyvinyl chloride (CAS 9002-86-2)	TWA	1 mg/m3	Respirable fraction.

U.S. - NIOSH

Components	Type	Value	Form
Colloidal silicon dioxide (CAS 112945-52-5)	REL	6 mg/m3	Unspecified.

US. NIOSH: Pocket Guide to Chemical Hazards

Components	Type	Value
2-Propanone (CAS 67-64-1)	TWA	590 mg/m3
		250 ppm
Colloidal silicon dioxide (CAS 112945-52-5)	TWA	6 mg/m3
Cyclohexanone (CAS 108-94-1)	TWA	100 mg/m3
		25 ppm
Furan, Tetrahydro- (CAS 109-99-9)	STEL	735 mg/m3
		250 ppm
	TWA	590 mg/m3
		200 ppm
Methyl ethyl ketone (CAS 78-93-3)	STEL	885 mg/m3
		300 ppm
	TWA	590 mg/m3
		200 ppm

Biological limit values

ACGIH Biological Exposure Indices

Components	Value	Determinant	Specimen	Sampling Time
2-Propanone (CAS 67-64-1)	50 mg/l	Acetone	Urine	*
Cyclohexanone (CAS 108-94-1)	80 mg/l	1,2-Cyclohexanediol, with hydrolysis	Urine	*
	8 mg/l	Cyclohexanol, with hydrolysis	Urine	*
Furan, Tetrahydro- (CAS 109-99-9)	2 mg/l	Tetrahydrofuran	Urine	*
Methyl ethyl ketone (CAS 78-93-3)	2 mg/l	MEK	Urine	*

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

Exposure guidelines

US - California OELs: Skin designation

Cyclohexanone (CAS 108-94-1) Can be absorbed through the skin.

US - Minnesota Haz Subs: Skin designation applies

Cyclohexanone (CAS 108-94-1) Skin designation applies.

US - Tennessee OELs: Skin designation

Cyclohexanone (CAS 108-94-1) Can be absorbed through the skin.

US ACGIH Threshold Limit Values: Skin designation

Cyclohexanone (CAS 108-94-1) Can be absorbed through the skin.
Furan, Tetrahydro- (CAS 109-99-9) Can be absorbed through the skin.

US. NIOSH: Pocket Guide to Chemical Hazards

Cyclohexanone (CAS 108-94-1) Can be absorbed through the skin.

Appropriate engineering controls Explosion-proof general and local exhaust ventilation. 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. Eye wash facilities and emergency shower must be available when handling this product.

Individual protection measures, such as personal protective equipment

Eye/face protection Wear safety glasses with side shields (or goggles).

Skin protection

Hand protection Wear appropriate chemical resistant gloves.

Other Wear appropriate chemical resistant clothing.

Respiratory protection If engineering controls do not maintain airborne concentrations below recommended exposure limits (where applicable) or to an acceptable level (in countries where exposure limits have not been established), an approved respirator must be worn.

Thermal hazards Wear appropriate thermal protective clothing, when necessary.

General hygiene considerations When using, do not eat, drink or smoke. Wash hands after handling and before eating.

9. Physical and chemical properties

Appearance Opaque.or Translucent.

Physical state Liquid.

Form Liquid.

Color Gray or Clear.

Odor Solvent.

Odor threshold Not available.

pH Not available.

Melting point/freezing point Not available.

Initial boiling point and boiling range 151 °F (66.11 °C)

Flash point 14.0 - 23.0 °F (-10.0 - -5.0 °C)

Evaporation rate 5.5 - 8

Flammability (solid, gas)	Not available.
Upper/lower flammability or explosive limits	
Flammability limit - lower (%)	Not available.
Flammability limit - upper (%)	Not available.
Explosive limit - lower (%)	Not available.
Explosive limit - upper (%)	Not available.
Vapor pressure	145 mm Hg @ 20 C
Vapor density	2.5
Relative density	0.88 - 0.92
Solubility(ies)	
Solubility (water)	Negligible
Partition coefficient (n-octanol/water)	Not available.
Auto-ignition temperature	Not available.
Decomposition temperature	Not available.
Viscosity	1200 - 2500 cP
Other information	
Bulk density	7.5 lb/gal
VOC (Weight %)	481 g/l SQACMD Method 304

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	Avoid heat, sparks, open flames and other ignition sources. Avoid temperatures exceeding the flash point. Contact with incompatible materials.
Incompatible materials	Acids. Strong oxidizing agents. Ammonia. Amines. Isocyanates. Caustics.
Hazardous decomposition products	No hazardous decomposition products are known.

11. Toxicological information

Information on likely routes of exposure

Inhalation	May be fatal if swallowed and enters airways. Vapors have a narcotic effect and may cause headache, fatigue, dizziness and nausea. Prolonged inhalation may be harmful. May cause irritation to the respiratory system.
Skin contact	Causes skin irritation.
Eye contact	Causes serious eye irritation.
Ingestion	May be fatal if swallowed and enters airways. Harmful if swallowed.
Symptoms related to the physical, chemical and toxicological characteristics	Symptoms may include stinging, tearing, redness, swelling, and blurred vision. Skin irritation. May cause redness and pain. Symptoms of overexposure may be headache, dizziness, tiredness, nausea and vomiting.

Information on toxicological effects

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

Components	Species	Test Results
Cyclohexanone (CAS 108-94-1)		
Acute		
Dermal		
LD50	Rabbit	948 mg/kg
Inhalation		
LC50	Rat	8000 ppm, 4 hours

Components	Species	Test Results
Oral		
LD50	Rat	1540 mg/kg

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

Skin corrosion/irritation Causes skin irritation.

Serious eye damage/eye irritation Causes serious eye irritation.

Respiratory or skin sensitization

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 Suspected of causing cancer. In 2012 USEPA Integrated Risk Information System (IRIS) reviewed a two species inhalation lifetime study on THF conducted by NTP (1998). Male rats developed renal tumors and female mice developed liver tumors while neither the female rats nor the male mice showed similar results. Because the carcinogenic mechanisms could not be identified clearly in either species for either tumor, the EPA determined that the male rat and female mouse findings are relevant to the assessment of carcinogenic potential in humans. Therefore, the IRIS review concludes that these data in aggregate indicate that there is "suggestive evidence of carcinogenic potential" following exposure to THF by all routes of exposure. This product contains polyvinyl chloride (PVC) that is not a fabricated product, and is therefore, defined and regulated as a toxic and hazardous substance under 29 C.F.R. § 1910.1017 due to the presumed presence of residual vinyl chloride monomer. The concentrations of residual vinyl chloride calculated to be contained in this product are well below the threshold for classification in accordance with 29 C.F.R. § 1910.1200.

IARC Monographs. Overall Evaluation of Carcinogenicity

Colloidal silicon dioxide (CAS 112945-52-5)	3 Not classifiable as to carcinogenicity to humans.
Cyclohexanone (CAS 108-94-1)	3 Not classifiable as to carcinogenicity to humans.
Polyvinyl chloride (CAS 9002-86-2)	3 Not classifiable as to carcinogenicity to humans.

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

Polyvinyl chloride (CAS 9002-86-2)	Cancer

Reproductive toxicity This product is not expected to cause reproductive or developmental effects.

Specific target organ toxicity - single exposure Respiratory tract irritation. Narcotic effects.

Specific target organ toxicity - repeated exposure Not classified.

Aspiration hazard May be fatal if swallowed and enters airways.

Chronic effects Prolonged inhalation may be harmful.

12. Ecological information

Ecotoxicity The product is not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.

Components		Species	Test Results
Cyclohexanone (CAS 108-94-1)			
Aquatic			
Fish	LC50	Fathead minnow (Pimephales promelas)	481 - 578 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)

2-Propanone (CAS 67-64-1)	-0.24
Cyclohexanone (CAS 108-94-1)	0.81
Furan, Tetrahydro- (CAS 109-99-9)	0.46
Methyl ethyl ketone (CAS 78-93-3)	0.29

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 instructions	Collect and reclaim or dispose in sealed containers at licensed waste disposal site. This material and its container must be disposed of as hazardous waste. Do not allow this material to drain into sewers/water supplies. Do not contaminate ponds, waterways or ditches with chemical or used container. Dispose of contents/container in accordance with local/regional/national/international regulations.
Local disposal regulations	Dispose in accordance with all applicable regulations.
Hazardous waste code	The waste code should be assigned in discussion between the user, the producer and the waste disposal company.
Waste from residues / unused products	Dispose of in accordance with local regulations. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe manner (see: Disposal instructions).
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	UN1133
UN proper shipping name	Adhesives
Transport hazard class(es)	
Class	3
Subsidiary risk	-
Label(s)	3
Packing group	II
Special precautions for user	Read safety instructions, SDS and emergency procedures before handling.
Special provisions	T11, TP1, TP8, TP27
Packaging exceptions	150
Packaging non bulk	201
Packaging bulk	243

IATA

UN number	UN1133
UN proper shipping name	Adhesives
Transport hazard class(es)	
Class	3
Subsidiary risk	-
Packing group	II
Environmental hazards	No.
ERG Code	3L
Special precautions for user	Read safety instructions, SDS and emergency procedures before handling.

IMDG

UN number	UN1133
UN proper shipping name	ADHESIVES
Transport hazard class(es)	
Class	3
Subsidiary risk	-
Packing group	II
Environmental hazards	
Marine pollutant	No.
EmS	F-E, S-D
Special precautions for user	Read safety instructions, SDS and emergency procedures before handling.

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

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.

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

Polyvinyl chloride (CAS 9002-86-2)	Cancer Central nervous system Liver Blood Flammability

CERCLA Hazardous Substance List (40 CFR 302.4)

2-Propanone (CAS 67-64-1)	LISTED
Cyclohexanone (CAS 108-94-1)	LISTED
Furan, Tetrahydro- (CAS 109-99-9)	LISTED
Methyl ethyl ketone (CAS 78-93-3)	LISTED

Superfund Amendments and Reauthorization Act of 1986 (SARA)

Hazard categories

Immediate Hazard - Yes
Delayed Hazard - No
Fire Hazard - Yes
Pressure Hazard - No
Reactivity Hazard - No

SARA 302 Extremely hazardous substance

Not listed.

SARA 311/312 Hazardous chemical

No

SARA 313 (TRI reporting)

Not regulated.

Other federal regulations

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)

Not regulated.

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

2-Propanone (CAS 67-64-1)	6532
Methyl ethyl ketone (CAS 78-93-3)	6714

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

2-Propanone (CAS 67-64-1)	35 %WV
Methyl ethyl ketone (CAS 78-93-3)	35 %WV

DEA Exempt Chemical Mixtures Code Number

2-Propanone (CAS 67-64-1)	6532
Methyl ethyl ketone (CAS 78-93-3)	6714

US state regulations

US. Massachusetts RTK - Substance List

2-Propanone (CAS 67-64-1)
Colloidal silicon dioxide (CAS 112945-52-5)
Cyclohexanone (CAS 108-94-1)
Furan, Tetrahydro- (CAS 109-99-9)
Methyl ethyl ketone (CAS 78-93-3)

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

2-Propanone (CAS 67-64-1)
Cyclohexanone (CAS 108-94-1)
Furan, Tetrahydro- (CAS 109-99-9)
Methyl ethyl ketone (CAS 78-93-3)

Polyvinyl chloride (CAS 9002-86-2)

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

2-Propanone (CAS 67-64-1)
Colloidal silicon dioxide (CAS 112945-52-5)
Cyclohexanone (CAS 108-94-1)
Furan, Tetrahydro- (CAS 109-99-9)
Methyl ethyl ketone (CAS 78-93-3)

US. Rhode Island RTK

2-Propanone (CAS 67-64-1)
Cyclohexanone (CAS 108-94-1)
Furan, Tetrahydro- (CAS 109-99-9)
Methyl ethyl ketone (CAS 78-93-3)

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. This product contains trace amounts of chemicals known to the state of California to cause cancer. Under normal use conditions, exposure to these chemicals at levels above the State of California "No significant Risk Level" (NSRL) are unlikely. The use of proper personal protective equipment (PPE) and ventilation guidelines noted in Section 8 will minimize exposure levels to these chemicals.

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
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)	Yes
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 this product complies 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	04-August-2014
Revision date	15-December-2014
Version #	02
HMIS® ratings	Health: 2 Flammability: 3 Physical hazard: 0
Disclaimer	The information in the sheet was written based on the best knowledge and experience currently available.

SAFETY DATA SHEET

1. Identification

Product identifier	**Oatey Clear Cleaner**
Other means of identification	
Product code	1400E
Synonyms	Part Numbers: 30766, 30779, 30782, 30795, 30805, 32216, 32217, 32218, 32219
Recommended use	Cleaning PVC, CPVC or ABS pipe and fittings
Recommended restrictions	None known.

Manufacturer/Importer/Supplier/Distributor information

Company Name	Oatey Inc.
Address	4700 West 160th Street Cleveland, OH 44135
Telephone	216-267-7100
E-mail	info@oatey.com
Transport Emergency	Chemtrec 1-800-424-9300 (Outside the US 1-703-527-3887)
Emergency First Aid	1-877-740-5015
Contact person	MSDS Coordinator

2. Hazard(s) identification

Physical hazards	Flammable liquids	Category 2
Health hazards	Acute toxicity, oral	Category 4
	Skin corrosion/irritation	Category 2
	Serious eye damage/eye irritation	Category 2A
	Specific target organ toxicity, single exposure	Category 3 respiratory tract irritation
	Specific target organ toxicity, single exposure	Category 3 narcotic effects
	Aspiration hazard	Category 1

OSHA defined hazards Not Classified

Label elements



Signal word	Danger
Hazard statement	Highly flammable liquid and vapor. Harmful if swallowed. May be fatal if swallowed and enters airways. Causes skin irritation. Causes serious eye irritation. May cause respiratory irritation. May cause drowsiness or dizziness.
Precautionary statement	
Prevention	Keep away from heat/sparks/open flames/hot surfaces. - No smoking. Keep container tightly closed. Ground/bond container and receiving equipment. Use explosion-proof electrical/ventilating/lighting equipment. Use only non-sparking tools. Take precautionary measures against static discharge. Avoid breathing mist or vapor. Wash thoroughly after handling. Do not eat, drink or smoke when using this product. Use only outdoors or in a well-ventilated area. Wear protective gloves/protective clothing/eye protection/face protection.
Response	If swallowed: Immediately call a poison center/doctor. If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower. If inhaled: Remove person to fresh air and keep comfortable for breathing. If in eyes: Rinse cautiously with water for several minutes.

	Remove contact lenses, if present and easy to do. Continue rinsing. Call a poison center/doctor if you feel unwell. Rinse mouth. Do NOT induce vomiting. If skin irritation occurs: Get medical advice/attention. If eye irritation persists: Get medical advice/attention. Take off contaminated clothing and wash before reuse. In case of fire: Use appropriate media to extinguish.
Storage	Store in a well-ventilated place. Keep container tightly closed. Keep cool. Store locked up.
Disposal	Dispose of contents/container in accordance with local/regional/national/international regulations.
Hazard(s) not otherwise classified (HNOC)	Frequent or prolonged contact may defat and dry the skin, leading to discomfort and dermatitis. May form explosive peroxides.

3. Composition/information on ingredients

Mixtures

Chemical name	CAS number	%
Acetone	67-64-1	75-95
Cyclohexanone	108-94-1	1-5
Methy ethyl ketone	78-93-3	0-5

*Designates that a 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	Take off immediately all contaminated clothing. Wash with plenty of soap and water. If skin irritation occurs: Get medical advice/attention.
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. If eye irritation persists: Get medical advice/attention.
Ingestion	Call a physician or poison control center immediately. Do not induce vomiting. If vomiting occurs, keep head low so that stomach content doesn't get into the lungs. Aspiration may cause pulmonary edema and pneumonitis.
Most important symptoms/effects, acute and delayed	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. Vapors have a narcotic effect and may cause headache, fatigue, dizziness and nausea. Skin irritation. May cause redness and pain.
Indication of immediate medical attention and special treatment Needed	Provide general supportive measures and treat symptomatically. Thermal burns: Flush with water immediately. While flushing, remove clothes which do not adhere to affected area. Call an ambulance. Continue flushing during transport to hospital. In case of shortness of breath, give oxygen. Keep victim warm. Keep victim under observation. Symptoms may be delayed.
General information	Take off all contaminated clothing immediately. Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves. Wash contaminated clothing before reuse.

5. Fire-fighting measures

Suitable extinguishing media	Alcohol resistant foam. Water fog. Dry chemical powder. Carbon dioxide (CO2).
Unsuitable extinguishing media	Do not use water jet as an extinguisher, as this will spread the fire.
Specific hazards arising from the chemical	Vapors may form explosive mixtures with air. Vapors may travel considerable distance to a source of ignition and flash back. During fire, gases hazardous to health may be formed.
Special protective equipment and precautions for firefighters	Self-contained breathing apparatus and full protective clothing must be worn in case of fire.
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.
Specific methods	Use standard firefighting procedures and consider the hazards of other involved materials.
General fire hazards	Highly flammable liquid and vapor. This product contains tetrahydrofuran that may form explosive organic peroxide when exposed to air or light or with age.

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. Eliminate all ignition sources (no smoking, flares, sparks, or flames in immediate area). Wear appropriate protective equipment and clothing during clean-up. Avoid breathing mist

or vapor. 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). Take precautionary measures against static discharge. Use only non-sparking tools. Keep combustibles (wood, paper, oil, etc.) away from spilled material. This product is miscible in water.

Large Spills: Stop the flow of material, if this is without risk. Use water spray to reduce vapors or divert vapor cloud drift. Dike the spilled material, where this is possible. Cover with plastic sheet to prevent spreading. Use a non-combustible material like vermiculite, sand or earth to soak up the product and place into a container for later disposal. Prevent entry into waterways, sewer, basements or confined areas. Following product recovery, flush area with water.

Small Spills: Absorb with earth, sand or other non-combustible material and transfer to containers for later disposal. Wipe up with absorbent material (e.g. cloth, fleece). Clean surface thoroughly to remove residual contamination.

Never return spills to original container for reuse. For waste disposal, see sect. 13 of the SDS.

Environmental precautions

Avoid discharge into drains, water courses or onto the ground.

7. Handling and storage

Precautions for safe handling

Vapors may form explosive mixtures with air. Do not handle, store or open near an open flame, sources of heat or sources of ignition. Protect material from direct sunlight. Explosion-proof general and local exhaust ventilation. Take precautionary measures against static discharges. All equipment used when handling the product must be grounded. Use non-sparking tools and explosion-proof equipment. Avoid breathing mist or vapor. Avoid contact with eyes, skin, and clothing. Avoid prolonged exposure. Do not taste or swallow. When using, do not eat, drink or smoke. Wear appropriate personal protective equipment. Wash hands thoroughly after handling. Observe good industrial hygiene practices.

Conditions for safe storage, including any incompatibilities

Store locked up. Keep away from heat, sparks and open flame. Prevent electrostatic charge build-up by using common bonding and grounding techniques. Store in a cool, dry place out of direct sunlight. Store in original tightly closed container. 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 Specifically Regulated Substances (29 CFR 1910.1001-1050)

Components	Type	Value	FORM
Acetone (CAS 67-64-1)	PEL	2400 mg/m3	
		1000 ppm	
Cyclohexanone (CAS 108-94-1)	PEL	200 mg/m3	
		50 ppm	
Methyl ethyl ketone (CAS 78-93-3)	PEL	590 mg/m3	
		200 pp,	

US. ACGIH Threshold Limit Values

Components	Type	Value	FORM
Acetone (CAS 67-64-1)	STEL	750 ppm	
	TWA	500 ppm	
Cyclohexanone (CAS 108-94-1)	STEL	50 ppm	
Methyl ethyl ketone (CAS 78-93-3)	STEL	300 ppm	
	TWA	200 ppm	

US. NIOSH: Pocket Guide to Chemical Hazards

Components	Type	Value

Acetone (CAS 67-64-1)	TWA	590 mg/m3 250 ppm
Cyclohexanone (CAS 108-94-1)	TWA	100 mg/m3 25 ppm
Methyl ethyl ketone (CAS 78-93-3)	STEL	885 mg/m3 300 ppm
	TWA	590 mg/m3 200 ppm

Biological limit values

ACGIH Biological Exposure Indices

Components	Value	Determinant	Specimen	Sampling Time
Acetone (CAS 67-64-1)	50 mg/l	Acetone	Urine	*
Cyclohexanone (CAS 108-94-1)	80 mg/l	1,2-Cyclohexanediol, with hydrolysis	Urine	*
	8 mg/l	Cyclohexanol, with hydrolysis		
Methyl ethyl ketone (CAS 78-93-3)	2 mg/l	MEK	Urine	*

*- For sampling details, see the source document.

Exposure guidelines

US - California OELs: Skin designation
Cyclohexanone (CAS 108-94-1) Can be absorbed through the skin.

US - Minnesota Haz Subs: Skin designation applies
Cyclohexanone (CAS 108-94-1) Skin designation applies.

US - Tennessee OELs: Skin designation
Cyclohexanone (CAS 108-94-1) Can be absorbed through the skin.

US ACGIH Threshold Limit Values: Skin designation
Cyclohexanone (CAS 108-94-1) Can be absorbed through the skin.

US. NIOSH: Pocket Guide to Chemical Hazards
Cyclohexanone (CAS 108-94-1) Can be absorbed through the skin.

Appropriate engineering controls Explosion-proof general and local exhaust ventilation. 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. Eye wash facilities and emergency shower must be available when handling this product.

Individual protection measures, such as personal protective equipment

Eye/face protection Face shield is recommended. Wear safety glasses with side shields (or goggles).

Skin protection

Hand Wear appropriate chemical resistant gloves.

Other Wear appropriate chemical resistant clothing.

Respiratory protection If engineering controls do not maintain airborne concentrations below recommended exposure limits (where applicable) or to an acceptable level (in countries where exposure limits have not been established), an approved respirator must be worn..

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	Liquid
Color	Clear
Odor	Solvent
Odor threshold	Not available.

pH	Not Applicable
Melting point/freezing point	Not available.
Initial boiling point and boiling range	151 °F (66.11 °C)
Flash point	0.0 – 4.0 °F (-18 to -15°C)
Evaporation rate	5.5 – 8
Upper/lower flammability or explosive limits	
Flammability limit – lower (%)	2.0
Flammability limit – upper (%)	13.0
Explosive limit - lower (%)	Not Available
Explosive limit - upper (%)	Not Available
Vapor pressure	145 mmHg @ 20 C
Vapor density	2.5
Relative density	0.82 +/- 0.02
Solubility(ies)	
Solubility (water)	Negligible
Partition coefficient (n-octanol/water)	Not Available
Auto-ignition temperature	Not Available
Decomposition temperature	>150°C (>302°F)
Viscosity	Not Available
Other information	
Bulk Density	6.8 lb/gal
VOC (Weight %)	20g/L SCAQMD 1168/M24

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 reaction	No dangerous reaction known under conditions of normal use.
Conditions to avoid	Avoid heat, sparks, open flames and other ignition sources. Avoid temperatures exceeding the flash point. Contact with incompatible materials.
Incompatible materials	Acids. Strong oxidizing agents. Ammonia. Amines. Isocyanates. Caustics.
Hazardous decomposition products	No hazardous decomposition products are known.

11. Toxicological information

Information on likely routes of exposure

Inhalation	May be fatal if swallowed and enters airways. Headache. Nausea, vomiting. May cause irritation to the respiratory system. Vapors have a narcotic effect and may cause headache, fatigue, dizziness and nausea. Prolonged inhalation may be harmful.
Skin contact	Causes skin irritation.
Eye contact	Causes serious eye irritation.
Ingestion	May be fatal if swallowed and enters airways. Harmful if swallowed. Harmful if swallowed. Droplets of the product aspirated into the lungs through ingestion or vomiting may cause a serious chemical pneumonia.
Symptoms related to the physical, chemical and toxicological characteristics	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. Skin irritation. May cause redness and pain. Symptoms of overexposure may be headache, dizziness, tiredness, nausea and vomiting.

Information on likely routes of exposure
Acute Toxicity

Components	Species	Results
Acetone (CAS 67-64-1)		
Acute		
Dermal		
LD50	Rabbit	20 ml/kg
Inhalation		
LC50	Rat	50 mg/l, 8 hours
Oral		
LD50	Rat	58000 mg/kg

Cyclohexanone (108-94-1)

Acute		
Dermal		
LD50	Rabbit	948 mg/kg
Inhalation		
LC50	Rat	8000 ppm, 4 hours
Oral		
LD50	Rat	1540 mg/kg

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

Skin corrosion/irritation Causes skin irritation.

Serious eye damage/eye irritation Causes serious eye irritation.

Respiratory or skin sensitization

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

IARC Mongraphs. Overall Evaluation of Carcingenicity

Cyclohexanone (CAS 108-94-1)	3 Not classifiable as to carcinogenicity to humans.
Polyvinyl chloride (CAS 9002-86-2)	3 Not classifiable as to carcinogenicity to humans.
Silica, amorphous, fumed (CAS 112945-52-5)	3 Not classifiable as to carcinogenicity to humans.

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

Polyvinyl chloride (CAS 9002-86-2)	Cancer

Reproductive toxicity This product is not expected to cause reproductive or developmental effects.

Specific target organ toxicity

Single exposure Narcotic effects. May cause drowsiness and dizziness. Respiratory tract irritation.

Repeated exposure Not Classified.

Aspiration Hazard May be fatal if swallowed and enters airways.

Chronic effects Prolonged inhalation may be harmful.

Further information None noted.

12. Ecological information

Ecotoxicity The product is not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.

Components	Species	Results
Acetone (CAS 67-64-1)		
Aquatic		
Fish – LC 50	Fathead minnow (Pimephales promelas)	>100 mg/l, 96 hours
Cyclohexanone (108-94-1)		
Aquatic		
Fish – LC 50	Fathead minnow (Pimephales promelas)	481-578 mg/l, 96 hours

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

Bio accumulative potential No data is available.

Partition coefficient n-octanol / water (log Kow)

Acetone (CAS 67-64-1)	-0.24
Cyclohexanone (CAS 108-94-1)	0.81
Methyl ethyl ketone (CAS 78-93-3)	0.29

Mobility in soil Not 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 instructions Collect and reclaim or dispose in sealed containers at licensed waste disposal site. This material and its container must be disposed of as hazardous waste. Do not allow this material to drain

	into sewers/water supplies. Do not contaminate ponds, waterways or ditches with chemical or used container. Dispose of contents/container in accordance with local, regional, national or international regulations.
Local disposal regulations	Dispose in accordance with all applicable regulations.
Hazardous waste code	The waste code should be assigned in discussion between the user, the producer and the waste disposal company.
Waste from residues / unused products	Dispose of in accordance with local regulations. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe manner (see: Disposal instructions).
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. Transportation information

DOT

UN number	UN1993
UN Proper Shipping Name	Flammable liquids, n.o.s. (Acetone RQ = 5128 LBS)
Transport Hazard class(es)	
Class	3
Subsidiary risk	-
Label(s)	3
Packing group	II
Special precautions for user	Read safety instructions, SDS and emergency procedures before handling.
Special provisions	IB2, T7, TP1, TP8, TP28
Packaging exceptions	150
Packaging non bulk	202
Packaging bulk	242

IATA

UN number	UN1993
UN Proper Shipping Name	Flammable liquid, n.o.s. (Acetone, Cyclohexanone)
Transport hazard class(es)	
Class	3
Subsidiary risk	-
Packing group	II
Environmental hazards	No.
ERG Code	3H
Special precautions for user	Read safety instructions, SDS and emergency procedures before handling.

IMDG

UN number	UN1993
UN Proper Shipping Name	Flammable liquid, n.o.s. (Acetone, Cyclohexanone)
Transport hazard class(es)	
Class	3
Subsidiary risk	-
Packing group	II
Environmental hazards	
Marine polluntant	No.
EmS	F-E, S-E
Special precautions for user	Read safety instructions, SDS and emergency procedures before handling.

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

15. Regulatory information

U.S. 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

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)
Not listed.

CERCLA Hazardous Substance List (40 CFR 302.4)

Acetone (CAS 67-64-1)	LISTED
Cyclohexanone (CAS 108-94-1)	LISTED
Methyl ethyl ketone (CAS 78-93-3)	LISTED

Superfund Amendments and Reauthorization Act of 1986 (SARA)

Hazard categories Immediate Hazard - Yes
Delayed Hazard - No
Fire Hazard - Yes
Pressure Hazard - No
Reactivity Hazard – No

SARA 302 Extremely hazardous substance
Not Listed

SARA 311/312 Hazardous chemical
No

SARA 313 (TRI reporting)
Not regulated.

Other federal regulations

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)
Not regulated.

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
Methyl ethyl ketone (CAS 78-93-3)	6714

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

Acetone (CAS 67-64-1)	35 %WV
Methyl ethyl ketone (CAS 78-93-3)	35 %WV

DEA Exempt Chemical Mixtures Code Number

Acetone (CAS 67-64-1)	6532
Methyl ethyl ketone (CAS 78-93-3)	6714

US state regulations

US. Massachusetts RTK - Substance List
Acetone (CAS 67-64-1)
Cyclohexanone (CAS 108-94-1)
Methyl ethyl ketone (CAS 78-93-3)

US. New Jersey Worker and Community Right-to-Know Act
Acetone (CAS 67-64-1)
Cyclohexanone (CAS 108-94-1)
Methyl ethyl ketone (CAS 78-93-3)

US. Pennsylvania Worker and Community Right-to-Know Law
Acetone (CAS 67-64-1)
Cyclohexanone (CAS 108-94-1)
Methyl ethyl ketone (CAS 78-93-3)

US. Rhode Island RTK
Acetone (CAS 67-64-1)
Cyclohexanone (CAS 108-94-1)
Methyl ethyl ketone (CAS 78-93-3)

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.

International Inventories

Country(s) or region	Inventory name	On inventory (yes/no)*
Canada	Domestic Substances List (DSL)	Yes
United States & Puerto Rico	Toxic Substances Control Act (TSCA) Inventory	No

*A "Yes" indicates this product complies 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 05-27-2015

Revision Date -

Version # 01

HMIS Rating
Health: 2
Flammability: 3
Physical Hazards: 0

NFPA ratings



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APPENDIX B CANISTER SAMPLING FIELD DATA SHEET

Environmental Resources Management
520 Broadhollow Rd, Suite 210
Melville, NY 11747
Phone: (631) 756-8900
Fax: (631) 756-8901

Project #:	0501429
Project Name:	Fortive Corporation Monitoring MacBeth
Location:	New Windsor, NY
Project Manager:	Karen Pickering

Sample Location:	Fortive Corporation / Monitoring Former MacBeth	**Collector(s):**	Daniel D'Arcy
Address:	Former MacBeth , New Windsor New York		--
PID Meter Used: (Model, Serial #)		**Building No:**	

SUMMA Canister Record:

SUBSTRUCTURE SOIL GAS		INDOOR AIR (1st Floor)		SUBSTRUCTURE SOIL GAS		INDOOR AIR (1st Floor)	
Sample ID: SG-2-013020		**Sample ID:** AA-2-013020		**Sample ID:** SG-3-013020		**Sample ID:** AA-3-013020	
Canister Serial No.:	A993	Canister Serial No.:	A1050	Canister Serial No.:	A369	Canister Serial No.:	A892
Flow Controller Id No:	MC23	Flow Controller Id No:	FC123	Flow Controller Id No:	FC686	Flow Controller Id No:	FC133
Start Date/Time:	1/30/2020 940	Start Date/Time:	1/30/2020 941	Start Date/Time:	1/30/2020 945	Start Date/Time:	1/30/2020 946
Start Pressure: (inches Hg)	30.5	Start Pressure: (inches Hg)	28	Start Pressure: (inches Hg)	30	Start Pressure: (inches Hg)	32
Stop Date/Time:	1/30/2020 1740	Stop Date/Time:	1/30/2020 1741	Stop Date/Time:	1/30/2020 1745	Stop Date/Time:	1/30/2020 1746
Stop Pressure: (inches Hg)	10.5	Stop Pressure: (inches Hg)	10.5	Stop Pressure: (inches Hg)	9	Stop Pressure: (inches Hg)	11
Other Sampling Information:							
PID Reading (ppm) Room & as purged	0.3/0.2	PID Reading (ppm)	0.3	PID Reading (ppm) Room & as purged	0.2/0.2	PID Reading (ppm)	0.2
Basement or Crawl Space?	N	Story/Level	~~#~~ 1	Basement or Crawl Space?	N	Story/Level	1
Floor Slab Thickness (inches) *[if present]*	unknown ~6	Room	Main	Floor Slab Thickness (inches) *[if present]*	unknown est. 6"	Room	Main
Potential Vapor Entry Points Observed?	No	Indoor Air Temp (°F)	72	Potential Vapor Entry Points Observed?	No	Indoor Air Temp (°F)	72
Ground Surface Condition (Crawl Space Only)	Good	Intake Height Above Floor Level (ft.)	~5.25	Ground Surface Condition (Crawl Space Only)	Good	Intake Height Above Floor Level (ft.)	~5.0
Noticeable Odor?	No	Noticeable Odor?	No	Noticeable Odor?	No	Noticeable Odor?	No
Percent $O_2/CO_2/CH_4$	—	Barometric Pressure (°Hg or mb)	30	Percent $O_2/CO_2/CH_4$	—	Barometric Pressure (°Hg or mb)	30
Duplicate Sample?	N	Duplicate Sample?	N	Duplicate Sample?	N	Duplicate Sample?	N

Comments:

Signature:

APPENDIX C LABORATORY ANALYTICAL DATA (JANUARY 2020)

The results set forth herein are provided by SGS North America Inc.

e-Hardcopy 2.0
Automated Report



Technical Report for

ERM, Inc.

Fortive, New Windsor, NY

0501429

SGS Job Number: JD2616

Sampling Date: 01/30/20

Report to:

ERM, Incorporated
105 Maxess Road Suite 316
Melville, NY 11747-3851
Karen.Pickering@ERM.com

ATTN: Karen Pickering

Total number of pages in report: **316**

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.

Laura Degenhardt
General Manager

Client Service contact: Tammy McCloskey 732-329-0200

Certifications: NJ(12129), NY(10983), CA, CT, FL, IL, IN, KS, KY, LA, MA, MD, ME, MN, NC, OH VAP (CL0056), AK (UST-103), AZ (AZ0786), PA, RI, SC, TX, UT, VA, WV, DoD ELAP (ANAB L2248)

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how we can serve you better at:
EHS.US.CustomerCare@sgs.com

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SGS North America Inc.

Sample Summary

ERM, Inc.

Job No: JD2616

Fortive, New Windsor, NY
Project No: 0501429

Sample Number	Collected Date	Time	By	Received	Matrix Code	Type	Client Sample ID
JD2616-1	01/30/20	17:40	DD	01/31/20	AIR	Soil Vapor Comp.	SG-2-013020
JD2616-2	01/30/20	17:41	DD	01/31/20	AIR	Indoor Air Comp.	AA-2-013020
JD2616-3	01/30/20	17:45	DD	01/31/20	AIR	Soil Vapor Comp.	SG-3-013020
JD2616-4	01/30/20	17:46	DD	01/31/20	AIR	Indoor Air Comp.	AA-3-013020

This report contains results reported as ND = Not detected. The following applies:
Organics ND = Not detected above the MDL

CASE NARRATIVE / CONFORMANCE SUMMARY

Client:	ERM, Inc.	**Job No**	JD2616
Site:	Fortive, New Windsor, NY	**Report Date**	2/13/2020 5:23:36 PM

On 01/31/2020, 4 Sample(s), 0 Trip Blank(s) and 0 Field Blank(s) were received at SGS North America Inc. A SGS North America Inc. Job Number of JD2616 was assigned to the project. Laboratory sample ID, client sample ID and dates of sample collection are detailed in the report's Results Summary Section.

Specified quality control criteria were achieved for this job except as noted below. For more information, please refer to the analytical results and QC summary pages.

Compounds qualified as out of range in the continuing calibration summary report are acceptable as per method requirements when there is a high bias but the sample result is non-detect.

MS Volatiles By Method TO-15

Matrix: AIR **Batch ID:** V3W2806

- All samples were analyzed within the recommended method holding time.
- Sample(s) JD2884-1DUP were used as the QC samples indicated.
- All method blanks for this batch meet method specific criteria.
- RPD(s) for Duplicate for o-Xylene, Xylenes (total) are outside control limits for sample JD2884-1DUP. High RPD due to low concentration of hit

Matrix: AIR **Batch ID:** V3W2807

- All samples were analyzed within the recommended method holding time.
- Sample(s) JD3012-1DUP were used as the QC samples indicated.
- All method blanks for this batch meet method specific criteria.

SGS North America Inc. certifies that data reported for samples received, listed on the associated custody chain or analytical task order, were produced to specifications meeting the Quality System precision, accuracy and completeness objectives except as noted.

Estimated non-standard method measurement uncertainty data is available on request, based on quality control bias and implicit for standard methods. Acceptable uncertainty requires tested parameter quality control data to meet method criteria.

SGS North America Inc. is not responsible for data quality assumptions if partial reports are used and recommends that this report be used in its entirety. Data release is authorized by SGS North America Inc indicated via signature on the report cover

Summary of Hits

Job Number: JD2616
Account: ERM, Inc.
Project: Fortive, New Windsor, NY
Collected: 01/30/20

Lab Sample ID / Analyte	Client Sample ID	Result/ Qual	RL	MDL	Units	Method
JD2616-1	**SG-2-013020**					
Acetone		7.1	0.20	0.11	ppbv	TO-15
Benzene		0.25	0.20	0.012	ppbv	TO-15
Carbon disulfide		0.10 J	0.20	0.024	ppbv	TO-15
Chloroform		0.12 J	0.20	0.020	ppbv	TO-15
Chloromethane		0.13 J	0.20	0.015	ppbv	TO-15
Carbon tetrachloride		0.28	0.040	0.024	ppbv	TO-15
Dichlorodifluoromethane		1.5	0.20	0.017	ppbv	TO-15
Ethanol		5.8	0.50	0.22	ppbv	TO-15
Ethylbenzene		0.43	0.20	0.015	ppbv	TO-15
Ethyl Acetate		0.47	0.20	0.038	ppbv	TO-15
4-Ethyltoluene		0.32	0.20	0.030	ppbv	TO-15
Freon 113		71.7	0.40	0.068	ppbv	TO-15
Heptane		0.27	0.20	0.018	ppbv	TO-15
Hexane		0.26	0.20	0.011	ppbv	TO-15
Isopropyl Alcohol		1.2	0.20	0.065	ppbv	TO-15
Methyl ethyl ketone		0.68	0.20	0.042	ppbv	TO-15
Methyl Isobutyl Ketone		0.24	0.20	0.036	ppbv	TO-15
Styrene		0.15 J	0.20	0.019	ppbv	TO-15
1,1,1-Trichloroethane		44.5	0.40	0.13	ppbv	TO-15
1,2,4-Trimethylbenzene		0.89	0.20	0.033	ppbv	TO-15
1,3,5-Trimethylbenzene		0.24	0.20	0.034	ppbv	TO-15
2,2,4-Trimethylpentane		0.17 J	0.20	0.022	ppbv	TO-15
Tetrachloroethylene		0.080	0.040	0.031	ppbv	TO-15
Toluene		1.6	0.20	0.014	ppbv	TO-15
Trichloroethylene		2.1	0.040	0.019	ppbv	TO-15
Trichlorofluoromethane		3.8	0.10	0.028	ppbv	TO-15
m,p-Xylene		1.8	0.20	0.034	ppbv	TO-15
o-Xylene		0.70	0.20	0.017	ppbv	TO-15
Xylenes (total)		2.5	0.20	0.017	ppbv	TO-15
Acetone		17	0.48	0.26	ug/m3	TO-15
Benzene		0.80	0.64	0.038	ug/m3	TO-15
Carbon disulfide		0.31 J	0.62	0.075	ug/m3	TO-15
Chloroform		0.59 J	0.98	0.098	ug/m3	TO-15
Chloromethane		0.27 J	0.41	0.031	ug/m3	TO-15
Carbon tetrachloride		1.8	0.25	0.15	ug/m3	TO-15
Dichlorodifluoromethane		7.4	0.99	0.084	ug/m3	TO-15
Ethanol		11	0.94	0.41	ug/m3	TO-15
Ethylbenzene		1.9	0.87	0.065	ug/m3	TO-15
Ethyl Acetate		1.7	0.72	0.14	ug/m3	TO-15
4-Ethyltoluene		1.6	0.98	0.15	ug/m3	TO-15
Freon 113		550	3.1	0.52	ug/m3	TO-15
Heptane		1.1	0.82	0.074	ug/m3	TO-15
Hexane		0.92	0.70	0.039	ug/m3	TO-15

Summary of Hits

Job Number: JD2616
Account: ERM, Inc.
Project: Fortive, New Windsor, NY
Collected: 01/30/20

Lab Sample ID / Client Sample ID / Analyte	Result/ Qual	RL	MDL	Units	Method
Isopropyl Alcohol	2.9	0.49	0.16	ug/m3	TO-15
Methyl ethyl ketone	2.0	0.59	0.12	ug/m3	TO-15
Methyl Isobutyl Ketone	0.98	0.82	0.15	ug/m3	TO-15
Styrene	0.64 J	0.85	0.081	ug/m3	TO-15
1,1,1-Trichloroethane	243	2.2	0.71	ug/m3	TO-15
1,2,4-Trimethylbenzene	4.4	0.98	0.16	ug/m3	TO-15
1,3,5-Trimethylbenzene	1.2	0.98	0.17	ug/m3	TO-15
2,2,4-Trimethylpentane	0.79 J	0.93	0.10	ug/m3	TO-15
Tetrachloroethylene	0.54	0.27	0.21	ug/m3	TO-15
Toluene	6.0	0.75	0.053	ug/m3	TO-15
Trichloroethylene	11	0.21	0.10	ug/m3	TO-15
Trichlorofluoromethane	21	0.56	0.16	ug/m3	TO-15
m,p-Xylene	7.8	0.87	0.15	ug/m3	TO-15
o-Xylene	3.0	0.87	0.074	ug/m3	TO-15
Xylenes (total)	11	0.87	0.074	ug/m3	TO-15
JD2616-2 AA-2-013020					
Acetone	2.3	0.16	0.090	ppbv	TO-15
Benzene	0.27	0.16	0.0095	ppbv	TO-15
Chloromethane	0.93	0.16	0.012	ppbv	TO-15
Carbon tetrachloride	0.12	0.032	0.019	ppbv	TO-15
Dichlorodifluoromethane	0.78	0.16	0.013	ppbv	TO-15
Ethanol	4.4	0.40	0.17	ppbv	TO-15
Freon 113	0.10	0.080	0.014	ppbv	TO-15
Hexane	0.45	0.16	0.0085	ppbv	TO-15
Methylene chloride	0.94	0.16	0.012	ppbv	TO-15
Methyl ethyl ketone	0.22	0.16	0.034	ppbv	TO-15
Toluene	0.20	0.16	0.012	ppbv	TO-15
Trichlorofluoromethane	0.89	0.080	0.022	ppbv	TO-15
m,p-Xylene	0.11 J	0.16	0.027	ppbv	TO-15
Xylenes (total)	0.11 J	0.16	0.014	ppbv	TO-15
Acetone	5.5	0.38	0.21	ug/m3	TO-15
Benzene	0.86	0.51	0.030	ug/m3	TO-15
Chloromethane	1.9	0.33	0.025	ug/m3	TO-15
Carbon tetrachloride	0.75	0.20	0.12	ug/m3	TO-15
Dichlorodifluoromethane	3.9	0.79	0.064	ug/m3	TO-15
Ethanol	8.3	0.75	0.32	ug/m3	TO-15
Freon 113	0.77	0.61	0.11	ug/m3	TO-15
Hexane	1.6	0.56	0.030	ug/m3	TO-15
Methylene chloride	3.3	0.56	0.042	ug/m3	TO-15
Methyl ethyl ketone	0.65	0.47	0.10	ug/m3	TO-15
Toluene	0.75	0.60	0.045	ug/m3	TO-15
Trichlorofluoromethane	5.0	0.45	0.12	ug/m3	TO-15
m,p-Xylene	0.48 J	0.69	0.12	ug/m3	TO-15

Summary of Hits

Job Number: JD2616
Account: ERM, Inc.
Project: Fortive, New Windsor, NY
Collected: 01/30/20

Lab Sample ID / Analyte	Client Sample ID	Result/ Qual	RL	MDL	Units	Method
Xylenes (total)		0.48 J	0.69	0.061	ug/m3	TO-15
JD2616-3	**SG-3-013020**					
Acetone		3.0	0.20	0.11	ppbv	TO-15
Carbon disulfide		0.17 J	0.20	0.024	ppbv	TO-15
Dichlorodifluoromethane		9.9	0.20	0.017	ppbv	TO-15
Ethanol		0.94	0.50	0.22	ppbv	TO-15
Ethylbenzene		0.14 J	0.20	0.015	ppbv	TO-15
Ethyl Acetate		0.61	0.20	0.038	ppbv	TO-15
Freon 113		6.7	0.10	0.017	ppbv	TO-15
Hexane		0.10 J	0.20	0.011	ppbv	TO-15
Isopropyl Alcohol		1.2	0.20	0.065	ppbv	TO-15
Methyl ethyl ketone		0.28	0.20	0.042	ppbv	TO-15
1,1,1-Trichloroethane		12.2	0.10	0.033	ppbv	TO-15
1,2,4-Trimethylbenzene		0.41	0.20	0.033	ppbv	TO-15
Tetrachloroethylene		64.2	0.16	0.12	ppbv	TO-15
Toluene		0.46	0.20	0.014	ppbv	TO-15
Trichloroethylene		0.12	0.040	0.019	ppbv	TO-15
Trichlorofluoromethane		3.4	0.10	0.028	ppbv	TO-15
Vinyl Acetate		0.41	0.20	0.034	ppbv	TO-15
m,p-Xylene		0.50	0.20	0.034	ppbv	TO-15
o-Xylene		0.19 J	0.20	0.017	ppbv	TO-15
Xylenes (total)		0.70	0.20	0.017	ppbv	TO-15
Acetone		7.1	0.48	0.26	ug/m3	TO-15
Carbon disulfide		0.53 J	0.62	0.075	ug/m3	TO-15
Dichlorodifluoromethane		49	0.99	0.084	ug/m3	TO-15
Ethanol		1.8	0.94	0.41	ug/m3	TO-15
Ethylbenzene		0.61 J	0.87	0.065	ug/m3	TO-15
Ethyl Acetate		2.2	0.72	0.14	ug/m3	TO-15
Freon 113		51	0.77	0.13	ug/m3	TO-15
Hexane		0.35 J	0.70	0.039	ug/m3	TO-15
Isopropyl Alcohol		2.9	0.49	0.16	ug/m3	TO-15
Methyl ethyl ketone		0.83	0.59	0.12	ug/m3	TO-15
1,1,1-Trichloroethane		66.6	0.55	0.18	ug/m3	TO-15
1,2,4-Trimethylbenzene		2.0	0.98	0.16	ug/m3	TO-15
Tetrachloroethylene		435	1.1	0.81	ug/m3	TO-15
Toluene		1.7	0.75	0.053	ug/m3	TO-15
Trichloroethylene		0.64	0.21	0.10	ug/m3	TO-15
Trichlorofluoromethane		19	0.56	0.16	ug/m3	TO-15
Vinyl Acetate		1.4	0.70	0.12	ug/m3	TO-15
m,p-Xylene		2.2	0.87	0.15	ug/m3	TO-15
o-Xylene		0.83 J	0.87	0.074	ug/m3	TO-15
Xylenes (total)		3.0	0.87	0.074	ug/m3	TO-15

Summary of Hits

Job Number: JD2616
Account: ERM, Inc.
Project: Fortive, New Windsor, NY
Collected: 01/30/20

Lab Sample ID / Analyte	Client Sample ID	Result/ Qual	RL	MDL	Units	Method
JD2616-4	**AA-3-013020**					
Acetone		4.6	0.16	0.090	ppbv	TO-15
Benzene		0.43	0.16	0.0095	ppbv	TO-15
Chloromethane		0.63	0.16	0.012	ppbv	TO-15
Cyclohexane		0.11 J	0.16	0.018	ppbv	TO-15
Dichlorodifluoromethane		0.49	0.16	0.013	ppbv	TO-15
Ethanol		8.2	0.40	0.17	ppbv	TO-15
Ethylbenzene		0.19	0.16	0.012	ppbv	TO-15
Ethyl Acetate		0.80	0.16	0.030	ppbv	TO-15
4-Ethyltoluene		0.18	0.16	0.024	ppbv	TO-15
Heptane		0.20	0.16	0.014	ppbv	TO-15
Hexane		0.20	0.16	0.0085	ppbv	TO-15
Isopropyl Alcohol		2.1	0.16	0.052	ppbv	TO-15
Methylene chloride		0.24	0.16	0.012	ppbv	TO-15
Methyl ethyl ketone		0.54	0.16	0.034	ppbv	TO-15
Methyl Isobutyl Ketone		1.6	0.16	0.029	ppbv	TO-15
1,2,4-Trimethylbenzene		0.64	0.16	0.026	ppbv	TO-15
1,3,5-Trimethylbenzene		0.21	0.16	0.027	ppbv	TO-15
2,2,4-Trimethylpentane		0.092 J	0.16	0.017	ppbv	TO-15
Tertiary Butyl Alcohol		0.13 J	0.16	0.011	ppbv	TO-15
Tetrachloroethylene		0.031 J	0.032	0.025	ppbv	TO-15
Toluene		3.0	0.16	0.012	ppbv	TO-15
Trichlorofluoromethane		0.35	0.080	0.022	ppbv	TO-15
Vinyl Acetate		0.26	0.16	0.027	ppbv	TO-15
m,p-Xylene		0.66	0.16	0.027	ppbv	TO-15
o-Xylene		0.26	0.16	0.014	ppbv	TO-15
Xylenes (total)		0.92	0.16	0.014	ppbv	TO-15
Acetone		11	0.38	0.21	ug/m3	TO-15
Benzene		1.4	0.51	0.030	ug/m3	TO-15
Chloromethane		1.3	0.33	0.025	ug/m3	TO-15
Cyclohexane		0.38 J	0.55	0.062	ug/m3	TO-15
Dichlorodifluoromethane		2.4	0.79	0.064	ug/m3	TO-15
Ethanol		15	0.75	0.32	ug/m3	TO-15
Ethylbenzene		0.83	0.69	0.052	ug/m3	TO-15
Ethyl Acetate		2.9	0.58	0.11	ug/m3	TO-15
4-Ethyltoluene		0.88	0.79	0.12	ug/m3	TO-15
Heptane		0.82	0.66	0.057	ug/m3	TO-15
Hexane		0.70	0.56	0.030	ug/m3	TO-15
Isopropyl Alcohol		5.2	0.39	0.13	ug/m3	TO-15
Methylene chloride		0.83	0.56	0.042	ug/m3	TO-15
Methyl ethyl ketone		1.6	0.47	0.10	ug/m3	TO-15
Methyl Isobutyl Ketone		6.6	0.66	0.12	ug/m3	TO-15
1,2,4-Trimethylbenzene		3.1	0.79	0.13	ug/m3	TO-15
1,3,5-Trimethylbenzene		1.0	0.79	0.13	ug/m3	TO-15

Summary of Hits

Job Number: JD2616
Account: ERM, Inc.
Project: Fortive, New Windsor, NY
Collected: 01/30/20

Lab Sample ID / Analyte	Client Sample ID	Result/ Qual	RL	MDL	Units	Method
2,2,4-Trimethylpentane		0.43 J	0.75	0.079	ug/m3	TO-15
Tertiary Butyl Alcohol		0.39 J	0.49	0.033	ug/m3	TO-15
Tetrachloroethylene		0.21 J	0.22	0.17	ug/m3	TO-15
Toluene		11	0.60	0.045	ug/m3	TO-15
Trichlorofluoromethane		2.0	0.45	0.12	ug/m3	TO-15
Vinyl Acetate		0.91	0.56	0.095	ug/m3	TO-15
m,p-Xylene		2.9	0.69	0.12	ug/m3	TO-15
o-Xylene		1.1	0.69	0.061	ug/m3	TO-15
Xylenes (total)		4.0	0.69	0.061	ug/m3	TO-15

Sample Results

Report of Analysis

SGS North America Inc.

Report of Analysis

Client Sample ID: SG-2-013020
Lab Sample ID: JD2616-1
Matrix: AIR - Soil Vapor Comp. Summa ID: A993
Method: TO-15
Project: Fortive, New Windsor, NY

Date Sampled: 01/30/20
Date Received: 01/31/20
Percent Solids: n/a

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	3W71611.D	1.58	02/12/20 01:43	DFT	n/a	n/a	V3W2806
Run #2	3W71625.D	1.58	02/12/20 15:14	DFT	n/a	n/a	V3W2807

	Initial Volume
Run #1	632 ml
Run #2	158 ml

VOA TO15 List

CAS No.	MW	Compound	Result	RL	MDL	Units	Q	Result	RL	MDL	Units
67-64-1	58.08	Acetone	7.1	0.20	0.11	ppbv		17	0.48	0.26	ug/m3
106-99-0	54.09	1,3-Butadiene	ND	0.20	0.046	ppbv		ND	0.44	0.10	ug/m3
71-43-2	78.11	Benzene	0.25	0.20	0.012	ppbv		0.80	0.64	0.038	ug/m3
75-27-4	163.8	Bromodichloromethane	ND	0.10	0.027	ppbv		ND	0.67	0.18	ug/m3
75-25-2	252.8	Bromoform	ND	0.040	0.037	ppbv		ND	0.41	0.38	ug/m3
74-83-9	94.94	Bromomethane	ND	0.20	0.022	ppbv		ND	0.78	0.085	ug/m3
593-60-2	106.9	Bromoethene	ND	0.20	0.022	ppbv		ND	0.87	0.096	ug/m3
100-44-7	126	Benzyl Chloride	ND	0.20	0.057	ppbv		ND	1.0	0.29	ug/m3
75-15-0	76.14	Carbon disulfide	0.10	0.20	0.024	ppbv	J	0.31	0.62	0.075	ug/m3
108-90-7	112.6	Chlorobenzene	ND	0.20	0.026	ppbv		ND	0.92	0.12	ug/m3
75-00-3	64.52	Chloroethane	ND	0.20	0.048	ppbv		ND	0.53	0.13	ug/m3
67-66-3	119.4	Chloroform	0.12	0.20	0.020	ppbv	J	0.59	0.98	0.098	ug/m3
74-87-3	50.49	Chloromethane	0.13	0.20	0.015	ppbv	J	0.27	0.41	0.031	ug/m3
107-05-1	76.53	3-Chloropropene	ND	0.20	0.040	ppbv		ND	0.63	0.13	ug/m3
95-49-8	126.6	2-Chlorotoluene	ND	0.20	0.025	ppbv		ND	1.0	0.13	ug/m3
56-23-5	153.8	Carbon tetrachloride	0.28	0.040	0.024	ppbv		1.8	0.25	0.15	ug/m3
110-82-7	84.16	Cyclohexane	ND	0.20	0.022	ppbv		ND	0.69	0.076	ug/m3
75-34-3	98.96	1,1-Dichloroethane	ND	0.20	0.012	ppbv		ND	0.81	0.049	ug/m3
75-35-4	96.94	1,1-Dichloroethylene	ND	0.040	0.017	ppbv		ND	0.16	0.067	ug/m3
106-93-4	187.9	1,2-Dibromoethane	ND	0.10	0.018	ppbv		ND	0.77	0.14	ug/m3
107-06-2	98.96	1,2-Dichloroethane	ND	0.20	0.021	ppbv		ND	0.81	0.085	ug/m3
78-87-5	113	1,2-Dichloropropane	ND	0.20	0.019	ppbv		ND	0.92	0.088	ug/m3
123-91-1	88.12	1,4-Dioxane	ND	0.20	0.052	ppbv		ND	0.72	0.19	ug/m3
75-71-8	120.9	Dichlorodifluoromethane	1.5	0.20	0.017	ppbv		7.4	0.99	0.084	ug/m3
124-48-1	208.3	Dibromochloromethane	ND	0.10	0.033	ppbv		ND	0.85	0.28	ug/m3
156-60-5	96.94	trans-1,2-Dichloroethylene	ND	0.20	0.0073	ppbv		ND	0.79	0.029	ug/m3
156-59-2	96.94	cis-1,2-Dichloroethylene	ND	0.040	0.012	ppbv		ND	0.16	0.048	ug/m3
10061-01-5	111	cis-1,3-Dichloropropene	ND	0.20	0.020	ppbv		ND	0.91	0.091	ug/m3
541-73-1	147	m-Dichlorobenzene	ND	0.10	0.019	ppbv		ND	0.60	0.11	ug/m3
95-50-1	147	o-Dichlorobenzene	ND	0.040	0.022	ppbv		ND	0.24	0.13	ug/m3
106-46-7	147	p-Dichlorobenzene	ND	0.10	0.018	ppbv		ND	0.60	0.11	ug/m3
10061-02-6	111	trans-1,3-Dichloropropene	ND	0.20	0.020	ppbv		ND	0.91	0.091	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-2-013020
Lab Sample ID: JD2616-1
Matrix: AIR - Soil Vapor Comp. Summa ID: A993
Method: TO-15
Project: Fortive, New Windsor, NY

Date Sampled: 01/30/20
Date Received: 01/31/20
Percent Solids: n/a

VOA TO15 List

CAS No.	MW	Compound	Result	RL	MDL	Units	Q	Result	RL	MDL	Units
64-17-5	46.07	Ethanol	5.8	0.50	0.22	ppbv		11	0.94	0.41	ug/m3
100-41-4	106.2	Ethylbenzene	0.43	0.20	0.015	ppbv		1.9	0.87	0.065	ug/m3
141-78-6	88	Ethyl Acetate	0.47	0.20	0.038	ppbv		1.7	0.72	0.14	ug/m3
622-96-8	120.2	4-Ethyltoluene	0.32	0.20	0.030	ppbv		1.6	0.98	0.15	ug/m3
76-13-1	187.4	Freon 113	71.7 [a]	0.40	0.068	ppbv		550 [a]	3.1	0.52	ug/m3
76-14-2	170.9	Freon 114	ND	0.10	0.019	ppbv		ND	0.70	0.13	ug/m3
142-82-5	100.2	Heptane	0.27	0.20	0.018	ppbv		1.1	0.82	0.074	ug/m3
87-68-3	260.8	Hexachlorobutadiene	ND	0.090	0.046	ppbv		ND	0.96	0.49	ug/m3
110-54-3	86.17	Hexane	0.26	0.20	0.011	ppbv		0.92	0.70	0.039	ug/m3
591-78-6	100	2-Hexanone	ND	0.20	0.036	ppbv		ND	0.82	0.15	ug/m3
67-63-0	60.1	Isopropyl Alcohol	1.2	0.20	0.065	ppbv		2.9	0.49	0.16	ug/m3
75-09-2	84.94	Methylene chloride	ND	0.20	0.015	ppbv		ND	0.69	0.052	ug/m3
78-93-3	72.11	Methyl ethyl ketone	0.68	0.20	0.042	ppbv		2.0	0.59	0.12	ug/m3
108-10-1	100.2	Methyl Isobutyl Ketone	0.24	0.20	0.036	ppbv		0.98	0.82	0.15	ug/m3
1634-04-4	88.15	Methyl Tert Butyl Ether	ND	0.20	0.019	ppbv		ND	0.72	0.069	ug/m3
80-62-6	100.12	Methylmethacrylate	ND	0.20	0.033	ppbv		ND	0.82	0.14	ug/m3
115-07-1	42	Propylene	ND	0.50	0.016	ppbv		ND	0.86	0.027	ug/m3
100-42-5	104.1	Styrene	0.15	0.20	0.019	ppbv	J	0.64	0.85	0.081	ug/m3
71-55-6	133.4	1,1,1-Trichloroethane	44.5 [a]	0.40	0.13	ppbv		243 [a]	2.2	0.71	ug/m3
79-34-5	167.9	1,1,2,2-Tetrachloroethane	ND	0.10	0.027	ppbv		ND	0.69	0.19	ug/m3
79-00-5	133.4	1,1,2-Trichloroethane	ND	0.10	0.030	ppbv		ND	0.55	0.16	ug/m3
120-82-1	181.5	1,2,4-Trichlorobenzene	ND	0.10	0.089	ppbv		ND	0.74	0.66	ug/m3
95-63-6	120.2	1,2,4-Trimethylbenzene	0.89	0.20	0.033	ppbv		4.4	0.98	0.16	ug/m3
108-67-8	120.2	1,3,5-Trimethylbenzene	0.24	0.20	0.034	ppbv		1.2	0.98	0.17	ug/m3
540-84-1	114.2	2,2,4-Trimethylpentane	0.17	0.20	0.022	ppbv	J	0.79	0.93	0.10	ug/m3
75-65-0	74.12	Tertiary Butyl Alcohol	ND	0.20	0.014	ppbv		ND	0.61	0.042	ug/m3
127-18-4	165.8	Tetrachloroethylene	0.080	0.040	0.031	ppbv		0.54	0.27	0.21	ug/m3
109-99-9	72.11	Tetrahydrofuran	ND	0.20	0.050	ppbv		ND	0.59	0.15	ug/m3
108-88-3	92.14	Toluene	1.6	0.20	0.014	ppbv		6.0	0.75	0.053	ug/m3
79-01-6	131.4	Trichloroethylene	2.1	0.040	0.019	ppbv		11	0.21	0.10	ug/m3
75-69-4	137.4	Trichlorofluoromethane	3.8	0.10	0.028	ppbv		21	0.56	0.16	ug/m3
75-01-4	62.5	Vinyl chloride	ND	0.040	0.022	ppbv		ND	0.10	0.056	ug/m3
108-05-4	86	Vinyl Acetate	ND	0.20	0.034	ppbv		ND	0.70	0.12	ug/m3
	106.2	m,p-Xylene	1.8	0.20	0.034	ppbv		7.8	0.87	0.15	ug/m3
95-47-6	106.2	o-Xylene	0.70	0.20	0.017	ppbv		3.0	0.87	0.074	ug/m3
1330-20-7	106.2	Xylenes (total)	2.5	0.20	0.017	ppbv		11	0.87	0.074	ug/m3

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
460-00-4	4-Bromofluorobenzene	84%	90%	65-128%

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-2-013020		
Lab Sample ID:	JD2616-1	**Date Sampled:**	01/30/20
Matrix:	AIR - Soil Vapor Comp. Summa ID: A993	**Date Received:**	01/31/20
Method:	TO-15	**Percent Solids:**	n/a
Project:	Fortive, New Windsor, NY		

VOA TO15 List

CAS No.	MW	Compound	Result	RL	MDL	Units	Q	Result	RL	MDL	Units

(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

SGS North America Inc.

Report of Analysis

Client Sample ID: AA-2-013020
Lab Sample ID: JD2616-2
Matrix: AIR - Indoor Air Comp. Summa ID: A1050
Method: TO-15
Project: Fortive, New Windsor, NY

Date Sampled: 01/30/20
Date Received: 01/31/20
Percent Solids: n/a

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	3W71609.D	1.6	02/11/20 23:47	DFT	n/a	n/a	V3W2806
Run #2							

	Initial Volume
Run #1	800 ml
Run #2	

VOA TO15 List

CAS No.	MW	Compound	Result	RL	MDL	Units	Q	Result	RL	MDL	Units
67-64-1	58.08	Acetone	2.3	0.16	0.090	ppbv		5.5	0.38	0.21	ug/m3
106-99-0	54.09	1,3-Butadiene	ND	0.16	0.037	ppbv		ND	0.35	0.082	ug/m3
71-43-2	78.11	Benzene	0.27	0.16	0.0095	ppbv		0.86	0.51	0.030	ug/m3
75-27-4	163.8	Bromodichloromethane	ND	0.080	0.021	ppbv		ND	0.54	0.14	ug/m3
75-25-2	252.8	Bromoform	ND	0.032	0.030	ppbv		ND	0.33	0.31	ug/m3
74-83-9	94.94	Bromomethane	ND	0.16	0.018	ppbv		ND	0.62	0.070	ug/m3
593-60-2	106.9	Bromoethene	ND	0.16	0.018	ppbv		ND	0.70	0.079	ug/m3
100-44-7	126	Benzyl Chloride	ND	0.16	0.045	ppbv		ND	0.82	0.23	ug/m3
75-15-0	76.14	Carbon disulfide	ND	0.16	0.019	ppbv		ND	0.50	0.059	ug/m3
108-90-7	112.6	Chlorobenzene	ND	0.16	0.021	ppbv		ND	0.74	0.097	ug/m3
75-00-3	64.52	Chloroethane	ND	0.16	0.039	ppbv		ND	0.42	0.10	ug/m3
67-66-3	119.4	Chloroform	ND	0.16	0.016	ppbv		ND	0.78	0.078	ug/m3
74-87-3	50.49	Chloromethane	0.93	0.16	0.012	ppbv		1.9	0.33	0.025	ug/m3
107-05-1	76.53	3-Chloropropene	ND	0.16	0.032	ppbv		ND	0.50	0.10	ug/m3
95-49-8	126.6	2-Chlorotoluene	ND	0.16	0.020	ppbv		ND	0.83	0.10	ug/m3
56-23-5	153.8	Carbon tetrachloride	0.12	0.032	0.019	ppbv		0.75	0.20	0.12	ug/m3
110-82-7	84.16	Cyclohexane	ND	0.16	0.018	ppbv		ND	0.55	0.062	ug/m3
75-34-3	98.96	1,1-Dichloroethane	ND	0.16	0.0093	ppbv		ND	0.65	0.038	ug/m3
75-35-4	96.94	1,1-Dichloroethylene	ND	0.032	0.013	ppbv		ND	0.13	0.052	ug/m3
106-93-4	187.9	1,2-Dibromoethane	ND	0.080	0.014	ppbv		ND	0.61	0.11	ug/m3
107-06-2	98.96	1,2-Dichloroethane	ND	0.16	0.017	ppbv		ND	0.65	0.069	ug/m3
78-87-5	113	1,2-Dichloropropane	ND	0.16	0.015	ppbv		ND	0.74	0.069	ug/m3
123-91-1	88.12	1,4-Dioxane	ND	0.16	0.042	ppbv		ND	0.58	0.15	ug/m3
75-71-8	120.9	Dichlorodifluoromethane	0.78	0.16	0.013	ppbv		3.9	0.79	0.064	ug/m3
124-48-1	208.3	Dibromochloromethane	ND	0.080	0.027	ppbv		ND	0.68	0.23	ug/m3
156-60-5	96.94	trans-1,2-Dichloroethylene	ND	0.16	0.0058	ppbv		ND	0.63	0.023	ug/m3
156-59-2	96.94	cis-1,2-Dichloroethylene	ND	0.032	0.0094	ppbv		ND	0.13	0.037	ug/m3
10061-01-5	111	cis-1,3-Dichloropropene	ND	0.16	0.016	ppbv		ND	0.73	0.073	ug/m3
541-73-1	147	m-Dichlorobenzene	ND	0.080	0.015	ppbv		ND	0.48	0.090	ug/m3
95-50-1	147	o-Dichlorobenzene	ND	0.032	0.017	ppbv		ND	0.19	0.10	ug/m3
106-46-7	147	p-Dichlorobenzene	ND	0.080	0.014	ppbv		ND	0.48	0.084	ug/m3
10061-02-6	111	trans-1,3-Dichloropropene	ND	0.16	0.016	ppbv		ND	0.73	0.073	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: AA-2-013020
Lab Sample ID: JD2616-2
Matrix: AIR - Indoor Air Comp. Summa ID: A1050
Method: TO-15
Project: Fortive, New Windsor, NY

Date Sampled: 01/30/20
Date Received: 01/31/20
Percent Solids: n/a

VOA TO15 List

CAS No.	MW	Compound	Result	RL	MDL	Units	Q	Result	RL	MDL	Units
64-17-5	46.07	Ethanol	4.4	0.40	0.17	ppbv		8.3	0.75	0.32	ug/m3
100-41-4	106.2	Ethylbenzene	ND	0.16	0.012	ppbv		ND	0.69	0.052	ug/m3
141-78-6	88	Ethyl Acetate	ND	0.16	0.030	ppbv		ND	0.58	0.11	ug/m3
622-96-8	120.2	4-Ethyltoluene	ND	0.16	0.024	ppbv		ND	0.79	0.12	ug/m3
76-13-1	187.4	Freon 113	0.10	0.080	0.014	ppbv		0.77	0.61	0.11	ug/m3
76-14-2	170.9	Freon 114	ND	0.080	0.015	ppbv		ND	0.56	0.10	ug/m3
142-82-5	100.2	Heptane	ND	0.16	0.014	ppbv		ND	0.66	0.057	ug/m3
87-68-3	260.8	Hexachlorobutadiene	ND	0.072	0.036	ppbv		ND	0.77	0.38	ug/m3
110-54-3	86.17	Hexane	0.45	0.16	0.0085	ppbv		1.6	0.56	0.030	ug/m3
591-78-6	100	2-Hexanone	ND	0.16	0.029	ppbv		ND	0.65	0.12	ug/m3
67-63-0	60.1	Isopropyl Alcohol	ND	0.16	0.052	ppbv		ND	0.39	0.13	ug/m3
75-09-2	84.94	Methylene chloride	0.94	0.16	0.012	ppbv		3.3	0.56	0.042	ug/m3
78-93-3	72.11	Methyl ethyl ketone	0.22	0.16	0.034	ppbv		0.65	0.47	0.10	ug/m3
108-10-1	100.2	Methyl Isobutyl Ketone	ND	0.16	0.029	ppbv		ND	0.66	0.12	ug/m3
1634-04-4	88.15	Methyl Tert Butyl Ether	ND	0.16	0.015	ppbv		ND	0.58	0.054	ug/m3
80-62-6	100.12	Methylmethacrylate	ND	0.16	0.026	ppbv		ND	0.66	0.11	ug/m3
115-07-1	42	Propylene	ND	0.40	0.013	ppbv		ND	0.69	0.022	ug/m3
100-42-5	104.1	Styrene	ND	0.16	0.015	ppbv		ND	0.68	0.064	ug/m3
71-55-6	133.4	1,1,1-Trichloroethane	ND	0.080	0.027	ppbv		ND	0.44	0.15	ug/m3
79-34-5	167.9	1,1,2,2-Tetrachloroethane	ND	0.080	0.022	ppbv		ND	0.55	0.15	ug/m3
79-00-5	133.4	1,1,2-Trichloroethane	ND	0.080	0.024	ppbv		ND	0.44	0.13	ug/m3
120-82-1	181.5	1,2,4-Trichlorobenzene	ND	0.080	0.071	ppbv		ND	0.59	0.53	ug/m3
95-63-6	120.2	1,2,4-Trimethylbenzene	ND	0.16	0.026	ppbv		ND	0.79	0.13	ug/m3
108-67-8	120.2	1,3,5-Trimethylbenzene	ND	0.16	0.027	ppbv		ND	0.79	0.13	ug/m3
540-84-1	114.2	2,2,4-Trimethylpentane	ND	0.16	0.017	ppbv		ND	0.75	0.079	ug/m3
75-65-0	74.12	Tertiary Butyl Alcohol	ND	0.16	0.011	ppbv		ND	0.49	0.033	ug/m3
127-18-4	165.8	Tetrachloroethylene	ND	0.032	0.025	ppbv		ND	0.22	0.17	ug/m3
109-99-9	72.11	Tetrahydrofuran	ND	0.16	0.040	ppbv		ND	0.47	0.12	ug/m3
108-88-3	92.14	Toluene	0.20	0.16	0.012	ppbv		0.75	0.60	0.045	ug/m3
79-01-6	131.4	Trichloroethylene	ND	0.032	0.015	ppbv		ND	0.17	0.081	ug/m3
75-69-4	137.4	Trichlorofluoromethane	0.89	0.080	0.022	ppbv		5.0	0.45	0.12	ug/m3
75-01-4	62.5	Vinyl chloride	ND	0.032	0.018	ppbv		ND	0.082	0.046	ug/m3
108-05-4	86	Vinyl Acetate	ND	0.16	0.027	ppbv		ND	0.56	0.095	ug/m3
	106.2	m,p-Xylene	0.11	0.16	0.027	ppbv	J	0.48	0.69	0.12	ug/m3
95-47-6	106.2	o-Xylene	ND	0.16	0.014	ppbv		ND	0.69	0.061	ug/m3
1330-20-7	106.2	Xylenes (total)	0.11	0.16	0.014	ppbv	J	0.48	0.69	0.061	ug/m3

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
460-00-4	4-Bromofluorobenzene	87%		65-128%

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

SGS North America Inc.

Report of Analysis

Client Sample ID: SG-3-013020
Lab Sample ID: JD2616-3
Matrix: AIR - Soil Vapor Comp. Summa ID: A369
Method: TO-15
Project: Fortive, New Windsor, NY

Date Sampled: 01/30/20
Date Received: 01/31/20
Percent Solids: n/a

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	3W71612.D	1.52	02/12/20 02:39	DFT	n/a	n/a	V3W2806
Run #2	3W71626.D	1.52	02/12/20 16:04	DFT	n/a	n/a	V3W2807

	Initial Volume
Run #1	608 ml
Run #2	152 ml

VOA TO15 List

CAS No.	MW	Compound	Result	RL	MDL	Units	Q	Result	RL	MDL	Units
67-64-1	58.08	Acetone	3.0	0.20	0.11	ppbv		7.1	0.48	0.26	ug/m3
106-99-0	54.09	1,3-Butadiene	ND	0.20	0.046	ppbv		ND	0.44	0.10	ug/m3
71-43-2	78.11	Benzene	ND	0.20	0.012	ppbv		ND	0.64	0.038	ug/m3
75-27-4	163.8	Bromodichloromethane	ND	0.10	0.027	ppbv		ND	0.67	0.18	ug/m3
75-25-2	252.8	Bromoform	ND	0.040	0.037	ppbv		ND	0.41	0.38	ug/m3
74-83-9	94.94	Bromomethane	ND	0.20	0.022	ppbv		ND	0.78	0.085	ug/m3
593-60-2	106.9	Bromoethene	ND	0.20	0.022	ppbv		ND	0.87	0.096	ug/m3
100-44-7	126	Benzyl Chloride	ND	0.20	0.057	ppbv		ND	1.0	0.29	ug/m3
75-15-0	76.14	Carbon disulfide	0.17	0.20	0.024	ppbv	J	0.53	0.62	0.075	ug/m3
108-90-7	112.6	Chlorobenzene	ND	0.20	0.026	ppbv		ND	0.92	0.12	ug/m3
75-00-3	64.52	Chloroethane	ND	0.20	0.048	ppbv		ND	0.53	0.13	ug/m3
67-66-3	119.4	Chloroform	ND	0.20	0.020	ppbv		ND	0.98	0.098	ug/m3
74-87-3	50.49	Chloromethane	ND	0.20	0.015	ppbv		ND	0.41	0.031	ug/m3
107-05-1	76.53	3-Chloropropene	ND	0.20	0.040	ppbv		ND	0.63	0.13	ug/m3
95-49-8	126.6	2-Chlorotoluene	ND	0.20	0.025	ppbv		ND	1.0	0.13	ug/m3
56-23-5	153.8	Carbon tetrachloride	ND	0.040	0.024	ppbv		ND	0.25	0.15	ug/m3
110-82-7	84.16	Cyclohexane	ND	0.20	0.022	ppbv		ND	0.69	0.076	ug/m3
75-34-3	98.96	1,1-Dichloroethane	ND	0.20	0.012	ppbv		ND	0.81	0.049	ug/m3
75-35-4	96.94	1,1-Dichloroethylene	ND	0.040	0.017	ppbv		ND	0.16	0.067	ug/m3
106-93-4	187.9	1,2-Dibromoethane	ND	0.10	0.018	ppbv		ND	0.77	0.14	ug/m3
107-06-2	98.96	1,2-Dichloroethane	ND	0.20	0.021	ppbv		ND	0.81	0.085	ug/m3
78-87-5	113	1,2-Dichloropropane	ND	0.20	0.019	ppbv		ND	0.92	0.088	ug/m3
123-91-1	88.12	1,4-Dioxane	ND	0.20	0.052	ppbv		ND	0.72	0.19	ug/m3
75-71-8	120.9	Dichlorodifluoromethane	9.9	0.20	0.017	ppbv		49	0.99	0.084	ug/m3
124-48-1	208.3	Dibromochloromethane	ND	0.10	0.033	ppbv		ND	0.85	0.28	ug/m3
156-60-5	96.94	trans-1,2-Dichloroethylene	ND	0.20	0.0073	ppbv		ND	0.79	0.029	ug/m3
156-59-2	96.94	cis-1,2-Dichloroethylene	ND	0.040	0.012	ppbv		ND	0.16	0.048	ug/m3
10061-01-5	111	cis-1,3-Dichloropropene	ND	0.20	0.020	ppbv		ND	0.91	0.091	ug/m3
541-73-1	147	m-Dichlorobenzene	ND	0.10	0.019	ppbv		ND	0.60	0.11	ug/m3
95-50-1	147	o-Dichlorobenzene	ND	0.040	0.022	ppbv		ND	0.24	0.13	ug/m3
106-46-7	147	p-Dichlorobenzene	ND	0.10	0.018	ppbv		ND	0.60	0.11	ug/m3
10061-02-6	111	trans-1,3-Dichloropropene	ND	0.20	0.020	ppbv		ND	0.91	0.091	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-3-013020
Lab Sample ID: JD2616-3
Matrix: AIR - Soil Vapor Comp. Summa ID: A369
Method: TO-15
Project: Fortive, New Windsor, NY

Date Sampled: 01/30/20
Date Received: 01/31/20
Percent Solids: n/a

VOA TO15 List

CAS No.	MW	Compound	Result	RL	MDL	Units	Q	Result	RL	MDL	Units
64-17-5	46.07	Ethanol	0.94	0.50	0.22	ppbv		1.8	0.94	0.41	ug/m3
100-41-4	106.2	Ethylbenzene	0.14	0.20	0.015	ppbv	J	0.61	0.87	0.065	ug/m3
141-78-6	88	Ethyl Acetate	0.61	0.20	0.038	ppbv		2.2	0.72	0.14	ug/m3
622-96-8	120.2	4-Ethyltoluene	ND	0.20	0.030	ppbv		ND	0.98	0.15	ug/m3
76-13-1	187.4	Freon 113	6.7	0.10	0.017	ppbv		51	0.77	0.13	ug/m3
76-14-2	170.9	Freon 114	ND	0.10	0.019	ppbv		ND	0.70	0.13	ug/m3
142-82-5	100.2	Heptane	ND	0.20	0.018	ppbv		ND	0.82	0.074	ug/m3
87-68-3	260.8	Hexachlorobutadiene	ND	0.090	0.046	ppbv		ND	0.96	0.49	ug/m3
110-54-3	86.17	Hexane	0.10	0.20	0.011	ppbv	J	0.35	0.70	0.039	ug/m3
591-78-6	100	2-Hexanone	ND	0.20	0.036	ppbv		ND	0.82	0.15	ug/m3
67-63-0	60.1	Isopropyl Alcohol	1.2	0.20	0.065	ppbv		2.9	0.49	0.16	ug/m3
75-09-2	84.94	Methylene chloride	ND	0.20	0.015	ppbv		ND	0.69	0.052	ug/m3
78-93-3	72.11	Methyl ethyl ketone	0.28	0.20	0.042	ppbv		0.83	0.59	0.12	ug/m3
108-10-1	100.2	Methyl Isobutyl Ketone	ND	0.20	0.036	ppbv		ND	0.82	0.15	ug/m3
1634-04-4	88.15	Methyl Tert Butyl Ether	ND	0.20	0.019	ppbv		ND	0.72	0.069	ug/m3
80-62-6	100.12	Methylmethacrylate	ND	0.20	0.033	ppbv		ND	0.82	0.14	ug/m3
115-07-1	42	Propylene	ND	0.50	0.016	ppbv		ND	0.86	0.027	ug/m3
100-42-5	104.1	Styrene	ND	0.20	0.019	ppbv		ND	0.85	0.081	ug/m3
71-55-6	133.4	1,1,1-Trichloroethane	12.2	0.10	0.033	ppbv		66.6	0.55	0.18	ug/m3
79-34-5	167.9	1,1,2,2-Tetrachloroethane	ND	0.10	0.027	ppbv		ND	0.69	0.19	ug/m3
79-00-5	133.4	1,1,2-Trichloroethane	ND	0.10	0.030	ppbv		ND	0.55	0.16	ug/m3
120-82-1	181.5	1,2,4-Trichlorobenzene	ND	0.10	0.089	ppbv		ND	0.74	0.66	ug/m3
95-63-6	120.2	1,2,4-Trimethylbenzene	0.41	0.20	0.033	ppbv		2.0	0.98	0.16	ug/m3
108-67-8	120.2	1,3,5-Trimethylbenzene	ND	0.20	0.034	ppbv		ND	0.98	0.17	ug/m3
540-84-1	114.2	2,2,4-Trimethylpentane	ND	0.20	0.022	ppbv		ND	0.93	0.10	ug/m3
75-65-0	74.12	Tertiary Butyl Alcohol	ND	0.20	0.014	ppbv		ND	0.61	0.042	ug/m3
127-18-4	165.8	Tetrachloroethylene	64.2 [a]	0.16	0.12	ppbv		435 [a]	1.1	0.81	ug/m3
109-99-9	72.11	Tetrahydrofuran	ND	0.20	0.050	ppbv		ND	0.59	0.15	ug/m3
108-88-3	92.14	Toluene	0.46	0.20	0.014	ppbv		1.7	0.75	0.053	ug/m3
79-01-6	131.4	Trichloroethylene	0.12	0.040	0.019	ppbv		0.64	0.21	0.10	ug/m3
75-69-4	137.4	Trichlorofluoromethane	3.4	0.10	0.028	ppbv		19	0.56	0.16	ug/m3
75-01-4	62.5	Vinyl chloride	ND	0.040	0.022	ppbv		ND	0.10	0.056	ug/m3
108-05-4	86	Vinyl Acetate	0.41	0.20	0.034	ppbv		1.4	0.70	0.12	ug/m3
	106.2	m,p-Xylene	0.50	0.20	0.034	ppbv		2.2	0.87	0.15	ug/m3
95-47-6	106.2	o-Xylene	0.19	0.20	0.017	ppbv	J	0.83	0.87	0.074	ug/m3
1330-20-7	106.2	Xylenes (total)	0.70	0.20	0.017	ppbv		3.0	0.87	0.074	ug/m3

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
460-00-4	4-Bromofluorobenzene	95%	94%	65-128%

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-3-013020		
Lab Sample ID:	JD2616-3	**Date Sampled:**	01/30/20
Matrix:	AIR - Soil Vapor Comp. Summa ID: A369	**Date Received:**	01/31/20
Method:	TO-15	**Percent Solids:**	n/a
Project:	Fortive, New Windsor, NY		

VOA TO15 List

CAS No.	MW	Compound	Result	RL	MDL	Units	Q	Result	RL	MDL	Units

(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

SGS North America Inc.

Report of Analysis

Client Sample ID:	AA-3-013020		
Lab Sample ID:	JD2616-4	**Date Sampled:**	01/30/20
Matrix:	AIR - Indoor Air Comp. Summa ID: A892	**Date Received:**	01/31/20
Method:	TO-15	**Percent Solids:**	n/a
Project:	Fortive, New Windsor, NY		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	3W71610.D	1.58	02/12/20 00:46	DFT	n/a	n/a	V3W2806
Run #2							

	Initial Volume
Run #1	790 ml
Run #2	

VOA TO15 List

CAS No.	MW	Compound	Result	RL	MDL	Units	Q	Result	RL	MDL	Units
67-64-1	58.08	Acetone	4.6	0.16	0.090	ppbv		11	0.38	0.21	ug/m3
106-99-0	54.09	1,3-Butadiene	ND	0.16	0.037	ppbv		ND	0.35	0.082	ug/m3
71-43-2	78.11	Benzene	0.43	0.16	0.0095	ppbv		1.4	0.51	0.030	ug/m3
75-27-4	163.8	Bromodichloromethane	ND	0.080	0.021	ppbv		ND	0.54	0.14	ug/m3
75-25-2	252.8	Bromoform	ND	0.032	0.030	ppbv		ND	0.33	0.31	ug/m3
74-83-9	94.94	Bromomethane	ND	0.16	0.018	ppbv		ND	0.62	0.070	ug/m3
593-60-2	106.9	Bromoethene	ND	0.16	0.018	ppbv		ND	0.70	0.079	ug/m3
100-44-7	126	Benzyl Chloride	ND	0.16	0.045	ppbv		ND	0.82	0.23	ug/m3
75-15-0	76.14	Carbon disulfide	ND	0.16	0.019	ppbv		ND	0.50	0.059	ug/m3
108-90-7	112.6	Chlorobenzene	ND	0.16	0.021	ppbv		ND	0.74	0.097	ug/m3
75-00-3	64.52	Chloroethane	ND	0.16	0.039	ppbv		ND	0.42	0.10	ug/m3
67-66-3	119.4	Chloroform	ND	0.16	0.016	ppbv		ND	0.78	0.078	ug/m3
74-87-3	50.49	Chloromethane	0.63	0.16	0.012	ppbv		1.3	0.33	0.025	ug/m3
107-05-1	76.53	3-Chloropropene	ND	0.16	0.032	ppbv		ND	0.50	0.10	ug/m3
95-49-8	126.6	2-Chlorotoluene	ND	0.16	0.020	ppbv		ND	0.83	0.10	ug/m3
56-23-5	153.8	Carbon tetrachloride	ND	0.032	0.019	ppbv		ND	0.20	0.12	ug/m3
110-82-7	84.16	Cyclohexane	0.11	0.16	0.018	ppbv	J	0.38	0.55	0.062	ug/m3
75-34-3	98.96	1,1-Dichloroethane	ND	0.16	0.0093	ppbv		ND	0.65	0.038	ug/m3
75-35-4	96.94	1,1-Dichloroethylene	ND	0.032	0.013	ppbv		ND	0.13	0.052	ug/m3
106-93-4	187.9	1,2-Dibromoethane	ND	0.080	0.014	ppbv		ND	0.61	0.11	ug/m3
107-06-2	98.96	1,2-Dichloroethane	ND	0.16	0.017	ppbv		ND	0.65	0.069	ug/m3
78-87-5	113	1,2-Dichloropropane	ND	0.16	0.015	ppbv		ND	0.74	0.069	ug/m3
123-91-1	88.12	1,4-Dioxane	ND	0.16	0.042	ppbv		ND	0.58	0.15	ug/m3
75-71-8	120.9	Dichlorodifluoromethane	0.49	0.16	0.013	ppbv		2.4	0.79	0.064	ug/m3
124-48-1	208.3	Dibromochloromethane	ND	0.080	0.027	ppbv		ND	0.68	0.23	ug/m3
156-60-5	96.94	trans-1,2-Dichloroethylene	ND	0.16	0.0058	ppbv		ND	0.63	0.023	ug/m3
156-59-2	96.94	cis-1,2-Dichloroethylene	ND	0.032	0.0094	ppbv		ND	0.13	0.037	ug/m3
10061-01-5	111	cis-1,3-Dichloropropene	ND	0.16	0.016	ppbv		ND	0.73	0.073	ug/m3
541-73-1	147	m-Dichlorobenzene	ND	0.080	0.015	ppbv		ND	0.48	0.090	ug/m3
95-50-1	147	o-Dichlorobenzene	ND	0.032	0.017	ppbv		ND	0.19	0.10	ug/m3
106-46-7	147	p-Dichlorobenzene	ND	0.080	0.014	ppbv		ND	0.48	0.084	ug/m3
10061-02-6	111	trans-1,3-Dichloropropene	ND	0.16	0.016	ppbv		ND	0.73	0.073	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: AA-3-013020
Lab Sample ID: JD2616-4
Matrix: AIR - Indoor Air Comp. Summa ID: A892
Method: TO-15
Project: Fortive, New Windsor, NY

Date Sampled: 01/30/20
Date Received: 01/31/20
Percent Solids: n/a

VOA TO15 List

CAS No.	MW	Compound	Result	RL	MDL	Units	Q	Result	RL	MDL	Units
64-17-5	46.07	Ethanol	8.2	0.40	0.17	ppbv		15	0.75	0.32	ug/m3
100-41-4	106.2	Ethylbenzene	0.19	0.16	0.012	ppbv		0.83	0.69	0.052	ug/m3
141-78-6	88	Ethyl Acetate	0.80	0.16	0.030	ppbv		2.9	0.58	0.11	ug/m3
622-96-8	120.2	4-Ethyltoluene	0.18	0.16	0.024	ppbv		0.88	0.79	0.12	ug/m3
76-13-1	187.4	Freon 113	ND	0.080	0.014	ppbv		ND	0.61	0.11	ug/m3
76-14-2	170.9	Freon 114	ND	0.080	0.015	ppbv		ND	0.56	0.10	ug/m3
142-82-5	100.2	Heptane	0.20	0.16	0.014	ppbv		0.82	0.66	0.057	ug/m3
87-68-3	260.8	Hexachlorobutadiene	ND	0.072	0.036	ppbv		ND	0.77	0.38	ug/m3
110-54-3	86.17	Hexane	0.20	0.16	0.0085	ppbv		0.70	0.56	0.030	ug/m3
591-78-6	100	2-Hexanone	ND	0.16	0.029	ppbv		ND	0.65	0.12	ug/m3
67-63-0	60.1	Isopropyl Alcohol	2.1	0.16	0.052	ppbv		5.2	0.39	0.13	ug/m3
75-09-2	84.94	Methylene chloride	0.24	0.16	0.012	ppbv		0.83	0.56	0.042	ug/m3
78-93-3	72.11	Methyl ethyl ketone	0.54	0.16	0.034	ppbv		1.6	0.47	0.10	ug/m3
108-10-1	100.2	Methyl Isobutyl Ketone	1.6	0.16	0.029	ppbv		6.6	0.66	0.12	ug/m3
1634-04-4	88.15	Methyl Tert Butyl Ether	ND	0.16	0.015	ppbv		ND	0.58	0.054	ug/m3
80-62-6	100.12	Methylmethacrylate	ND	0.16	0.026	ppbv		ND	0.66	0.11	ug/m3
115-07-1	42	Propylene	ND	0.40	0.013	ppbv		ND	0.69	0.022	ug/m3
100-42-5	104.1	Styrene	ND	0.16	0.015	ppbv		ND	0.68	0.064	ug/m3
71-55-6	133.4	1,1,1-Trichloroethane	ND	0.080	0.027	ppbv		ND	0.44	0.15	ug/m3
79-34-5	167.9	1,1,2,2-Tetrachloroethane	ND	0.080	0.022	ppbv		ND	0.55	0.15	ug/m3
79-00-5	133.4	1,1,2-Trichloroethane	ND	0.080	0.024	ppbv		ND	0.44	0.13	ug/m3
120-82-1	181.5	1,2,4-Trichlorobenzene	ND	0.080	0.071	ppbv		ND	0.59	0.53	ug/m3
95-63-6	120.2	1,2,4-Trimethylbenzene	0.64	0.16	0.026	ppbv		3.1	0.79	0.13	ug/m3
108-67-8	120.2	1,3,5-Trimethylbenzene	0.21	0.16	0.027	ppbv		1.0	0.79	0.13	ug/m3
540-84-1	114.2	2,2,4-Trimethylpentane	0.092	0.16	0.017	ppbv	J	0.43	0.75	0.079	ug/m3
75-65-0	74.12	Tertiary Butyl Alcohol	0.13	0.16	0.011	ppbv	J	0.39	0.49	0.033	ug/m3
127-18-4	165.8	Tetrachloroethylene	0.031	0.032	0.025	ppbv	J	0.21	0.22	0.17	ug/m3
109-99-9	72.11	Tetrahydrofuran	ND	0.16	0.040	ppbv		ND	0.47	0.12	ug/m3
108-88-3	92.14	Toluene	3.0	0.16	0.012	ppbv		11	0.60	0.045	ug/m3
79-01-6	131.4	Trichloroethylene	ND	0.032	0.015	ppbv		ND	0.17	0.081	ug/m3
75-69-4	137.4	Trichlorofluoromethane	0.35	0.080	0.022	ppbv		2.0	0.45	0.12	ug/m3
75-01-4	62.5	Vinyl chloride	ND	0.032	0.018	ppbv		ND	0.082	0.046	ug/m3
108-05-4	86	Vinyl Acetate	0.26	0.16	0.027	ppbv		0.91	0.56	0.095	ug/m3
	106.2	m,p-Xylene	0.66	0.16	0.027	ppbv		2.9	0.69	0.12	ug/m3
95-47-6	106.2	o-Xylene	0.26	0.16	0.014	ppbv		1.1	0.69	0.061	ug/m3
1330-20-7	106.2	Xylenes (total)	0.92	0.16	0.014	ppbv		4.0	0.69	0.061	ug/m3

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
460-00-4	4-Bromofluorobenzene	87%		65-128%

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

5

Misc. Forms

Custody Documents and Other Forms

Includes the following where applicable:

- Chain of Custody
- Summa Canister and Flow Controller Log
- Sample Tracking Chronicle
- Internal Chain of Custody
- 2018 MDL Study - Method: TO-15

SGS AIR

AIR CHAIN OF CUSTODY

PAGE ___ OF ___

SGS North America Inc. - Dayton
2235 Route 130, Dayton, NJ 08810
TEL. 732-329-0200 FAX 732-329-3499
www.sgs.com/ehsusa

FED EX Tracking #

Bottle Order Control # TM-052220-18

SGS Quote #

SGS Job # JD2616

Client / Reporting Information

Company Name: ERM
Address: 105 Maxess Rd
City: Melville State: NY Zip: 11747
Project Contact: Karen Pickering E-mail: @ERM.com
Phone #: 631 756 4900 Fax #:
Sampler(s) Name(s):

Project Information

Project Name: Fortune-MacBeth
Street: 617 Little Britain Rd
City: New Windsor State: NY
Project #: 0501429
Client Purchase Order #:

Weather Parameters

Temperature (Fahrenheit)
Start: 27 Maximum: 27
Stop: 33 Minimum: 35

Atmoshpheric Pressure (inches of Hg)
Start: 30 Maximum: 30
Stop: 30 Minimum: 30

Other weather comment:

Requested Analysis

TO15 NYSVOLL
TO15 NYSVOLL

Lab Sample #	Field ID / Point of Collection	Air Type: Indoor (I) Soil Vap (SV) Ambient (A)	Sampling Equipment Info: Canister Serial #	Canister Size 6L or 1L	Flow Controller Serial #	Start Sampling Information: Date	Time (24hr clock)	Canister Pressure ("Hg)	Interior Temp (F)	Sampler Init.	Stop Sampling Information: Date	Time (24hr clock)	Canister Pressure ("Hg)	Interior Temp (F)	Sampler Init.		
1	SG-2-013020	SV	A993	6	MC233	1/30	9:40	30.5	72	DD	1/30	17:40	10.5	72	DD		X
2	AA-2-013020	I	A1050	6	FC123	1/30	9:41	28	72	DD	1/30	17:41	10.5	72	DD	X	
3	SG-3-013020	SV	A369	6	FC686	1/30	9:45	30	72	DD	1/30	17:45	9	72	DD		X
4	AA-3-013020	I	A892	6	FC133	1/30	9:46	32	72	DD	1/30	17:46	11	72	DD	X	

Turnaround Time (Business days)

- Standard - 15 Days
- 10 Day
- 5 Day
- 3 Day
- 2 Day
- 1 Day
- Other

Approved By: _____

Date: _____

Data Deliverable Information

All NJDEP TO-15 is mandatory Full T1

- Comm A
- Comm B
- Reduced T2
- Full T1
- Other:
- DKQP reporting

SUMM

Comments / Remarks

Initial Assessment HB 1/31

Label Verification _____

Sample inventory is verified upon receipt in the Laboratory

Sample Custody must be documented below each time samples change possession, including courier delivery.

Relinquished by Sampler:	Date Time:	Received By:	Relinquished By:	Date Time:	Received By:
1	1/30 13:30	1	2	1/31 1034	2
Relinquished by:	Date Time:	Received By:	Relinquished By:	Date Time:	Received By:
3		3	4		4
Relinquished by:	Date Time:	Received By:	Custody Seal #		
5		5			

Form:SM088-03D (revised 2-12-18)

http://www.sgs.com/en/terms-and-conditions

SGS

AIR SAMPLING EQUIPMENT RETURN FORM

CLIENT: ERM

PROJECT: Fort Hunter - Mt Gretna

CONTROL# fm-012220184

JOB # J02616

ADDITIONAL SUMMA CANISTERS

-5 MC 147

ADDITIONAL CONTROLLERS

fc123 FC706

RELINQUISHED BY: 1 SHS COURIER	DATE & TIME: 1/31/20 1434	RECEIVED BY: 2	DATE & TIME: 1/31/20 1434
RELINQUISHED BY: 3	DATE & TIME:	RECEIVED BY: 4	DATE & TIME:
CUSTODY SEAL #'S:		# OF BOXES OR PIECES IN DELIVERY	

NOTES:

SM086-03
Pub date: 3/12/18

5.1 5

SGS Sample Receipt Summary

Job Number: JD2616 **Client:** ERM, INCORPORATED **Project:** FORTIVE, NEW WINDSOR, NY

Date / Time Received: 1/31/2020 2:34:00 PM **Delivery Method:** **Airbill #'s:**

Cooler Temps (Raw Measured) °C:

Cooler Temps (Corrected) °C:

Cooler Security	Y	or	N		Y	or	N
1. Custody Seals Present:	☑		☐	3. COC Present:	☑		☐
2. Custody Seals Intact:	☑		☐	4. Smpl Dates/Time OK	☑		☐

Cooler Temperature	Y	or	N
1. Temp criteria achieved:	☑		☐
2. Cooler temp verification:			
3. Cooler media:			
4. No. Coolers:			

Quality Control _Preservation	Y	or	N	N/A
1. Trip Blank present / cooler:	☐		☑	☐
2. Trip Blank listed on COC:	☐		☑	☐
3. Samples preserved properly:	☑		☐	
4. VOCs headspace free:	☐		☐	☑

Sample Integrity - Documentation	Y	or	N
1. Sample labels present on bottles:	☑		☐
2. Container labeling complete:	☑		☐
3. Sample container label / COC agree:	☑		☐

Sample Integrity - Condition	Y	or	N
1. Sample recvd within HT:	☑		☐
2. All containers accounted for:	☑		☐
3. Condition of sample:	Intact		

Sample Integrity - Instructions	Y	or	N	N/A
1. Analysis requested is clear:	☑		☐	
2. Bottles received for unspecified tests	☐		☑	
3. Sufficient volume recvd for analysis:	☑		☐	
4. Compositing instructions clear:	☐		☐	☑
5. Filtering instructions clear:	☐		☐	☑

Test Strip Lot #s: pH 1-12: 229517 pH 12+: 208717 Other: (Specify)

Comments

SM089-03
Rev. Date 12/7/17

JD2616: Chain of Custody
Page 3 of 3

Summa Canister and Flow Controller Log

Job Number: JD2616
Account: ERMNYW ERM, Inc.
Project: Fortive, New Windsor, NY
Received: 01/31/20

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
A993	6	29.4	01/28/20	JT	CP10668	3W71421.D	JD2616-1	02/05/20	TCH	9.5		1.1	1.58
A1050	6	29.4	01/28/20	JT	CP10668	3W71421.D	JD2616-2	02/05/20	ED	10		1	1.6
A369	6	29.4	01/28/20	JT	CP10668	3W71421.D	JD2616-3	02/05/20	TCH	8.5		1.3	1.52
A892	6	29.4	01/28/20	JT	CP10668	3W71421.D	JD2616-4	02/05/20	ED	9.5		1.1	1.58

FLOW CONTROLLERS / OTHER

Shipping					Receiving				
Flow Crtl ID	Date Out	By	cc/ min	Time hrs.	Date In	By	cc/ min	Flow RPD	Equipment Type
FC133	01/28/20	JT	9.6	8	02/13/20	JT	9.2	4.3	Flow Controller
FC686	01/28/20	JT	9.6	8	02/13/20	JT	10	4.1	Flow Controller
FC706	01/28/20	JT	9.6	8	02/12/20	JT	10.7	10.8	Flow Controller
MC233	01/28/20	JT	9.6	8	02/13/20	JT	9.9	3.1	Flow Controller

SGS Bottle Order(s):
TM-012220-184

Prep Date	Room Temp(F)	Bar Pres "Hg
01/28/20	70	29.92

Internal Sample Tracking Chronicle

ERM, Inc.

Job No: JD2616

Fortive, New Windsor, NY
Project No: 0501429

Sample Number	Method	Analyzed	By	Prepped	By	Test Codes
JD2616-1	Collected: 30-JAN-20 17:40 By: DD		Received: 31-JAN-20 By: AS			
SG-2-013020						
JD2616-1	TO-15	12-FEB-20 01:43	DFT			VTO15NYSVLL
JD2616-1	TO-15	12-FEB-20 15:14	DFT			VTO15NYSVLL
JD2616-2	Collected: 30-JAN-20 17:41 By: DD		Received: 31-JAN-20 By: AS			
AA-2-013020						
JD2616-2	TO-15	11-FEB-20 23:47	DFT			VTO15NYLL
JD2616-3	Collected: 30-JAN-20 17:45 By: DD		Received: 31-JAN-20 By: AS			
SG-3-013020						
JD2616-3	TO-15	12-FEB-20 02:39	DFT			VTO15NYSVLL
JD2616-3	TO-15	12-FEB-20 16:04	DFT			VTO15NYSVLL
JD2616-4	Collected: 30-JAN-20 17:46 By: DD		Received: 31-JAN-20 By: AS			
AA-3-013020						
JD2616-4	TO-15	12-FEB-20 00:46	DFT			VTO15NYLL

SGS Internal Chain of Custody

Job Number: JD2616
Account: ERMNYW ERM, Inc.
Project: Fortive, New Windsor, NY
Received: 01/31/20

Sample.Bottle Number	Transfer FROM	Transfer TO	Date/Time	Reason
JD2616-1.1	Jeemit Patel	Air Storage	01/31/20 20:53	Return to Storage
JD2616-1.2	Jeemit Patel	Air Storage	01/31/20 20:53	Return to Storage
JD2616-2.1	Jeemit Patel	Air Storage	01/31/20 20:53	Return to Storage
JD2616-2.2	Jeemit Patel	Air Storage	01/31/20 20:53	Return to Storage
JD2616-3.1	Jeemit Patel	Air Storage	01/31/20 20:53	Return to Storage
JD2616-3.2	Jeemit Patel	Air Storage	01/31/20 20:53	Return to Storage
JD2616-4.1	Jeemit Patel	Air Storage	01/31/20 20:53	Return to Storage
JD2616-4.2	Jeemit Patel	Air Storage	01/31/20 20:53	Return to Storage

Accutest Laboratories Annual Method Detection Limit Determination
Dayton, NJ Facility

Method: TO-15 (VTO14/15)
Instrument(s): GCMS3W, GCMS5W, GCMS6W
Analyst: Pooled

Matrix: AIR
Quant Factor: 1.00
Study Period: July,2018

			Replicate Spikes											
Cmpd./Element/Parm. Name	Analysis Date	Spike ppbv	R1 ppbv	R2 ppbv	R3 ppbv	R4 ppbv	R5 ppbv	R6 ppbv	R7 ppbv	X-Bar ppbv	X-Bar %Recov.	STD.Dev. ppbv	MDL	Spike/MDL Ratio
Acetone	4-Apr-18	0.1	0.15	0.17	0.14	0.17	0.17	0.09	0.09	0.14	139.43	0.04	0.11	0.89
Acrylonitrile	6-Mar-18	0.1	0.11	0.13	0.13	0.10	0.11	0.09	0.10	0.11	110.28	0.02	0.05	1.97
Acetonitrile	4-Apr-18	0.1	0.17	0.13	0.16	0.15	0.21	0.09	0.07	0.14	140.53	0.05	0.15	0.67
1,3-Butadiene	4-Apr-18	0.1	0.10	0.11	0.10	0.10	0.10	0.07	0.07	0.09	93.21	0.01	0.05	2.16
Benzene	6-Mar-18	0.1	0.10	0.10	0.10	0.09	0.09	0.10	0.10	0.10	96.63	0.00	0.01	8.40
Bromobenzene	4-Apr-18	0.04	0.05	0.04	0.05	0.04	0.05	0.03	0.03	0.04	103.07	0.01	0.02	1.79
Bromodichloromethane	4-Apr-18	0.04	0.05	0.05	0.05	0.05	0.05	0.04	0.03	0.05	120.64	0.01	0.03	1.49
Bromoform	4-Apr-18	0.04	0.06	0.06	0.06	0.05	0.06	0.03	0.03	0.05	127.36	0.01	0.04	1.07
Bromomethane	4-Apr-18	0.04	0.06	0.05	0.05	0.06	0.06	0.04	0.04	0.05	128.54	0.01	0.02	1.82
Bromoethene	4-Apr-18	0.04	0.04	0.05	0.05	0.04	0.04	0.03	0.03	0.04	103.18	0.01	0.02	1.82
n-Butane	9-Jul-18	0.2	0.20	0.18	0.20	0.18	0.12	0.20	0.15	0.18	88.23	0.03	0.10	2.10
Benzyl Chloride	4-Apr-18	0.1	0.10	0.09	0.09	0.08	0.08	0.05	0.05	0.08	77.01	0.02	0.06	1.77
n-Butylbenzene	6-Mar-18	0.1	0.07	0.07	0.07	0.09	0.07	0.05	0.06	0.07	69.64	0.01	0.04	2.69
sec-Butylbenzene	6-Mar-18	0.1	0.09	0.10	0.09	0.11	0.10	0.07	0.08	0.09	91.41	0.01	0.04	2.26
tert-Butylbenzene	6-Mar-18	0.1	0.09	0.10	0.10	0.11	0.10	0.07	0.09	0.09	93.20	0.01	0.04	2.71
Carbon disulfide	16-Mar-18	0.04	0.03	0.03	0.03	0.03	0.03	0.04	0.05	0.03	84.90	0.01	0.02	1.69
Chlorobenzene	4-Apr-18	0.04	0.06	0.05	0.05	0.05	0.05	0.03	0.04	0.05	121.74	0.01	0.03	1.53
Chlorodifluoromethane	4-Apr-18	0.1	0.11	0.12	0.12	0.12	0.11	0.07	0.03	0.10	97.42	0.03	0.10	0.96
Chloroethane	4-Apr-18	0.1	0.11	0.10	0.10	0.10	0.11	0.08	0.08	0.10	98.82	0.02	0.05	2.07
Chlorotrifluoroethene	16-Mar-18	0.04	0.04	0.03	0.03	0.04	0.04	0.05	0.04	0.04	96.91	0.00	0.01	2.74
Chloroform	4-Apr-18	0.04	0.05	0.05	0.05	0.05	0.05	0.04	0.03	0.04	109.12	0.01	0.02	2.01
Chloromethane	4-Apr-18	0.1	0.09	0.10	0.09	0.10	0.10	0.08	0.09	0.09	92.74	0.00	0.02	6.54
3-Chloropropene	16-Mar-18	0.1	0.08	0.08	0.07	0.05	0.06	0.08	0.07	0.07	70.88	0.01	0.04	2.52
2-Chlorotoluene	4-Apr-18	0.1	0.09	0.09	0.08	0.08	0.08	0.08	0.07	0.08	82.41	0.01	0.03	4.00
Carbon tetrachloride	4-Apr-18	0.04	0.04	0.04	0.05	0.05	0.05	0.03	0.03	0.04	105.24	0.01	0.02	1.70
Cyclohexane	4-Apr-18	0.1	0.06	0.07	0.06	0.06	0.06	0.08	0.08	0.07	66.65	0.01	0.02	4.55
1,1-Dichloroethane	4-Apr-18	0.1	0.09	0.10	0.10	0.10	0.10	0.09	0.09	0.10	95.35	0.00	0.01	8.62
1,1-Dichloroethylene	6-Mar-18	0.04	0.06	0.05	0.05	0.05	0.04	0.05	0.05	0.05	122.85	0.01	0.02	2.40
1,2-Dibromoethane	4-Apr-18	0.04	0.04	0.04	0.04	0.04	0.04	0.03	0.03	0.04	92.37	0.01	0.02	2.25
1,2-Dichloroethane	4-Apr-18	0.04	0.04	0.05	0.04	0.05	0.05	0.03	0.03	0.04	102.51	0.01	0.02	1.92
1,2-Dichloropropane	6-Mar-18	0.04	0.05	0.05	0.05	0.04	0.04	0.05	0.06	0.05	123.28	0.01	0.02	2.09
1,3-Dichloropropane	6-Mar-18	0.04	0.03	0.03	0.04	0.03	0.03	0.03	0.02	0.03	79.01	0.01	0.02	2.54
1,4-Dioxane	16-Mar-18	0.1	0.10	0.09	0.07	0.09	0.09	0.06	0.05	0.08	77.81	0.02	0.05	1.93
Dichlorodifluoromethane	4-Apr-18	0.04	0.05	0.05	0.05	0.05	0.05	0.04	0.04	0.05	113.93	0.01	0.02	2.43

Dichlorofluoromethane	4-Apr-18	0.04	0.05	0.06	0.05	0.06	0.05	0.04	0.04	0.05	121.63	0.01	0.03	1.44
Dibromochloromethane	4-Apr-18	0.04	0.06	0.06	0.05	0.05	0.05	0.03	0.03	0.05	119.40	0.01	0.03	1.20
Dibromomethane	4-Apr-18	0.04	0.06	0.06	0.06	0.06	0.06	0.04	0.04	0.05	129.43	0.01	0.02	1.61
trans-1,2-Dichloroethylene	16-Mar-18	0.04	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	78.89	0.00	0.01	5.45
cis-1,2-Dichloroethylene	16-Mar-18	0.04	0.04	0.04	0.04	0.03	0.04	0.03	0.03	0.03	84.39	0.00	0.01	3.43
cis-1,3-Dichloropropene	6-Mar-18	0.1	0.10	0.10	0.10	0.08	0.09	0.09	0.09	0.09	91.08	0.01	0.02	5.13
m-Dichlorobenzene	4-Apr-18	0.04	0.04	0.04	0.04	0.03	0.03	0.03	0.03	0.03	87.14	0.01	0.02	2.12
o-Dichlorobenzene	6-Mar-18	0.1	0.08	0.09	0.08	0.08	0.08	0.07	0.07	0.08	79.00	0.01	0.02	4.58
p-Dichlorobenzene	4-Apr-18	0.04	0.04	0.04	0.04	0.03	0.03	0.03	0.03	0.03	84.30	0.01	0.02	2.29
trans-1,3-Dichloropropene	4-Apr-18	0.1	0.08	0.08	0.08	0.07	0.08	0.07	0.07	0.07	74.34	0.01	0.02	5.13
Di-Isopropyl ether	6-Mar-18	0.2	0.21	0.22	0.22	0.21	0.22	0.20	0.21	0.21	106.79	0.01	0.03	6.78
2,3-Dimethylpentane	4-Apr-18	0.1	0.08	0.08	0.08	0.08	0.08	0.07	0.07	0.08	76.36	0.01	0.02	5.07
2,4-Dimethylpentane	4-Apr-18	0.1	0.07	0.07	0.06	0.07	0.07	0.08	0.08	0.07	69.67	0.01	0.02	5.70
Ethanol	4-Apr-18	0.1	0.20	0.20	0.22	0.21	0.21	0.08	0.06	0.17	168.18	0.07	0.22	0.46
Ethylbenzene	6-Mar-18	0.1	0.09	0.10	0.10	0.10	0.09	0.11	0.09	0.10	96.79	0.00	0.02	6.61
Ethyl Acetate	6-Mar-18	0.1	0.08	0.08	0.10	0.09	0.09	0.06	0.06	0.08	79.31	0.01	0.04	2.66
Ethyl Acrylate	6-Mar-18	0.1	0.08	0.09	0.10	0.08	0.08	0.06	0.06	0.08	76.98	0.01	0.05	2.16
4-Ethyltoluene	6-Mar-18	0.1	0.08	0.09	0.09	0.09	0.09	0.07	0.07	0.08	82.05	0.01	0.03	3.38
Freon 113	4-Apr-18	0.04	0.05	0.04	0.05	0.04	0.04	0.03	0.03	0.04	103.42	0.01	0.02	2.34
Freon 114	4-Apr-18	0.04	0.05	0.05	0.05	0.05	0.05	0.04	0.04	0.05	115.71	0.01	0.02	2.09
Freon 115	6-Mar-18	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	99.91	0.00	0.01	5.22
Freon 123	4-Apr-18	0.04	0.05	0.05	0.05	0.05	0.05	0.04	0.03	0.04	107.96	0.01	0.02	2.05
Freon 123A	16-Mar-18	0.04	0.05	0.04	0.04	0.04	0.04	0.08	0.08	0.05	131.10	0.02	0.06	0.63
Freon 141B	4-Apr-18	0.04	0.06	0.06	0.06	0.06	0.06	0.04	0.04	0.05	132.21	0.01	0.03	1.30
Freon 142B	4-Apr-18	0.04	0.05	0.05	0.05	0.05	0.05	0.04	0.03	0.05	120.27	0.01	0.03	1.46
Freon 143a	4-Apr-18	0.04	0.05	0.05	0.05	0.05	0.05	0.04	0.04	0.05	119.26	0.01	0.02	1.96
Freon 152A	4-Apr-18	0.1	0.09	0.10	0.10	0.10	0.10	0.08	0.08	0.09	93.15	0.01	0.03	3.93
Heptane	16-Mar-18	0.04	0.03	0.02	0.02	0.01	0.02	0.02	0.01	0.02	51.50	0.01	0.02	2.29
Hexachlorobutadiene	4-Apr-18	0.04	0.07	0.07	0.07	0.07	0.06	0.04	0.04	0.06	141.60	0.01	0.05	0.88
Hexachloroethane	4-Apr-18	0.04	0.07	0.07	0.07	0.07	0.07	0.04	0.03	0.06	148.40	0.02	0.05	0.75
Hexane	6-Mar-18	0.04	0.04	0.05	0.04	0.04	0.04	0.04	0.04	0.04	101.95	0.00	0.01	3.79
2-Hexanone	6-Mar-18	0.1	0.07	0.08	0.08	0.08	0.07	0.05	0.06	0.07	68.64	0.01	0.04	2.76
Iodomethane	6-Mar-18	0.1	0.10	0.10	0.10	0.09	0.09	0.10	0.09	0.10	96.55	0.00	0.01	8.77
Isopropylbenzene	6-Mar-18	0.1	0.10	0.10	0.10	0.11	0.10	0.09	0.08	0.10	95.35	0.01	0.03	3.65
Isopropyl Alcohol	9-Jul-18	0.2	0.32	0.32	0.31	0.32	0.29	0.27	0.33	0.31	154.14	0.02	0.06	3.09
p-Isopropyltoluene	6-Mar-18	0.1	0.08	0.09	0.09	0.10	0.10	0.07	0.07	0.09	85.96	0.01	0.04	2.82
Methylene chloride	6-Mar-18	0.1	0.13	0.14	0.13	0.12	0.13	0.12	0.13	0.13	130.26	0.00	0.01	6.92
Methyl ethyl ketone	6-Mar-18	0.1	0.08	0.08	0.09	0.09	0.10	0.06	0.06	0.08	80.25	0.01	0.04	2.38
Methyl Isobutyl Ketone	6-Mar-18	0.1	0.08	0.09	0.10	0.09	0.09	0.06	0.08	0.08	82.66	0.01	0.04	2.78
Methyl Tert Butyl Ether	6-Mar-18	0.04	0.04	0.04	0.04	0.04	0.04	0.03	0.03	0.04	95.74	0.01	0.02	2.09
Methylmethacrylate	6-Mar-18	0.1	0.08	0.08	0.09	0.08	0.09	0.06	0.07	0.08	79.33	0.01	0.03	3.07
Naphthalene	16-Mar-18	0.2	0.08	0.07	0.07	0.06	0.05	0.01	0.01	0.05	25.45	0.03	0.09	2.20
Nonane	16-Mar-18	0.04	0.03	0.03	0.03	0.03	0.03	0.02	0.02	0.03	69.05	0.00	0.01	2.98
Octane	4-Apr-18	0.1	0.06	0.05	0.05	0.05	0.05	0.07	0.07	0.06	57.51	0.01	0.03	3.20
Pentane	16-Mar-18	0.2	0.20	0.20	0.18	0.20	0.17	0.17	0.16	0.18	91.02	0.02	0.06	3.63

n-Propylbenzene	6-Mar-18	0.1	0.08	0.09	0.08	0.09	0.09	0.07	0.07	0.08	81.29	0.01	0.03	3.80
Propylene	16-Mar-18	0.04	0.04	0.05	0.05	0.05	0.05	0.04	0.04	0.05	115.79	0.01	0.02	2.51
Styrene	4-Apr-18	0.1	0.07	0.07	0.07	0.06	0.06	0.07	0.07	0.06	64.67	0.01	0.02	5.30
1,1,1-Trichloroethane	4-Apr-18	0.04	0.05	0.06	0.06	0.05	0.05	0.03	0.03	0.05	120.15	0.01	0.03	1.20
1,1,1,2-Tetrachloroethane	4-Apr-18	0.04	0.05	0.06	0.05	0.06	0.05	0.04	0.03	0.05	123.96	0.01	0.04	1.10
1,1,2,2-Tetrachloroethane	4-Apr-18	0.04	0.05	0.05	0.05	0.05	0.05	0.03	0.03	0.05	113.92	0.01	0.03	1.47
1,1,2-Trichloroethane	4-Apr-18	0.04	0.04	0.04	0.05	0.05	0.04	0.02	0.03	0.04	95.93	0.01	0.03	1.31
1,2,4-Trichlorobenzene	6-Mar-18	0.2	0.12	0.16	0.11	0.11	0.10	0.08	0.08	0.11	54.59	0.03	0.09	2.26
1,2,3-Trichloropropane	6-Mar-18	0.04	0.04	0.04	0.04	0.03	0.03	0.02	0.06	0.04	94.35	0.01	0.04	1.12
1,2,4-Trimethylbenzene	6-Mar-18	0.1	0.08	0.09	0.09	0.09	0.09	0.07	0.07	0.08	84.25	0.01	0.03	3.03
1,3,5-Trimethylbenzene	6-Mar-18	0.1	0.09	0.09	0.10	0.10	0.10	0.08	0.08	0.09	89.95	0.01	0.03	2.98
2,2,4-Trimethylpentane	6-Mar-18	0.1	0.11	0.11	0.11	0.09	0.09	0.10	0.10	0.10	100.21	0.01	0.02	4.59
Tertiary Butyl Alcohol	6-Mar-18	0.04	0.04	0.04	0.04	0.04	0.04	0.03	0.04	0.04	97.25	0.00	0.01	2.90
Tetrachloroethylene	6-Mar-18	0.2	0.20	0.22	0.21	0.23	0.21	0.21	0.22	0.21	106.97	0.01	0.03	6.49
Tetrahydrofuran	16-Mar-18	0.1	0.07	0.05	0.05	0.08	0.06	0.03	0.04	0.05	54.16	0.02	0.05	1.99
Toluene	6-Mar-18	0.1	0.09	0.09	0.10	0.09	0.09	0.09	0.09	0.09	92.31	0.00	0.01	6.94
Trichloroethylene	4-Apr-18	0.04	0.04	0.05	0.04	0.04	0.05	0.03	0.03	0.04	101.18	0.01	0.02	2.10
Trichlorofluoromethane	4-Apr-18	0.04	0.06	0.06	0.05	0.06	0.06	0.04	0.04	0.05	129.81	0.01	0.03	1.42
Vinyl chloride	4-Apr-18	0.1	0.10	0.11	0.10	0.10	0.10	0.09	0.09	0.10	97.80	0.01	0.02	4.49
Vinyl Acetate	6-Mar-18	0.1	0.06	0.04	0.04	0.06	0.06	0.04	0.04	0.05	50.75	0.01	0.03	2.93
m,p-Xylene	6-Mar-18	0.2	0.17	0.18	0.18	0.18	0.19	0.19	0.16	0.18	89.18	0.01	0.03	5.86
o-Xylene	6-Mar-18	0.1	0.08	0.09	0.09	0.09	0.09	0.08	0.08	0.09	87.80	0.01	0.02	5.90
TVHC As Equiv Pentane	16-Mar-18	0.1	0.14	0.14	0.15	0.13	0.14	0.11	0.12	0.13	133.35	0.01	0.04	2.64

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
- Run Sequence Reports

Method Blank Summary

Job Number: JD2616
Account: ERMNYW ERM, Inc.
Project: Fortive, New Windsor, NY

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V3W2806-MB	3W71600.D	1	02/11/20	DFT	n/a	n/a	V3W2806

The QC reported here applies to the following samples: **Method:** TO-15

JD2616-1, JD2616-2, JD2616-3, JD2616-4

CAS No.	Compound	Result	RL	MDL	Units	Q	Result	RL	Units
67-64-1	Acetone	ND	0.20	0.11	ppbv		ND	0.48	ug/m3
106-99-0	1,3-Butadiene	ND	0.20	0.046	ppbv		ND	0.44	ug/m3
71-43-2	Benzene	ND	0.20	0.012	ppbv		ND	0.64	ug/m3
75-27-4	Bromodichloromethane	ND	0.20	0.027	ppbv		ND	1.3	ug/m3
75-25-2	Bromoform	ND	0.20	0.037	ppbv		ND	2.1	ug/m3
74-83-9	Bromomethane	ND	0.20	0.022	ppbv		ND	0.78	ug/m3
593-60-2	Bromoethene	ND	0.20	0.022	ppbv		ND	0.87	ug/m3
100-44-7	Benzyl Chloride	ND	0.20	0.057	ppbv		ND	1.0	ug/m3
75-15-0	Carbon disulfide	ND	0.20	0.024	ppbv		ND	0.62	ug/m3
108-90-7	Chlorobenzene	ND	0.20	0.026	ppbv		ND	0.92	ug/m3
75-00-3	Chloroethane	ND	0.20	0.048	ppbv		ND	0.53	ug/m3
67-66-3	Chloroform	ND	0.20	0.020	ppbv		ND	0.98	ug/m3
74-87-3	Chloromethane	ND	0.20	0.015	ppbv		ND	0.41	ug/m3
107-05-1	3-Chloropropene	ND	0.20	0.040	ppbv		ND	0.63	ug/m3
95-49-8	2-Chlorotoluene	ND	0.20	0.025	ppbv		ND	1.0	ug/m3
56-23-5	Carbon tetrachloride	ND	0.20	0.024	ppbv		ND	1.3	ug/m3
110-82-7	Cyclohexane	ND	0.20	0.022	ppbv		ND	0.69	ug/m3
75-34-3	1,1-Dichloroethane	ND	0.20	0.012	ppbv		ND	0.81	ug/m3
75-35-4	1,1-Dichloroethylene	ND	0.20	0.017	ppbv		ND	0.79	ug/m3
106-93-4	1,2-Dibromoethane	ND	0.20	0.018	ppbv		ND	1.5	ug/m3
107-06-2	1,2-Dichloroethane	ND	0.20	0.021	ppbv		ND	0.81	ug/m3
78-87-5	1,2-Dichloropropane	ND	0.20	0.019	ppbv		ND	0.92	ug/m3
123-91-1	1,4-Dioxane	ND	0.20	0.052	ppbv		ND	0.72	ug/m3
75-71-8	Dichlorodifluoromethane	ND	0.20	0.017	ppbv		ND	0.99	ug/m3
124-48-1	Dibromochloromethane	ND	0.20	0.033	ppbv		ND	1.7	ug/m3
156-60-5	trans-1,2-Dichloroethylene	ND	0.20	0.0073	ppbv		ND	0.79	ug/m3
156-59-2	cis-1,2-Dichloroethylene	ND	0.20	0.012	ppbv		ND	0.79	ug/m3
10061-01-5	cis-1,3-Dichloropropene	ND	0.20	0.020	ppbv		ND	0.91	ug/m3
541-73-1	m-Dichlorobenzene	ND	0.20	0.019	ppbv		ND	1.2	ug/m3
95-50-1	o-Dichlorobenzene	ND	0.20	0.022	ppbv		ND	1.2	ug/m3
106-46-7	p-Dichlorobenzene	ND	0.20	0.018	ppbv		ND	1.2	ug/m3
10061-02-6	trans-1,3-Dichloropropene	ND	0.20	0.020	ppbv		ND	0.91	ug/m3
64-17-5	Ethanol	ND	0.50	0.22	ppbv		ND	0.94	ug/m3
100-41-4	Ethylbenzene	ND	0.20	0.015	ppbv		ND	0.87	ug/m3
141-78-6	Ethyl Acetate	ND	0.20	0.038	ppbv		ND	0.72	ug/m3
622-96-8	4-Ethyltoluene	ND	0.20	0.030	ppbv		ND	0.98	ug/m3

Method Blank Summary

Job Number: JD2616
Account: ERMNYW ERM, Inc.
Project: Fortive, New Windsor, NY

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V3W2806-MB	3W71600.D	1	02/11/20	DFT	n/a	n/a	V3W2806

The QC reported here applies to the following samples: **Method:** TO-15

JD2616-1, JD2616-2, JD2616-3, JD2616-4

CAS No.	Compound	Result	RL	MDL	Units	Q	Result	RL	Units
76-13-1	Freon 113	ND	0.20	0.017	ppbv		ND	1.5	ug/m3
76-14-2	Freon 114	ND	0.20	0.019	ppbv		ND	1.4	ug/m3
142-82-5	Heptane	ND	0.20	0.018	ppbv		ND	0.82	ug/m3
87-68-3	Hexachlorobutadiene	ND	0.20	0.046	ppbv		ND	2.1	ug/m3
110-54-3	Hexane	ND	0.20	0.011	ppbv		ND	0.70	ug/m3
591-78-6	2-Hexanone	ND	0.20	0.036	ppbv		ND	0.82	ug/m3
67-63-0	Isopropyl Alcohol	ND	0.20	0.065	ppbv		ND	0.49	ug/m3
75-09-2	Methylene chloride	ND	0.20	0.015	ppbv		ND	0.69	ug/m3
78-93-3	Methyl ethyl ketone	ND	0.20	0.042	ppbv		ND	0.59	ug/m3
108-10-1	Methyl Isobutyl Ketone	ND	0.20	0.036	ppbv		ND	0.82	ug/m3
1634-04-4	Methyl Tert Butyl Ether	ND	0.20	0.019	ppbv		ND	0.72	ug/m3
80-62-6	Methylmethacrylate	ND	0.20	0.033	ppbv		ND	0.82	ug/m3
115-07-1	Propylene	ND	0.50	0.016	ppbv		ND	0.86	ug/m3
100-42-5	Styrene	ND	0.20	0.019	ppbv		ND	0.85	ug/m3
71-55-6	1,1,1-Trichloroethane	ND	0.20	0.033	ppbv		ND	1.1	ug/m3
79-34-5	1,1,2,2-Tetrachloroethane	ND	0.20	0.027	ppbv		ND	1.4	ug/m3
79-00-5	1,1,2-Trichloroethane	ND	0.20	0.030	ppbv		ND	1.1	ug/m3
120-82-1	1,2,4-Trichlorobenzene	ND	0.20	0.089	ppbv		ND	1.5	ug/m3
95-63-6	1,2,4-Trimethylbenzene	ND	0.20	0.033	ppbv		ND	0.98	ug/m3
108-67-8	1,3,5-Trimethylbenzene	ND	0.20	0.034	ppbv		ND	0.98	ug/m3
540-84-1	2,2,4-Trimethylpentane	ND	0.20	0.022	ppbv		ND	0.93	ug/m3
75-65-0	Tertiary Butyl Alcohol	ND	0.20	0.014	ppbv		ND	0.61	ug/m3
127-18-4	Tetrachloroethylene	ND	0.040	0.031	ppbv		ND	0.27	ug/m3
109-99-9	Tetrahydrofuran	ND	0.20	0.050	ppbv		ND	0.59	ug/m3
108-88-3	Toluene	ND	0.20	0.014	ppbv		ND	0.75	ug/m3
79-01-6	Trichloroethylene	ND	0.040	0.019	ppbv		ND	0.21	ug/m3
75-69-4	Trichlorofluoromethane	ND	0.20	0.028	ppbv		ND	1.1	ug/m3
75-01-4	Vinyl chloride	ND	0.20	0.022	ppbv		ND	0.51	ug/m3
108-05-4	Vinyl Acetate	ND	0.20	0.034	ppbv		ND	0.70	ug/m3
	m,p-Xylene	ND	0.20	0.034	ppbv		ND	0.87	ug/m3
95-47-6	o-Xylene	ND	0.20	0.017	ppbv		ND	0.87	ug/m3
1330-20-7	Xylenes (total)	ND	0.20	0.017	ppbv		ND	0.87	ug/m3

Method Blank Summary

Job Number: JD2616
Account: ERMNYW ERM, Inc.
Project: Fortive, New Windsor, NY

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V3W2806-MB	3W71600.D	1	02/11/20	DFT	n/a	n/a	V3W2806

The QC reported here applies to the following samples: **Method:** TO-15

JD2616-1, JD2616-2, JD2616-3, JD2616-4

CAS No.	Surrogate Recoveries		Limits
460-00-4	4-Bromofluorobenzene	97%	65-128%

Method Blank Summary

Job Number: JD2616
Account: ERMNYW ERM, Inc.
Project: Fortive, New Windsor, NY

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V3W2807-MB	3W71624.D	1	02/12/20	DFT	n/a	n/a	V3W2807

The QC reported here applies to the following samples: **Method:** TO-15

JD2616-1, JD2616-3

CAS No.	Compound	Result	RL	MDL	Units	Q	Result	RL	Units
76-13-1	Freon 113	ND	0.20	0.017	ppbv		ND	1.5	ug/m3
71-55-6	1,1,1-Trichloroethane	ND	0.20	0.033	ppbv		ND	1.1	ug/m3
127-18-4	Tetrachloroethylene	ND	0.040	0.031	ppbv		ND	0.27	ug/m3

CAS No.	Surrogate Recoveries		Limits
460-00-4	4-Bromofluorobenzene	94%	65-128%

Method Blank Summary

Job Number: JD2616
Account: ERMNYW ERM, Inc.
Project: Fortive, New Windsor, NY

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V3W2796-MB	3W71403.D	1	01/23/20	TCH	n/a	n/a	V3W2796

The QC reported here applies to the following samples: **Method:** TO-15

V3W2796-SCC

CAS No.	Compound	Result	RL	MDL	Units	Q	Result	RL	Units
67-64-1	Acetone	ND	0.20	0.11	ppbv		ND	0.48	ug/m3
106-99-0	1,3-Butadiene	ND	0.20	0.046	ppbv		ND	0.44	ug/m3
71-43-2	Benzene	ND	0.20	0.012	ppbv		ND	0.64	ug/m3
75-27-4	Bromodichloromethane	ND	0.20	0.027	ppbv		ND	1.3	ug/m3
75-25-2	Bromoform	ND	0.20	0.037	ppbv		ND	2.1	ug/m3
74-83-9	Bromomethane	ND	0.20	0.022	ppbv		ND	0.78	ug/m3
593-60-2	Bromoethene	ND	0.20	0.022	ppbv		ND	0.87	ug/m3
100-44-7	Benzyl Chloride	ND	0.20	0.057	ppbv		ND	1.0	ug/m3
75-15-0	Carbon disulfide	ND	0.20	0.024	ppbv		ND	0.62	ug/m3
108-90-7	Chlorobenzene	ND	0.20	0.026	ppbv		ND	0.92	ug/m3
75-00-3	Chloroethane	ND	0.20	0.048	ppbv		ND	0.53	ug/m3
67-66-3	Chloroform	ND	0.20	0.020	ppbv		ND	0.98	ug/m3
74-87-3	Chloromethane	ND	0.20	0.015	ppbv		ND	0.41	ug/m3
107-05-1	3-Chloropropene	ND	0.20	0.040	ppbv		ND	0.63	ug/m3
95-49-8	2-Chlorotoluene	ND	0.20	0.025	ppbv		ND	1.0	ug/m3
56-23-5	Carbon tetrachloride	ND	0.20	0.024	ppbv		ND	1.3	ug/m3
110-82-7	Cyclohexane	ND	0.20	0.022	ppbv		ND	0.69	ug/m3
75-34-3	1,1-Dichloroethane	ND	0.20	0.012	ppbv		ND	0.81	ug/m3
75-35-4	1,1-Dichloroethylene	ND	0.20	0.017	ppbv		ND	0.79	ug/m3
106-93-4	1,2-Dibromoethane	ND	0.20	0.018	ppbv		ND	1.5	ug/m3
107-06-2	1,2-Dichloroethane	ND	0.20	0.021	ppbv		ND	0.81	ug/m3
78-87-5	1,2-Dichloropropane	ND	0.20	0.019	ppbv		ND	0.92	ug/m3
123-91-1	1,4-Dioxane	ND	0.20	0.052	ppbv		ND	0.72	ug/m3
75-71-8	Dichlorodifluoromethane	ND	0.20	0.017	ppbv		ND	0.99	ug/m3
124-48-1	Dibromochloromethane	ND	0.20	0.033	ppbv		ND	1.7	ug/m3
156-60-5	trans-1,2-Dichloroethylene	ND	0.20	0.0073	ppbv		ND	0.79	ug/m3
156-59-2	cis-1,2-Dichloroethylene	ND	0.20	0.012	ppbv		ND	0.79	ug/m3
10061-01-5	cis-1,3-Dichloropropene	ND	0.20	0.020	ppbv		ND	0.91	ug/m3
541-73-1	m-Dichlorobenzene	ND	0.20	0.019	ppbv		ND	1.2	ug/m3
95-50-1	o-Dichlorobenzene	ND	0.20	0.022	ppbv		ND	1.2	ug/m3
106-46-7	p-Dichlorobenzene	ND	0.20	0.018	ppbv		ND	1.2	ug/m3
10061-02-6	trans-1,3-Dichloropropene	ND	0.20	0.020	ppbv		ND	0.91	ug/m3
64-17-5	Ethanol	ND	0.50	0.22	ppbv		ND	0.94	ug/m3
100-41-4	Ethylbenzene	ND	0.20	0.015	ppbv		ND	0.87	ug/m3
141-78-6	Ethyl Acetate	ND	0.20	0.038	ppbv		ND	0.72	ug/m3
622-96-8	4-Ethyltoluene	ND	0.20	0.030	ppbv		ND	0.98	ug/m3

Method Blank Summary

Job Number: JD2616
Account: ERMNYW ERM, Inc.
Project: Fortive, New Windsor, NY

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V3W2796-MB	3W71403.D	1	01/23/20	TCH	n/a	n/a	V3W2796

The QC reported here applies to the following samples: **Method:** TO-15

V3W2796-SCC

CAS No.	Compound	Result	RL	MDL	Units	Q	Result	RL	Units
76-13-1	Freon 113	ND	0.20	0.017	ppbv		ND	1.5	ug/m3
76-14-2	Freon 114	ND	0.20	0.019	ppbv		ND	1.4	ug/m3
142-82-5	Heptane	ND	0.20	0.018	ppbv		ND	0.82	ug/m3
87-68-3	Hexachlorobutadiene	ND	0.20	0.046	ppbv		ND	2.1	ug/m3
110-54-3	Hexane	ND	0.20	0.011	ppbv		ND	0.70	ug/m3
591-78-6	2-Hexanone	ND	0.20	0.036	ppbv		ND	0.82	ug/m3
67-63-0	Isopropyl Alcohol	ND	0.20	0.065	ppbv		ND	0.49	ug/m3
75-09-2	Methylene chloride	ND	0.20	0.015	ppbv		ND	0.69	ug/m3
78-93-3	Methyl ethyl ketone	ND	0.20	0.042	ppbv		ND	0.59	ug/m3
108-10-1	Methyl Isobutyl Ketone	ND	0.20	0.036	ppbv		ND	0.82	ug/m3
1634-04-4	Methyl Tert Butyl Ether	ND	0.20	0.019	ppbv		ND	0.72	ug/m3
80-62-6	Methylmethacrylate	ND	0.20	0.033	ppbv		ND	0.82	ug/m3
115-07-1	Propylene	ND	0.50	0.016	ppbv		ND	0.86	ug/m3
100-42-5	Styrene	ND	0.20	0.019	ppbv		ND	0.85	ug/m3
71-55-6	1,1,1-Trichloroethane	ND	0.20	0.033	ppbv		ND	1.1	ug/m3
79-34-5	1,1,2,2-Tetrachloroethane	ND	0.20	0.027	ppbv		ND	1.4	ug/m3
79-00-5	1,1,2-Trichloroethane	ND	0.20	0.030	ppbv		ND	1.1	ug/m3
120-82-1	1,2,4-Trichlorobenzene	ND	0.20	0.089	ppbv		ND	1.5	ug/m3
95-63-6	1,2,4-Trimethylbenzene	ND	0.20	0.033	ppbv		ND	0.98	ug/m3
108-67-8	1,3,5-Trimethylbenzene	ND	0.20	0.034	ppbv		ND	0.98	ug/m3
540-84-1	2,2,4-Trimethylpentane	ND	0.20	0.022	ppbv		ND	0.93	ug/m3
75-65-0	Tertiary Butyl Alcohol	ND	0.20	0.014	ppbv		ND	0.61	ug/m3
127-18-4	Tetrachloroethylene	ND	0.040	0.031	ppbv		ND	0.27	ug/m3
109-99-9	Tetrahydrofuran	ND	0.20	0.050	ppbv		ND	0.59	ug/m3
108-88-3	Toluene	ND	0.20	0.014	ppbv		ND	0.75	ug/m3
79-01-6	Trichloroethylene	ND	0.040	0.019	ppbv		ND	0.21	ug/m3
75-69-4	Trichlorofluoromethane	ND	0.20	0.028	ppbv		ND	1.1	ug/m3
75-01-4	Vinyl chloride	ND	0.20	0.022	ppbv		ND	0.51	ug/m3
108-05-4	Vinyl Acetate	ND	0.20	0.034	ppbv		ND	0.70	ug/m3
	m,p-Xylene	ND	0.20	0.034	ppbv		ND	0.87	ug/m3
95-47-6	o-Xylene	ND	0.20	0.017	ppbv		ND	0.87	ug/m3
1330-20-7	Xylenes (total)	ND	0.20	0.017	ppbv		ND	0.87	ug/m3

Method Blank Summary

Job Number: JD2616
Account: ERMNYW ERM, Inc.
Project: Fortive, New Windsor, NY

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V3W2796-MB	3W71403.D	1	01/23/20	TCH	n/a	n/a	V3W2796

The QC reported here applies to the following samples: **Method:** TO-15

V3W2796-SCC

CAS No.	Surrogate Recoveries		Limits
460-00-4	4-Bromofluorobenzene	95%	65-128%

CAS No.	Tentatively Identified Compounds	R.T.	Est. Conc.	Units	Q
	Total TIC, Volatile		0	ppbv	

Blank Spike/Blank Spike Duplicate Summary

Job Number: JD2616
Account: ERMNYW ERM, Inc.
Project: Fortive, New Windsor, NY

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V3W2806-BS	3W71597.D	1	02/11/20	DFT	n/a	n/a	V3W2806
V3W2806-BSD	3W71598.D	1	02/11/20	DFT	n/a	n/a	V3W2806

The QC reported here applies to the following samples: **Method:** TO-15

JD2616-1, JD2616-2, JD2616-3, JD2616-4

CAS No.	Compound	Spike ppbv	BSP ppbv	BSP %	BSD ppbv	BSD %	RPD	Limits Rec/RPD
67-64-1	Acetone	10	7.4	74	8.2	82	10	70-130/30
106-99-0	1,3-Butadiene	10	11.6	116	11.4	114	2	70-130/30
71-43-2	Benzene	10	11.6	116	11.8	118	2	70-130/30
75-27-4	Bromodichloromethane	10	11.8	118	12.0	120	2	70-130/30
75-25-2	Bromoform	10	11.8	118	12.0	120	2	70-130/30
74-83-9	Bromomethane	10	10.3	103	10	100	3	70-130/30
593-60-2	Bromoethene	10	10.5	105	10.4	104	1	70-130/30
100-44-7	Benzyl Chloride	10	11.6	116	11.7	117	1	70-130/30
75-15-0	Carbon disulfide	10	10.2	102	10.0	100	2	70-130/30
108-90-7	Chlorobenzene	10	11.2	112	11.4	114	2	70-130/30
75-00-3	Chloroethane	10	11.4	114	11.5	115	1	70-130/30
67-66-3	Chloroform	10	9.8	98	9.9	99	1	70-130/30
74-87-3	Chloromethane	10	11.8	118	11.7	117	1	70-130/30
107-05-1	3-Chloropropene	10	10.9	109	11.0	110	1	70-130/30
95-49-8	2-Chlorotoluene	10	11.0	110	11.5	115	4	70-130/30
56-23-5	Carbon tetrachloride	10	10.1	101	10.0	100	1	70-130/30
110-82-7	Cyclohexane	10	12.1	121	12.2	122	1	70-130/30
75-34-3	1,1-Dichloroethane	10	10.2	102	10.3	103	1	70-130/30
75-35-4	1,1-Dichloroethylene	10	10.2	102	10.2	102	0	70-130/30
106-93-4	1,2-Dibromoethane	10	10.9	109	11.0	110	1	70-130/30
107-06-2	1,2-Dichloroethane	10	9.5	95	9.6	96	1	70-130/30
78-87-5	1,2-Dichloropropane	10	10.5	105	11.1	111	6	70-130/30
123-91-1	1,4-Dioxane	10	10.9	109	10.7	107	2	70-130/30
75-71-8	Dichlorodifluoromethane	10	10.3	103	10.0	100	3	70-130/30
124-48-1	Dibromochloromethane	10	12.2	122	12.0	120	2	70-130/30
156-60-5	trans-1,2-Dichloroethylene	10	10.5	105	10.5	105	0	70-130/30
156-59-2	cis-1,2-Dichloroethylene	10	10.5	105	10.5	105	0	70-130/30
10061-01-5	cis-1,3-Dichloropropene	10	11.1	111	11.6	116	4	70-130/30
541-73-1	m-Dichlorobenzene	10	10.3	103	10.7	107	4	70-130/30
95-50-1	o-Dichlorobenzene	10	9.8	98	10.0	100	2	70-130/30
106-46-7	p-Dichlorobenzene	10	10.0	100	10.3	103	3	70-130/30
10061-02-6	trans-1,3-Dichloropropene	10	10.6	106	11.4	114	7	70-130/30
64-17-5	Ethanol	10	9.2	92	9.5	95	3	70-130/30
100-41-4	Ethylbenzene	10	9.2	92	10.0	100	8	70-130/30
141-78-6	Ethyl Acetate	10	7.6	76	8.0	80	5	70-130/30
622-96-8	4-Ethyltoluene	10	10.8	108	11.3	113	5	70-130/30

* = Outside of Control Limits.

Blank Spike/Blank Spike Duplicate Summary

Job Number: JD2616
Account: ERMNYW ERM, Inc.
Project: Fortive, New Windsor, NY

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V3W2806-BS	3W71597.D	1	02/11/20	DFT	n/a	n/a	V3W2806
V3W2806-BSD	3W71598.D	1	02/11/20	DFT	n/a	n/a	V3W2806

The QC reported here applies to the following samples: **Method:** TO-15

JD2616-1, JD2616-2, JD2616-3, JD2616-4

CAS No.	Compound	Spike ppbv	BSP ppbv	BSP %	BSD ppbv	BSD %	RPD	Limits Rec/RPD
76-13-1	Freon 113	10	9.8	98	9.7	97	1	70-130/30
76-14-2	Freon 114	10	10.5	105	10.4	104	1	70-130/30
142-82-5	Heptane	10	12.5	125	12.9	129	3	70-130/30
87-68-3	Hexachlorobutadiene	10	7.4	74	7.0	70	6	70-130/30
110-54-3	Hexane	10	10.6	106	10.9	109	3	70-130/30
591-78-6	2-Hexanone	10	13.0	130	12.8	128	2	70-130/30
67-63-0	Isopropyl Alcohol	10	9.2	92	9.2	92	0	70-130/30
75-09-2	Methylene chloride	10	9.4	94	9.5	95	1	70-130/30
78-93-3	Methyl ethyl ketone	10	8.1	81	8.4	84	4	70-130/30
108-10-1	Methyl Isobutyl Ketone	10	11.0	110	11.2	112	2	70-130/30
1634-04-4	Methyl Tert Butyl Ether	10	7.8	78	8.4	84	7	70-130/30
80-62-6	Methylmethacrylate	10	9.0	90	9.6	96	6	70-130/30
115-07-1	Propylene	10	11.1	111	11.3	113	2	70-130/30
100-42-5	Styrene	10	11.3	113	12.1	121	7	70-130/30
71-55-6	1,1,1-Trichloroethane	10	9.8	98	9.8	98	0	70-130/30
79-34-5	1,1,2,2-Tetrachloroethane	10	10.4	104	10.8	108	4	70-130/30
79-00-5	1,1,2-Trichloroethane	10	10.3	103	11.2	112	8	70-130/30
120-82-1	1,2,4-Trichlorobenzene	10	8.4	84	7.8	78	7	70-130/30
95-63-6	1,2,4-Trimethylbenzene	10	11.0	110	11.3	113	3	70-130/30
108-67-8	1,3,5-Trimethylbenzene	10	10.5	105	11.0	110	5	70-130/30
540-84-1	2,2,4-Trimethylpentane	10	12.5	125	12.8	128	2	70-130/30
75-65-0	Tertiary Butyl Alcohol	10	9.8	98	9.6	96	2	70-130/30
127-18-4	Tetrachloroethylene	10	11.9	119	11.4	114	4	70-130/30
109-99-9	Tetrahydrofuran	10	8.2	82	8.6	86	5	70-130/30
108-88-3	Toluene	10	10.0	100	10.8	108	8	70-130/30
79-01-6	Trichloroethylene	10	11.7	117	11.7	117	0	70-130/30
75-69-4	Trichlorofluoromethane	10	9.6	96	9.6	96	0	70-130/30
75-01-4	Vinyl chloride	10	11.4	114	11.2	112	2	70-130/30
108-05-4	Vinyl Acetate	10	8.5	85	9.3	93	9	70-130/30
	m,p-Xylene	20	20.0	100	21.6	108	8	70-130/30
95-47-6	o-Xylene	10	8.9	89	9.7	97	9	70-130/30
1330-20-7	Xylenes (total)	30	28.9	96	31.3	104	8	70-130/30

* = Outside of Control Limits.

Blank Spike/Blank Spike Duplicate Summary

Job Number: JD2616
Account: ERMNYW ERM, Inc.
Project: Fortive, New Windsor, NY

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V3W2806-BS	3W71597.D	1	02/11/20	DFT	n/a	n/a	V3W2806
V3W2806-BSD	3W71598.D	1	02/11/20	DFT	n/a	n/a	V3W2806

The QC reported here applies to the following samples: **Method:** TO-15

JD2616-1, JD2616-2, JD2616-3, JD2616-4

CAS No.	Surrogate Recoveries	BSP	BSD	Limits
460-00-4	4-Bromofluorobenzene	96%	97%	65-128%

* = Outside of Control Limits.

Blank Spike/Blank Spike Duplicate Summary

Job Number: JD2616
Account: ERMNYW ERM, Inc.
Project: Fortive, New Windsor, NY

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V3W2807-BS	3W71621.D	1	02/12/20	DFT	n/a	n/a	V3W2807
V3W2807-BSD	3W71622.D	1	02/12/20	DFT	n/a	n/a	V3W2807

The QC reported here applies to the following samples: **Method:** TO-15

JD2616-1, JD2616-3

CAS No.	Compound	Spike ppbv	BSP ppbv	BSP %	BSD ppbv	BSD %	RPD	Limits Rec/RPD
76-13-1	Freon 113	10	9.3	93	9.2	92	1	70-130/30
71-55-6	1,1,1-Trichloroethane	10	9.0	90	9.0	90	0	70-130/30
127-18-4	Tetrachloroethylene	10	12.7	127	12.6	126	1	70-130/30

CAS No.	Surrogate Recoveries	BSP	BSD	Limits
460-00-4	4-Bromofluorobenzene	95%	97%	65-128%

* = Outside of Control Limits.

Blank Spike/Blank Spike Duplicate Summary

Job Number: JD2616
Account: ERMNYW ERM, Inc.
Project: Fortive, New Windsor, NY

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V3W2796-BS	3W71399.D	1	01/23/20	TCH	n/a	n/a	V3W2796
V3W2796-BSD	3W71401.D	1	01/23/20	TCH	n/a	n/a	V3W2796

The QC reported here applies to the following samples: **Method:** TO-15

V3W2796-SCC

CAS No.	Compound	Spike ppbv	BSP ppbv	BSP %	BSD ppbv	BSD %	RPD	Limits Rec/RPD
67-64-1	Acetone	10	7.0	70	7.8	78	11	70-130/30
106-99-0	1,3-Butadiene	10	8.9	89	9.5	95	7	70-130/30
71-43-2	Benzene	10	9.0	90	8.9	89	1	70-130/30
75-27-4	Bromodichloromethane	10	9.5	95	9.4	94	1	70-130/30
75-25-2	Bromoform	10	10.7	107	11.3	113	5	70-130/30
74-83-9	Bromomethane	10	8.6	86	9.2	92	7	70-130/30
593-60-2	Bromoethene	10	9.0	90	9.6	96	6	70-130/30
100-44-7	Benzyl Chloride	10	10.3	103	11.3	113	9	70-130/30
75-15-0	Carbon disulfide	10	8.8	88	9.3	93	6	70-130/30
108-90-7	Chlorobenzene	10	9.2	92	9.7	97	5	70-130/30
75-00-3	Chloroethane	10	9.2	92	9.7	97	5	70-130/30
67-66-3	Chloroform	10	8.7	87	9.0	90	3	70-130/30
74-87-3	Chloromethane	10	9.2	92	9.8	98	6	70-130/30
107-05-1	3-Chloropropene	10	8.8	88	9.3	93	6	70-130/30
95-49-8	2-Chlorotoluene	10	9.4	94	10.1	101	7	70-130/30
56-23-5	Carbon tetrachloride	10	9.3	93	9.7	97	4	70-130/30
110-82-7	Cyclohexane	10	9.3	93	9.2	92	1	70-130/30
75-34-3	1,1-Dichloroethane	10	8.5	85	8.8	88	3	70-130/30
75-35-4	1,1-Dichloroethylene	10	8.5	85	9.1	91	7	70-130/30
106-93-4	1,2-Dibromoethane	10	9.0	90	9.4	94	4	70-130/30
107-06-2	1,2-Dichloroethane	10	8.4	84	8.8	88	5	70-130/30
78-87-5	1,2-Dichloropropane	10	8.3	83	8.1	81	2	70-130/30
123-91-1	1,4-Dioxane	10	9.0	90	9.4	94	4	70-130/30
75-71-8	Dichlorodifluoromethane	10	9.0	90	9.5	95	5	70-130/30
124-48-1	Dibromochloromethane	10	10.3	103	10.9	109	6	70-130/30
156-60-5	trans-1,2-Dichloroethylene	10	8.9	89	9.4	94	5	70-130/30
156-59-2	cis-1,2-Dichloroethylene	10	8.8	88	9.2	92	4	70-130/30
10061-01-5	cis-1,3-Dichloropropene	10	8.7	87	8.9	89	2	70-130/30
541-73-1	m-Dichlorobenzene	10	9.5	95	10.2	102	7	70-130/30
95-50-1	o-Dichlorobenzene	10	9.3	93	10.2	102	9	70-130/30
106-46-7	p-Dichlorobenzene	10	9.2	92	9.9	99	7	70-130/30
10061-02-6	trans-1,3-Dichloropropene	10	8.6	86	8.8	88	2	70-130/30
64-17-5	Ethanol	10	8.1	81	8.7	87	7	70-130/30
100-41-4	Ethylbenzene	10	8.0	80	8.4	84	5	70-130/30
141-78-6	Ethyl Acetate	10	7.5	75	8.0	80	6	70-130/30
622-96-8	4-Ethyltoluene	10	9.8	98	10.7	107	9	70-130/30

* = Outside of Control Limits.

Blank Spike/Blank Spike Duplicate Summary

Job Number: JD2616
Account: ERMNYW ERM, Inc.
Project: Fortive, New Windsor, NY

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V3W2796-BS	3W71399.D	1	01/23/20	TCH	n/a	n/a	V3W2796
V3W2796-BSD	3W71401.D	1	01/23/20	TCH	n/a	n/a	V3W2796

The QC reported here applies to the following samples: **Method:** TO-15

V3W2796-SCC

CAS No.	Compound	Spike ppbv	BSP ppbv	BSP %	BSD ppbv	BSD %	RPD	Limits Rec/RPD
76-13-1	Freon 113	10	8.7	87	9.3	93	7	70-130/30
76-14-2	Freon 114	10	8.9	89	9.5	95	7	70-130/30
142-82-5	Heptane	10	9.2	92	8.9	89	3	70-130/30
87-68-3	Hexachlorobutadiene	10	8.4	84	9.6	96	13	70-130/30
110-54-3	Hexane	10	8.6	86	9.0	90	5	70-130/30
591-78-6	2-Hexanone	10	10.2	102	10.7	107	5	70-130/30
67-63-0	Isopropyl Alcohol	10	8.2	82	8.7	87	6	70-130/30
75-09-2	Methylene chloride	10	8.2	82	8.6	86	5	70-130/30
78-93-3	Methyl ethyl ketone	10	7.6	76	8.3	83	9	70-130/30
108-10-1	Methyl Isobutyl Ketone	10	9.0	90	9.2	92	2	70-130/30
1634-04-4	Methyl Tert Butyl Ether	10	7.6	76	8.3	83	9	70-130/30
80-62-6	Methylmethacrylate	10	7.9	79	8.2	82	4	70-130/30
115-07-1	Propylene	10	8.5	85	9.1	91	7	70-130/30
100-42-5	Styrene	10	9.6	96	10.3	103	7	70-130/30
71-55-6	1,1,1-Trichloroethane	10	8.9	89	9.3	93	4	70-130/30
79-34-5	1,1,2,2-Tetrachloroethane	10	8.9	89	9.5	95	7	70-130/30
79-00-5	1,1,2-Trichloroethane	10	8.5	85	8.6	86	1	70-130/30
120-82-1	1,2,4-Trichlorobenzene	10	8.2	82	9.4	94	14	70-130/30
95-63-6	1,2,4-Trimethylbenzene	10	10.2	102	11.0	110	8	70-130/30
108-67-8	1,3,5-Trimethylbenzene	10	9.8	98	10.6	106	8	70-130/30
540-84-1	2,2,4-Trimethylpentane	10	9.4	94	9.2	92	2	70-130/30
75-65-0	Tertiary Butyl Alcohol	10	8.8	88	9.4	94	7	70-130/30
127-18-4	Tetrachloroethylene	10	10.0	100	10.3	103	3	70-130/30
109-99-9	Tetrahydrofuran	10	7.6	76	8.3	83	9	70-130/30
108-88-3	Toluene	10	8.4	84	8.5	85	1	70-130/30
79-01-6	Trichloroethylene	10	9.4	94	9.4	94	0	70-130/30
75-69-4	Trichlorofluoromethane	10	8.8	88	9.3	93	6	70-130/30
75-01-4	Vinyl chloride	10	9.1	91	9.7	97	6	70-130/30
108-05-4	Vinyl Acetate	10	7.9	79	8.3	83	5	70-130/30
	m,p-Xylene	20	17.2	86	18.4	92	7	70-130/30
95-47-6	o-Xylene	10	7.8	78	8.3	83	6	70-130/30
1330-20-7	Xylenes (total)	30	25.0	83	26.8	89	7	70-130/30

* = Outside of Control Limits.

Blank Spike/Blank Spike Duplicate Summary

Job Number: JD2616
Account: ERMNYW ERM, Inc.
Project: Fortive, New Windsor, NY

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V3W2796-BS	3W71399.D	1	01/23/20	TCH	n/a	n/a	V3W2796
V3W2796-BSD	3W71401.D	1	01/23/20	TCH	n/a	n/a	V3W2796

The QC reported here applies to the following samples: **Method:** TO-15

V3W2796-SCC

CAS No.	Surrogate Recoveries	BSP	BSD	Limits
460-00-4	4-Bromofluorobenzene	100%	101%	65-128%

* = Outside of Control Limits.

Duplicate Summary

Job Number: JD2616
Account: ERMNYW ERM, Inc.
Project: Fortive, New Windsor, NY

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
JD2884-1DUP	3W71602.D	1	02/11/20	DFT	n/a	n/a	V3W2806
JD2884-1	3W71601.D	1	02/11/20	DFT	n/a	n/a	V3W2806

The QC reported here applies to the following samples: **Method:** TO-15

JD2616-1, JD2616-2, JD2616-3, JD2616-4

CAS No.	Compound	JD2884-1 ppbv	Q	DUP ppbv	Q	RPD	Limits
67-64-1	Acetone	26.6		25.0		6	25
106-99-0	1,3-Butadiene	ND		ND		nc	25
71-43-2	Benzene	ND		ND		nc	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	25
100-44-7	Benzyl Chloride	ND		ND		nc	25
75-15-0	Carbon disulfide	2.9		2.9		0	25
108-90-7	Chlorobenzene	ND		ND		nc	25
75-00-3	Chloroethane	ND		ND		nc	25
67-66-3	Chloroform	0.88		0.89		1	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	0.54	J	0.54	J	0	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	ND		ND		nc	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	31.1		30.4		2	25
100-41-4	Ethylbenzene	ND		ND		nc	25
141-78-6	Ethyl Acetate	0.64	J	0.60	J	6	25
622-96-8	4-Ethyltoluene	ND		ND		nc	25

* = Outside of Control Limits.

Duplicate Summary

Job Number: JD2616
Account: ERMNYW ERM, Inc.
Project: Fortive, New Windsor, NY

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
JD2884-1DUP	3W71602.D	1	02/11/20	DFT	n/a	n/a	V3W2806
JD2884-1	3W71601.D	1	02/11/20	DFT	n/a	n/a	V3W2806

The QC reported here applies to the following samples: **Method:** TO-15

JD2616-1, JD2616-2, JD2616-3, JD2616-4

CAS No.	Compound	JD2884-1 ppbv	Q	DUP 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	0.92		0.88		4	25
87-68-3	Hexachlorobutadiene	ND		ND		nc	25
110-54-3	Hexane	0.79	J	0.78	J	1	25
591-78-6	2-Hexanone	ND		ND		nc	25
67-63-0	Isopropyl Alcohol	27.9		27.7		1	25
75-09-2	Methylene chloride	ND		ND		nc	25
78-93-3	Methyl ethyl ketone	1.1		1.0		10	25
108-10-1	Methyl Isobutyl Ketone	ND		ND		nc	25
1634-04-4	Methyl Tert Butyl Ether	ND		ND		nc	25
80-62-6	Methylmethacrylate	ND		ND		nc	25
115-07-1	Propylene	ND		ND		nc	25
100-42-5	Styrene	ND		ND		nc	25
71-55-6	1,1,1-Trichloroethane	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	0.86		0.84		2	25
127-18-4	Tetrachloroethylene	0.58		0.54		7	25
109-99-9	Tetrahydrofuran	ND		ND		nc	25
108-88-3	Toluene	1.3		1.1		17	25
79-01-6	Trichloroethylene	ND		ND		nc	25
75-69-4	Trichlorofluoromethane	ND		ND		nc	25
75-01-4	Vinyl chloride	ND		ND		nc	25
108-05-4	Vinyl Acetate	ND		ND		nc	25
	m,p-Xylene	1.1		0.87		23	25
95-47-6	o-Xylene	0.39	J	ND		200* [a]	25
1330-20-7	Xylenes (total)	1.4		0.87		47* [a]	25

* = Outside of Control Limits.

Duplicate Summary

Job Number: JD2616
Account: ERMNYW ERM, Inc.
Project: Fortive, New Windsor, NY

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
JD2884-1DUP	3W71602.D	1	02/11/20	DFT	n/a	n/a	V3W2806
JD2884-1	3W71601.D	1	02/11/20	DFT	n/a	n/a	V3W2806

The QC reported here applies to the following samples: **Method:** TO-15

JD2616-1, JD2616-2, JD2616-3, JD2616-4

CAS No.	Surrogate Recoveries	DUP	JD2884-1	Limits
460-00-4	4-Bromofluorobenzene	90%	85%	65-128%

(a) High RPD due to low concentration of hit

* = Outside of Control Limits.

Duplicate Summary

Job Number: JD2616
Account: ERMNYW ERM, Inc.
Project: Fortive, New Windsor, NY

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
JD3012-1DUP	3W71630.D	1	02/12/20	DFT	n/a	n/a	V3W2807
JD3012-1	3W71629.D	1	02/12/20	DFT	n/a	n/a	V3W2807

The QC reported here applies to the following samples: **Method:** TO-15

JD2616-1, JD2616-3

CAS No.	Compound	JD3012-1 ppbv	Q	DUP ppbv	Q	RPD	Limits
76-13-1	Freon 113	ND		ND		nc	25
71-55-6	1,1,1-Trichloroethane	ND		ND		nc	25
127-18-4	Tetrachloroethylene	0.081		0.082		1	25

CAS No.	Surrogate Recoveries	DUP	JD3012-1	Limits
460-00-4	4-Bromofluorobenzene	95%	92%	65-128%

* = Outside of Control Limits.

Summa Cleaning Certification

Job Number: JD2616
Account: ERMNYW ERM, Inc.
Project: Fortive, New Windsor, NY

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V3W2796-SCC	3W71421.D	1	01/24/20	TCH	n/a	n/a	V3W2796

The QC reported here (Summa M132) applies to the following samples: **Method:** TO-15

Batch CP10668 cleaned 01/17/20: JD2616-1(A993), JD2616-2(A1050), JD2616-3(A369), JD2616-4(A892)

CAS No.	Compound	Result	RL	MDL	Units	Q	Result	RL	Units
67-64-1	Acetone	ND	0.20	0.11	ppbv		ND	0.48	ug/m3
106-99-0	1,3-Butadiene	ND	0.20	0.046	ppbv		ND	0.44	ug/m3
71-43-2	Benzene	ND	0.20	0.012	ppbv		ND	0.64	ug/m3
75-27-4	Bromodichloromethane	ND	0.20	0.027	ppbv		ND	1.3	ug/m3
75-25-2	Bromoform	ND	0.20	0.037	ppbv		ND	2.1	ug/m3
74-83-9	Bromomethane	ND	0.20	0.022	ppbv		ND	0.78	ug/m3
593-60-2	Bromoethene	ND	0.20	0.022	ppbv		ND	0.87	ug/m3
100-44-7	Benzyl Chloride	ND	0.20	0.057	ppbv		ND	1.0	ug/m3
75-15-0	Carbon disulfide	ND	0.20	0.024	ppbv		ND	0.62	ug/m3
108-90-7	Chlorobenzene	ND	0.20	0.026	ppbv		ND	0.92	ug/m3
75-00-3	Chloroethane	ND	0.20	0.048	ppbv		ND	0.53	ug/m3
67-66-3	Chloroform	ND	0.20	0.020	ppbv		ND	0.98	ug/m3
74-87-3	Chloromethane	ND	0.20	0.015	ppbv		ND	0.41	ug/m3
107-05-1	3-Chloropropene	ND	0.20	0.040	ppbv		ND	0.63	ug/m3
95-49-8	2-Chlorotoluene	ND	0.20	0.025	ppbv		ND	1.0	ug/m3
56-23-5	Carbon tetrachloride	ND	0.20	0.024	ppbv		ND	1.3	ug/m3
110-82-7	Cyclohexane	ND	0.20	0.022	ppbv		ND	0.69	ug/m3
75-34-3	1,1-Dichloroethane	ND	0.20	0.012	ppbv		ND	0.81	ug/m3
75-35-4	1,1-Dichloroethylene	ND	0.20	0.017	ppbv		ND	0.79	ug/m3
106-93-4	1,2-Dibromoethane	ND	0.20	0.018	ppbv		ND	1.5	ug/m3
107-06-2	1,2-Dichloroethane	ND	0.20	0.021	ppbv		ND	0.81	ug/m3
78-87-5	1,2-Dichloropropane	ND	0.20	0.019	ppbv		ND	0.92	ug/m3
123-91-1	1,4-Dioxane	ND	0.20	0.052	ppbv		ND	0.72	ug/m3
75-71-8	Dichlorodifluoromethane	ND	0.20	0.017	ppbv		ND	0.99	ug/m3
124-48-1	Dibromochloromethane	ND	0.20	0.033	ppbv		ND	1.7	ug/m3
156-60-5	trans-1,2-Dichloroethylene	ND	0.20	0.0073	ppbv		ND	0.79	ug/m3
156-59-2	cis-1,2-Dichloroethylene	ND	0.20	0.012	ppbv		ND	0.79	ug/m3
10061-01-5	cis-1,3-Dichloropropene	ND	0.20	0.020	ppbv		ND	0.91	ug/m3
541-73-1	m-Dichlorobenzene	ND	0.20	0.019	ppbv		ND	1.2	ug/m3
95-50-1	o-Dichlorobenzene	ND	0.20	0.022	ppbv		ND	1.2	ug/m3
106-46-7	p-Dichlorobenzene	ND	0.20	0.018	ppbv		ND	1.2	ug/m3
10061-02-6	trans-1,3-Dichloropropene	ND	0.20	0.020	ppbv		ND	0.91	ug/m3
64-17-5	Ethanol	ND	0.50	0.22	ppbv		ND	0.94	ug/m3
100-41-4	Ethylbenzene	ND	0.20	0.015	ppbv		ND	0.87	ug/m3
141-78-6	Ethyl Acetate	ND	0.20	0.038	ppbv		ND	0.72	ug/m3
622-96-8	4-Ethyltoluene	ND	0.20	0.030	ppbv		ND	0.98	ug/m3

Summa Cleaning Certification

Job Number: JD2616
Account: ERMNYW ERM, Inc.
Project: Fortive, New Windsor, NY

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V3W2796-SCC	3W71421.D	1	01/24/20	TCH	n/a	n/a	V3W2796

The QC reported here (Summa M132) applies to the following samples: **Method:** TO-15

Batch CP10668 cleaned 01/17/20: JD2616-1(A993), JD2616-2(A1050), JD2616-3(A369), JD2616-4(A892)

CAS No.	Compound	Result	RL	MDL	Units	Q	Result	RL	Units
76-13-1	Freon 113	ND	0.20	0.017	ppbv		ND	1.5	ug/m3
76-14-2	Freon 114	ND	0.20	0.019	ppbv		ND	1.4	ug/m3
142-82-5	Heptane	ND	0.20	0.018	ppbv		ND	0.82	ug/m3
87-68-3	Hexachlorobutadiene	ND	0.20	0.046	ppbv		ND	2.1	ug/m3
110-54-3	Hexane	ND	0.20	0.011	ppbv		ND	0.70	ug/m3
591-78-6	2-Hexanone	ND	0.20	0.036	ppbv		ND	0.82	ug/m3
67-63-0	Isopropyl Alcohol	ND	0.20	0.065	ppbv		ND	0.49	ug/m3
75-09-2	Methylene chloride	ND	0.20	0.015	ppbv		ND	0.69	ug/m3
78-93-3	Methyl ethyl ketone	ND	0.20	0.042	ppbv		ND	0.59	ug/m3
108-10-1	Methyl Isobutyl Ketone	ND	0.20	0.036	ppbv		ND	0.82	ug/m3
1634-04-4	Methyl Tert Butyl Ether	ND	0.20	0.019	ppbv		ND	0.72	ug/m3
80-62-6	Methylmethacrylate	ND	0.20	0.033	ppbv		ND	0.82	ug/m3
115-07-1	Propylene	ND	0.50	0.016	ppbv		ND	0.86	ug/m3
100-42-5	Styrene	ND	0.20	0.019	ppbv		ND	0.85	ug/m3
71-55-6	1,1,1-Trichloroethane	ND	0.20	0.033	ppbv		ND	1.1	ug/m3
79-34-5	1,1,2,2-Tetrachloroethane	ND	0.20	0.027	ppbv		ND	1.4	ug/m3
79-00-5	1,1,2-Trichloroethane	ND	0.20	0.030	ppbv		ND	1.1	ug/m3
120-82-1	1,2,4-Trichlorobenzene	ND	0.20	0.089	ppbv		ND	1.5	ug/m3
95-63-6	1,2,4-Trimethylbenzene	ND	0.20	0.033	ppbv		ND	0.98	ug/m3
108-67-8	1,3,5-Trimethylbenzene	ND	0.20	0.034	ppbv		ND	0.98	ug/m3
540-84-1	2,2,4-Trimethylpentane	ND	0.20	0.022	ppbv		ND	0.93	ug/m3
75-65-0	Tertiary Butyl Alcohol	ND	0.20	0.014	ppbv		ND	0.61	ug/m3
127-18-4	Tetrachloroethylene	ND	0.040	0.031	ppbv		ND	0.27	ug/m3
109-99-9	Tetrahydrofuran	ND	0.20	0.050	ppbv		ND	0.59	ug/m3
108-88-3	Toluene	ND	0.20	0.014	ppbv		ND	0.75	ug/m3
79-01-6	Trichloroethylene	ND	0.040	0.019	ppbv		ND	0.21	ug/m3
75-69-4	Trichlorofluoromethane	ND	0.20	0.028	ppbv		ND	1.1	ug/m3
75-01-4	Vinyl chloride	ND	0.20	0.022	ppbv		ND	0.51	ug/m3
108-05-4	Vinyl Acetate	ND	0.20	0.034	ppbv		ND	0.70	ug/m3
	m,p-Xylene	ND	0.20	0.034	ppbv		ND	0.87	ug/m3
95-47-6	o-Xylene	ND	0.20	0.017	ppbv		ND	0.87	ug/m3
1330-20-7	Xylenes (total)	ND	0.20	0.017	ppbv		ND	0.87	ug/m3

Summa Cleaning Certification

Job Number: JD2616
Account: ERMNYW ERM, Inc.
Project: Fortive, New Windsor, NY

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V3W2796-SCC	3W71421.D	1	01/24/20	TCH	n/a	n/a	V3W2796

The QC reported here (Summa M132) applies to the following samples: **Method:** TO-15

Batch CP10668 cleaned 01/17/20: JD2616-1(A993), JD2616-2(A1050), JD2616-3(A369), JD2616-4(A892)

CAS No.	Surrogate Recoveries		Limits
460-00-4	4-Bromofluorobenzene	94%	65-128%

Instrument Performance Check (BFB)

Job Number: JD2616
Account: ERMNYW ERM, Inc.
Project: Fortive, New Windsor, NY

Sample:	V3W2789-BFB	**Injection Date:**	01/14/20
Lab File ID:	3W71238.D	**Injection Time:**	10:53
Instrument ID:	GCMS3W		

m/e	Ion Abundance Criteria	Raw Abundance	% Relative Abundance		Pass/Fail
50	8.0 - 40.0% of mass 95	40331	20.6		Pass
75	30.0 - 66.0% of mass 95	96168	49.2		Pass
95	Base peak, 100% relative abundance	195328	100.0		Pass
96	5.0 - 9.0% of mass 95	13484	6.90		Pass
173	Less than 2.0% of mass 174	0	0.00	(0.00) [a]	Pass
174	50.0 - 120.0% of mass 95	149952	76.8		Pass
175	4.0 - 9.01% of mass 174	12305	6.30	(8.21) [a]	Pass
176	93.0 - 101.0% of mass 174	145387	74.4	(97.0) [a]	Pass
177	5.0 - 9.0% of mass 176	9679	4.96	(6.66) [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
V3W2789-IC2789	3W71239.D	01/14/20	11:44	00:51	Initial cal 0.5
V3W2789-IC2789	3W71241.D	01/14/20	13:41	02:48	Initial cal 0.2
V3W2789-ICC2789	3W71242.D	01/14/20	14:33	03:40	Initial cal 10
V3W2789-IC2789	3W71243.D	01/14/20	15:37	04:44	Initial cal 5
V3W2789-IC2789	3W71244.D	01/14/20	16:28	05:35	Initial cal 20
V3W2789-IC2789	3W71245.D	01/14/20	17:21	06:28	Initial cal 40
V3W2789-IC2789	3W71248.D	01/14/20	19:51	08:58	Initial cal 0.1
V3W2789-IC2789	3W71249.D	01/14/20	20:40	09:47	Initial cal 0.04
V3W2789-ICV2789	3W71250.D	01/14/20	21:30	10:37	Initial cal verification 10

Instrument Performance Check (BFB)

Job Number: JD2616
Account: ERMNYW ERM, Inc.
Project: Fortive, New Windsor, NY

Sample: V3W2796-BFB
Lab File ID: 3W71397.D
Instrument ID: GCMS3W
Injection Date: 01/23/20
Injection Time: 08:49

m/e	Ion Abundance Criteria	Raw Abundance	% Relative Abundance		Pass/Fail
50	8.0 - 40.0% of mass 95	21667	20.3		Pass
75	30.0 - 66.0% of mass 95	52317	49.0		Pass
95	Base peak, 100% relative abundance	106741	100.0		Pass
96	5.0 - 9.0% of mass 95	7208	6.75		Pass
173	Less than 2.0% of mass 174	0	0.00	(0.00) [a]	Pass
174	50.0 - 120.0% of mass 95	85003	79.6		Pass
175	4.0 - 9.01% of mass 174	7105	6.66	(8.36) [a]	Pass
176	93.0 - 101.0% of mass 174	81501	76.4	(95.9) [a]	Pass
177	5.0 - 9.0% of mass 176	5475	5.13	(6.72) [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
V3W2796-CC2789	3W71398.D	01/23/20	09:39	00:50	Continuing cal 10
V3W2796-BS	3W71399.D	01/23/20	10:30	01:41	Blank Spike
V3W2796-BSD	3W71401.D	01/23/20	12:10	03:21	Blank Spike Duplicate
V3W2796-MB	3W71403.D	01/23/20	13:58	05:09	Method Blank
ZZZZZZ	3W71404.D	01/23/20	14:49	06:00	(unrelated sample)
JD1970-4	3W71405.D	01/23/20	15:39	06:50	(used for QC only; not part of job JD2616)
JD1970-4DUP	3W71406.D	01/23/20	16:39	07:50	Duplicate
ZZZZZZ	3W71407.D	01/23/20	17:33	08:44	(unrelated sample)
ZZZZZZ	3W71408.D	01/23/20	18:26	09:37	(unrelated sample)
ZZZZZZ	3W71409.D	01/23/20	19:21	10:32	(unrelated sample)
ZZZZZZ	3W71410.D	01/23/20	20:12	11:23	(unrelated sample)
ZZZZZZ	3W71411.D	01/23/20	21:01	12:12	(unrelated sample)
ZZZZZZ	3W71412.D	01/23/20	21:52	13:03	(unrelated sample)
ZZZZZZ	3W71413.D	01/23/20	22:43	13:54	(unrelated sample)
ZZZZZZ	3W71414.D	01/23/20	23:34	14:45	(unrelated sample)
ZZZZZZ	3W71415.D	01/24/20	00:24	15:35	(unrelated sample)
ZZZZZZ	3W71416.D	01/24/20	01:15	16:26	(unrelated sample)
ZZZZZZ	3W71417.D	01/24/20	02:04	17:15	(unrelated sample)
V3W2796-SCC	3W71418.D	01/24/20	02:54	18:05	Summa Cleaning Certification
V3W2796-SCC	3W71419.D	01/24/20	03:45	18:56	Summa Cleaning Certification
V3W2796-SCC	3W71420.D	01/24/20	04:34	19:45	Summa Cleaning Certification
V3W2796-SCC	3W71421.D	01/24/20	05:28	20:39	Summa Cleaning Certification
V3W2796-SCC	3W71422.D	01/24/20	06:22	21:33	Summa Cleaning Certification

Instrument Performance Check (BFB)

Job Number: JD2616
Account: ERMNYW ERM, Inc.
Project: Fortive, New Windsor, NY

Sample: V3W2806-BFB
Lab File ID: 3W71594.D
Instrument ID: GCMS3W
Injection Date: 02/11/20
Injection Time: 09:37

m/e	Ion Abundance Criteria	Raw Abundance	% Relative Abundance		Pass/Fail
50	8.0 - 40.0% of mass 95	19715	20.0		Pass
75	30.0 - 66.0% of mass 95	46509	47.3		Pass
95	Base peak, 100% relative abundance	98368	100.0		Pass
96	5.0 - 9.0% of mass 95	6542	6.65		Pass
173	Less than 2.0% of mass 174	0	0.00	(0.00) [a]	Pass
174	50.0 - 120.0% of mass 95	74976	76.2		Pass
175	4.0 - 9.01% of mass 174	6037	6.14	(8.05) [a]	Pass
176	93.0 - 101.0% of mass 174	72029	73.2	(96.1) [a]	Pass
177	5.0 - 9.0% of mass 176	4995	5.08	(6.93) [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
V3W2806-CC2789	3W71596.D	02/11/20	11:15	01:38	Continuing cal 10
V3W2806-BS	3W71597.D	02/11/20	12:06	02:29	Blank Spike
V3W2806-BSD	3W71598.D	02/11/20	13:33	03:56	Blank Spike Duplicate
V3W2806-MB	3W71600.D	02/11/20	15:19	05:42	Method Blank
JD2884-1	3W71601.D	02/11/20	16:22	06:45	(used for QC only; not part of job JD2616)
JD2884-1DUP	3W71602.D	02/11/20	17:13	07:36	Duplicate
ZZZZZZ	3W71603.D	02/11/20	18:05	08:28	(unrelated sample)
ZZZZZZ	3W71604.D	02/11/20	19:00	09:23	(unrelated sample)
ZZZZZZ	3W71605.D	02/11/20	19:58	10:21	(unrelated sample)
ZZZZZZ	3W71606.D	02/11/20	20:54	11:17	(unrelated sample)
ZZZZZZ	3W71607.D	02/11/20	21:49	12:12	(unrelated sample)
ZZZZZZ	3W71608.D	02/11/20	22:48	13:11	(unrelated sample)
JD2616-2	3W71609.D	02/11/20	23:47	14:10	AA-2-013020
JD2616-4	3W71610.D	02/12/20	00:46	15:09	AA-3-013020
JD2616-1	3W71611.D	02/12/20	01:43	16:06	SG-2-013020
JD2616-3	3W71612.D	02/12/20	02:39	17:02	SG-3-013020
ZZZZZZ	3W71613.D	02/12/20	03:33	17:56	(unrelated sample)
ZZZZZZ	3W71614.D	02/12/20	04:29	18:52	(unrelated sample)
ZZZZZZ	3W71615.D	02/12/20	05:24	19:47	(unrelated sample)
ZZZZZZ	3W71616.D	02/12/20	06:13	20:36	(unrelated sample)

Instrument Performance Check (BFB)

Job Number: JD2616
Account: ERMNYW ERM, Inc.
Project: Fortive, New Windsor, NY

Sample: V3W2807-BFB
Lab File ID: 3W71618.D
Instrument ID: GCMS3W
Injection Date: 02/12/20
Injection Time: 09:12

m/e	Ion Abundance Criteria	Raw Abundance	% Relative Abundance		Pass/Fail
50	8.0 - 40.0% of mass 95	16829	22.1		Pass
75	30.0 - 66.0% of mass 95	37744	49.6		Pass
95	Base peak, 100% relative abundance	76120	100.0		Pass
96	5.0 - 9.0% of mass 95	5124	6.73		Pass
173	Less than 2.0% of mass 174	0	0.00	(0.00) [a]	Pass
174	50.0 - 120.0% of mass 95	59552	78.2		Pass
175	4.0 - 9.01% of mass 174	4882	6.41	(8.20) [a]	Pass
176	93.0 - 101.0% of mass 174	56781	74.6	(95.3) [a]	Pass
177	5.0 - 9.0% of mass 176	3752	4.93	(6.61) [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
V3W2807-CC2789	3W71620.D	02/12/20	10:54	01:42	Continuing cal 10
V3W2807-BS	3W71621.D	02/12/20	11:44	02:32	Blank Spike
V3W2807-BSD	3W71622.D	02/12/20	12:34	03:22	Blank Spike Duplicate
V3W2807-MB	3W71624.D	02/12/20	14:23	05:11	Method Blank
JD2616-1	3W71625.D	02/12/20	15:14	06:02	SG-2-013020
JD2616-3	3W71626.D	02/12/20	16:04	06:52	SG-3-013020
ZZZZZZ	3W71627.D	02/12/20	16:54	07:42	(unrelated sample)
JD3012-1	3W71629.D	02/12/20	18:39	09:27	(used for QC only; not part of job JD2616)
JD3012-1DUP	3W71630.D	02/12/20	19:36	10:24	Duplicate
ZZZZZZ	3W71631.D	02/12/20	20:32	11:20	(unrelated sample)
ZZZZZZ	3W71632.D	02/12/20	21:28	12:16	(unrelated sample)
ZZZZZZ	3W71633.D	02/12/20	22:21	13:09	(unrelated sample)

Internal Standard Area Summary

Job Number: JD2616
Account: ERMNYW ERM, Inc.
Project: Fortive, New Windsor, NY

Check Std:	V3W2796-CC2789	**Injection Date:**	01/23/20
Lab File ID:	3W71398.D	**Injection Time:**	09:39
Instrument ID:	GCMS3W	**Method:**	TO-15

	IS 1 AREA	RT	IS 2 AREA	RT	IS 3 AREA	RT
Check Std	94752	7.83	437897	9.78	204902	14.35
Upper Limit [a]	132653	8.16	613056	10.11	286863	14.68
Lower Limit [b]	56851	7.50	262738	9.45	122941	14.02

Lab Sample ID	IS 1 AREA	RT	IS 2 AREA	RT	IS 3 AREA	RT
V3W2796-BS	96617	7.83	437896	9.78	216116	14.35
V3W2796-BSD	94139	7.82	451710	9.78	215684	14.35
V3W2796-MB	96730	7.82	377598	9.78	180027	14.35
ZZZZZZ	97042	7.82	431880	9.78	199038	14.35
JD1970-4	99638	7.82	450630	9.78	206735	14.35
JD1970-4DUP	94230	7.82	420654	9.78	195794	14.35
ZZZZZZ	93923	7.82	462305	9.78	203286	14.35
ZZZZZZ	93442	7.82	459847	9.78	194989	14.35
ZZZZZZ	91873	7.82	444972	9.78	190067	14.35
ZZZZZZ	94215	7.82	415010	9.78	193072	14.35
ZZZZZZ	96640	7.82	473451	9.78	203931	14.35
ZZZZZZ	96953	7.82	408338	9.78	186380	14.35
ZZZZZZ	94017	7.82	421686	9.78	190070	14.35
ZZZZZZ	95370	7.82	468652	9.78	199730	14.35
ZZZZZZ	91909	7.82	428766	9.78	187120	14.35
ZZZZZZ	96264	7.82	442059	9.78	194916	14.35
ZZZZZZ	96266	7.82	453248	9.78	194974	14.35
V3W2796-SCC	89742	7.82	350452	9.78	157264	14.35
V3W2796-SCC	90319	7.82	345512	9.78	158049	14.35
V3W2796-SCC	88063	7.82	351316	9.78	152333	14.35
V3W2796-SCC	86906	7.82	319862	9.78	148897	14.35
V3W2796-SCC	89964	7.82	342702	9.78	152658	14.35

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.

Internal Standard Area Summary

Job Number: JD2616
Account: ERMNYW ERM, Inc.
Project: Fortive, New Windsor, NY

Check Std:	V3W2806-CC2789	**Injection Date:**	02/11/20
Lab File ID:	3W71596.D	**Injection Time:**	11:15
Instrument ID:	GCMS3W	**Method:**	TO-15

	IS 1 AREA	RT	IS 2 AREA	RT	IS 3 AREA	RT
Check Std	101258	7.82	428959	9.78	204698	14.35
Upper Limit [a]	141761	8.15	600543	10.11	286577	14.68
Lower Limit [b]	60755	7.49	257375	9.45	122819	14.02

Lab Sample ID	IS 1 AREA	RT	IS 2 AREA	RT	IS 3 AREA	RT
V3W2806-BS	101135	7.82	424226	9.78	207085	14.35
V3W2806-BSD	106203	7.82	440511	9.78	221711	14.35
V3W2806-MB	89456	7.82	273937	9.77	136740	14.35
JD2884-1	96777	7.81	447835	9.77	167734	14.35
JD2884-1DUP	91945	7.81	444435	9.77	169793	14.35
ZZZZZZ	91878	7.82	441670	9.78	177809	14.35
ZZZZZZ	90094	7.82	359149	9.78	136150	14.35
ZZZZZZ	84524	7.82	313292	9.77	132980	14.35
ZZZZZZ	82868	7.82	309488	9.77	142744	14.35
ZZZZZZ	86010	7.81	417844	9.77	169264	14.35
ZZZZZZ	81896	7.82	282870	9.77	135491	14.34
JD2616-2	87143	7.82	362495	9.77	155019	14.35
JD2616-4	86059	7.82	368950	9.77	147296	14.34
JD2616-1	86616	7.82	318032	9.78	144216	14.35
JD2616-3	84622	7.82	304216	9.77	145577	14.35
ZZZZZZ	84393	7.84	406540	9.78	157613	14.35
ZZZZZZ	84809	7.82	347663	9.78	141800	14.35
ZZZZZZ	82521	7.82	327222	9.77	148314	14.34
ZZZZZZ	85479	7.82	276850	9.77	138518	14.34

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.

Internal Standard Area Summary

Job Number: JD2616
Account: ERMNYW ERM, Inc.
Project: Fortive, New Windsor, NY

Check Std:	V3W2807-CC2789	**Injection Date:**	02/12/20
Lab File ID:	3W71620.D	**Injection Time:**	10:54
Instrument ID:	GCMS3W	**Method:**	TO-15

	IS 1 AREA	RT	IS 2 AREA	RT	IS 3 AREA	RT
Check Std	95038	7.82	363996	9.78	180611	14.35
Upper Limit [a]	133053	8.15	509594	10.11	252855	14.68
Lower Limit [b]	57023	7.49	218398	9.45	108367	14.02

Lab Sample ID	IS 1 AREA	RT	IS 2 AREA	RT	IS 3 AREA	RT
V3W2807-BS	102318	7.82	375828	9.78	184802	14.35
V3W2807-BSD	101213	7.82	381992	9.78	187274	14.35
V3W2807-MB	87435	7.82	263034	9.77	118979	14.34
JD2616-1	91373	7.82	395412	9.77	153054	14.34
JD2616-3	85839	7.81	364070	9.77	156761	14.34
ZZZZZZ	86346	7.82	289360	9.78	139963	14.35
JD3012-1	80067	7.81	329324	9.77	143917	14.34
JD3012-1DUP	80389	7.81	300516	9.77	136373	14.34
ZZZZZZ	83658	7.82	370611	9.77	139509	14.34
ZZZZZZ	81832	7.82	330321	9.77	146663	14.34
ZZZZZZ	82175	7.81	330319	9.77	146992	14.34

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

Job Number: JD2616
Account: ERMNYW ERM, Inc.
Project: Fortive, New Windsor, NY

Sample Number	Lab File ID	Injected	By	Level	Inst ID	Method	
V3W2789-IC2789	3W71239.D	01/14/20 11:44	DFT	0.5	GCMS3W	TO-15	Reporting this level
V3W2789-IC2789	3W71241.D	01/14/20 13:41	DFT	0.2	GCMS3W	TO-15	
V3W2789-ICC2789	3W71242.D	01/14/20 14:33	DFT	10	GCMS3W	TO-15	
V3W2789-IC2789	3W71243.D	01/14/20 15:37	DFT	5	GCMS3W	TO-15	
V3W2789-IC2789	3W71244.D	01/14/20 16:28	DFT	20	GCMS3W	TO-15	
V3W2789-IC2789	3W71245.D	01/14/20 17:21	DFT	40	GCMS3W	TO-15	
V3W2789-IC2789	3W71248.D	01/14/20 19:51	DFT	0.1	GCMS3W	TO-15	
V3W2789-IC2789	3W71249.D	01/14/20 20:40	DFT	0.04	GCMS3W	TO-15	

Target Compound	RT (min.)	Istd RT (min.)	Rel RT		Mean Rel RT	Rel RT Range (+ /- .06)
Acetone	5.14	7.82	0.657	ok	0.655	0.595-0.715
Acrolein	5.02	7.82	0.642	ok	0.641	0.581-0.701
Acrylonitrile	5.46	7.82	0.698	ok	0.698	0.638-0.758
Acetonitrile	4.94	7.82	0.632	ok	0.630	0.570-0.690
1,3-Butadiene	4.37	7.82	0.559	ok	0.558	0.498-0.618
Benzene	9.42	9.78	0.963	ok	0.963	0.903-1.023
Bromobenzene	16.31	14.35	1.137	ok	1.137	1.077-1.197
Bromodichloromethane	10.47	9.78	1.071	ok	1.070	1.010-1.130
Bromoform	15.09	14.35	1.052	ok	1.052	0.992-1.112
Bromomethane	4.56	7.82	0.583	ok	0.583	0.523-0.643
Bromoethene	4.93	7.82	0.630	ok	0.629	0.569-0.689
n-Butane	4.40	7.82	0.563	ok	0.562	0.502-0.622
Benzyl Chloride	17.77	14.35	1.238	ok	1.238	1.178-1.298
n-Butylbenzene	18.64	14.35	1.299	ok	1.299	1.239-1.359
sec-Butylbenzene	17.93	14.35	1.249	ok	1.249	1.189-1.309
tert-Butylbenzene	17.60	14.35	1.226	ok	1.226	1.166-1.286
Carbon disulfide	6.11	7.82	0.781	ok	0.782	0.722-0.842
Chlorobenzene	14.41	14.35	1.004	ok	1.004	0.944-1.064
Chlorodifluoromethane	3.93	7.82	0.503	ok	0.502	0.442-0.562
Chloroethane	4.68	7.82	0.598	ok	0.598	0.538-0.658
Chlorotrifluoroethene	3.96	7.82	0.506	ok	0.506	0.446-0.566
Chloroform	7.95	7.82	1.017	ok	1.016	0.956-1.076
Chloromethane	4.13	7.82	0.528	ok	0.527	0.467-0.587
3-Chloropropene	5.92	7.82	0.757	ok	0.757	0.697-0.817
2-Chlorotoluene	16.78	14.35	1.169	ok	1.169	1.109-1.229
Carbon tetrachloride	9.57	7.82	1.224	ok	1.223	1.163-1.283
Cyclohexane	9.69	9.78	0.991	ok	0.991	0.931-1.051
1,1-Dichloroethane	6.86	7.82	0.877	ok	0.877	0.817-0.937
1,1-Dichloroethylene	5.73	7.82	0.733	ok	0.732	0.672-0.792
1,2-Dibromoethane	13.16	14.35	0.917	ok	0.917	0.857-0.977
1,2-Dichloroethane	8.69	7.82	1.111	ok	1.111	1.051-1.171
1,2-Dichloropropane	10.27	9.78	1.050	ok	1.050	0.990-1.110
1,3-Dichloropropane	12.48	9.78	1.276	ok	1.276	1.216-1.336
1,4-Dioxane	10.63	9.78	1.087	ok	1.081	1.021-1.141
Dichlorodifluoromethane	4.00	7.82	0.512	ok	0.512	0.452-0.572
Dichlorofluoromethane	4.73	7.82	0.605	ok	0.604	0.544-0.664
Dibromochloromethane	12.90	14.35	0.899	ok	0.899	0.839-0.959
Dibromomethane	10.24	9.78	1.047	ok	1.047	0.987-1.107
trans-1,2-Dichloroethylene	6.67	7.82	0.853	ok	0.852	0.792-0.912
cis-1,2-Dichloroethylene	7.66	7.82	0.980	ok	0.979	0.919-1.039

Initial Calibration Retention Time/Internal Standard Area Summary

Job Number: JD2616
Account: ERMNYW ERM, Inc.
Project: Fortive, New Windsor, NY

Sample Number	Lab File ID	Injected	By	Level	Inst ID	Method	
V3W2789-IC2789	3W71239.D	01/14/20 11:44	DFT	0.5	GCMS3W	TO-15	Reporting this level
V3W2789-IC2789	3W71241.D	01/14/20 13:41	DFT	0.2	GCMS3W	TO-15	
V3W2789-ICC2789	3W71242.D	01/14/20 14:33	DFT	10	GCMS3W	TO-15	
V3W2789-IC2789	3W71243.D	01/14/20 15:37	DFT	5	GCMS3W	TO-15	
V3W2789-IC2789	3W71244.D	01/14/20 16:28	DFT	20	GCMS3W	TO-15	
V3W2789-IC2789	3W71245.D	01/14/20 17:21	DFT	40	GCMS3W	TO-15	
V3W2789-IC2789	3W71248.D	01/14/20 19:51	DFT	0.1	GCMS3W	TO-15	
V3W2789-IC2789	3W71249.D	01/14/20 20:40	DFT	0.04	GCMS3W	TO-15	

Target Compound	RT (min.)	Istd RT (min.)	Rel RT		Mean Rel RT	Rel RT Range (+ /- .06)
cis-1,3-Dichloropropene	11.42	9.78	1.168	ok	1.167	1.107-1.227
m-Dichlorobenzene	17.79	14.35	1.240	ok	1.239	1.179-1.299
o-Dichlorobenzene	18.28	14.35	1.274	ok	1.274	1.214-1.334
p-Dichlorobenzene	17.87	14.35	1.245	ok	1.245	1.185-1.305
trans-1,3-Dichloropropene	11.98	9.78	1.225	ok	1.225	1.165-1.285
Di-Isopropyl ether	7.88	7.82	1.008	ok	1.006	0.946-1.066
2,3-Dimethylpentane	9.94	9.78	1.016	ok	1.016	0.956-1.076
2,4-Dimethylpentane	8.74	7.82	1.118	ok	1.118	1.058-1.178
Ethanol	4.80	7.82	0.614	ok	0.610	0.550-0.670
Ethylbenzene	14.82	14.35	1.033	ok	1.033	0.973-1.093
Ethyl Acetate	7.92	7.82	1.013	ok	1.011	0.951-1.071
Ethyl Acrylate	10.30	9.78	1.053	ok	1.052	0.992-1.112
4-Ethyltoluene	17.01	14.35	1.185	ok	1.185	1.125-1.245
Freon 113	6.04	7.82	0.772	ok	0.773	0.713-0.833
Freon 114	4.19	7.82	0.536	ok	0.535	0.475-0.595
Freon 115	3.82	7.82	0.488	ok	0.488	0.428-0.548
Freon 123	5.01	7.82	0.641	ok	0.640	0.580-0.700
Freon 123A	5.05	7.82	0.646	ok	0.645	0.585-0.705
Freon 142B	4.11	7.82	0.526	ok	0.524	0.464-0.584
Freon 152A	3.90	7.82	0.499	ok	0.498	0.438-0.558
Heptane	10.82	9.78	1.106	ok	1.106	1.046-1.166
Hexachlorobutadiene	20.60	14.35	1.436	ok	1.435	1.375-1.495
Hexachloroethane	19.08	14.35	1.330	ok	1.329	1.269-1.389
Hexane	7.86	7.82	1.005	ok	1.004	0.944-1.064
2-Hexanone	12.80	14.35	0.892	ok	0.890	0.830-0.950
Iodomethane	5.68	7.82	0.726	ok	0.725	0.665-0.785
Isopropylbenzene	16.22	14.35	1.130	ok	1.130	1.070-1.190
Isopropyl Alcohol	5.32	7.82	0.680	ok	0.678	0.618-0.738
p-Isopropyltoluene	18.13	14.35	1.263	ok	1.263	1.203-1.323
Methylene chloride	5.82	7.82	0.744	ok	0.744	0.684-0.804
Methyl ethyl ketone	7.29	7.82	0.932	ok	0.929	0.869-0.989
Methyl Isobutyl Ketone	11.52	9.78	1.178	ok	1.176	1.116-1.236
Methyl Tert Butyl Ether	6.96	7.82	0.890	ok	0.888	0.828-0.948
Methylmethacrylate	10.75	9.78	1.099	ok	1.099	1.039-1.159
Naphthalene	20.29	14.35	1.414	ok	1.413	1.353-1.473
Nonane	15.81	14.35	1.102	ok	1.101	1.041-1.161
Octane	13.52	14.35	0.942	ok	0.942	0.882-1.002
Pentane	5.49	7.82	0.702	ok	0.702	0.642-0.762
n-Propylbenzene	16.83	14.35	1.173	ok	1.173	1.113-1.233
Propylene	3.96	7.82	0.506	ok	0.505	0.445-0.565

Initial Calibration Retention Time/Internal Standard Area Summary

Job Number: JD2616
Account: ERMNYW ERM, Inc.
Project: Fortive, New Windsor, NY

Sample Number	Lab File ID	Injected	By	Level	Inst ID	Method	
V3W2789-IC2789	3W71239.D	01/14/20 11:44	DFT	0.5	GCMS3W	TO-15	Reporting this level
V3W2789-IC2789	3W71241.D	01/14/20 13:41	DFT	0.2	GCMS3W	TO-15	
V3W2789-ICC2789	3W71242.D	01/14/20 14:33	DFT	10	GCMS3W	TO-15	
V3W2789-IC2789	3W71243.D	01/14/20 15:37	DFT	5	GCMS3W	TO-15	
V3W2789-IC2789	3W71244.D	01/14/20 16:28	DFT	20	GCMS3W	TO-15	
V3W2789-IC2789	3W71245.D	01/14/20 17:21	DFT	40	GCMS3W	TO-15	
V3W2789-IC2789	3W71248.D	01/14/20 19:51	DFT	0.1	GCMS3W	TO-15	
V3W2789-IC2789	3W71249.D	01/14/20 20:40	DFT	0.04	GCMS3W	TO-15	

Target Compound	RT (min.)	Istd RT (min.)	Rel RT		Mean Rel RT	Rel RT Range (+ /- .06)
Styrene	15.42	14.35	1.075	ok	1.075	1.015-1.135
1,1,1-Trichloroethane	8.95	7.82	1.145	ok	1.144	1.084-1.204
1,1,1,2-Tetrachloroethane	14.39	14.35	1.003	ok	1.003	0.943-1.063
1,1,2,2-Tetrachloroethane	15.54	14.35	1.083	ok	1.083	1.023-1.143
1,1,2-Trichloroethane	12.16	9.78	1.243	ok	1.243	1.183-1.303
1,2,4-Trichlorobenzene	20.19	14.35	1.407	ok	1.407	1.347-1.467
1,2,3-Trichloropropane	15.69	14.35	1.093	ok	1.093	1.033-1.153
1,2,3-Trimethylbenzene	18.12	14.35	1.263	ok	1.262	1.202-1.322
1,2,4-Trimethylbenzene	17.61	14.35	1.227	ok	1.227	1.167-1.287
1,3,5-Trimethylbenzene	17.11	14.35	1.192	ok	1.192	1.132-1.252
2,2,4-Trimethylpentane	10.54	9.78	1.078	ok	1.078	1.018-1.138
Tertiary Butyl Alcohol	5.83	7.82	0.746	ok	0.744	0.684-0.804
Tetrachloroethylene	13.66	14.35	0.952	ok	0.952	0.892-1.012
Tetrahydrofuran	8.45	7.82	1.081	ok	1.077	1.017-1.137
Toluene	12.45	9.78	1.273	ok	1.273	1.213-1.333
Trichloroethylene	10.51	9.78	1.075	ok	1.074	1.014-1.134
Trichlorofluoromethane	5.22	7.82	0.668	ok	0.668	0.608-0.728
Vinyl chloride	4.27	7.82	0.546	ok	0.546	0.486-0.606
Vinyl Acetate	7.00	7.82	0.895	ok	0.894	0.834-0.954
m,p-Xylene	15.02	14.35	1.047	ok	1.047	0.987-1.107
o-Xylene	15.54	14.35	1.083	ok	1.083	1.023-1.143

Internal Standard	RT (min.)		Mean RT(min.)	RT Range (+ /- 0.33)	Area		Mean Area	Area Range (+ /- 40 %)
Bromochloromethane	7.82	ok	7.83	7.50-8.16	108508	ok	112035	67221-156849
1,4-Difluorobenzene	9.78	ok	9.79	9.46-10.12	496850	ok	528424	317054-739794
Chlorobenzene-D5	14.35	ok	14.36	14.03-14.69	259801	ok	268656	161194-376118

Initial Calibration Retention Time/Internal Standard Area Summary

Job Number: JD2616
Account: ERMNYW ERM, Inc.
Project: Fortive, New Windsor, NY

Sample Number	Lab File ID	Injected	By	Level	Inst ID	Method	
V3W2789-IC2789	3W71239.D	01/14/20 11:44	DFT	0.5	GCMS3W	TO-15	
V3W2789-IC2789	3W71241.D	01/14/20 13:41	DFT	0.2	GCMS3W	TO-15	Reporting this level
V3W2789-ICC2789	3W71242.D	01/14/20 14:33	DFT	10	GCMS3W	TO-15	
V3W2789-IC2789	3W71243.D	01/14/20 15:37	DFT	5	GCMS3W	TO-15	
V3W2789-IC2789	3W71244.D	01/14/20 16:28	DFT	20	GCMS3W	TO-15	
V3W2789-IC2789	3W71245.D	01/14/20 17:21	DFT	40	GCMS3W	TO-15	
V3W2789-IC2789	3W71248.D	01/14/20 19:51	DFT	0.1	GCMS3W	TO-15	
V3W2789-IC2789	3W71249.D	01/14/20 20:40	DFT	0.04	GCMS3W	TO-15	

Target Compound	RT (min.)	Istd RT (min.)	Rel RT		Mean Rel RT	Rel RT Range (+ /- .06)
Acetone	5.15	7.82	0.659	ok	0.655	0.595-0.715
Acrolein	5.03	7.82	0.643	ok	0.641	0.581-0.701
Acrylonitrile	5.47	7.82	0.699	ok	0.698	0.638-0.758
Acetonitrile	4.95	7.82	0.633	ok	0.630	0.570-0.690
1,3-Butadiene	4.36	7.82	0.558	ok	0.558	0.498-0.618
Benzene	9.41	9.78	0.962	ok	0.963	0.903-1.023
Bromobenzene	16.32	14.35	1.137	ok	1.137	1.077-1.197
Bromodichloromethane	10.47	9.78	1.071	ok	1.070	1.010-1.130
Bromoform	15.10	14.35	1.052	ok	1.052	0.992-1.112
Bromomethane	4.56	7.82	0.583	ok	0.583	0.523-0.643
Bromoethene	4.93	7.82	0.630	ok	0.629	0.569-0.689
n-Butane	4.40	7.82	0.563	ok	0.562	0.502-0.622
Benzyl Chloride	17.77	14.35	1.238	ok	1.238	1.178-1.298
n-Butylbenzene	18.64	14.35	1.299	ok	1.299	1.239-1.359
sec-Butylbenzene	17.93	14.35	1.249	ok	1.249	1.189-1.309
tert-Butylbenzene	17.60	14.35	1.226	ok	1.226	1.166-1.286
Carbon disulfide	6.11	7.82	0.781	ok	0.782	0.722-0.842
Chlorobenzene	14.40	14.35	1.003	ok	1.004	0.944-1.064
Chlorodifluoromethane	3.92	7.82	0.501	ok	0.502	0.442-0.562
Chloroethane	4.67	7.82	0.597	ok	0.598	0.538-0.658
Chlorotrifluoroethene	3.96	7.82	0.506	ok	0.506	0.446-0.566
Chloroform	7.94	7.82	1.015	ok	1.016	0.956-1.076
Chloromethane	4.13	7.82	0.528	ok	0.527	0.467-0.587
3-Chloropropene	5.93	7.82	0.758	ok	0.757	0.697-0.817
2-Chlorotoluene	16.78	14.35	1.169	ok	1.169	1.109-1.229
Carbon tetrachloride	9.56	7.82	1.223	ok	1.223	1.163-1.283
Cyclohexane	9.70	9.78	0.992	ok	0.991	0.931-1.051
1,1-Dichloroethane	6.86	7.82	0.877	ok	0.877	0.817-0.937
1,1-Dichloroethylene	5.73	7.82	0.733	ok	0.732	0.672-0.792
1,2-Dibromoethane	13.17	14.35	0.918	ok	0.917	0.857-0.977
1,2-Dichloroethane	8.69	7.82	1.111	ok	1.111	1.051-1.171
1,2-Dichloropropane	10.26	9.78	1.049	ok	1.050	0.990-1.110
1,3-Dichloropropane	12.49	9.78	1.277	ok	1.276	1.216-1.336
1,4-Dioxane	10.65	9.78	1.089	ok	1.081	1.021-1.141
Dichlorodifluoromethane	4.01	7.82	0.513	ok	0.512	0.452-0.572
Dichlorofluoromethane	4.73	7.82	0.605	ok	0.604	0.544-0.664
Dibromochloromethane	12.90	14.35	0.899	ok	0.899	0.839-0.959
Dibromomethane	10.23	9.78	1.046	ok	1.047	0.987-1.107
trans-1,2-Dichloroethylene	6.66	7.82	0.852	ok	0.852	0.792-0.912
cis-1,2-Dichloroethylene	7.66	7.82	0.980	ok	0.979	0.919-1.039

Initial Calibration Retention Time/Internal Standard Area Summary

Job Number: JD2616
Account: ERMNYW ERM, Inc.
Project: Fortive, New Windsor, NY

Sample Number	Lab File ID	Injected	By	Level	Inst ID	Method	
V3W2789-IC2789	3W71239.D	01/14/20 11:44	DFT	0.5	GCMS3W	TO-15	
V3W2789-IC2789	3W71241.D	01/14/20 13:41	DFT	0.2	GCMS3W	TO-15	Reporting this level
V3W2789-ICC2789	3W71242.D	01/14/20 14:33	DFT	10	GCMS3W	TO-15	
V3W2789-IC2789	3W71243.D	01/14/20 15:37	DFT	5	GCMS3W	TO-15	
V3W2789-IC2789	3W71244.D	01/14/20 16:28	DFT	20	GCMS3W	TO-15	
V3W2789-IC2789	3W71245.D	01/14/20 17:21	DFT	40	GCMS3W	TO-15	
V3W2789-IC2789	3W71248.D	01/14/20 19:51	DFT	0.1	GCMS3W	TO-15	
V3W2789-IC2789	3W71249.D	01/14/20 20:40	DFT	0.04	GCMS3W	TO-15	

Target Compound	RT (min.)	Istd RT (min.)	Rel RT		Mean Rel RT	Rel RT Range (+ /- .06)
cis-1,3-Dichloropropene	11.42	9.78	1.168	ok	1.167	1.107-1.227
m-Dichlorobenzene	17.78	14.35	1.239	ok	1.239	1.179-1.299
o-Dichlorobenzene	18.28	14.35	1.274	ok	1.274	1.214-1.334
p-Dichlorobenzene	17.86	14.35	1.245	ok	1.245	1.185-1.305
trans-1,3-Dichloropropene	11.98	9.78	1.225	ok	1.225	1.165-1.285
Di-Isopropyl ether	7.89	7.82	1.009	ok	1.006	0.946-1.066
2,3-Dimethylpentane	9.94	9.78	1.016	ok	1.016	0.956-1.076
2,4-Dimethylpentane	8.75	7.82	1.119	ok	1.118	1.058-1.178
Ethylbenzene	14.82	14.35	1.033	ok	1.033	0.973-1.093
Ethyl Acetate	7.92	7.82	1.013	ok	1.011	0.951-1.071
Ethyl Acrylate	10.31	9.78	1.054	ok	1.052	0.992-1.112
4-Ethyltoluene	17.01	14.35	1.185	ok	1.185	1.125-1.245
Freon 113	6.05	7.82	0.774	ok	0.773	0.713-0.833
Freon 114	4.19	7.82	0.536	ok	0.535	0.475-0.595
Freon 115	3.82	7.82	0.488	ok	0.488	0.428-0.548
Freon 123	5.01	7.82	0.641	ok	0.640	0.580-0.700
Freon 123A	5.05	7.82	0.646	ok	0.645	0.585-0.705
Freon 142B	4.11	7.82	0.526	ok	0.524	0.464-0.584
Freon 152A	3.90	7.82	0.499	ok	0.498	0.438-0.558
Heptane	10.82	9.78	1.106	ok	1.106	1.046-1.166
Hexachlorobutadiene	20.60	14.35	1.436	ok	1.435	1.375-1.495
Hexachloroethane	19.08	14.35	1.330	ok	1.329	1.269-1.389
Hexane	7.86	7.82	1.005	ok	1.004	0.944-1.064
2-Hexanone	12.80	14.35	0.892	ok	0.890	0.830-0.950
Iodomethane	5.68	7.82	0.726	ok	0.725	0.665-0.785
Isopropylbenzene	16.22	14.35	1.130	ok	1.130	1.070-1.190
Isopropyl Alcohol	5.34	7.82	0.683	ok	0.678	0.618-0.738
p-Isopropyltoluene	18.13	14.35	1.263	ok	1.263	1.203-1.323
Methylene chloride	5.82	7.82	0.744	ok	0.744	0.684-0.804
Methyl ethyl ketone	7.30	7.82	0.934	ok	0.929	0.869-0.989
Methyl Isobutyl Ketone	11.53	9.78	1.179	ok	1.176	1.116-1.236
Methyl Tert Butyl Ether	6.97	7.82	0.891	ok	0.888	0.828-0.948
Methylmethacrylate	10.76	9.78	1.100	ok	1.099	1.039-1.159
Naphthalene	20.29	14.35	1.414	ok	1.413	1.353-1.473
Nonane	15.81	14.35	1.102	ok	1.101	1.041-1.161
Octane	13.52	14.35	0.942	ok	0.942	0.882-1.002
Pentane	5.49	7.82	0.702	ok	0.702	0.642-0.762
n-Propylbenzene	16.83	14.35	1.173	ok	1.173	1.113-1.233
Propylene	3.96	7.82	0.506	ok	0.505	0.445-0.565
Styrene	15.43	14.35	1.075	ok	1.075	1.015-1.135

Initial Calibration Retention Time/Internal Standard Area Summary

Job Number: JD2616
Account: ERMNYW ERM, Inc.
Project: Fortive, New Windsor, NY

Sample Number	Lab File ID	Injected	By	Level	Inst ID	Method	
V3W2789-IC2789	3W71239.D	01/14/20 11:44	DFT	0.5	GCMS3W	TO-15	
V3W2789-IC2789	3W71241.D	01/14/20 13:41	DFT	0.2	GCMS3W	TO-15	Reporting this level
V3W2789-ICC2789	3W71242.D	01/14/20 14:33	DFT	10	GCMS3W	TO-15	
V3W2789-IC2789	3W71243.D	01/14/20 15:37	DFT	5	GCMS3W	TO-15	
V3W2789-IC2789	3W71244.D	01/14/20 16:28	DFT	20	GCMS3W	TO-15	
V3W2789-IC2789	3W71245.D	01/14/20 17:21	DFT	40	GCMS3W	TO-15	
V3W2789-IC2789	3W71248.D	01/14/20 19:51	DFT	0.1	GCMS3W	TO-15	
V3W2789-IC2789	3W71249.D	01/14/20 20:40	DFT	0.04	GCMS3W	TO-15	

Target Compound	RT (min.)	Istd RT (min.)	Rel RT		Mean Rel RT	Rel RT Range (+ /- .06)
1,1,1-Trichloroethane	8.95	7.82	1.145	ok	1.144	1.084-1.204
1,1,1,2-Tetrachloroethane	14.39	14.35	1.003	ok	1.003	0.943-1.063
1,1,2,2-Tetrachloroethane	15.54	14.35	1.083	ok	1.083	1.023-1.143
1,1,2-Trichloroethane	12.16	9.78	1.243	ok	1.243	1.183-1.303
1,2,4-Trichlorobenzene	20.20	14.35	1.408	ok	1.407	1.347-1.467
1,2,3-Trichloropropane	15.69	14.35	1.093	ok	1.093	1.033-1.153
1,2,3-Trimethylbenzene	18.12	14.35	1.263	ok	1.262	1.202-1.322
1,2,4-Trimethylbenzene	17.61	14.35	1.227	ok	1.227	1.167-1.287
1,3,5-Trimethylbenzene	17.11	14.35	1.192	ok	1.192	1.132-1.252
2,2,4-Trimethylpentane	10.54	9.78	1.078	ok	1.078	1.018-1.138
Tertiary Butyl Alcohol	5.84	7.82	0.747	ok	0.744	0.684-0.804
Tetrachloroethylene	13.66	14.35	0.952	ok	0.952	0.892-1.012
Tetrahydrofuran	8.47	7.82	1.083	ok	1.077	1.017-1.137
Toluene	12.45	9.78	1.273	ok	1.273	1.213-1.333
Trichloroethylene	10.51	9.78	1.075	ok	1.074	1.014-1.134
Trichlorofluoromethane	5.23	7.82	0.669	ok	0.668	0.608-0.728
Vinyl chloride	4.27	7.82	0.546	ok	0.546	0.486-0.606
Vinyl Acetate	7.00	7.82	0.895	ok	0.894	0.834-0.954
m,p-Xylene	15.02	14.35	1.047	ok	1.047	0.987-1.107
o-Xylene	15.54	14.35	1.083	ok	1.083	1.023-1.143

Internal Standard	RT (min.)		Mean RT(min.)	RT Range (+ /- 0.33)	Area		Mean Area	Area Range (+ /- 40 %)
Bromochloromethane	7.82	ok	7.83	7.50-8.16	108180	ok	112035	67221-156849
1,4-Difluorobenzene	9.78	ok	9.79	9.46-10.12	488952	ok	528424	317054-739794
Chlorobenzene-D5	14.35	ok	14.36	14.03-14.69	249662	ok	268656	161194-376118

Initial Calibration Retention Time/Internal Standard Area Summary

Job Number: JD2616
Account: ERMNYW ERM, Inc.
Project: Fortive, New Windsor, NY

Sample Number	Lab File ID	Injected	By	Level	Inst ID	Method	
V3W2789-IC2789	3W71239.D	01/14/20 11:44	DFT	0.5	GCMS3W	TO-15	
V3W2789-IC2789	3W71241.D	01/14/20 13:41	DFT	0.2	GCMS3W	TO-15	
V3W2789-ICC2789	3W71242.D	01/14/20 14:33	DFT	10	GCMS3W	TO-15	Reporting this level
V3W2789-IC2789	3W71243.D	01/14/20 15:37	DFT	5	GCMS3W	TO-15	
V3W2789-IC2789	3W71244.D	01/14/20 16:28	DFT	20	GCMS3W	TO-15	
V3W2789-IC2789	3W71245.D	01/14/20 17:21	DFT	40	GCMS3W	TO-15	
V3W2789-IC2789	3W71248.D	01/14/20 19:51	DFT	0.1	GCMS3W	TO-15	
V3W2789-IC2789	3W71249.D	01/14/20 20:40	DFT	0.04	GCMS3W	TO-15	

Target Compound	RT (min.)	Istd RT (min.)	Rel RT		Mean Rel RT	Rel RT Range (+ /- .06)
Acetone	5.11	7.83	0.653	ok	0.655	0.595-0.715
Acrolein	5.01	7.83	0.640	ok	0.641	0.581-0.701
Acrylonitrile	5.45	7.83	0.696	ok	0.698	0.638-0.758
Acetonitrile	4.92	7.83	0.628	ok	0.630	0.570-0.690
1,3-Butadiene	4.37	7.83	0.558	ok	0.558	0.498-0.618
Benzene	9.42	9.79	0.962	ok	0.963	0.903-1.023
Bromobenzene	16.32	14.36	1.136	ok	1.137	1.077-1.197
Bromodichloromethane	10.47	9.79	1.069	ok	1.070	1.010-1.130
Bromoform	15.10	14.36	1.052	ok	1.052	0.992-1.112
Bromomethane	4.56	7.83	0.582	ok	0.583	0.523-0.643
Bromoethene	4.92	7.83	0.628	ok	0.629	0.569-0.689
n-Butane	4.40	7.83	0.562	ok	0.562	0.502-0.622
Benzyl Chloride	17.77	14.36	1.237	ok	1.238	1.178-1.298
n-Butylbenzene	18.64	14.36	1.298	ok	1.299	1.239-1.359
sec-Butylbenzene	17.93	14.36	1.249	ok	1.249	1.189-1.309
tert-Butylbenzene	17.60	14.36	1.226	ok	1.226	1.166-1.286
Carbon disulfide	6.12	7.83	0.782	ok	0.782	0.722-0.842
Chlorobenzene	14.41	14.36	1.003	ok	1.004	0.944-1.064
Chlorodifluoromethane	3.93	7.83	0.502	ok	0.502	0.442-0.562
Chloroethane	4.67	7.83	0.596	ok	0.598	0.538-0.658
Chlorotrifluoroethene	3.96	7.83	0.506	ok	0.506	0.446-0.566
Chloroform	7.96	7.83	1.017	ok	1.016	0.956-1.076
Chloromethane	4.12	7.83	0.526	ok	0.527	0.467-0.587
3-Chloropropene	5.93	7.83	0.757	ok	0.757	0.697-0.817
2-Chlorotoluene	16.78	14.36	1.169	ok	1.169	1.109-1.229
Carbon tetrachloride	9.57	7.83	1.222	ok	1.223	1.163-1.283
Cyclohexane	9.70	9.79	0.991	ok	0.991	0.931-1.051
1,1-Dichloroethane	6.86	7.83	0.876	ok	0.877	0.817-0.937
1,1-Dichloroethylene	5.73	7.83	0.732	ok	0.732	0.672-0.792
1,2-Dibromoethane	13.17	14.36	0.917	ok	0.917	0.857-0.977
1,2-Dichloroethane	8.70	7.83	1.111	ok	1.111	1.051-1.171
1,2-Dichloropropane	10.27	9.79	1.049	ok	1.050	0.990-1.110
1,3-Dichloropropane	12.49	9.79	1.276	ok	1.276	1.216-1.336
1,4-Dioxane	10.55	9.79	1.078	ok	1.081	1.021-1.141
Dichlorodifluoromethane	4.01	7.83	0.512	ok	0.512	0.452-0.572
Dichlorofluoromethane	4.73	7.83	0.604	ok	0.604	0.544-0.664
Dibromochloromethane	12.91	14.36	0.899	ok	0.899	0.839-0.959
Dibromomethane	10.24	9.79	1.046	ok	1.047	0.987-1.107
trans-1,2-Dichloroethylene	6.67	7.83	0.852	ok	0.852	0.792-0.912
cis-1,2-Dichloroethylene	7.66	7.83	0.978	ok	0.979	0.919-1.039

Initial Calibration Retention Time/Internal Standard Area Summary

Job Number: JD2616
Account: ERMNYW ERM, Inc.
Project: Fortive, New Windsor, NY

Sample Number	Lab File ID	Injected	By	Level	Inst ID	Method	
V3W2789-IC2789	3W71239.D	01/14/20 11:44	DFT	0.5	GCMS3W	TO-15	
V3W2789-IC2789	3W71241.D	01/14/20 13:41	DFT	0.2	GCMS3W	TO-15	
V3W2789-ICC2789	3W71242.D	01/14/20 14:33	DFT	10	GCMS3W	TO-15	Reporting this level
V3W2789-IC2789	3W71243.D	01/14/20 15:37	DFT	5	GCMS3W	TO-15	
V3W2789-IC2789	3W71244.D	01/14/20 16:28	DFT	20	GCMS3W	TO-15	
V3W2789-IC2789	3W71245.D	01/14/20 17:21	DFT	40	GCMS3W	TO-15	
V3W2789-IC2789	3W71248.D	01/14/20 19:51	DFT	0.1	GCMS3W	TO-15	
V3W2789-IC2789	3W71249.D	01/14/20 20:40	DFT	0.04	GCMS3W	TO-15	

Target Compound	RT (min.)	Istd RT (min.)	Rel RT		Mean Rel RT	Rel RT Range (+ /- .06)
cis-1,3-Dichloropropene	11.42	9.79	1.166	ok	1.167	1.107-1.227
m-Dichlorobenzene	17.79	14.36	1.239	ok	1.239	1.179-1.299
o-Dichlorobenzene	18.28	14.36	1.273	ok	1.274	1.214-1.334
p-Dichlorobenzene	17.87	14.36	1.244	ok	1.245	1.185-1.305
trans-1,3-Dichloropropene	11.98	9.79	1.224	ok	1.225	1.165-1.285
Di-Isopropyl ether	7.86	7.83	1.004	ok	1.006	0.946-1.066
2,3-Dimethylpentane	9.95	9.79	1.016	ok	1.016	0.956-1.076
2,4-Dimethylpentane	8.75	7.83	1.117	ok	1.118	1.058-1.178
Ethanol	4.77	7.83	0.609	ok	0.610	0.550-0.670
Ethylbenzene	14.82	14.36	1.032	ok	1.033	0.973-1.093
Ethyl Acetate	7.90	7.83	1.009	ok	1.011	0.951-1.071
Ethyl Acrylate	10.29	9.79	1.051	ok	1.052	0.992-1.112
4-Ethyltoluene	17.01	14.36	1.185	ok	1.185	1.125-1.245
Freon 113	6.04	7.83	0.771	ok	0.773	0.713-0.833
Freon 114	4.19	7.83	0.535	ok	0.535	0.475-0.595
Freon 115	3.82	7.83	0.488	ok	0.488	0.428-0.548
Freon 123	5.01	7.83	0.640	ok	0.640	0.580-0.700
Freon 123A	5.05	7.83	0.645	ok	0.645	0.585-0.705
Freon 142B	4.10	7.83	0.524	ok	0.524	0.464-0.584
Freon 152A	3.90	7.83	0.498	ok	0.498	0.438-0.558
Heptane	10.82	9.79	1.105	ok	1.106	1.046-1.166
Hexachlorobutadiene	20.60	14.36	1.435	ok	1.435	1.375-1.495
Hexachloroethane	19.08	14.36	1.329	ok	1.329	1.269-1.389
Hexane	7.86	7.83	1.004	ok	1.004	0.944-1.064
2-Hexanone	12.77	14.36	0.889	ok	0.890	0.830-0.950
Iodomethane	5.67	7.83	0.724	ok	0.725	0.665-0.785
Isopropylbenzene	16.23	14.36	1.130	ok	1.130	1.070-1.190
Isopropyl Alcohol	5.29	7.83	0.676	ok	0.678	0.618-0.738
p-Isopropyltoluene	18.13	14.36	1.263	ok	1.263	1.203-1.323
Methylene chloride	5.82	7.83	0.743	ok	0.744	0.684-0.804
Methyl ethyl ketone	7.26	7.83	0.927	ok	0.929	0.869-0.989
Methyl Isobutyl Ketone	11.48	9.79	1.173	ok	1.176	1.116-1.236
Methyl Tert Butyl Ether	6.92	7.83	0.884	ok	0.888	0.828-0.948
Methylmethacrylate	10.74	9.79	1.097	ok	1.099	1.039-1.159
Naphthalene	20.29	14.36	1.413	ok	1.413	1.353-1.473
Nonane	15.81	14.36	1.101	ok	1.101	1.041-1.161
Octane	13.53	14.36	0.942	ok	0.942	0.882-1.002
Pentane	5.49	7.83	0.701	ok	0.702	0.642-0.762
n-Propylbenzene	16.83	14.36	1.172	ok	1.173	1.113-1.233
Propylene	3.95	7.83	0.504	ok	0.505	0.445-0.565

Initial Calibration Retention Time/Internal Standard Area Summary

Job Number: JD2616
Account: ERMNYW ERM, Inc.
Project: Fortive, New Windsor, NY

Sample Number	Lab File ID	Injected	By	Level	Inst ID	Method	
V3W2789-IC2789	3W71239.D	01/14/20 11:44	DFT	0.5	GCMS3W	TO-15	
V3W2789-IC2789	3W71241.D	01/14/20 13:41	DFT	0.2	GCMS3W	TO-15	
V3W2789-ICC2789	3W71242.D	01/14/20 14:33	DFT	10	GCMS3W	TO-15	Reporting this level
V3W2789-IC2789	3W71243.D	01/14/20 15:37	DFT	5	GCMS3W	TO-15	
V3W2789-IC2789	3W71244.D	01/14/20 16:28	DFT	20	GCMS3W	TO-15	
V3W2789-IC2789	3W71245.D	01/14/20 17:21	DFT	40	GCMS3W	TO-15	
V3W2789-IC2789	3W71248.D	01/14/20 19:51	DFT	0.1	GCMS3W	TO-15	
V3W2789-IC2789	3W71249.D	01/14/20 20:40	DFT	0.04	GCMS3W	TO-15	

Target Compound	RT (min.)	Istd RT (min.)	Rel RT		Mean Rel RT	Rel RT Range (+ /- .06)
Styrene	15.43	14.36	1.075	ok	1.075	1.015-1.135
1,1,1-Trichloroethane	8.95	7.83	1.143	ok	1.144	1.084-1.204
1,1,1,2-Tetrachloroethane	14.39	14.36	1.002	ok	1.003	0.943-1.063
1,1,2,2-Tetrachloroethane	15.54	14.36	1.082	ok	1.083	1.023-1.143
1,1,2-Trichloroethane	12.16	9.79	1.242	ok	1.243	1.183-1.303
1,2,4-Trichlorobenzene	20.19	14.36	1.406	ok	1.407	1.347-1.467
1,2,3-Trichloropropane	15.69	14.36	1.093	ok	1.093	1.033-1.153
1,2,3-Trimethylbenzene	18.12	14.36	1.262	ok	1.262	1.202-1.322
1,2,4-Trimethylbenzene	17.61	14.36	1.226	ok	1.227	1.167-1.287
1,3,5-Trimethylbenzene	17.11	14.36	1.192	ok	1.192	1.132-1.252
2,2,4-Trimethylpentane	10.54	9.79	1.077	ok	1.078	1.018-1.138
Tertiary Butyl Alcohol	5.78	7.83	0.738	ok	0.744	0.684-0.804
Tetrachloroethylene	13.67	14.36	0.952	ok	0.952	0.892-1.012
Tetrahydrofuran	8.39	7.83	1.072	ok	1.077	1.017-1.137
Toluene	12.45	9.79	1.272	ok	1.273	1.213-1.333
Trichloroethylene	10.51	9.79	1.074	ok	1.074	1.014-1.134
Trichlorofluoromethane	5.22	7.83	0.667	ok	0.668	0.608-0.728
Vinyl chloride	4.28	7.83	0.547	ok	0.546	0.486-0.606
Vinyl Acetate	7.00	7.83	0.894	ok	0.894	0.834-0.954
m,p-Xylene	15.03	14.36	1.047	ok	1.047	0.987-1.107
o-Xylene	15.55	14.36	1.083	ok	1.083	1.023-1.143

Internal Standard	RT (min.)		Mean RT(min.)	RT Range (+ /- 0.33)	Area		Mean Area	Area Range (+ /- 40 %)
Bromochloromethane	7.83	ok	7.83	7.50-8.16	107344	ok	112035	67221-156849
1,4-Difluorobenzene	9.79	ok	9.79	9.46-10.12	517280	ok	528424	317054-739794
Chlorobenzene-D5	14.36	ok	14.36	14.03-14.69	269710	ok	268656	161194-376118

Initial Calibration Retention Time/Internal Standard Area Summary

Job Number: JD2616
Account: ERMNYW ERM, Inc.
Project: Fortive, New Windsor, NY

Sample Number	Lab File ID	Injected	By	Level	Inst ID	Method	
V3W2789-IC2789	3W71239.D	01/14/20 11:44	DFT	0.5	GCMS3W	TO-15	
V3W2789-IC2789	3W71241.D	01/14/20 13:41	DFT	0.2	GCMS3W	TO-15	
V3W2789-ICC2789	3W71242.D	01/14/20 14:33	DFT	10	GCMS3W	TO-15	
V3W2789-IC2789	3W71243.D	01/14/20 15:37	DFT	5	GCMS3W	TO-15	Reporting this level
V3W2789-IC2789	3W71244.D	01/14/20 16:28	DFT	20	GCMS3W	TO-15	
V3W2789-IC2789	3W71245.D	01/14/20 17:21	DFT	40	GCMS3W	TO-15	
V3W2789-IC2789	3W71248.D	01/14/20 19:51	DFT	0.1	GCMS3W	TO-15	
V3W2789-IC2789	3W71249.D	01/14/20 20:40	DFT	0.04	GCMS3W	TO-15	

Target Compound	RT (min.)	Istd RT (min.)	Rel RT		Mean Rel RT	Rel RT Range (+ /- .06)
Acetone	5.12	7.82	0.655	ok	0.655	0.595-0.715
Acrolein	5.01	7.82	0.641	ok	0.641	0.581-0.701
Acrylonitrile	5.45	7.82	0.697	ok	0.698	0.638-0.758
Acetonitrile	4.92	7.82	0.629	ok	0.630	0.570-0.690
1,3-Butadiene	4.36	7.82	0.558	ok	0.558	0.498-0.618
Benzene	9.42	9.78	0.963	ok	0.963	0.903-1.023
Bromobenzene	16.31	14.35	1.137	ok	1.137	1.077-1.197
Bromodichloromethane	10.47	9.78	1.071	ok	1.070	1.010-1.130
Bromoform	15.10	14.35	1.052	ok	1.052	0.992-1.112
Bromomethane	4.56	7.82	0.583	ok	0.583	0.523-0.643
Bromoethene	4.92	7.82	0.629	ok	0.629	0.569-0.689
n-Butane	4.40	7.82	0.563	ok	0.562	0.502-0.622
Benzyl Chloride	17.77	14.35	1.238	ok	1.238	1.178-1.298
n-Butylbenzene	18.64	14.35	1.299	ok	1.299	1.239-1.359
sec-Butylbenzene	17.93	14.35	1.249	ok	1.249	1.189-1.309
tert-Butylbenzene	17.60	14.35	1.226	ok	1.226	1.166-1.286
Carbon disulfide	6.11	7.82	0.781	ok	0.782	0.722-0.842
Chlorobenzene	14.40	14.35	1.003	ok	1.004	0.944-1.064
Chlorodifluoromethane	3.93	7.82	0.503	ok	0.502	0.442-0.562
Chloroethane	4.68	7.82	0.598	ok	0.598	0.538-0.658
Chlorotrifluoroethene	3.95	7.82	0.505	ok	0.506	0.446-0.566
Chloroform	7.95	7.82	1.017	ok	1.016	0.956-1.076
Chloromethane	4.12	7.82	0.527	ok	0.527	0.467-0.587
3-Chloropropene	5.92	7.82	0.757	ok	0.757	0.697-0.817
2-Chlorotoluene	16.78	14.35	1.169	ok	1.169	1.109-1.229
Carbon tetrachloride	9.57	7.82	1.224	ok	1.223	1.163-1.283
Cyclohexane	9.69	9.78	0.991	ok	0.991	0.931-1.051
1,1-Dichloroethane	6.86	7.82	0.877	ok	0.877	0.817-0.937
1,1-Dichloroethylene	5.73	7.82	0.733	ok	0.732	0.672-0.792
1,2-Dibromoethane	13.16	14.35	0.917	ok	0.917	0.857-0.977
1,2-Dichloroethane	8.69	7.82	1.111	ok	1.111	1.051-1.171
1,2-Dichloropropane	10.26	9.78	1.049	ok	1.050	0.990-1.110
1,3-Dichloropropane	12.48	9.78	1.276	ok	1.276	1.216-1.336
1,4-Dioxane	10.56	9.78	1.080	ok	1.081	1.021-1.141
Dichlorodifluoromethane	4.00	7.82	0.512	ok	0.512	0.452-0.572
Dichlorofluoromethane	4.73	7.82	0.605	ok	0.604	0.544-0.664
Dibromochloromethane	12.90	14.35	0.899	ok	0.899	0.839-0.959
Dibromomethane	10.24	9.78	1.047	ok	1.047	0.987-1.107
trans-1,2-Dichloroethylene	6.67	7.82	0.853	ok	0.852	0.792-0.912
cis-1,2-Dichloroethylene	7.66	7.82	0.980	ok	0.979	0.919-1.039

Initial Calibration Retention Time/Internal Standard Area Summary

Job Number: JD2616
Account: ERMNYW ERM, Inc.
Project: Fortive, New Windsor, NY

Sample Number	Lab File ID	Injected	By	Level	Inst ID	Method	
V3W2789-IC2789	3W71239.D	01/14/20 11:44	DFT	0.5	GCMS3W	TO-15	
V3W2789-IC2789	3W71241.D	01/14/20 13:41	DFT	0.2	GCMS3W	TO-15	
V3W2789-ICC2789	3W71242.D	01/14/20 14:33	DFT	10	GCMS3W	TO-15	
V3W2789-IC2789	3W71243.D	01/14/20 15:37	DFT	5	GCMS3W	TO-15	Reporting this level
V3W2789-IC2789	3W71244.D	01/14/20 16:28	DFT	20	GCMS3W	TO-15	
V3W2789-IC2789	3W71245.D	01/14/20 17:21	DFT	40	GCMS3W	TO-15	
V3W2789-IC2789	3W71248.D	01/14/20 19:51	DFT	0.1	GCMS3W	TO-15	
V3W2789-IC2789	3W71249.D	01/14/20 20:40	DFT	0.04	GCMS3W	TO-15	

Target Compound	RT (min.)	Istd RT (min.)	Rel RT		Mean Rel RT	Rel RT Range (+ /- .06)
cis-1,3-Dichloropropene	11.42	9.78	1.168	ok	1.167	1.107-1.227
m-Dichlorobenzene	17.78	14.35	1.239	ok	1.239	1.179-1.299
o-Dichlorobenzene	18.28	14.35	1.274	ok	1.274	1.214-1.334
p-Dichlorobenzene	17.87	14.35	1.245	ok	1.245	1.185-1.305
trans-1,3-Dichloropropene	11.98	9.78	1.225	ok	1.225	1.165-1.285
Di-Isopropyl ether	7.86	7.82	1.005	ok	1.006	0.946-1.066
2,3-Dimethylpentane	9.94	9.78	1.016	ok	1.016	0.956-1.076
2,4-Dimethylpentane	8.75	7.82	1.119	ok	1.118	1.058-1.178
Ethanol	4.77	7.82	0.610	ok	0.610	0.550-0.670
Ethylbenzene	14.82	14.35	1.033	ok	1.033	0.973-1.093
Ethyl Acetate	7.89	7.82	1.009	ok	1.011	0.951-1.071
Ethyl Acrylate	10.29	9.78	1.052	ok	1.052	0.992-1.112
4-Ethyltoluene	17.01	14.35	1.185	ok	1.185	1.125-1.245
Freon 113	6.05	7.82	0.774	ok	0.773	0.713-0.833
Freon 114	4.19	7.82	0.536	ok	0.535	0.475-0.595
Freon 115	3.81	7.82	0.487	ok	0.488	0.428-0.548
Freon 123	5.01	7.82	0.641	ok	0.640	0.580-0.700
Freon 123A	5.05	7.82	0.646	ok	0.645	0.585-0.705
Freon 142B	4.10	7.82	0.524	ok	0.524	0.464-0.584
Freon 152A	3.89	7.82	0.497	ok	0.498	0.438-0.558
Heptane	10.82	9.78	1.106	ok	1.106	1.046-1.166
Hexachlorobutadiene	20.60	14.35	1.436	ok	1.435	1.375-1.495
Hexachloroethane	19.08	14.35	1.330	ok	1.329	1.269-1.389
Hexane	7.86	7.82	1.005	ok	1.004	0.944-1.064
2-Hexanone	12.77	14.35	0.890	ok	0.890	0.830-0.950
Iodomethane	5.67	7.82	0.725	ok	0.725	0.665-0.785
Isopropylbenzene	16.22	14.35	1.130	ok	1.130	1.070-1.190
Isopropyl Alcohol	5.29	7.82	0.676	ok	0.678	0.618-0.738
p-Isopropyltoluene	18.13	14.35	1.263	ok	1.263	1.203-1.323
Methylene chloride	5.82	7.82	0.744	ok	0.744	0.684-0.804
Methyl ethyl ketone	7.26	7.82	0.928	ok	0.929	0.869-0.989
Methyl Isobutyl Ketone	11.49	9.78	1.175	ok	1.176	1.116-1.236
Methyl Tert Butyl Ether	6.93	7.82	0.886	ok	0.888	0.828-0.948
Methylmethacrylate	10.74	9.78	1.098	ok	1.099	1.039-1.159
Naphthalene	20.29	14.35	1.414	ok	1.413	1.353-1.473
Nonane	15.81	14.35	1.102	ok	1.101	1.041-1.161
Octane	13.52	14.35	0.942	ok	0.942	0.882-1.002
Pentane	5.49	7.82	0.702	ok	0.702	0.642-0.762
n-Propylbenzene	16.83	14.35	1.173	ok	1.173	1.113-1.233
Propylene	3.95	7.82	0.505	ok	0.505	0.445-0.565

Initial Calibration Retention Time/Internal Standard Area Summary

Job Number: JD2616
Account: ERMNYW ERM, Inc.
Project: Fortive, New Windsor, NY

Sample Number	Lab File ID	Injected	By	Level	Inst ID	Method	
V3W2789-IC2789	3W71239.D	01/14/20 11:44	DFT	0.5	GCMS3W	TO-15	
V3W2789-IC2789	3W71241.D	01/14/20 13:41	DFT	0.2	GCMS3W	TO-15	
V3W2789-ICC2789	3W71242.D	01/14/20 14:33	DFT	10	GCMS3W	TO-15	
V3W2789-IC2789	3W71243.D	01/14/20 15:37	DFT	5	GCMS3W	TO-15	Reporting this level
V3W2789-IC2789	3W71244.D	01/14/20 16:28	DFT	20	GCMS3W	TO-15	
V3W2789-IC2789	3W71245.D	01/14/20 17:21	DFT	40	GCMS3W	TO-15	
V3W2789-IC2789	3W71248.D	01/14/20 19:51	DFT	0.1	GCMS3W	TO-15	
V3W2789-IC2789	3W71249.D	01/14/20 20:40	DFT	0.04	GCMS3W	TO-15	

Target Compound	RT (min.)	Istd RT (min.)	Rel RT		Mean Rel RT	Rel RT Range (+ /- .06)
Styrene	15.43	14.35	1.075	ok	1.075	1.015-1.135
1,1,1-Trichloroethane	8.95	7.82	1.145	ok	1.144	1.084-1.204
1,1,1,2-Tetrachloroethane	14.39	14.35	1.003	ok	1.003	0.943-1.063
1,1,2,2-Tetrachloroethane	15.54	14.35	1.083	ok	1.083	1.023-1.143
1,1,2-Trichloroethane	12.16	9.78	1.243	ok	1.243	1.183-1.303
1,2,4-Trichlorobenzene	20.19	14.35	1.407	ok	1.407	1.347-1.467
1,2,3-Trichloropropane	15.69	14.35	1.093	ok	1.093	1.033-1.153
1,2,3-Trimethylbenzene	18.12	14.35	1.263	ok	1.262	1.202-1.322
1,2,4-Trimethylbenzene	17.61	14.35	1.227	ok	1.227	1.167-1.287
1,3,5-Trimethylbenzene	17.11	14.35	1.192	ok	1.192	1.132-1.252
2,2,4-Trimethylpentane	10.54	9.78	1.078	ok	1.078	1.018-1.138
Tertiary Butyl Alcohol	5.79	7.82	0.740	ok	0.744	0.684-0.804
Tetrachloroethylene	13.66	14.35	0.952	ok	0.952	0.892-1.012
Tetrahydrofuran	8.40	7.82	1.074	ok	1.077	1.017-1.137
Toluene	12.45	9.78	1.273	ok	1.273	1.213-1.333
Trichloroethylene	10.51	9.78	1.075	ok	1.074	1.014-1.134
Trichlorofluoromethane	5.22	7.82	0.668	ok	0.668	0.608-0.728
Vinyl chloride	4.27	7.82	0.546	ok	0.546	0.486-0.606
Vinyl Acetate	6.99	7.82	0.894	ok	0.894	0.834-0.954
m,p-Xylene	15.02	14.35	1.047	ok	1.047	0.987-1.107
o-Xylene	15.54	14.35	1.083	ok	1.083	1.023-1.143

Internal Standard	RT (min.)		Mean RT(min.)	RT Range (+ /- 0.33)	Area		Mean Area	Area Range (+ /- 40 %)
Bromochloromethane	7.82	ok	7.83	7.50-8.16	113319	ok	112035	67221-156849
1,4-Difluorobenzene	9.78	ok	9.79	9.46-10.12	564663	ok	528424	317054-739794
Chlorobenzene-D5	14.35	ok	14.36	14.03-14.69	275923	ok	268656	161194-376118

Initial Calibration Retention Time/Internal Standard Area Summary

Job Number: JD2616
Account: ERMNYW ERM, Inc.
Project: Fortive, New Windsor, NY

Sample Number	Lab File ID	Injected	By	Level	Inst ID	Method	
V3W2789-IC2789	3W71239.D	01/14/20 11:44	DFT	0.5	GCMS3W	TO-15	
V3W2789-IC2789	3W71241.D	01/14/20 13:41	DFT	0.2	GCMS3W	TO-15	
V3W2789-ICC2789	3W71242.D	01/14/20 14:33	DFT	10	GCMS3W	TO-15	
V3W2789-IC2789	3W71243.D	01/14/20 15:37	DFT	5	GCMS3W	TO-15	
V3W2789-IC2789	3W71244.D	01/14/20 16:28	DFT	20	GCMS3W	TO-15	Reporting this level
V3W2789-IC2789	3W71245.D	01/14/20 17:21	DFT	40	GCMS3W	TO-15	
V3W2789-IC2789	3W71248.D	01/14/20 19:51	DFT	0.1	GCMS3W	TO-15	
V3W2789-IC2789	3W71249.D	01/14/20 20:40	DFT	0.04	GCMS3W	TO-15	

Target Compound	RT (min.)	Istd RT (min.)	Rel RT		Mean Rel RT	Rel RT Range (+ /- .06)
Acetone	5.11	7.84	0.652	ok	0.655	0.595-0.715
Acrolein	5.01	7.84	0.639	ok	0.641	0.581-0.701
Acrylonitrile	5.46	7.84	0.696	ok	0.698	0.638-0.758
Acetonitrile	4.92	7.84	0.628	ok	0.630	0.570-0.690
1,3-Butadiene	4.37	7.84	0.557	ok	0.558	0.498-0.618
Benzene	9.43	9.79	0.963	ok	0.963	0.903-1.023
Bromobenzene	16.32	14.36	1.136	ok	1.137	1.077-1.197
Bromodichloromethane	10.48	9.79	1.070	ok	1.070	1.010-1.130
Bromoform	15.11	14.36	1.052	ok	1.052	0.992-1.112
Bromomethane	4.56	7.84	0.582	ok	0.583	0.523-0.643
Bromoethene	4.93	7.84	0.629	ok	0.629	0.569-0.689
n-Butane	4.41	7.84	0.562	ok	0.562	0.502-0.622
Benzyl Chloride	17.78	14.36	1.238	ok	1.238	1.178-1.298
n-Butylbenzene	18.64	14.36	1.298	ok	1.299	1.239-1.359
sec-Butylbenzene	17.94	14.36	1.249	ok	1.249	1.189-1.309
tert-Butylbenzene	17.61	14.36	1.226	ok	1.226	1.166-1.286
Carbon disulfide	6.12	7.84	0.781	ok	0.782	0.722-0.842
Chlorobenzene	14.41	14.36	1.003	ok	1.004	0.944-1.064
Chlorodifluoromethane	3.93	7.84	0.501	ok	0.502	0.442-0.562
Chloroethane	4.68	7.84	0.597	ok	0.598	0.538-0.658
Chlorotrifluoroethene	3.96	7.84	0.505	ok	0.506	0.446-0.566
Chloroform	7.97	7.84	1.017	ok	1.016	0.956-1.076
Chloromethane	4.12	7.84	0.526	ok	0.527	0.467-0.587
3-Chloropropene	5.93	7.84	0.756	ok	0.757	0.697-0.817
2-Chlorotoluene	16.79	14.36	1.169	ok	1.169	1.109-1.229
Carbon tetrachloride	9.58	7.84	1.222	ok	1.223	1.163-1.283
Cyclohexane	9.70	9.79	0.991	ok	0.991	0.931-1.051
1,1-Dichloroethane	6.86	7.84	0.875	ok	0.877	0.817-0.937
1,1-Dichloroethylene	5.73	7.84	0.731	ok	0.732	0.672-0.792
1,2-Dibromoethane	13.17	14.36	0.917	ok	0.917	0.857-0.977
1,2-Dichloroethane	8.71	7.84	1.111	ok	1.111	1.051-1.171
1,2-Dichloropropane	10.27	9.79	1.049	ok	1.050	0.990-1.110
1,3-Dichloropropane	12.49	9.79	1.276	ok	1.276	1.216-1.336
1,4-Dioxane	10.55	9.79	1.078	ok	1.081	1.021-1.141
Dichlorodifluoromethane	4.01	7.84	0.511	ok	0.512	0.452-0.572
Dichlorofluoromethane	4.73	7.84	0.603	ok	0.604	0.544-0.664
Dibromochloromethane	12.91	14.36	0.899	ok	0.899	0.839-0.959
Dibromomethane	10.25	9.79	1.047	ok	1.047	0.987-1.107
trans-1,2-Dichloroethylene	6.67	7.84	0.851	ok	0.852	0.792-0.912
cis-1,2-Dichloroethylene	7.67	7.84	0.978	ok	0.979	0.919-1.039

Initial Calibration Retention Time/Internal Standard Area Summary

Job Number: JD2616
Account: ERMNYW ERM, Inc.
Project: Fortive, New Windsor, NY

Sample Number	Lab File ID	Injected	By	Level	Inst ID	Method	
V3W2789-IC2789	3W71239.D	01/14/20 11:44	DFT	0.5	GCMS3W	TO-15	
V3W2789-IC2789	3W71241.D	01/14/20 13:41	DFT	0.2	GCMS3W	TO-15	
V3W2789-ICC2789	3W71242.D	01/14/20 14:33	DFT	10	GCMS3W	TO-15	
V3W2789-IC2789	3W71243.D	01/14/20 15:37	DFT	5	GCMS3W	TO-15	
V3W2789-IC2789	3W71244.D	01/14/20 16:28	DFT	20	GCMS3W	TO-15	Reporting this level
V3W2789-IC2789	3W71245.D	01/14/20 17:21	DFT	40	GCMS3W	TO-15	
V3W2789-IC2789	3W71248.D	01/14/20 19:51	DFT	0.1	GCMS3W	TO-15	
V3W2789-IC2789	3W71249.D	01/14/20 20:40	DFT	0.04	GCMS3W	TO-15	

Target Compound	RT (min.)	Istd RT (min.)	Rel RT		Mean Rel RT	Rel RT Range (+ /- .06)
cis-1,3-Dichloropropene	11.43	9.79	1.168	ok	1.167	1.107-1.227
m-Dichlorobenzene	17.79	14.36	1.239	ok	1.239	1.179-1.299
o-Dichlorobenzene	18.29	14.36	1.274	ok	1.274	1.214-1.334
p-Dichlorobenzene	17.88	14.36	1.245	ok	1.245	1.185-1.305
trans-1,3-Dichloropropene	11.99	9.79	1.225	ok	1.225	1.165-1.285
Di-Isopropyl ether	7.87	7.84	1.004	ok	1.006	0.946-1.066
2,3-Dimethylpentane	9.95	9.79	1.016	ok	1.016	0.956-1.076
2,4-Dimethylpentane	8.75	7.84	1.116	ok	1.118	1.058-1.178
Ethanol	4.77	7.84	0.608	ok	0.610	0.550-0.670
Ethylbenzene	14.83	14.36	1.033	ok	1.033	0.973-1.093
Ethyl Acetate	7.90	7.84	1.008	ok	1.011	0.951-1.071
Ethyl Acrylate	10.29	9.79	1.051	ok	1.052	0.992-1.112
4-Ethyltoluene	17.02	14.36	1.185	ok	1.185	1.125-1.245
Freon 113	6.05	7.84	0.772	ok	0.773	0.713-0.833
Freon 114	4.19	7.84	0.534	ok	0.535	0.475-0.595
Freon 115	3.82	7.84	0.487	ok	0.488	0.428-0.548
Freon 123	5.01	7.84	0.639	ok	0.640	0.580-0.700
Freon 123A	5.05	7.84	0.644	ok	0.645	0.585-0.705
Freon 142B	4.10	7.84	0.523	ok	0.524	0.464-0.584
Freon 152A	3.90	7.84	0.497	ok	0.498	0.438-0.558
Heptane	10.83	9.79	1.106	ok	1.106	1.046-1.166
Hexachlorobutadiene	20.60	14.36	1.435	ok	1.435	1.375-1.495
Hexachloroethane	19.08	14.36	1.329	ok	1.329	1.269-1.389
Hexane	7.86	7.84	1.003	ok	1.004	0.944-1.064
2-Hexanone	12.77	14.36	0.889	ok	0.890	0.830-0.950
Iodomethane	5.68	7.84	0.724	ok	0.725	0.665-0.785
Isopropylbenzene	16.23	14.36	1.130	ok	1.130	1.070-1.190
Isopropyl Alcohol	5.30	7.84	0.676	ok	0.678	0.618-0.738
p-Isopropyltoluene	18.14	14.36	1.263	ok	1.263	1.203-1.323
Methylene chloride	5.83	7.84	0.744	ok	0.744	0.684-0.804
Methyl ethyl ketone	7.26	7.84	0.926	ok	0.929	0.869-0.989
Methyl Isobutyl Ketone	11.48	9.79	1.173	ok	1.176	1.116-1.236
Methyl Tert Butyl Ether	6.92	7.84	0.883	ok	0.888	0.828-0.948
Methylmethacrylate	10.74	9.79	1.097	ok	1.099	1.039-1.159
Naphthalene	20.29	14.36	1.413	ok	1.413	1.353-1.473
Nonane	15.81	14.36	1.101	ok	1.101	1.041-1.161
Octane	13.53	14.36	0.942	ok	0.942	0.882-1.002
Pentane	5.49	7.84	0.700	ok	0.702	0.642-0.762
n-Propylbenzene	16.84	14.36	1.173	ok	1.173	1.113-1.233
Propylene	3.95	7.84	0.504	ok	0.505	0.445-0.565

Initial Calibration Retention Time/Internal Standard Area Summary

Job Number: JD2616
Account: ERMNYW ERM, Inc.
Project: Fortive, New Windsor, NY

Sample Number	Lab File ID	Injected	By	Level	Inst ID	Method	
V3W2789-IC2789	3W71239.D	01/14/20 11:44	DFT	0.5	GCMS3W	TO-15	
V3W2789-IC2789	3W71241.D	01/14/20 13:41	DFT	0.2	GCMS3W	TO-15	
V3W2789-ICC2789	3W71242.D	01/14/20 14:33	DFT	10	GCMS3W	TO-15	
V3W2789-IC2789	3W71243.D	01/14/20 15:37	DFT	5	GCMS3W	TO-15	
V3W2789-IC2789	3W71244.D	01/14/20 16:28	DFT	20	GCMS3W	TO-15	Reporting this level
V3W2789-IC2789	3W71245.D	01/14/20 17:21	DFT	40	GCMS3W	TO-15	
V3W2789-IC2789	3W71248.D	01/14/20 19:51	DFT	0.1	GCMS3W	TO-15	
V3W2789-IC2789	3W71249.D	01/14/20 20:40	DFT	0.04	GCMS3W	TO-15	

Target Compound	RT (min.)	Istd RT (min.)	Rel RT		Mean Rel RT	Rel RT Range (+ /- .06)
Styrene	15.43	14.36	1.075	ok	1.075	1.015-1.135
1,1,1-Trichloroethane	8.96	7.84	1.143	ok	1.144	1.084-1.204
1,1,1,2-Tetrachloroethane	14.40	14.36	1.003	ok	1.003	0.943-1.063
1,1,2,2-Tetrachloroethane	15.55	14.36	1.083	ok	1.083	1.023-1.143
1,1,2-Trichloroethane	12.17	9.79	1.243	ok	1.243	1.183-1.303
1,2,4-Trichlorobenzene	20.20	14.36	1.407	ok	1.407	1.347-1.467
1,2,3-Trichloropropane	15.70	14.36	1.093	ok	1.093	1.033-1.153
1,2,3-Trimethylbenzene	18.13	14.36	1.263	ok	1.262	1.202-1.322
1,2,4-Trimethylbenzene	17.62	14.36	1.227	ok	1.227	1.167-1.287
1,3,5-Trimethylbenzene	17.12	14.36	1.192	ok	1.192	1.132-1.252
2,2,4-Trimethylpentane	10.55	9.79	1.078	ok	1.078	1.018-1.138
Tertiary Butyl Alcohol	5.78	7.84	0.737	ok	0.744	0.684-0.804
Tetrachloroethylene	13.67	14.36	0.952	ok	0.952	0.892-1.012
Tetrahydrofuran	8.39	7.84	1.070	ok	1.077	1.017-1.137
Toluene	12.46	9.79	1.273	ok	1.273	1.213-1.333
Trichloroethylene	10.52	9.79	1.075	ok	1.074	1.014-1.134
Trichlorofluoromethane	5.23	7.84	0.667	ok	0.668	0.608-0.728
Vinyl chloride	4.28	7.84	0.546	ok	0.546	0.486-0.606
Vinyl Acetate	7.00	7.84	0.893	ok	0.894	0.834-0.954
m,p-Xylene	15.03	14.36	1.047	ok	1.047	0.987-1.107
o-Xylene	15.55	14.36	1.083	ok	1.083	1.023-1.143

Internal Standard	RT (min.)		Mean RT(min.)	RT Range (+ /- 0.33)	Area		Mean Area	Area Range (+ /- 40 %)
Bromochloromethane	7.84	ok	7.83	7.50-8.16	114159	ok	112035	67221-156849
1,4-Difluorobenzene	9.79	ok	9.79	9.46-10.12	576721	ok	528424	317054-739794
Chlorobenzene-D5	14.36	ok	14.36	14.03-14.69	305164	ok	268656	161194-376118

Initial Calibration Retention Time/Internal Standard Area Summary

Job Number: JD2616
Account: ERMNYW ERM, Inc.
Project: Fortive, New Windsor, NY

Sample Number	Lab File ID	Injected	By	Level	Inst ID	Method	
V3W2789-IC2789	3W71239.D	01/14/20 11:44	DFT	0.5	GCMS3W	TO-15	
V3W2789-IC2789	3W71241.D	01/14/20 13:41	DFT	0.2	GCMS3W	TO-15	
V3W2789-ICC2789	3W71242.D	01/14/20 14:33	DFT	10	GCMS3W	TO-15	
V3W2789-IC2789	3W71243.D	01/14/20 15:37	DFT	5	GCMS3W	TO-15	
V3W2789-IC2789	3W71244.D	01/14/20 16:28	DFT	20	GCMS3W	TO-15	
V3W2789-IC2789	3W71245.D	01/14/20 17:21	DFT	40	GCMS3W	TO-15	Reporting this level
V3W2789-IC2789	3W71248.D	01/14/20 19:51	DFT	0.1	GCMS3W	TO-15	
V3W2789-IC2789	3W71249.D	01/14/20 20:40	DFT	0.04	GCMS3W	TO-15	

Target Compound	RT (min.)	Istd RT (min.)	Rel RT		Mean Rel RT	Rel RT Range (+ /- .06)
Acetone	5.12	7.85	0.652	ok	0.655	0.595-0.715
Acrolein	5.02	7.85	0.639	ok	0.641	0.581-0.701
Acrylonitrile	5.47	7.85	0.697	ok	0.698	0.638-0.758
Acetonitrile	4.93	7.85	0.628	ok	0.630	0.570-0.690
1,3-Butadiene	4.37	7.85	0.557	ok	0.558	0.498-0.618
Benzene	9.44	9.80	0.963	ok	0.963	0.903-1.023
Bromobenzene	16.33	14.37	1.136	ok	1.137	1.077-1.197
Bromodichloromethane	10.49	9.80	1.070	ok	1.070	1.010-1.130
Bromoform	15.12	14.37	1.052	ok	1.052	0.992-1.112
Bromomethane	4.57	7.85	0.582	ok	0.583	0.523-0.643
Bromoethene	4.93	7.85	0.628	ok	0.629	0.569-0.689
n-Butane	4.41	7.85	0.562	ok	0.562	0.502-0.622
Benzyl Chloride	17.79	14.37	1.238	ok	1.238	1.178-1.298
n-Butylbenzene	18.65	14.37	1.298	ok	1.299	1.239-1.359
sec-Butylbenzene	17.95	14.37	1.249	ok	1.249	1.189-1.309
tert-Butylbenzene	17.61	14.37	1.225	ok	1.226	1.166-1.286
Carbon disulfide	6.13	7.85	0.781	ok	0.782	0.722-0.842
Chlorobenzene	14.42	14.37	1.003	ok	1.004	0.944-1.064
Chlorodifluoromethane	3.94	7.85	0.502	ok	0.502	0.442-0.562
Chloroethane	4.69	7.85	0.597	ok	0.598	0.538-0.658
Chlorotrifluoroethene	3.96	7.85	0.504	ok	0.506	0.446-0.566
Chloroform	7.98	7.85	1.017	ok	1.016	0.956-1.076
Chloromethane	4.13	7.85	0.526	ok	0.527	0.467-0.587
3-Chloropropene	5.94	7.85	0.757	ok	0.757	0.697-0.817
2-Chlorotoluene	16.80	14.37	1.169	ok	1.169	1.109-1.229
Carbon tetrachloride	9.59	7.85	1.222	ok	1.223	1.163-1.283
Cyclohexane	9.71	9.80	0.991	ok	0.991	0.931-1.051
1,1-Dichloroethane	6.88	7.85	0.876	ok	0.877	0.817-0.937
1,1-Dichloroethylene	5.74	7.85	0.731	ok	0.732	0.672-0.792
1,2-Dibromoethane	13.19	14.37	0.918	ok	0.917	0.857-0.977
1,2-Dichloroethane	8.72	7.85	1.111	ok	1.111	1.051-1.171
1,2-Dichloropropane	10.29	9.80	1.050	ok	1.050	0.990-1.110
1,3-Dichloropropane	12.50	9.80	1.276	ok	1.276	1.216-1.336
1,4-Dioxane	10.56	9.80	1.078	ok	1.081	1.021-1.141
Dichlorodifluoromethane	4.01	7.85	0.511	ok	0.512	0.452-0.572
Dichlorofluoromethane	4.74	7.85	0.604	ok	0.604	0.544-0.664
Dibromochloromethane	12.93	14.37	0.900	ok	0.899	0.839-0.959
Dibromomethane	10.26	9.80	1.047	ok	1.047	0.987-1.107
trans-1,2-Dichloroethylene	6.68	7.85	0.851	ok	0.852	0.792-0.912
cis-1,2-Dichloroethylene	7.68	7.85	0.978	ok	0.979	0.919-1.039

Initial Calibration Retention Time/Internal Standard Area Summary

Job Number: JD2616
Account: ERMNYW ERM, Inc.
Project: Fortive, New Windsor, NY

Sample Number	Lab File ID	Injected	By	Level	Inst ID	Method	
V3W2789-IC2789	3W71239.D	01/14/20 11:44	DFT	0.5	GCMS3W	TO-15	
V3W2789-IC2789	3W71241.D	01/14/20 13:41	DFT	0.2	GCMS3W	TO-15	
V3W2789-ICC2789	3W71242.D	01/14/20 14:33	DFT	10	GCMS3W	TO-15	
V3W2789-IC2789	3W71243.D	01/14/20 15:37	DFT	5	GCMS3W	TO-15	
V3W2789-IC2789	3W71244.D	01/14/20 16:28	DFT	20	GCMS3W	TO-15	
V3W2789-IC2789	3W71245.D	01/14/20 17:21	DFT	40	GCMS3W	TO-15	Reporting this level
V3W2789-IC2789	3W71248.D	01/14/20 19:51	DFT	0.1	GCMS3W	TO-15	
V3W2789-IC2789	3W71249.D	01/14/20 20:40	DFT	0.04	GCMS3W	TO-15	

Target Compound	RT (min.)	Istd RT (min.)	Rel RT		Mean Rel RT	Rel RT Range (+ /- .06)
cis-1,3-Dichloropropene	11.44	9.80	1.167	ok	1.167	1.107-1.227
m-Dichlorobenzene	17.80	14.37	1.239	ok	1.239	1.179-1.299
o-Dichlorobenzene	18.29	14.37	1.273	ok	1.274	1.214-1.334
p-Dichlorobenzene	17.88	14.37	1.244	ok	1.245	1.185-1.305
trans-1,3-Dichloropropene	12.00	9.80	1.224	ok	1.225	1.165-1.285
Di-Isopropyl ether	7.88	7.85	1.004	ok	1.006	0.946-1.066
2,3-Dimethylpentane	9.96	9.80	1.016	ok	1.016	0.956-1.076
2,4-Dimethylpentane	8.76	7.85	1.116	ok	1.118	1.058-1.178
Ethanol	4.78	7.85	0.609	ok	0.610	0.550-0.670
Ethylbenzene	14.84	14.37	1.033	ok	1.033	0.973-1.093
Ethyl Acetate	7.91	7.85	1.008	ok	1.011	0.951-1.071
Ethyl Acrylate	10.30	9.80	1.051	ok	1.052	0.992-1.112
4-Ethyltoluene	17.03	14.37	1.185	ok	1.185	1.125-1.245
Freon 113	6.06	7.85	0.772	ok	0.773	0.713-0.833
Freon 114	4.19	7.85	0.534	ok	0.535	0.475-0.595
Freon 115	3.83	7.85	0.488	ok	0.488	0.428-0.548
Freon 123	5.02	7.85	0.639	ok	0.640	0.580-0.700
Freon 123A	5.06	7.85	0.645	ok	0.645	0.585-0.705
Freon 142B	4.11	7.85	0.524	ok	0.524	0.464-0.584
Freon 152A	3.91	7.85	0.498	ok	0.498	0.438-0.558
Heptane	10.84	9.80	1.106	ok	1.106	1.046-1.166
Hexachlorobutadiene	20.60	14.37	1.434	ok	1.435	1.375-1.495
Hexachloroethane	19.09	14.37	1.328	ok	1.329	1.269-1.389
Hexane	7.87	7.85	1.003	ok	1.004	0.944-1.064
2-Hexanone	12.78	14.37	0.889	ok	0.890	0.830-0.950
Iodomethane	5.69	7.85	0.725	ok	0.725	0.665-0.785
Isopropylbenzene	16.24	14.37	1.130	ok	1.130	1.070-1.190
Isopropyl Alcohol	5.31	7.85	0.676	ok	0.678	0.618-0.738
p-Isopropyltoluene	18.15	14.37	1.263	ok	1.263	1.203-1.323
Methylene chloride	5.84	7.85	0.744	ok	0.744	0.684-0.804
Methyl ethyl ketone	7.27	7.85	0.926	ok	0.929	0.869-0.989
Methyl Isobutyl Ketone	11.49	9.80	1.172	ok	1.176	1.116-1.236
Methyl Tert Butyl Ether	6.93	7.85	0.883	ok	0.888	0.828-0.948
Methylmethacrylate	10.75	9.80	1.097	ok	1.099	1.039-1.159
Naphthalene	20.29	14.37	1.412	ok	1.413	1.353-1.473
Nonane	15.82	14.37	1.101	ok	1.101	1.041-1.161
Octane	13.54	14.37	0.942	ok	0.942	0.882-1.002
Pentane	5.50	7.85	0.701	ok	0.702	0.642-0.762
n-Propylbenzene	16.85	14.37	1.173	ok	1.173	1.113-1.233
Propylene	3.96	7.85	0.504	ok	0.505	0.445-0.565

Initial Calibration Retention Time/Internal Standard Area Summary

Job Number: JD2616
Account: ERMNYW ERM, Inc.
Project: Fortive, New Windsor, NY

Sample Number	Lab File ID	Injected	By	Level	Inst ID	Method	
V3W2789-IC2789	3W71239.D	01/14/20 11:44	DFT	0.5	GCMS3W	TO-15	
V3W2789-IC2789	3W71241.D	01/14/20 13:41	DFT	0.2	GCMS3W	TO-15	
V3W2789-ICC2789	3W71242.D	01/14/20 14:33	DFT	10	GCMS3W	TO-15	
V3W2789-IC2789	3W71243.D	01/14/20 15:37	DFT	5	GCMS3W	TO-15	
V3W2789-IC2789	3W71244.D	01/14/20 16:28	DFT	20	GCMS3W	TO-15	
V3W2789-IC2789	3W71245.D	01/14/20 17:21	DFT	40	GCMS3W	TO-15	Reporting this level
V3W2789-IC2789	3W71248.D	01/14/20 19:51	DFT	0.1	GCMS3W	TO-15	
V3W2789-IC2789	3W71249.D	01/14/20 20:40	DFT	0.04	GCMS3W	TO-15	

Target Compound	RT (min.)	Istd RT (min.)	Rel RT		Mean Rel RT	Rel RT Range (+ /- .06)
Styrene	15.44	14.37	1.074	ok	1.075	1.015-1.135
1,1,1-Trichloroethane	8.97	7.85	1.143	ok	1.144	1.084-1.204
1,1,1,2-Tetrachloroethane	14.40	14.37	1.002	ok	1.003	0.943-1.063
1,1,2,2-Tetrachloroethane	15.56	14.37	1.083	ok	1.083	1.023-1.143
1,1,2-Trichloroethane	12.18	9.80	1.243	ok	1.243	1.183-1.303
1,2,4-Trichlorobenzene	20.20	14.37	1.406	ok	1.407	1.347-1.467
1,2,3-Trichloropropane	15.71	14.37	1.093	ok	1.093	1.033-1.153
1,2,3-Trimethylbenzene	18.13	14.37	1.262	ok	1.262	1.202-1.322
1,2,4-Trimethylbenzene	17.63	14.37	1.227	ok	1.227	1.167-1.287
1,3,5-Trimethylbenzene	17.13	14.37	1.192	ok	1.192	1.132-1.252
2,2,4-Trimethylpentane	10.56	9.80	1.078	ok	1.078	1.018-1.138
Tertiary Butyl Alcohol	5.81	7.85	0.740	ok	0.744	0.684-0.804
Tetrachloroethylene	13.68	14.37	0.952	ok	0.952	0.892-1.012
Tetrahydrofuran	8.39	7.85	1.069	ok	1.077	1.017-1.137
Toluene	12.47	9.80	1.272	ok	1.273	1.213-1.333
Trichloroethylene	10.53	9.80	1.074	ok	1.074	1.014-1.134
Trichlorofluoromethane	5.23	7.85	0.666	ok	0.668	0.608-0.728
Vinyl chloride	4.28	7.85	0.545	ok	0.546	0.486-0.606
Vinyl Acetate	7.01	7.85	0.893	ok	0.894	0.834-0.954
m,p-Xylene	15.04	14.37	1.047	ok	1.047	0.987-1.107
o-Xylene	15.56	14.37	1.083	ok	1.083	1.023-1.143

Internal Standard	RT (min.)		Mean RT(min.)	RT Range (+ /- 0.33)	Area		Mean Area	Area Range (+ /- 40 %)
Bromochloromethane	7.85	ok	7.83	7.50-8.16	119865	ok	112035	67221-156849
1,4-Difluorobenzene	9.80	ok	9.79	9.46-10.12	605934	ok	528424	317054-739794
Chlorobenzene-D5	14.37	ok	14.36	14.03-14.69	335027	ok	268656	161194-376118

Initial Calibration Retention Time/Internal Standard Area Summary

Job Number: JD2616
Account: ERMNYW ERM, Inc.
Project: Fortive, New Windsor, NY

Sample Number	Lab File ID	Injected	By	Level	Inst ID	Method	
V3W2789-IC2789	3W71239.D	01/14/20 11:44	DFT	0.5	GCMS3W	TO-15	
V3W2789-IC2789	3W71241.D	01/14/20 13:41	DFT	0.2	GCMS3W	TO-15	
V3W2789-ICC2789	3W71242.D	01/14/20 14:33	DFT	10	GCMS3W	TO-15	
V3W2789-IC2789	3W71243.D	01/14/20 15:37	DFT	5	GCMS3W	TO-15	
V3W2789-IC2789	3W71244.D	01/14/20 16:28	DFT	20	GCMS3W	TO-15	
V3W2789-IC2789	3W71245.D	01/14/20 17:21	DFT	40	GCMS3W	TO-15	
V3W2789-IC2789	3W71248.D	01/14/20 19:51	DFT	0.1	GCMS3W	TO-15	Reporting this level
V3W2789-IC2789	3W71249.D	01/14/20 20:40	DFT	0.04	GCMS3W	TO-15	

Target Compound	RT (min.)	Istd RT (min.)	Rel RT		Mean Rel RT	Rel RT Range (+ /- .06)
Acrolein	5.03	7.82	0.643	ok	0.641	0.581-0.701
Acrylonitrile	5.48	7.82	0.701	ok	0.698	0.638-0.758
1,3-Butadiene	4.37	7.82	0.559	ok	0.558	0.498-0.618
Benzene	9.42	9.78	0.963	ok	0.963	0.903-1.023
Bromobenzene	16.32	14.35	1.137	ok	1.137	1.077-1.197
Bromodichloromethane	10.47	9.78	1.071	ok	1.070	1.010-1.130
Bromoform	15.10	14.35	1.052	ok	1.052	0.992-1.112
Bromomethane	4.56	7.82	0.583	ok	0.583	0.523-0.643
Bromoethene	4.92	7.82	0.629	ok	0.629	0.569-0.689
Benzyl Chloride	17.77	14.35	1.238	ok	1.238	1.178-1.298
n-Butylbenzene	18.64	14.35	1.299	ok	1.299	1.239-1.359
sec-Butylbenzene	17.94	14.35	1.250	ok	1.249	1.189-1.309
tert-Butylbenzene	17.60	14.35	1.226	ok	1.226	1.166-1.286
Carbon disulfide	6.12	7.82	0.783	ok	0.782	0.722-0.842
Chlorobenzene	14.40	14.35	1.003	ok	1.004	0.944-1.064
Chlorodifluoromethane	3.94	7.82	0.504	ok	0.502	0.442-0.562
Chloroethane	4.67	7.82	0.597	ok	0.598	0.538-0.658
Chlorotrifluoroethene	3.96	7.82	0.506	ok	0.506	0.446-0.566
Chloroform	7.95	7.82	1.017	ok	1.016	0.956-1.076
Chloromethane	4.12	7.82	0.527	ok	0.527	0.467-0.587
3-Chloropropene	5.93	7.82	0.758	ok	0.757	0.697-0.817
2-Chlorotoluene	16.78	14.35	1.169	ok	1.169	1.109-1.229
Carbon tetrachloride	9.57	7.82	1.224	ok	1.223	1.163-1.283
Cyclohexane	9.70	9.78	0.992	ok	0.991	0.931-1.051
1,1-Dichloroethane	6.86	7.82	0.877	ok	0.877	0.817-0.937
1,1-Dichloroethylene	5.73	7.82	0.733	ok	0.732	0.672-0.792
1,2-Dibromoethane	13.16	14.35	0.917	ok	0.917	0.857-0.977
1,2-Dichloroethane	8.70	7.82	1.113	ok	1.111	1.051-1.171
1,2-Dichloropropane	10.27	9.78	1.050	ok	1.050	0.990-1.110
1,3-Dichloropropane	12.49	9.78	1.277	ok	1.276	1.216-1.336
Dichlorodifluoromethane	4.00	7.82	0.512	ok	0.512	0.452-0.572
Dichlorofluoromethane	4.73	7.82	0.605	ok	0.604	0.544-0.664
Dibromochloromethane	12.91	14.35	0.900	ok	0.899	0.839-0.959
Dibromomethane	10.24	9.78	1.047	ok	1.047	0.987-1.107
trans-1,2-Dichloroethylene	6.67	7.82	0.853	ok	0.852	0.792-0.912
cis-1,2-Dichloroethylene	7.66	7.82	0.980	ok	0.979	0.919-1.039
cis-1,3-Dichloropropene	11.42	9.78	1.168	ok	1.167	1.107-1.227
m-Dichlorobenzene	17.79	14.35	1.240	ok	1.239	1.179-1.299
o-Dichlorobenzene	18.28	14.35	1.274	ok	1.274	1.214-1.334
p-Dichlorobenzene	17.87	14.35	1.245	ok	1.245	1.185-1.305

Initial Calibration Retention Time/Internal Standard Area Summary

Job Number: JD2616
Account: ERMNYW ERM, Inc.
Project: Fortive, New Windsor, NY

Sample Number	Lab File ID	Injected	By	Level	Inst ID	Method	
V3W2789-IC2789	3W71239.D	01/14/20 11:44	DFT	0.5	GCMS3W	TO-15	
V3W2789-IC2789	3W71241.D	01/14/20 13:41	DFT	0.2	GCMS3W	TO-15	
V3W2789-ICC2789	3W71242.D	01/14/20 14:33	DFT	10	GCMS3W	TO-15	
V3W2789-IC2789	3W71243.D	01/14/20 15:37	DFT	5	GCMS3W	TO-15	
V3W2789-IC2789	3W71244.D	01/14/20 16:28	DFT	20	GCMS3W	TO-15	
V3W2789-IC2789	3W71245.D	01/14/20 17:21	DFT	40	GCMS3W	TO-15	
V3W2789-IC2789	3W71248.D	01/14/20 19:51	DFT	0.1	GCMS3W	TO-15	Reporting this level
V3W2789-IC2789	3W71249.D	01/14/20 20:40	DFT	0.04	GCMS3W	TO-15	

Target Compound	RT (min.)	Istd RT (min.)	Rel RT		Mean Rel RT	Rel RT Range (+ /- .06)
trans-1,3-Dichloropropene	11.98	9.78	1.225	ok	1.225	1.165-1.285
Di-Isopropyl ether	7.90	7.82	1.010	ok	1.006	0.946-1.066
2,3-Dimethylpentane	9.94	9.78	1.016	ok	1.016	0.956-1.076
2,4-Dimethylpentane	8.75	7.82	1.119	ok	1.118	1.058-1.178
Ethylbenzene	14.82	14.35	1.033	ok	1.033	0.973-1.093
Ethyl Acetate	7.94	7.82	1.015	ok	1.011	0.951-1.071
4-Ethyltoluene	17.02	14.35	1.186	ok	1.185	1.125-1.245
Freon 113	6.05	7.82	0.774	ok	0.773	0.713-0.833
Freon 114	4.19	7.82	0.536	ok	0.535	0.475-0.595
Freon 123	5.01	7.82	0.641	ok	0.640	0.580-0.700
Freon 123A	5.05	7.82	0.646	ok	0.645	0.585-0.705
Freon 142B	4.10	7.82	0.524	ok	0.524	0.464-0.584
Freon 152A	3.90	7.82	0.499	ok	0.498	0.438-0.558
Heptane	10.82	9.78	1.106	ok	1.106	1.046-1.166
Hexachlorobutadiene	20.60	14.35	1.436	ok	1.435	1.375-1.495
Hexachloroethane	19.08	14.35	1.330	ok	1.329	1.269-1.389
Hexane	7.86	7.82	1.005	ok	1.004	0.944-1.064
Iodomethane	5.67	7.82	0.725	ok	0.725	0.665-0.785
Isopropylbenzene	16.22	14.35	1.130	ok	1.130	1.070-1.190
p-Isopropyltoluene	18.13	14.35	1.263	ok	1.263	1.203-1.323
Methyl Isobutyl Ketone	11.54	9.78	1.180	ok	1.176	1.116-1.236
Methyl Tert Butyl Ether	6.98	7.82	0.893	ok	0.888	0.828-0.948
Methylmethacrylate	10.76	9.78	1.100	ok	1.099	1.039-1.159
Naphthalene	20.29	14.35	1.414	ok	1.413	1.353-1.473
Nonane	15.81	14.35	1.102	ok	1.101	1.041-1.161
Octane	13.52	14.35	0.942	ok	0.942	0.882-1.002
Pentane	5.49	7.82	0.702	ok	0.702	0.642-0.762
n-Propylbenzene	16.84	14.35	1.174	ok	1.173	1.113-1.233
Propylene	3.95	7.82	0.505	ok	0.505	0.445-0.565
Styrene	15.42	14.35	1.075	ok	1.075	1.015-1.135
1,1,1-Trichloroethane	8.95	7.82	1.145	ok	1.144	1.084-1.204
1,1,1,2-Tetrachloroethane	14.39	14.35	1.003	ok	1.003	0.943-1.063
1,1,2,2-Tetrachloroethane	15.55	14.35	1.084	ok	1.083	1.023-1.143
1,1,2-Trichloroethane	12.16	9.78	1.243	ok	1.243	1.183-1.303
1,2,4-Trichlorobenzene	20.20	14.35	1.408	ok	1.407	1.347-1.467
1,2,3-Trichloropropane	15.69	14.35	1.093	ok	1.093	1.033-1.153
1,2,3-Trimethylbenzene	18.12	14.35	1.263	ok	1.262	1.202-1.322
1,2,4-Trimethylbenzene	17.61	14.35	1.227	ok	1.227	1.167-1.287
1,3,5-Trimethylbenzene	17.11	14.35	1.192	ok	1.192	1.132-1.252
2,2,4-Trimethylpentane	10.54	9.78	1.078	ok	1.078	1.018-1.138

Initial Calibration Retention Time/Internal Standard Area Summary

Job Number: JD2616
Account: ERMNYW ERM, Inc.
Project: Fortive, New Windsor, NY

Sample Number	Lab File ID	Injected	By	Level	Inst ID	Method	
V3W2789-IC2789	3W71239.D	01/14/20 11:44	DFT	0.5	GCMS3W	TO-15	
V3W2789-IC2789	3W71241.D	01/14/20 13:41	DFT	0.2	GCMS3W	TO-15	
V3W2789-ICC2789	3W71242.D	01/14/20 14:33	DFT	10	GCMS3W	TO-15	
V3W2789-IC2789	3W71243.D	01/14/20 15:37	DFT	5	GCMS3W	TO-15	
V3W2789-IC2789	3W71244.D	01/14/20 16:28	DFT	20	GCMS3W	TO-15	
V3W2789-IC2789	3W71245.D	01/14/20 17:21	DFT	40	GCMS3W	TO-15	
V3W2789-IC2789	3W71248.D	01/14/20 19:51	DFT	0.1	GCMS3W	TO-15	Reporting this level
V3W2789-IC2789	3W71249.D	01/14/20 20:40	DFT	0.04	GCMS3W	TO-15	

Target Compound	RT (min.)	Istd RT (min.)	Rel RT		Mean Rel RT	Rel RT Range (+ /- .06)
Tertiary Butyl Alcohol	5.87	7.82	0.751	ok	0.744	0.684-0.804
Tetrachloroethylene	13.66	14.35	0.952	ok	0.952	0.892-1.012
Tetrahydrofuran	8.49	7.82	1.086	ok	1.077	1.017-1.137
Toluene	12.45	9.78	1.273	ok	1.273	1.213-1.333
Trichloroethylene	10.51	9.78	1.075	ok	1.074	1.014-1.134
Trichlorofluoromethane	5.22	7.82	0.668	ok	0.668	0.608-0.728
Vinyl chloride	4.28	7.82	0.547	ok	0.546	0.486-0.606
Vinyl Acetate	7.01	7.82	0.896	ok	0.894	0.834-0.954
m,p-Xylene	15.01	14.35	1.046	ok	1.047	0.987-1.107
o-Xylene	15.54	14.35	1.083	ok	1.083	1.023-1.143

Internal Standard	RT (min.)		Mean RT(min.)	RT Range (+ /- 0.33)	Area		Mean Area	Area Range (+ /- 40 %)
Bromochloromethane	7.82	ok	7.83	7.50-8.16	112196	ok	112035	67221-156849
1,4-Difluorobenzene	9.78	ok	9.79	9.46-10.12	514733	ok	528424	317054-739794
Chlorobenzene-D5	14.35	ok	14.36	14.03-14.69	236051	ok	268656	161194-376118

Initial Calibration Retention Time/Internal Standard Area Summary

Job Number: JD2616
Account: ERMNYW ERM, Inc.
Project: Fortive, New Windsor, NY

Sample Number	Lab File ID	Injected	By	Level	Inst ID	Method	
V3W2789-IC2789	3W71239.D	01/14/20 11:44	DFT	0.5	GCMS3W	TO-15	
V3W2789-IC2789	3W71241.D	01/14/20 13:41	DFT	0.2	GCMS3W	TO-15	
V3W2789-ICC2789	3W71242.D	01/14/20 14:33	DFT	10	GCMS3W	TO-15	
V3W2789-IC2789	3W71243.D	01/14/20 15:37	DFT	5	GCMS3W	TO-15	
V3W2789-IC2789	3W71244.D	01/14/20 16:28	DFT	20	GCMS3W	TO-15	
V3W2789-IC2789	3W71245.D	01/14/20 17:21	DFT	40	GCMS3W	TO-15	
V3W2789-IC2789	3W71248.D	01/14/20 19:51	DFT	0.1	GCMS3W	TO-15	
V3W2789-IC2789	3W71249.D	01/14/20 20:40	DFT	0.04	GCMS3W	TO-15	Reporting this level

Target Compound	RT (min.)	Istd RT (min.)	Rel RT		Mean Rel RT	Rel RT Range (+ /- .06)
Acrolein	5.04	7.82	0.645	ok	0.641	0.581-0.701
Acrylonitrile	5.48	7.82	0.701	ok	0.698	0.638-0.758
1,3-Butadiene	4.37	7.82	0.559	ok	0.558	0.498-0.618
Benzene	9.42	9.78	0.963	ok	0.963	0.903-1.023
Bromobenzene	16.31	14.35	1.137	ok	1.137	1.077-1.197
Bromodichloromethane	10.47	9.78	1.071	ok	1.070	1.010-1.130
Bromoform	15.10	14.35	1.052	ok	1.052	0.992-1.112
Bromomethane	4.56	7.82	0.583	ok	0.583	0.523-0.643
Bromoethene	4.92	7.82	0.629	ok	0.629	0.569-0.689
Benzyl Chloride	17.77	14.35	1.238	ok	1.238	1.178-1.298
n-Butylbenzene	18.64	14.35	1.299	ok	1.299	1.239-1.359
sec-Butylbenzene	17.94	14.35	1.250	ok	1.249	1.189-1.309
tert-Butylbenzene	17.60	14.35	1.226	ok	1.226	1.166-1.286
Carbon disulfide	6.12	7.82	0.783	ok	0.782	0.722-0.842
Chlorobenzene	14.40	14.35	1.003	ok	1.004	0.944-1.064
Chloroethane	4.68	7.82	0.598	ok	0.598	0.538-0.658
Chlorotrifluoroethene	3.96	7.82	0.506	ok	0.506	0.446-0.566
Chloroform	7.95	7.82	1.017	ok	1.016	0.956-1.076
Chloromethane	4.13	7.82	0.528	ok	0.527	0.467-0.587
3-Chloropropene	5.93	7.82	0.758	ok	0.757	0.697-0.817
2-Chlorotoluene	16.78	14.35	1.169	ok	1.169	1.109-1.229
Carbon tetrachloride	9.56	7.82	1.223	ok	1.223	1.163-1.283
Cyclohexane	9.69	9.78	0.991	ok	0.991	0.931-1.051
1,1-Dichloroethane	6.86	7.82	0.877	ok	0.877	0.817-0.937
1,1-Dichloroethylene	5.73	7.82	0.733	ok	0.732	0.672-0.792
1,2-Dibromoethane	13.16	14.35	0.917	ok	0.917	0.857-0.977
1,2-Dichloroethane	8.69	7.82	1.111	ok	1.111	1.051-1.171
1,2-Dichloropropane	10.27	9.78	1.050	ok	1.050	0.990-1.110
1,3-Dichloropropane	12.49	9.78	1.277	ok	1.276	1.216-1.336
Dichlorodifluoromethane	4.01	7.82	0.513	ok	0.512	0.452-0.572
Dichlorofluoromethane	4.73	7.82	0.605	ok	0.604	0.544-0.664
Dibromochloromethane	12.90	14.35	0.899	ok	0.899	0.839-0.959
Dibromomethane	10.24	9.78	1.047	ok	1.047	0.987-1.107
trans-1,2-Dichloroethylene	6.68	7.82	0.854	ok	0.852	0.792-0.912
cis-1,2-Dichloroethylene	7.66	7.82	0.980	ok	0.979	0.919-1.039
cis-1,3-Dichloropropene	11.42	9.78	1.168	ok	1.167	1.107-1.227
m-Dichlorobenzene	17.78	14.35	1.239	ok	1.239	1.179-1.299
o-Dichlorobenzene	18.28	14.35	1.274	ok	1.274	1.214-1.334
p-Dichlorobenzene	17.87	14.35	1.245	ok	1.245	1.185-1.305
trans-1,3-Dichloropropene	11.98	9.78	1.225	ok	1.225	1.165-1.285

Initial Calibration Retention Time/Internal Standard Area Summary

Job Number: JD2616
Account: ERMNYW ERM, Inc.
Project: Fortive, New Windsor, NY

Sample Number	Lab File ID	Injected	By	Level	Inst ID	Method	
V3W2789-IC2789	3W71239.D	01/14/20 11:44	DFT	0.5	GCMS3W	TO-15	
V3W2789-IC2789	3W71241.D	01/14/20 13:41	DFT	0.2	GCMS3W	TO-15	
V3W2789-ICC2789	3W71242.D	01/14/20 14:33	DFT	10	GCMS3W	TO-15	
V3W2789-IC2789	3W71243.D	01/14/20 15:37	DFT	5	GCMS3W	TO-15	
V3W2789-IC2789	3W71244.D	01/14/20 16:28	DFT	20	GCMS3W	TO-15	
V3W2789-IC2789	3W71245.D	01/14/20 17:21	DFT	40	GCMS3W	TO-15	
V3W2789-IC2789	3W71248.D	01/14/20 19:51	DFT	0.1	GCMS3W	TO-15	
V3W2789-IC2789	3W71249.D	01/14/20 20:40	DFT	0.04	GCMS3W	TO-15	Reporting this level

Target Compound	RT (min.)	Istd RT (min.)	Rel RT		Mean Rel RT	Rel RT Range (+ /- .06)
2,3-Dimethylpentane	9.94	9.78	1.016	ok	1.016	0.956-1.076
2,4-Dimethylpentane	8.74	7.82	1.118	ok	1.118	1.058-1.178
Ethylbenzene	14.82	14.35	1.033	ok	1.033	0.973-1.093
4-Ethyltoluene	17.01	14.35	1.185	ok	1.185	1.125-1.245
Freon 113	6.04	7.82	0.772	ok	0.773	0.713-0.833
Freon 114	4.19	7.82	0.536	ok	0.535	0.475-0.595
Freon 123	5.01	7.82	0.641	ok	0.640	0.580-0.700
Freon 123A	5.05	7.82	0.646	ok	0.645	0.585-0.705
Freon 142B	4.11	7.82	0.526	ok	0.524	0.464-0.584
Freon 152A	3.90	7.82	0.499	ok	0.498	0.438-0.558
Heptane	10.82	9.78	1.106	ok	1.106	1.046-1.166
Hexachlorobutadiene	20.60	14.35	1.436	ok	1.435	1.375-1.495
Hexachloroethane	19.07	14.35	1.329	ok	1.329	1.269-1.389
Hexane	7.86	7.82	1.005	ok	1.004	0.944-1.064
Iodomethane	5.68	7.82	0.726	ok	0.725	0.665-0.785
Isopropylbenzene	16.22	14.35	1.130	ok	1.130	1.070-1.190
p-Isopropyltoluene	18.13	14.35	1.263	ok	1.263	1.203-1.323
Methyl Isobutyl Ketone	11.55	9.78	1.181	ok	1.176	1.116-1.236
Methyl Tert Butyl Ether	6.99	7.82	0.894	ok	0.888	0.828-0.948
Methylmethacrylate	10.77	9.78	1.101	ok	1.099	1.039-1.159
Naphthalene	20.29	14.35	1.414	ok	1.413	1.353-1.473
Nonane	15.81	14.35	1.102	ok	1.101	1.041-1.161
Octane	13.53	14.35	0.943	ok	0.942	0.882-1.002
Pentane	5.49	7.82	0.702	ok	0.702	0.642-0.762
n-Propylbenzene	16.83	14.35	1.173	ok	1.173	1.113-1.233
Styrene	15.43	14.35	1.075	ok	1.075	1.015-1.135
1,1,1-Trichloroethane	8.95	7.82	1.145	ok	1.144	1.084-1.204
1,1,1,2-Tetrachloroethane	14.39	14.35	1.003	ok	1.003	0.943-1.063
1,1,2,2-Tetrachloroethane	15.55	14.35	1.084	ok	1.083	1.023-1.143
1,1,2-Trichloroethane	12.16	9.78	1.243	ok	1.243	1.183-1.303
1,2,4-Trichlorobenzene	20.20	14.35	1.408	ok	1.407	1.347-1.467
1,2,3-Trichloropropane	15.69	14.35	1.093	ok	1.093	1.033-1.153
1,2,3-Trimethylbenzene	18.12	14.35	1.263	ok	1.262	1.202-1.322
1,2,4-Trimethylbenzene	17.61	14.35	1.227	ok	1.227	1.167-1.287
1,3,5-Trimethylbenzene	17.11	14.35	1.192	ok	1.192	1.132-1.252
2,2,4-Trimethylpentane	10.54	9.78	1.078	ok	1.078	1.018-1.138
Tertiary Butyl Alcohol	5.89	7.82	0.753	ok	0.744	0.684-0.804
Tetrachloroethylene	13.67	14.35	0.953	ok	0.952	0.892-1.012
Tetrahydrofuran	8.49	7.82	1.086	ok	1.077	1.017-1.137
Toluene	12.45	9.78	1.273	ok	1.273	1.213-1.333

Initial Calibration Retention Time/Internal Standard Area Summary

Job Number: JD2616
Account: ERMNYW ERM, Inc.
Project: Fortive, New Windsor, NY

Sample Number	Lab File ID	Injected	By	Level	Inst ID	Method	
V3W2789-IC2789	3W71239.D	01/14/20 11:44	DFT	0.5	GCMS3W	TO-15	
V3W2789-IC2789	3W71241.D	01/14/20 13:41	DFT	0.2	GCMS3W	TO-15	
V3W2789-ICC2789	3W71242.D	01/14/20 14:33	DFT	10	GCMS3W	TO-15	
V3W2789-IC2789	3W71243.D	01/14/20 15:37	DFT	5	GCMS3W	TO-15	
V3W2789-IC2789	3W71244.D	01/14/20 16:28	DFT	20	GCMS3W	TO-15	
V3W2789-IC2789	3W71245.D	01/14/20 17:21	DFT	40	GCMS3W	TO-15	
V3W2789-IC2789	3W71248.D	01/14/20 19:51	DFT	0.1	GCMS3W	TO-15	
V3W2789-IC2789	3W71249.D	01/14/20 20:40	DFT	0.04	GCMS3W	TO-15	Reporting this level

Target Compound	RT (min.)	Istd RT (min.)	Rel RT		Mean Rel RT	Rel RT Range (+ /- .06)
Trichloroethylene	10.51	9.78	1.075	ok	1.074	1.014-1.134
Trichlorofluoromethane	5.23	7.82	0.669	ok	0.668	0.608-0.728
Vinyl chloride	4.28	7.82	0.547	ok	0.546	0.486-0.606
m,p-Xylene	15.03	14.35	1.047	ok	1.047	0.987-1.107
o-Xylene	15.55	14.35	1.084	ok	1.083	1.023-1.143

Internal Standard	RT (min.)		Mean RT(min.)	RT Range (+ /- 0.33)	Area		Mean Area	Area Range (+ /- 40 %)
Bromochloromethane	7.82	ok	7.83	7.50-8.16	112706	ok	112035	67221-156849
1,4-Difluorobenzene	9.78	ok	9.79	9.46-10.12	462257	ok	528424	317054-739794
Chlorobenzene-D5	14.35	ok	14.36	14.03-14.69	217910	ok	268656	161194-376118

Surrogate Recovery Summary

Job Number: JD2616
Account: ERMNYW ERM, Inc.
Project: Fortive, 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
JD2616-1	3W71625.D	90
JD2616-1	3W71611.D	84
JD2616-2	3W71609.D	87
JD2616-3	3W71626.D	94
JD2616-3	3W71612.D	95
JD2616-4	3W71610.D	87
JD2884-1DUP	3W71602.D	90
JD3012-1DUP	3W71630.D	95
V3W2796-SCC	3W71421.D	94
V3W2806-BS	3W71597.D	96
V3W2806-BSD	3W71598.D	97
V3W2806-MB	3W71600.D	97
V3W2807-BS	3W71621.D	95
V3W2807-BSD	3W71622.D	97
V3W2807-MB	3W71624.D	94
V3W2796-BS	3W71399.D	100
V3W2796-BSD	3W71401.D	101
V3W2796-MB	3W71403.D	95

Surrogate Compounds	Recovery Limits
S1 = 4-Bromofluorobenzene	65-128%

Initial Calibration Summary

Job Number: JD2616
Account: ERMNYW ERM, Inc.
Project: Fortive, New Windsor, NY

Sample: V3W2789-ICC2789
Lab FileID: 3W71242.D

Response Factor Report GCMS3W

Method Path : C:\msdchem\1\METHODS\
Method File : M3W2789.M
Title : TO15 by GCMS w/Rtx-1, 60 m X 0.32mm ID X 1.0 um
Last Update : Wed Jan 15 09:19:47 2020
Response Via : Initial Calibration

Calibration Files
0.04=3W71249.D 0.1 =3W71248.D 0.2 =3W71241.D 0.5 =3W71239.D 5 =3W71243.D 10 =3W71242.D 20 =3W71244.D
40 =3W71245.D

	Compound	0.04	0.1	0.2	0.5	5	10	20	40	Avg	%RSD
1) I	BROMOCHLOROMETHANE	----------ISTD----------									
2)	FREON 115			0.046	0.055	0.043	0.046	0.049	0.048	0.048	8.30
3)	FREON 152A	0.783	0.857	1.094	0.895	0.796	0.787	0.845	0.819	0.860	11.92
4)	CHLORODIFLUORO...		0.344	0.440	0.370	0.333	0.321	0.345	0.334	0.355	11.35
5)	CHLOROTRIFLUOR...	1.284	1.521	2.017	1.641	1.508	1.494	1.569	1.494	1.566	13.31
6)	DICHLORODIFLUO...	3.054	3.432	4.483	3.619	3.185	3.163	3.282	3.027	3.406	14.03
7)	PROPYLENE		1.661	1.717	1.370	1.194	1.213	1.226	1.131	1.359	17.47
8)	1-CHLORO-1,1-D...	2.518	2.530	3.400	2.791	2.455	2.414	2.562	2.422	2.637	12.55
9)	FREON 114	3.083	3.440	4.664	3.652	3.252	3.182	3.333	3.087	3.461	15.07
10)	CHLOROMETHANE	0.384	0.436	0.610	0.477	0.425	0.424	0.434	0.415	0.450	15.38
11)	VINYL CHLORIDE	1.315	1.529	1.934	1.500	1.388	1.363	1.440	1.387	1.482	13.22
12)	1,3-BUTADIENE	1.125	1.103	1.404	1.105	1.024	1.015	1.076	1.035	1.111	11.29
13)	n-BUTANE			3.905	2.740	2.180	2.161	2.186	2.060	2.539	28.03
14)	BROMOMETHANE	1.309	1.362	1.684	1.346	1.182	1.157	1.225	1.180	1.306	13.20
15)	CHLOROETHANE	0.484	0.715	0.930	0.759	0.661	0.670	0.708	0.692	0.702	17.51
16)	DICHLOROFLUORO...	3.017	2.989	3.931	3.193	2.745	2.809	2.900	2.761	3.043	12.78
17)	ACETONITRILE			1.517	1.287	0.924	1.026	1.097	1.116	1.161	18.21
18)	ACROLEIN	0.741	0.701	0.679	0.592	0.474	0.521	0.568	0.556	0.604	15.49
19)	FREON 123	2.664	3.070	4.043	3.275	2.784	2.885	2.944	2.735	3.050	14.63
20)	FREON 123A	1.216	1.322	1.932	1.571	1.329	1.378	1.437	1.388	1.447	15.28
21)	TRICHLOROFLUOR...	2.666	3.021	3.855	3.161	2.773	2.754	2.860	2.737	2.979	13.10
22)	ISOPROPYL ALCOHOL			3.441	2.791	1.836	2.059	2.376	2.426	2.488	22.92
23)	ACETONE			0.787	0.664	0.447	0.504	0.563	0.582	0.591	20.40
24)	PENTANE	2.209	1.931	2.228	1.714	1.446	1.453	1.482	1.417	1.735	19.91
25)	IODOMETHANE	2.779	3.025	3.611	2.894	2.724	2.700	2.859	2.748	2.918	10.27
26)	1,1-DICHLOROET...	1.178	1.240	1.535	1.194	1.119	1.124	1.190	1.172	1.219	10.96
27)	CARBON DISULFIDE	3.644	3.956	4.403	3.501	3.393	3.394	3.562	3.466	3.665	9.54
28)	ETHANOL				0.872	0.463	0.519	0.573	0.591	0.603	26.21
29)	BROMOETHENE	1.031	1.144	1.438	1.135	1.083	1.066	1.144	1.108	1.144	10.99
30)	ACRYLONITRILE	0.665	0.935	0.937	0.806	0.692	0.774	0.856	0.877	0.818	12.56
31)	METHYLENE CHLO...			1.843	1.368	1.072	1.111	1.147	1.114	1.276	23.30
32)	3-CHLOROPROPENE	0.515	0.630	0.772	0.618	0.564	0.587	0.628	0.621	0.617	12.04
33)	FREON 113	1.708	1.746	2.237	1.875	1.618	1.664	1.760	1.743	1.794	10.83
34)	TRANS-1,2-DICH...	1.080	1.204	1.404	1.143	1.095	1.131	1.219	1.218	1.187	8.69
35)	TERTIARY BUTYL...	2.314	2.896	3.044	2.324	1.923	2.108	2.469	1.954	2.379	17.30
36)	METHYL TERTIAR...	2.589	2.977	3.767	3.267	2.595	2.940	3.362	3.500	3.124	13.55
37)	TETRAHYDROFURAN	0.448	0.586	0.610	0.525	0.435	0.504	0.588	0.630	0.541	13.71
38)	HEXANE	2.194	2.274	2.691	2.162	1.986	2.062	2.095	1.890	2.169	11.19
39)	VINYL ACETATE		0.168	0.216	0.192	0.195	0.219	0.256	0.279	0.218	17.64
40)	1,1-DICHLOROET...	2.411	2.586	3.194	2.589	2.272	2.380	2.496	2.439	2.546	11.09
41)	METHYL ETHYL K...			0.577	0.558	0.407	0.482	0.568	0.620	0.535	14.41
42)	cis-1,2-DICHLO...	1.320	1.333	1.482	1.199	1.170	1.229	1.317	1.314	1.296	7.55
43)	DIISOPROPYL ETHER		0.562	0.642	0.594	0.462	0.538	0.583	0.564	0.563	9.83
44)	ETHYL ACETATE		0.437	0.425	0.365	0.282	0.329	0.381	0.395	0.373	14.54
45)	METHYL ACRYLATE			2.551	2.256	1.816	2.152	2.331	2.278	2.231	10.87

Initial Calibration Summary

Job Number: JD2616
Account: ERMNYW ERM, Inc.
Project: Fortive, New Windsor, NY

Sample: V3W2789-ICC2789
Lab FileID: 3W71242.D

46)		CHLOROFORM	2.515	2.749	3.344	2.733	2.458	2.561	2.682	2.617	2.707	10.23
47)		2,4-DIMETHYLPE...	2.298	2.671	3.042	2.552	2.377	2.480	2.603	2.488	2.564	8.85
48)		1,1,1-TRICHLOR...	2.300	2.541	3.189	2.505	2.313	2.422	2.557	2.504	2.541	11.00
49)		CARBON TETRACH...	2.294	2.459	2.873	2.273	2.234	2.349	2.498	2.436	2.427	8.38
50)		1,2-DICHLOROET...	1.579	1.860	2.001	1.633	1.562	1.659	1.758	1.731	1.723	8.66
51)	I	1,4-DIFLUOROBENZENE	----------ISTD----------									
52)		BENZENE	1.036	0.941	1.054	0.838	0.757	0.823	0.820	0.789	0.882	12.88
53)		CYCLOHEXANE	0.360	0.380	0.433	0.354	0.307	0.334	0.339	0.334	0.355	10.71
54)		2,3-DIMETHYLPE...	0.176	0.189	0.249	0.205	0.167	0.182	0.183	0.180	0.191	13.42
55)		TRICHLOROETHYLENE	0.366	0.380	0.403	0.334	0.310	0.340	0.344	0.328	0.351	8.67
56)		1,2-DICHLOROPR...	0.395	0.356	0.406	0.326	0.277	0.311	0.312	0.295	0.335	13.95
57)		DIBROMOMETHANE	0.422	0.349	0.315	0.246	0.233	0.261	0.266	0.263	0.294	21.80
58)		ETHYL ACRYLATE			0.543	0.483	0.386	0.486	0.548	0.575	0.504	13.52
59)		BROMODICHLOROM...	0.619	0.616	0.689	0.583	0.537	0.595	0.599	0.575	0.602	7.29
60)		2,2,4-TRIMETHY...	1.496	1.499	1.825	1.494	1.290	1.412	1.354	1.197	1.446	12.99
61)		1,4-DIOXANE			0.171	0.151	0.111	0.132	0.154	0.161	0.147	14.66
62)		HEPTANE	0.604	0.608	0.696	0.563	0.490	0.540	0.532	0.505	0.567	11.83
63)		METHYL METHACR...	0.276	0.276	0.275	0.228	0.185	0.233	0.267	0.293	0.254	14.07
64)		METHYL ISOBUTY...	0.227	0.223	0.235	0.210	0.162	0.195	0.228	0.246	0.216	12.36
65)		cis-1,3-DICHLO...	0.490	0.462	0.462	0.380	0.391	0.441	0.466	0.465	0.445	8.80
66)		TOLUENE	0.706	0.556	0.571	0.466	0.457	0.521	0.534	0.518	0.541	14.32
67)		1,3-DICHLOROPR...	0.432	0.439	0.454	0.383	0.361	0.422	0.435	0.431	0.420	7.47
68)		trans-1,3-DICH...	0.389	0.392	0.338	0.282	0.317	0.374	0.402	0.413	0.363	12.71
69)		1,1,2-TRICHLOR...	0.291	0.289	0.315	0.252	0.236	0.274	0.281	0.278	0.277	8.75
70)	I	CHLOROBENZENE-D5	----------ISTD----------									
71)		2-HEXANONE			0.547	0.487	0.443	0.499	0.567	0.557	0.517	9.31
72)		ETHYL METHACRY...	0.823	0.828	0.674	0.591	0.581	0.686	0.780	0.776	0.717	13.76
73)		TETRACHLOROETH...	0.754	0.766	0.683	0.533	0.578	0.610	0.605	0.557	0.636	13.91
74)		DIBROMOCHLOROM...	1.046	1.039	0.940	0.736	0.930	0.983	0.994	0.914	0.948	10.39
75)		1,2-DIBROMOETHANE	1.033	1.062	0.802	0.665	0.778	0.843	0.867	0.823	0.859	15.27
76)		OCTANE	1.638	1.673	1.625	1.276	1.362	1.412	1.356	1.183	1.441	12.71
77)		1,1,1,2-TETRAC...	0.749	0.761	0.739	0.575	0.624	0.679	0.676	0.611	0.677	10.25
78)		CHLOROBENZENE	1.528	1.584	1.305	1.027	1.189	1.281	1.265	1.136	1.289	14.59
79)		ETHYLBENZENE	3.359	2.817	2.227	1.712	1.869	2.062	2.099	1.930	2.259	24.51
80)		m,p-XYLENE	0.978	0.912	0.737	0.590	0.687	0.769	0.781	0.711	0.771	16.08
81)		o-XYLENE	1.304	1.068	0.805	0.613	0.672	0.759	0.760	0.680	0.833	28.22
82)		STYRENE	1.069	1.182	0.853	0.716	1.041	1.194	1.240	1.172	1.059	17.48
83)		NONANE	1.327	1.419	1.337	1.092	1.270	1.396	1.339	1.169	1.293	8.68
84)		BROMOFORM	0.804	0.880	0.667	0.507	0.769	0.870	0.900	0.853	0.781	17.18
85)	S	4-BROMOFLUOROB...	1.007	1.078	1.117	1.105	1.156	1.167	1.127	1.028	1.098	5.22
86)		1,1,2,2-TETRAC...	1.300	1.386	1.257	1.050	1.051	1.234	1.226	1.068	1.196	10.55
87)		1,2,3-TRICHLOR...	1.043	1.151	0.939	0.773	0.784	0.924	0.954	0.903	0.934	13.34
88)		ISOPROPYLBENZENE	2.039	2.286	1.994	1.677	1.953	2.227	2.229	1.989	2.049	9.67
89)		BROMOBENZENE	1.403	1.455	1.004	0.807	1.064	1.205	1.207	1.108	1.157	18.24
90)		2-CHLOROTOLUENE	0.507	0.580	0.445	0.348	0.475	0.538	0.546	0.516	0.494	14.63
91)		n-PROPYLBENZENE	0.441	0.530	0.411	0.377	0.484	0.581	0.601	0.568	0.499	16.79
92)		4-ETHYLTOLUENE	1.622	1.862	1.500	1.265	1.715	2.049	2.096	1.944	1.757	16.31
93)		1,3,5-TRIMETHY...	1.379	1.602	1.294	1.086	1.454	1.739	1.778	1.618	1.494	15.78
94)		ALPHA-METHYLST...	0.595	0.664	0.511	0.449	0.733	0.893	0.928	0.864	0.705	25.62
95)		tert-BUTYLBENZENE	0.285	0.348	0.296	0.255	0.304	0.378	0.379	0.334	0.322	13.91
96)		1,2,4-TRIMETHY...	1.310	1.529	1.195	1.044	1.416	1.725	1.713	1.464	1.424	16.71
97)		m-DICHLOROBENZENE	1.043	1.240	0.790	0.633	0.944	1.117	1.137	1.017	0.990	19.95
98)		BENZYL CHLORIDE	1.341	1.462	0.783	0.626	1.155	1.471	1.588	1.428	1.232	28.47
99)		p-DICHLOROBENZENE	1.176	1.265	0.766	0.618	0.928	1.103	1.130	1.035	1.003	21.84
100)		sec-BUTYLBENZENE	0.279	0.386	0.326	0.296	0.379	0.472	0.493	0.460	0.386	21.31
101)		1,2,3-Trimethy...	1.365	1.603	1.185	1.042	1.422	1.761	1.763	1.484	1.453	17.72
102)		p-ISOPROPYLTOL...	0.294	0.396	0.328	0.290	0.401	0.506	0.523	0.452	0.399	22.74
103)		o-DICHLOROBENZENE	1.136	1.134	0.744	0.595	0.889	1.058	1.083	1.000	0.955	20.67

Initial Calibration Summary

Job Number: JD2616
Account: ERMNYW ERM, Inc.
Project: Fortive, New Windsor, NY

Sample: V3W2789-ICC2789
Lab FileID: 3W71242.D

104)	n-BUTYLBENZENE	0.281	0.336	0.242	0.202	0.342	0.442	0.481	0.452	0.347	29.76
105)	HEXACHLOROETHANE	0.716	0.758	0.543	0.404	0.666	0.789	0.794	0.687	0.670	20.05
106)	HEXACHLOROBUTA...	0.640	0.634	0.445	0.357	0.412	0.502	0.508	0.412	0.489	21.27
107)	1,2,4-TRICHLOR...	0.726	0.680	0.327	0.247	0.381	0.467	0.529	0.478	0.479	34.40
108)	NAPHTHALENE		1.309	0.527	0.400	0.741	0.901	1.046	0.948	0.839	37.05

(#) = Out of Range

M3W2789.M Wed Jan 15 09:40:08 2020 GCMS6W

Initial Calibration Verification

Job Number: JD2616
Account: ERMNYW ERM, Inc.
Project: Fortive, New Windsor, NY

Sample: V3W2789-ICV2789
Lab FileID: 3W71250.D

Evaluate Continuing Calibration Report

Data Path : C:\msdchem\1\DATA\
Data File : 3W71250.D
Acq On : 14 Jan 2020 9:30 pm
Operator : danat
Sample : icv2789-10
Misc : MS40248,V3W2789,,,,,1
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Jan 15 09:19:54 2020
Quant Method : C:\msdchem\1\METHODS\M3W2789.M
Quant Title : TO15 by GCMS w/Rtx-1, 60 m X 0.32mm ID X 1.0 um
QLast Update : Wed Jan 15 09:18:27 2020
Response via : Initial Calibration

Min. RRF : 0.000 Min. Rel. Area : 60% Max. R.T. Dev 0.50min
Max. RRF Dev : 30% Max. Rel. Area : 140%

	Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1 I	BROMOCHLOROMETHANE	1.000	1.000	0.0	102	0.00
2	FREON 115	0.048	0.047	2.1	103	0.00
3	FREON 152A	0.860	0.735	14.5	95	0.00
4	CHLORODIFLUOROMETHANE	0.355	0.302	14.9	96	0.00
5	CHLOROTRIFLUOROETHENE	1.566	1.425	9.0	97	0.00
6	DICHLORODIFLUOROMETHANE	3.406	2.962	13.0	95	0.00
7	PROPYLENE	1.359	1.168	14.1	98	0.00
8	1-CHLORO-1,1-DIFLUOROETHANE	2.637	2.251	14.6	95	0.00
9	FREON 114	3.461	2.909	15.9	93	0.00
10	CHLOROMETHANE	0.450	0.390	13.3	94	0.00
11	VINYL CHLORIDE	1.482	1.259	15.0	94	0.00
12	1,3-BUTADIENE	1.111	0.951	14.4	96	0.00
13	n-BUTANE	2.539	2.009	20.9	95	0.00
14	BROMOMETHANE	1.306	1.064	18.5	94	0.00
15	CHLOROETHANE	0.702	0.612	12.8	93	0.00
16	DICHLOROFLUOROMETHANE	3.043	2.517	17.3	91	0.00
17	ACETONITRILE	1.161	0.864	25.6	86	0.00
18	ACROLEIN	0.604	0.455	24.7	89	0.00
19	FREON 123	3.050	2.758	9.6	97	0.00
20	FREON 123A	1.447	1.400	3.2	104	0.00
21	TRICHLOROFLUOROMETHANE	2.979	2.515	15.6	93	0.00
22	ISOPROPYL ALCOHOL	2.488	1.881	24.4	93	0.00
23	ACETONE	0.591	0.447	24.4	90	0.00
24	PENTANE	1.735	1.352	22.1	95	0.00
25	IODOMETHANE	2.918	2.507	14.1	95	0.00
26	1,1-DICHLOROETHYLENE	1.219	1.047	14.1	95	0.00
27	CARBON DISULFIDE	3.665	3.384	7.7	102	0.00
28	ETHANOL	0.603	0.457	24.2	90	0.00
29	BROMOETHENE	1.144	1.015	11.3	97	0.00
30	ACRYLONITRILE	0.818	0.673	17.7	89	0.00
31	METHYLENE CHLORIDE	1.276	1.016	20.4	93	0.00
32	3-CHLOROPROPENE	0.617	0.540	12.5	94	0.00
33	FREON 113	1.794	1.508	15.9	92	0.00
34	TRANS-1,2-DICHLOROETHYLENE	1.187	1.081	8.9	97	0.00
35	TERTIARY BUTYL ALCOHOL	2.379	1.806	24.1	87	0.00
36	METHYL TERTIARY BUTYL ETHER	3.124	2.611	16.4	91	0.00
37	TETRAHYDROFURAN	0.541	0.438	19.0	89	0.00
38	HEXANE	2.169	1.957	9.8	97	0.00

Initial Calibration Verification

Job Number: JD2616
Account: ERMNYW ERM, Inc.
Project: Fortive, New Windsor, NY

Sample: V3W2789-ICV2789
Lab FileID: 3W71250.D

39		VINYL ACETATE	0.218	0.193	11.5	90	0.00
40		1,1-DICHLOROETHANE	2.546	2.229	12.5	95	0.00
41		METHYL ETHYL KETONE	0.535	0.434	18.9	92	0.00
42		cis-1,2-DICHLOROETHYLENE	1.296	1.146	11.6	95	0.00
43		DIISOPROPYL ETHER	0.563	0.465	17.4	88	0.00
44		ETHYL ACETATE	0.373	0.323	13.4	100	0.00
45		METHYL ACRYLATE	2.231	1.841	17.5	87	0.00
46		CHLOROFORM	2.707	2.411	10.9	96	0.00
47		2,4-DIMETHYLPENTANE	2.564	2.304	10.1	95	0.00
48		1,1,1-TRICHLOROETHANE	2.541	2.298	9.6	97	0.00
49		CARBON TETRACHLORIDE	2.427	2.237	7.8	97	0.00
50		1,2-DICHLOROETHANE	1.723	1.570	8.9	96	0.00
51	I	1,4-DIFLUOROBENZENE	1.000	1.000	0.0	107	0.00
52		BENZENE	0.882	0.735	16.7	96	0.00
53		CYCLOHEXANE	0.355	0.296	16.6	95	0.00
54		2,3-DIMETHYLPENTANE	0.191	0.161	15.7	95	0.00
55		TRICHLOROETHYLENE	0.351	0.306	12.8	97	0.00
56		1,2-DICHLOROPROPANE	0.335	0.285	14.9	99	0.00
57		DIBROMOMETHANE	0.294	0.228	22.4	94	0.00
58		ETHYL ACRYLATE	0.504	0.418	17.1	92	0.00
59		BROMODICHLOROMETHANE	0.602	0.525	12.8	95	0.00
60		2,2,4-TRIMETHYLPENTANE	1.446	1.245	13.9	95	0.00
61		1,4-DIOXANE	0.147	0.119	19.0	96	0.00
62		HEPTANE	0.567	0.480	15.3	95	0.00
63		METHYL METHACRYLATE	0.254	0.196	22.8	90	0.00
64		METHYL ISOBUTYL KETONE	0.216	0.181	16.2	100	0.00
65		cis-1,3-DICHLOROPROPENE	0.445	0.430	3.4	105	0.00
66		TOLUENE	0.541	0.461	14.8	95	0.00
67		1,3-DICHLOROPROPANE	0.420	0.356	15.2	91	0.00
68		trans-1,3-DICHLOROPROPENE	0.363	0.329	9.4	95	0.00
69		1,1,2-TRICHLOROETHANE	0.277	0.240	13.4	94	0.00
70	I	CHLOROBENZENE-D5	1.000	1.000	0.0	98	0.00
71		2-HEXANONE	0.517	0.500	3.3	99	0.00
72		ETHYL METHACRYLATE	0.717	0.675	5.9	97	0.00
73		TETRACHLOROETHYLENE	0.636	0.583	8.3	94	0.00
74		DIBROMOCHLOROMETHANE	0.948	0.960	-1.3	96	0.00
75		1,2-DIBROMOETHANE	0.859	0.807	6.1	94	0.00
76		OCTANE	1.441	1.358	5.8	95	0.00
77		1,1,1,2-TETRACHLOROETHANE	0.677	0.633	6.5	92	0.00
78		CHLOROBENZENE	1.289	1.216	5.7	94	0.00
79		ETHYLBENZENE	2.259	1.886	16.5	90	0.00
80		m,p-XYLENE	0.771	0.696	9.7	89	0.00
81		o-XYLENE	0.833	0.676	18.8	88	0.00
82		STYRENE	1.059	1.071	-1.1	88	0.00
83		NONANE	1.293	1.280	1.0	90	0.00
84		BROMOFORM	0.781	0.810	-3.7	92	0.00
85	S	4-BROMOFLUOROBENZENE	1.098	1.057	3.7	89	0.00
86		1,1,2,2-TETRACHLOROETHANE	1.196	1.073	10.3	86	0.00
87		1,2,3-TRICHLOROPROPANE	0.934	0.797	14.7	85	0.00
88		ISOPROPYLBENZENE	2.049	1.954	4.6	86	0.00
89		BROMOBENZENE	1.157	1.080	6.7	88	0.00
90		2-CHLOROTOLUENE	0.494	0.476	3.6	87	0.00
91		n-PROPYLBENZENE	0.499	0.502	-0.6	85	0.00
92		4-ETHYLTOLUENE	1.757	1.790	-1.9	86	0.00
93		1,3,5-TRIMETHYLBENZENE	1.494	1.495	-0.1	85	0.00
94		ALPHA-METHYLSTYRENE	0.705	0.751	-6.5	83	0.00
95		tert-BUTYLBENZENE	0.322	0.312	3.1	81	0.00
96		1,2,4-TRIMETHYLBENZENE	1.424	1.472	-3.4	84	0.00

Initial Calibration Verification

Job Number: JD2616
Account: ERMNYW ERM, Inc.
Project: Fortive, New Windsor, NY

Sample: V3W2789-ICV2789
Lab FileID: 3W71250.D

97	m-DICHLOROBENZENE	0.990	0.949	4.1	84	0.00
98	BENZYL CHLORIDE	1.232	1.218	1.1	82	0.00
99	p-DICHLOROBENZENE	1.003	0.931	7.2	83	0.00
100	sec-BUTYLBENZENE	0.386	0.399	-3.4	83	0.00
101	1,2,3-Trimethylbenzene	1.453	1.453	0.0	81	0.00
102	p-ISOPROPYLTOLUENE	0.399	0.422	-5.8	82	0.00
103	o-DICHLOROBENZENE	0.955	0.880	7.9	82	0.00
104	n-BUTYLBENZENE	0.347	0.372	-7.2	83	0.00
105	HEXACHLOROETHANE	0.670	0.690	-3.0	86	0.00
106	HEXACHLOROBUTADIENE	0.489	0.378	22.7	74	0.00
107	1,2,4-TRICHLOROBENZENE	0.479	0.343	28.4	72	0.00
108	NAPHTHALENE	0.839	0.629	25.0	69	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0

M3W2789.M Wed Jan 15 09:40:37 2020 GCMS6W

Continuing Calibration Summary

Job Number: JD2616
Account: ERMNYW ERM, Inc.
Project: Fortive, New Windsor, NY

Sample: V3W2796-CC2789
Lab FileID: 3W71398.D

Evaluate Continuing Calibration Report

Data Path : C:\msdchem\1\DATA\
Data File : 3W71398.D
Acq On : 23 Jan 2020 9:39 am
Operator : thomash
Sample : cc2789-10
Misc : MS40366,V3W2796,,,,,1
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Jan 23 13:28:42 2020
Quant Method : C:\msdchem\1\METHODS\M3W2789.M
Quant Title : TO15 by GCMS w/Rtx-1, 60 m X 0.32mm ID X 1.0 um
QLast Update : Wed Jan 15 09:18:27 2020
Response via : Initial Calibration

Min. RRF : 0.000 Min. Rel. Area : 60% Max. R.T. Dev 0.50min
Max. RRF Dev : 30% Max. Rel. Area : 140%

	Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1 I	BROMOCHLOROMETHANE	1.000	1.000	0.0	88	0.00
2	FREON 115	0.048	0.052	-8.3	98	0.00
3	FREON 152A	0.860	0.747	13.1	84	0.00
4	CHLORODIFLUOROMETHANE	0.355	0.301	15.2	83	0.00
5	CHLOROTRIFLUOROETHENE	1.566	1.425	9.0	84	0.00
6	DICHLORODIFLUOROMETHANE	3.406	2.976	12.6	83	0.00
7	PROPYLENE	1.359	1.141	16.0	83	0.00
8	1-CHLORO-1,1-DIFLUOROETHANE	2.637	2.252	14.6	82	0.00
9	FREON 114	3.461	3.026	12.6	84	0.00
10	CHLOROMETHANE	0.450	0.415	7.8	86	0.00
11	VINYL CHLORIDE	1.482	1.297	12.5	84	0.00
12	1,3-BUTADIENE	1.111	0.962	13.4	84	0.00
13	n-BUTANE	2.539	2.101	17.3	86	0.00
14	BROMOMETHANE	1.306	1.106	15.3	84	0.00
15	CHLOROETHANE	0.702	0.637	9.3	84	0.00
16	DICHLOROFLUOROMETHANE	3.043	2.662	12.5	84	0.00
17	ACETONITRILE	1.161	0.867	25.3	75	0.00
18	ACROLEIN	0.604	0.409	32.3#	69	0.00
19	FREON 123	3.050	2.705	11.3	83	0.00
20	FREON 123A	1.447	1.285	11.2	82	0.00
21	TRICHLOROFLUOROMETHANE	2.979	2.627	11.8	84	0.00
22	ISOPROPYL ALCOHOL	2.488	2.129	14.4	91	0.00
23	ACETONE	0.591	0.446	24.5	78	0.00
24	PENTANE	1.735	1.426	17.8	87	0.00
25	IODOMETHANE	2.918	2.498	14.4	82	0.00
26	1,1-DICHLOROETHYLENE	1.219	1.044	14.4	82	0.00
27	CARBON DISULFIDE	3.665	3.241	11.6	84	0.00
28	ETHANOL	0.603	0.513	14.9	87	0.00
29	BROMOETHENE	1.144	0.995	13.0	82	0.00
30	ACRYLONITRILE	0.818	0.635	22.4	72	0.00
31	METHYLENE CHLORIDE	1.276	1.066	16.5	85	0.00
32	3-CHLOROPROPENE	0.617	0.540	12.5	81	0.00
33	FREON 113	1.794	1.578	12.0	84	0.00
34	TRANS-1,2-DICHLOROETHYLENE	1.187	1.048	11.7	82	0.00
35	TERTIARY BUTYL ALCOHOL	2.379	2.199	7.6	92	0.00
36	METHYL TERTIARY BUTYL ETHER	3.124	2.496	20.1	75	0.00
37	TETRAHYDROFURAN	0.541	0.427	21.1	75	0.00
38	HEXANE	2.169	1.924	11.3	82	0.00

Continuing Calibration Summary

Job Number: JD2616
Account: ERMNYW ERM, Inc.
Project: Fortive, New Windsor, NY

Sample: V3W2796-CC2789
Lab FileID: 3W71398.D

39		VINYL ACETATE	0.218	0.178	18.3	72	0.00
40		1,1-DICHLOROETHANE	2.546	2.210	13.2	82	0.00
41		METHYL ETHYL KETONE	0.535	0.431	19.4	79	0.00
42		cis-1,2-DICHLOROETHYLENE	1.296	1.134	12.5	81	0.00
43		DIISOPROPYL ETHER	0.563	0.463	17.8	76	0.00
44		ETHYL ACETATE	0.373	0.298	20.1	80	0.00
45		METHYL ACRYLATE	2.231	1.770	20.7	73	0.00
46		CHLOROFORM	2.707	2.399	11.4	83	0.00
47		2,4-DIMETHYLPENTANE	2.564	2.306	10.1	82	0.00
48		1,1,1-TRICHLOROETHANE	2.541	2.280	10.3	83	0.00
49		CARBON TETRACHLORIDE	2.427	2.269	6.5	85	0.00
50		1,2-DICHLOROETHANE	1.723	1.494	13.3	79	0.00
51	I	1,4-DIFLUOROBENZENE	1.000	1.000	0.0	85	0.00
52		BENZENE	0.882	0.785	11.0	81	0.00
53		CYCLOHEXANE	0.355	0.324	8.7	82	0.00
54		2,3-DIMETHYLPENTANE	0.191	0.175	8.4	81	0.00
55		TRICHLOROETHYLENE	0.351	0.328	6.6	82	0.00
56		1,2-DICHLOROPROPANE	0.335	0.283	15.5	77	0.00
57		DIBROMOMETHANE	0.294	0.251	14.6	82	0.00
58		ETHYL ACRYLATE	0.504	0.458	9.1	80	0.00
59		BROMODICHLOROMETHANE	0.602	0.577	4.2	82	0.00
60		2,2,4-TRIMETHYLPENTANE	1.446	1.381	4.5	83	0.00
61		1,4-DIOXANE	0.147	0.133	9.5	85	0.00
62		HEPTANE	0.567	0.525	7.4	82	0.00
63		METHYL METHACRYLATE	0.254	0.209	17.7	76	0.00
64		METHYL ISOBUTYL KETONE	0.216	0.206	4.6	90	0.00
65		cis-1,3-DICHLOROPROPENE	0.445	0.395	11.2	76	0.00
66		TOLUENE	0.541	0.456	15.7	74	0.00
67		1,3-DICHLOROPROPANE	0.420	0.367	12.6	74	0.00
68		trans-1,3-DICHLOROPROPENE	0.363	0.320	11.8	73	0.00
69		1,1,2-TRICHLOROETHANE	0.277	0.245	11.6	76	0.00
70	I	CHLOROBENZENE-D5	1.000	1.000	0.0	76	0.00
71		2-HEXANONE	0.517	0.588	-13.7	89	0.00
72		ETHYL METHACRYLATE	0.717	0.776	-8.2	86	0.00
73		TETRACHLOROETHYLENE	0.636	0.661	-3.9	82	0.00
74		DIBROMOCHLOROMETHANE	0.948	1.058	-11.6	82	0.00
75		1,2-DIBROMOETHANE	0.859	0.832	3.1	75	0.00
76		OCTANE	1.441	1.528	-6.0	82	0.00
77		1,1,1,2-TETRACHLOROETHANE	0.677	0.696	-2.8	78	0.00
78		CHLOROBENZENE	1.289	1.283	0.5	76	0.00
79		ETHYLBENZENE	2.259	1.963	13.1	72	0.00
80		m,p-XYLENE	0.771	0.734	4.8	73	0.00
81		o-XYLENE	0.833	0.721	13.4	72	0.00
82		STYRENE	1.059	1.115	-5.3	71	0.00
83		NONANE	1.293	1.407	-8.8	77	0.00
84		BROMOFORM	0.781	0.906	-16.0	79	0.00
85	S	4-BROMOFLUOROBENZENE	1.098	1.061	3.4	69	0.00
86		1,1,2,2-TETRACHLOROETHANE	1.196	1.221	-2.1	75	0.00
87		1,2,3-TRICHLOROPROPANE	0.934	0.896	4.1	74	0.00
88		ISOPROPYLBENZENE	2.049	2.129	-3.9	73	0.00
89		BROMOBENZENE	1.157	1.142	1.3	72	0.00
90		2-CHLOROTOLUENE	0.494	0.520	-5.3	73	0.00
91		n-PROPYLBENZENE	0.499	0.545	-9.2	71	0.00
92		4-ETHYLTOLUENE	1.757	1.923	-9.4	71	0.00
93		1,3,5-TRIMETHYLBENZENE	1.494	1.639	-9.7	72	0.00
94		ALPHA-METHYLSTYRENE	0.705	0.821	-16.5	70	0.00
95		tert-BUTYLBENZENE	0.322	0.356	-10.6	72	0.00
96		1,2,4-TRIMETHYLBENZENE	1.424	1.644	-15.4	72	0.00

Continuing Calibration Summary

Job Number: JD2616
Account: ERMNYW ERM, Inc.
Project: Fortive, New Windsor, NY

Sample: V3W2796-CC2789
Lab FileID: 3W71398.D

97	m-DICHLOROBENZENE	0.990	1.056	-6.7	72	0.00
98	BENZYL CHLORIDE	1.232	1.437	-16.6	74	0.00
99	p-DICHLOROBENZENE	1.003	1.031	-2.8	71	0.00
100	sec-BUTYLBENZENE	0.386	0.451	-16.8	73	0.00
101	1,2,3-Trimethylbenzene	1.453	1.701	-17.1	73	0.00
102	p-ISOPROPYLTOLUENE	0.399	0.500	-25.3	75	0.00
103	o-DICHLOROBENZENE	0.955	1.011	-5.9	73	0.00
104	n-BUTYLBENZENE	0.347	0.436	-25.6	75	0.00
105	HEXACHLOROETHANE	0.670	0.809	-20.7	78	0.00
106	HEXACHLOROBUTADIENE	0.489	0.484	1.0	73	0.00
107	1,2,4-TRICHLOROBENZENE	0.479	0.453	5.4	74	0.00
108	NAPHTHALENE	0.900	0.859	4.6	72	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0

M3W2789.M Thu Jan 23 13:29:06 2020 GCMS6W

Continuing Calibration Summary

Job Number: JD2616
Account: ERMNYW ERM, Inc.
Project: Fortive, New Windsor, NY

Sample: V3W2806-CC2789
Lab FileID: 3W71596.D

Evaluate Continuing Calibration Report

Data Path : C:\msdchem\1\DATA\
Data File : 3W71596.D
Acq On : 11 Feb 2020 11:15 am
Operator : danat
Sample : cc2789-10
Misc : MS40975,V3W2806,,,,,1
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Feb 11 11:46:47 2020
Quant Method : C:\msdchem\1\METHODS\M3W2789.M
Quant Title : TO15 by GCMS w/Rtx-1, 60 m X 0.32mm ID X 1.0 um
QLast Update : Wed Jan 15 09:18:27 2020
Response via : Initial Calibration

Min. RRF : 0.000 Min. Rel. Area : 60% Max. R.T. Dev 0.50min
Max. RRF Dev : 30% Max. Rel. Area : 140%

	Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1 I	BROMOCHLOROMETHANE	1.000	1.000	0.0	94	0.00
2	FREON 115	0.048	0.057	-18.8	116	0.00
3	FREON 152A	0.860	0.930	-8.1	111	0.00
4	CHLORODIFLUOROMETHANE	0.355	0.346	2.5	101	0.00
5	CHLOROTRIFLUOROETHENE	1.566	1.683	-7.5	106	0.00
6	DICHLORODIFLUOROMETHANE	3.406	3.433	-0.8	102	0.00
7	PROPYLENE	1.359	1.437	-5.7	112	0.00
8	1-CHLORO-1,1-DIFLUOROETHANE	2.637	2.583	2.0	101	0.00
9	FREON 114	3.461	3.605	-4.2	107	0.00
10	CHLOROMETHANE	0.450	0.506	-12.4	113	0.00
11	VINYL CHLORIDE	1.482	1.636	-10.4	113	0.00
12	1,3-BUTADIENE	1.111	1.241	-11.7	115	0.00
13	n-BUTANE	2.539	2.612	-2.9	114	0.00
14	BROMOMETHANE	1.306	1.312	-0.5	107	0.00
15	CHLOROETHANE	0.702	0.782	-11.4	110	0.00
16	DICHLOROFLUOROMETHANE	3.043	3.166	-4.0	106	0.00
17	ACETONITRILE	1.161	0.942	18.9	87	0.00
18	ACROLEIN	0.604	0.485	19.7	88	0.00
19	FREON 123	3.050	3.147	-3.2	103	0.00
20	FREON 123A	1.447	1.458	-0.8	100	0.00
21	TRICHLOROFLUOROMETHANE	2.979	2.829	5.0	97	0.00
22	ISOPROPYL ALCOHOL	2.488	2.135	14.2	98	0.00
23	ACETONE	0.591	0.420	28.9	79	0.00
24	PENTANE	1.735	1.684	2.9	109	0.00
25	IODOMETHANE	2.918	2.989	-2.4	104	0.00
26	1,1-DICHLOROETHYLENE	1.219	1.228	-0.7	103	0.00
27	CARBON DISULFIDE	3.665	3.651	0.4	101	0.00
28	ETHANOL	0.603	0.518	14.1	94	0.00
29	BROMOETHENE	1.144	1.196	-4.5	106	0.00
30	ACRYLONITRILE	0.818	0.686	16.1	84	0.00
31	METHYLENE CHLORIDE	1.276	1.191	6.7	101	0.00
32	3-CHLOROPROPENE	0.617	0.663	-7.5	107	0.00
33	FREON 113	1.794	1.766	1.6	100	0.00
34	TRANS-1,2-DICHLOROETHYLENE	1.187	1.230	-3.6	103	0.00
35	TERTIARY BUTYL ALCOHOL	2.379	2.190	7.9	98	0.00
36	METHYL TERTIARY BUTYL ETHER	3.124	2.366	24.3	76	0.00
37	TETRAHYDROFURAN	0.541	0.418	22.7	78	0.00
38	HEXANE	2.169	2.256	-4.0	103	0.00

Continuing Calibration Summary

Job Number: JD2616
Account: ERMNYW ERM, Inc.
Project: Fortive, New Windsor, NY

Sample: V3W2806-CC2789
Lab FileID: 3W71596.D

39		VINYL ACETATE	0.218	0.181	17.0	78	0.00
40		1,1-DICHLOROETHANE	2.546	2.530	0.6	100	0.00
41		METHYL ETHYL KETONE	0.535	0.404	24.5	79	0.00
42		cis-1,2-DICHLOROETHYLENE	1.296	1.327	-2.4	102	0.00
43		DIISOPROPYL ETHER	0.563	0.441	21.7	77	0.00
44		ETHYL ACETATE	0.373	0.267	28.4	77	-0.01
45		METHYL ACRYLATE	2.231	1.688	24.3	74	0.00
46		CHLOROFORM	2.707	2.629	2.9	97	0.00
47		2,4-DIMETHYLPENTANE	2.564	2.757	-7.5	105	0.00
48		1,1,1-TRICHLOROETHANE	2.541	2.469	2.8	96	0.00
49		CARBON TETRACHLORIDE	2.427	2.430	-0.1	98	0.00
50		1,2-DICHLOROETHANE	1.723	1.620	6.0	92	0.00
51	I	1,4-DIFLUOROBENZENE	1.000	1.000	0.0	83	0.00
52		BENZENE	0.882	1.001	-13.5	101	0.00
53		CYCLOHEXANE	0.355	0.417	-17.5	103	0.00
54		2,3-DIMETHYLPENTANE	0.191	0.230	-20.4	105	0.00
55		TRICHLOROETHYLENE	0.351	0.398	-13.4	97	0.00
56		1,2-DICHLOROPROPANE	0.335	0.343	-2.4	91	0.00
57		DIBROMOMETHANE	0.294	0.300	-2.0	95	0.00
58		ETHYL ACRYLATE	0.504	0.459	8.9	78	0.00
59		BROMODICHLOROMETHANE	0.602	0.694	-15.3	97	0.00
60		2,2,4-TRIMETHYLPENTANE	1.446	1.764	-22.0	104	0.00
61		1,4-DIOXANE	0.147	0.147	0.0	92	0.00
62		HEPTANE	0.567	0.679	-19.8	104	0.00
63		METHYL METHACRYLATE	0.254	0.213	16.1	76	0.00
64		METHYL ISOBUTYL KETONE	0.216	0.213	1.4	91	0.00
65		cis-1,3-DICHLOROPROPENE	0.445	0.482	-8.3	91	0.00
66		TOLUENE	0.541	0.539	0.4	86	0.00
67		1,3-DICHLOROPROPANE	0.420	0.416	1.0	82	0.00
68		trans-1,3-DICHLOROPROPENE	0.363	0.378	-4.1	84	0.00
69		1,1,2-TRICHLOROETHANE	0.277	0.284	-2.5	86	0.00
70	I	CHLOROBENZENE-D5	1.000	1.000	0.0	76	0.00
71		2-HEXANONE	0.517	0.621	-20.1	94	0.00
72		ETHYL METHACRYLATE	0.717	0.753	-5.0	83	0.00
73		TETRACHLOROETHYLENE	0.636	0.765	-20.3	95	0.00
74		DIBROMOCHLOROMETHANE	0.948	1.171	-23.5	90	0.00
75		1,2-DIBROMOETHANE	0.859	0.942	-9.7	85	0.00
76		OCTANE	1.441	1.936	-34.4#	104	0.00
77		1,1,1,2-TETRACHLOROETHANE	0.677	0.754	-11.4	84	0.00
78		CHLOROBENZENE	1.289	1.457	-13.0	86	0.00
79		ETHYLBENZENE	2.259	2.103	6.9	77	0.00
80		m,p-XYLENE	0.771	0.784	-1.7	77	0.00
81		o-XYLENE	0.833	0.763	8.4	76	0.00
82		STYRENE	1.059	1.215	-14.7	77	0.00
83		NONANE	1.293	1.652	-27.8	90	0.00
84		BROMOFORM	0.781	0.943	-20.7	82	0.00
85	S	4-BROMOFLUOROBENZENE	1.098	1.073	2.3	70	0.00
86		1,1,2,2-TETRACHLOROETHANE	1.196	1.236	-3.3	76	0.00
87		1,2,3-TRICHLOROPROPANE	0.934	0.909	2.7	75	0.00
88		ISOPROPYLBENZENE	2.049	2.169	-5.9	74	0.00
89		BROMOBENZENE	1.157	1.249	-8.0	79	0.00
90		2-CHLOROTOLUENE	0.494	0.560	-13.4	79	0.00
91		n-PROPYLBENZENE	0.499	0.554	-11.0	72	0.00
92		4-ETHYLTOLUENE	1.757	1.893	-7.7	70	0.00
93		1,3,5-TRIMETHYLBENZENE	1.494	1.579	-5.7	69	0.00
94		ALPHA-METHYLSTYRENE	0.705	0.825	-17.0	70	0.00
95		tert-BUTYLBENZENE	0.322	0.349	-8.4	70	0.00
96		1,2,4-TRIMETHYLBENZENE	1.424	1.573	-10.5	69	0.00

Continuing Calibration Summary

Job Number: JD2616
Account: ERMNYW ERM, Inc.
Project: Fortive, New Windsor, NY

Sample: V3W2806-CC2789
Lab FileID: 3W71596.D

97	m-DICHLOROBENZENE	0.990	1.063	-7.4	72	0.00
98	BENZYL CHLORIDE	1.232	1.416	-14.9	73	0.00
99	p-DICHLOROBENZENE	1.003	1.039	-3.6	71	0.00
100	sec-BUTYLBENZENE	0.386	0.436	-13.0	70	0.00
101	1,2,3-Trimethylbenzene	1.453	1.590	-9.4	69	0.00
102	p-ISOPROPYLTOLUENE	0.399	0.466	-16.8	70	0.00
103	o-DICHLOROBENZENE	0.955	0.965	-1.0	69	0.00
104	n-BUTYLBENZENE	0.347	0.401	-15.6	69	0.00
105	HEXACHLOROETHANE	0.670	0.843	-25.8	81	0.00
106	HEXACHLOROBUTADIENE	0.489	0.359	26.6	54#	0.00
107	1,2,4-TRICHLOROBENZENE	0.479	0.381	20.5	62	0.00
108	NAPHTHALENE	0.900	0.815	9.4	69	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0

M3W2789.M Tue Feb 11 14:03:31 2020 GCMS6W

Continuing Calibration Summary

Job Number: JD2616
Account: ERMNYW ERM, Inc.
Project: Fortive, New Windsor, NY

Sample: V3W2807-CC2789
Lab FileID: 3W71620.D

Evaluate Continuing Calibration Report

Data Path : C:\msdchem\1\DATA\
Data File : 3W71620.D
Acq On : 12 Feb 2020 10:54 am
Operator : danat
Sample : CC2789-10
Misc : MS41043,V3W2807,,,,,1
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Feb 12 11:16:55 2020
Quant Method : C:\msdchem\1\METHODS\M3W2789.M
Quant Title : TO15 by GCMS w/Rtx-1, 60 m X 0.32mm ID X 1.0 um
QLast Update : Wed Jan 15 09:18:27 2020
Response via : Initial Calibration

Min. RRF : 0.000 Min. Rel. Area : 60% Max. R.T. Dev 0.50min
Max. RRF Dev : 30% Max. Rel. Area : 140%

	Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1 I	BROMOCHLOROMETHANE	1.000	1.000	0.0	89	-0.01
2	FREON 115	0.048	0.061	-27.1	116	0.00
3	FREON 152A	0.860	0.938	-9.1	106	0.00
4	CHLORODIFLUOROMETHANE	0.355	0.354	0.3	98	0.00
5	CHLOROTRIFLUOROETHENE	1.566	1.713	-9.4	101	0.00
6	DICHLORODIFLUOROMETHANE	3.406	3.470	-1.9	97	0.00
7	PROPYLENE	1.359	1.440	-6.0	105	0.00
8	1-CHLORO-1,1-DIFLUOROETHANE	2.637	2.618	0.7	96	0.00
9	FREON 114	3.461	3.615	-4.4	101	0.00
10	CHLOROMETHANE	0.450	0.514	-14.2	107	0.00
11	VINYL CHLORIDE	1.482	1.654	-11.6	107	0.00
12	1,3-BUTADIENE	1.111	1.259	-13.3	110	0.00
13	n-BUTANE	2.539	2.639	-3.9	108	0.00
14	BROMOMETHANE	1.306	1.334	-2.1	102	0.00
15	CHLOROETHANE	0.702	0.789	-12.4	104	0.00
16	DICHLOROFLUOROMETHANE	3.043	3.209	-5.5	101	0.00
17	ACETONITRILE	1.161	0.863	25.7	74	0.00
18	ACROLEIN	0.604	0.427	29.3	73	0.00
19	FREON 123	3.050	3.209	-5.2	98	0.00
20	FREON 123A	1.447	1.481	-2.3	95	0.00
21	TRICHLOROFLUOROMETHANE	2.979	2.861	4.0	92	0.00
22	ISOPROPYL ALCOHOL	2.488	2.208	11.3	95	0.00
23	ACETONE	0.591	0.398	32.7#	70	0.00
24	PENTANE	1.735	1.753	-1.0	107	0.00
25	IODOMETHANE	2.918	2.994	-2.6	98	0.00
26	1,1-DICHLOROETHYLENE	1.219	1.230	-0.9	97	0.00
27	CARBON DISULFIDE	3.665	3.676	-0.3	96	0.00
28	ETHANOL	0.603	0.522	13.4	89	0.00
29	BROMOETHENE	1.144	1.203	-5.2	100	0.00
30	ACRYLONITRILE	0.818	0.612	25.2	70	0.00
31	METHYLENE CHLORIDE	1.276	1.202	5.8	96	0.00
32	3-CHLOROPROPENE	0.617	0.670	-8.6	101	0.00
33	FREON 113	1.794	1.736	3.2	92	0.00
34	TRANS-1,2-DICHLOROETHYLENE	1.187	1.210	-1.9	95	0.00
35	TERTIARY BUTYL ALCOHOL	2.379	2.260	5.0	95	0.00
36	METHYL TERTIARY BUTYL ETHER	3.124	2.179	30.2#	66	0.00
37	TETRAHYDROFURAN	0.541	0.383	29.2	67	0.00
38	HEXANE	2.169	2.244	-3.5	96	0.00

Continuing Calibration Summary

Job Number: JD2616
Account: ERMNYW ERM, Inc.
Project: Fortive, New Windsor, NY

Sample: V3W2807-CC2789
Lab FileID: 3W71620.D

39		VINYL ACETATE	0.218	0.155	28.9	63	0.00
40		1,1-DICHLOROETHANE	2.546	2.526	0.8	94	0.00
41		METHYL ETHYL KETONE	0.535	0.386	27.9	71	0.00
42		cis-1,2-DICHLOROETHYLENE	1.296	1.297	-0.1	93	0.00
43		DIISOPROPYL ETHER	0.563	0.409	27.4	67	0.00
44		ETHYL ACETATE	0.373	0.251	32.7#	68	-0.02
45		METHYL ACRYLATE	2.231	1.575	29.4	65	0.00
46		CHLOROFORM	2.707	2.599	4.0	90	-0.01
47		2,4-DIMETHYLPENTANE	2.564	2.728	-6.4	97	0.00
48		1,1,1-TRICHLOROETHANE	2.541	2.416	4.9	88	0.00
49		CARBON TETRACHLORIDE	2.427	2.371	2.3	89	0.00
50		1,2-DICHLOROETHANE	1.723	1.524	11.5	81	0.00
51	I	1,4-DIFLUOROBENZENE	1.000	1.000	0.0	70	0.00
52		BENZENE	0.882	1.053	-19.4	90	0.00
53		CYCLOHEXANE	0.355	0.448	-26.2	94	0.00
54		2,3-DIMETHYLPENTANE	0.191	0.247	-29.3	95	0.00
55		TRICHLOROETHYLENE	0.351	0.429	-22.2	89	0.00
56		1,2-DICHLOROPROPANE	0.335	0.345	-3.0	78	0.00
57		DIBROMOMETHANE	0.294	0.318	-8.2	86	0.00
58		ETHYL ACRYLATE	0.504	0.485	3.8	70	-0.01
59		BROMODICHLOROMETHANE	0.602	0.753	-25.1	89	0.00
60		2,2,4-TRIMETHYLPENTANE	1.446	1.932	-33.6#	96	0.00
61		1,4-DIOXANE	0.147	0.154	-4.8	82	-0.02
62		HEPTANE	0.567	0.747	-31.7#	97	0.00
63		METHYL METHACRYLATE	0.254	0.221	13.0	67	-0.01
64		METHYL ISOBUTYL KETONE	0.216	0.230	-6.5	83	-0.01
65		cis-1,3-DICHLOROPROPENE	0.445	0.474	-6.5	76	-0.01
66		TOLUENE	0.541	0.514	5.0	69	0.00
67		1,3-DICHLOROPROPANE	0.420	0.400	4.8	67	0.00
68		trans-1,3-DICHLOROPROPENE	0.363	0.361	0.6	68	0.00
69		1,1,2-TRICHLOROETHANE	0.277	0.274	1.1	71	0.00
70	I	CHLOROBENZENE-D5	1.000	1.000	0.0	67	0.00
71		2-HEXANONE	0.517	0.640	-23.8	86	-0.01
72		ETHYL METHACRYLATE	0.717	0.780	-8.8	76	-0.01
73		TETRACHLOROETHYLENE	0.636	0.795	-25.0	87	0.00
74		DIBROMOCHLOROMETHANE	0.948	1.136	-19.8	77	0.00
75		1,2-DIBROMOETHANE	0.859	0.884	-2.9	70	0.00
76		OCTANE	1.441	1.980	-37.4#	94	0.00
77		1,1,1,2-TETRACHLOROETHANE	0.677	0.712	-5.2	70	-0.01
78		CHLOROBENZENE	1.289	1.377	-6.8	72	0.00
79		ETHYLBENZENE	2.259	1.918	15.1	62	0.00
80		m,p-XYLENE	0.771	0.715	7.3	62	-0.02
81		o-XYLENE	0.833	0.698	16.2	62	-0.01
82		STYRENE	1.059	1.101	-4.0	62	0.00
83		NONANE	1.293	1.542	-19.3	74	0.00
84		BROMOFORM	0.781	0.892	-14.2	69	-0.01
85	S	4-BROMOFLUOROBENZENE	1.098	1.062	3.3	61	0.00
86		1,1,2,2-TETRACHLOROETHANE	1.196	1.187	0.8	64	0.00
87		1,2,3-TRICHLOROPROPANE	0.934	0.855	8.5	62	0.00
88		ISOPROPYLBENZENE	2.049	2.015	1.7	61	0.00
89		BROMOBENZENE	1.157	1.145	1.0	64	0.00
90		2-CHLOROTOLUENE	0.494	0.516	-4.5	64	0.00
91		n-PROPYLBENZENE	0.499	0.509	-2.0	59#	0.00
92		4-ETHYLTOLUENE	1.757	1.799	-2.4	59#	0.00
93		1,3,5-TRIMETHYLBENZENE	1.494	1.502	-0.5	58#	0.00
94		ALPHA-METHYLSTYRENE	0.705	0.774	-9.8	58#	0.00
95		tert-BUTYLBENZENE	0.322	0.336	-4.3	60#	0.00
96		1,2,4-TRIMETHYLBENZENE	1.424	1.515	-6.4	59#	0.00

Continuing Calibration Summary

Job Number: JD2616
Account: ERMNYW ERM, Inc.
Project: Fortive, New Windsor, NY

Sample: V3W2807-CC2789
Lab FileID: 3W71620.D

97	m-DICHLOROBENZENE	0.990	0.988	0.2	59#	0.00
98	BENZYL CHLORIDE	1.232	1.368	-11.0	62	-0.01
99	p-DICHLOROBENZENE	1.003	0.974	2.9	59#	0.00
100	sec-BUTYLBENZENE	0.386	0.421	-9.1	60#	0.00
101	1,2,3-Trimethylbenzene	1.453	1.550	-6.7	59#	0.00
102	p-ISOPROPYLTOLUENE	0.399	0.459	-15.0	61	0.00
103	o-DICHLOROBENZENE	0.955	0.917	4.0	58#	0.00
104	n-BUTYLBENZENE	0.347	0.401	-15.6	61	0.00
105	HEXACHLOROETHANE	0.670	0.799	-19.3	68	0.00
106	HEXACHLOROBUTADIENE	0.489	0.351	28.2	47#	0.00
107	1,2,4-TRICHLOROBENZENE	0.479	0.387	19.2	56#	0.00
108	NAPHTHALENE	0.900	0.828	8.0	62	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0

M3W2789.M Wed Feb 12 14:37:11 2020 GCMS6W

Run Sequence Report

Job Number: JD2616
Account: ERMNYW ERM, Inc.
Project: Fortive, New Windsor, NY

Run ID: V3W2789	**Method:** TO-15	**Instrument ID:** GCMS3W

Lab Sample ID	Lab File ID	Date/Time Analyzed	Prep QC Batch	Client Sample ID
V3W2789-BFB	3W71238.D	01/14/20 10:53	n/a	BFB Tune
V3W2789-IC2789	3W71239.D	01/14/20 11:44	n/a	Initial cal 0.5
V3W2789-IC2789	3W71241.D	01/14/20 13:41	n/a	Initial cal 0.2
V3W2789-ICC2789	3W71242.D	01/14/20 14:33	n/a	Initial cal 10
V3W2789-IC2789	3W71243.D	01/14/20 15:37	n/a	Initial cal 5
V3W2789-IC2789	3W71244.D	01/14/20 16:28	n/a	Initial cal 20
V3W2789-IC2789	3W71245.D	01/14/20 17:21	n/a	Initial cal 40
V3W2789-IC2789	3W71248.D	01/14/20 19:51	n/a	Initial cal 0.1
V3W2789-IC2789	3W71249.D	01/14/20 20:40	n/a	Initial cal 0.04
V3W2789-ICV2789	3W71250.D	01/14/20 21:30	n/a	Initial cal verification 10

Run Sequence Report

Job Number: JD2616
Account: ERMNYW ERM, Inc.
Project: Fortive, New Windsor, NY

Run ID: V3W2796 **Method:** TO-15 **Instrument ID:** GCMS3W

Lab Sample ID	Lab File ID	Date/Time Analyzed	Prep QC Batch	Client Sample ID
V3W2796-BFB	3W71397.D	01/23/20 08:49	n/a	BFB Tune
V3W2796-CC2789	3W71398.D	01/23/20 09:39	n/a	Continuing cal 10
V3W2796-BS	3W71399.D	01/23/20 10:30	n/a	Blank Spike
V3W2796-BSD	3W71401.D	01/23/20 12:10	n/a	Blank Spike Duplicate
V3W2796-MB	3W71403.D	01/23/20 13:58	n/a	Method Blank
ZZZZZZ	3W71404.D	01/23/20 14:49	n/a	(unrelated sample)
JD1970-4	3W71405.D	01/23/20 15:39	n/a	(used for QC only; not part of job JD2616)
JD1970-4DUP	3W71406.D	01/23/20 16:39	n/a	Duplicate
ZZZZZZ	3W71407.D	01/23/20 17:33	n/a	(unrelated sample)
ZZZZZZ	3W71408.D	01/23/20 18:26	n/a	(unrelated sample)
ZZZZZZ	3W71409.D	01/23/20 19:21	n/a	(unrelated sample)
ZZZZZZ	3W71410.D	01/23/20 20:12	n/a	(unrelated sample)
ZZZZZZ	3W71411.D	01/23/20 21:01	n/a	(unrelated sample)
ZZZZZZ	3W71412.D	01/23/20 21:52	n/a	(unrelated sample)
ZZZZZZ	3W71413.D	01/23/20 22:43	n/a	(unrelated sample)
ZZZZZZ	3W71414.D	01/23/20 23:34	n/a	(unrelated sample)
ZZZZZZ	3W71415.D	01/24/20 00:24	n/a	(unrelated sample)
ZZZZZZ	3W71416.D	01/24/20 01:15	n/a	(unrelated sample)
ZZZZZZ	3W71417.D	01/24/20 02:04	n/a	(unrelated sample)
V3W2796-SCC	3W71418.D	01/24/20 02:54	n/a	Summa Cleaning Certification
V3W2796-SCC	3W71419.D	01/24/20 03:45	n/a	Summa Cleaning Certification
V3W2796-SCC	3W71420.D	01/24/20 04:34	n/a	Summa Cleaning Certification
V3W2796-SCC	3W71421.D	01/24/20 05:28	n/a	Summa Cleaning Certification
V3W2796-SCC	3W71422.D	01/24/20 06:22	n/a	Summa Cleaning Certification

Run Sequence Report

Job Number: JD2616
Account: ERMNYW ERM, Inc.
Project: Fortive, New Windsor, NY

Run ID: V3W2806	**Method:** TO-15	**Instrument ID:** GCMS3W

Lab Sample ID	Lab File ID	Date/Time Analyzed	Prep QC Batch	Client Sample ID
V3W2806-BFB	3W71594.D	02/11/20 09:37	n/a	BFB Tune
V3W2806-CC2789	3W71596.D	02/11/20 11:15	n/a	Continuing cal 10
V3W2806-BS	3W71597.D	02/11/20 12:06	n/a	Blank Spike
V3W2806-BSD	3W71598.D	02/11/20 13:33	n/a	Blank Spike Duplicate
V3W2806-MB	3W71600.D	02/11/20 15:19	n/a	Method Blank
JD2884-1	3W71601.D	02/11/20 16:22	n/a	(used for QC only; not part of job JD2616)
JD2884-1DUP	3W71602.D	02/11/20 17:13	n/a	Duplicate
ZZZZZZ	3W71603.D	02/11/20 18:05	n/a	(unrelated sample)
ZZZZZZ	3W71604.D	02/11/20 19:00	n/a	(unrelated sample)
ZZZZZZ	3W71605.D	02/11/20 19:58	n/a	(unrelated sample)
ZZZZZZ	3W71606.D	02/11/20 20:54	n/a	(unrelated sample)
ZZZZZZ	3W71607.D	02/11/20 21:49	n/a	(unrelated sample)
ZZZZZZ	3W71608.D	02/11/20 22:48	n/a	(unrelated sample)
JD2616-2	3W71609.D	02/11/20 23:47	n/a	AA-2-013020
JD2616-4	3W71610.D	02/12/20 00:46	n/a	AA-3-013020
JD2616-1	3W71611.D	02/12/20 01:43	n/a	SG-2-013020
JD2616-3	3W71612.D	02/12/20 02:39	n/a	SG-3-013020
ZZZZZZ	3W71613.D	02/12/20 03:33	n/a	(unrelated sample)
ZZZZZZ	3W71614.D	02/12/20 04:29	n/a	(unrelated sample)
ZZZZZZ	3W71615.D	02/12/20 05:24	n/a	(unrelated sample)
ZZZZZZ	3W71616.D	02/12/20 06:13	n/a	(unrelated sample)

Run Sequence Report

Job Number: JD2616
Account: ERMNYW ERM, Inc.
Project: Fortive, New Windsor, NY

Run ID: V3W2807	**Method:** TO-15	**Instrument ID:** GCMS3W

Lab Sample ID	Lab File ID	Date/Time Analyzed	Prep QC Batch	Client Sample ID
V3W2807-BFB	3W71618.D	02/12/20 09:12	n/a	BFB Tune
V3W2807-CC2789	3W71620.D	02/12/20 10:54	n/a	Continuing cal 10
V3W2807-BS	3W71621.D	02/12/20 11:44	n/a	Blank Spike
V3W2807-BSD	3W71622.D	02/12/20 12:34	n/a	Blank Spike Duplicate
V3W2807-MB	3W71624.D	02/12/20 14:23	n/a	Method Blank
JD2616-1	3W71625.D	02/12/20 15:14	n/a	SG-2-013020
JD2616-3	3W71626.D	02/12/20 16:04	n/a	SG-3-013020
ZZZZZZ	3W71627.D	02/12/20 16:54	n/a	(unrelated sample)
JD3012-1	3W71629.D	02/12/20 18:39	n/a	(used for QC only; not part of job JD2616)
JD3012-1DUP	3W71630.D	02/12/20 19:36	n/a	Duplicate
ZZZZZZ	3W71631.D	02/12/20 20:32	n/a	(unrelated sample)
ZZZZZZ	3W71632.D	02/12/20 21:28	n/a	(unrelated sample)
ZZZZZZ	3W71633.D	02/12/20 22:21	n/a	(unrelated sample)

MS Volatiles

Raw Data

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\
Data File : 3W71611.D
Acq On : 12 Feb 2020 1:43 am
Operator : danat
Sample : jd2616-1
Misc : MS40889,V3W2806,632,,,,1.58
ALS Vial : 13 Sample Multiplier: 1

Quant Time: Feb 12 10:54:56 2020
Quant Method : C:\msdchem\1\METHODS\M3W2789.M
Quant Title : TO15 by GCMS w/Rtx-1, 60 m X 0.32mm ID X 1.0 um
QLast Update : Wed Jan 15 09:18:27 2020
Response via : Initial Calibration

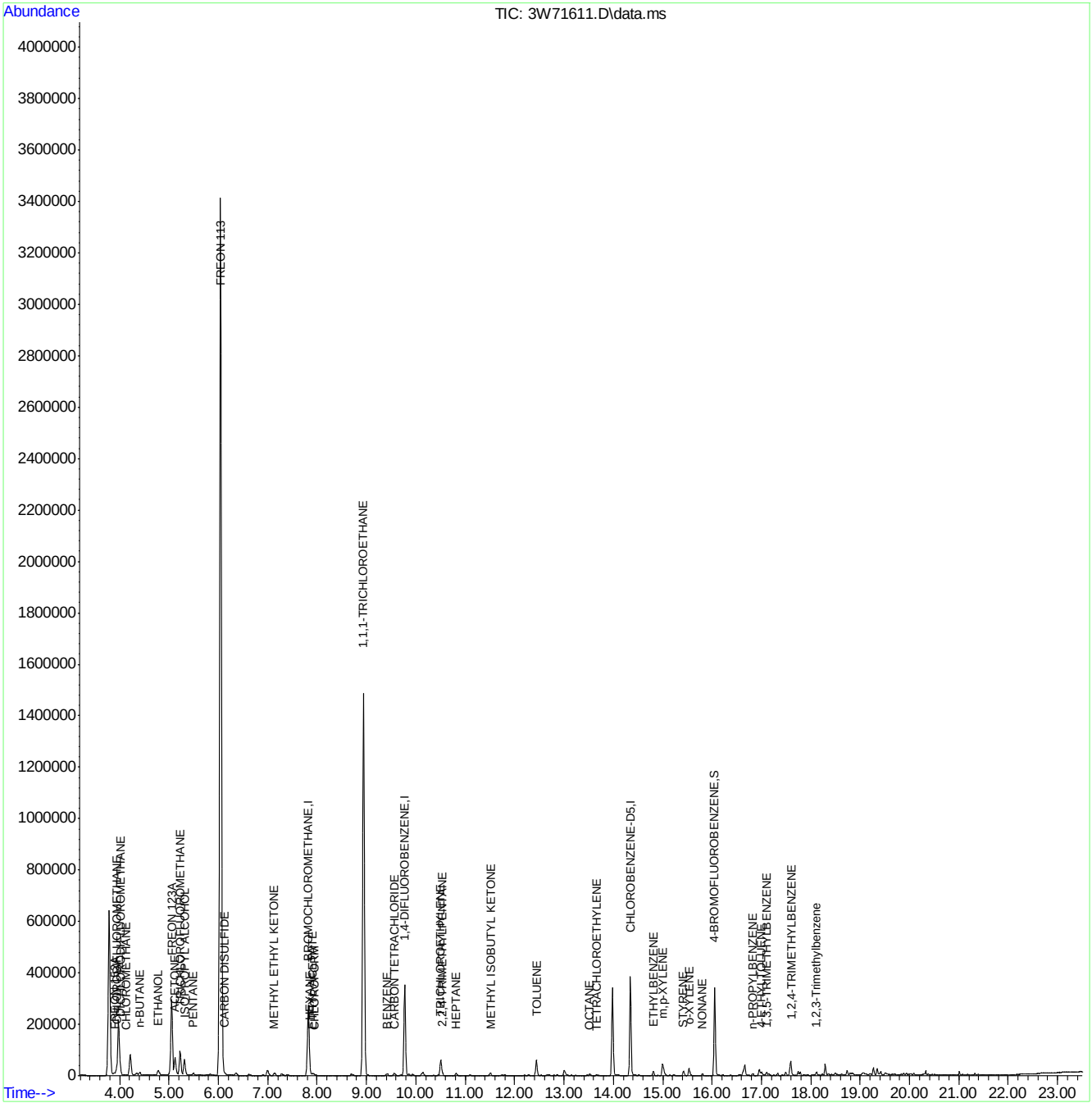
Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) BROMOCHLOROMETHANE	7.821	128	86616	10.00	PPBV		# 0.00
51) 1,4-DIFLUOROBENZENE	9.775	114	318032	10.00	PPBV		-0.01
70) CHLOROBENZENE-D5	14.348	82	144216	10.00	PPBV		-0.01
System Monitoring Compounds							
85) 4-BROMOFLUOROBENZENE	16.052	95	133300	8.42	PPBV		-0.01
Spiked Amount 10.000	Range 65 - 128		Recovery = 84.20%				
Target Compounds							Qvalue
3) FREON 152A	3.903	65	1498	0.20	PPBV		89
4) CHLORODIFLUOROMETHANE	3.935	67	4056	1.32	PPBV	#	33
6) DICHLORODIFLUOROMETHANE	4.009	85	43329	1.47	PPBV		100
10) CHLOROMETHANE	4.124	52	524	0.13	PPBV	#	88
13) n-BUTANE	4.407	43	11870	0.54	PPBV		99
20) FREON 123A	5.055	117	113109	9.03	PPBV		98
21) TRICHLOROFLUOROMETHANE	5.225	101	98233	3.81	PPBV		99
22) ISOPROPYL ALCOHOL	5.321	45	25777	1.20	PPBV		82
23) ACETONE	5.122	58	36432	7.12	PPBV	#	66
24) PENTANE	5.491	42	5157	0.34	PPBV		97
27) CARBON DISULFIDE	6.120	76	3246	0.10	PPBV	#	69
28) ETHANOL	4.782	45	30146	5.77	PPBV		100
33) FREON 113	6.043	151	1257572	80.93	PPBV		94
38) HEXANE	7.856	57	4876	0.26	PPBV		87
41) METHYL ETHYL KETONE	7.128	72	3166	0.68	PPBV	#	1
44) ETHYL ACETATE	7.914	61	1533	0.47	PPBV	#	69
46) CHLOROFORM	7.949	83	2745	0.12	PPBV		95
48) 1,1,1-TRICHLOROETHANE	8.941	97	1083362	49.22	PPBV		97
49) CARBON TETRACHLORIDE	9.567	117	5783	0.28	PPBV		98
52) BENZENE	9.413	78	6889	0.25	PPBV		99
55) TRICHLOROETHYLENE	10.500	95	23119	2.07	PPBV		100
60) 2,2,4-TRIMETHYLPENTANE	10.533	57	7750	0.17	PPBV	#	85
62) HEPTANE	10.812	43	4793	0.27	PPBV		90
64) METHYL ISOBUTYL KETONE	11.511	58	1614	0.24	PPBV	#	81
66) TOLUENE	12.442	92	27428	1.59	PPBV		99
73) TETRACHLOROETHYLENE	13.658	164	737	0.08	PPBV		92
76) OCTANE	13.514	43	3806	0.18	PPBV		91
79) ETHYLBENZENE	14.810	91	14079	0.43	PPBV		99
80) m,p-XYLENE	14.999	106	19963	1.80	PPBV		95
81) o-XYLENE	15.535	106	8364	0.70	PPBV		100
82) STYRENE	15.410	104	2305	0.15	PPBV		98
83) NONANE	15.802	43	3529	0.19	PPBV	#	92
91) n-PROPYLBENZENE	16.822	120	1345	0.19	PPBV		95
92) 4-ETHYLTOLUENE	17.002	105	8049	0.32	PPBV		99
93) 1,3,5-TRIMETHYLBENZENE	17.104	105	5265	0.24	PPBV		96
96) 1,2,4-TRIMETHYLBENZENE	17.602	105	18292	0.89	PPBV	#	37
101) 1,2,3-Trimethylbenzene	18.115	105	6077	0.29	PPBV	#	77

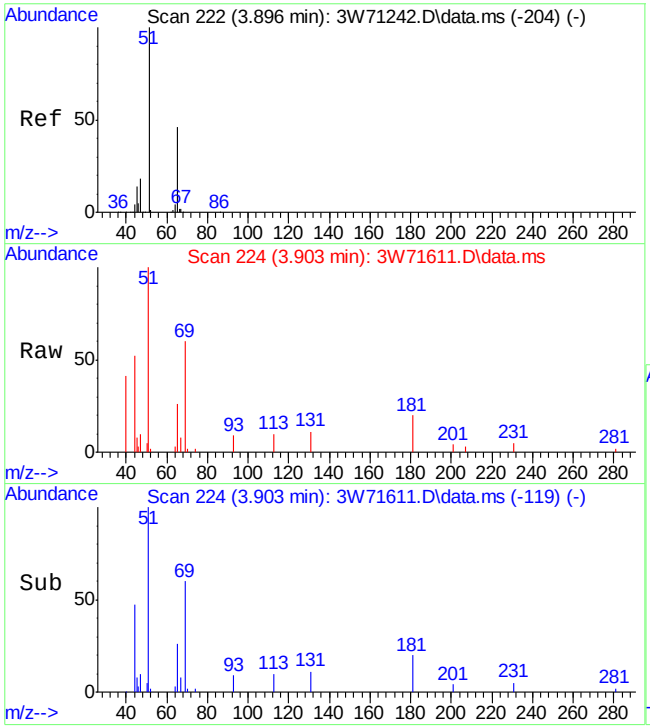
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\
Data File : 3W71611.D
Acq On : 12 Feb 2020 1:43 am
Operator : danat
Sample : jd2616-1
Misc : MS40889,V3W2806,632,,,,1.58
ALS Vial : 13 Sample Multiplier: 1

Quant Time: Feb 12 10:54:56 2020
Quant Method : C:\msdchem\1\METHODS\M3W2789.M
Quant Title : TO15 by GCMS w/Rtx-1, 60 m X 0.32mm ID X 1.0 um
QLast Update : Wed Jan 15 09:18:27 2020
Response via : Initial Calibration

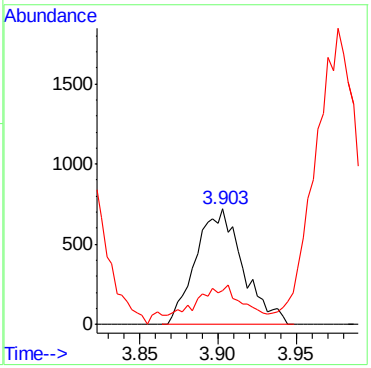


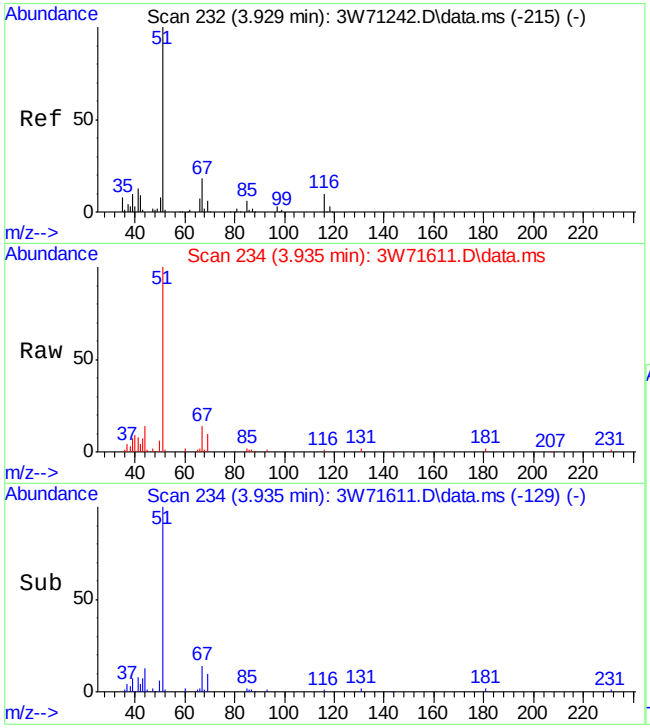


#3
FREON 152A
Concen: 0.20 PPBV
RT: 3.903 min Scan# 224
Delta R.T. 0.006 min
Lab File: 3W71611.D
Acq: 12 Feb 2020 1:43 am

Tgt Ion: 65 Resp: 1498

Ion	Ratio	Lower	Upper
65	100		
45	36.1	10.1	50.1

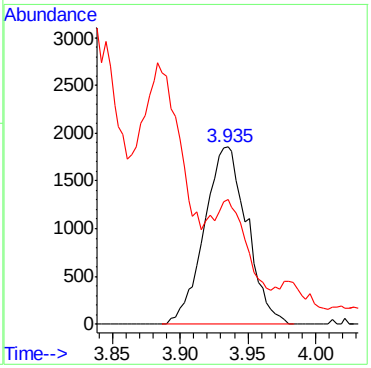


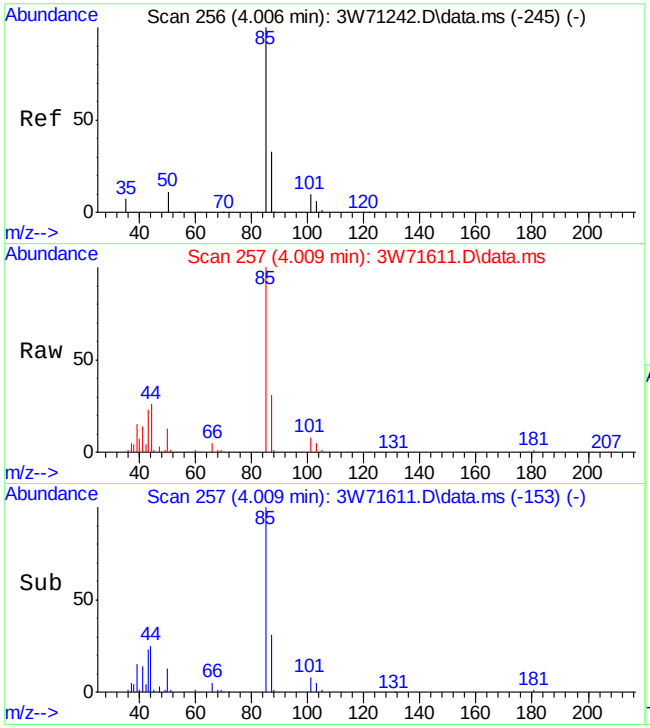


#4
CHLORODIFLUOROMETHANE
Concen: 1.32 PPBV
RT: 3.935 min Scan# 234
Delta R.T. 0.006 min
Lab File: 3W71611.D
Acq: 12 Feb 2020 1:43 am

Tgt Ion: 67 Resp: 4056

Ion	Ratio	Lower	Upper
67	100		
69	70.5	12.6	52.6#

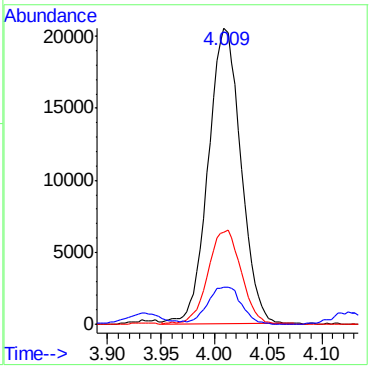


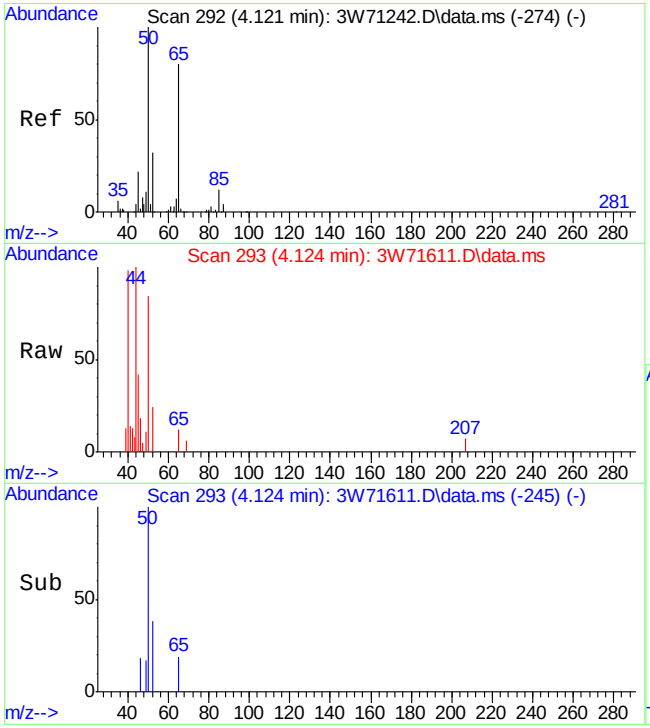


#6
DICHLORODIFLUOROMETHANE
Concen: 1.47 PPBV
RT: 4.009 min Scan# 257
Delta R.T. 0.003 min
Lab File: 3W71611.D
Acq: 12 Feb 2020 1:43 am

Tgt Ion: 85 Resp: 43329

Ion	Ratio	Lower	Upper
85	100		
87	32.3	12.2	52.2
50	13.0	0.0	32.7

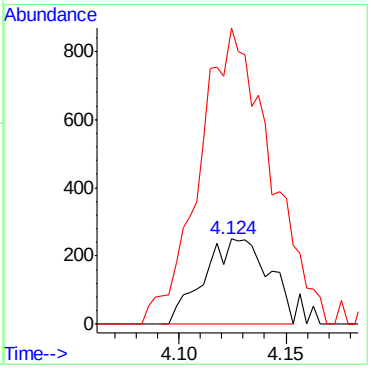


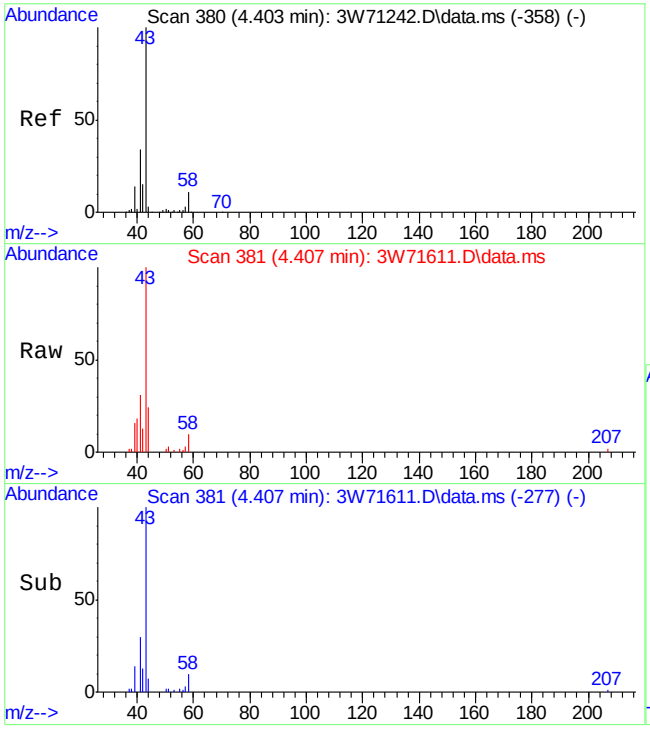


#10
CHLOROMETHANE
Concen: 0.13 PPBV
RT: 4.124 min Scan# 293
Delta R.T. 0.003 min
Lab File: 3W71611.D
Acq: 12 Feb 2020 1:43 am

Tgt Ion: 52 Resp: 524

Ion	Ratio	Lower	Upper
52	100		
50	285.0	289.6	329.6#

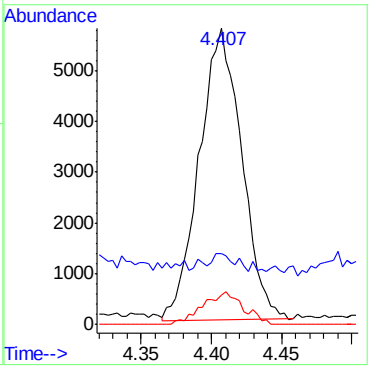


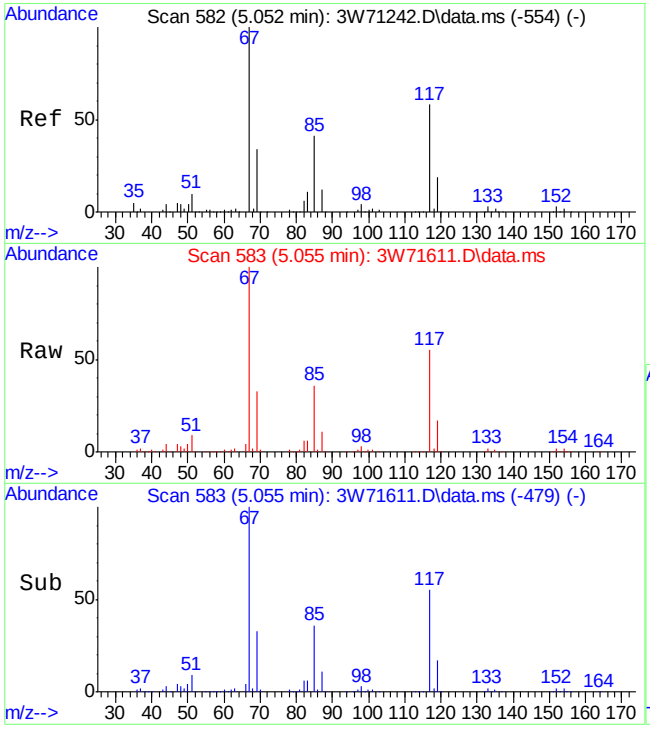


#13
n-BUTANE
Concen: 0.54 PPBV
RT: 4.407 min Scan# 381
Delta R.T. 0.003 min
Lab File: 3W71611.D
Acq: 12 Feb 2020 1:43 am

Tgt Ion: 43 Resp: 11870

Ion	Ratio	Lower	Upper
43	100		
58	10.6	0.0	30.9
44	4.4	0.0	23.6

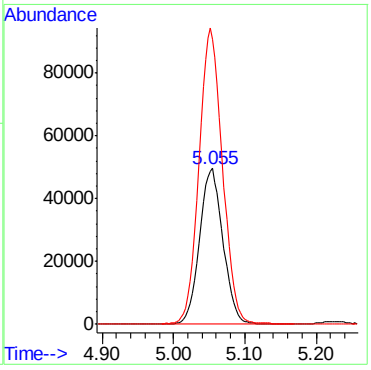


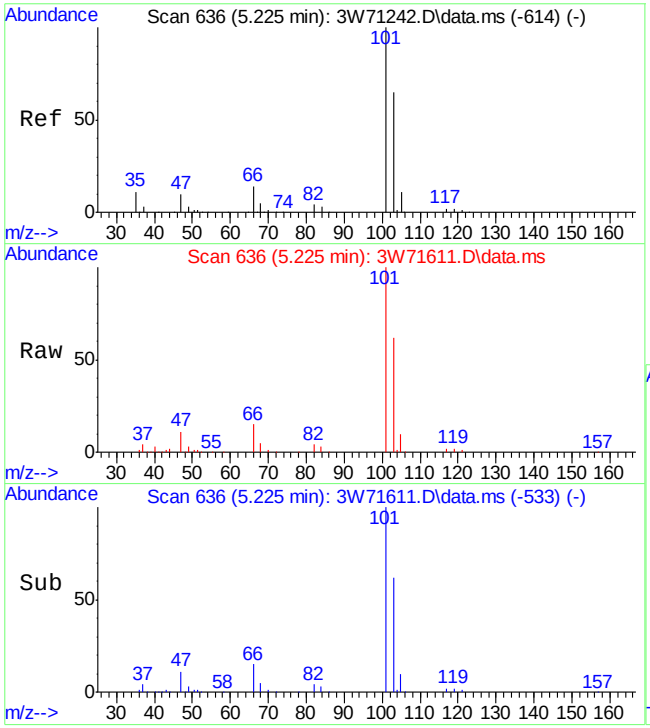


#20
FREON 123A
Concen: 9.03 PPBV
RT: 5.055 min Scan# 583
Delta R.T. 0.003 min
Lab File: 3W71611.D
Acq: 12 Feb 2020 1:43 am

Tgt Ion:117 Resp: 113109

Ion	Ratio	Lower	Upper
117	100		
67	190.4	167.4	207.4

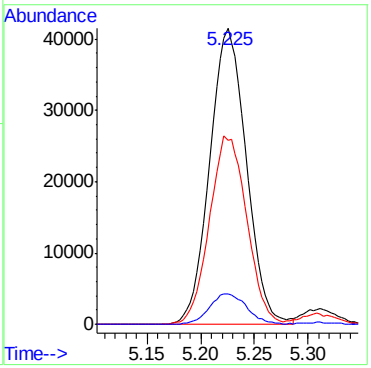


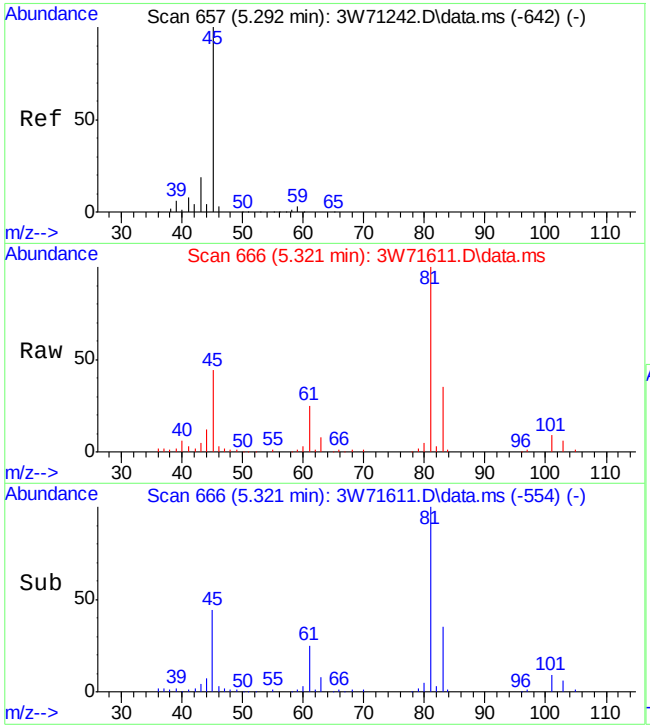


#21
TRICHLOROFLUOROMETHANE
Concen: 3.81 PPBV
RT: 5.225 min Scan# 636
Delta R.T. 0.000 min
Lab File: 3W71611.D
Acq: 12 Feb 2020 1:43 am

Tgt Ion:101 Resp: 98233

Ion	Ratio	Lower	Upper
101	100		
103	65.0	44.5	84.5
105	10.5	0.0	30.5

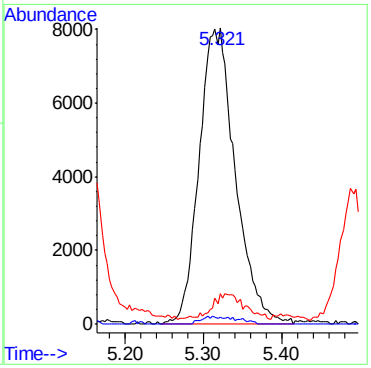


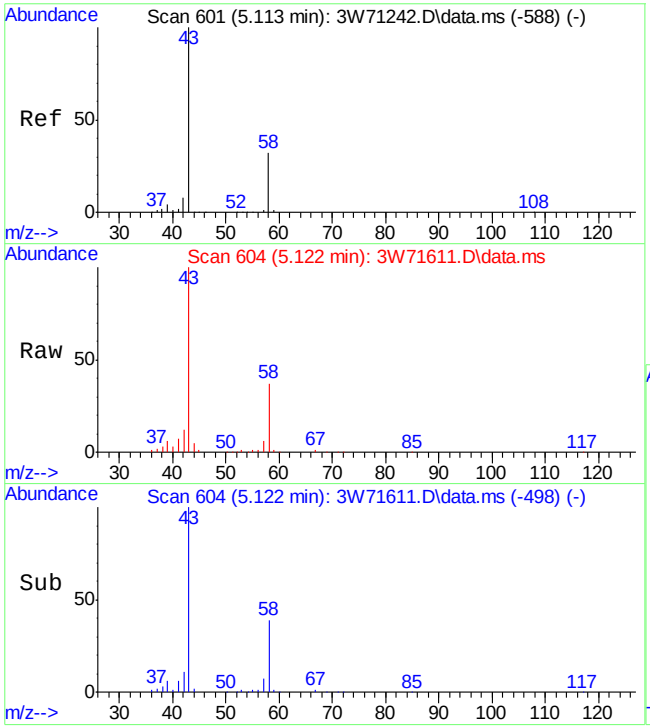


#22
ISOPROPYL ALCOHOL
Concen: 1.20 PPBV
RT: 5.321 min Scan# 666
Delta R.T. 0.029 min
Lab File: 3W71611.D
Acq: 12 Feb 2020 1:43 am

Tgt Ion: 45 Resp: 25777

Ion	Ratio	Lower	Upper
45	100		
43	10.3	0.0	39.5
59	2.2	0.0	23.5

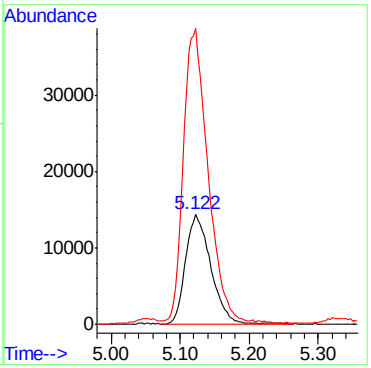


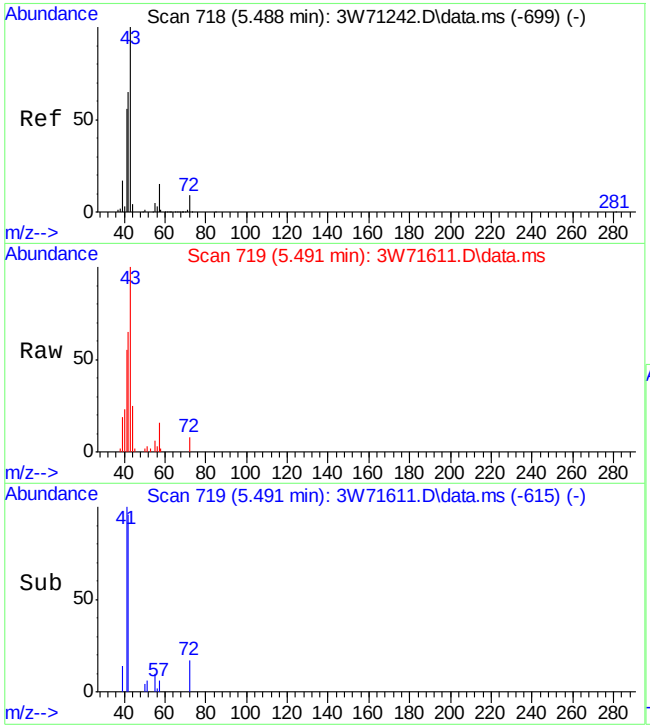


#23
ACETONE
Concen: 7.12 PPBV
RT: 5.122 min Scan# 604
Delta R.T. 0.010 min
Lab File: 3W71611.D
Acq: 12 Feb 2020 1:43 am

Tgt Ion: 58 Resp: 36432

Ion	Ratio	Lower	Upper
58	100		
43	260.7	311.7	351.7#

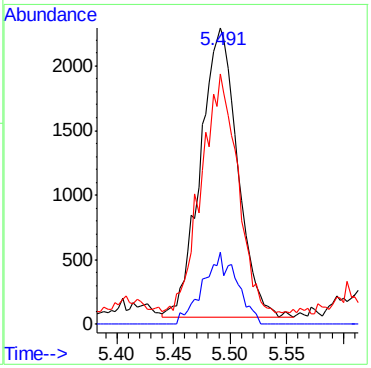


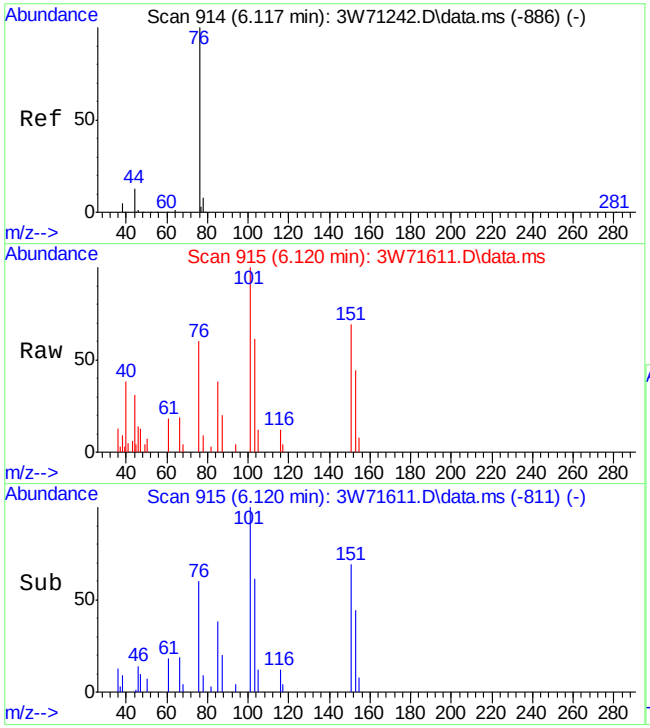


#24
PENTANE
Concen: 0.34 PPBV
RT: 5.491 min Scan# 719
Delta R.T. 0.003 min
Lab File: 3W71611.D
Acq: 12 Feb 2020 1:43 am

Tgt Ion: 42 Resp: 5157

Ion	Ratio	Lower	Upper
42	100		
41	83.8	66.3	106.3
57	22.3	3.6	43.6

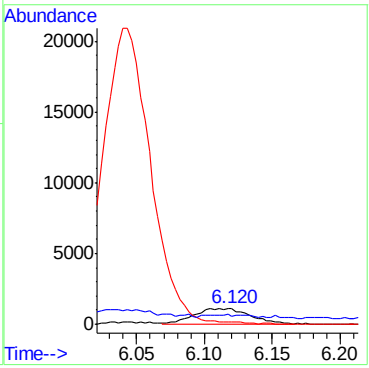


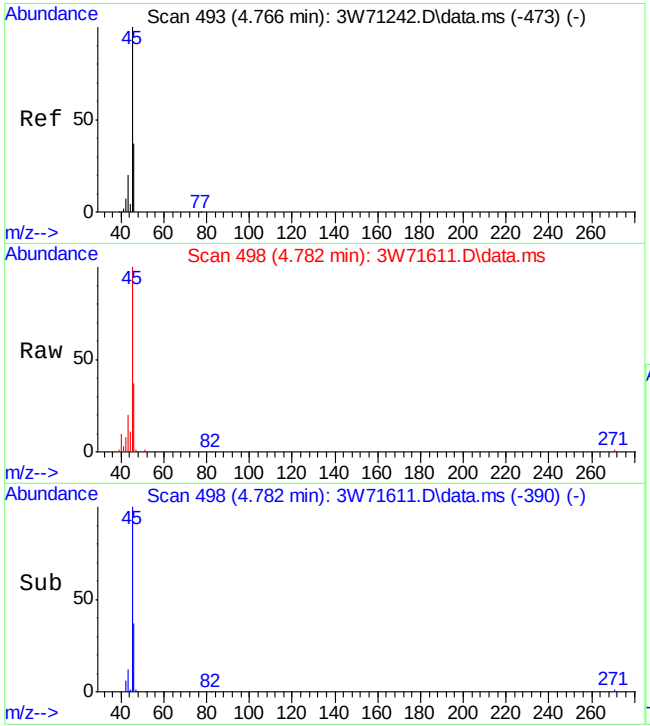


#27
CARBON DISULFIDE
Concen: 0.10 PPBV
RT: 6.120 min Scan# 915
Delta R.T. 0.003 min
Lab File: 3W71611.D
Acq: 12 Feb 2020 1:43 am

Tgt Ion: 76 Resp: 3246

Ion	Ratio	Lower	Upper
76	100		
78	0.0	0.0	29.1
44	0.0	0.0	33.9

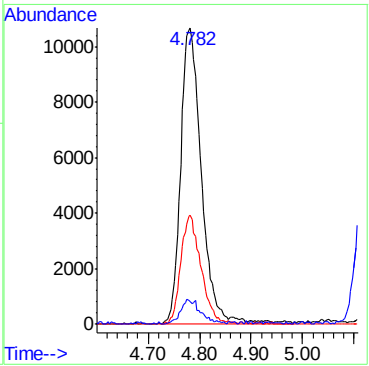


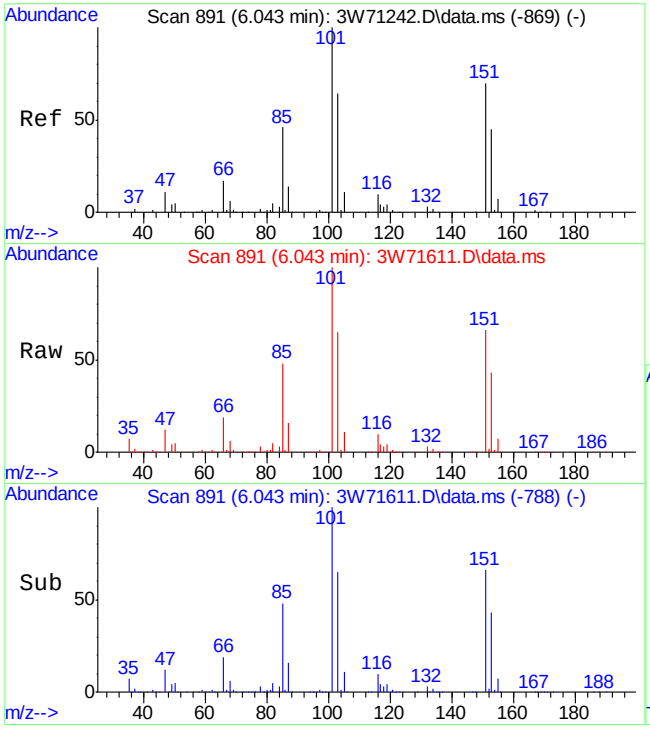


#28
ETHANOL
Concen: 5.77 PPBV
RT: 4.782 min Scan# 498
Delta R.T. 0.016 min
Lab File: 3W71611.D
Acq: 12 Feb 2020 1:43 am

Tgt Ion: 45 Resp: 30146

Ion	Ratio	Lower	Upper
45	100		
46	35.4	15.7	55.7
42	8.0	0.0	28.1

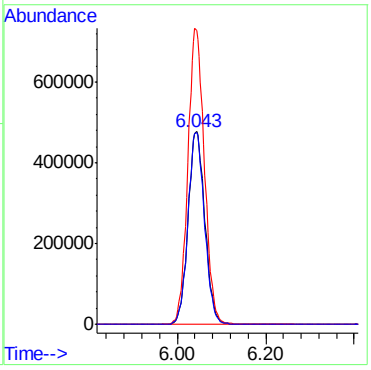


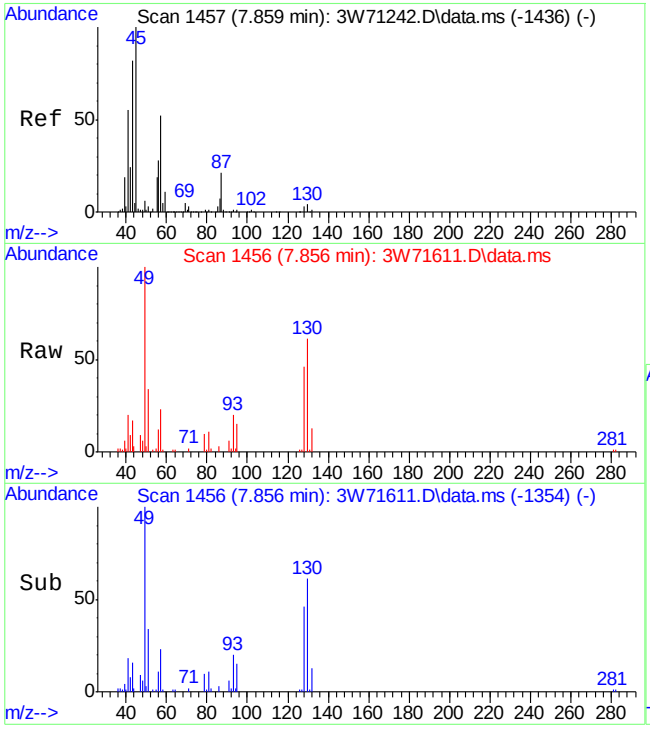


#33
FREON 113
Concen: 80.93 PPBV
RT: 6.043 min Scan# 891
Delta R.T. 0.000 min
Lab File: 3W71611.D
Acq: 12 Feb 2020 1:43 am

Tgt Ion:151 Resp: 1257572

Ion	Ratio	Lower	Upper
151	100		
101	150.7	123.1	163.1
103	98.0	71.8	111.8

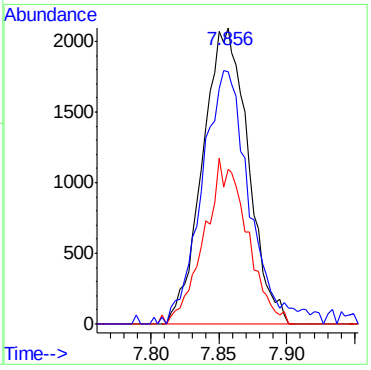


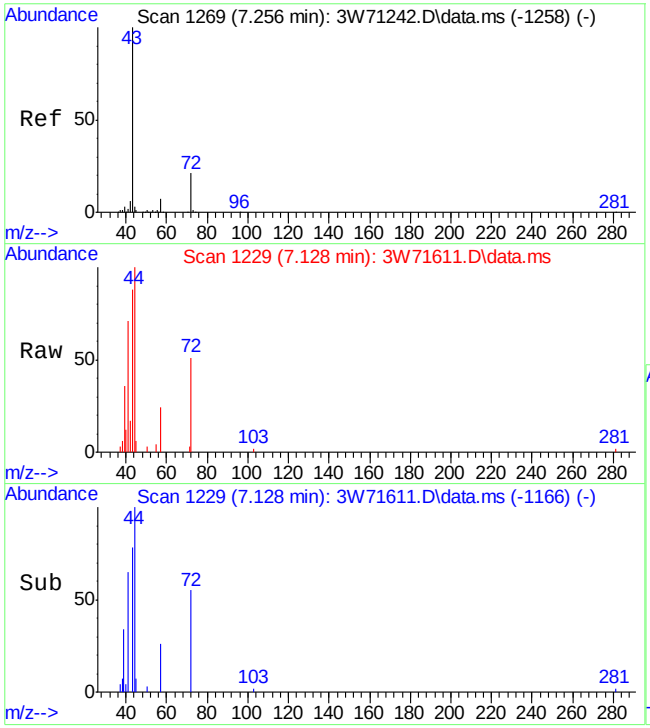


#38
HEXANE
Concen: 0.26 PPBV
RT: 7.856 min Scan# 1456
Delta R.T. -0.003 min
Lab File: 3W71611.D
Acq: 12 Feb 2020 1:43 am

Tgt Ion: 57 Resp: 4876

Ion	Ratio	Lower	Upper
57	100		
56	52.7	35.4	75.4
41	90.2	88.4	128.4

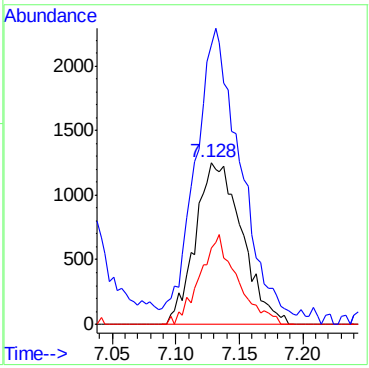


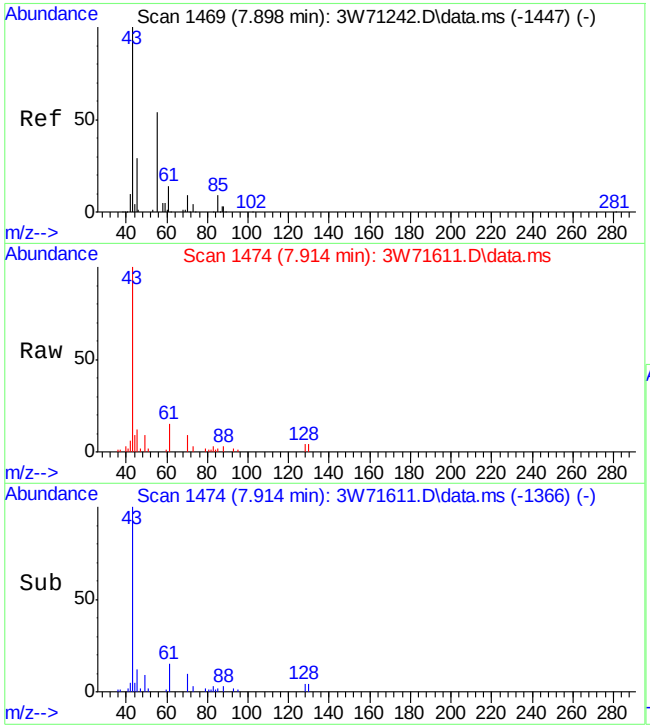


#41
METHYL ETHYL KETONE
Concen: 0.68 PPBV
RT: 7.128 min Scan# 1229
Delta R.T. -0.128 min
Lab File: 3W71611.D
Acq: 12 Feb 2020 1:43 am

Tgt Ion: 72 Resp: 3166

Ion	Ratio	Lower	Upper
72	100		
57	47.4	12.1	52.1
43	172.5	446.3	486.3#

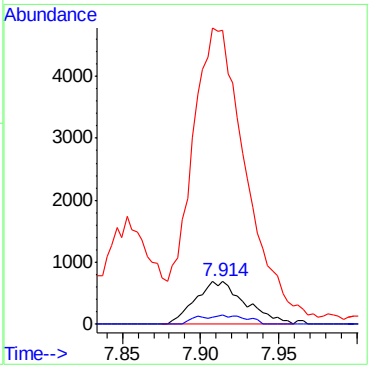


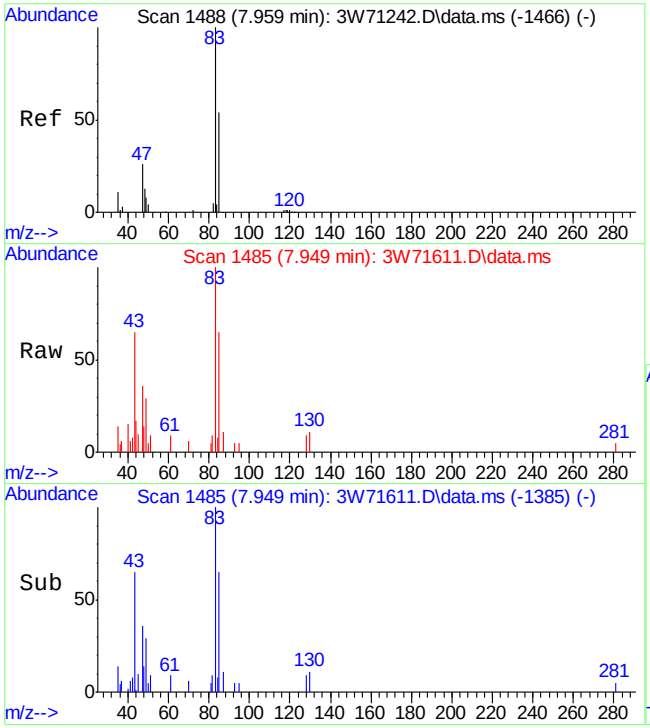


#44
ETHYL ACETATE
Concen: 0.47 PPBV
RT: 7.914 min Scan# 1474
Delta R.T. 0.016 min
Lab File: 3W71611.D
Acq: 12 Feb 2020 1:43 am

Tgt Ion: 61 Resp: 1533

Ion	Ratio	Lower	Upper
61	100		
43	749.8	0.0	20.0#
88	19.4	18.0	58.0

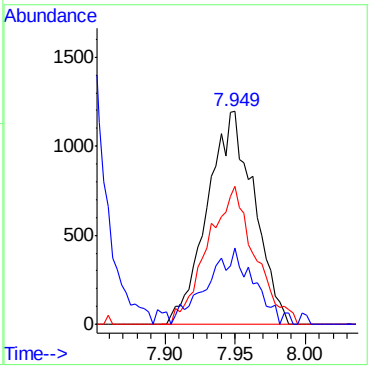


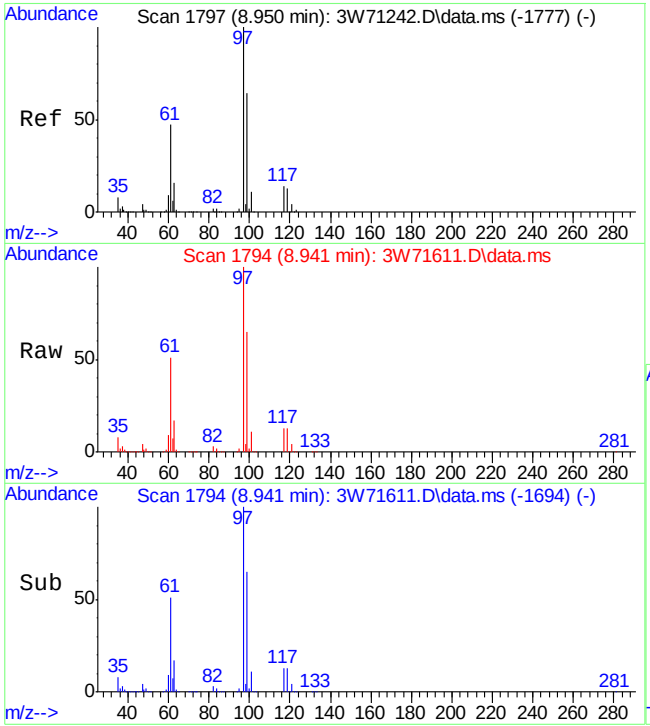


#46
CHLOROFORM
Concen: 0.12 PPBV
RT: 7.949 min Scan# 1485
Delta R.T. -0.010 min
Lab File: 3W71611.D
Acq: 12 Feb 2020 1:43 am

Tgt Ion: 83 Resp: 2745

Ion	Ratio	Lower	Upper
83	100		
85	65.1	45.0	85.0
47	34.6	6.0	46.0

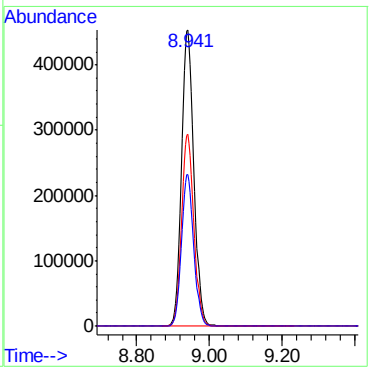


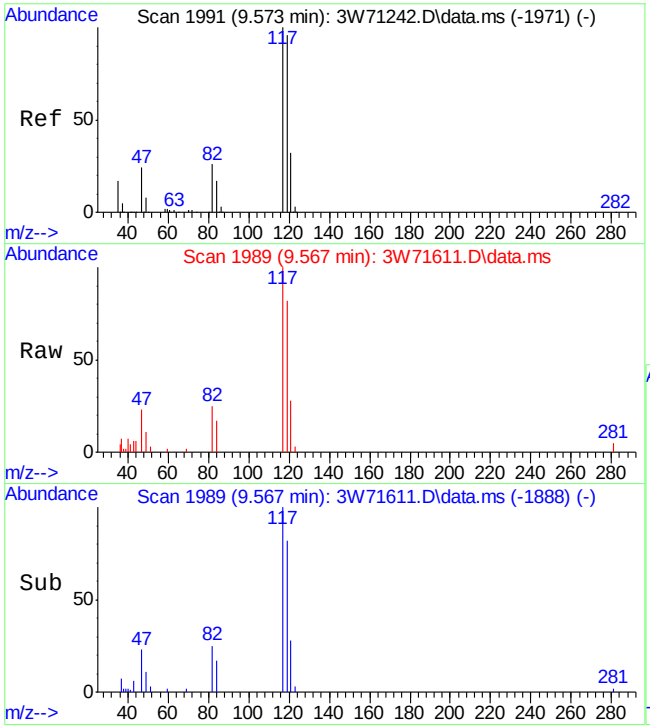


#48
1,1,1-TRICHLOROETHANE
Concen: 49.22 PPBV
RT: 8.941 min Scan# 1794
Delta R.T. -0.010 min
Lab File: 3W71611.D
Acq: 12 Feb 2020 1:43 am

Tgt Ion: 97 Resp: 1083362

Ion	Ratio	Lower	Upper
97	100		
99	64.7	43.9	83.9
61	50.9	27.8	67.8

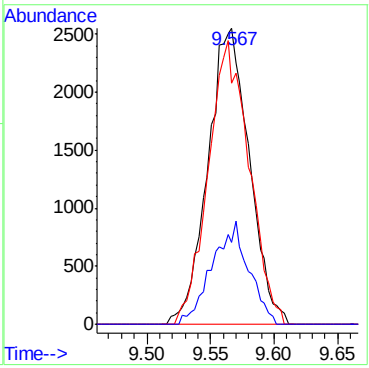


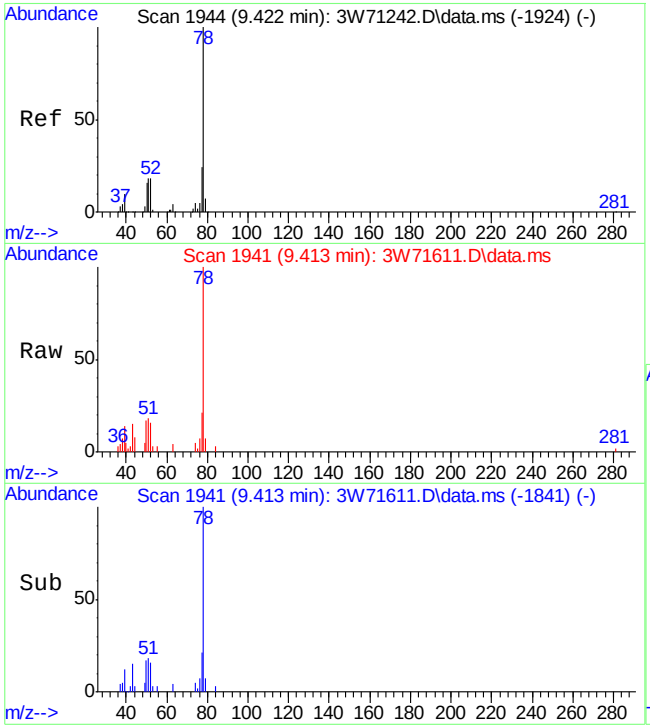


#49
CARBON TETRACHLORIDE
Concen: 0.28 PPBV
RT: 9.567 min Scan# 1989
Delta R.T. -0.006 min
Lab File: 3W71611.D
Acq: 12 Feb 2020 1:43 am

Tgt Ion:117 Resp: 5783

Ion	Ratio	Lower	Upper
117	100		
119	94.0	76.4	116.4
121	30.5	11.1	51.1

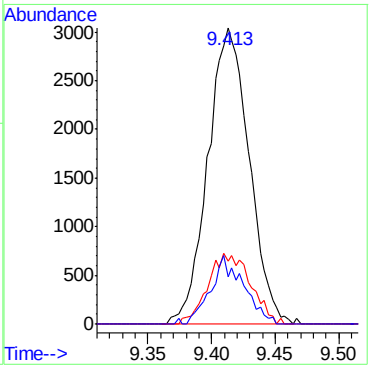


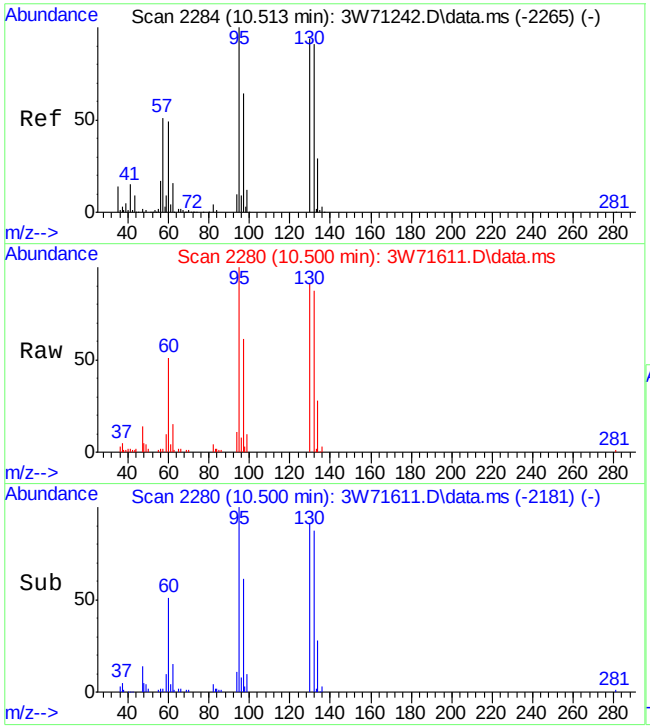


#52
BENZENE
Concen: 0.25 PPBV
RT: 9.413 min Scan# 1941
Delta R.T. -0.010 min
Lab File: 3W71611.D
Acq: 12 Feb 2020 1:43 am

Tgt Ion: 78 Resp: 6889

Ion	Ratio	Lower	Upper
78	100		
77	24.3	4.1	44.1
52	18.2	0.0	37.6

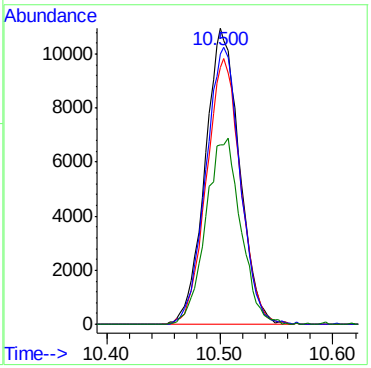


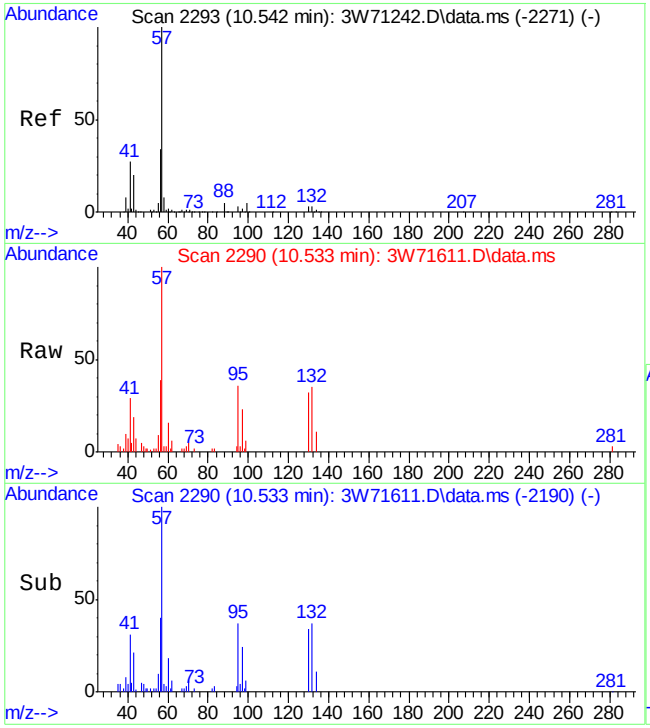


#55
TRICHLOROETHYLENE
Concen: 2.07 PPBV
RT: 10.500 min Scan# 2280
Delta R.T. -0.013 min
Lab File: 3W71611.D
Acq: 12 Feb 2020 1:43 am

Tgt Ion: 95 Resp: 23119

Ion	Ratio	Lower	Upper
95	100		
132	89.2	68.8	108.8
130	93.5	73.3	113.3
97	64.3	44.3	84.3

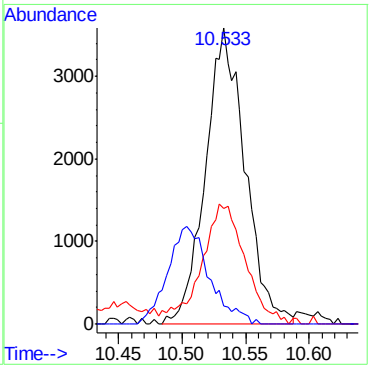


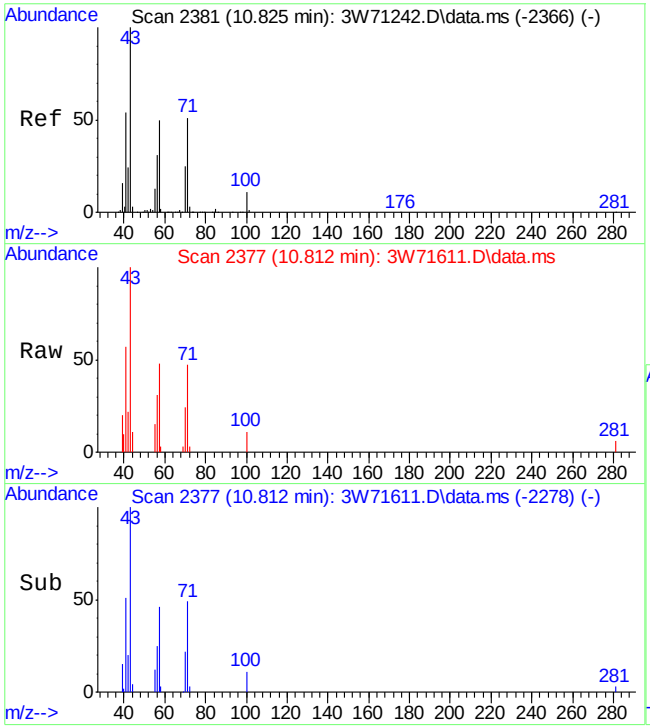


#60
2,2,4-TRIMETHYLPENTANE
Concen: 0.17 PPBV
RT: 10.533 min Scan# 2290
Delta R.T. -0.010 min
Lab File: 3W71611.D
Acq: 12 Feb 2020 1:43 am

Tgt Ion: 57 Resp: 7750

Ion	Ratio	Lower	Upper
57	100		
56	41.5	13.6	53.6
99	0.0	0.0	26.5

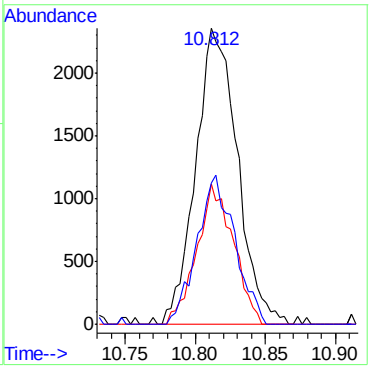


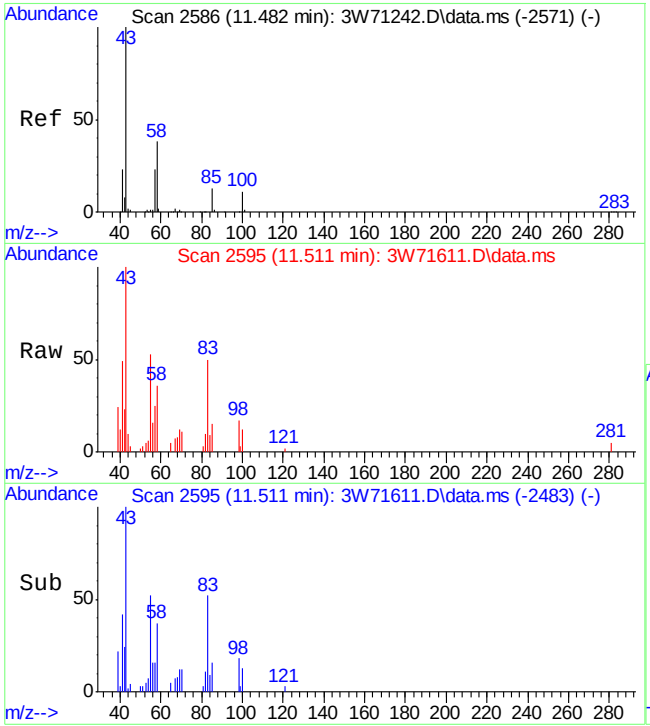


#62
HEPTANE
Concen: 0.27 PPBV
RT: 10.812 min Scan# 2377
Delta R.T. -0.013 min
Lab File: 3W71611.D
Acq: 12 Feb 2020 1:43 am

Tgt Ion: 43 Resp: 4793

Ion	Ratio	Lower	Upper
43	100		
71	41.4	30.4	70.4
57	45.4	29.9	69.9

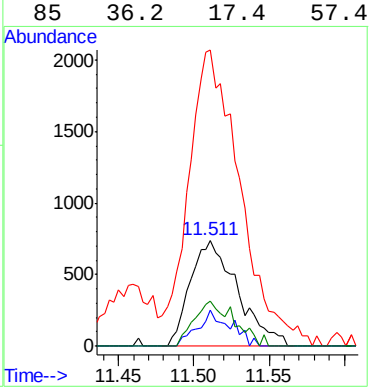


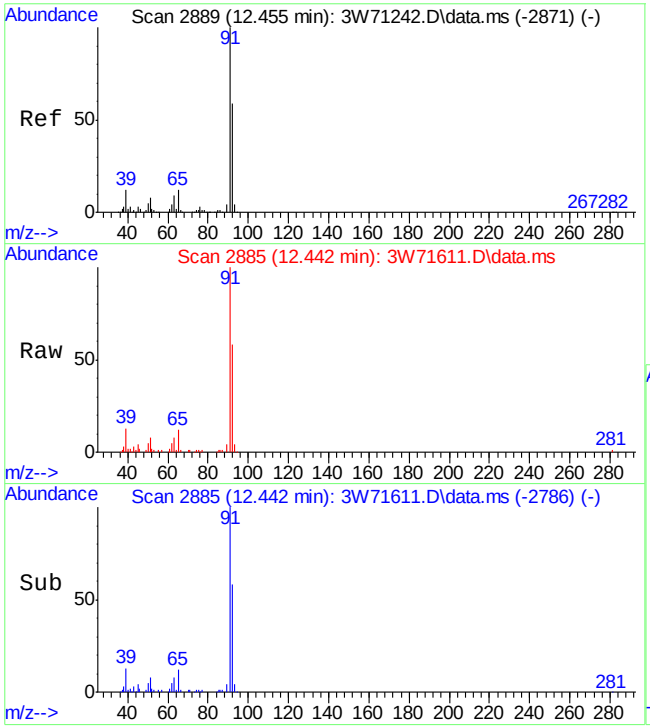


#64
METHYL ISOBUTYL KETONE
Concen: 0.24 PPBV
RT: 11.511 min Scan# 2595
Delta R.T. 0.029 min
Lab File: 3W71611.D
Acq: 12 Feb 2020 1:43 am

Tgt Ion: 58 Resp: 1614

Ion	Ratio	Lower	Upper
58	100		
43	305.4	244.4	284.4#
100	23.5	8.7	48.7
85	36.2	17.4	57.4

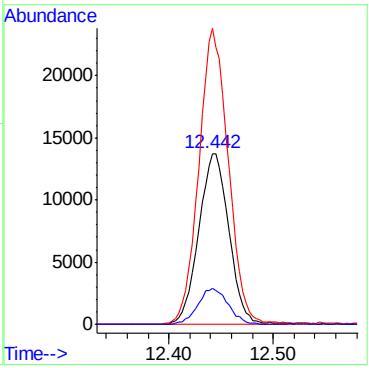


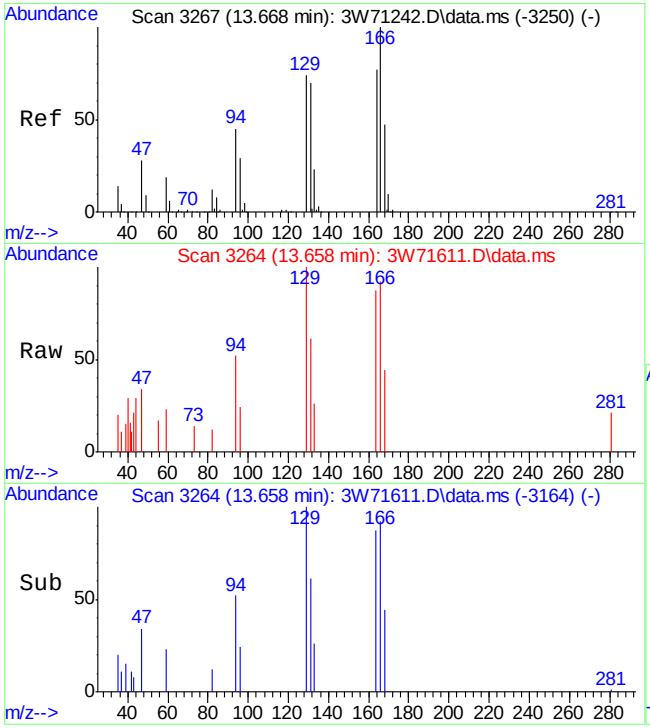


#66
TOLUENE
Concen: 1.59 PPBV
RT: 12.442 min Scan# 2885
Delta R.T. -0.013 min
Lab File: 3W71611.D
Acq: 12 Feb 2020 1:43 am

Tgt Ion: 92 Resp: 27428

Ion	Ratio	Lower	Upper
92	100		
91	169.7	150.3	190.3
65	21.2	4.0	44.0

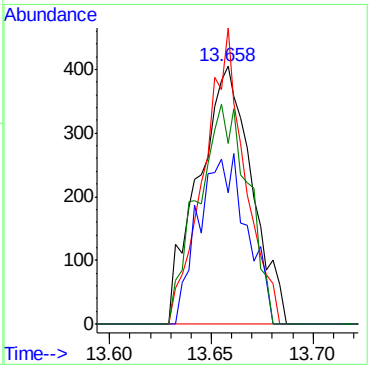


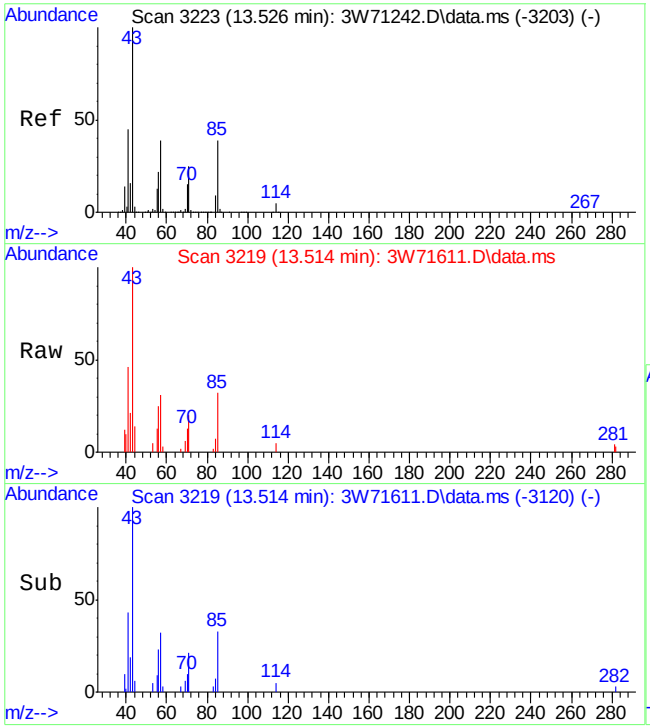


#73
TETRACHLOROETHYLENE
Concen: 0.08 PPBV
RT: 13.658 min Scan# 3264
Delta R.T. -0.010 min
Lab File: 3W71611.D
Acq: 12 Feb 2020 1:43 am

Tgt Ion:164 Resp: 737

Ion	Ratio	Lower	Upper
164	100		
129	87.7	75.3	115.3
168	59.8	41.2	81.2
131	80.5	71.6	111.6

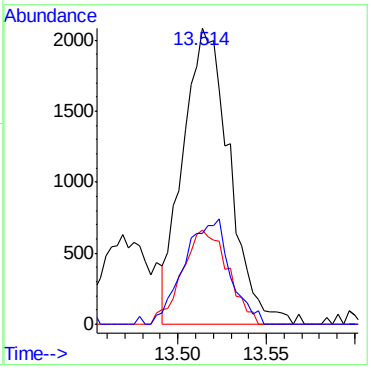


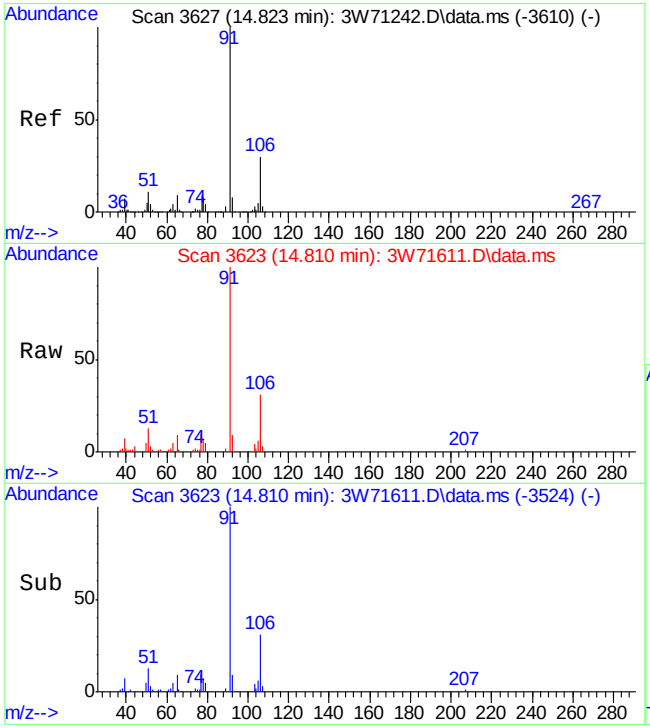


#76
OCTANE
Concen: 0.18 PPBV
RT: 13.514 min Scan# 3219
Delta R.T. -0.013 min
Lab File: 3W71611.D
Acq: 12 Feb 2020 1:43 am

Tgt Ion: 43 Resp: 3806

Ion	Ratio	Lower	Upper
43	100		
85	31.2	18.0	58.0
57	34.9	18.5	58.5

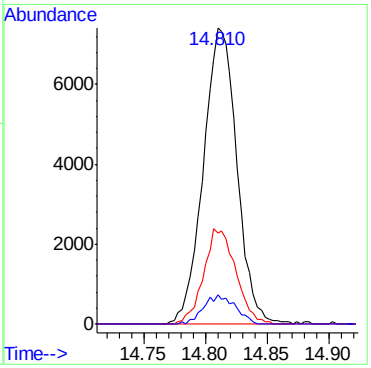


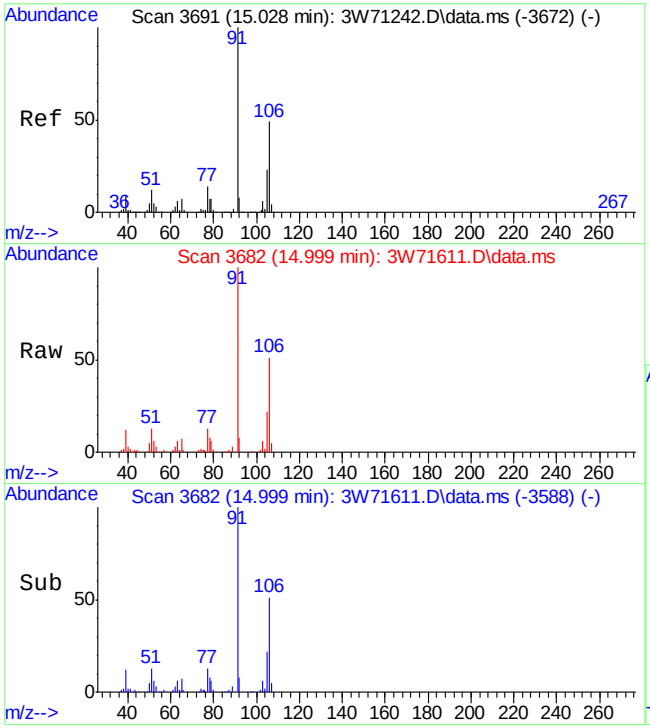


#79
ETHYLBENZENE
Concen: 0.43 PPBV
RT: 14.810 min Scan# 3623
Delta R.T. -0.013 min
Lab File: 3W71611.D
Acq: 12 Feb 2020 1:43 am

Tgt Ion: 91 Resp: 14079

Ion	Ratio	Lower	Upper
91	100		
106	30.8	10.2	50.2
77	9.3	0.0	29.0

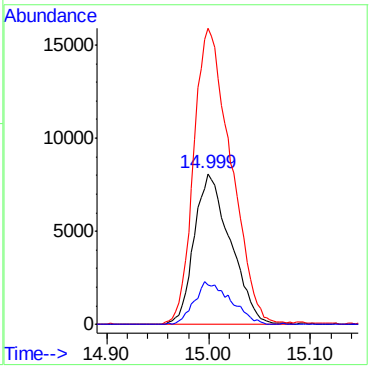


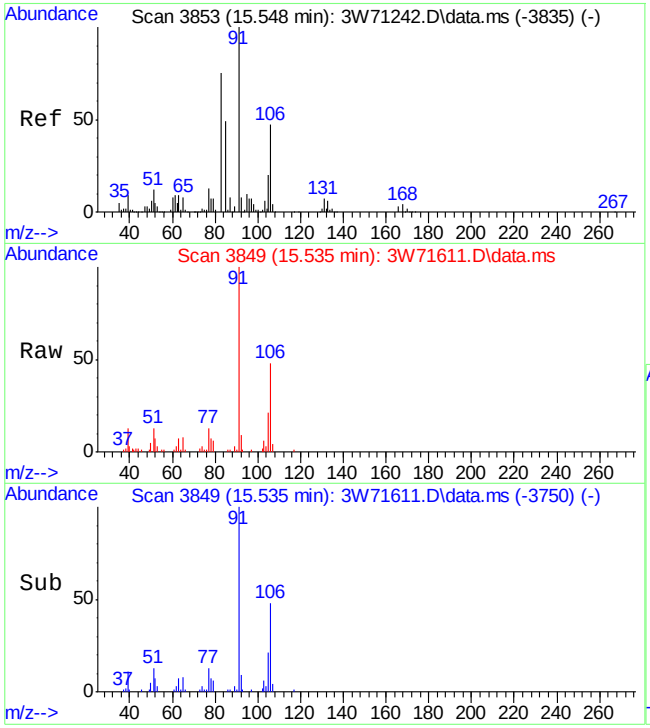


#80
m,p-XYLENE
Concen: 1.80 PPBV
RT: 14.999 min Scan# 3682
Delta R.T. -0.029 min
Lab File: 3W71611.D
Acq: 12 Feb 2020 1:43 am

Tgt Ion:106 Resp: 19963

Ion	Ratio	Lower	Upper
106	100		
91	196.9	185.1	225.1
77	25.8	8.5	48.5

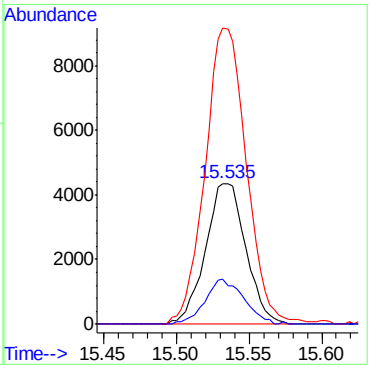


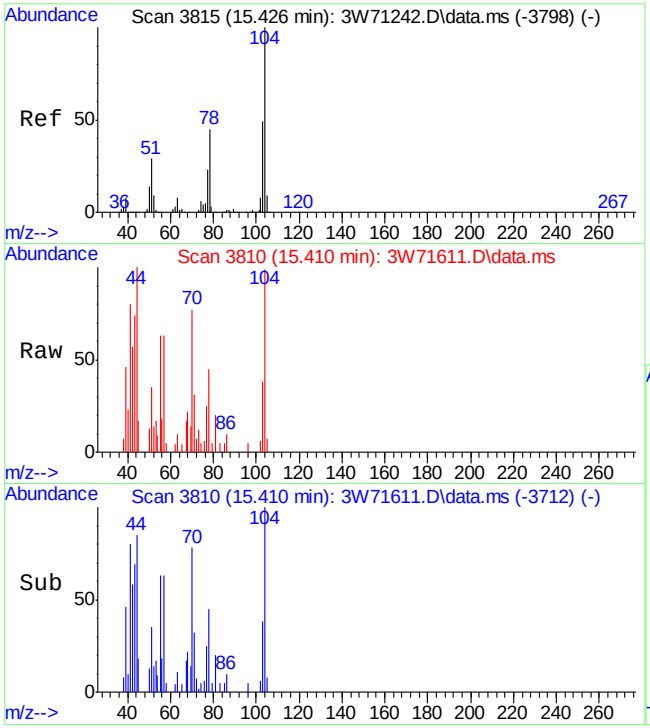


#81
o-XYLENE
Concen: 0.70 PPBV
RT: 15.535 min Scan# 3849
Delta R.T. -0.013 min
Lab File: 3W71611.D
Acq: 12 Feb 2020 1:43 am

Tgt Ion:106 Resp: 8364

Ion	Ratio	Lower	Upper
106	100		
91	216.4	196.3	236.3
77	30.4	8.4	48.4

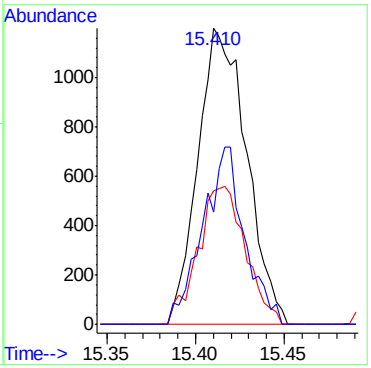


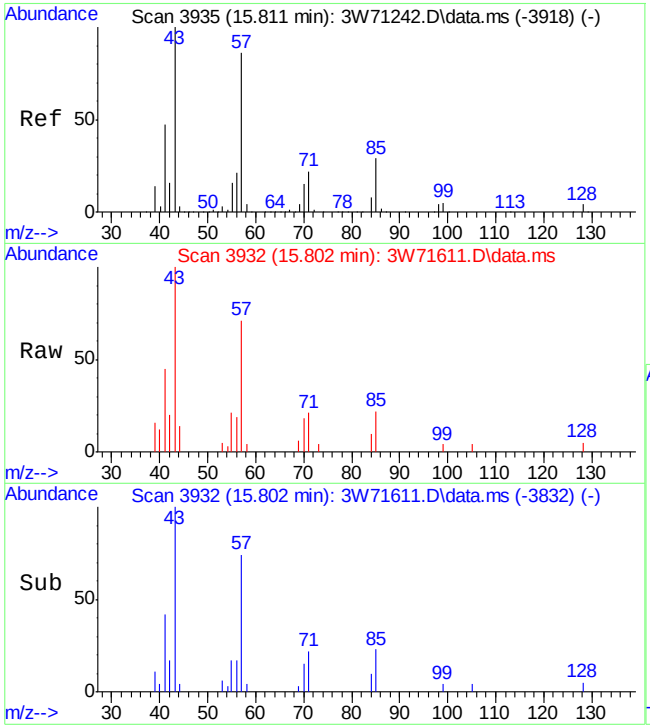


#82
STYRENE
Concen: 0.15 PPBV
RT: 15.410 min Scan# 3810
Delta R.T. -0.016 min
Lab File: 3W71611.D
Acq: 12 Feb 2020 1:43 am

Tgt Ion:104 Resp: 2305

Ion	Ratio	Lower	Upper
104	100		
78	45.4	25.2	65.2
103	51.5	28.5	68.5

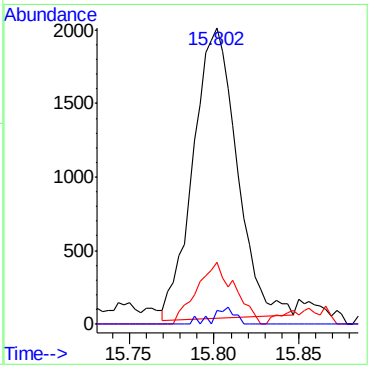


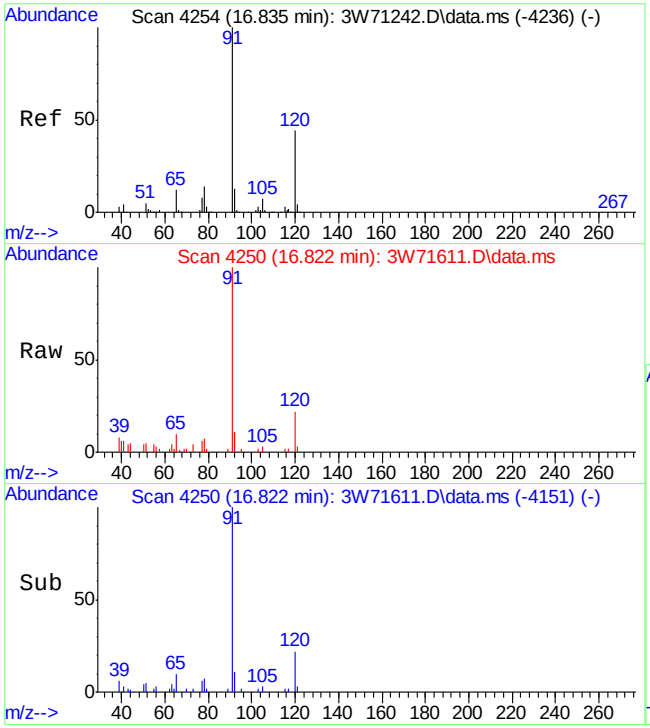


#83
NONANE
Concen: 0.19 PPBV
RT: 15.802 min Scan# 3932
Delta R.T. -0.010 min
Lab File: 3W71611.D
Acq: 12 Feb 2020 1:43 am

Tgt Ion: 43 Resp: 3529

Ion	Ratio	Lower	Upper
43	100		
71	18.4	1.7	41.7
128	0.0	0.0	24.2

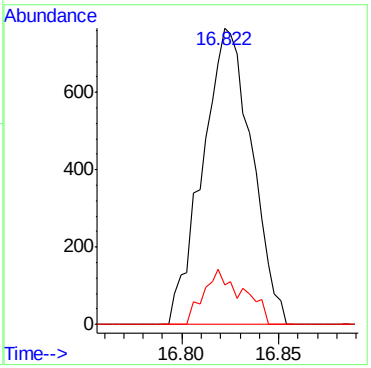


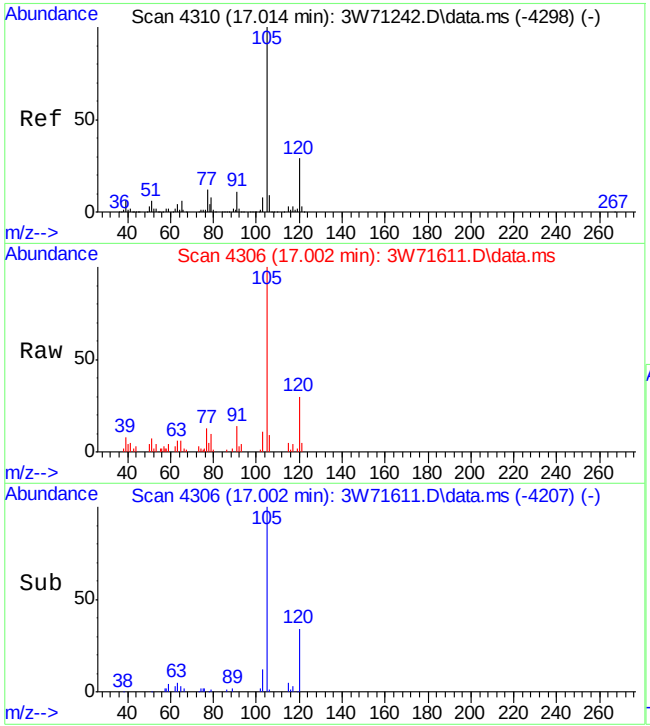


#91
n-PROPYLBENZENE
Concen: 0.19 PPBV
RT: 16.822 min Scan# 4250
Delta R.T. -0.013 min
Lab File: 3W71611.D
Acq: 12 Feb 2020 1:43 am

Tgt Ion:120 Resp: 1345

Ion	Ratio	Lower	Upper
120	100		
105	14.7	0.0	37.1

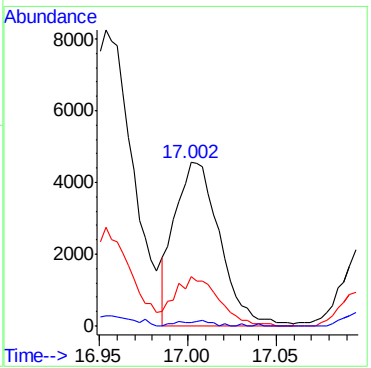


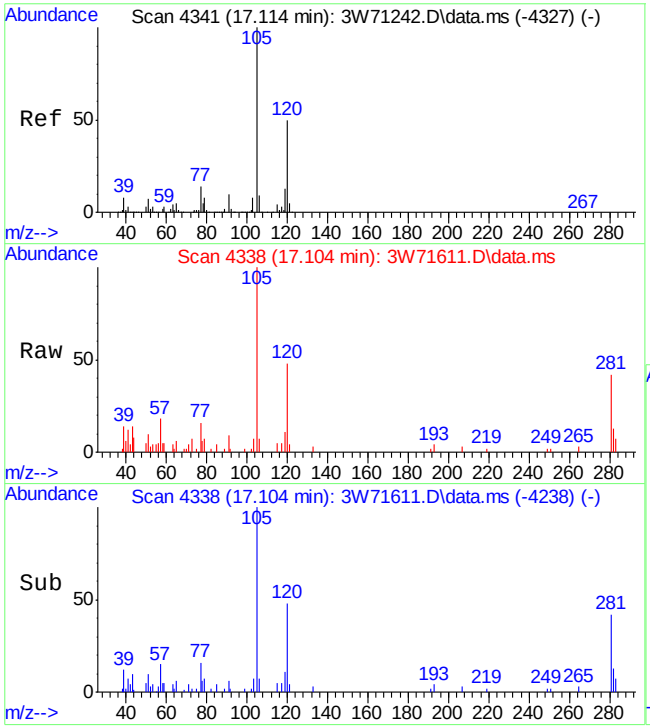


#92
4-ETHYLTOLUENE
Concen: 0.32 PPBV
RT: 17.002 min Scan# 4306
Delta R.T. -0.013 min
Lab File: 3W71611.D
Acq: 12 Feb 2020 1:43 am

Tgt Ion:105 Resp: 8049

Ion	Ratio	Lower	Upper
105	100		
120	28.9	9.2	49.2
119	2.5	0.0	22.4

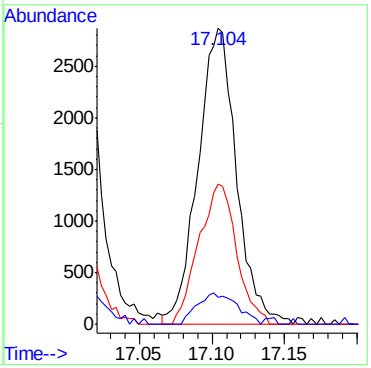


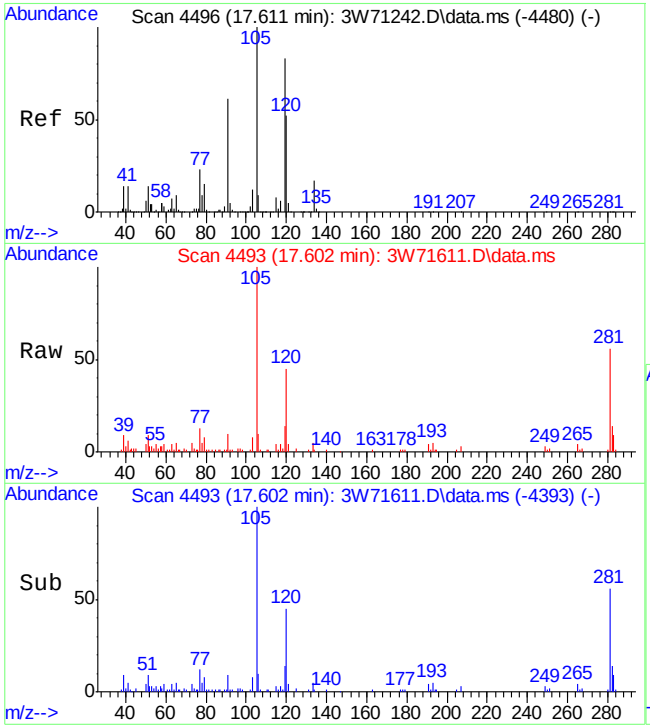


#93
1,3,5-TRIMETHYLBENZENE
Concen: 0.24 PPBV
RT: 17.104 min Scan# 4338
Delta R.T. -0.010 min
Lab File: 3W71611.D
Acq: 12 Feb 2020 1:43 am

Tgt Ion:105 Resp: 5265

Ion	Ratio	Lower	Upper
105	100		
120	46.5	29.2	69.2
91	10.9	0.0	30.4

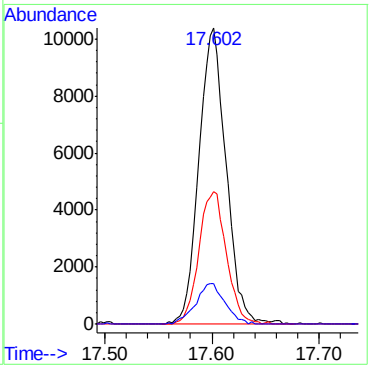


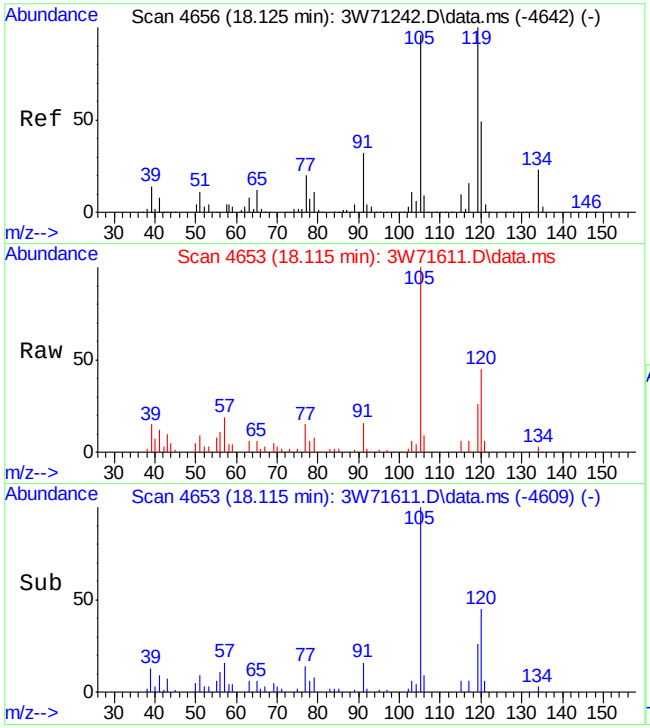


#96
1,2,4-TRIMETHYLBENZENE
Concen: 0.89 PPBV
RT: 17.602 min Scan# 4493
Delta R.T. -0.010 min
Lab File: 3W71611.D
Acq: 12 Feb 2020 1:43 am

Tgt Ion:105 Resp: 18292

Ion	Ratio	Lower	Upper
105	100		
120	45.4	34.7	74.7
119	14.8	87.2	127.2#

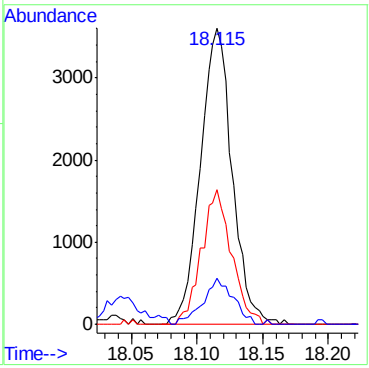




#101
1,2,3-Trimethylbenzene
Concen: 0.29 PPBV
RT: 18.115 min Scan# 4653
Delta R.T. -0.010 min
Lab File: 3W71611.D
Acq: 12 Feb 2020 1:43 am

Tgt Ion:105 Resp: 6077

Ion	Ratio	Lower	Upper
105	100		
120	43.1	31.7	71.7
91	14.7	16.7	56.7#



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\
Data File : 3W71625.D
Acq On : 12 Feb 2020 3:14 pm
Operator : danat
Sample : jd2616-1
Misc : MS40889,V3W2807,158,,,,1.58
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Feb 13 14:42:41 2020
Quant Method : C:\msdchem\1\METHODS\M3W2789.M
Quant Title : TO15 by GCMS w/Rtx-1, 60 m X 0.32mm ID X 1.0 um
QLast Update : Wed Jan 15 09:18:27 2020
Response via : Initial Calibration

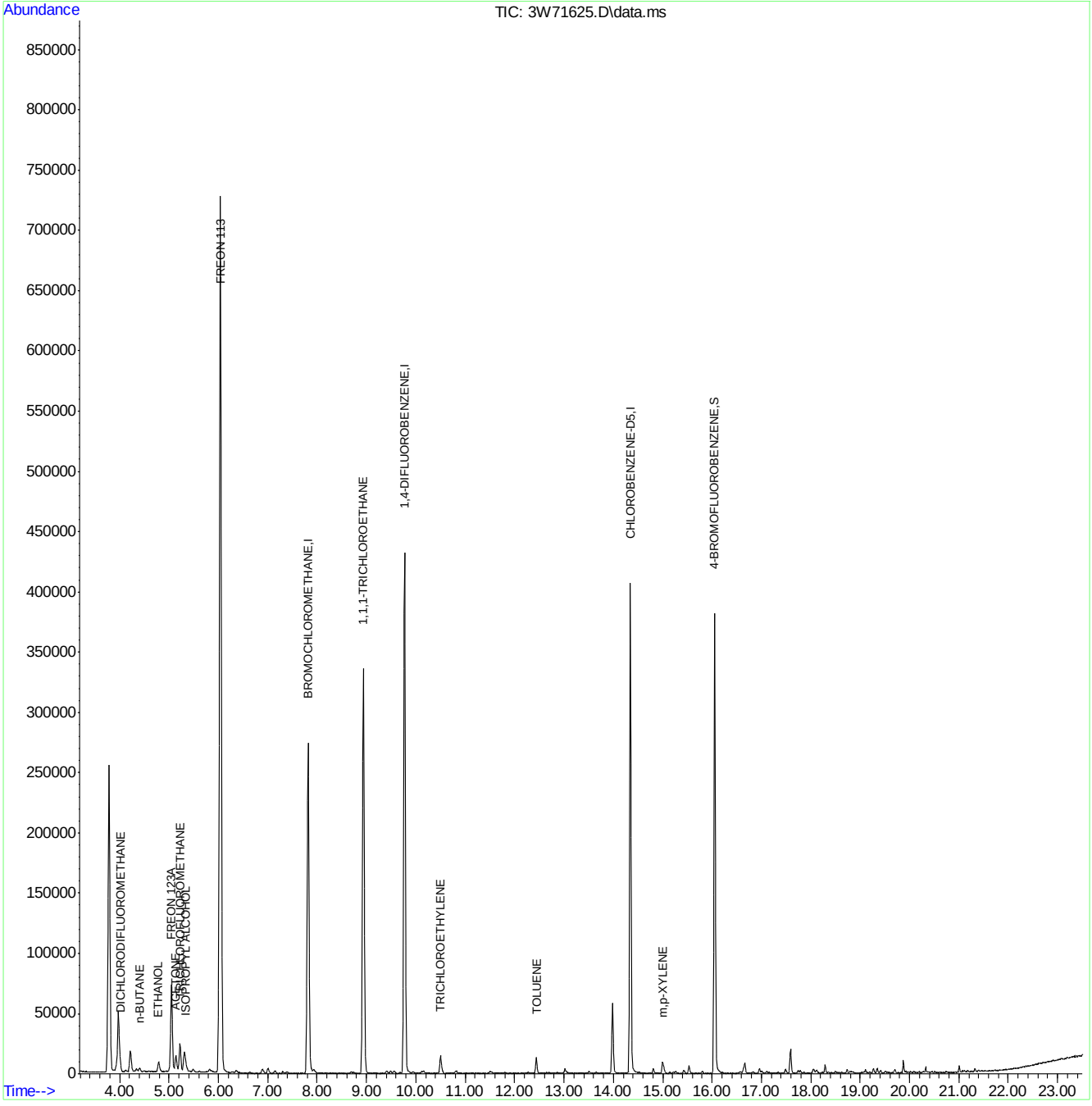
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) BROMOCHLOROMETHANE	7.818	128	91373	10.00	PPBV	-0.01
51) 1,4-DIFLUOROBENZENE	9.769	114	395412	10.00	PPBV	-0.02
70) CHLOROBENZENE-D5	14.345	82	153054	10.00	PPBV	-0.01
System Monitoring Compounds						
85) 4-BROMOFLUOROBENZENE	16.052	95	150725	8.97	PPBV	-0.01
Spiked Amount 10.000	Range 65 - 128		Recovery = 89.70%			
Target Compounds						Qvalue
6) DICHLORODIFLUOROMETHANE	4.009	85	11541	0.37	PPBV	99
13) n-BUTANE	4.403	43	3551	0.15	PPBV #	95
20) FREON 123A	5.048	117	27571	2.09	PPBV	99
21) TRICHLOROFLUOROMETHANE	5.222	101	24234	0.89	PPBV	99
22) ISOPROPYL ALCOHOL	5.337	45	16698	0.73	PPBV	99
23) ACETONE	5.138	58	7606	1.41	PPBV #	65
28) ETHANOL	4.789	45	11794	2.14	PPBV	97
33) FREON 113	6.037	151	293783	17.92	PPBV	98
48) 1,1,1-TRICHLOROETHANE	8.938	97	258503	11.13	PPBV	99
55) TRICHLOROETHYLENE	10.500	95	5469	0.39	PPBV	96
66) TOLUENE	12.445	92	5976	0.28	PPBV	99
80) m,p-XYLENE	14.999	106	4175	0.35	PPBV	96

(#) = qualifier out of range (m) = manual integration (+) = signals summed

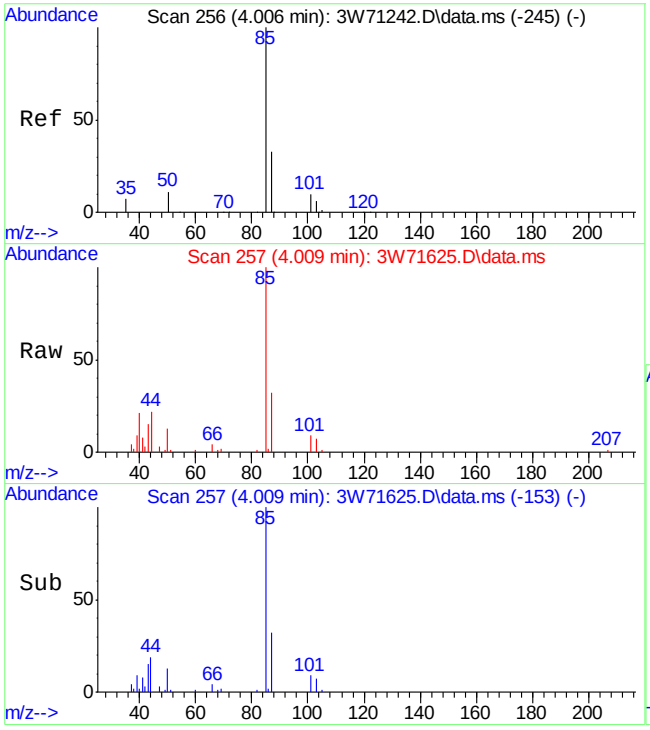
Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\
Data File : 3W71625.D
Acq On : 12 Feb 2020 3:14 pm
Operator : danat
Sample : jd2616-1
Misc : MS40889,V3W2807,158,,,,1.58
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Feb 13 14:42:41 2020
Quant Method : C:\msdchem\1\METHODS\M3W2789.M
Quant Title : TO15 by GCMS w/Rtx-1, 60 m X 0.32mm ID X 1.0 um
QLast Update : Wed Jan 15 09:18:27 2020
Response via : Initial Calibration



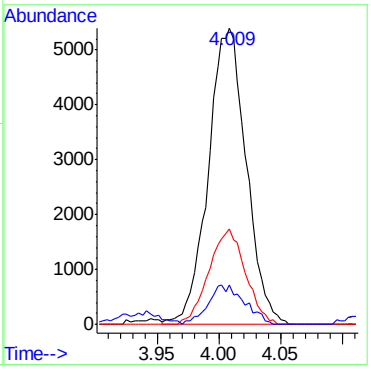
M3W2789.M Thu Feb 13 14:42:55 2020 GCMS6W Page: 2

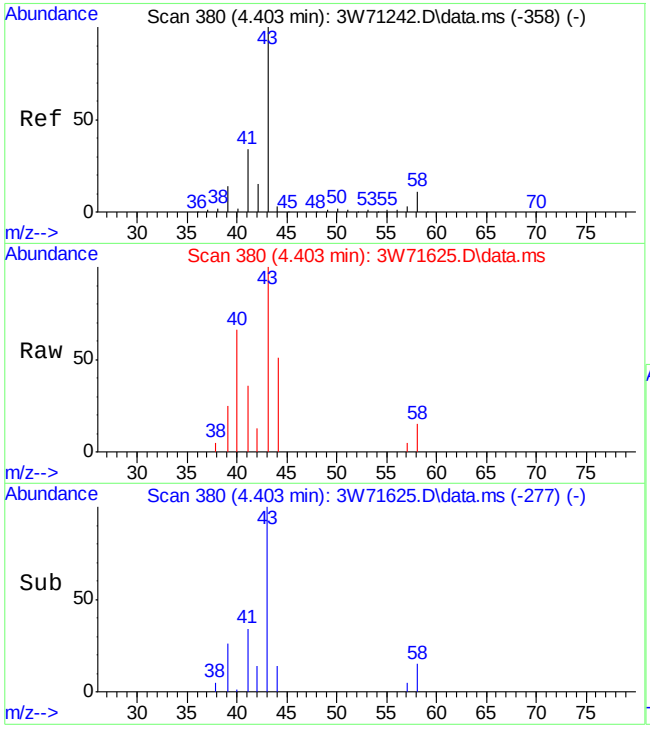


#6
DICHLORODIFLUOROMETHANE
Concen: 0.37 PPBV
RT: 4.009 min Scan# 257
Delta R.T. 0.003 min
Lab File: 3W71625.D
Acq: 12 Feb 2020 3:14 pm

Tgt Ion: 85 Resp: 11541

Ion	Ratio	Lower	Upper
85	100		
87	31.1	12.2	52.2
50	12.7	0.0	32.7

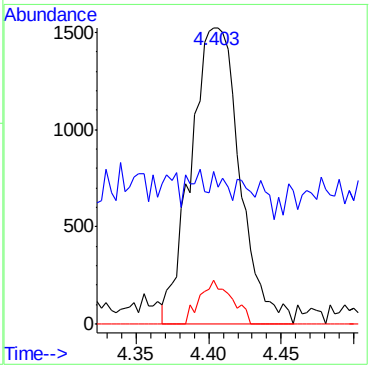


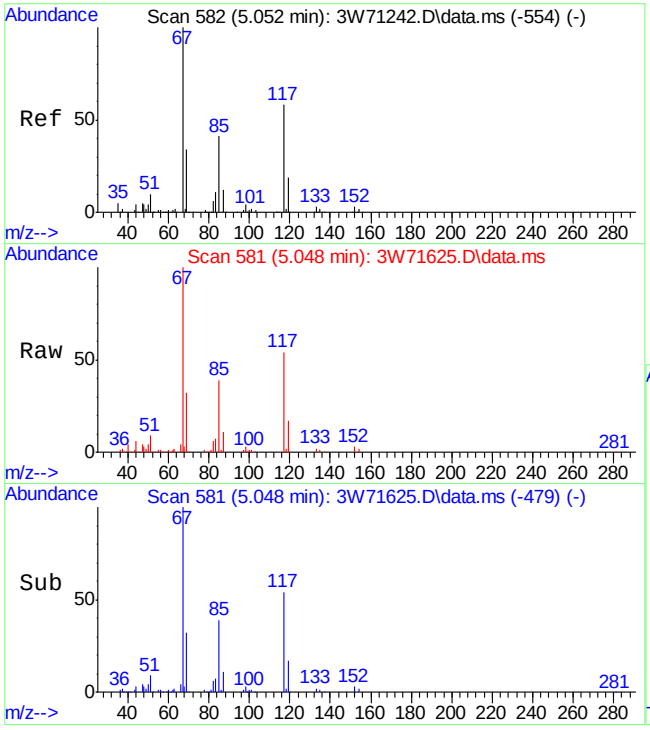


#13
n-BUTANE
Concen: 0.15 PPBV
RT: 4.403 min Scan# 380
Delta R.T. -0.000 min
Lab File: 3W71625.D
Acq: 12 Feb 2020 3:14 pm

Tgt Ion: 43 Resp: 3551

Ion	Ratio	Lower	Upper
43	100		
58	9.6	0.0	30.9
44	0.0	0.0	23.6

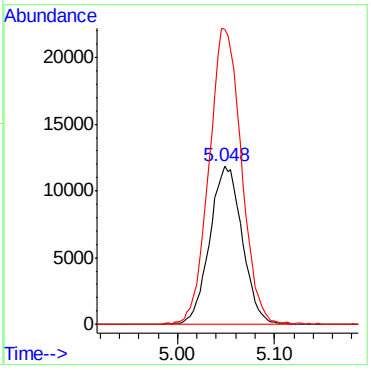


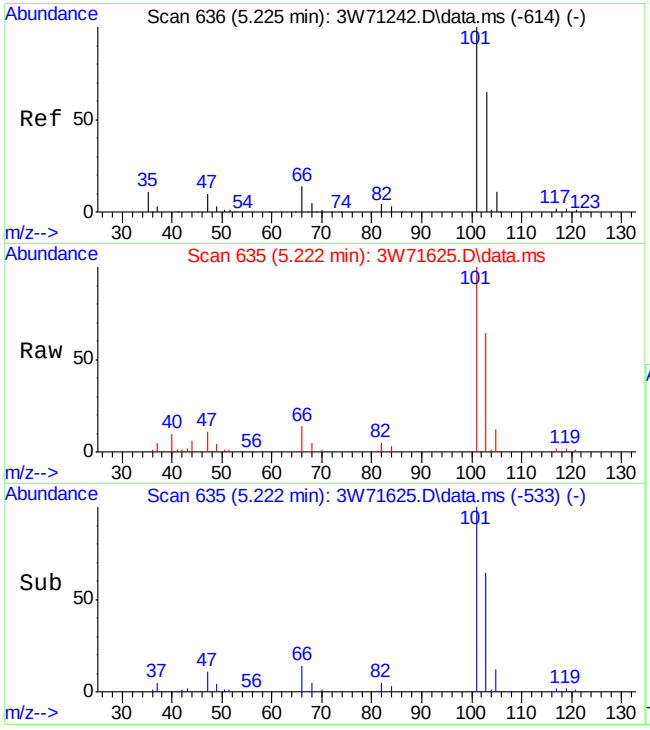


#20
FREON 123A
Concen: 2.09 PPBV
RT: 5.048 min Scan# 581
Delta R.T. -0.003 min
Lab File: 3W71625.D
Acq: 12 Feb 2020 3:14 pm

Tgt Ion:117 Resp: 27571

Ion	Ratio	Lower	Upper
117	100		
67	186.6	167.4	207.4

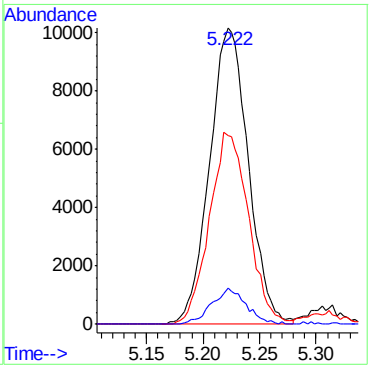


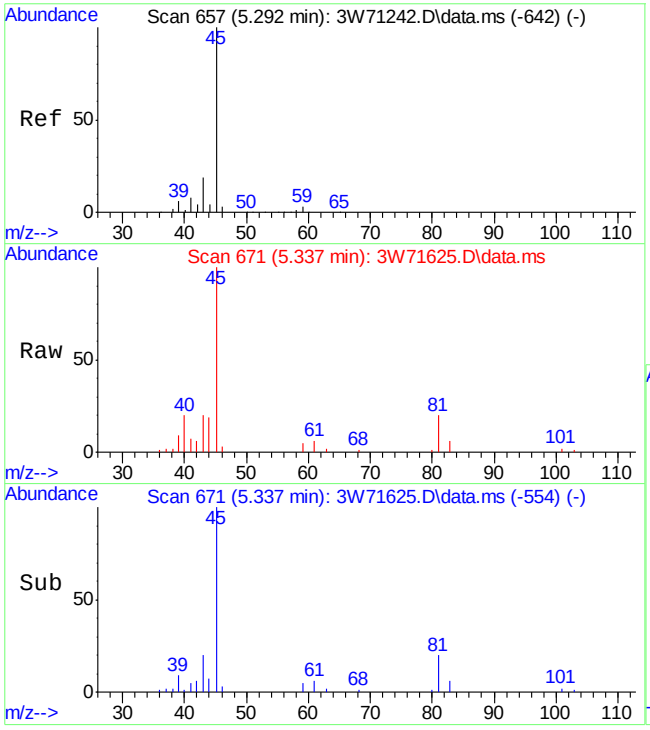


#21
TRICHLOROFLUOROMETHANE
Concen: 0.89 PPBV
RT: 5.222 min Scan# 635
Delta R.T. -0.003 min
Lab File: 3W71625.D
Acq: 12 Feb 2020 3:14 pm

Tgt Ion:101 Resp: 24234

Ion	Ratio	Lower	Upper
101	100		
103	65.1	44.5	84.5
105	10.7	0.0	30.5

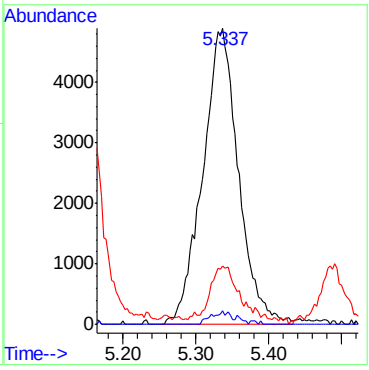


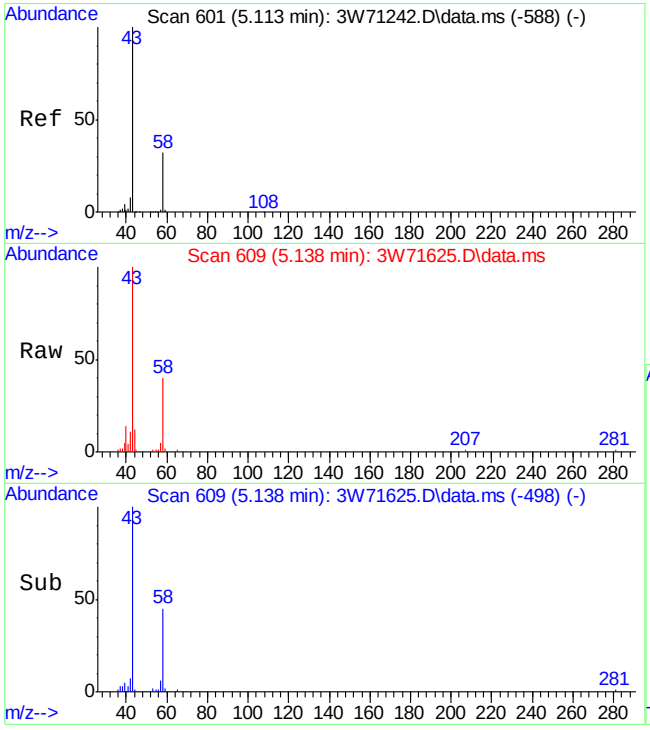


#22
ISOPROPYL ALCOHOL
Concen: 0.73 PPBV
RT: 5.337 min Scan# 671
Delta R.T. 0.045 min
Lab File: 3W71625.D
Acq: 12 Feb 2020 3:14 pm

Tgt Ion: 45 Resp: 16698

Ion	Ratio	Lower	Upper
45	100		
43	19.6	0.0	39.5
59	4.5	0.0	23.5

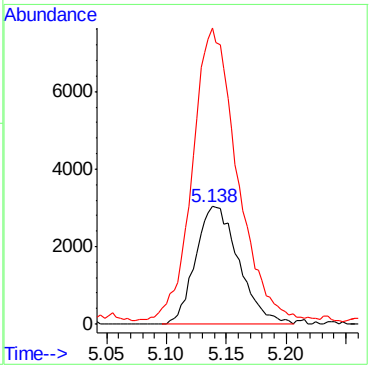


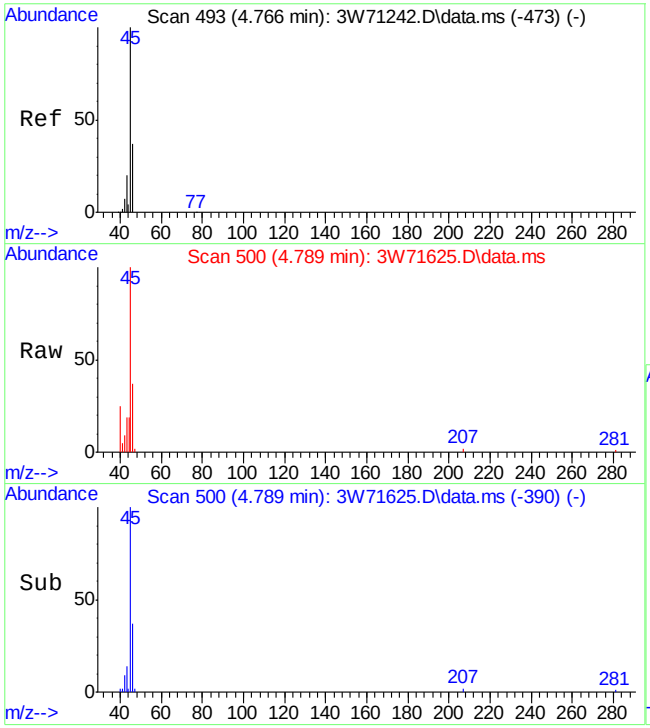


#23
ACETONE
Concen: 1.41 PPBV
RT: 5.138 min Scan# 609
Delta R.T. 0.026 min
Lab File: 3W71625.D
Acq: 12 Feb 2020 3:14 pm

Tgt Ion: 58 Resp: 7606

Ion	Ratio	Lower	Upper
58	100		
43	258.3	311.7	351.7#

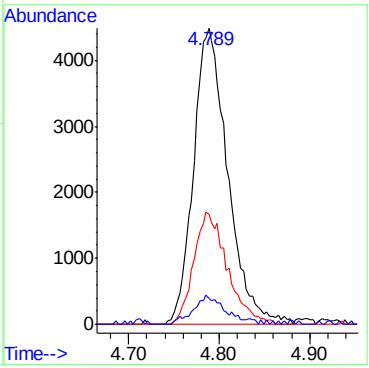


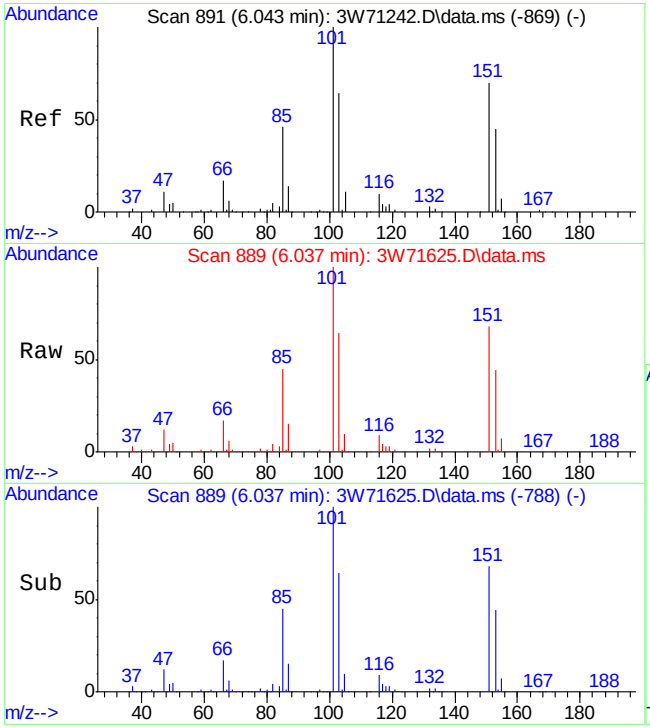


#28
ETHANOL
Concen: 2.14 PPBV
RT: 4.789 min Scan# 500
Delta R.T. 0.023 min
Lab File: 3W71625.D
Acq: 12 Feb 2020 3:14 pm

Tgt Ion: 45 Resp: 11794

Ion	Ratio	Lower	Upper
45	100		
46	37.2	15.7	55.7
42	9.1	0.0	28.1

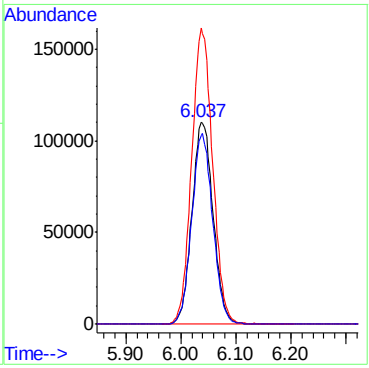


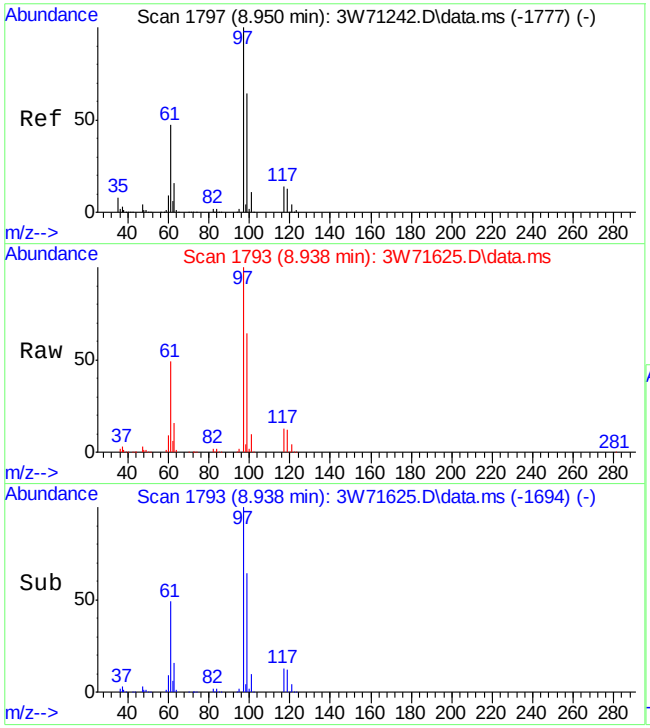


#33
FREON 113
Concen: 17.92 PPBV
RT: 6.037 min Scan# 889
Delta R.T. -0.006 min
Lab File: 3W71625.D
Acq: 12 Feb 2020 3:14 pm

Tgt Ion:151 Resp: 293783

Ion	Ratio	Lower	Upper
151	100		
101	145.2	123.1	163.1
103	93.6	71.8	111.8

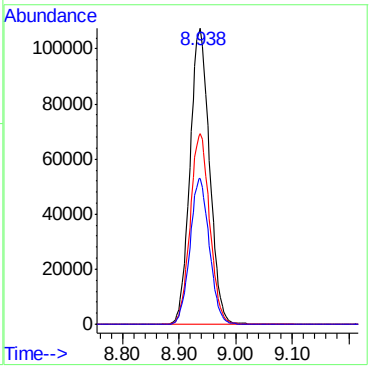


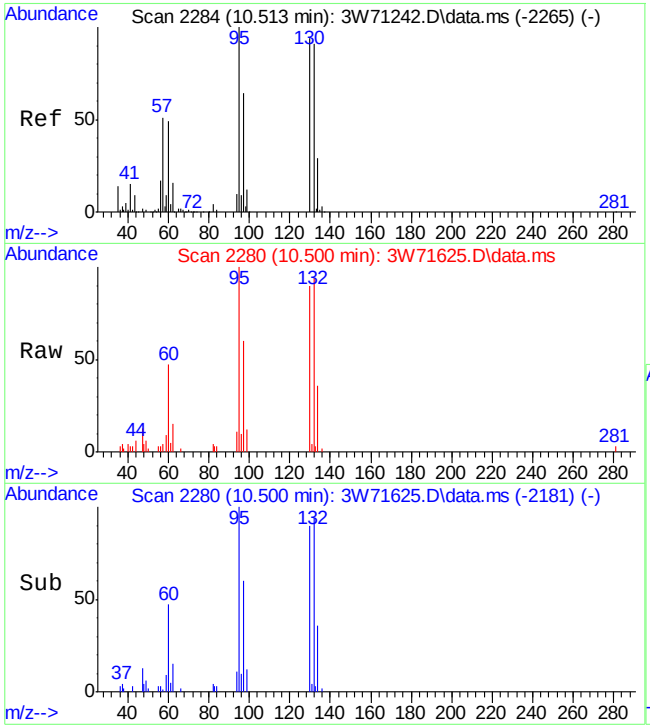


#48
1,1,1-TRICHLOROETHANE
Concen: 11.13 PPBV
RT: 8.938 min Scan# 1793
Delta R.T. -0.013 min
Lab File: 3W71625.D
Acq: 12 Feb 2020 3:14 pm

Tgt Ion: 97 Resp: 258503

Ion	Ratio	Lower	Upper
97	100		
99	64.4	43.9	83.9
61	48.9	27.8	67.8

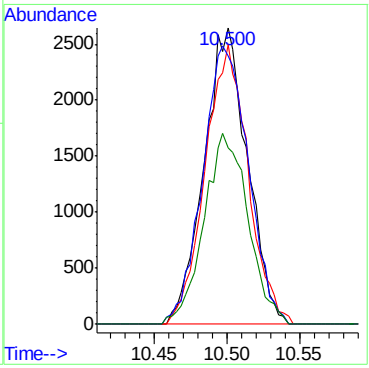


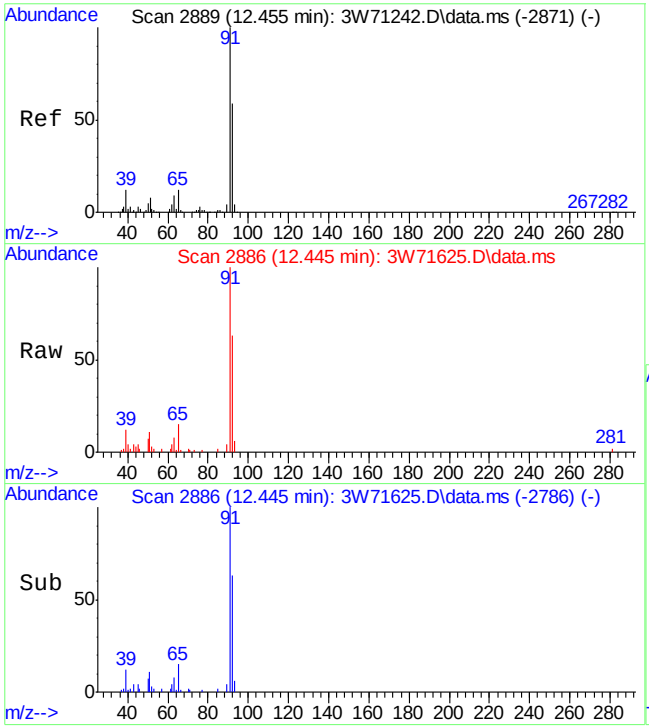


#55
TRICHLOROETHYLENE
Concen: 0.39 PPBV
RT: 10.500 min Scan# 2280
Delta R.T. -0.013 min
Lab File: 3W71625.D
Acq: 12 Feb 2020 3:14 pm

Tgt Ion: 95 Resp: 5469

Ion	Ratio	Lower	Upper
95	100		
132	93.5	68.8	108.8
130	98.9	73.3	113.3
97	65.6	44.3	84.3

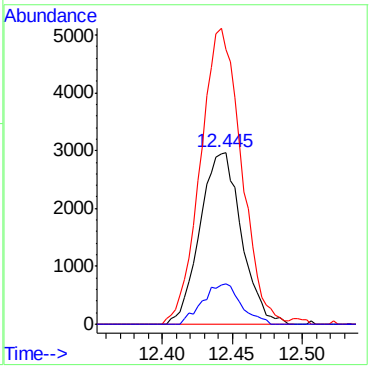


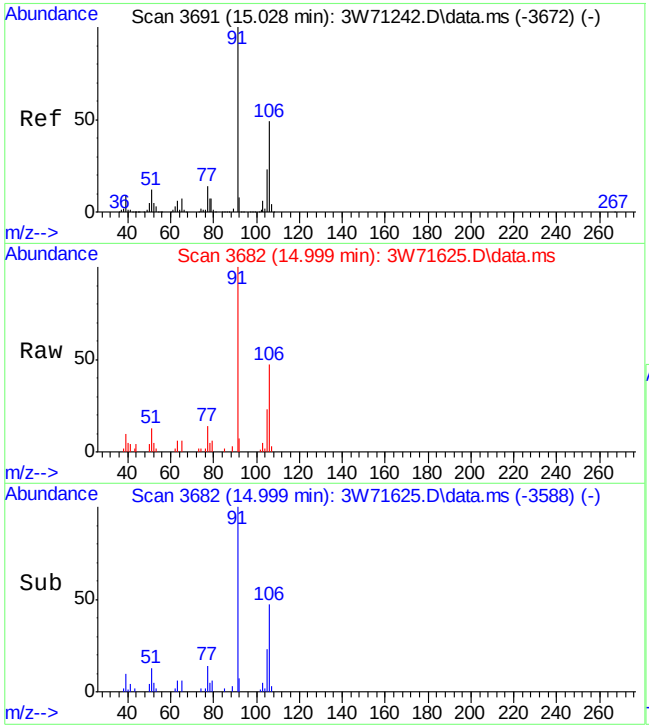


#66
TOLUENE
Concen: 0.28 PPBV
RT: 12.445 min Scan# 2886
Delta R.T. -0.010 min
Lab File: 3W71625.D
Acq: 12 Feb 2020 3:14 pm

Tgt Ion: 92 Resp: 5976

Ion	Ratio	Lower	Upper
92	100		
91	170.6	150.3	190.3
65	21.8	4.0	44.0

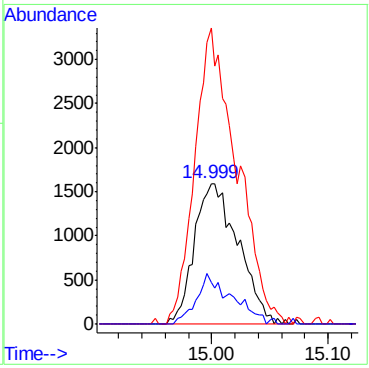




#80
m,p-XYLENE
Concen: 0.35 PPBV
RT: 14.999 min Scan# 3682
Delta R.T. -0.029 min
Lab File: 3W71625.D
Acq: 12 Feb 2020 3:14 pm

Tgt Ion:106 Resp: 4175

Ion	Ratio	Lower	Upper
106	100		
91	211.0	185.1	225.1
77	29.9	8.5	48.5



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\
Data File : 3W71609.D
Acq On : 11 Feb 2020 11:47 pm
Operator : danat
Sample : jd2616-2
Misc : MS40889,V3W2806,800,,,,1.6
ALS Vial : 11 Sample Multiplier: 1

Quant Time: Feb 12 10:43:17 2020
Quant Method : C:\msdchem\1\METHODS\M3W2789.M
Quant Title : TO15 by GCMS w/Rtx-1, 60 m X 0.32mm ID X 1.0 um
QLast Update : Wed Jan 15 09:18:27 2020
Response via : Initial Calibration

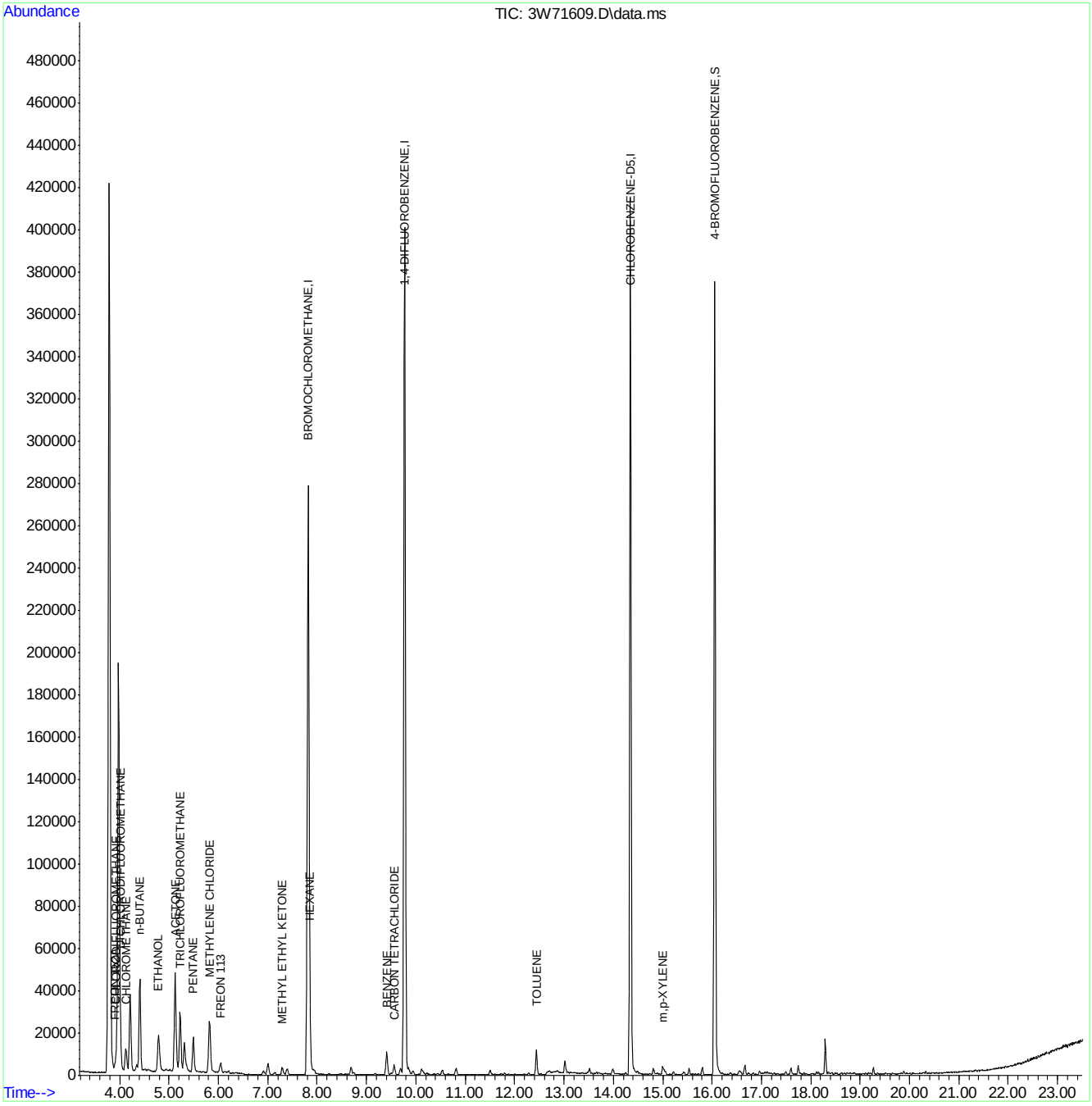
Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) BROMOCHLOROMETHANE	7.818	128	87143	10.00	PPBV		#-0.01
51) 1,4-DIFLUOROBENZENE	9.772	114	362495	10.00	PPBV		-0.02
70) CHLOROBENZENE-D5	14.348	82	155019	10.00	PPBV		-0.01
System Monitoring Compounds							
85) 4-BROMOFLUOROBENZENE	16.055	95	147314	8.65	PPBV		0.00
Spiked Amount 10.000	Range 65 - 128		Recovery = 86.50%				
Target Compounds							Qvalue
3) FREON 152A	3.900	65	1631	0.22	PPBV		92
4) CHLORODIFLUOROMETHANE	3.932	67	1648	0.53	PPBV		97
6) DICHLORODIFLUOROMETHANE	4.012	85	29024	0.98	PPBV		99
10) CHLOROMETHANE	4.131	52	4579	1.17	PPBV	#	88
13) n-BUTANE	4.407	43	49353	2.23	PPBV		98
21) TRICHLOROFLUOROMETHANE	5.225	101	28862	1.11	PPBV		100
23) ACETONE	5.129	58	15076	2.93	PPBV	#	76
24) PENTANE	5.491	42	9133	0.60	PPBV		93
28) ETHANOL	4.782	45	29108	5.54	PPBV		98
31) METHYLENE CHLORIDE	5.822	84	13084	1.18	PPBV		88
33) FREON 113	6.047	151	1966	0.13	PPBV		92
38) HEXANE	7.853	57	10565	0.56	PPBV	#	81
41) METHYL ETHYL KETONE	7.295	72	1282	0.27	PPBV	#	76
49) CARBON TETRACHLORIDE	9.560	117	3184	0.15	PPBV		99
52) BENZENE	9.406	78	10924	0.34	PPBV		99
66) TOLUENE	12.442	92	4873	0.25	PPBV		97
80) m,p-XYLENE	14.999	106	1608	0.13	PPBV	#	78

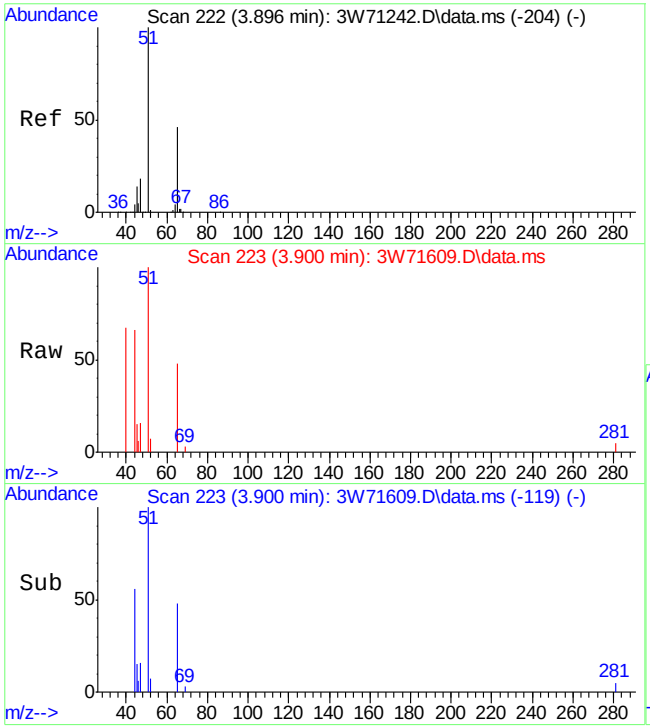
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\
Data File : 3W71609.D
Acq On : 11 Feb 2020 11:47 pm
Operator : danat
Sample : jd2616-2
Misc : MS40889,V3W2806,800,,,,1.6
ALS Vial : 11 Sample Multiplier: 1

Quant Time: Feb 12 10:43:17 2020
Quant Method : C:\msdchem\1\METHODS\M3W2789.M
Quant Title : TO15 by GCMS w/Rtx-1, 60 m X 0.32mm ID X 1.0 um
QLast Update : Wed Jan 15 09:18:27 2020
Response via : Initial Calibration

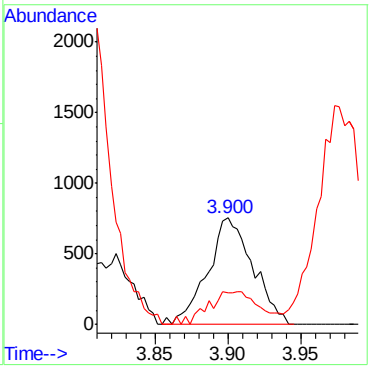


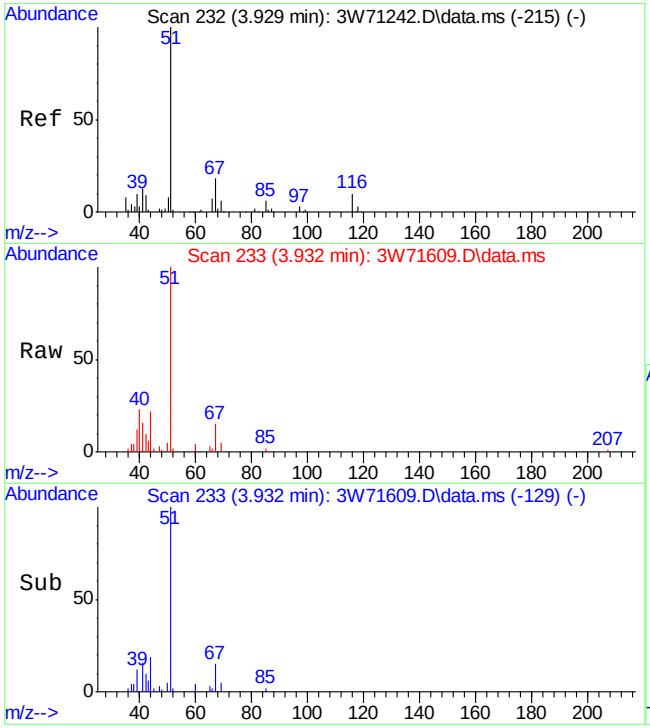


#3
FREON 152A
Concen: 0.22 PPBV
RT: 3.900 min Scan# 223
Delta R.T. 0.003 min
Lab File: 3W71609.D
Acq: 11 Feb 2020 11:47 pm

Tgt Ion: 65 Resp: 1631

Ion	Ratio	Lower	Upper
65	100		
45	34.3	10.1	50.1

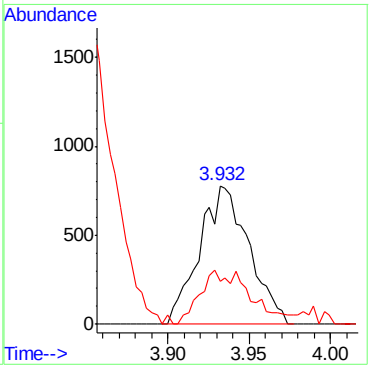


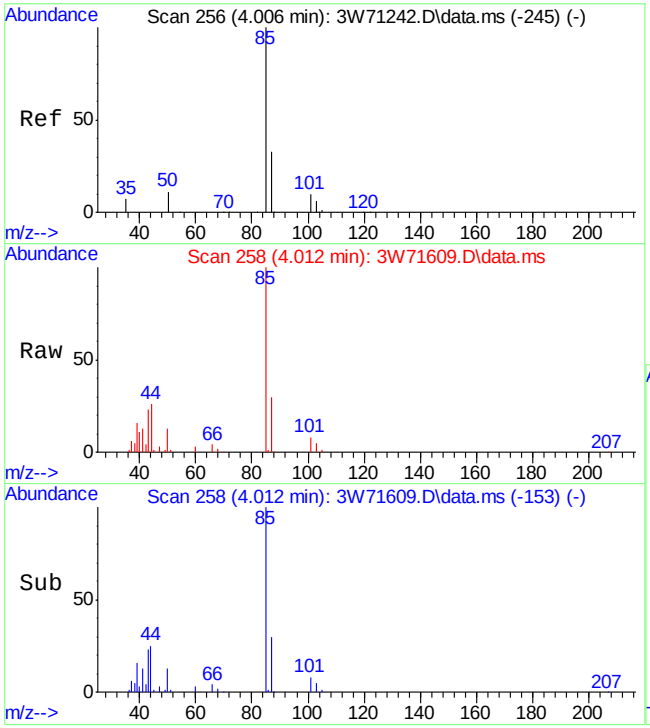


#4
CHLORODIFLUOROMETHANE
Concen: 0.53 PPBV
RT: 3.932 min Scan# 233
Delta R.T. 0.003 min
Lab File: 3W71609.D
Acq: 11 Feb 2020 11:47 pm

Tgt Ion: 67 Resp: 1648

Ion	Ratio	Lower	Upper
67	100		
69	31.1	12.6	52.6

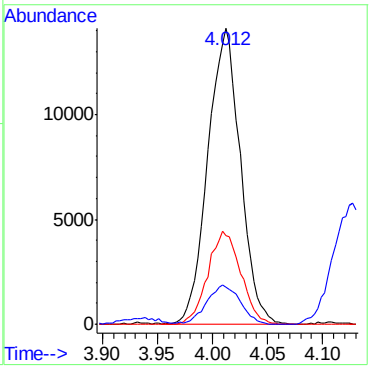


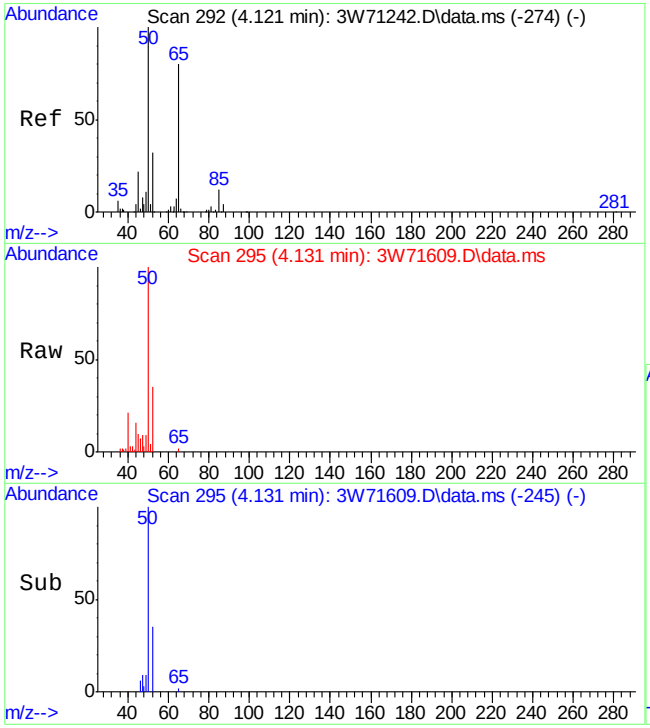


#6
DICHLORODIFLUOROMETHANE
Concen: 0.98 PPBV
RT: 4.012 min Scan# 258
Delta R.T. 0.007 min
Lab File: 3W71609.D
Acq: 11 Feb 2020 11:47 pm

Tgt Ion: 85 Resp: 29024

Ion	Ratio	Lower	Upper
85	100		
87	31.8	12.2	52.2
50	13.6	0.0	32.7

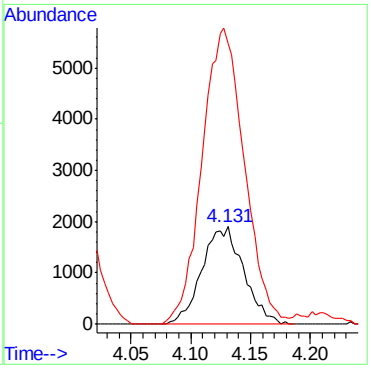


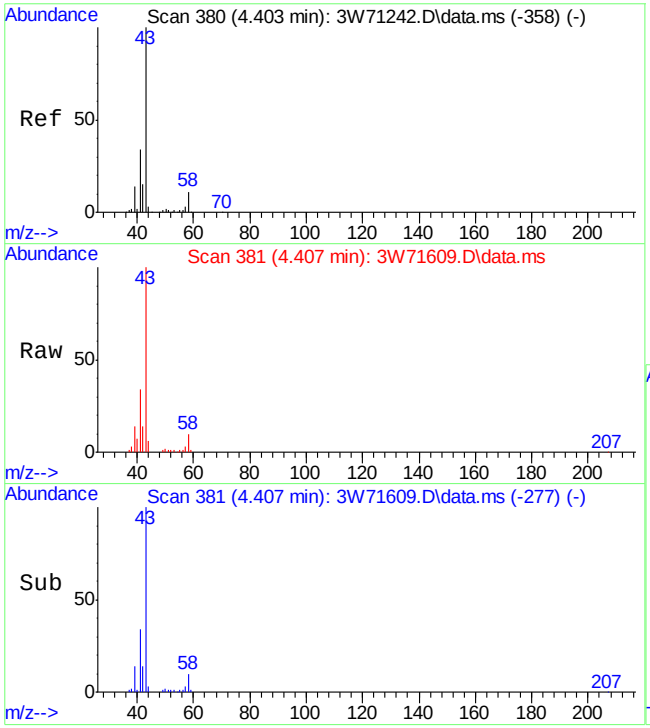


#10
CHLOROMETHANE
Concen: 1.17 PPBV
RT: 4.131 min Scan# 295
Delta R.T. 0.010 min
Lab File: 3W71609.D
Acq: 11 Feb 2020 11:47 pm

Tgt Ion: 52 Resp: 4579

Ion	Ratio	Lower	Upper
52	100		
50	285.2	289.6	329.6#

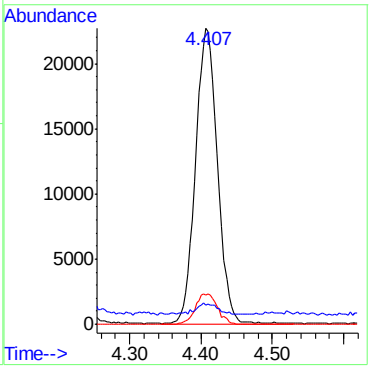


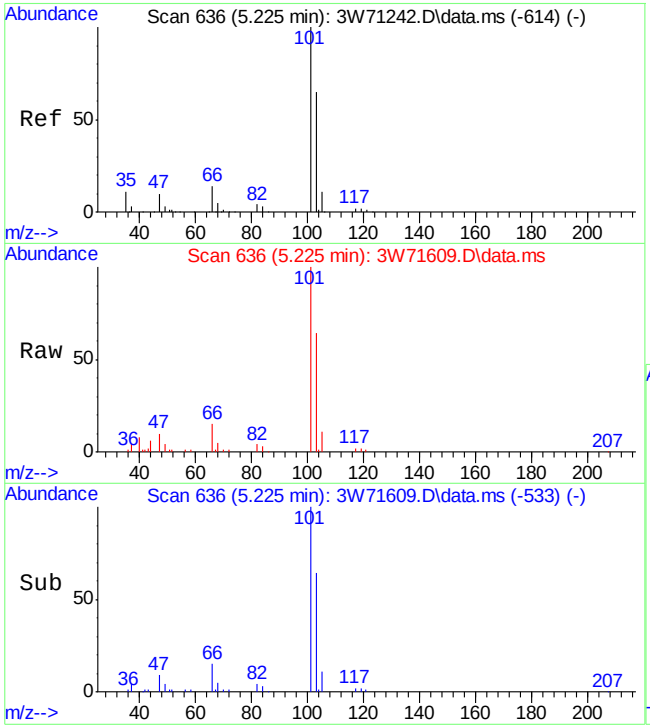


#13
n-BUTANE
Concen: 2.23 PPBV
RT: 4.407 min Scan# 381
Delta R.T. 0.003 min
Lab File: 3W71609.D
Acq: 11 Feb 2020 11:47 pm

Tgt Ion: 43 Resp: 49353

Ion	Ratio	Lower	Upper
43	100		
58	10.2	0.0	30.9
44	3.4	0.0	23.6

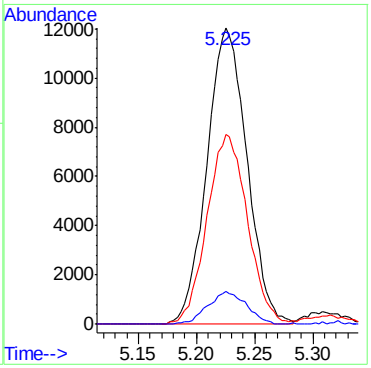


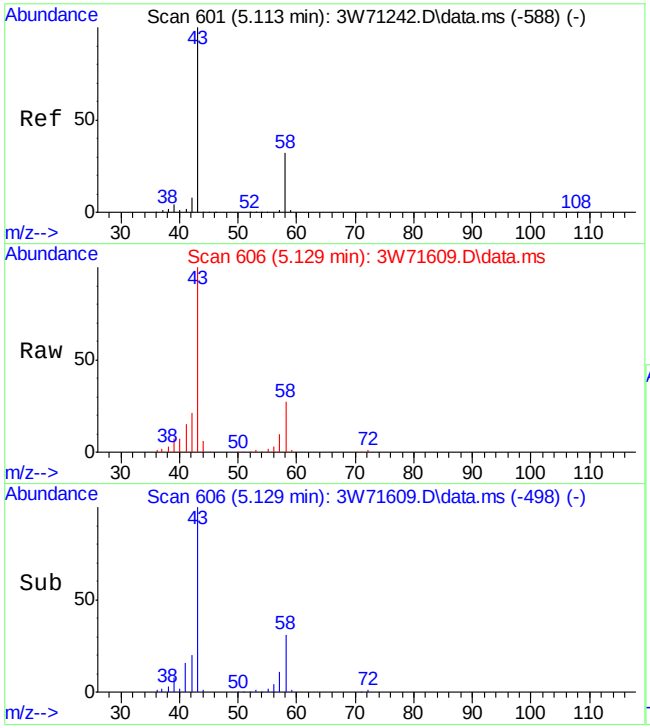


#21
TRICHLOROFLUOROMETHANE
Concen: 1.11 PPBV
RT: 5.225 min Scan# 636
Delta R.T. 0.000 min
Lab File: 3W71609.D
Acq: 11 Feb 2020 11:47 pm

Tgt Ion:101 Resp: 28862

Ion	Ratio	Lower	Upper
101	100		
103	64.7	44.5	84.5
105	10.5	0.0	30.5

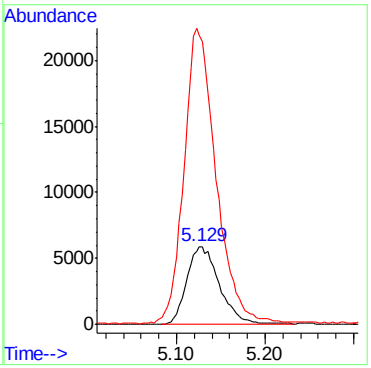


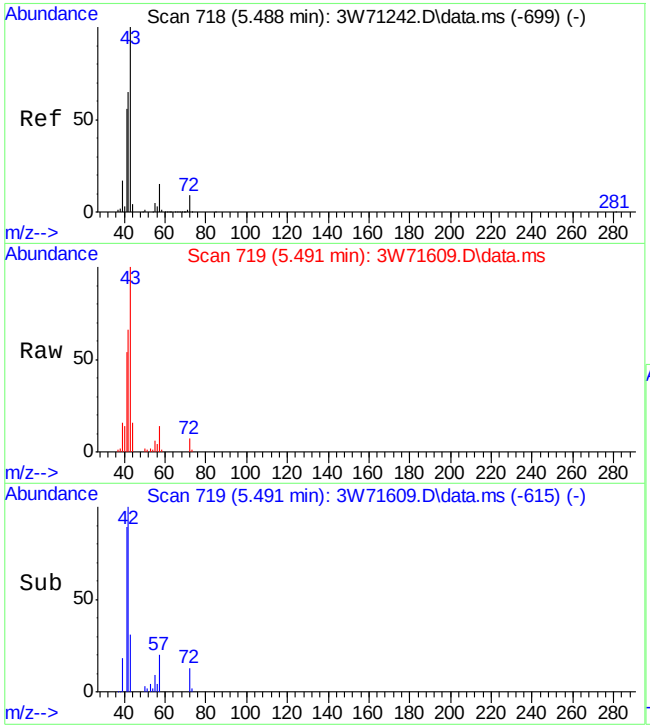


#23
ACETONE
Concen: 2.93 PPBV
RT: 5.129 min Scan# 606
Delta R.T. 0.016 min
Lab File: 3W71609.D
Acq: 11 Feb 2020 11:47 pm

Tgt Ion: 58 Resp: 15076

Ion	Ratio	Lower	Upper
58	100		
43	381.2	311.7	351.7#

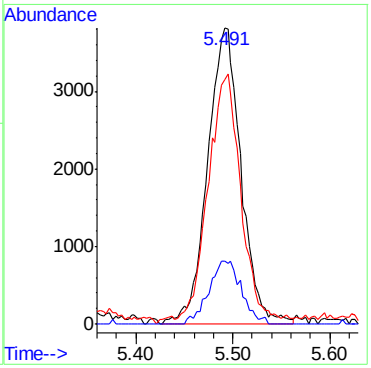


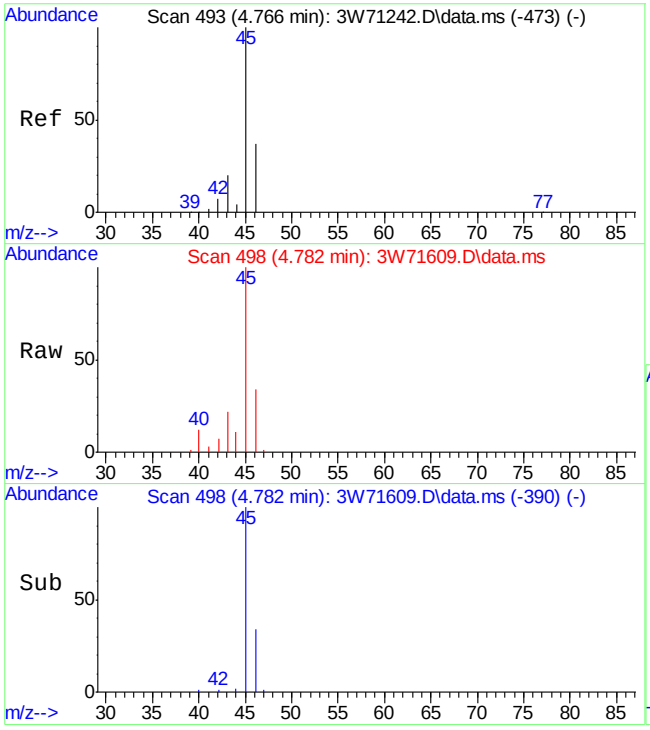


#24
PENTANE
Concen: 0.60 PPBV
RT: 5.491 min Scan# 719
Delta R.T. 0.003 min
Lab File: 3W71609.D
Acq: 11 Feb 2020 11:47 pm

Tgt Ion: 42 Resp: 9133

Ion	Ratio	Lower	Upper
42	100		
41	79.2	66.3	106.3
57	20.8	3.6	43.6

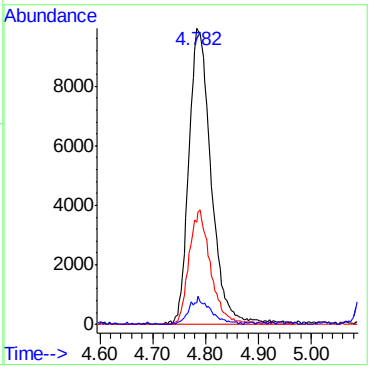


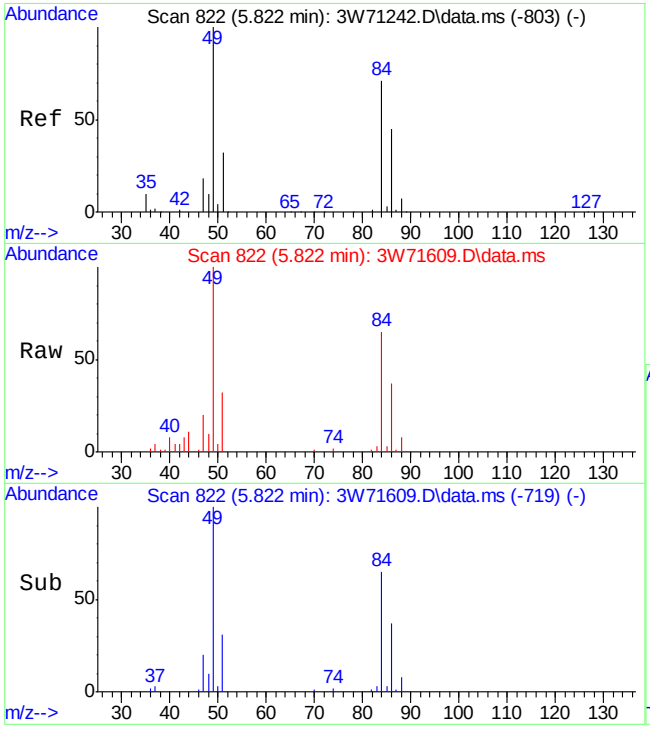


#28
ETHANOL
Concen: 5.54 PPBV
RT: 4.782 min Scan# 498
Delta R.T. 0.016 min
Lab File: 3W71609.D
Acq: 11 Feb 2020 11:47 pm

Tgt Ion: 45 Resp: 29108

Ion	Ratio	Lower	Upper
45	100		
46	37.1	15.7	55.7
42	8.7	0.0	28.1

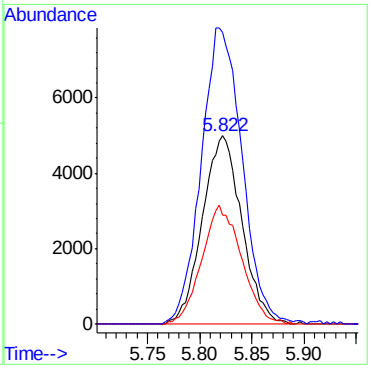


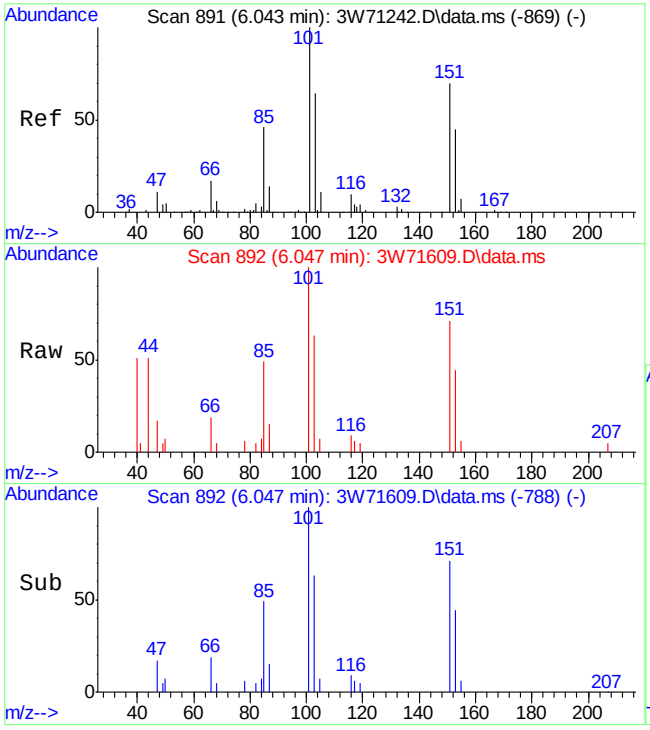


#31
METHYLENE CHLORIDE
Concen: 1.18 PPBV
RT: 5.822 min Scan# 822
Delta R.T. 0.000 min
Lab File: 3W71609.D
Acq: 11 Feb 2020 11:47 pm

Tgt Ion: 84 Resp: 13084

Ion	Ratio	Lower	Upper
84	100		
86	63.4	43.5	83.5
49	162.8	0.0	342.4

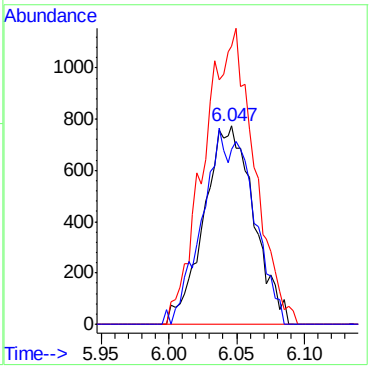


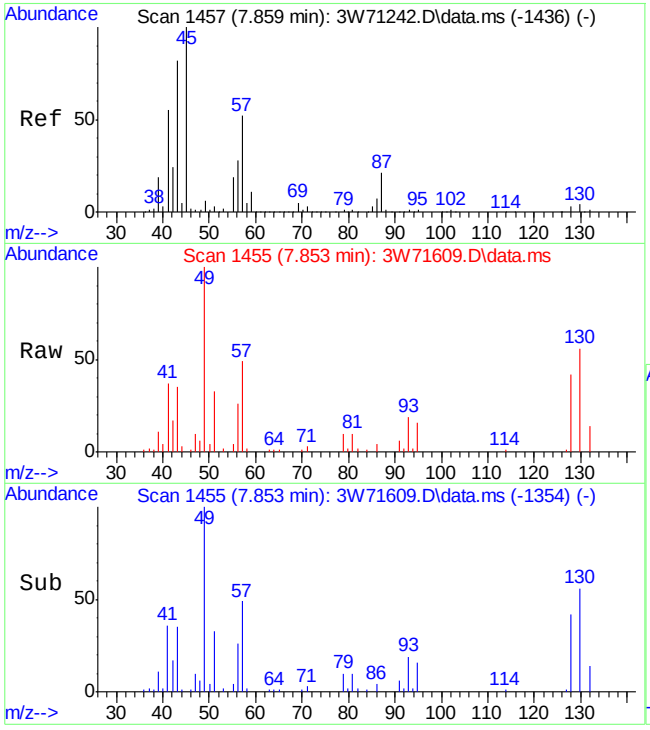


#33
FREON 113
Concen: 0.13 PPBV
RT: 6.047 min Scan# 892
Delta R.T. 0.003 min
Lab File: 3W71609.D
Acq: 11 Feb 2020 11:47 pm

Tgt Ion:151 Resp: 1966

Ion	Ratio	Lower	Upper
151	100		
101	151.1	123.1	163.1
103	100.5	71.8	111.8

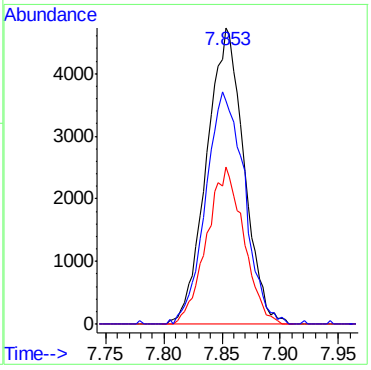


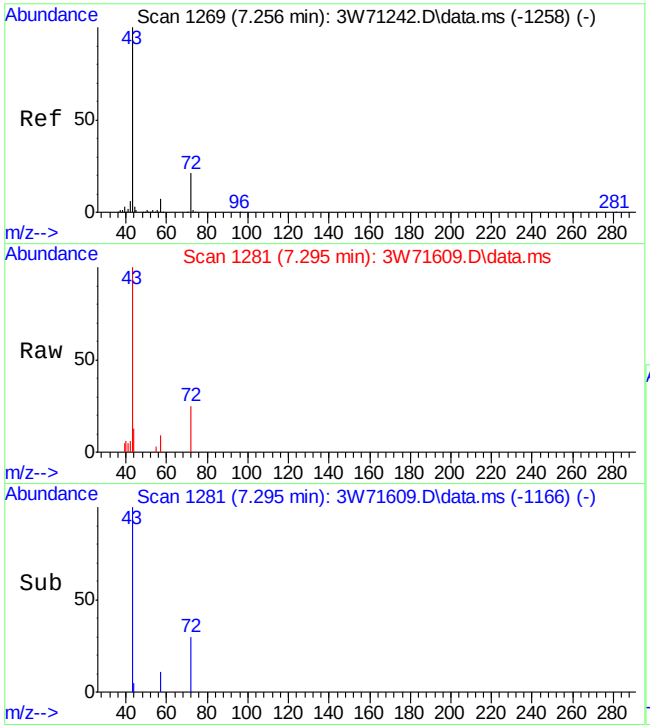


#38
HEXANE
Concen: 0.56 PPBV
RT: 7.853 min Scan# 1455
Delta R.T. -0.006 min
Lab File: 3W71609.D
Acq: 11 Feb 2020 11:47 pm

Tgt Ion: 57 Resp: 10565

Ion	Ratio	Lower	Upper
57	100		
56	52.3	35.4	75.4
41	81.3	88.4	128.4#

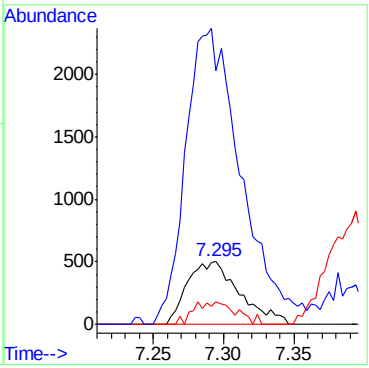


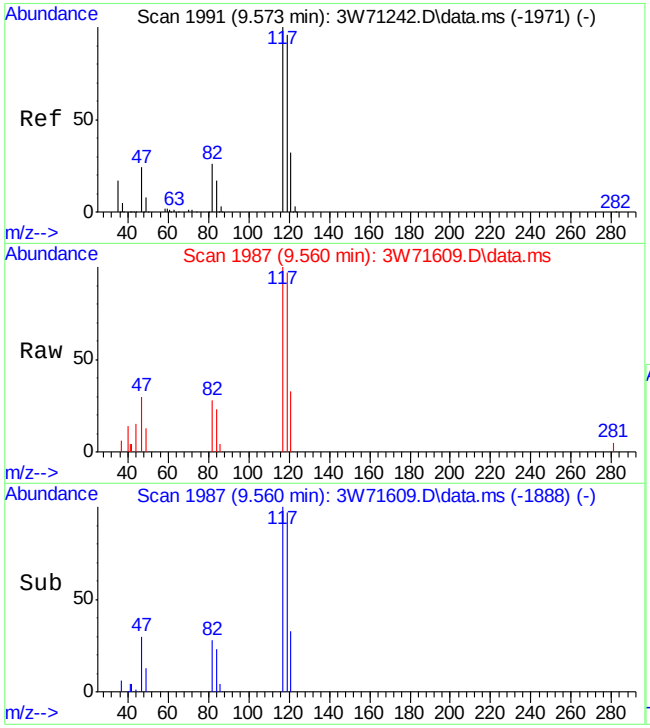


#41
METHYL ETHYL KETONE
Concen: 0.27 PPBV
RT: 7.295 min Scan# 1281
Delta R.T. 0.039 min
Lab File: 3W71609.D
Acq: 11 Feb 2020 11:47 pm

Tgt Ion: 72 Resp: 1282

Ion	Ratio	Lower	Upper
72	100		
57	36.0	12.1	52.1
43	401.4	446.3	486.3#

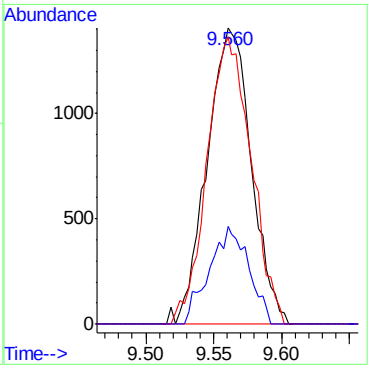


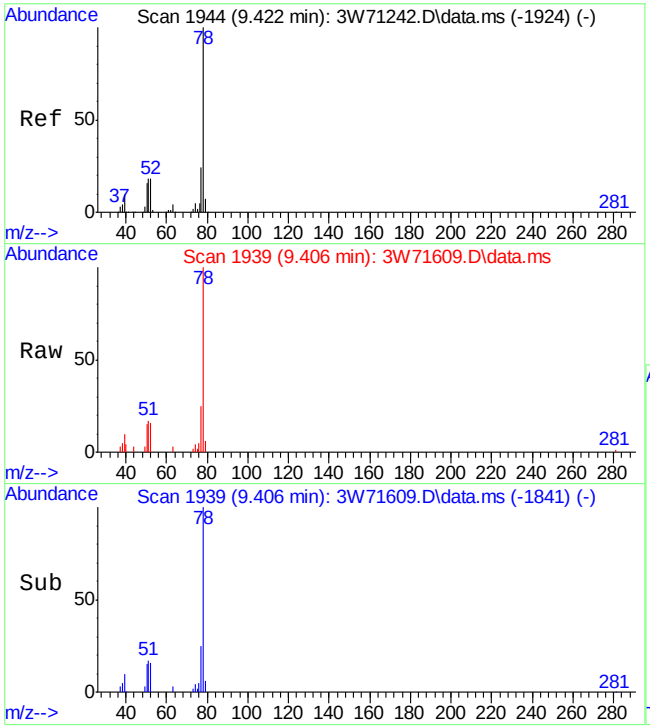


#49
CARBON TETRACHLORIDE
Concen: 0.15 PPBV
RT: 9.560 min Scan# 1987
Delta R.T. -0.013 min
Lab File: 3W71609.D
Acq: 11 Feb 2020 11:47 pm

Tgt Ion:117 Resp: 3184

Ion	Ratio	Lower	Upper
117	100		
119	96.4	76.4	116.4
121	29.3	11.1	51.1

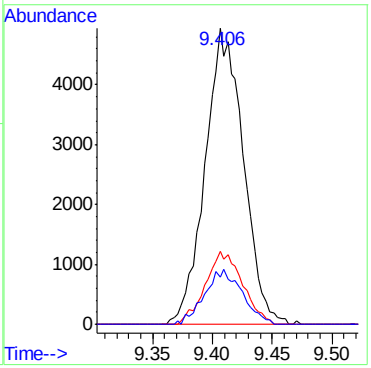


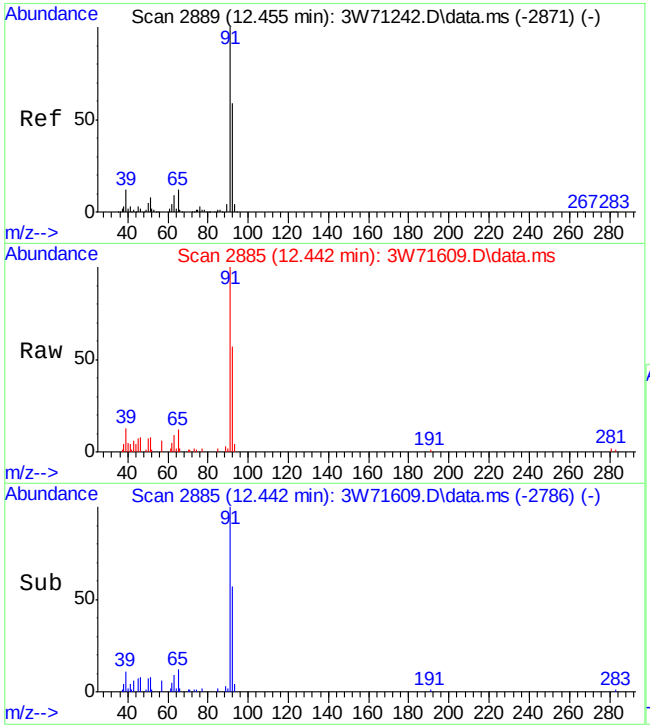


#52
BENZENE
Concen: 0.34 PPBV
RT: 9.406 min Scan# 1939
Delta R.T. -0.016 min
Lab File: 3W71609.D
Acq: 11 Feb 2020 11:47 pm

Tgt Ion: 78 Resp: 10924

Ion	Ratio	Lower	Upper
78	100		
77	24.0	4.1	44.1
52	18.2	0.0	37.6

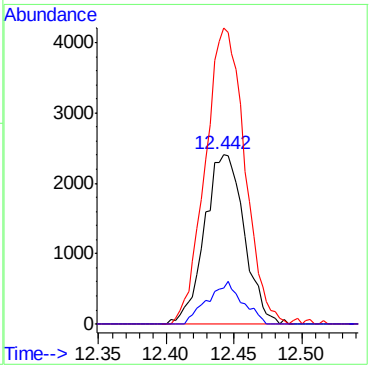


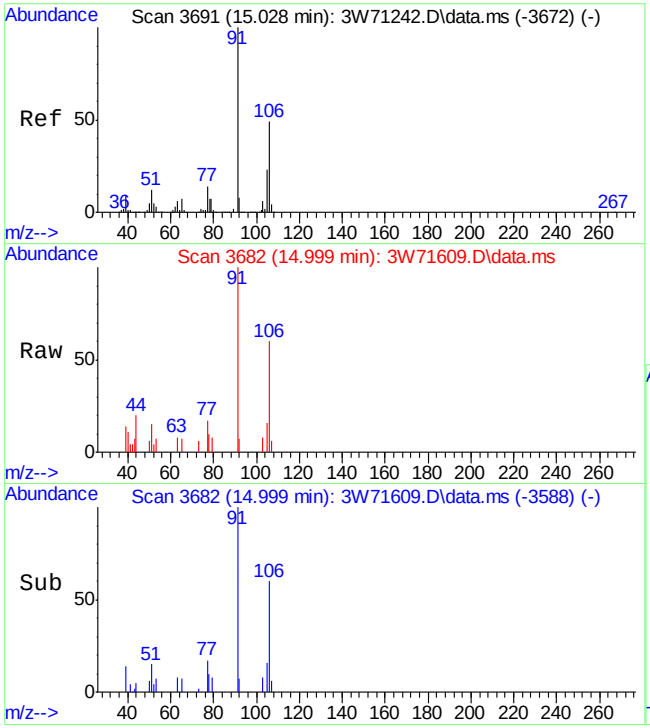


#66
TOLUENE
Concen: 0.25 PPBV
RT: 12.442 min Scan# 2885
Delta R.T. -0.013 min
Lab File: 3W71609.D
Acq: 11 Feb 2020 11:47 pm

Tgt Ion: 92 Resp: 4873

Ion	Ratio	Lower	Upper
92	100		
91	174.7	150.3	190.3
65	22.1	4.0	44.0

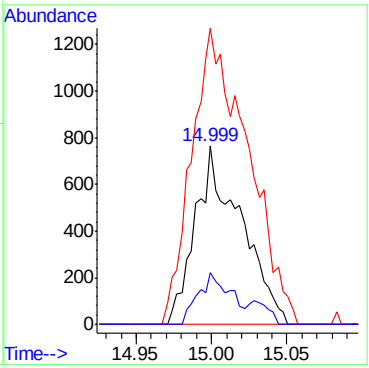




#80
m,p-XYLENE
Concen: 0.13 PPBV
RT: 14.999 min Scan# 3682
Delta R.T. -0.029 min
Lab File: 3W71609.D
Acq: 11 Feb 2020 11:47 pm

Tgt Ion:106 Resp: 1608

Ion	Ratio	Lower	Upper
106	100		
91	166.1	185.1	225.1#
77	29.1	8.5	48.5



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\
Data File : 3W71612.D
Acq On : 12 Feb 2020 2:39 am
Operator : danat
Sample : jd2616-3
Misc : MS40889,V3W2806,608,,,,1.52
ALS Vial : 14 Sample Multiplier: 1

Quant Time: Feb 12 10:56:58 2020
Quant Method : C:\msdchem\1\METHODS\M3W2789.M
Quant Title : TO15 by GCMS w/Rtx-1, 60 m X 0.32mm ID X 1.0 um
QLast Update : Wed Jan 15 09:18:27 2020
Response via : Initial Calibration

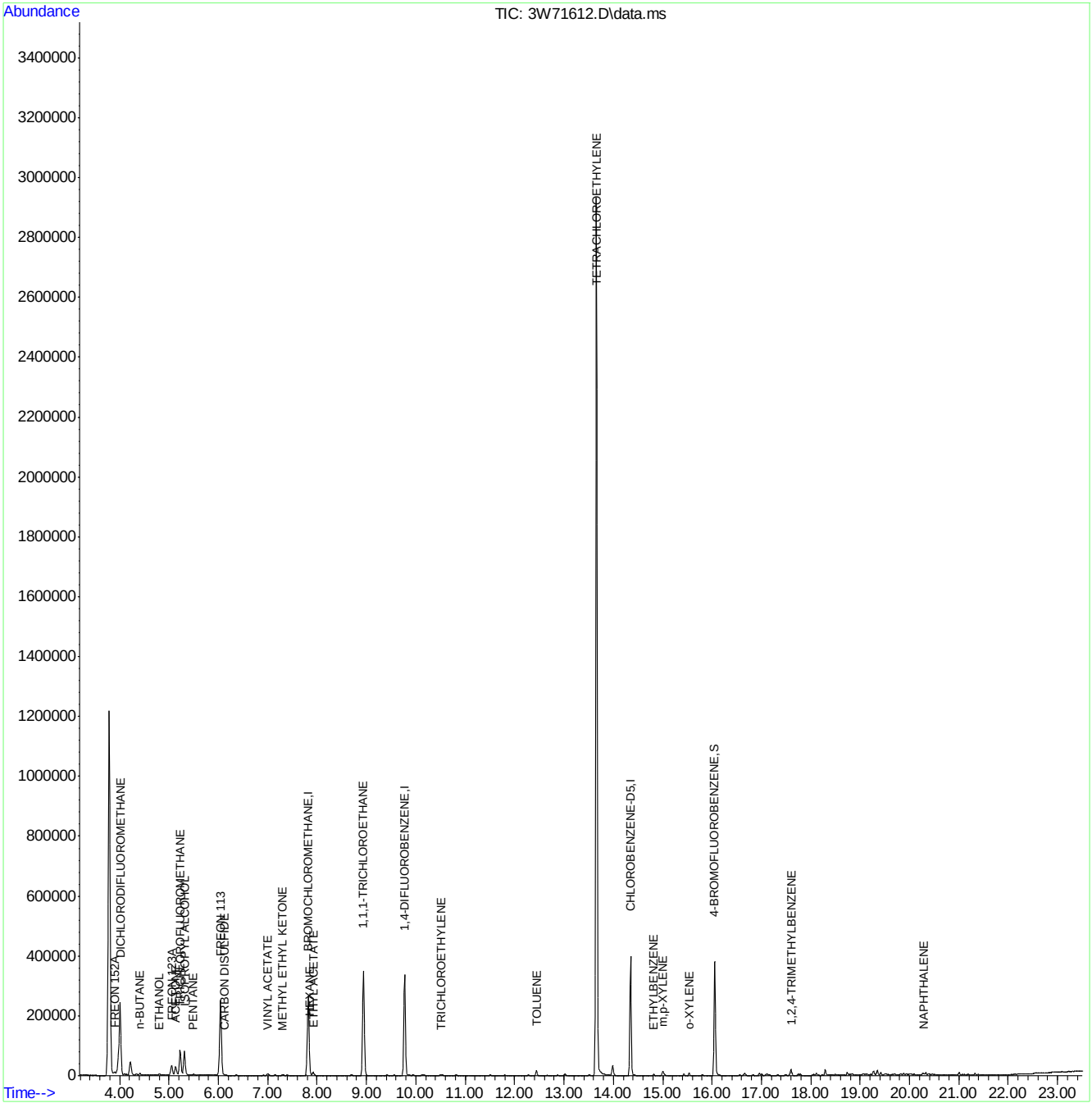
Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) BROMOCHLOROMETHANE	7.818	128	84622	10.00	PPBV		#-0.01
51) 1,4-DIFLUOROBENZENE	9.772	114	304216	10.00	PPBV		-0.02
70) CHLOROBENZENE-D5	14.348	82	145577	10.00	PPBV		-0.01
System Monitoring Compounds							
85) 4-BROMOFLUOROBENZENE	16.052	95	151352	9.47	PPBV		-0.01
Spiked Amount 10.000	Range 65 - 128		Recovery = 94.70%				
Target Compounds							Qvalue
3) FREON 152A	3.900	65	1470	0.20	PPBV		93
6) DICHLORODIFLUOROMETHANE	4.009	85	284456	9.87	PPBV		100
13) n-BUTANE	4.407	43	5716	0.27	PPBV	#	97
20) FREON 123A	5.058	117	12513	1.02	PPBV		100
21) TRICHLOROFLUOROMETHANE	5.225	101	85759	3.40	PPBV		100
22) ISOPROPYL ALCOHOL	5.312	45	26187	1.24	PPBV		68
23) ACETONE	5.135	58	14849	2.97	PPBV	#	68
24) PENTANE	5.488	42	2211	0.15	PPBV		93
27) CARBON DISULFIDE	6.117	76	5137	0.17	PPBV	#	78
28) ETHANOL	4.801	45	4806	0.94	PPBV		97
33) FREON 113	6.043	151	101004	6.65	PPBV		98
38) HEXANE	7.850	57	1898	0.10	PPBV		90
39) VINYL ACETATE	6.996	86	751	0.41	PPBV	#	72
41) METHYL ETHYL KETONE	7.295	72	1258	0.28	PPBV		96
44) ETHYL ACETATE	7.917	61	1922	0.61	PPBV	#	74
48) 1,1,1-TRICHLOROETHANE	8.938	97	263143	12.24	PPBV		98
55) TRICHLOROETHYLENE	10.507	95	1255	0.12	PPBV		98
66) TOLUENE	12.442	92	7651	0.46	PPBV		97
73) TETRACHLOROETHYLENE	13.658	164	702647	75.92	PPBV		96
79) ETHYLBENZENE	14.816	91	4562	0.14	PPBV		98
80) m,p-XYLENE	15.006	106	5656	0.50	PPBV		94
81) o-XYLENE	15.535	106	2340	0.19	PPBV		96
96) 1,2,4-TRIMETHYLBENZENE	17.602	105	8529	0.41	PPBV	#	36
108) NAPHTHALENE	20.288	128	2246	0.17	PPBV		97

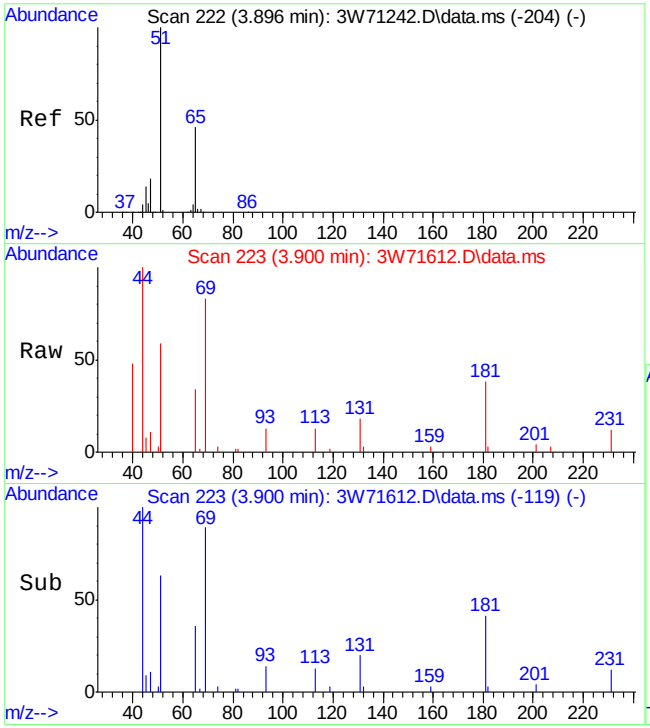
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\
Data File : 3W71612.D
Acq On : 12 Feb 2020 2:39 am
Operator : danat
Sample : jd2616-3
Misc : MS40889,V3W2806,608,,,,1.52
ALS Vial : 14 Sample Multiplier: 1

Quant Time: Feb 12 10:56:58 2020
Quant Method : C:\msdchem\1\METHODS\M3W2789.M
Quant Title : TO15 by GCMS w/Rtx-1, 60 m X 0.32mm ID X 1.0 um
QLast Update : Wed Jan 15 09:18:27 2020
Response via : Initial Calibration

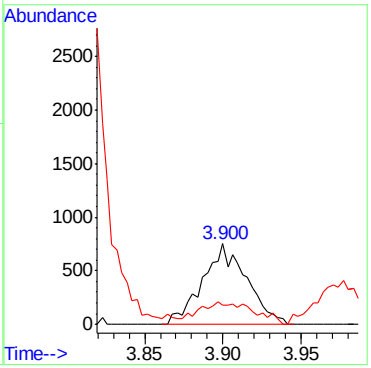


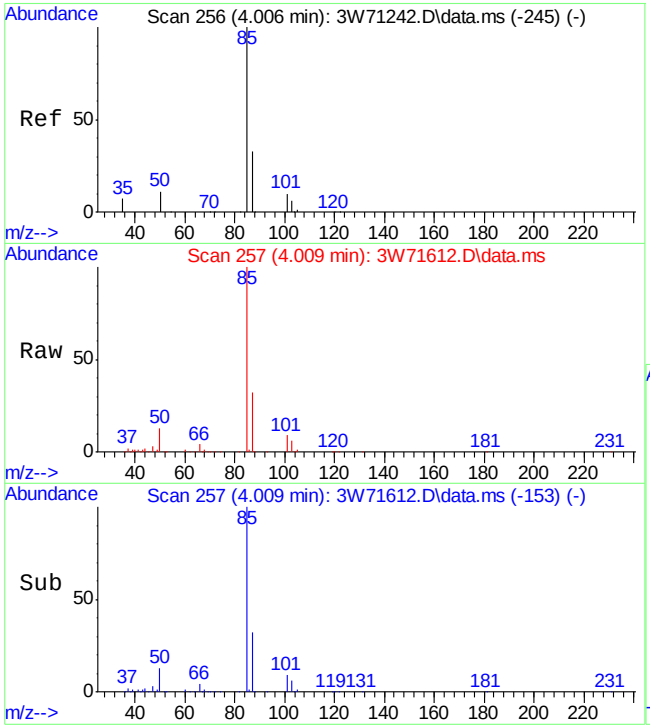


#3
FREON 152A
Concen: 0.20 PPBV
RT: 3.900 min Scan# 223
Delta R.T. 0.003 min
Lab File: 3W71612.D
Acq: 12 Feb 2020 2:39 am

Tgt Ion: 65 Resp: 1470

Ion	Ratio	Lower	Upper
65	100		
45	34.1	10.1	50.1

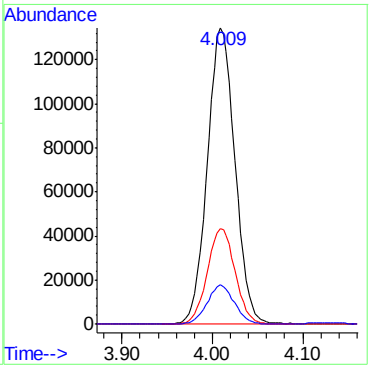


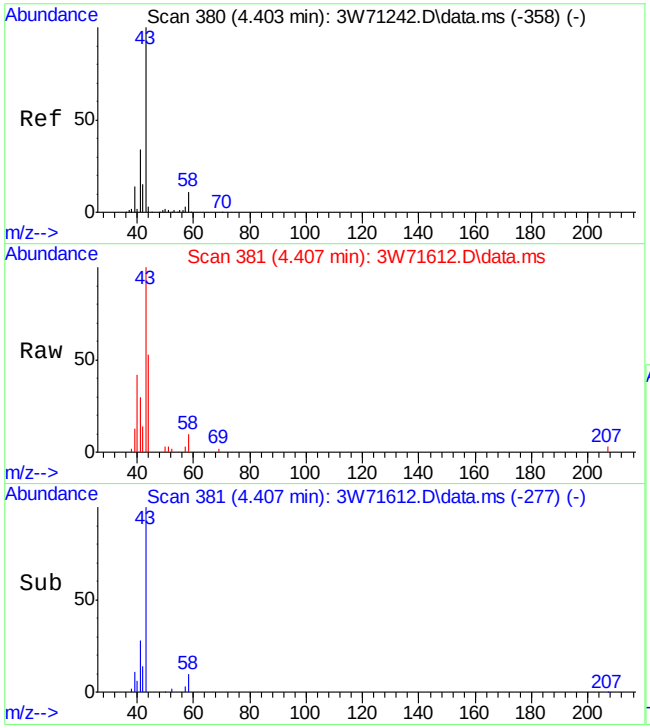


#6
DICHLORODIFLUOROMETHANE
Concen: 9.87 PPBV
RT: 4.009 min Scan# 257
Delta R.T. 0.003 min
Lab File: 3W71612.D
Acq: 12 Feb 2020 2:39 am

Tgt Ion: 85 Resp: 284456

Ion	Ratio	Lower	Upper
85	100		
87	32.4	12.2	52.2
50	13.0	0.0	32.7

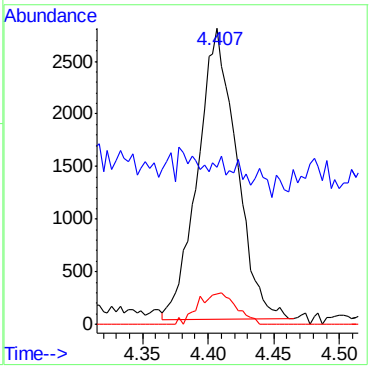


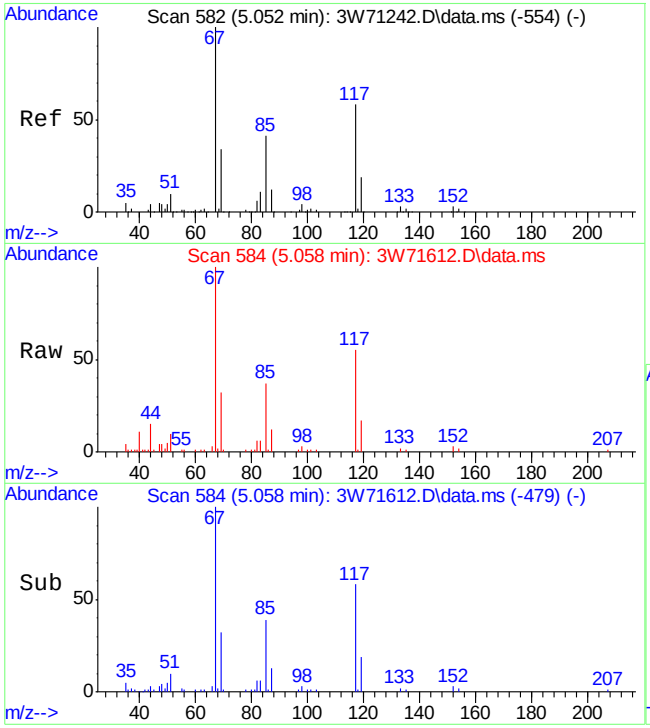


#13
n-BUTANE
Concen: 0.27 PPBV
RT: 4.407 min Scan# 381
Delta R.T. 0.003 min
Lab File: 3W71612.D
Acq: 12 Feb 2020 2:39 am

Tgt Ion: 43 Resp: 5716

Ion	Ratio	Lower	Upper
43	100		
58	10.6	0.0	30.9
44	0.0	0.0	23.6

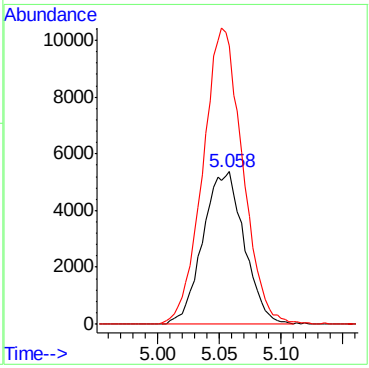


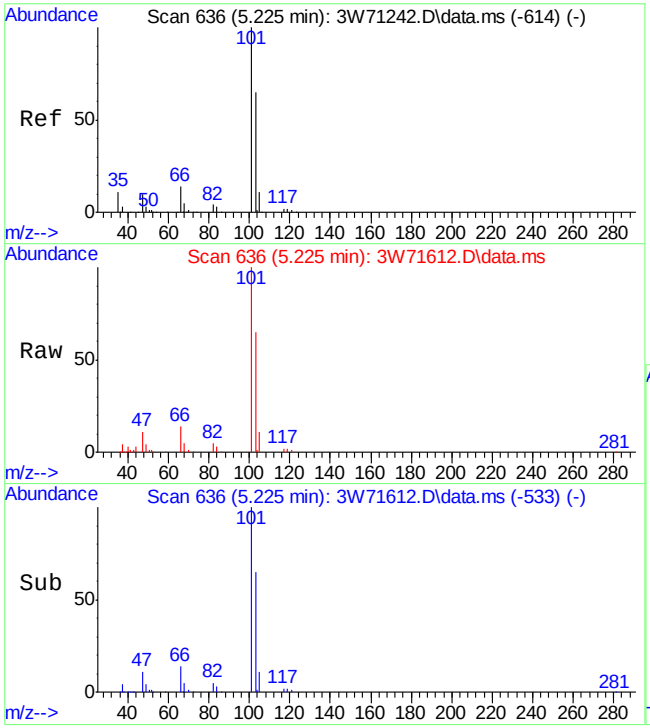


#20
FREON 123A
Concen: 1.02 PPBV
RT: 5.058 min Scan# 584
Delta R.T. 0.006 min
Lab File: 3W71612.D
Acq: 12 Feb 2020 2:39 am

Tgt Ion:117 Resp: 12513

Ion	Ratio	Lower	Upper
117	100		
67	187.6	167.4	207.4

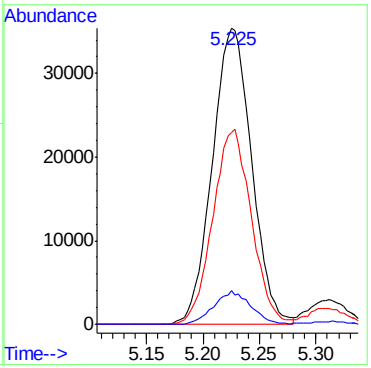


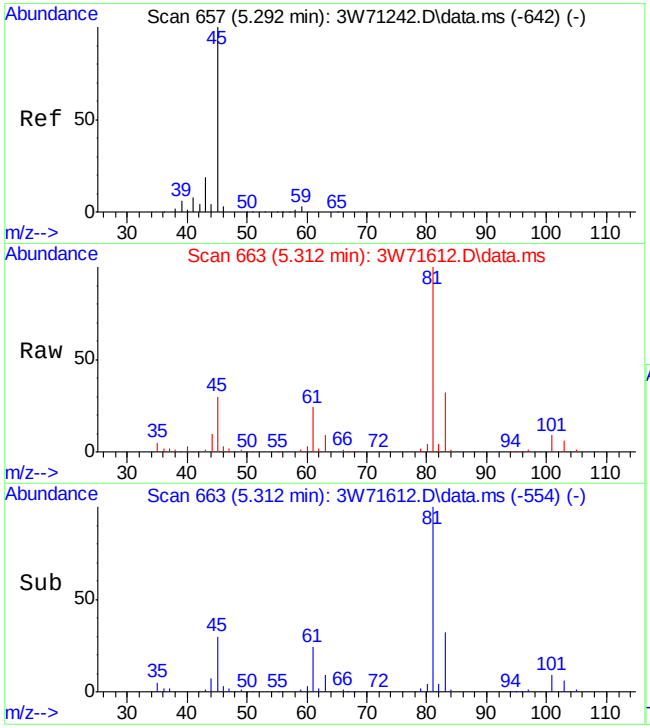


#21
TRICHLOROFLUOROMETHANE
Concen: 3.40 PPBV
RT: 5.225 min Scan# 636
Delta R.T. 0.000 min
Lab File: 3W71612.D
Acq: 12 Feb 2020 2:39 am

Tgt Ion:101 Resp: 85759

Ion	Ratio	Lower	Upper
101	100		
103	64.7	44.5	84.5
105	10.6	0.0	30.5

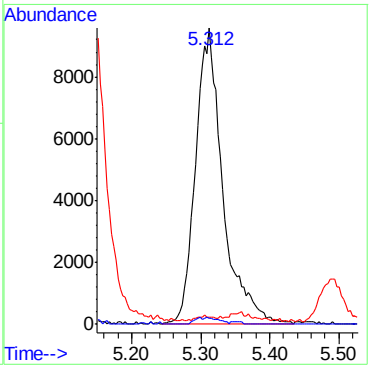


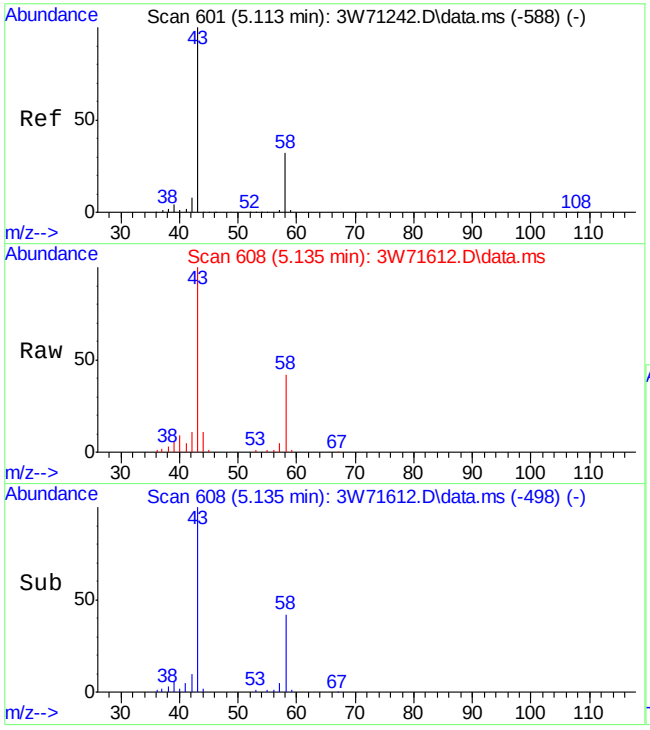


#22
ISOPROPYL ALCOHOL
Concen: 1.24 PPBV
RT: 5.312 min Scan# 663
Delta R.T. 0.019 min
Lab File: 3W71612.D
Acq: 12 Feb 2020 2:39 am

Tgt Ion: 45 Resp: 26187

Ion	Ratio	Lower	Upper
45	100		
43	2.5	0.0	39.5
59	1.8	0.0	23.5

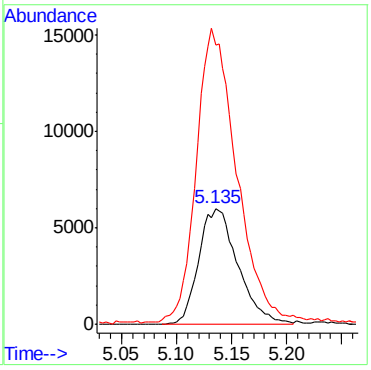


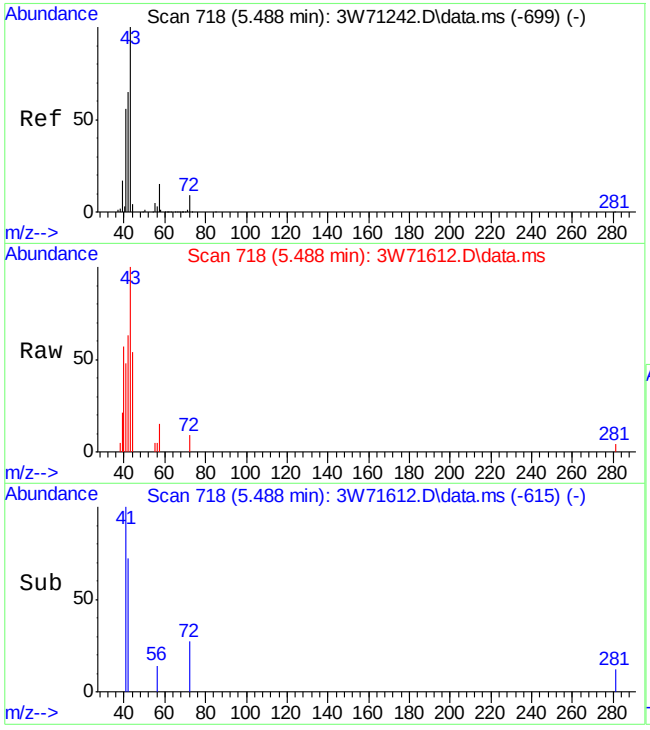


#23
ACETONE
Concen: 2.97 PPBV
RT: 5.135 min Scan# 608
Delta R.T. 0.023 min
Lab File: 3W71612.D
Acq: 12 Feb 2020 2:39 am

Tgt Ion: 58 Resp: 14849

Ion	Ratio	Lower	Upper
58	100		
43	264.1	311.7	351.7#

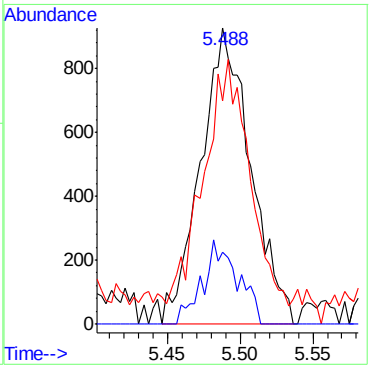


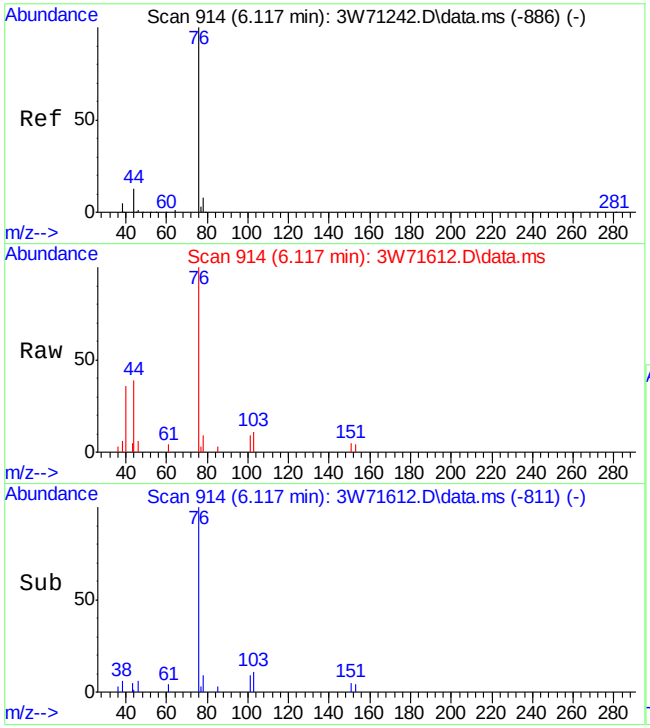


#24
PENTANE
Concen: 0.15 PPBV
RT: 5.488 min Scan# 718
Delta R.T. 0.000 min
Lab File: 3W71612.D
Acq: 12 Feb 2020 2:39 am

Tgt Ion: 42 Resp: 2211

Ion	Ratio	Lower	Upper
42	100		
41	92.4	66.3	106.3
57	19.9	3.6	43.6

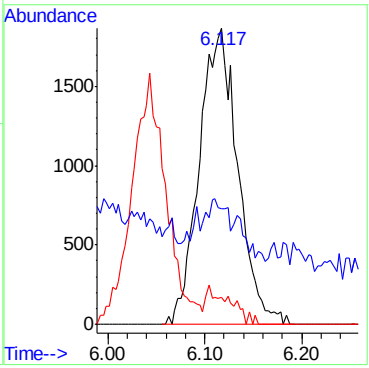


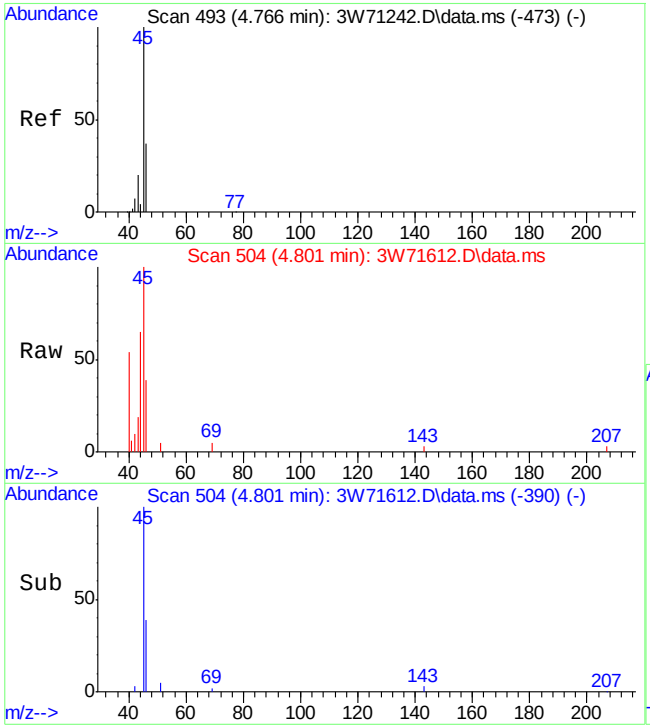


#27
CARBON DISULFIDE
Concen: 0.17 PPBV
RT: 6.117 min Scan# 914
Delta R.T. 0.000 min
Lab File: 3W71612.D
Acq: 12 Feb 2020 2:39 am

Tgt Ion: 76 Resp: 5137

Ion	Ratio	Lower	Upper
76	100		
78	8.1	0.0	29.1
44	0.0	0.0	33.9

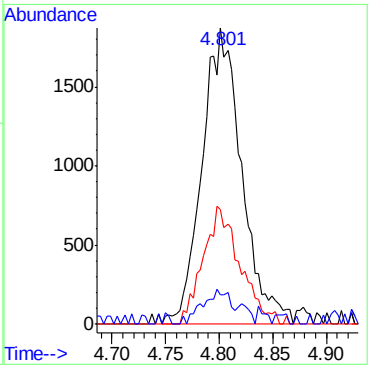


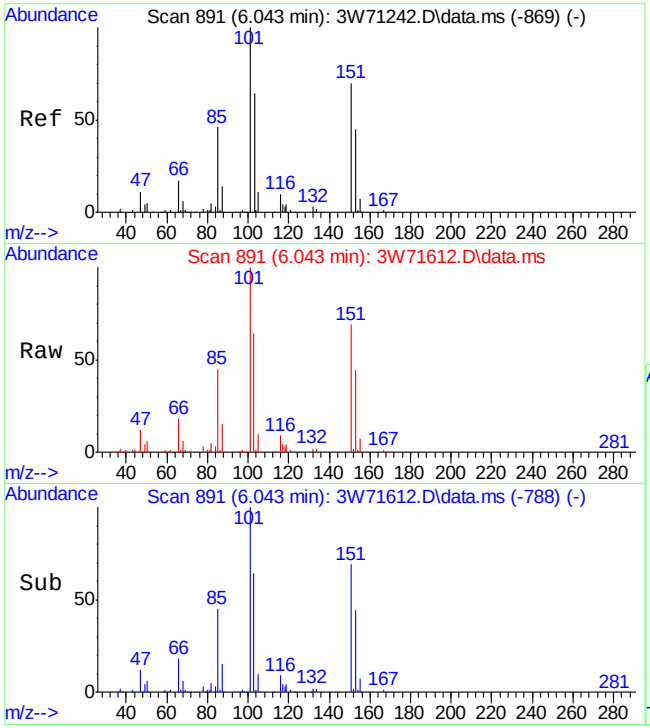


#28
ETHANOL
Concen: 0.94 PPBV
RT: 4.801 min Scan# 504
Delta R.T. 0.035 min
Lab File: 3W71612.D
Acq: 12 Feb 2020 2:39 am

Tgt Ion: 45 Resp: 4806

Ion	Ratio	Lower	Upper
45	100		
46	36.9	15.7	55.7
42	10.0	0.0	28.1

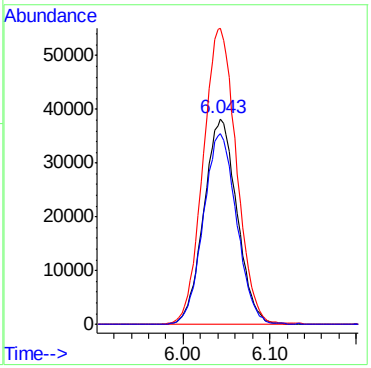


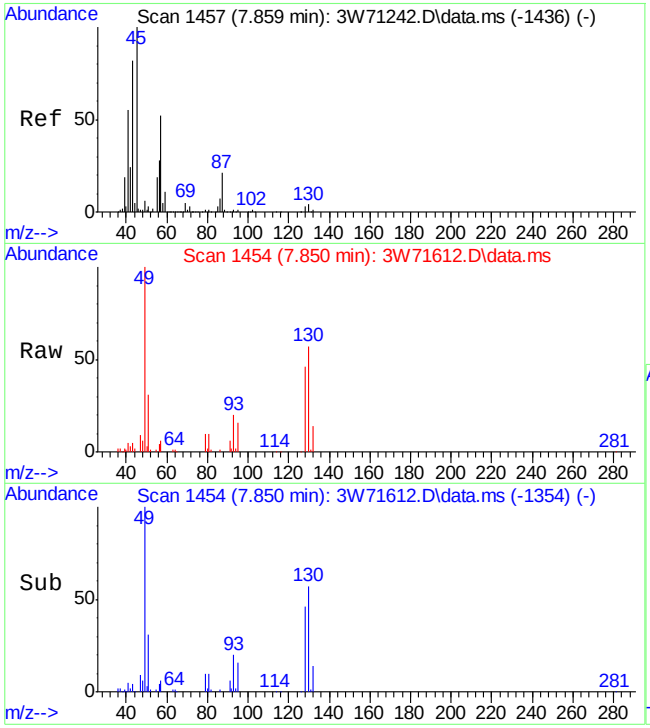


#33
FREON 113
Concen: 6.65 PPBV
RT: 6.043 min Scan# 891
Delta R.T. 0.000 min
Lab File: 3W71612.D
Acq: 12 Feb 2020 2:39 am

Tgt Ion:151 Resp: 101004

Ion	Ratio	Lower	Upper
151	100		
101	145.2	123.1	163.1
103	93.3	71.8	111.8

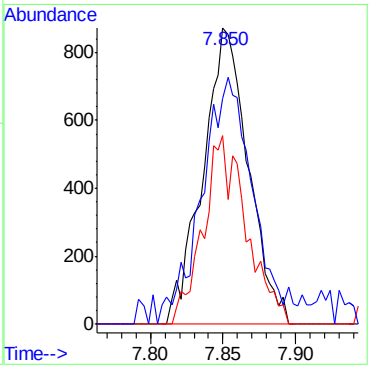


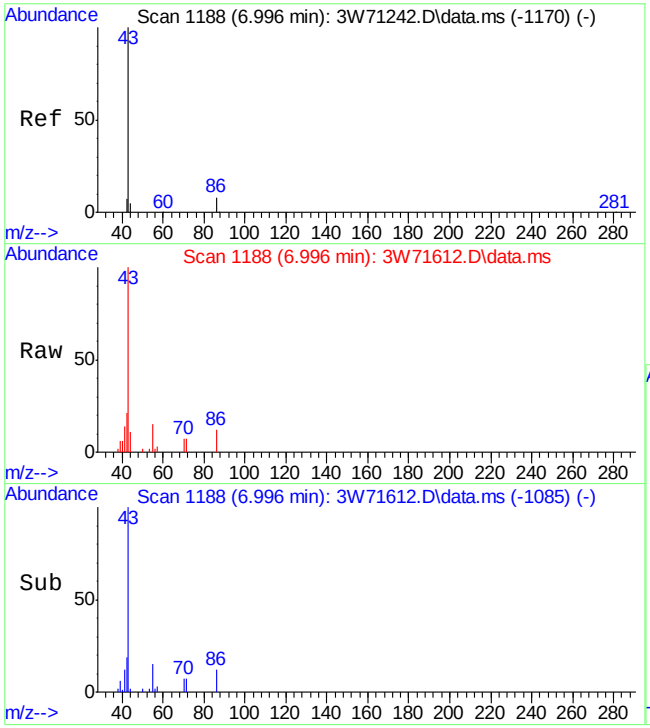


#38
HEXANE
Concen: 0.10 PPBV
RT: 7.850 min Scan# 1454
Delta R.T. -0.010 min
Lab File: 3W71612.D
Acq: 12 Feb 2020 2:39 am

Tgt Ion: 57 Resp: 1898

Ion	Ratio	Lower	Upper
57	100		
56	60.3	35.4	75.4
41	96.4	88.4	128.4

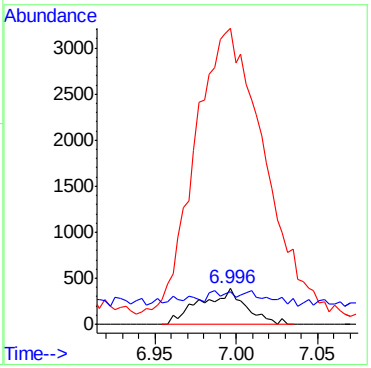


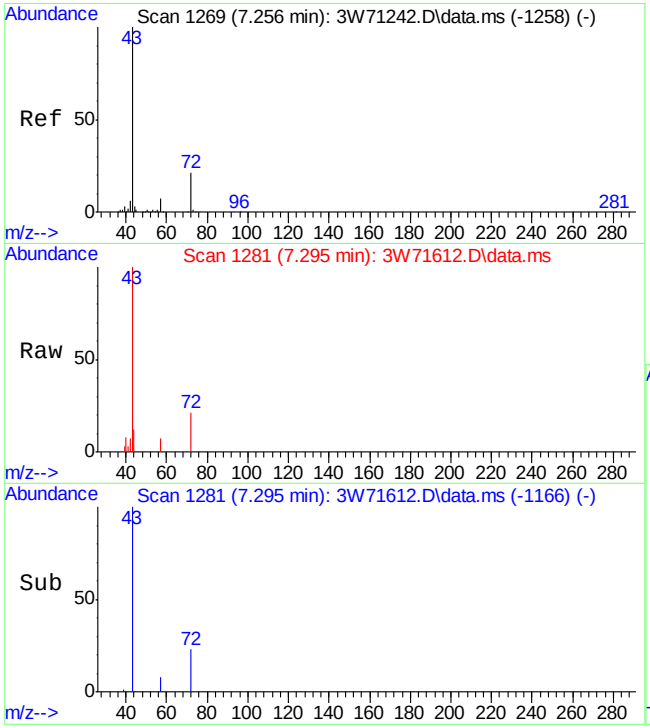


#39
VINYL ACETATE
Concen: 0.41 PPBV
RT: 6.996 min Scan# 1188
Delta R.T. 0.000 min
Lab File: 3W71612.D
Acq: 12 Feb 2020 2:39 am

Tgt Ion: 86 Resp: 751

Ion	Ratio	Lower	Upper
86	100		
43	1334.9	1473.4	1513.4#
44	33.8	64.2	104.2#

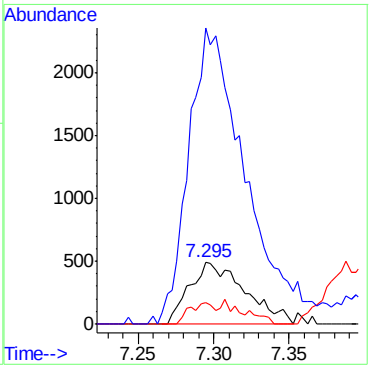


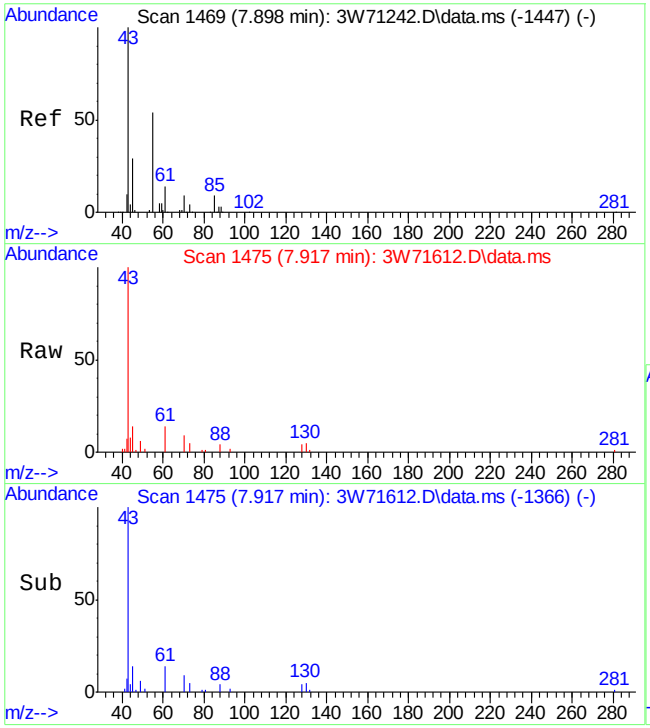


#41
METHYL ETHYL KETONE
Concen: 0.28 PPBV
RT: 7.295 min Scan# 1281
Delta R.T. 0.039 min
Lab File: 3W71612.D
Acq: 12 Feb 2020 2:39 am

Tgt Ion: 72 Resp: 1258

Ion	Ratio	Lower	Upper
72	100		
57	34.8	12.1	52.1
43	476.9	446.3	486.3

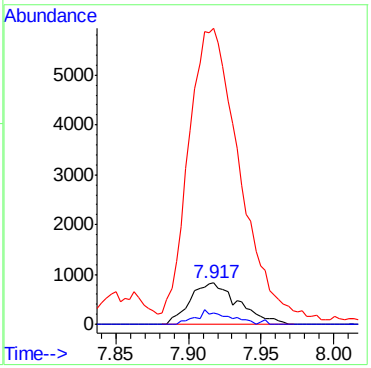


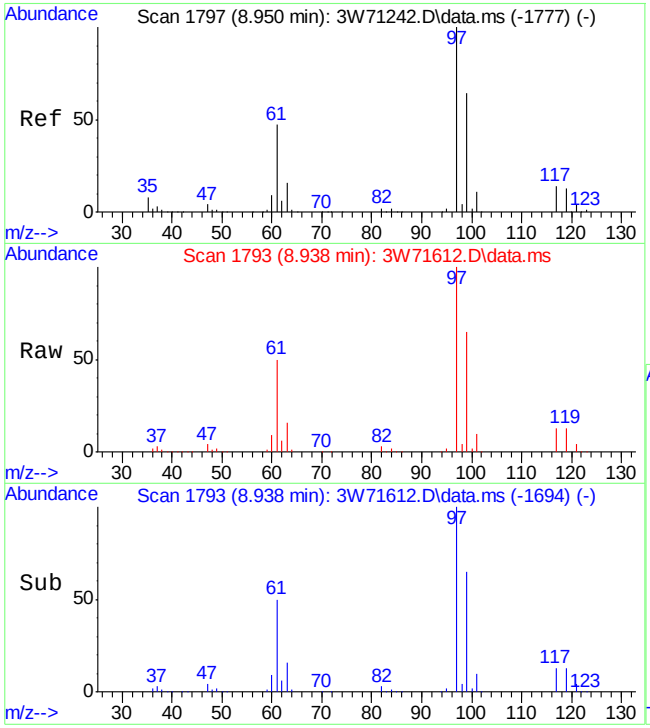


#44
ETHYL ACETATE
Concen: 0.61 PPBV
RT: 7.917 min Scan# 1475
Delta R.T. 0.019 min
Lab File: 3W71612.D
Acq: 12 Feb 2020 2:39 am

Tgt Ion: 61 Resp: 1922

Ion	Ratio	Lower	Upper
61	100		
43	771.3	0.0	20.0#
88	22.4	18.0	58.0

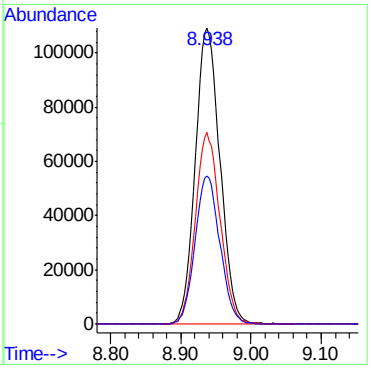


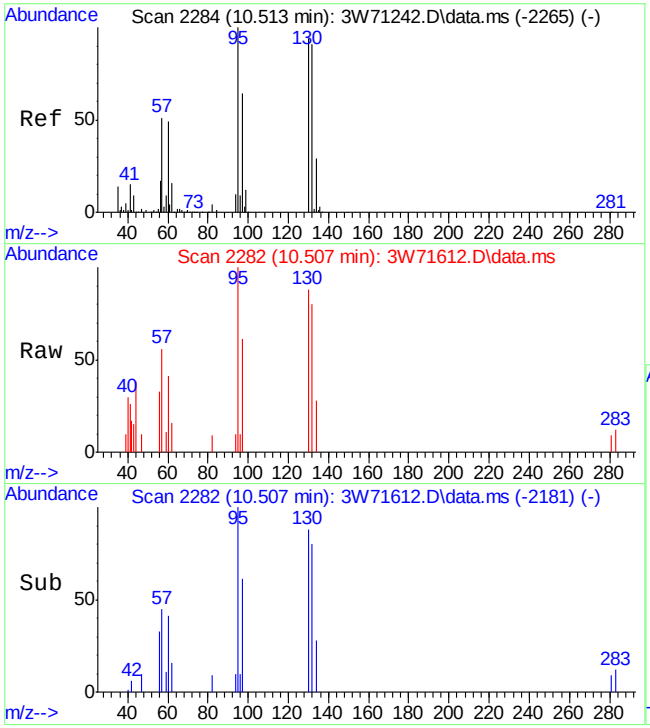


#48
1,1,1-TRICHLOROETHANE
Concen: 12.24 PPBV
RT: 8.938 min Scan# 1793
Delta R.T. -0.013 min
Lab File: 3W71612.D
Acq: 12 Feb 2020 2:39 am

Tgt Ion: 97 Resp: 263143

Ion	Ratio	Lower	Upper
97	100		
99	64.5	43.9	83.9
61	50.3	27.8	67.8

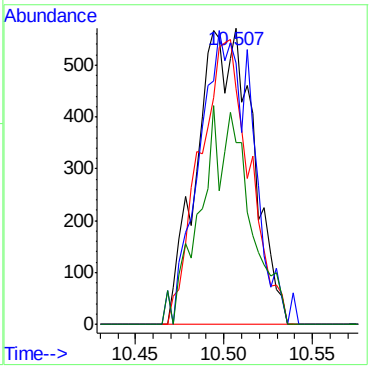


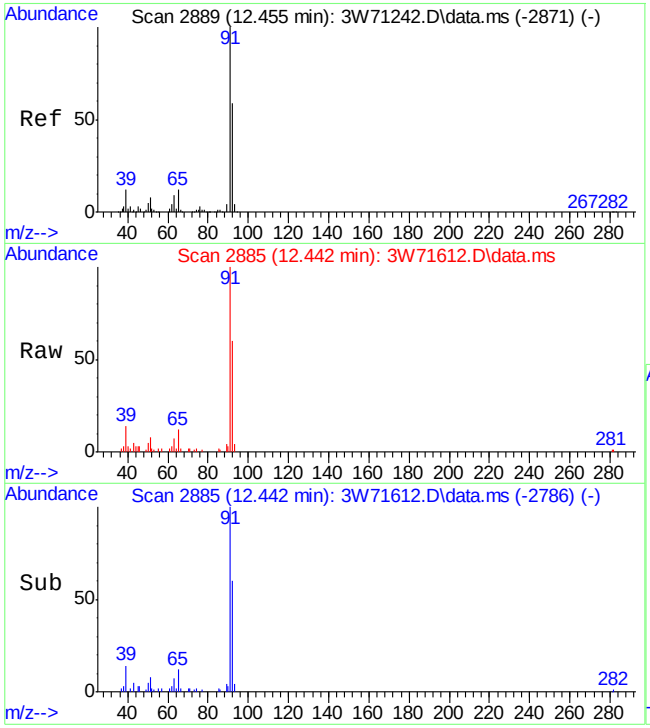


#55
TRICHLOROETHYLENE
Concen: 0.12 PPBV
RT: 10.507 min Scan# 2282
Delta R.T. -0.006 min
Lab File: 3W71612.D
Acq: 12 Feb 2020 2:39 am

Tgt Ion: 95 Resp: 1255

Ion	Ratio	Lower	Upper
95	100		
132	86.5	68.8	108.8
130	95.0	73.3	113.3
97	63.7	44.3	84.3

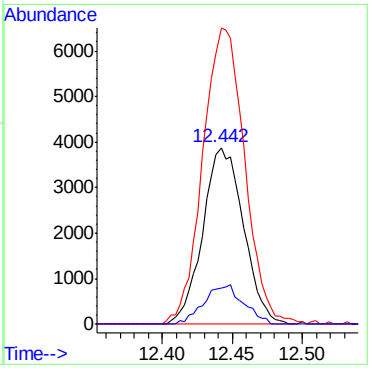


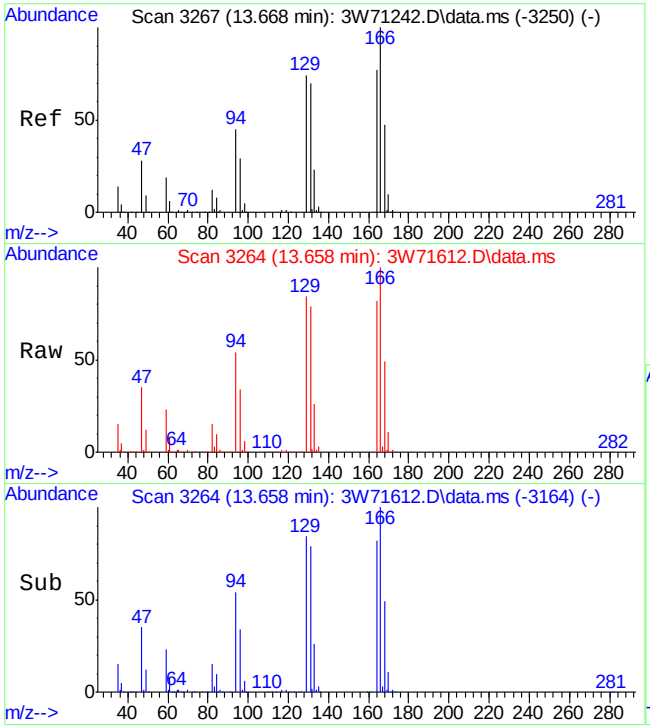


#66
TOLUENE
Concen: 0.46 PPBV
RT: 12.442 min Scan# 2885
Delta R.T. -0.013 min
Lab File: 3W71612.D
Acq: 12 Feb 2020 2:39 am

Tgt Ion: 92 Resp: 7651

Ion	Ratio	Lower	Upper
92	100		
91	173.3	150.3	190.3
65	21.6	4.0	44.0

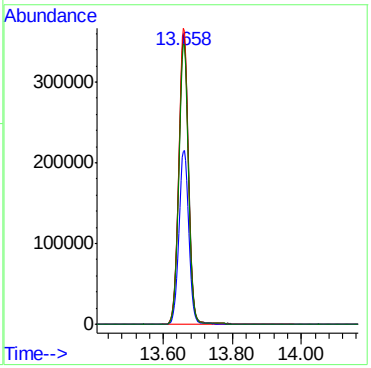


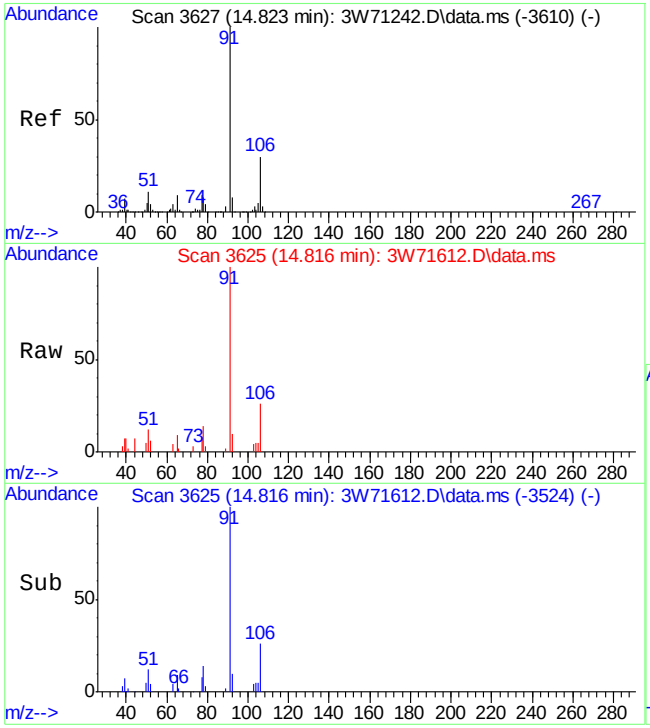


#73
TETRACHLOROETHYLENE
Concen: 75.92 PPBV
RT: 13.658 min Scan# 3264
Delta R.T. -0.010 min
Lab File: 3W71612.D
Acq: 12 Feb 2020 2:39 am

Tgt Ion:164 Resp: 702647

Ion	Ratio	Lower	Upper
164	100		
129	100.1	75.3	115.3
168	60.5	41.2	81.2
131	95.5	71.6	111.6

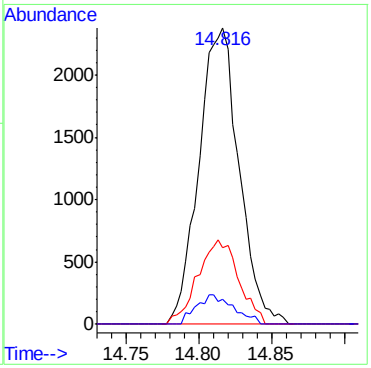


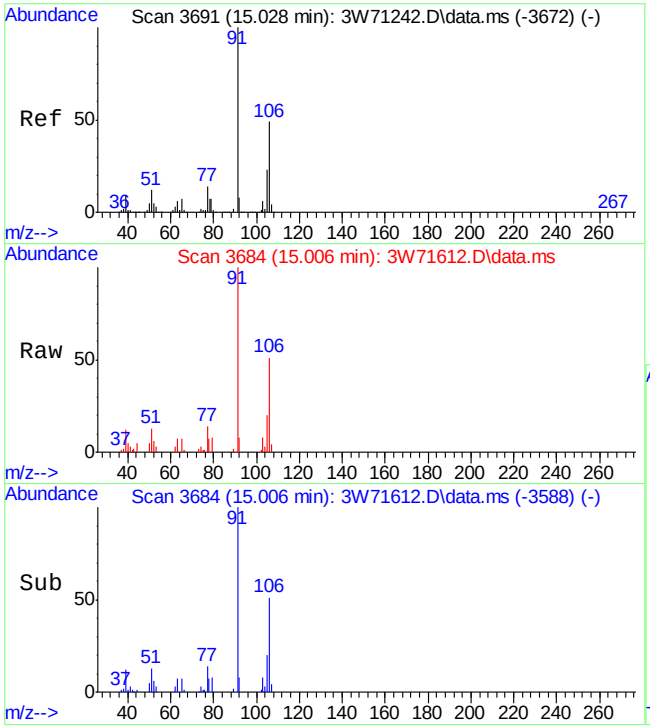


#79
ETHYLBENZENE
Concen: 0.14 PPBV
RT: 14.816 min Scan# 3625
Delta R.T. -0.006 min
Lab File: 3W71612.D
Acq: 12 Feb 2020 2:39 am

Tgt Ion: 91 Resp: 4562

Ion	Ratio	Lower	Upper
91	100		
106	28.8	10.2	50.2
77	9.2	0.0	29.0

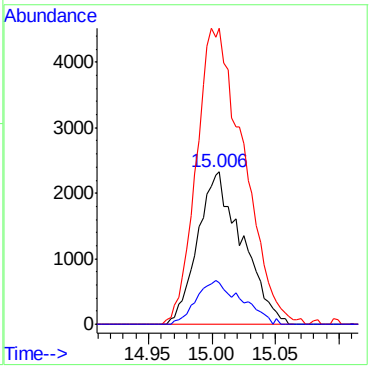


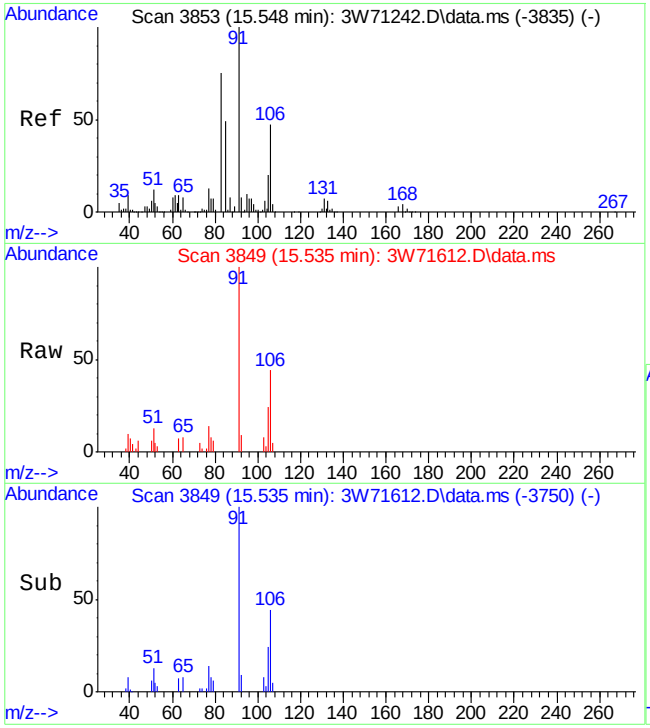


#80
m,p-XYLENE
Concen: 0.50 PPBV
RT: 15.006 min Scan# 3684
Delta R.T. -0.022 min
Lab File: 3W71612.D
Acq: 12 Feb 2020 2:39 am

Tgt Ion:106 Resp: 5656

Ion	Ratio	Lower	Upper
106	100		
91	194.5	185.1	225.1
77	27.0	8.5	48.5

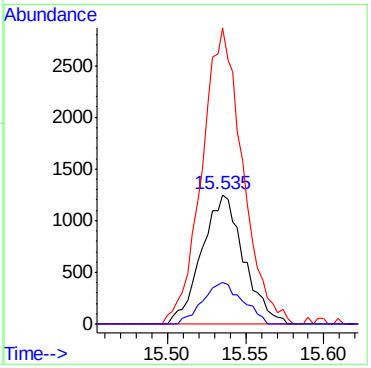


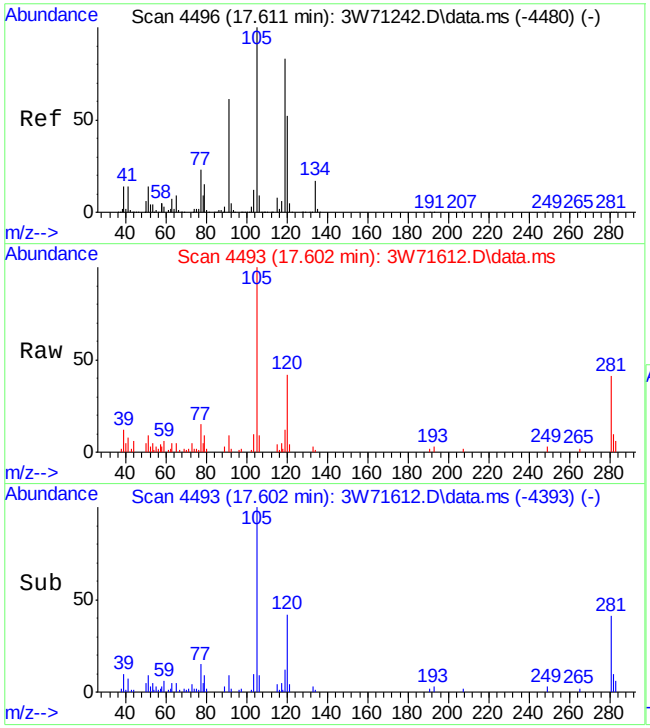


#81
o-XYLENE
Concen: 0.19 PPBV
RT: 15.535 min Scan# 3849
Delta R.T. -0.013 min
Lab File: 3W71612.D
Acq: 12 Feb 2020 2:39 am

Tgt Ion:106 Resp: 2340

Ion	Ratio	Lower	Upper
106	100		
91	223.0	196.3	236.3
77	30.4	8.4	48.4

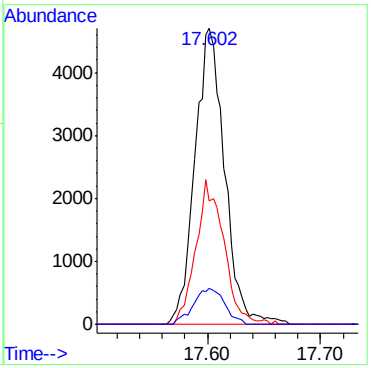


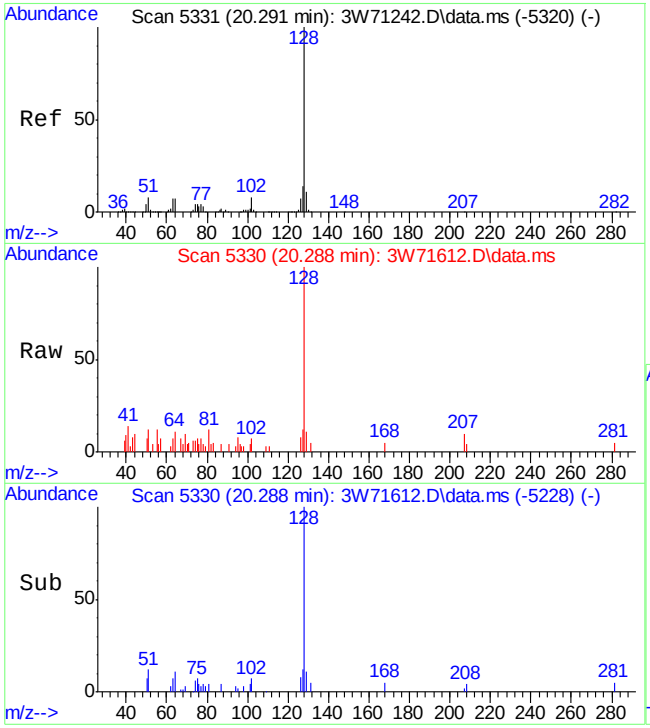


#96
1,2,4-TRIMETHYLBENZENE
Concen: 0.41 PPBV
RT: 17.602 min Scan# 4493
Delta R.T. -0.010 min
Lab File: 3W71612.D
Acq: 12 Feb 2020 2:39 am

Tgt Ion:105 Resp: 8529

Ion	Ratio	Lower	Upper
105	100		
120	46.0	34.7	74.7
119	12.8	87.2	127.2#

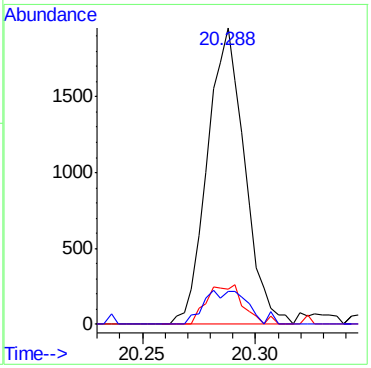




#108
NAPHTHALENE
Concen: 0.17 PPBV
RT: 20.288 min Scan# 5330
Delta R.T. -0.003 min
Lab File: 3W71612.D
Acq: 12 Feb 2020 2:39 am

Tgt Ion:128 Resp: 2246

Ion	Ratio	Lower	Upper
128	100		
127	13.0	0.0	33.5
129	12.8	0.0	31.0



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\
Data File : 3W71626.D
Acq On : 12 Feb 2020 4:04 pm
Operator : danat
Sample : jd2616-3
Misc : MS40889,V3W2807,152,,,,1.52
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Feb 13 14:45:02 2020
Quant Method : C:\msdchem\1\METHODS\M3W2789.M
Quant Title : TO15 by GCMS w/Rtx-1, 60 m X 0.32mm ID X 1.0 um
QLast Update : Wed Jan 15 09:18:27 2020
Response via : Initial Calibration

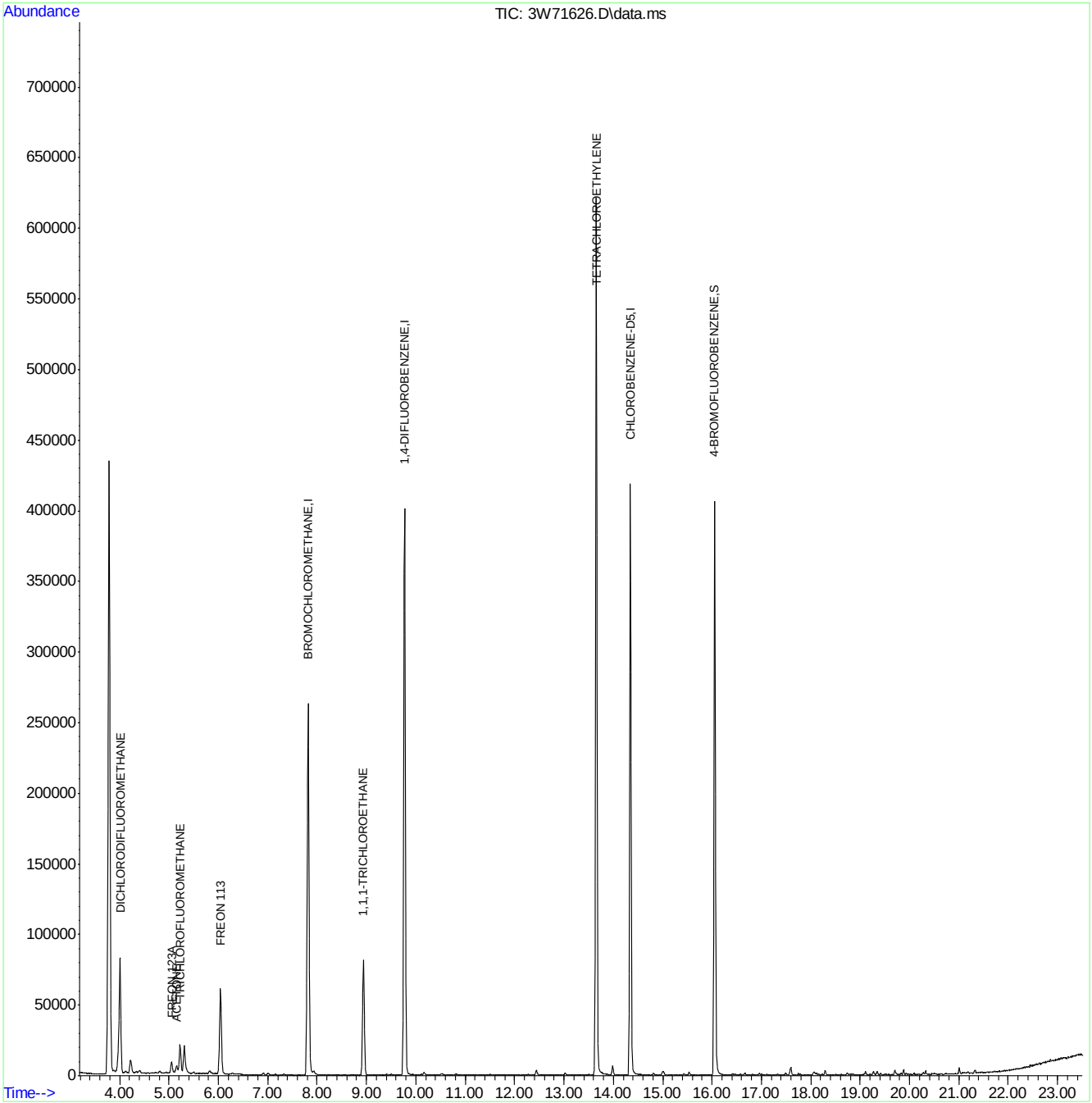
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) BROMOCHLOROMETHANE	7.815	128	85839	10.00	PPBV	-0.02
51) 1,4-DIFLUOROBENZENE	9.769	114	364070	10.00	PPBV	-0.02
70) CHLOROBENZENE-D5	14.345	82	156761	10.00	PPBV	-0.01
System Monitoring Compounds						
85) 4-BROMOFLUOROBENZENE	16.052	95	161298	9.37	PPBV	-0.01
Spiked Amount 10.000	Range 65 - 128		Recovery = 93.70%			
Target Compounds						Qvalue
6) DICHLORODIFLUOROMETHANE	4.009	85	96826	3.31	PPBV	100
20) FREON 123A	5.055	117	2982	0.24	PPBV	100
21) TRICHLOROFLUOROMETHANE	5.222	101	20942	0.82	PPBV	99
23) ACETONE	5.148	58	3055	0.60	PPBV #	74
33) FREON 113	6.043	151	24308	1.58	PPBV	98
48) 1,1,1-TRICHLOROETHANE	8.934	97	62960	2.89	PPBV	98
73) TETRACHLOROETHYLENE	13.655	164	159930	16.05	PPBV	99

(#) = qualifier out of range (m) = manual integration (+) = signals summed

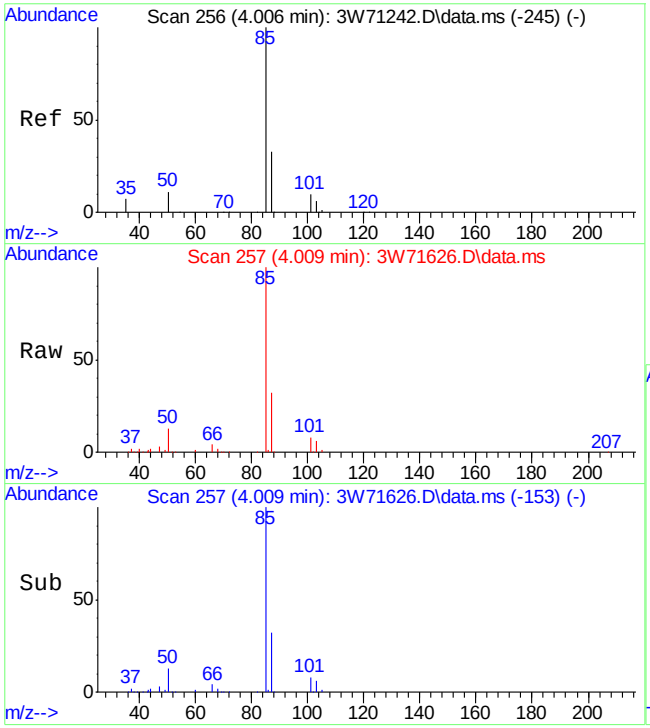
Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\
Data File : 3W71626.D
Acq On : 12 Feb 2020 4:04 pm
Operator : danat
Sample : jd2616-3
Misc : MS40889,V3W2807,152,,,,1.52
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Feb 13 14:45:02 2020
Quant Method : C:\msdchem\1\METHODS\M3W2789.M
Quant Title : TO15 by GCMS w/Rtx-1, 60 m X 0.32mm ID X 1.0 um
QLast Update : Wed Jan 15 09:18:27 2020
Response via : Initial Calibration



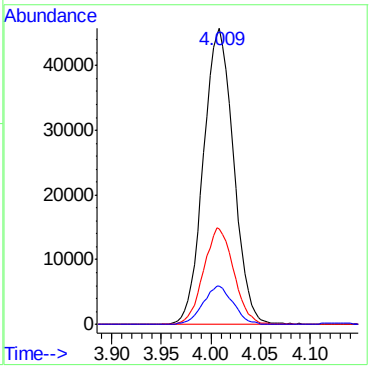
M3W2789.M Thu Feb 13 14:45:07 2020 GCMS6W Page: 2

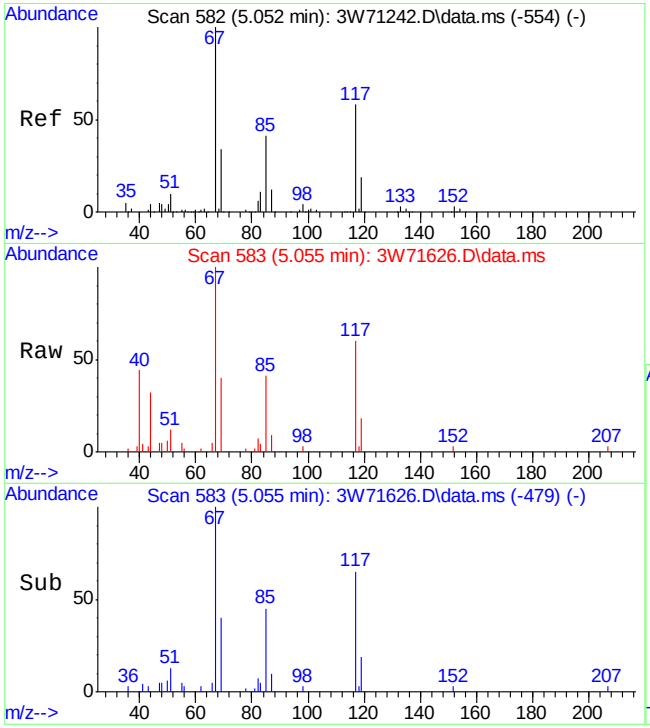


#6
DICHLORODIFLUOROMETHANE
Concen: 3.31 PPBV
RT: 4.009 min Scan# 257
Delta R.T. 0.003 min
Lab File: 3W71626.D
Acq: 12 Feb 2020 4:04 pm

Tgt Ion: 85 Resp: 96826

Ion	Ratio	Lower	Upper
85	100		
87	32.5	12.2	52.2
50	12.8	0.0	32.7

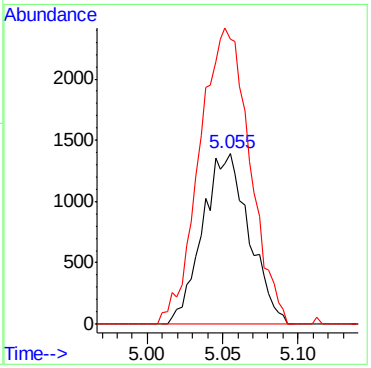


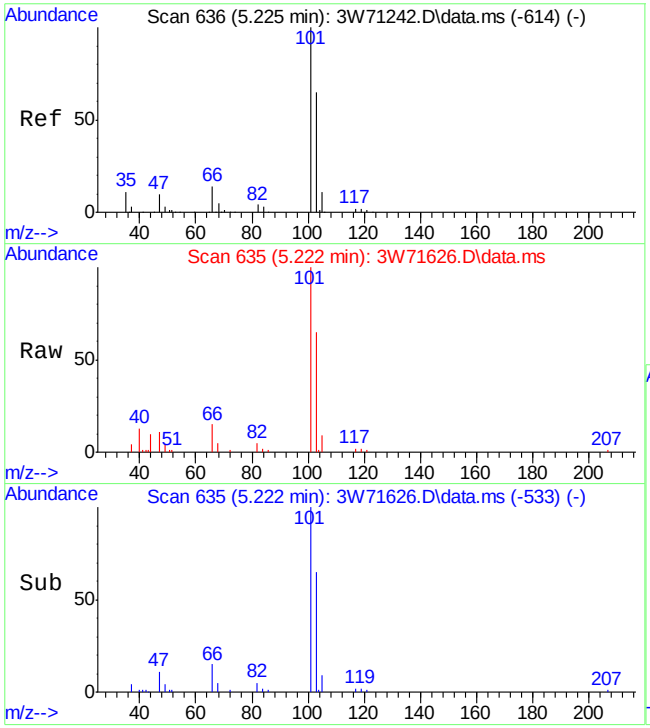


#20
FREON 123A
Concen: 0.24 PPBV
RT: 5.055 min Scan# 583
Delta R.T. 0.003 min
Lab File: 3W71626.D
Acq: 12 Feb 2020 4:04 pm

Tgt Ion:117 Resp: 2982

Ion	Ratio	Lower	Upper
117	100		
67	187.8	167.4	207.4

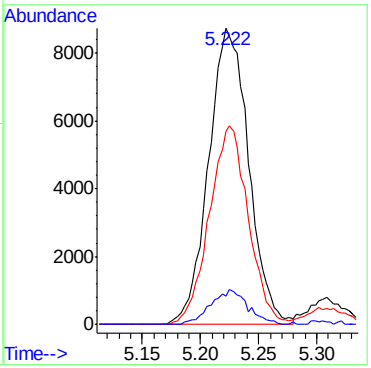


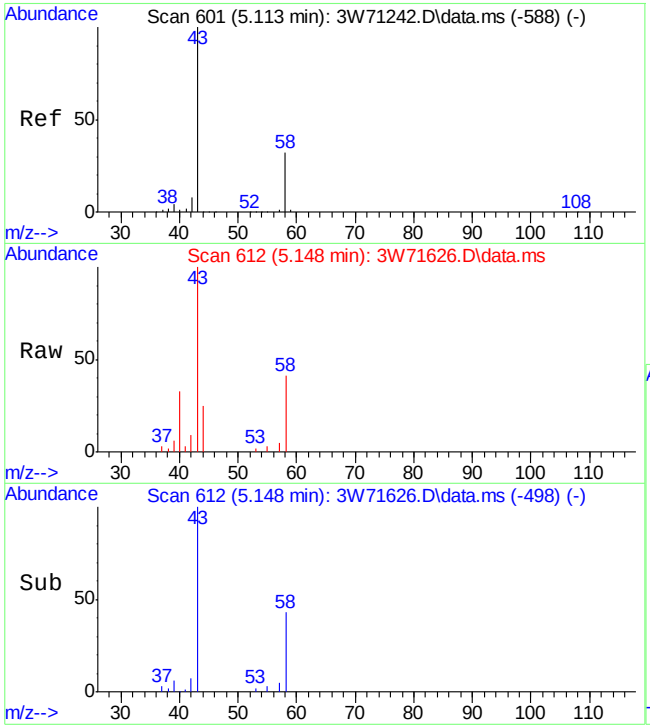


#21
TRICHLOROFLUOROMETHANE
Concen: 0.82 PPBV
RT: 5.222 min Scan# 635
Delta R.T. -0.003 min
Lab File: 3W71626.D
Acq: 12 Feb 2020 4:04 pm

Tgt Ion:101 Resp: 20942

Ion	Ratio	Lower	Upper
101	100		
103	65.2	44.5	84.5
105	10.7	0.0	30.5

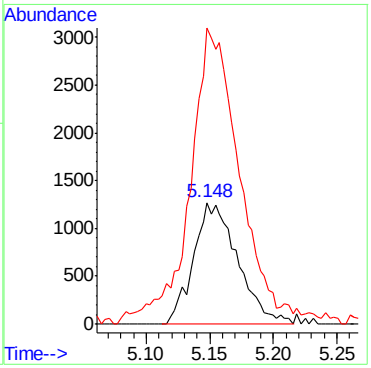


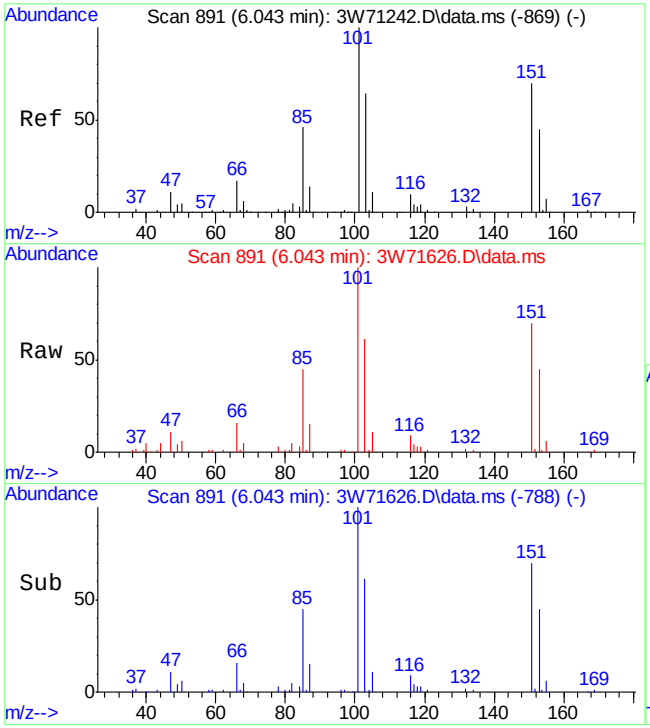


#23
ACETONE
Concen: 0.60 PPBV
RT: 5.148 min Scan# 612
Delta R.T. 0.035 min
Lab File: 3W71626.D
Acq: 12 Feb 2020 4:04 pm

Tgt Ion: 58 Resp: 3055

Ion	Ratio	Lower	Upper
58	100		
43	276.8	311.7	351.7#

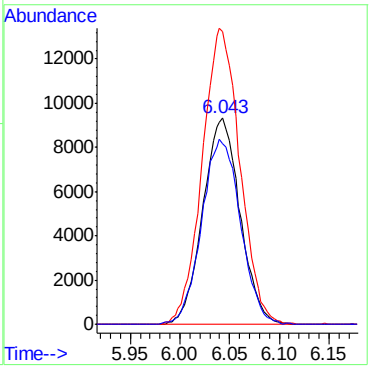


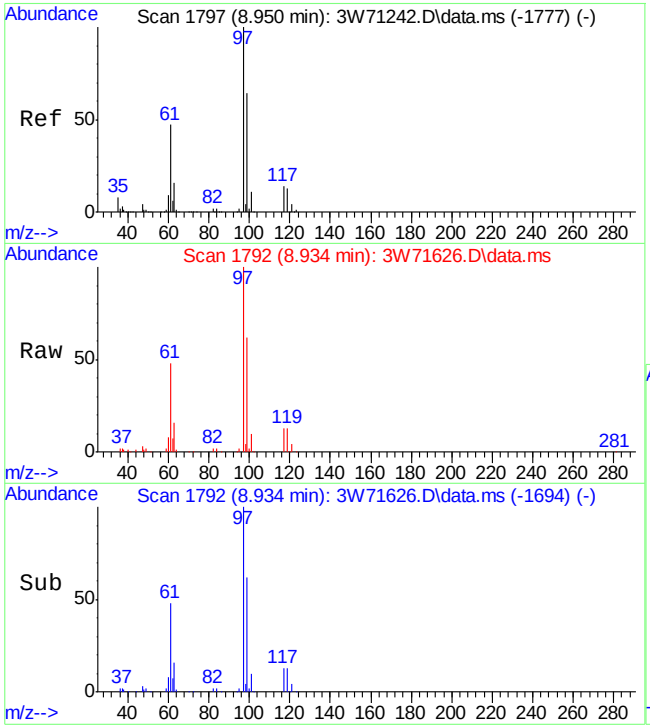


#33
FREON 113
Concen: 1.58 PPBV
RT: 6.043 min Scan# 891
Delta R.T. -0.000 min
Lab File: 3W71626.D
Acq: 12 Feb 2020 4:04 pm

Tgt Ion:151 Resp: 24308

Ion	Ratio	Lower	Upper
151	100		
101	145.5	123.1	163.1
103	93.4	71.8	111.8

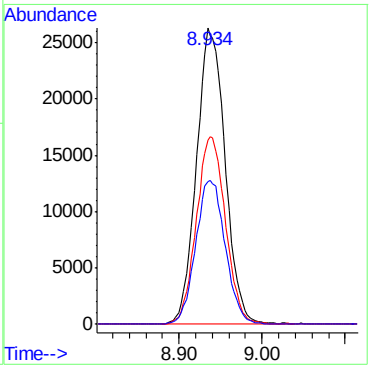


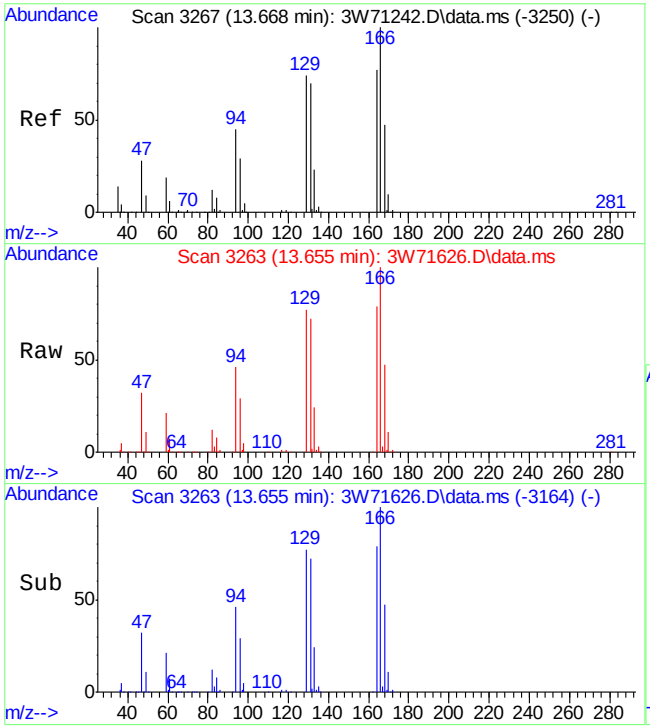


#48
1,1,1-TRICHLOROETHANE
Concen: 2.89 PPBV
RT: 8.934 min Scan# 1792
Delta R.T. -0.016 min
Lab File: 3W71626.D
Acq: 12 Feb 2020 4:04 pm

Tgt Ion: 97 Resp: 62960

Ion	Ratio	Lower	Upper
97	100		
99	64.1	43.9	83.9
61	49.9	27.8	67.8

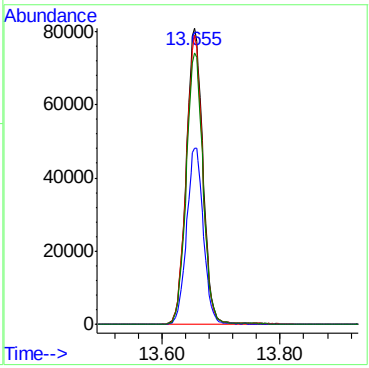




#73
TETRACHLOROETHYLENE
Concen: 16.05 PPBV
RT: 13.655 min Scan# 3263
Delta R.T. -0.013 min
Lab File: 3W71626.D
Acq: 12 Feb 2020 4:04 pm

Tgt Ion:164 Resp: 159930

Ion	Ratio	Lower	Upper
164	100		
129	96.3	75.3	115.3
168	60.0	41.2	81.2
131	92.2	71.6	111.6



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\
Data File : 3W71610.D
Acq On : 12 Feb 2020 12:46 am
Operator : danat
Sample : jd2616-4
Misc : MS40889,V3W2806,790,,,,1.58
ALS Vial : 12 Sample Multiplier: 1

Quant Time: Feb 12 10:45:33 2020
Quant Method : C:\msdchem\1\METHODS\M3W2789.M
Quant Title : TO15 by GCMS w/Rtx-1, 60 m X 0.32mm ID X 1.0 um
QLast Update : Wed Jan 15 09:18:27 2020
Response via : Initial Calibration

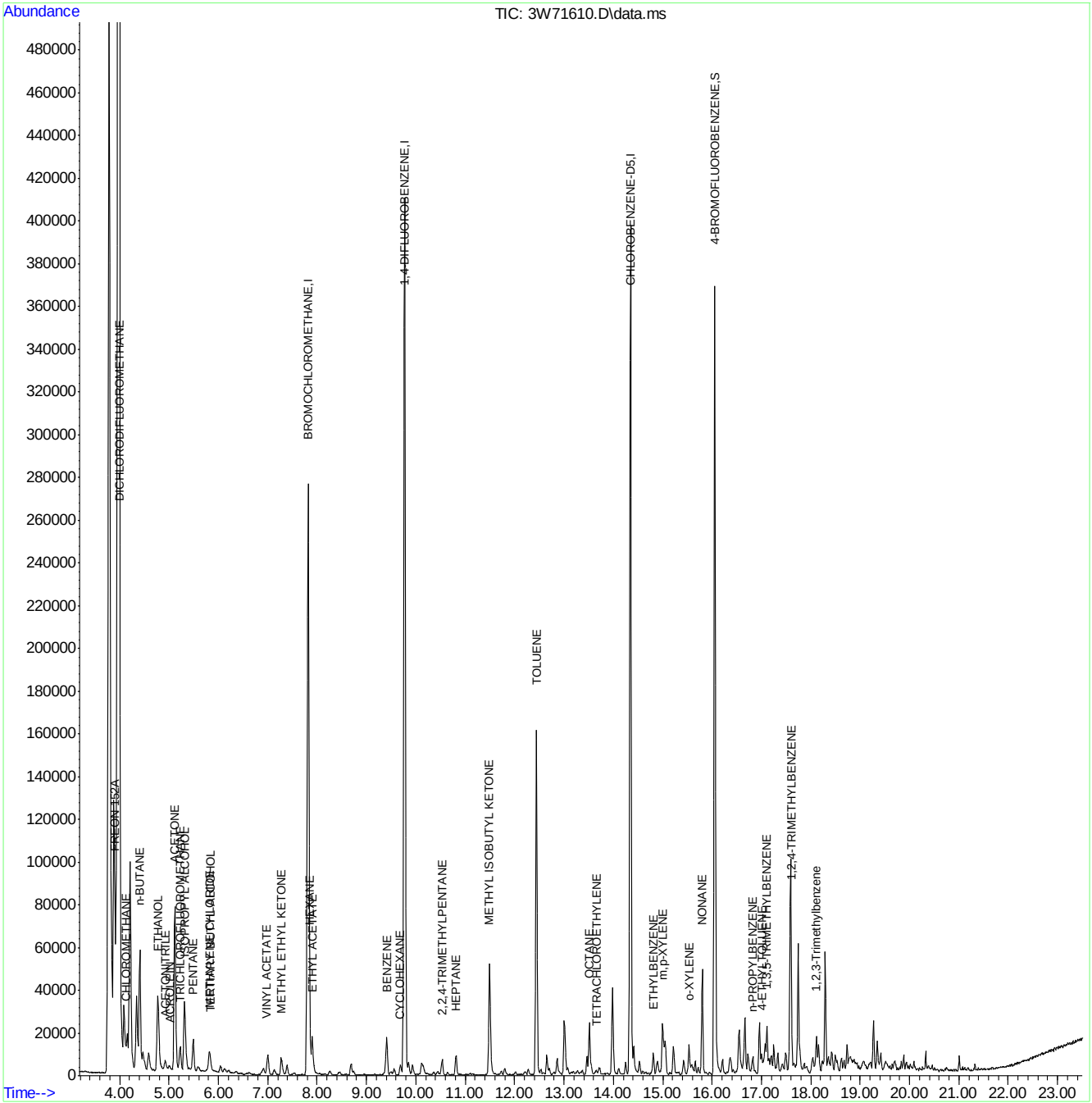
Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) BROMOCHLOROMETHANE	7.818	128	86059	10.00	PPBV		#-0.01
51) 1,4-DIFLUOROBENZENE	9.772	114	368950	10.00	PPBV		-0.02
70) CHLOROBENZENE-D5	14.345	82	147296	10.00	PPBV		-0.01
System Monitoring Compounds							
85) 4-BROMOFLUOROBENZENE	16.055	95	141351	8.74	PPBV		0.00
Spiked Amount 10.000	Range 65 - 128		Recovery = 87.40%				
Target Compounds							Qvalue
3) FREON 152A	3.903	65	2058	0.28	PPBV		99
6) DICHLORODIFLUOROMETHANE	4.006	85	17892	0.61	PPBV		96
10) CHLOROMETHANE	4.128	52	3075	0.79	PPBV		99
13) n-BUTANE	4.407	43	60726	2.78	PPBV		100
17) ACETONITRILE	4.923	41	6719	0.67	PPBV		99
18) ACROLEIN	5.013	56	1750	0.34	PPBV		95
21) TRICHLOROFLUOROMETHANE	5.225	101	11087	0.43	PPBV		100
22) ISOPROPYL ALCOHOL	5.315	45	57348	2.68	PPBV		99
23) ACETONE	5.113	58	29095	5.72	PPBV		98
24) PENTANE	5.488	42	7704	0.52	PPBV		97
28) ETHANOL	4.773	45	53446	10.29	PPBV		98
31) METHYLENE CHLORIDE	5.819	84	3332	0.30	PPBV		89
35) TERTIARY BUTYL ALCOHOL	5.835	59	3407	0.17	PPBV	#	71
38) HEXANE	7.850	57	4642	0.25	PPBV		90
39) VINYL ACETATE	6.980	86	621	0.33	PPBV	#	46
41) METHYL ETHYL KETONE	7.276	72	3081	0.67	PPBV	#	81
44) ETHYL ACETATE	7.898	61	3231	1.01	PPBV	#	73
52) BENZENE	9.406	78	17681	0.54	PPBV		99
53) CYCLOHEXANE	9.685	84	1750	0.13	PPBV		99
60) 2,2,4-TRIMETHYLPENTANE	10.533	57	6120	0.11	PPBV	#	79
62) HEPTANE	10.818	43	5116	0.24	PPBV		86
64) METHYL ISOBUTYL KETONE	11.486	58	15888	2.00	PPBV	#	90
66) TOLUENE	12.442	92	75454	3.78	PPBV		99
73) TETRACHLOROETHYLENE	13.661	164	360	0.04	PPBV		94
76) OCTANE	13.517	43	12430	0.59	PPBV		94
79) ETHYLBENZENE	14.816	91	7977	0.24	PPBV		99
80) m,p-XYLENE	15.003	106	9334	0.82	PPBV		94
81) o-XYLENE	15.535	106	4025	0.33	PPBV		94
83) NONANE	15.802	43	21958	1.15	PPBV		97
91) n-PROPYLBENZENE	16.825	120	980	0.13	PPBV		98
92) 4-ETHYLTOLUENE	17.005	105	5710	0.22	PPBV		100
93) 1,3,5-TRIMETHYLBENZENE	17.104	105	5781	0.26	PPBV		97
96) 1,2,4-TRIMETHYLBENZENE	17.602	105	16700	0.80	PPBV	#	40
101) 1,2,3-Trimethylbenzene	18.112	105	5525	0.26	PPBV		81

(#) = qualifier out of range (m) = manual integration (+) = signals summed

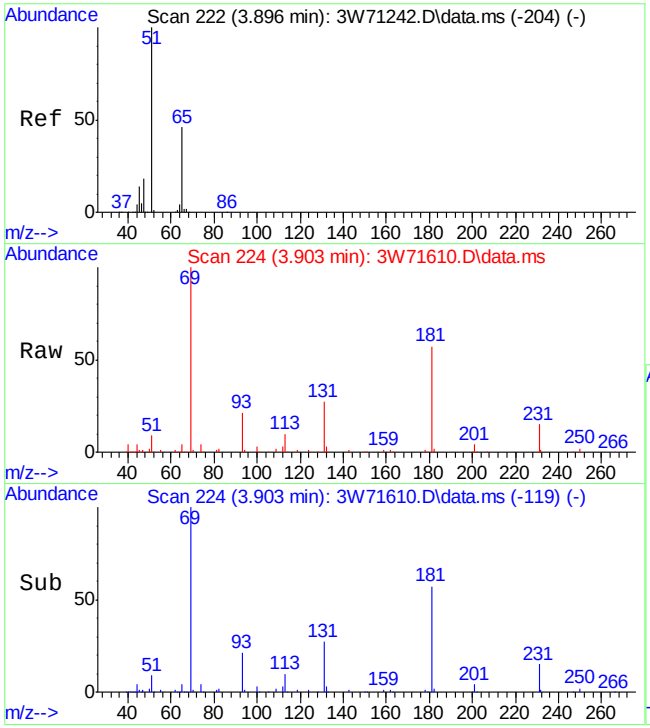
Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\
Data File : 3W71610.D
Acq On : 12 Feb 2020 12:46 am
Operator : danat
Sample : jd2616-4
Misc : MS40889,V3W2806,790,,,,1.58
ALS Vial : 12 Sample Multiplier: 1

Quant Time: Feb 12 10:45:33 2020
Quant Method : C:\msdchem\1\METHODS\M3W2789.M
Quant Title : TO15 by GCMS w/Rtx-1, 60 m X 0.32mm ID X 1.0 um
QLast Update : Wed Jan 15 09:18:27 2020
Response via : Initial Calibration



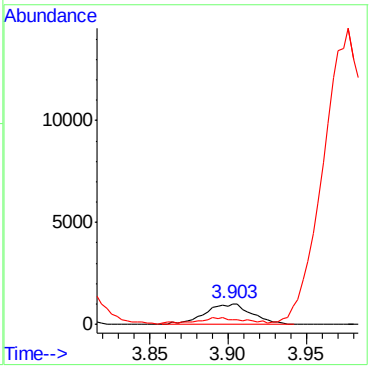
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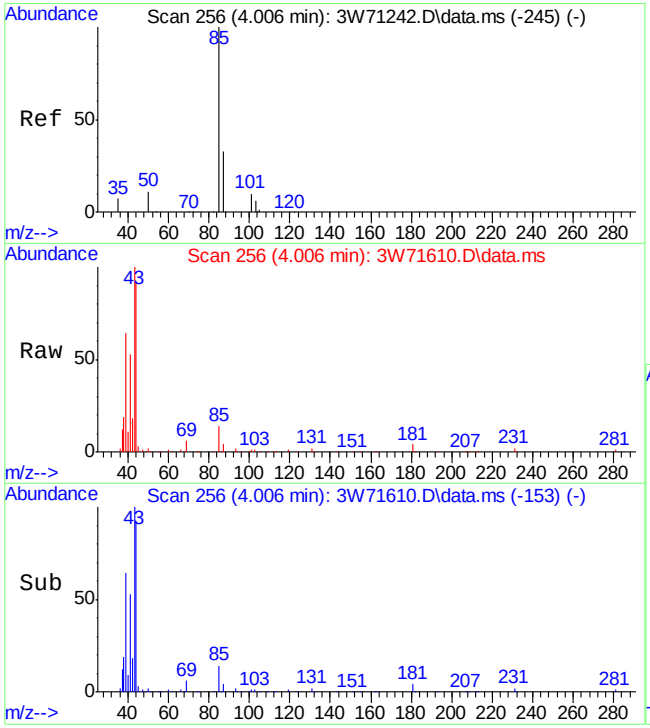


#3
FREON 152A
Concen: 0.28 PPBV
RT: 3.903 min Scan# 224
Delta R.T. 0.006 min
Lab File: 3W71610.D
Acq: 12 Feb 2020 12:46 am

Tgt Ion: 65 Resp: 2058

Ion	Ratio	Lower	Upper
65	100		
45	29.4	10.1	50.1

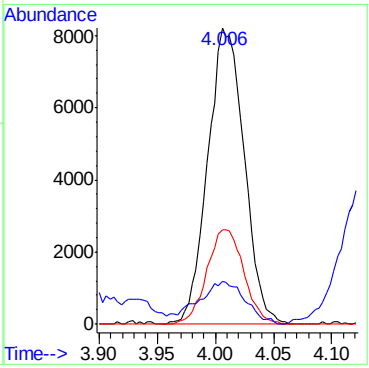


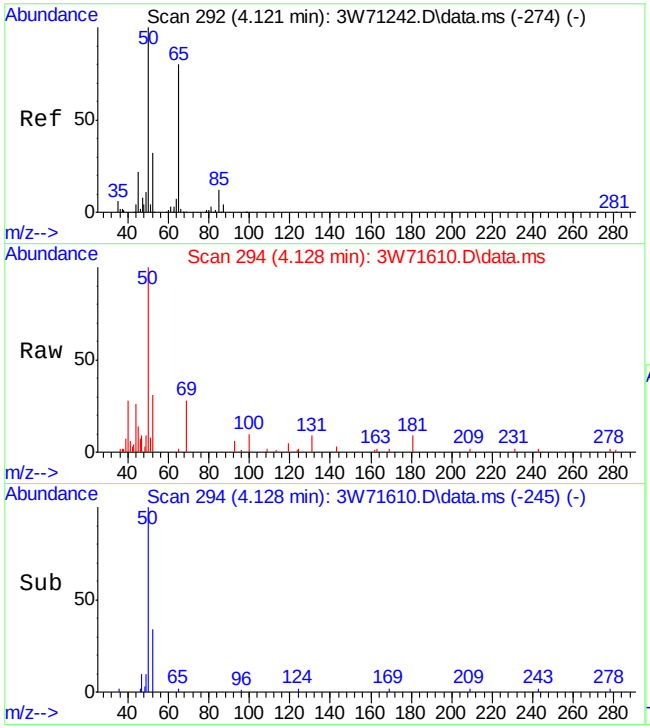


#6
DICHLORODIFLUOROMETHANE
Concen: 0.61 PPBV
RT: 4.006 min Scan# 256
Delta R.T. 0.000 min
Lab File: 3W71610.D
Acq: 12 Feb 2020 12:46 am

Tgt Ion: 85 Resp: 17892

Ion	Ratio	Lower	Upper
85	100		
87	32.2	12.2	52.2
50	18.2	0.0	32.7

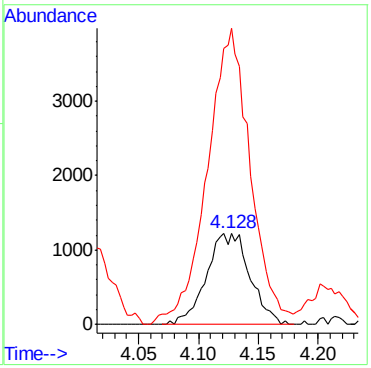


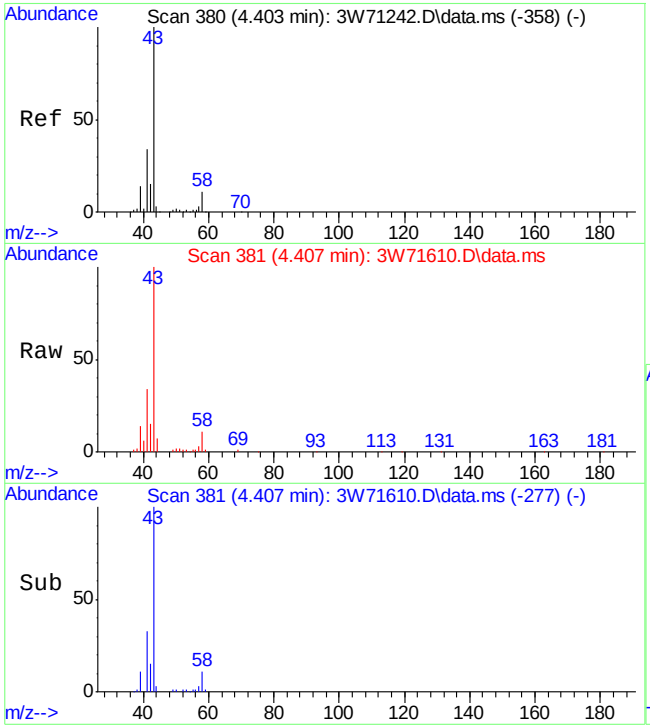


#10
CHLOROMETHANE
Concen: 0.79 PPBV
RT: 4.128 min Scan# 294
Delta R.T. 0.006 min
Lab File: 3W71610.D
Acq: 12 Feb 2020 12:46 am

Tgt Ion: 52 Resp: 3075

Ion	Ratio	Lower	Upper
52	100		
50	312.5	289.6	329.6

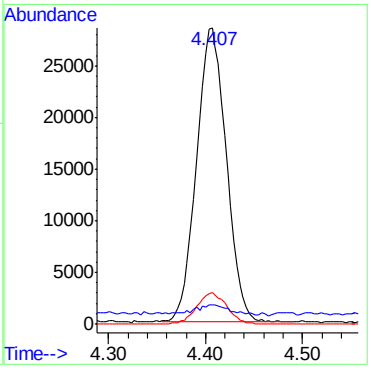


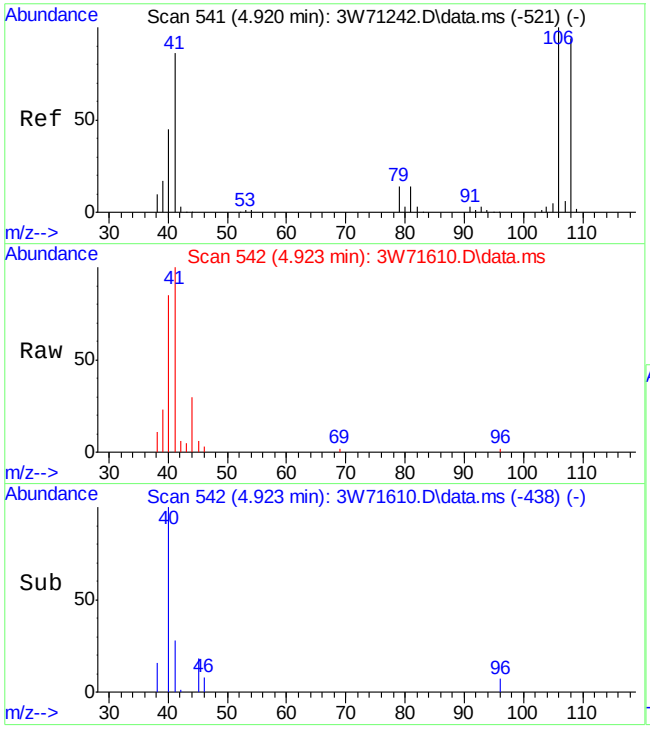


#13
n-BUTANE
Concen: 2.78 PPBV
RT: 4.407 min Scan# 381
Delta R.T. 0.003 min
Lab File: 3W71610.D
Acq: 12 Feb 2020 12:46 am

Tgt Ion: 43 Resp: 60726

Ion	Ratio	Lower	Upper
43	100		
58	10.7	0.0	30.9
44	3.6	0.0	23.6

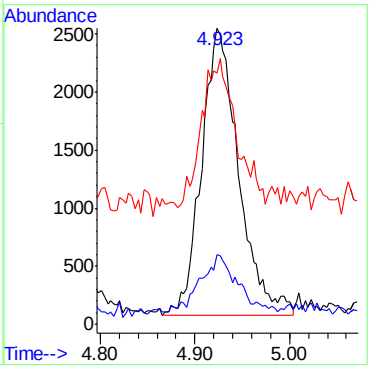


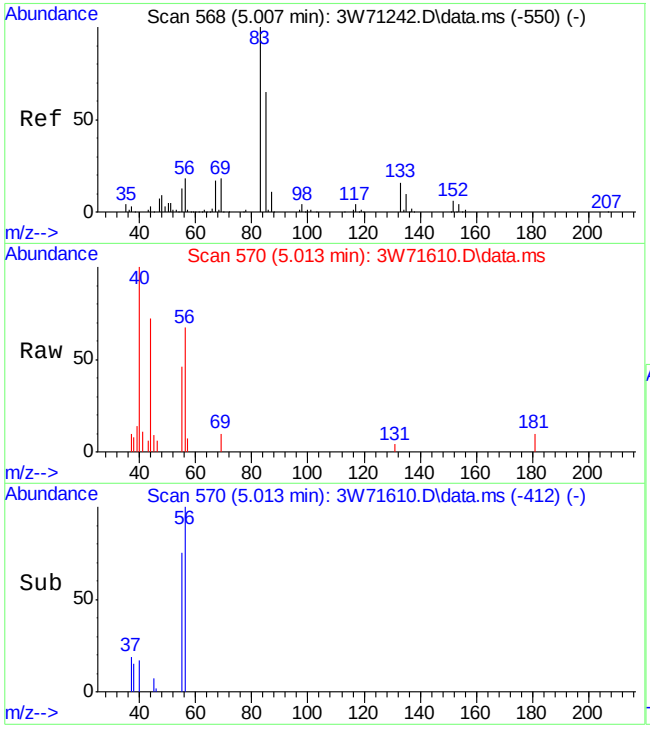


#17
ACETONITRILE
Concen: 0.67 PPBV
RT: 4.923 min Scan# 542
Delta R.T. 0.003 min
Lab File: 3W71610.D
Acq: 12 Feb 2020 12:46 am

Tgt Ion: 41 Resp: 6719

Ion	Ratio	Lower	Upper
41	100		
40	55.2	43.4	65.0
39	20.3	15.7	23.5

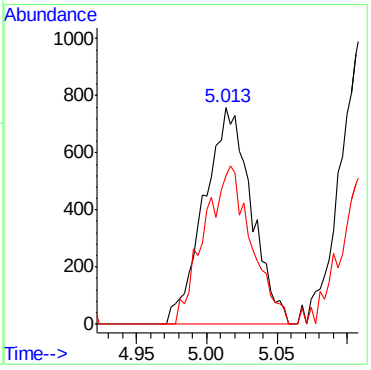


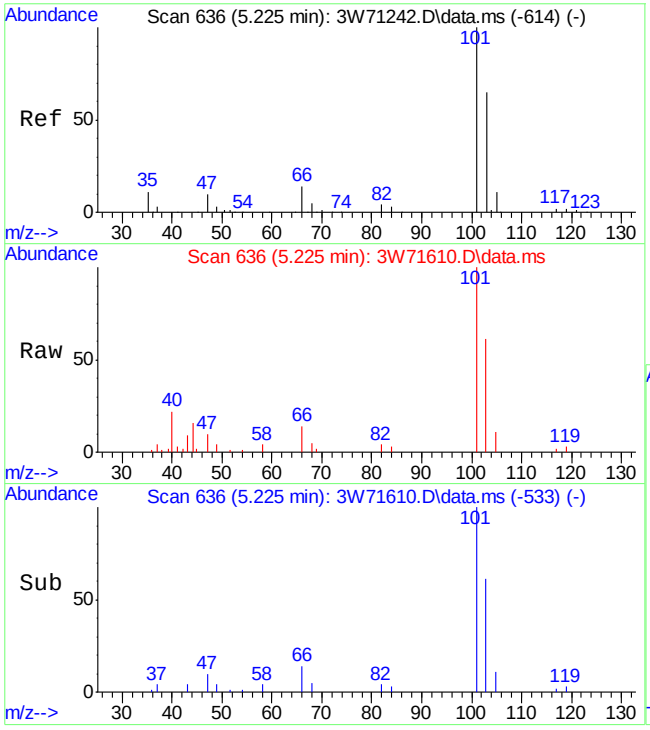


#18
ACROLEIN
Concen: 0.34 PPBV
RT: 5.013 min Scan# 570
Delta R.T. 0.006 min
Lab File: 3W71610.D
Acq: 12 Feb 2020 12:46 am

Tgt Ion: 56 Resp: 1750

Ion	Ratio	Lower	Upper
56	100		
55	72.9	54.7	82.1

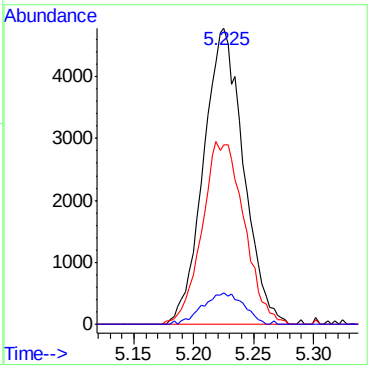


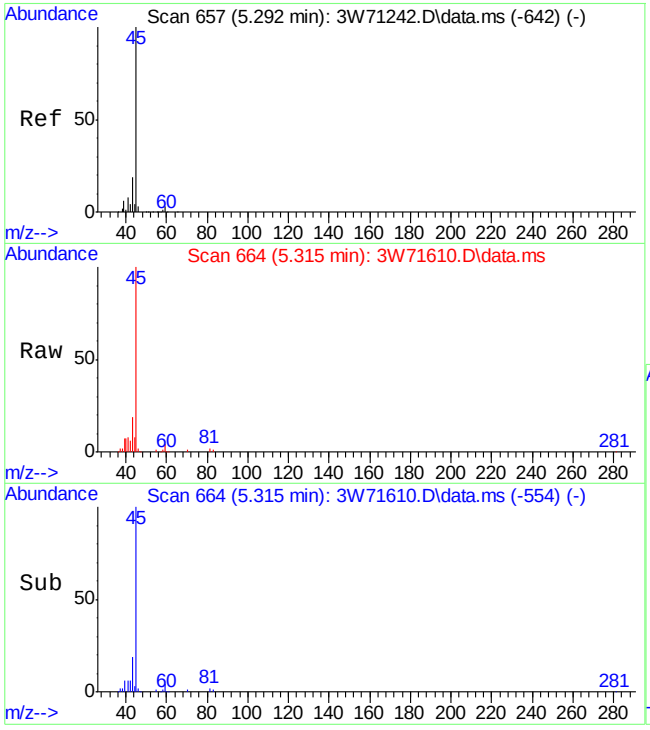


#21
TRICHLOROFLUOROMETHANE
Concen: 0.43 PPBV
RT: 5.225 min Scan# 636
Delta R.T. 0.000 min
Lab File: 3W71610.D
Acq: 12 Feb 2020 12:46 am

Tgt Ion:101 Resp: 11087

Ion	Ratio	Lower	Upper
101	100		
103	64.7	44.5	84.5
105	10.9	0.0	30.5

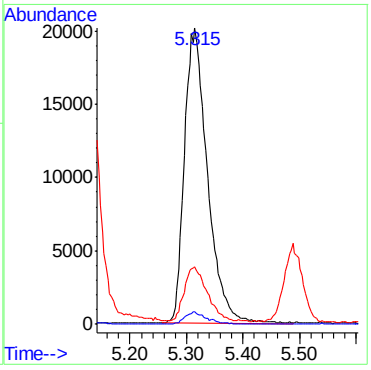


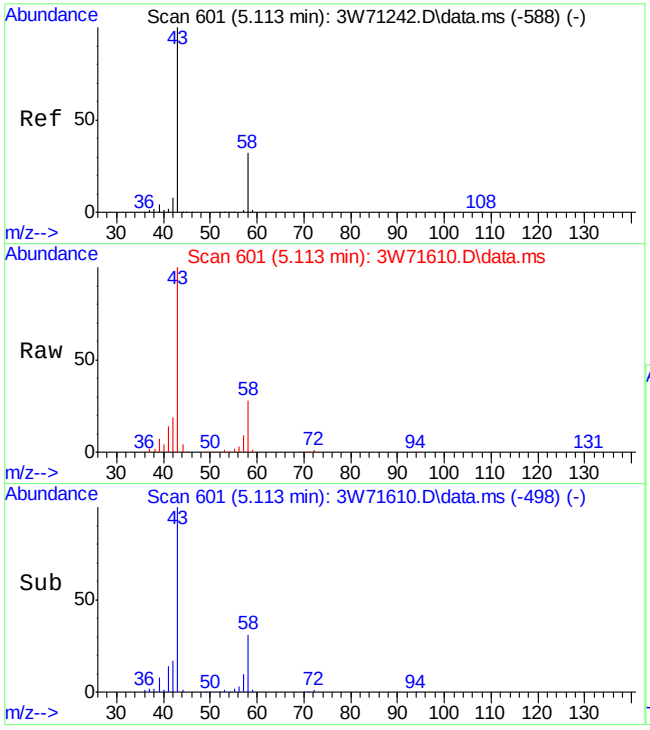


#22
ISOPROPYL ALCOHOL
Concen: 2.68 PPBV
RT: 5.315 min Scan# 664
Delta R.T. 0.023 min
Lab File: 3W71610.D
Acq: 12 Feb 2020 12:46 am

Tgt Ion: 45 Resp: 57348

Ion	Ratio	Lower	Upper
45	100		
43	19.3	0.0	39.5
59	4.1	0.0	23.5

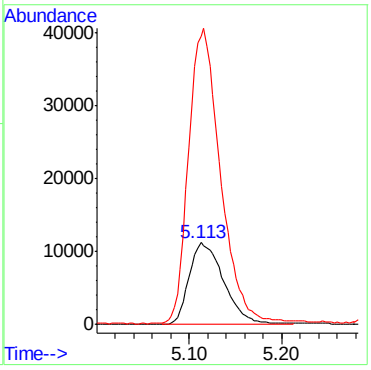


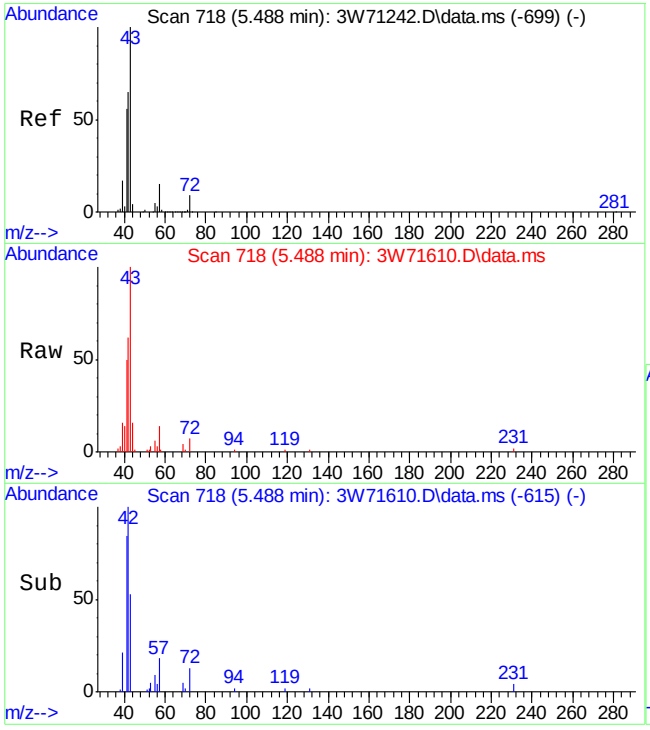


#23
ACETONE
Concen: 5.72 PPBV
RT: 5.113 min Scan# 601
Delta R.T. 0.000 min
Lab File: 3W71610.D
Acq: 12 Feb 2020 12:46 am

Tgt Ion: 58 Resp: 29095

Ion	Ratio	Lower	Upper
58	100		
43	336.9	311.7	351.7

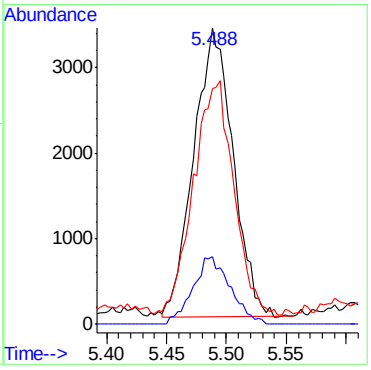


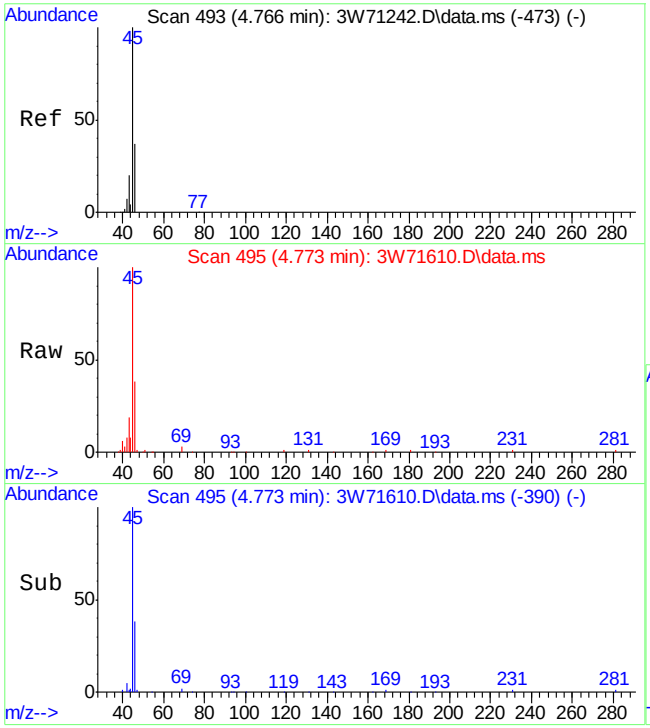


#24
PENTANE
Concen: 0.52 PPBV
RT: 5.488 min Scan# 718
Delta R.T. 0.000 min
Lab File: 3W71610.D
Acq: 12 Feb 2020 12:46 am

Tgt Ion: 42 Resp: 7704

Ion	Ratio	Lower	Upper
42	100		
41	83.1	66.3	106.3
57	22.2	3.6	43.6

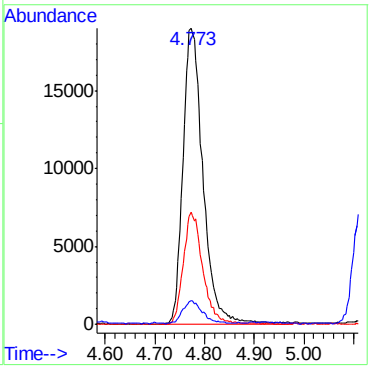


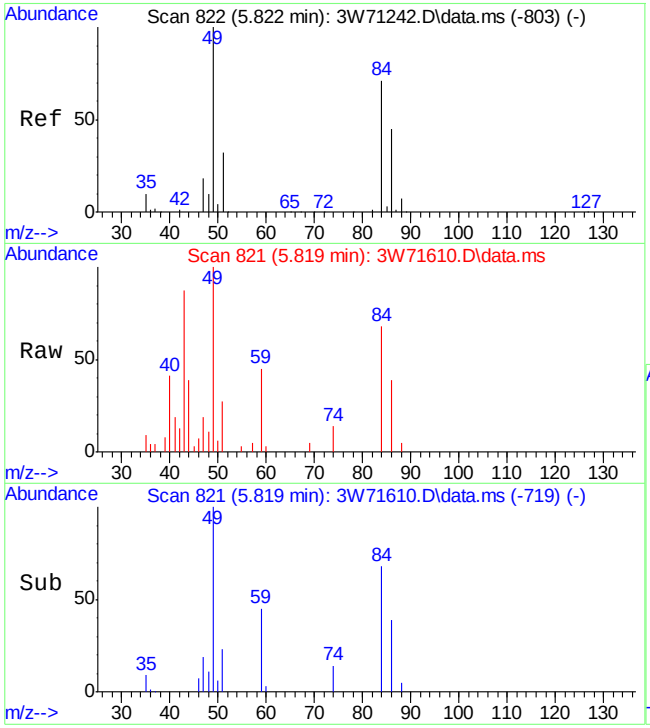


#28
ETHANOL
Concen: 10.29 PPBV
RT: 4.773 min Scan# 495
Delta R.T. 0.007 min
Lab File: 3W71610.D
Acq: 12 Feb 2020 12:46 am

Tgt Ion: 45 Resp: 53446

Ion	Ratio	Lower	Upper
45	100		
46	36.8	15.7	55.7
42	8.3	0.0	28.1

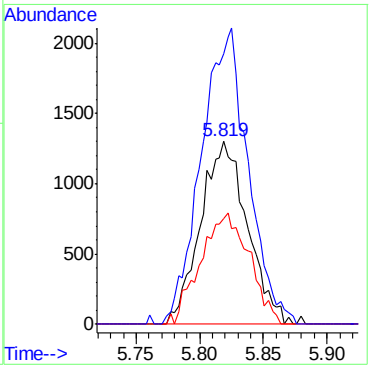


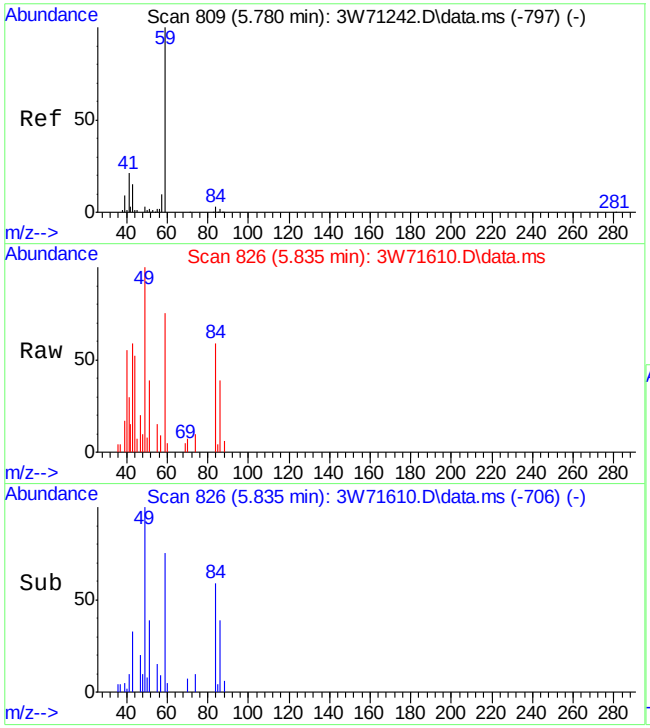


#31
METHYLENE CHLORIDE
Concen: 0.30 PPBV
RT: 5.819 min Scan# 821
Delta R.T. -0.003 min
Lab File: 3W71610.D
Acq: 12 Feb 2020 12:46 am

Tgt Ion: 84 Resp: 3332

Ion	Ratio	Lower	Upper
84	100		
86	63.1	43.5	83.5
49	161.7	0.0	342.4

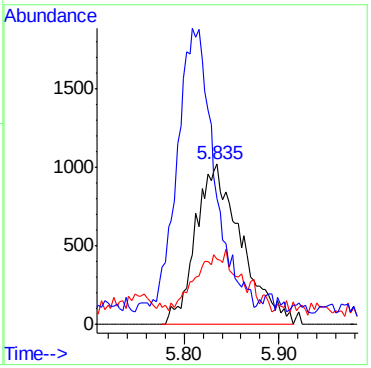


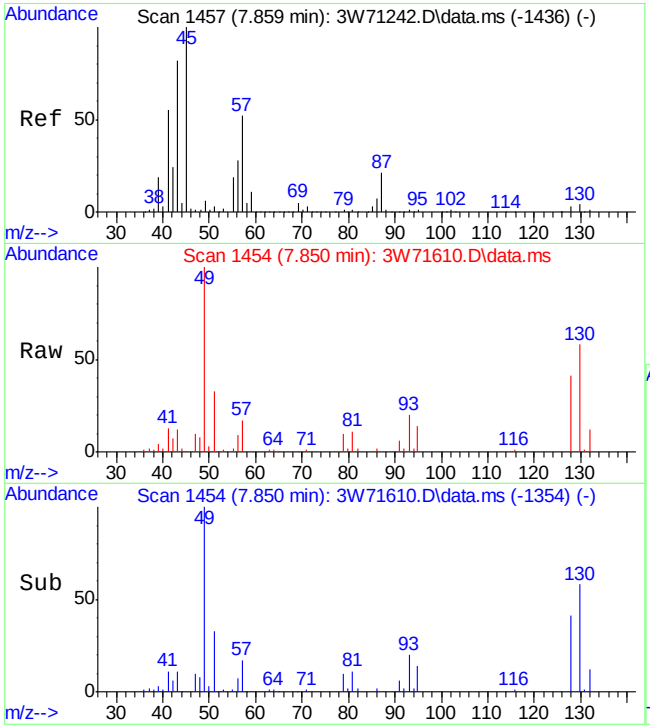


#35
TERTIARY BUTYL ALCOHOL
Concen: 0.17 PPBV
RT: 5.835 min Scan# 826
Delta R.T. 0.055 min
Lab File: 3W71610.D
Acq: 12 Feb 2020 12:46 am

Tgt Ion: 59 Resp: 3407

Ion	Ratio	Lower	Upper
59	100		
41	34.6	3.3	43.3
43	0.0	0.0	35.6

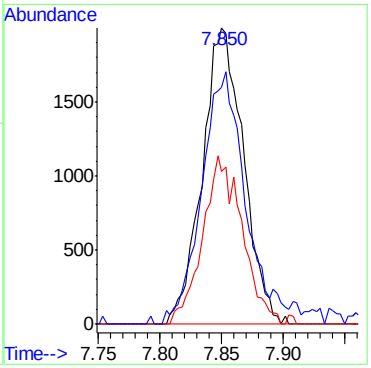


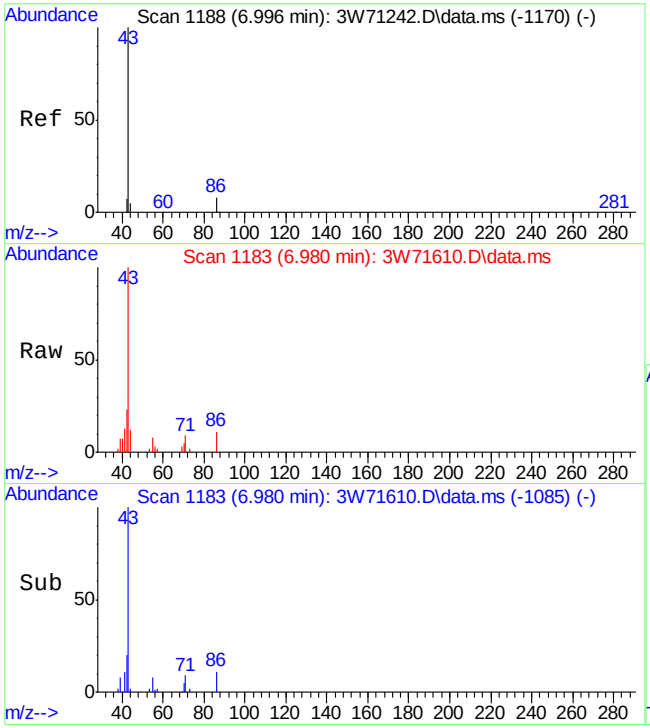


#38
HEXANE
Concen: 0.25 PPBV
RT: 7.850 min Scan# 1454
Delta R.T. -0.010 min
Lab File: 3W71610.D
Acq: 12 Feb 2020 12:46 am

Tgt Ion: 57 Resp: 4642

Ion	Ratio	Lower	Upper
57	100		
56	54.7	35.4	75.4
41	93.7	88.4	128.4

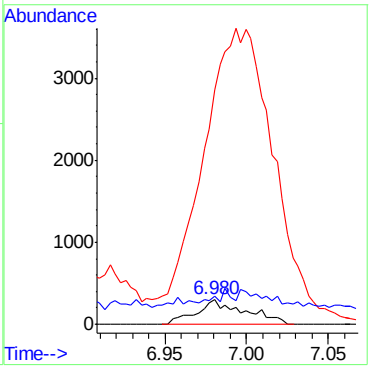


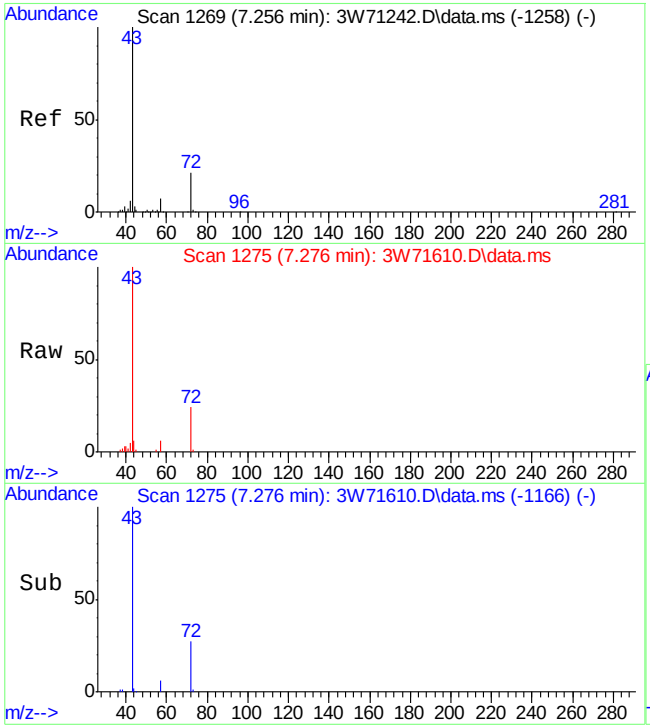


#39
VINYL ACETATE
Concen: 0.33 PPBV
RT: 6.980 min Scan# 1183
Delta R.T. -0.016 min
Lab File: 3W71610.D
Acq: 12 Feb 2020 12:46 am

Tgt Ion: 86 Resp: 621

Ion	Ratio	Lower	Upper
86	100		
43	1801.6	1473.4	1513.4#
44	0.0	64.2	104.2#

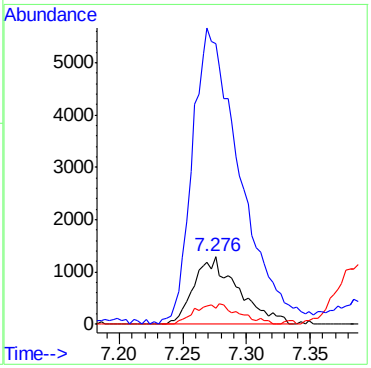


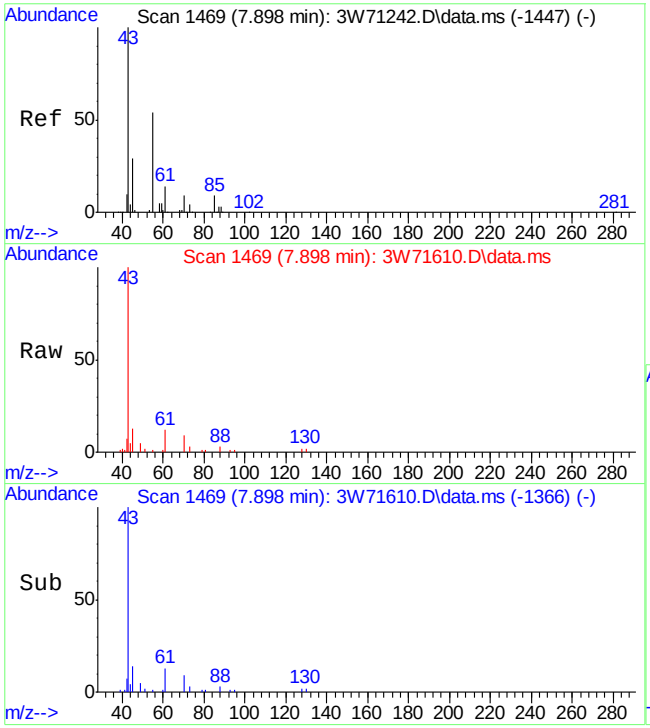


#41
METHYL ETHYL KETONE
Concen: 0.67 PPBV
RT: 7.276 min Scan# 1275
Delta R.T. 0.019 min
Lab File: 3W71610.D
Acq: 12 Feb 2020 12:46 am

Tgt Ion: 72 Resp: 3081

Ion	Ratio	Lower	Upper
72	100		
57	23.8	12.1	52.1
43	415.4	446.3	486.3#

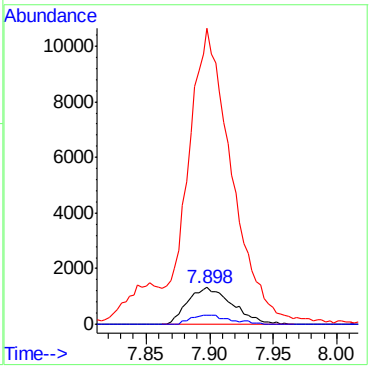


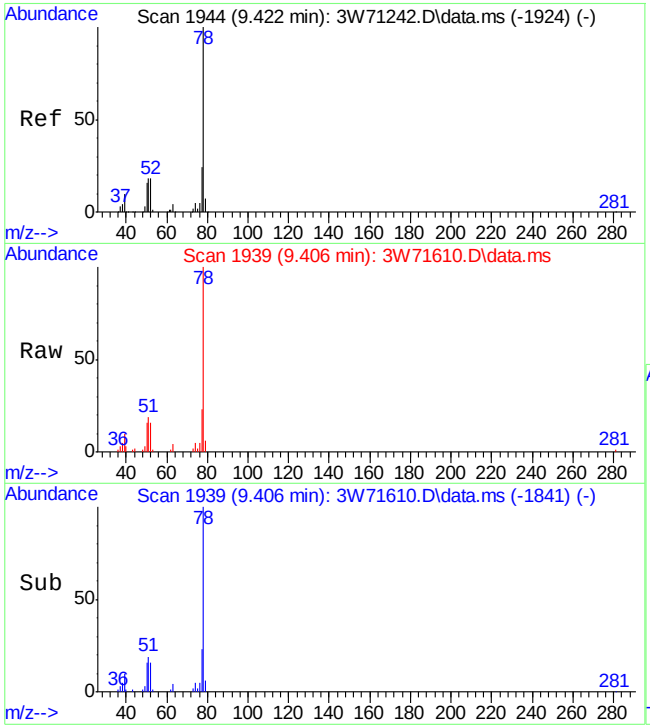


#44
ETHYL ACETATE
Concen: 1.01 PPBV
RT: 7.898 min Scan# 1469
Delta R.T. 0.000 min
Lab File: 3W71610.D
Acq: 12 Feb 2020 12:46 am

Tgt Ion: 61 Resp: 3231

Ion	Ratio	Lower	Upper
61	100		
43	772.8	0.0	20.0#
88	21.9	18.0	58.0

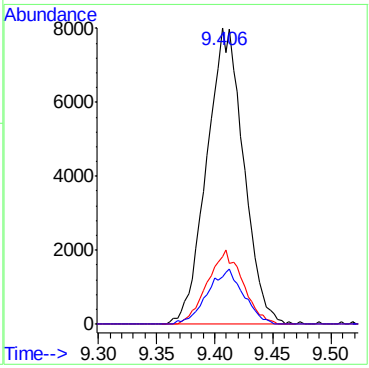


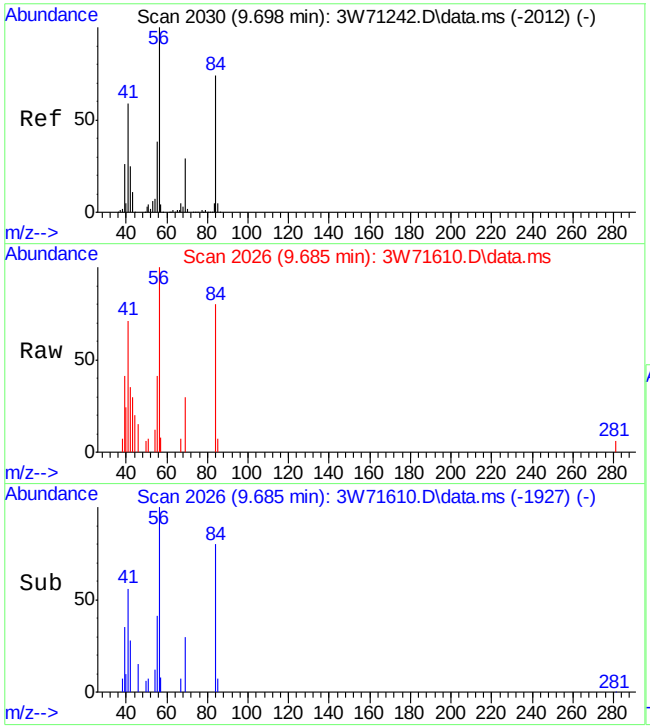


#52
BENZENE
Concen: 0.54 PPBV
RT: 9.406 min Scan# 1939
Delta R.T. -0.016 min
Lab File: 3W71610.D
Acq: 12 Feb 2020 12:46 am

Tgt Ion: 78 Resp: 17681

Ion	Ratio	Lower	Upper
78	100		
77	23.9	4.1	44.1
52	18.1	0.0	37.6

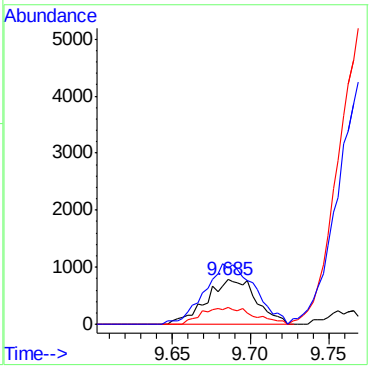


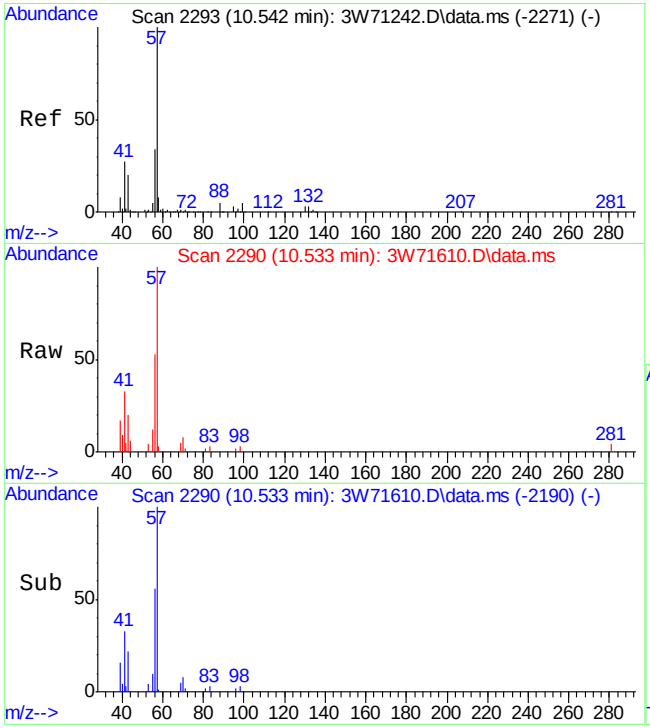


#53
CYCLOHEXANE
Concen: 0.13 PPBV
RT: 9.685 min Scan# 2026
Delta R.T. -0.013 min
Lab File: 3W71610.D
Acq: 12 Feb 2020 12:46 am

Tgt Ion: 84 Resp: 1750

Ion	Ratio	Lower	Upper
84	100		
69	38.9	19.3	59.3
56	134.8	113.4	153.4

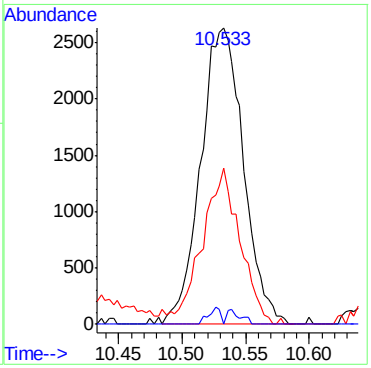


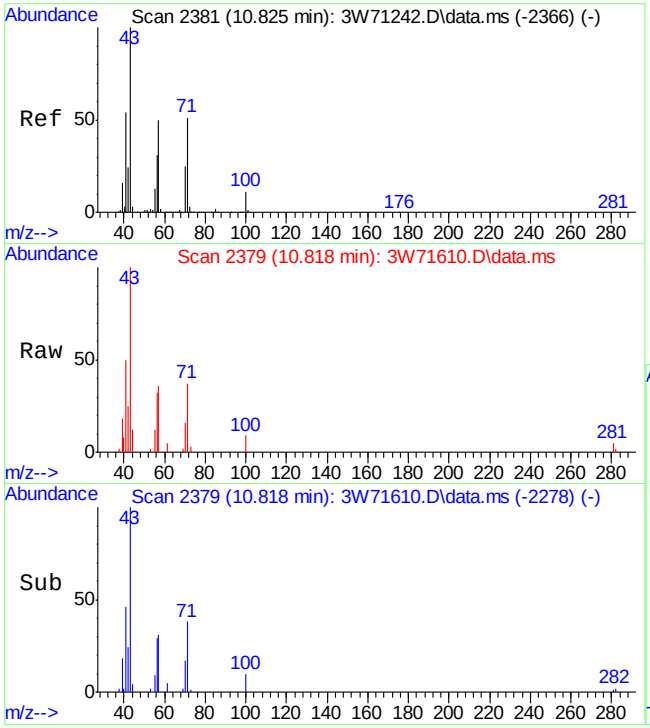


#60
2,2,4-TRIMETHYLPENTANE
Concen: 0.11 PPBV
RT: 10.533 min Scan# 2290
Delta R.T. -0.010 min
Lab File: 3W71610.D
Acq: 12 Feb 2020 12:46 am

Tgt Ion: 57 Resp: 6120

Ion	Ratio	Lower	Upper
57	100		
56	46.0	13.6	53.6
99	0.0	0.0	26.5

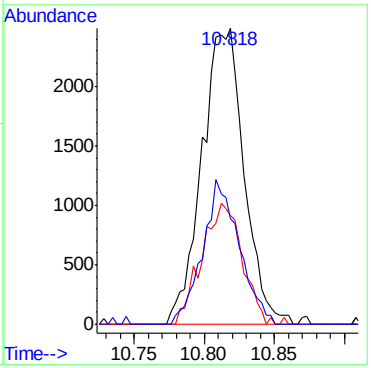


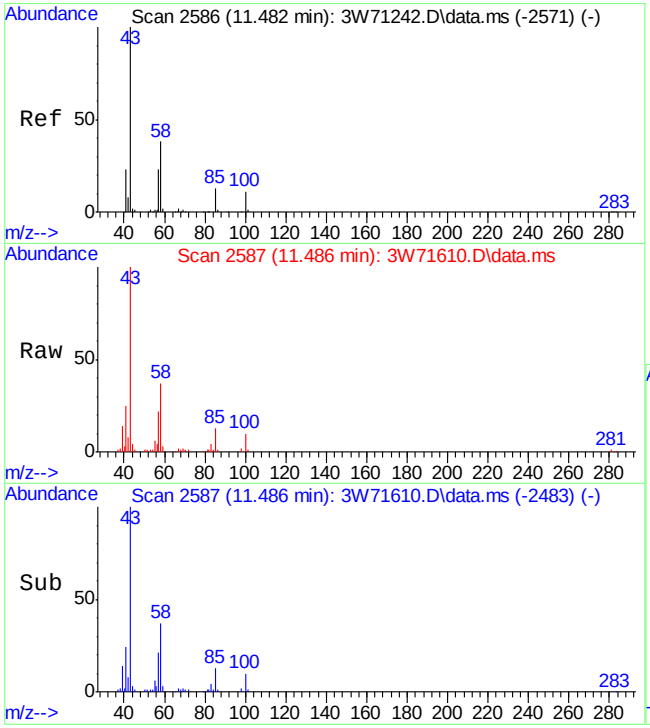


#62
HEPTANE
Concen: 0.24 PPBV
RT: 10.818 min Scan# 2379
Delta R.T. -0.006 min
Lab File: 3W71610.D
Acq: 12 Feb 2020 12:46 am

Tgt Ion: 43 Resp: 5116

Ion	Ratio	Lower	Upper
43	100		
71	39.0	30.4	70.4
57	42.2	29.9	69.9

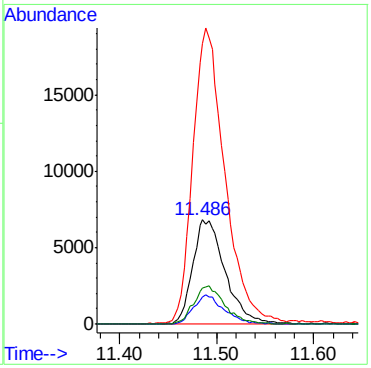


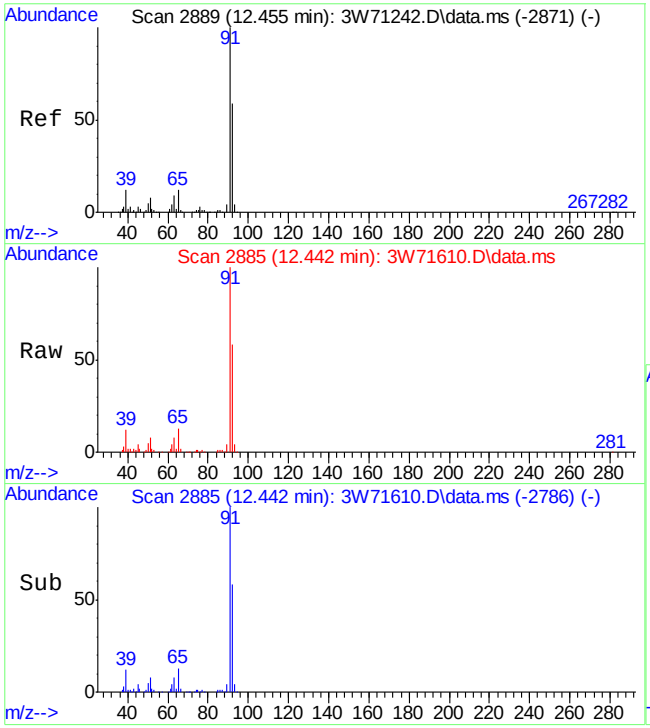


#64
METHYL ISOBUTYL KETONE
Concen: 2.00 PPBV
RT: 11.486 min Scan# 2587
Delta R.T. 0.003 min
Lab File: 3W71610.D
Acq: 12 Feb 2020 12:46 am

Tgt Ion: 58 Resp: 15888

Ion	Ratio	Lower	Upper
58	100		
43	284.5	244.4	284.4#
100	26.1	8.7	48.7
85	34.9	17.4	57.4

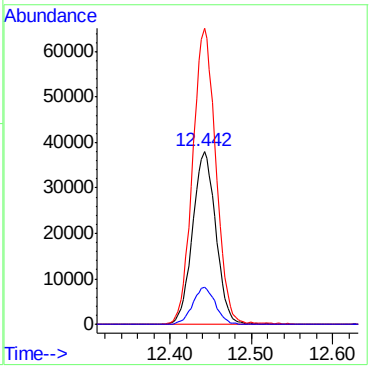


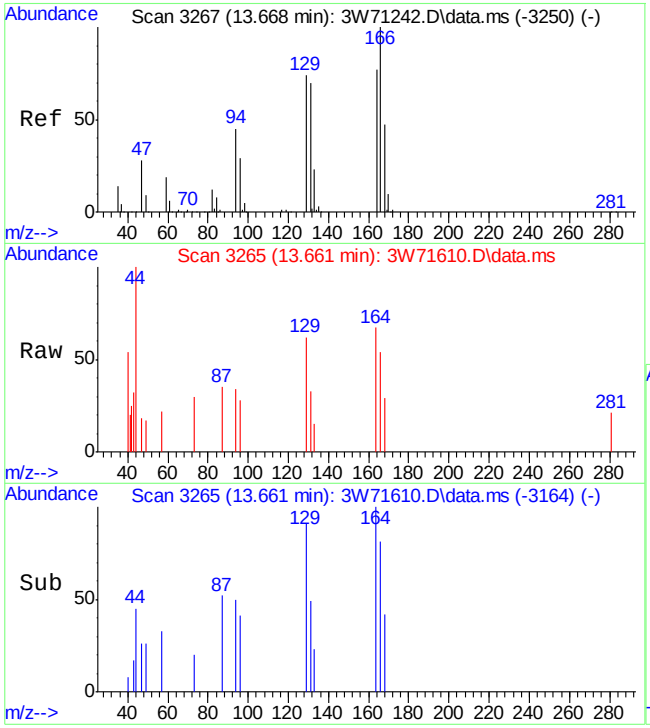


#66
TOLUENE
Concen: 3.78 PPBV
RT: 12.442 min Scan# 2885
Delta R.T. -0.013 min
Lab File: 3W71610.D
Acq: 12 Feb 2020 12:46 am

Tgt Ion: 92 Resp: 75454

Ion	Ratio	Lower	Upper
92	100		
91	170.7	150.3	190.3
65	20.8	4.0	44.0

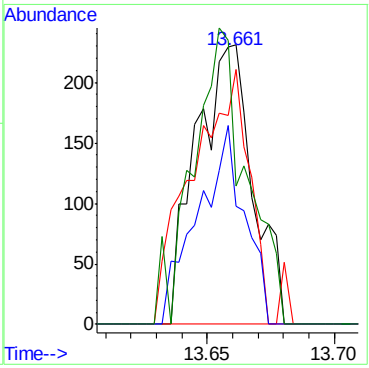


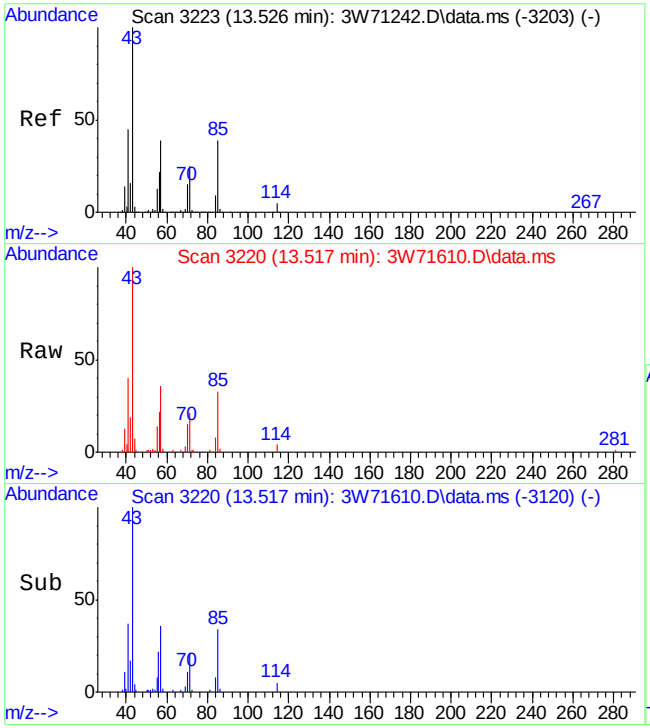


#73
TETRACHLOROETHYLENE
Concen: 0.04 PPBV
RT: 13.661 min Scan# 3265
Delta R.T. -0.006 min
Lab File: 3W71610.D
Acq: 12 Feb 2020 12:46 am

Tgt Ion:164 Resp: 360

Ion	Ratio	Lower	Upper
164	100		
129	91.1	75.3	115.3
168	57.8	41.2	81.2
131	99.4	71.6	111.6

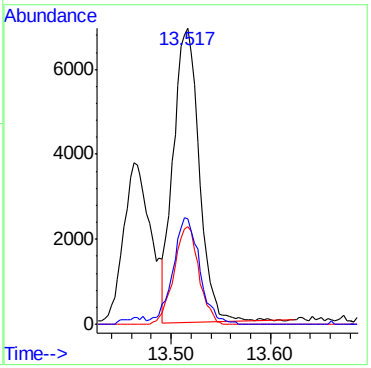


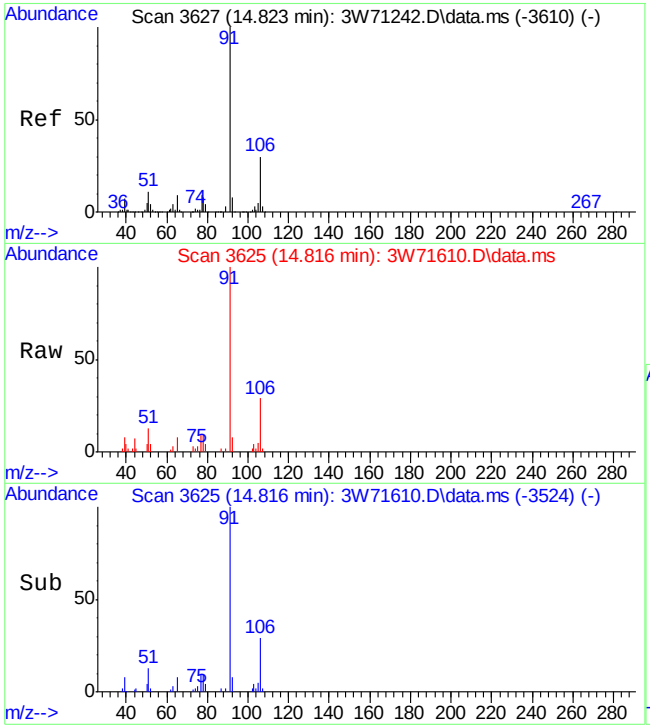


#76
OCTANE
Concen: 0.59 PPBV
RT: 13.517 min Scan# 3220
Delta R.T. -0.010 min
Lab File: 3W71610.D
Acq: 12 Feb 2020 12:46 am

Tgt Ion: 43 Resp: 12430

Ion	Ratio	Lower	Upper
43	100		
85	32.1	18.0	58.0
57	37.7	18.5	58.5

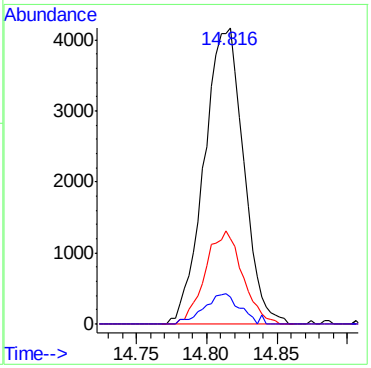


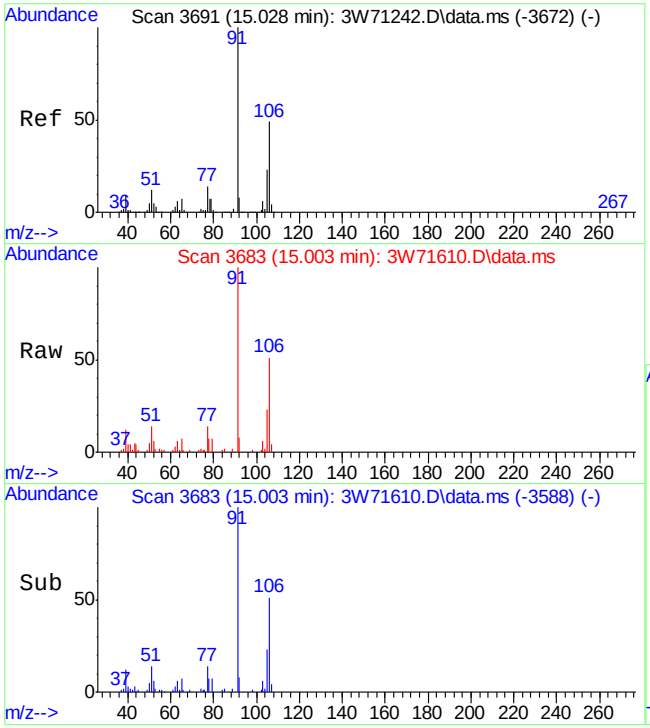


#79
ETHYLBENZENE
Concen: 0.24 PPBV
RT: 14.816 min Scan# 3625
Delta R.T. -0.006 min
Lab File: 3W71610.D
Acq: 12 Feb 2020 12:46 am

Tgt Ion: 91 Resp: 7977

Ion	Ratio	Lower	Upper
91	100		
106	29.6	10.2	50.2
77	9.1	0.0	29.0

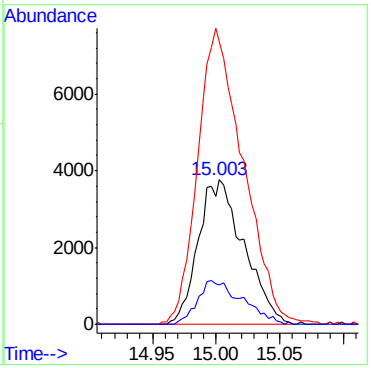


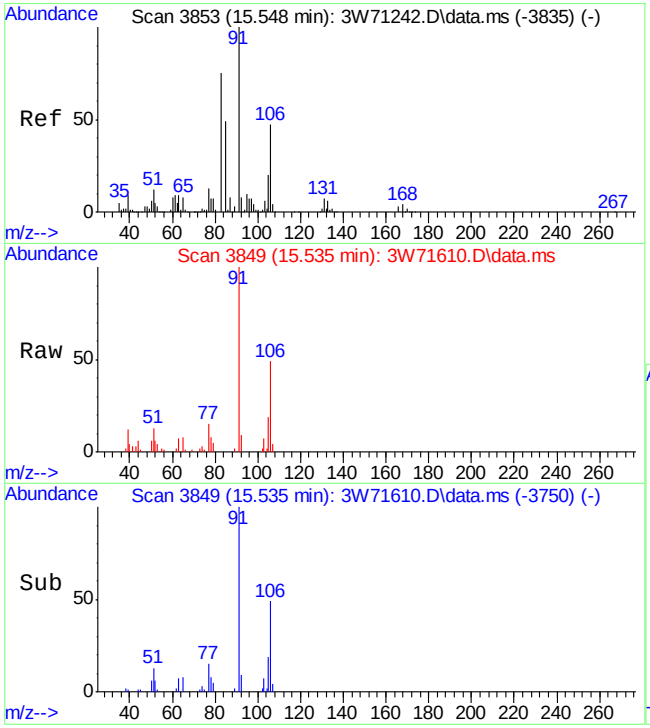


#80
m,p-XYLENE
Concen: 0.82 PPBV
RT: 15.003 min Scan# 3683
Delta R.T. -0.026 min
Lab File: 3W71610.D
Acq: 12 Feb 2020 12:46 am

Tgt Ion:106 Resp: 9334

Ion	Ratio	Lower	Upper
106	100		
91	195.6	185.1	225.1
77	27.6	8.5	48.5

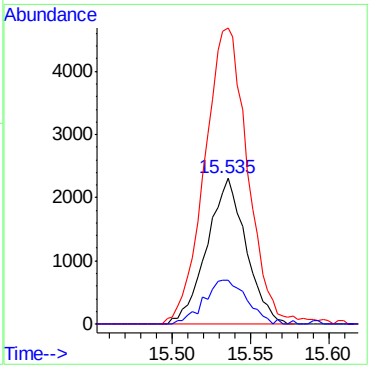


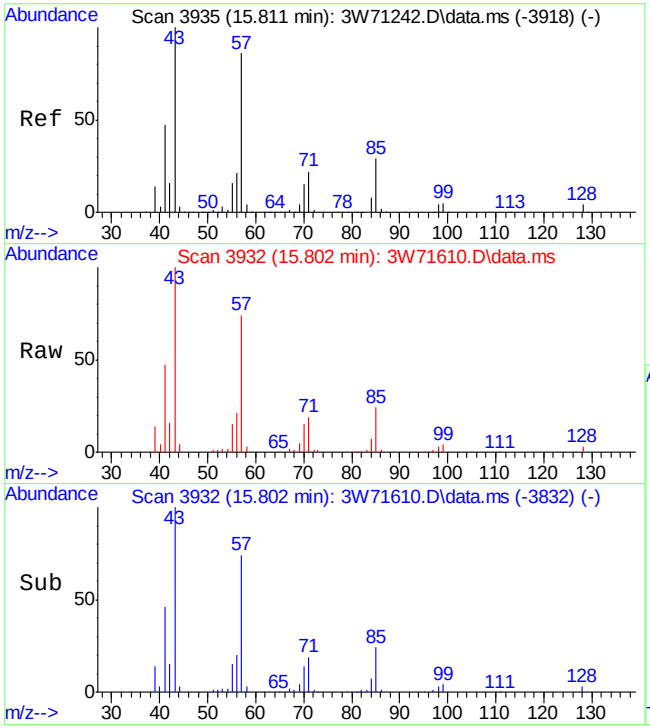


#81
o-XYLENE
Concen: 0.33 PPBV
RT: 15.535 min Scan# 3849
Delta R.T. -0.013 min
Lab File: 3W71610.D
Acq: 12 Feb 2020 12:46 am

Tgt Ion:106 Resp: 4025

Ion	Ratio	Lower	Upper
106	100		
91	225.0	196.3	236.3
77	33.0	8.4	48.4

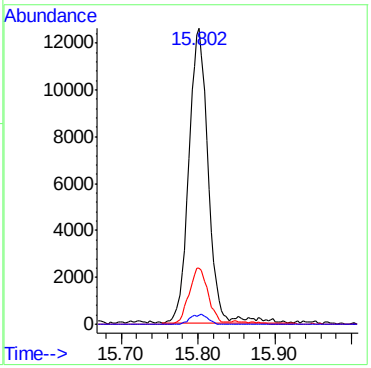


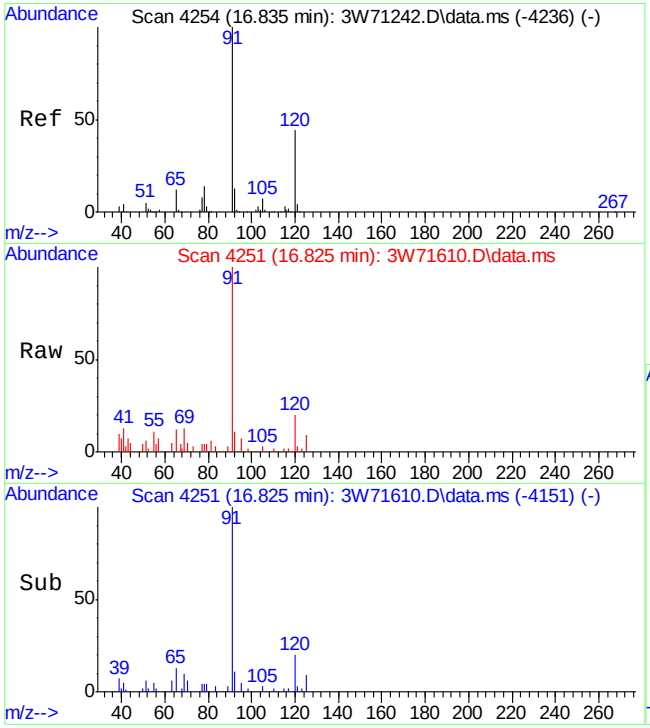


#83
NONANE
Concen: 1.15 PPBV
RT: 15.802 min Scan# 3932
Delta R.T. -0.010 min
Lab File: 3W71610.D
Acq: 12 Feb 2020 12:46 am

Tgt Ion: 43 Resp: 21958

Ion	Ratio	Lower	Upper
43	100		
71	20.3	1.7	41.7
128	3.0	0.0	24.2

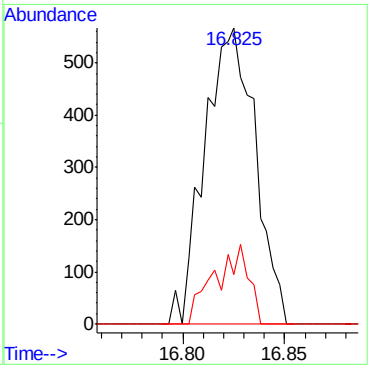


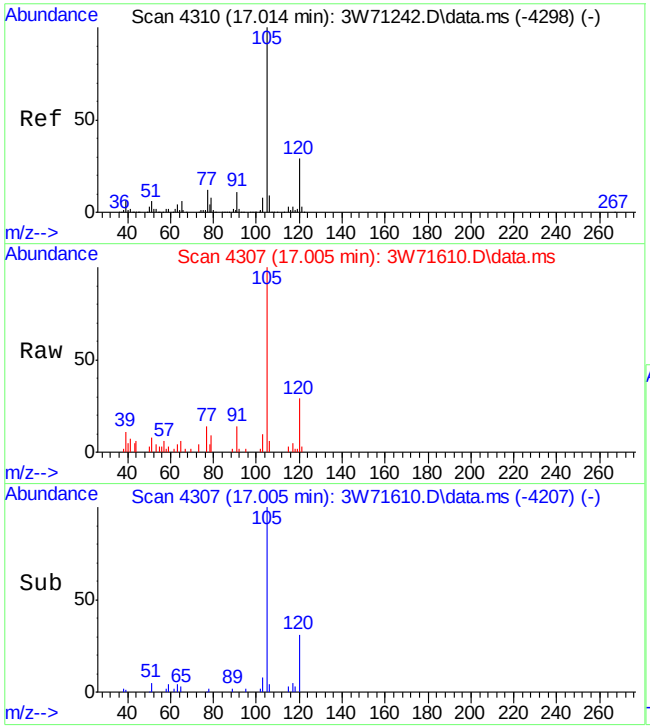


#91
n-PROPYLBENZENE
Concen: 0.13 PPBV
RT: 16.825 min Scan# 4251
Delta R.T. -0.010 min
Lab File: 3W71610.D
Acq: 12 Feb 2020 12:46 am

Tgt Ion:120 Resp: 980

Ion	Ratio	Lower	Upper
120	100		
105	17.9	0.0	37.1

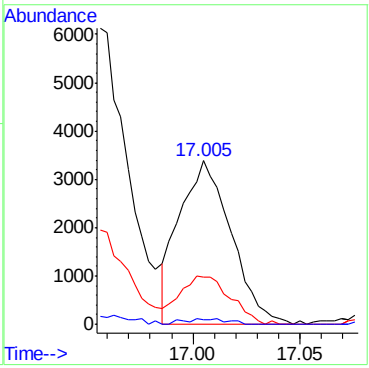


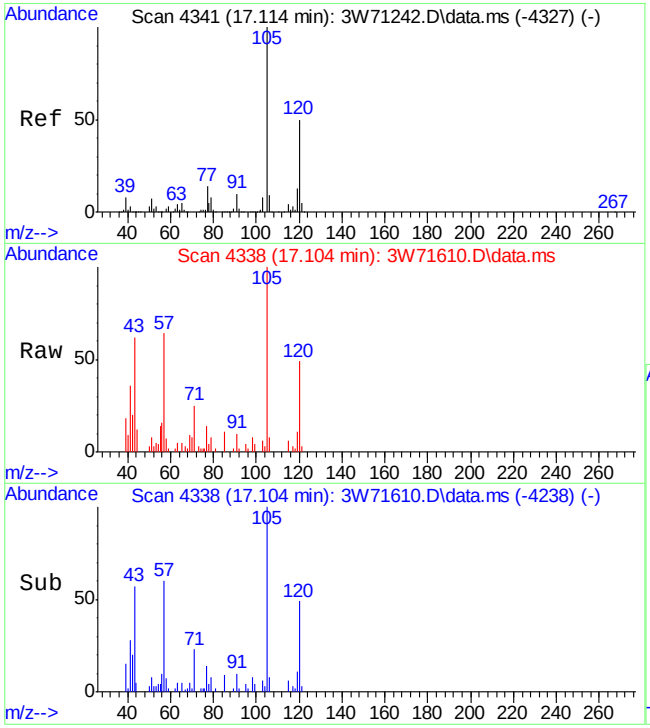


#92
4-ETHYLTOLUENE
Concen: 0.22 PPBV
RT: 17.005 min Scan# 4307
Delta R.T. -0.010 min
Lab File: 3W71610.D
Acq: 12 Feb 2020 12:46 am

Tgt Ion:105 Resp: 5710

Ion	Ratio	Lower	Upper
105	100		
120	29.2	9.2	49.2
119	2.7	0.0	22.4

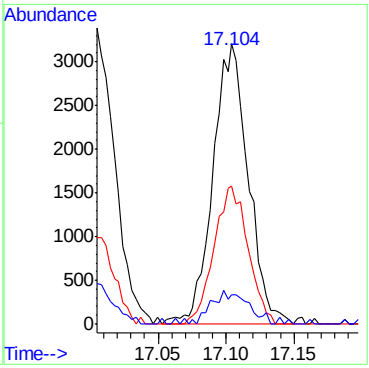


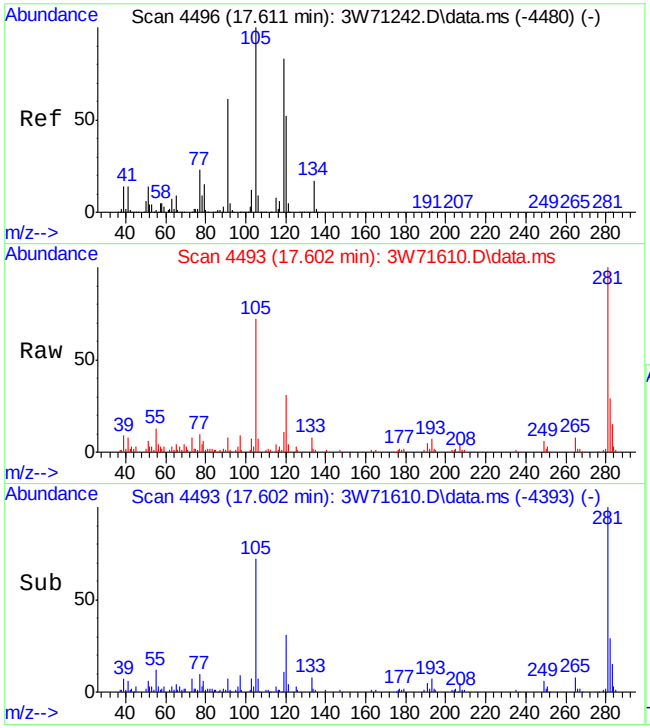


#93
1,3,5-TRIMETHYLBENZENE
Concen: 0.26 PPBV
RT: 17.104 min Scan# 4338
Delta R.T. -0.010 min
Lab File: 3W71610.D
Acq: 12 Feb 2020 12:46 am

Tgt Ion:105 Resp: 5781

Ion	Ratio	Lower	Upper
105	100		
120	47.6	29.2	69.2
91	12.1	0.0	30.4

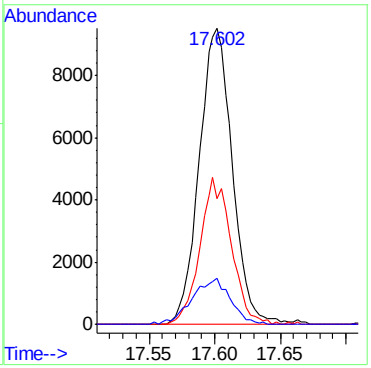


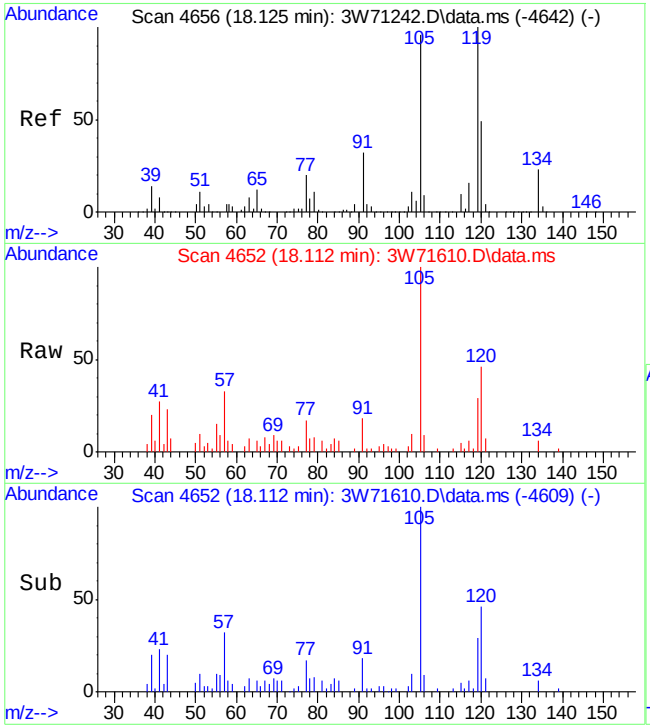


#96
1,2,4-TRIMETHYLBENZENE
Concen: 0.80 PPBV
RT: 17.602 min Scan# 4493
Delta R.T. -0.010 min
Lab File: 3W71610.D
Acq: 12 Feb 2020 12:46 am

Tgt Ion:105 Resp: 16700

Ion	Ratio	Lower	Upper
105	100		
120	47.0	34.7	74.7
119	17.9	87.2	127.2#

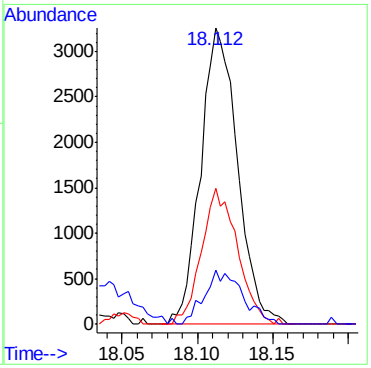




#101
1,2,3-Trimethylbenzene
Concen: 0.26 PPBV
RT: 18.112 min Scan# 4652
Delta R.T. -0.013 min
Lab File: 3W71610.D
Acq: 12 Feb 2020 12:46 am

Tgt Ion:105 Resp: 5525

Ion	Ratio	Lower	Upper
105	100		
120	44.3	31.7	71.7
91	18.5	16.7	56.7



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\
Data File : 3W71600.D
Acq On : 11 Feb 2020 3:19 pm
Operator : danat
Sample : mb
Misc : MS40975,V3W2806,,,,,1
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Feb 11 15:42:21 2020
Quant Method : C:\msdchem\1\METHODS\M3W2789.M
Quant Title : TO15 by GCMS w/Rtx-1, 60 m X 0.32mm ID X 1.0 um
QLast Update : Wed Jan 15 09:18:27 2020
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) BROMOCHLOROMETHANE	7.821	128	89456	10.00	PPBV	-0.01
51) 1,4-DIFLUOROBENZENE	9.772	114	273937	10.00	PPBV	-0.02
70) CHLOROBENZENE-D5	14.348	82	136740	10.00	PPBV	-0.01
System Monitoring Compounds						
85) 4-BROMOFLUOROBENZENE	16.055	95	145195	9.67	PPBV	0.00
Spiked Amount 10.000	Range 65 - 128		Recovery = 96.70%			
Target Compounds						Qvalue

(#) = qualifier out of range (m) = manual integration (+) = signals summed

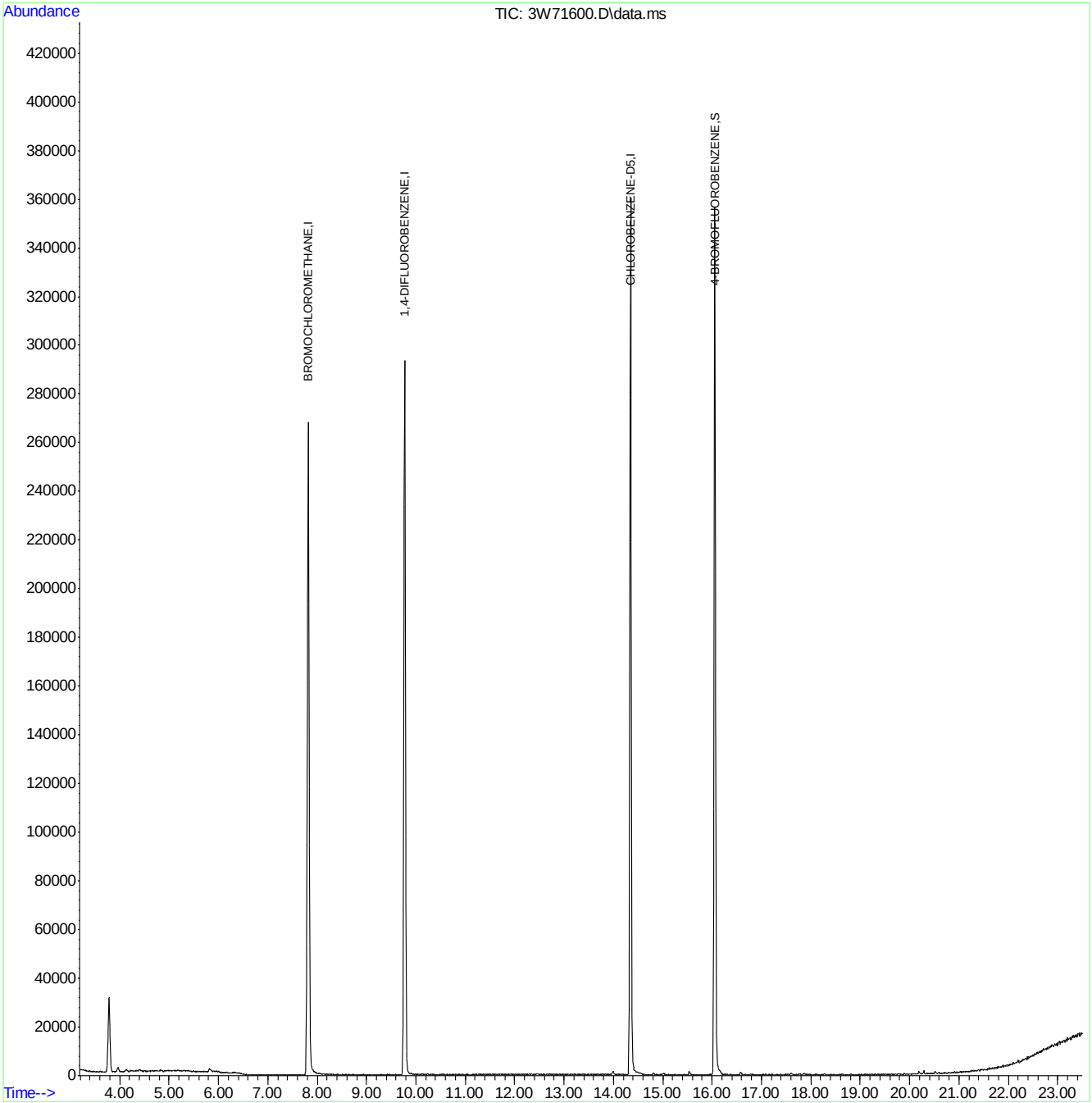
7.2.1

7

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\
Data File : 3W71600.D
Acq On : 11 Feb 2020 3:19 pm
Operator : danat
Sample : mb
Misc : MS40975,V3W2806,,,,,1
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Feb 11 15:42:21 2020
Quant Method : C:\msdchem\1\METHODS\M3W2789.M
Quant Title : TO15 by GCMS w/Rtx-1, 60 m X 0.32mm ID X 1.0 um
QLast Update : Wed Jan 15 09:18:27 2020
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\
Data File : 3W71624.D
Acq On : 12 Feb 2020 2:23 pm
Operator : danat
Sample : mb
Misc : MS41043,V3W2807,,,,,1
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Feb 12 14:46:47 2020
Quant Method : C:\msdchem\1\METHODS\M3W2789.M
Quant Title : TO15 by GCMS w/Rtx-1, 60 m X 0.32mm ID X 1.0 um
QLast Update : Wed Jan 15 09:18:27 2020
Response via : Initial Calibration

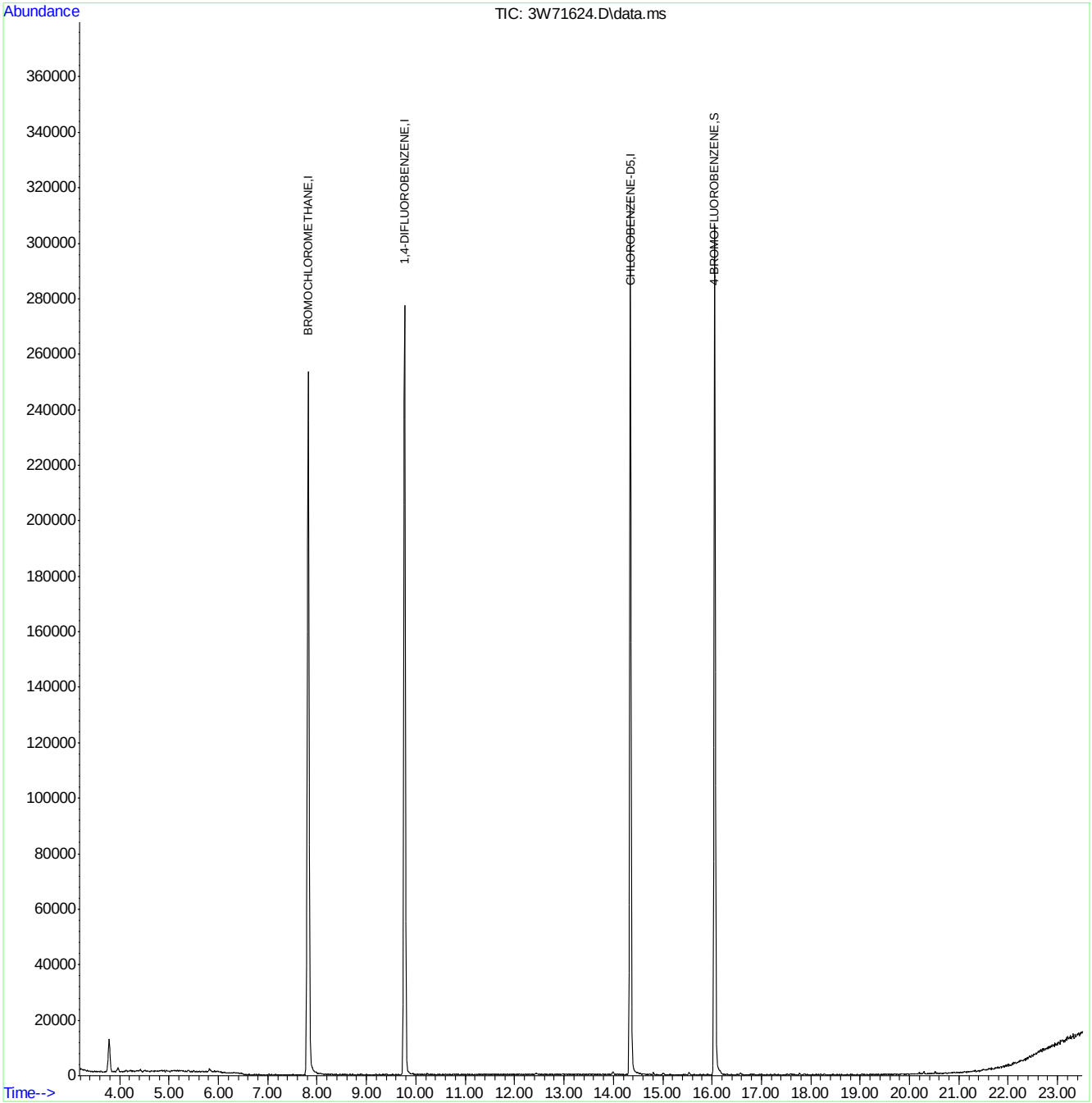
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) BROMOCHLOROMETHANE	7.821	128	87435	10.00	PPBV	-0.01
51) 1,4-DIFLUOROBENZENE	9.769	114	263034	10.00	PPBV	-0.02
70) CHLOROBENZENE-D5	14.345	82	118979	10.00	PPBV	-0.01
System Monitoring Compounds						
85) 4-BROMOFLUOROBENZENE	16.052	95	122928	9.41	PPBV	-0.01
Spiked Amount 10.000	Range 65 - 128		Recovery = 94.10%			
Target Compounds						Qvalue

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\
Data File : 3W71624.D
Acq On : 12 Feb 2020 2:23 pm
Operator : danat
Sample : mb
Misc : MS41043,V3W2807,,,,,1
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Feb 12 14:46:47 2020
Quant Method : C:\msdchem\1\METHODS\M3W2789.M
Quant Title : TO15 by GCMS w/Rtx-1, 60 m X 0.32mm ID X 1.0 um
QLast Update : Wed Jan 15 09:18:27 2020
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\
Data File : 3W71403.D
Acq On : 23 Jan 2020 1:58 pm
Operator : thomash
Sample : mb
Misc : MS40366,V3W2796,,,,,1
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Jan 23 14:19:45 2020
Quant Method : C:\msdchem\1\METHODS\M3W2789.M
Quant Title : TO15 by GCMS w/Rtx-1, 60 m X 0.32mm ID X 1.0 um
QLast Update : Wed Jan 15 09:18:27 2020
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) BROMOCHLOROMETHANE	7.818	128	96730	10.00	PPBV	-0.01
51) 1,4-DIFLUOROBENZENE	9.775	114	377598	10.00	PPBV	-0.01
70) CHLOROBENZENE-D5	14.351	82	180027	10.00	PPBV	0.00
System Monitoring Compounds						
85) 4-BROMOFLUOROBENZENE	16.058	95	188396	9.53	PPBV	0.00
Spiked Amount 10.000	Range 65 - 128		Recovery = 95.30%			
Target Compounds						Qvalue

(#) = qualifier out of range (m) = manual integration (+) = signals summed

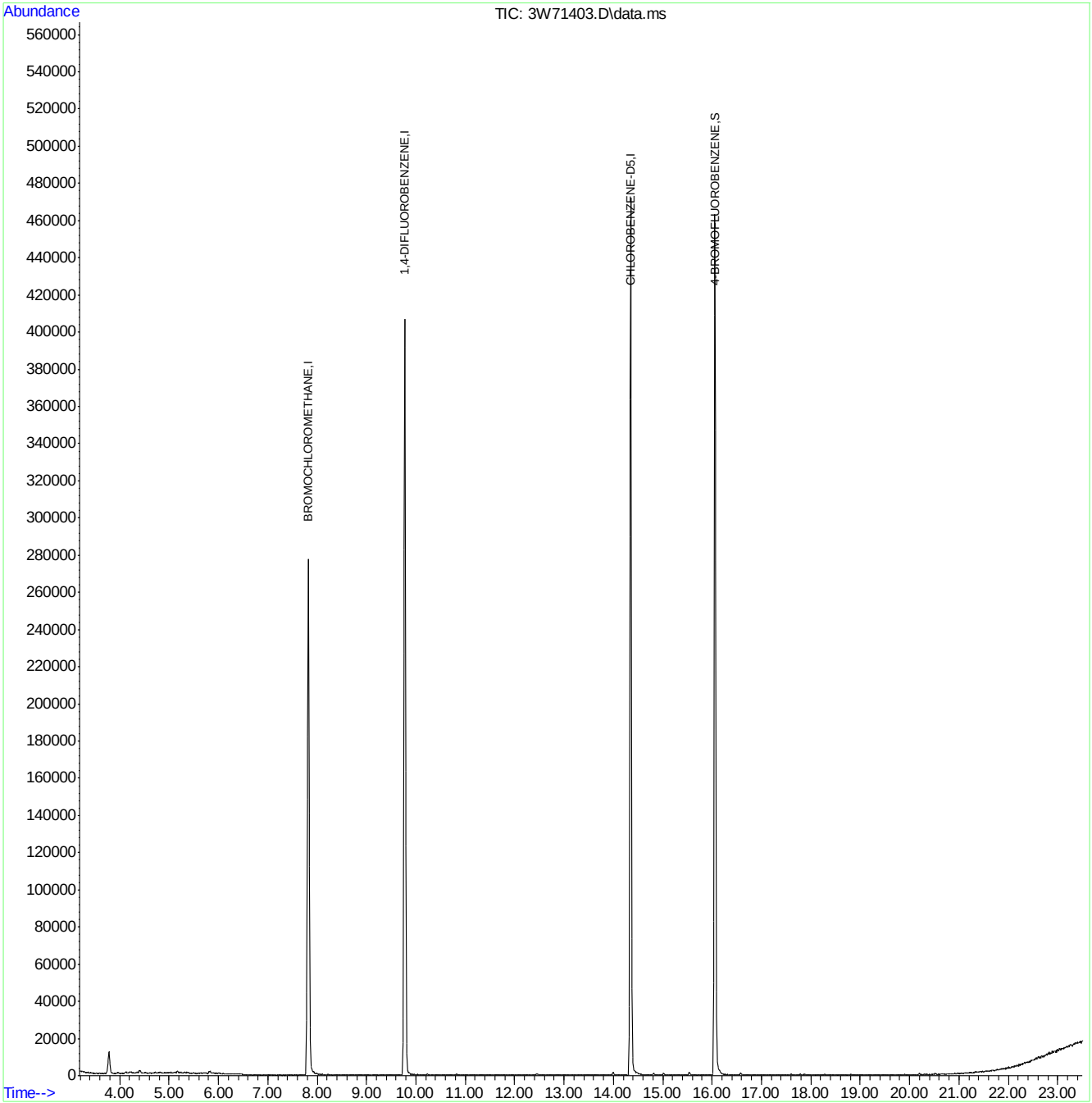
7.2.3

7

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\
Data File : 3W71403.D
Acq On : 23 Jan 2020 1:58 pm
Operator : thomash
Sample : mb
Misc : MS40366,V3W2796,,,,,1
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Jan 23 14:19:45 2020
Quant Method : C:\msdchem\1\METHODS\M3W2789.M
Quant Title : TO15 by GCMS w/Rtx-1, 60 m X 0.32mm ID X 1.0 um
QLast Update : Wed Jan 15 09:18:27 2020
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\
Data File : 3W71597.D
Acq On : 11 Feb 2020 12:06 pm
Operator : danat
Sample : bs
Misc : MS40975,V3W2806,,,,,1
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Feb 11 12:58:44 2020
Quant Method : C:\msdchem\1\METHODS\M3W2789.M
Quant Title : TO15 by GCMS w/Rtx-1, 60 m X 0.32mm ID X 1.0 um
QLast Update : Wed Jan 15 09:18:27 2020
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) BROMOCHLOROMETHANE	7.824	128	101135	10.00	PPBV	0.00
51) 1,4-DIFLUOROBENZENE	9.782	114	424226	10.00	PPBV	0.00
70) CHLOROBENZENE-D5	14.351	82	207085	10.00	PPBV	0.00
System Monitoring Compounds						
85) 4-BROMOFLUOROBENZENE	16.058	95	217283	9.55	PPBV	0.00
Spiked Amount 10.000	Range 65 - 128		Recovery = 95.50%			
Target Compounds						Qvalue
2) FREON 115	3.823	119	5553	11.44	PPBV	98
3) FREON 152A	3.903	65	96789	11.13	PPBV	98
4) CHLORODIFLUOROMETHANE	3.932	67	36936	10.28	PPBV	97
5) CHLOROTRIFLUOROETHENE	3.961	116	171263	10.81	PPBV	99
6) DICHLORODIFLUOROMETHANE	4.009	85	355842	10.33	PPBV	98
7) PROPYLENE	3.957	41	152396	11.09	PPBV	98
8) 1-CHLORO-1,1-DIFLUOROE...	4.105	65	270749	10.15	PPBV	99
9) FREON 114	4.188	85	367628	10.50	PPBV	97
10) CHLOROMETHANE	4.124	52	53639	11.77	PPBV	98
11) VINYL CHLORIDE	4.278	62	170709	11.39	PPBV	100
12) 1,3-BUTADIENE	4.368	54	129879	11.56	PPBV	97
13) n-BUTANE	4.407	43	273321	10.64	PPBV	100
14) BROMOMETHANE	4.561	94	135406	10.26	PPBV	99
15) CHLOROETHANE	4.679	64	80910	11.39	PPBV	99
16) DICHLOROFLUOROMETHANE	4.731	67	326874	10.62	PPBV	100
17) ACETONITRILE	4.923	41	100475	8.55	PPBV	96
18) ACROLEIN	5.010	56	50652	8.29	PPBV	97
19) FREON 123	5.013	83	322205	10.45	PPBV	99
20) FREON 123A	5.055	117	147706	10.10	PPBV	91
21) TRICHLOROFLUOROMETHANE	5.225	101	289386	9.61	PPBV	100
22) ISOPROPYL ALCOHOL	5.296	45	232038	9.22	PPBV	97
23) ACETONE	5.113	58	44501	7.44	PPBV	98
24) PENTANE	5.491	42	174653	9.95	PPBV	96
25) IODOMETHANE	5.677	142	305218	10.34	PPBV	96
26) 1,1-DICHLOROETHYLENE	5.729	96	125485	10.18	PPBV	97
27) CARBON DISULFIDE	6.114	76	377131	10.18	PPBV	98
28) ETHANOL	4.773	45	55944	9.17	PPBV	99
29) BROMOETHENE	4.927	106	121691	10.52	PPBV	99
30) ACRYLONITRILE	5.450	52	71620	8.66	PPBV	99
31) METHYLENE CHLORIDE	5.819	84	121190	9.39	PPBV	96
32) 3-CHLOROPROPENE	5.928	76	68060	10.91	PPBV	96
33) FREON 113	6.043	151	178620	9.84	PPBV	100
34) TRANS-1,2-DICHLOROETHY...	6.663	96	125712	10.47	PPBV	100
35) TERTIARY BUTYL ALCOHOL	5.780	59	236829	9.84	PPBV	97
36) METHYL TERTIARY BUTYL ...	6.922	73	247738	7.84	PPBV	98
37) TETRAHYDROFURAN	8.392	72	44589	8.15	PPBV	100
38) HEXANE	7.856	57	232846	10.61	PPBV	93
39) VINYL ACETATE	6.990	86	18716	8.49	PPBV	98
40) 1,1-DICHLOROETHANE	6.858	63	261654	10.16	PPBV	99
41) METHYL ETHYL KETONE	7.253	72	43773	8.09	PPBV #	92

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\
Data File : 3W71597.D
Acq On : 11 Feb 2020 12:06 pm
Operator : danat
Sample : bs
Misc : MS40975,V3W2806,,,,,1
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Feb 11 12:58:44 2020
Quant Method : C:\msdchem\1\METHODS\M3W2789.M
Quant Title : TO15 by GCMS w/Rtx-1, 60 m X 0.32mm ID X 1.0 um
QLast Update : Wed Jan 15 09:18:27 2020
Response via : Initial Calibration

	Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
42)	cis-1,2-DICHLOROETHYLENE	7.657	96	137121	10.47	PPBV		99
43)	DIISOPROPYL ETHER	7.863	59	46021	8.08	PPBV	#	91
44)	ETHYL ACETATE	7.892	61	28611	7.58	PPBV	#	99
45)	METHYL ACRYLATE	7.872	55	178940	7.93	PPBV		98
46)	CHLOROFORM	7.953	83	269454	9.84	PPBV		100
47)	2,4-DIMETHYLPENTANE	8.742	57	285148	11.00	PPBV		99
48)	1,1,1-TRICHLOROETHANE	8.944	97	252583	9.83	PPBV		99
49)	CARBON TETRACHLORIDE	9.567	117	248154	10.11	PPBV		100
50)	1,2-DICHLOROETHANE	8.694	62	165753	9.51	PPBV		99
52)	BENZENE	9.419	78	435185	11.63	PPBV		100
53)	CYCLOHEXANE	9.692	84	182792	12.14	PPBV		98
54)	2,3-DIMETHYLPENTANE	9.939	71	99719	12.29	PPBV		99
55)	TRICHLOROETHYLENE	10.507	95	173903	11.69	PPBV		99
56)	1,2-DICHLOROPROPANE	10.263	63	148795	10.47	PPBV		97
57)	DIBROMOMETHANE	10.234	174	128866	10.32	PPBV		98
58)	ETHYL ACRYLATE	10.282	55	211062	9.88	PPBV		100
59)	BROMODICHLOROMETHANE	10.465	83	302480	11.85	PPBV		100
60)	2,2,4-TRIMETHYLPENTANE	10.539	57	768638	12.53	PPBV		100
61)	1,4-DIOXANE	10.549	88	68037	10.93	PPBV	#	76
62)	HEPTANE	10.818	43	300339	12.48	PPBV		99
63)	METHYL METHACRYLATE	10.735	69	96783	8.97	PPBV		99
64)	METHYL ISOBUTYL KETONE	11.473	58	100281	10.96	PPBV		99
65)	cis-1,3-DICHLOROPROPENE	11.415	75	209119	11.09	PPBV		98
66)	TOLUENE	12.448	92	230075	10.03	PPBV		100
67)	1,3-DICHLOROPROPANE	12.480	76	179890	10.10	PPBV	#	99
68)	trans-1,3-DICHLOROPROPENE	11.973	75	163535	10.61	PPBV		99
69)	1,1,2-TRICHLOROETHANE	12.156	83	121234	10.32	PPBV		100
71)	2-HEXANONE	12.763	58	139585	13.04	PPBV		99
72)	ETHYL METHACRYLATE	12.766	69	166587	11.21	PPBV		96
73)	TETRACHLOROETHYLENE	13.661	164	156578	11.89	PPBV		98
74)	DIBROMOCHLOROMETHANE	12.901	129	239067	12.18	PPBV		100
75)	1,2-DIBROMOETHANE	13.161	107	193285	10.86	PPBV		100
76)	OCTANE	13.520	43	406417	13.62	PPBV		98
77)	1,1,1,2-TETRACHLOROETHANE	14.383	131	152578	10.89	PPBV		97
78)	CHLOROBENZENE	14.399	112	298045	11.16	PPBV		99
79)	ETHYLBENZENE	14.816	91	430226	9.20	PPBV		99
80)	m,p-XYLENE	15.019	106	318777	19.97	PPBV		98
81)	o-XYLENE	15.538	106	153734	8.91	PPBV		99
82)	STYRENE	15.420	104	246975	11.27	PPBV		98
83)	NONANE	15.805	43	339669	12.68	PPBV		97
84)	BROMOFORM	15.092	173	190832	11.80	PPBV		99
86)	1,1,2,2-TETRACHLOROETHANE	15.538	83	256451	10.35	PPBV		99
87)	1,2,3-TRICHLOROPROPANE	15.686	75	188095	9.73	PPBV		97
88)	ISOPROPYLBENZENE	16.215	105	438786	10.34	PPBV		100
89)	BROMOBENZENE	16.312	77	254048	10.61	PPBV		97
90)	2-CHLOROTOLUENE	16.777	126	112824	11.02	PPBV		99
91)	n-PROPYLBENZENE	16.828	120	111024	10.74	PPBV		100
92)	4-ETHYLTOLUENE	17.008	105	391492	10.76	PPBV		100
93)	1,3,5-TRIMETHYLBENZENE	17.108	105	324988	10.50	PPBV		100
94)	ALPHA-METHYLSTYRENE	17.300	118	169108	11.59	PPBV		99

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\
Data File : 3W71597.D
Acq On : 11 Feb 2020 12:06 pm
Operator : danat
Sample : bs
Misc : MS40975,V3W2806,,,,,1
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Feb 11 12:58:44 2020
Quant Method : C:\msdchem\1\METHODS\M3W2789.M
Quant Title : TO15 by GCMS w/Rtx-1, 60 m X 0.32mm ID X 1.0 um
QLast Update : Wed Jan 15 09:18:27 2020
Response via : Initial Calibration

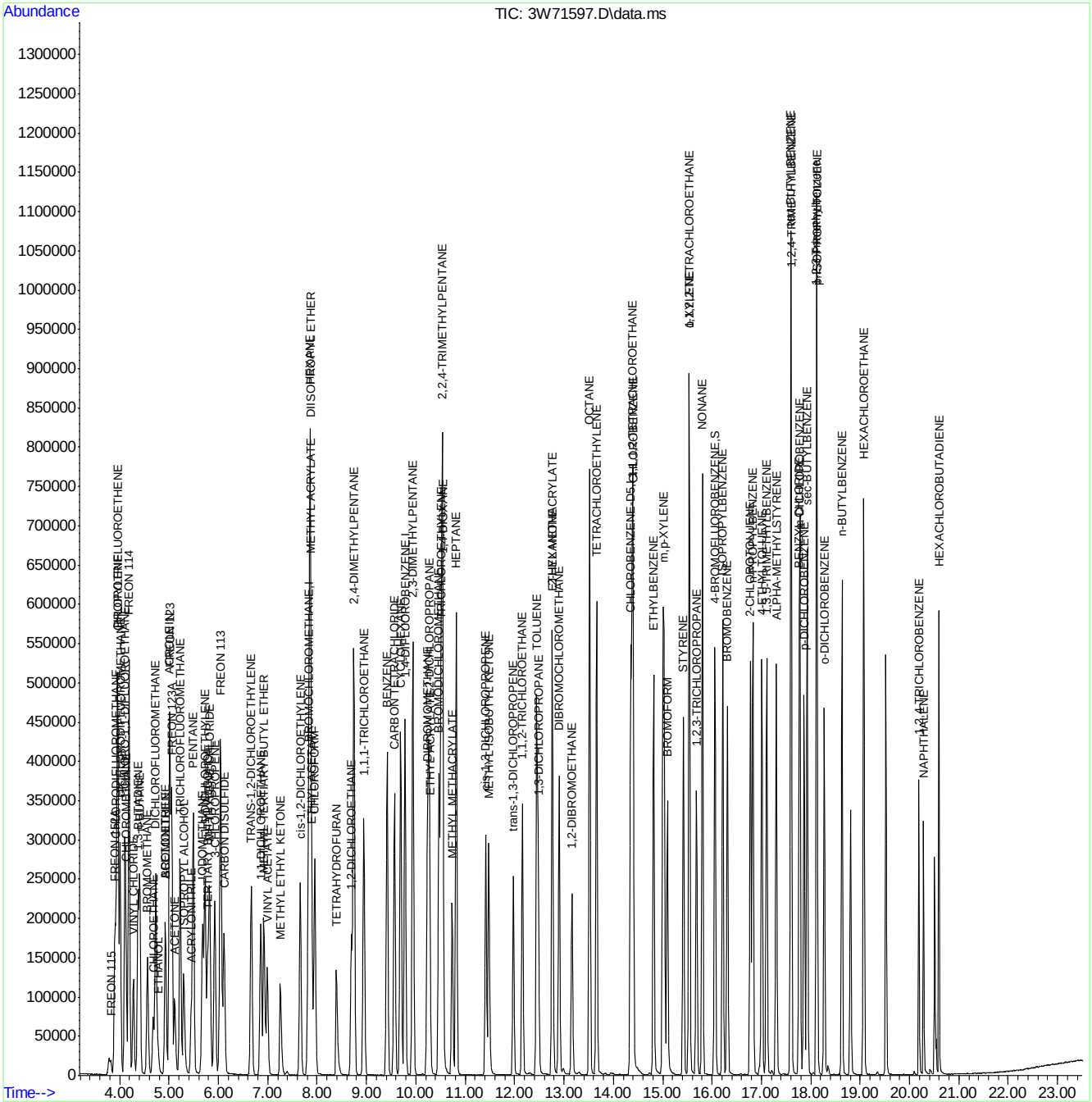
	Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
95)	tert-BUTYLBENZENE	17.595	134	70712	10.59	PPBV	98
96)	1,2,4-TRIMETHYLBENZENE	17.605	105	324760	11.01	PPBV	100
97)	m-DICHLOROBENZENE	17.781	146	210885	10.29	PPBV	99
98)	BENZYL CHLORIDE	17.765	91	296551	11.63	PPBV	100
99)	p-DICHLOROBENZENE	17.865	146	207885	10.01	PPBV	99
100)	sec-BUTYLBENZENE	17.926	134	88461	11.06	PPBV	97
101)	1,2,3-Trimethylbenzene	18.118	105	328939	10.93	PPBV	99
102)	p-ISOPROPYLTOLUENE	18.125	134	95595	11.58	PPBV	98
103)	o-DICHLOROBENZENE	18.272	146	193906	9.81	PPBV	99
104)	n-BUTYLBENZENE	18.632	134	82591	11.49	PPBV	92
105)	HEXACHLOROETHANE	19.071	117	168008	12.11	PPBV	95
106)	HEXACHLOROBUTADIENE	20.596	225	75068	7.41	PPBV	100
107)	1,2,4-TRICHLOROBENZENE	20.191	180	83832	8.45	PPBV	100
108)	NAPHTHALENE	20.288	128	182674	9.80	PPBV	99

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\
Data File : 3W71597.D
Acq On : 11 Feb 2020 12:06 pm
Operator : danat
Sample : bs
Misc : MS40975,V3W2806,,,,,1
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Feb 11 12:58:44 2020
Quant Method : C:\msdchem\1\METHODS\M3W2789.M
Quant Title : TO15 by GCMS w/Rtx-1, 60 m X 0.32mm ID X 1.0 um
QLast Update : Wed Jan 15 09:18:27 2020
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\
Data File : 3W71598.D
Acq On : 11 Feb 2020 1:33 pm
Operator : danat
Sample : bsd
Misc : MS40975,V3W2806,,,,,1
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Feb 11 14:04:44 2020
Quant Method : C:\msdchem\1\METHODS\M3W2789.M
Quant Title : TO15 by GCMS w/Rtx-1, 60 m X 0.32mm ID X 1.0 um
QLast Update : Wed Jan 15 09:18:27 2020
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) BROMOCHLOROMETHANE	7.821	128	106203	10.00	PPBV	0.00
51) 1,4-DIFLUOROBENZENE	9.775	114	440511	10.00	PPBV	-0.01
70) CHLOROBENZENE-D5	14.351	82	221711	10.00	PPBV	0.00
System Monitoring Compounds						
85) 4-BROMOFLUOROBENZENE	16.058	95	237002	9.73	PPBV	0.00
Spiked Amount 10.000	Range 65 - 128		Recovery = 97.30%			
Target Compounds						Qvalue
2) FREON 115	3.820	119	9499	18.63	PPBV	97
3) FREON 152A	3.897	65	100061	10.96	PPBV	99
4) CHLORODIFLUOROMETHANE	3.929	67	38808	10.29	PPBV	99
5) CHLOROTRIFLUOROETHENE	3.958	116	173080	10.41	PPBV	97
6) DICHLORODIFLUOROMETHANE	4.006	85	362262	10.02	PPBV	100
7) PROPYLENE	3.954	41	163356	11.32	PPBV	99
8) 1-CHLORO-1,1-DIFLUOROE...	4.102	65	284471	10.16	PPBV	98
9) FREON 114	4.185	85	383698	10.44	PPBV	96
10) CHLOROMETHANE	4.124	52	55890	11.68	PPBV	100
11) VINYL CHLORIDE	4.275	62	176644	11.22	PPBV	100
12) 1,3-BUTADIENE	4.365	54	134453	11.40	PPBV	100
13) n-BUTANE	4.404	43	287754	10.67	PPBV	99
14) BROMOMETHANE	4.561	94	138209	9.97	PPBV	100
15) CHLOROETHANE	4.673	64	85441	11.46	PPBV	96
16) DICHLOROFLUOROMETHANE	4.728	67	347980	10.77	PPBV	99
17) ACETONITRILE	4.917	41	116693	9.46	PPBV	98
18) ACROLEIN	5.007	56	58933	9.18	PPBV	96
19) FREON 123	5.007	83	342932	10.59	PPBV	99
20) FREON 123A	5.049	117	155520	10.12	PPBV	89
21) TRICHLOROFLUOROMETHANE	5.225	101	302342	9.56	PPBV	100
22) ISOPROPYL ALCOHOL	5.289	45	243806	9.23	PPBV	95
23) ACETONE	5.110	58	51680	8.23	PPBV	99
24) PENTANE	5.488	42	187247	10.16	PPBV	96
25) IODOMETHANE	5.674	142	316060	10.20	PPBV	97
26) 1,1-DICHLOROETHYLENE	5.726	96	132020	10.20	PPBV	97
27) CARBON DISULFIDE	6.111	76	391119	10.05	PPBV	99
28) ETHANOL	4.766	45	60848	9.49	PPBV	99
29) BROMOETHENE	4.920	106	126032	10.38	PPBV	100
30) ACRYLONITRILE	5.447	52	83204	9.58	PPBV	98
31) METHYLENE CHLORIDE	5.819	84	128297	9.47	PPBV	95
32) 3-CHLOROPROPENE	5.921	76	72012	10.99	PPBV	95
33) FREON 113	6.040	151	185138	9.72	PPBV	99
34) TRANS-1,2-DICHLOROETHY...	6.663	96	132203	10.49	PPBV	99
35) TERTIARY BUTYL ALCOHOL	5.774	59	241473	9.56	PPBV	98
36) METHYL TERTIARY BUTYL ...	6.916	73	280154	8.44	PPBV	99
37) TETRAHYDROFURAN	8.383	72	49479	8.62	PPBV	97
38) HEXANE	7.853	57	250727	10.88	PPBV	93
39) VINYL ACETATE	6.984	86	21626	9.34	PPBV #	96
40) 1,1-DICHLOROETHANE	6.855	63	277228	10.25	PPBV	99
41) METHYL ETHYL KETONE	7.250	72	47599	8.37	PPBV	94

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\
Data File : 3W71598.D
Acq On : 11 Feb 2020 1:33 pm
Operator : danat
Sample : bsd
Misc : MS40975,V3W2806,,,,,1
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Feb 11 14:04:44 2020
Quant Method : C:\msdchem\1\METHODS\M3W2789.M
Quant Title : TO15 by GCMS w/Rtx-1, 60 m X 0.32mm ID X 1.0 um
QLast Update : Wed Jan 15 09:18:27 2020
Response via : Initial Calibration

	Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
42)	cis-1,2-DICHLOROETHYLENE	7.654	96	143827	10.45	PPBV		99
43)	DIISOPROPYL ETHER	7.853	59	52676	8.80	PPBV	#	93
44)	ETHYL ACETATE	7.882	61	31912	8.05	PPBV	#	99
45)	METHYL ACRYLATE	7.869	55	207026	8.74	PPBV		99
46)	CHLOROFORM	7.949	83	284823	9.91	PPBV		99
47)	2,4-DIMETHYLPENTANE	8.739	57	302104	11.09	PPBV		99
48)	1,1,1-TRICHLOROETHANE	8.944	97	263634	9.77	PPBV		99
49)	CARBON TETRACHLORIDE	9.564	117	258580	10.03	PPBV		99
50)	1,2-DICHLOROETHANE	8.687	62	175276	9.58	PPBV		99
52)	BENZENE	9.413	78	456800	11.75	PPBV		100
53)	CYCLOHEXANE	9.689	84	190655	12.19	PPBV		97
54)	2,3-DIMETHYLPENTANE	9.936	71	104646	12.42	PPBV		100
55)	TRICHLOROETHYLENE	10.504	95	180263	11.67	PPBV		99
56)	1,2-DICHLOROPROPANE	10.260	63	164219	11.13	PPBV		97
57)	DIBROMOMETHANE	10.231	174	131085	10.11	PPBV		96
58)	ETHYL ACRYLATE	10.276	55	232866	10.50	PPBV		100
59)	BROMODICHLOROMETHANE	10.465	83	318117	12.00	PPBV		100
60)	2,2,4-TRIMETHYLPENTANE	10.536	57	817954	12.84	PPBV		99
61)	1,4-DIOXANE	10.539	88	69463	10.74	PPBV	#	20
62)	HEPTANE	10.815	43	323050	12.93	PPBV		98
63)	METHYL METHACRYLATE	10.732	69	107567	9.60	PPBV		97
64)	METHYL ISOBUTYL KETONE	11.470	58	106531	11.21	PPBV		99
65)	cis-1,3-DICHLOROPROPENE	11.412	75	227026	11.59	PPBV		99
66)	TOLUENE	12.445	92	256577	10.77	PPBV		99
67)	1,3-DICHLOROPROPANE	12.477	76	204002	11.04	PPBV	#	100
68)	trans-1,3-DICHLOROPROPENE	11.973	75	181707	11.35	PPBV		100
69)	1,1,2-TRICHLOROETHANE	12.153	83	136470	11.19	PPBV		99
71)	2-HEXANONE	12.756	58	146914	12.82	PPBV		97
72)	ETHYL METHACRYLATE	12.763	69	177262	11.15	PPBV		94
73)	TETRACHLOROETHYLENE	13.658	164	160306	11.37	PPBV		98
74)	DIBROMOCHLOROMETHANE	12.898	129	251546	11.97	PPBV		99
75)	1,2-DIBROMOETHANE	13.161	107	208703	10.96	PPBV		100
76)	OCTANE	13.517	43	433903	13.58	PPBV		96
77)	1,1,1,2-TETRACHLOROETHANE	14.380	131	166842	11.12	PPBV		99
78)	CHLOROBENZENE	14.399	112	325152	11.37	PPBV		100
79)	ETHYLBENZENE	14.813	91	502161	10.02	PPBV		99
80)	m,p-XYLENE	15.019	106	369325	21.62	PPBV		98
81)	o-XYLENE	15.539	106	178289	9.66	PPBV		100
82)	STYRENE	15.420	104	283035	12.06	PPBV		99
83)	NONANE	15.805	43	395397	13.79	PPBV		97
84)	BROMOFORM	15.092	173	207866	12.00	PPBV		99
86)	1,1,2,2-TETRACHLOROETHANE	15.535	83	286966	10.82	PPBV		99
87)	1,2,3-TRICHLOROPROPANE	15.683	75	212138	10.25	PPBV		96
88)	ISOPROPYLBENZENE	16.216	105	504461	11.10	PPBV		100
89)	BROMOBENZENE	16.309	77	286429	11.17	PPBV		95
90)	2-CHLOROTOLUENE	16.777	126	125626	11.46	PPBV		100
91)	n-PROPYLBENZENE	16.825	120	126763	11.45	PPBV		100
92)	4-ETHYLTOLUENE	17.008	105	438550	11.26	PPBV		99
93)	1,3,5-TRIMETHYLBENZENE	17.108	105	365452	11.03	PPBV		100
94)	ALPHA-METHYLSTYRENE	17.300	118	188630	12.07	PPBV		100

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\
Data File : 3W71598.D
Acq On : 11 Feb 2020 1:33 pm
Operator : danat
Sample : bsd
Misc : MS40975,V3W2806,,,,,1
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Feb 11 14:04:44 2020
Quant Method : C:\msdchem\1\METHODS\M3W2789.M
Quant Title : TO15 by GCMS w/Rtx-1, 60 m X 0.32mm ID X 1.0 um
QLast Update : Wed Jan 15 09:18:27 2020
Response via : Initial Calibration

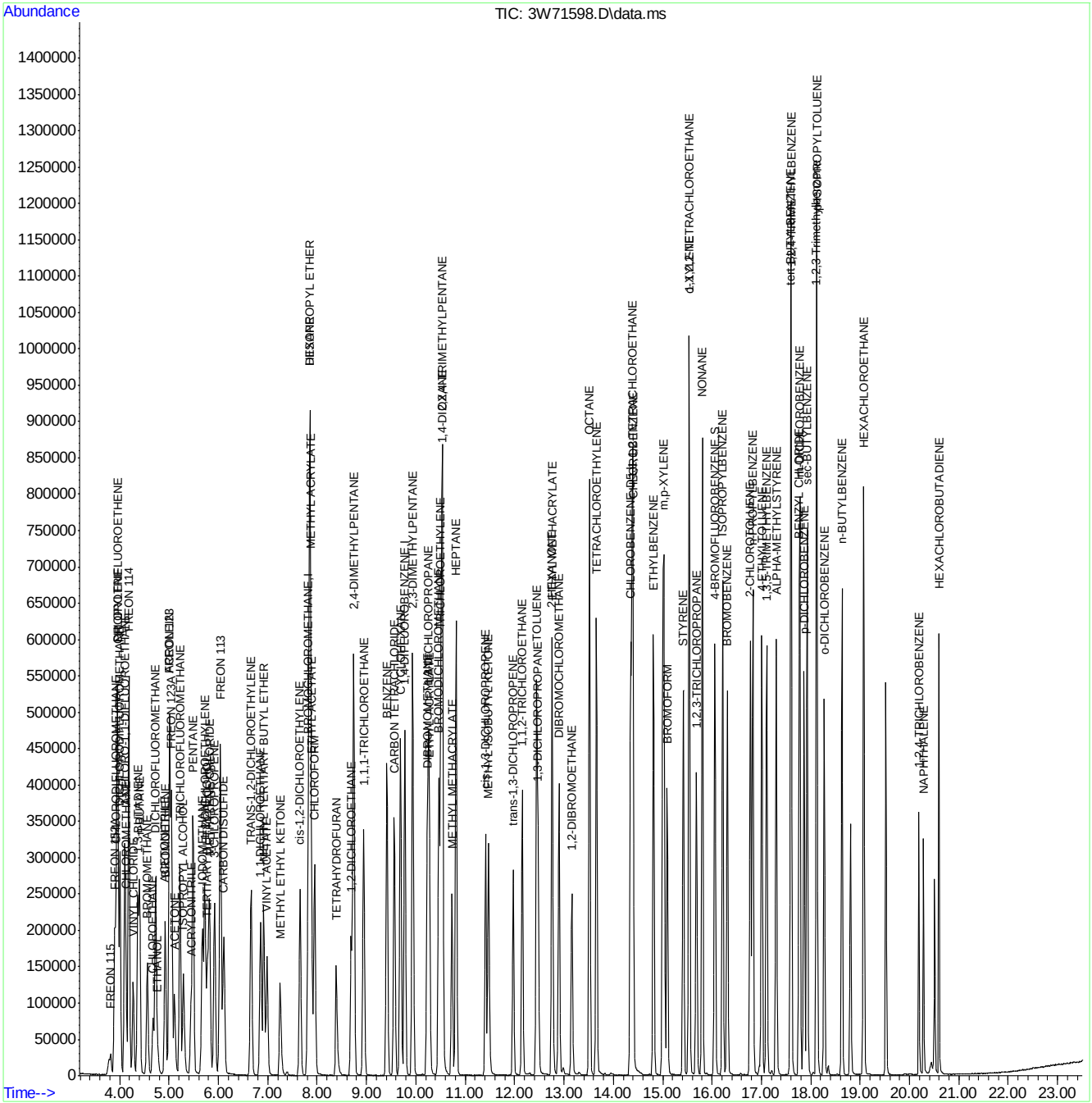
	Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
95)	tert-BUTYLBENZENE	17.595	134	78172	10.94	PPBV		99
96)	1,2,4-TRIMETHYLBENZENE	17.605	105	357922	11.33	PPBV		100
97)	m-DICHLOROBENZENE	17.778	146	234711	10.69	PPBV		99
98)	BENZYL CHLORIDE	17.765	91	320246	11.73	PPBV		99
99)	p-DICHLOROBENZENE	17.865	146	229113	10.31	PPBV		99
100)	sec-BUTYLBENZENE	17.926	134	97098	11.34	PPBV		96
101)	1,2,3-Trimethylbenzene	18.118	105	361332	11.22	PPBV		100
102)	p-ISOPROPYLTOLUENE	18.125	134	102679	11.62	PPBV		98
103)	o-DICHLOROBENZENE	18.272	146	212429	10.04	PPBV		99
104)	n-BUTYLBENZENE	18.632	134	86019	11.17	PPBV	#	88
105)	HEXACHLOROETHANE	19.072	117	186016	12.53	PPBV		95
106)	HEXACHLOROBUTADIENE	20.596	225	75509	6.97	PPBV		100
107)	1,2,4-TRICHLOROBENZENE	20.191	180	82457	7.76	PPBV		100
108)	NAPHTHALENE	20.284	128	177637	8.90	PPBV		99

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\
Data File : 3W71598.D
Acq On : 11 Feb 2020 1:33 pm
Operator : danat
Sample : bsd
Misc : MS40975,V3W2806,,,,,1
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Feb 11 14:04:44 2020
Quant Method : C:\msdchem\1\METHODS\M3W2789.M
Quant Title : TO15 by GCMS w/Rtx-1, 60 m X 0.32mm ID X 1.0 um
QLast Update : Wed Jan 15 09:18:27 2020
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\
Data File : 3W71621.D
Acq On : 12 Feb 2020 11:44 am
Operator : danat
Sample : bs
Misc : MS41043,V3W2807,,,,,1
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Feb 12 13:11:19 2020
Quant Method : C:\msdchem\1\METHODS\M3W2789.M
Quant Title : TO15 by GCMS w/Rtx-1, 60 m X 0.32mm ID X 1.0 um
QLast Update : Wed Jan 15 09:18:27 2020
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) BROMOCHLOROMETHANE	7.824	128	102318	10.00	PPBV		0.00
51) 1,4-DIFLUOROBENZENE	9.775	114	375828	10.00	PPBV		-0.01
70) CHLOROBENZENE-D5	14.348	82	184802	10.00	PPBV		0.00
System Monitoring Compounds							
85) 4-BROMOFLUOROBENZENE	16.055	95	193112	9.52	PPBV		0.00
Spiked Amount 10.000	Range 65 - 128		Recovery = 95.20%				
Target Compounds							Qvalue
2) FREON 115	3.823	119	5520	11.24	PPBV		96
3) FREON 152A	3.900	65	88555	10.07	PPBV		96
4) CHLORODIFLUOROMETHANE	3.929	67	33187	9.13	PPBV		99
5) CHLOROTRIFLUOROETHENE	3.958	116	162172	10.12	PPBV		98
6) DICHLORODIFLUOROMETHANE	4.006	85	321940	9.24	PPBV		99
7) PROPYLENE	3.958	41	133180	9.58	PPBV		97
8) 1-CHLORO-1,1-DIFLUOROE...	4.102	65	245645	9.11	PPBV		99
9) FREON 114	4.185	85	343578	9.70	PPBV		99
10) CHLOROMETHANE	4.121	52	48323	10.49	PPBV	#	80
11) VINYL CHLORIDE	4.275	62	156990	10.35	PPBV		100
12) 1,3-BUTADIENE	4.368	54	117396	10.33	PPBV		97
13) n-BUTANE	4.407	43	245687	9.46	PPBV		100
14) BROMOMETHANE	4.561	94	126478	9.47	PPBV		99
15) CHLOROETHANE	4.673	64	74310	10.34	PPBV		95
16) DICHLOROFLUOROMETHANE	4.728	67	301844	9.69	PPBV		100
17) ACETONITRILE	4.920	41	91069	7.66	PPBV		96
18) ACROLEIN	5.004	56	47277	7.65	PPBV		96
19) FREON 123	5.010	83	302825	9.70	PPBV		100
20) FREON 123A	5.049	117	142075	9.60	PPBV		96
21) TRICHLOROFLUOROMETHANE	5.225	101	271334	8.90	PPBV		100
22) ISOPROPYL ALCOHOL	5.289	45	206191	8.10	PPBV		96
23) ACETONE	5.113	58	40837	6.75	PPBV		97
24) PENTANE	5.488	42	162434	9.15	PPBV		97
25) IODOMETHANE	5.674	142	288937	9.68	PPBV		97
26) 1,1-DICHLOROETHYLENE	5.726	96	118888	9.53	PPBV		99
27) CARBON DISULFIDE	6.108	76	351822	9.38	PPBV		98
28) ETHANOL	4.769	45	49622	8.04	PPBV		99
29) BROMOETHENE	4.927	106	115044	9.83	PPBV		99
30) ACRYLONITRILE	5.450	52	67106	8.02	PPBV		99
31) METHYLENE CHLORIDE	5.819	84	113631	8.70	PPBV		95
32) 3-CHLOROPROPENE	5.921	76	63877	10.12	PPBV		95
33) FREON 113	6.040	151	170130	9.27	PPBV		99
34) TRANS-1,2-DICHLOROETHY...	6.659	96	117496	9.68	PPBV		98
35) TERTIARY BUTYL ALCOHOL	5.777	59	211682	8.70	PPBV		98
36) METHYL TERTIARY BUTYL ...	6.919	73	230503	7.21	PPBV		98
37) TETRAHYDROFURAN	8.389	72	40212	7.27	PPBV		99
38) HEXANE	7.853	57	215901	9.73	PPBV		91
39) VINYL ACETATE	6.987	86	17930	8.04	PPBV	#	92
40) 1,1-DICHLOROETHANE	6.855	63	240450	9.23	PPBV		99
41) METHYL ETHYL KETONE	7.250	72	38225	6.98	PPBV		97

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\
Data File : 3W71621.D
Acq On : 12 Feb 2020 11:44 am
Operator : danat
Sample : bs
Misc : MS41043,V3W2807,,,,,1
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Feb 12 13:11:19 2020
Quant Method : C:\msdchem\1\METHODS\M3W2789.M
Quant Title : TO15 by GCMS w/Rtx-1, 60 m X 0.32mm ID X 1.0 um
QLast Update : Wed Jan 15 09:18:27 2020
Response via : Initial Calibration

	Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
42)	cis-1,2-DICHLOROETHYLENE	7.654	96	126577	9.55	PPBV		98
43)	DIISOPROPYL ETHER	7.856	59	42754	7.42	PPBV		96
44)	ETHYL ACETATE	7.885	61	25885	6.78	PPBV	#	100
45)	METHYL ACRYLATE	7.872	55	164171	7.19	PPBV		98
46)	CHLOROFORM	7.949	83	250980	9.06	PPBV		100
47)	2,4-DIMETHYLPENTANE	8.739	57	258820	9.87	PPBV		99
48)	1,1,1-TRICHLOROETHANE	8.941	97	234332	9.01	PPBV		100
49)	CARBON TETRACHLORIDE	9.564	117	230388	9.28	PPBV		100
50)	1,2-DICHLOROETHANE	8.691	62	148494	8.42	PPBV		99
52)	BENZENE	9.413	78	392464	11.84	PPBV		99
53)	CYCLOHEXANE	9.689	84	168096	12.60	PPBV		99
54)	2,3-DIMETHYLPENTANE	9.936	71	90546	12.60	PPBV		98
55)	TRICHLOROETHYLENE	10.504	95	160938	12.21	PPBV		98
56)	1,2-DICHLOROPROPANE	10.260	63	138347	10.99	PPBV		97
57)	DIBROMOMETHANE	10.234	174	120388	10.89	PPBV		99
58)	ETHYL ACRYLATE	10.276	55	181234	9.58	PPBV		100
59)	BROMODICHLOROMETHANE	10.462	83	280083	12.38	PPBV		100
60)	2,2,4-TRIMETHYLPENTANE	10.536	57	699637	12.88	PPBV		100
61)	1,4-DIOXANE	10.542	88	57556	10.44	PPBV	#	37
62)	HEPTANE	10.815	43	269525	12.64	PPBV		99
63)	METHYL METHACRYLATE	10.728	69	84469	8.84	PPBV		100
64)	METHYL ISOBUTYL KETONE	11.470	58	83087	10.25	PPBV		98
65)	cis-1,3-DICHLOROPROPENE	11.412	75	192032	11.49	PPBV		97
66)	TOLUENE	12.445	92	219274	10.78	PPBV		99
67)	1,3-DICHLOROPROPANE	12.477	76	169309	10.73	PPBV	#	100
68)	trans-1,3-DICHLOROPROPENE	11.973	75	151790	11.11	PPBV		98
69)	1,1,2-TRICHLOROETHANE	12.153	83	115617	11.11	PPBV		100
71)	2-HEXANONE	12.756	58	113966	11.93	PPBV		99
72)	ETHYL METHACRYLATE	12.763	69	140374	10.59	PPBV		98
73)	TETRACHLOROETHYLENE	13.658	164	148990	12.68	PPBV		99
74)	DIBROMOCHLOROMETHANE	12.898	129	225651	12.88	PPBV		100
75)	1,2-DIBROMOETHANE	13.157	107	182734	11.51	PPBV		100
76)	OCTANE	13.517	43	357821	13.44	PPBV		99
77)	1,1,1,2-TETRACHLOROETHANE	14.380	131	148933	11.91	PPBV		97
78)	CHLOROBENZENE	14.396	112	285451	11.98	PPBV		98
79)	ETHYLBENZENE	14.813	91	414192	9.92	PPBV		99
80)	m,p-XYLENE	15.022	106	311172	21.85	PPBV		95
81)	o-XYLENE	15.535	106	151850	9.87	PPBV		97
82)	STYRENE	15.417	104	239736	12.25	PPBV		98
83)	NONANE	15.802	43	317128	13.27	PPBV		99
84)	BROMOFORM	15.092	173	187346	12.98	PPBV		99
86)	1,1,2,2-TETRACHLOROETHANE	15.535	83	240005	10.86	PPBV		100
87)	1,2,3-TRICHLOROPROPANE	15.683	75	174952	10.14	PPBV		98
88)	ISOPROPYLBENZENE	16.216	105	430192	11.36	PPBV		99
89)	BROMOBENZENE	16.309	77	240675	11.26	PPBV		100
90)	2-CHLOROTOLUENE	16.774	126	110248	12.07	PPBV		100
91)	n-PROPYLBENZENE	16.825	120	108079	11.71	PPBV		99
92)	4-ETHYLTOLUENE	17.005	105	370772	11.42	PPBV		100
93)	1,3,5-TRIMETHYLBENZENE	17.104	105	307325	11.13	PPBV		99
94)	ALPHA-METHYLSTYRENE	17.297	118	162096	12.45	PPBV		99

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\
Data File : 3W71621.D
Acq On : 12 Feb 2020 11:44 am
Operator : danat
Sample : bs
Misc : MS41043,V3W2807,,,,,1
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Feb 12 13:11:19 2020
Quant Method : C:\msdchem\1\METHODS\M3W2789.M
Quant Title : TO15 by GCMS w/Rtx-1, 60 m X 0.32mm ID X 1.0 um
QLast Update : Wed Jan 15 09:18:27 2020
Response via : Initial Calibration

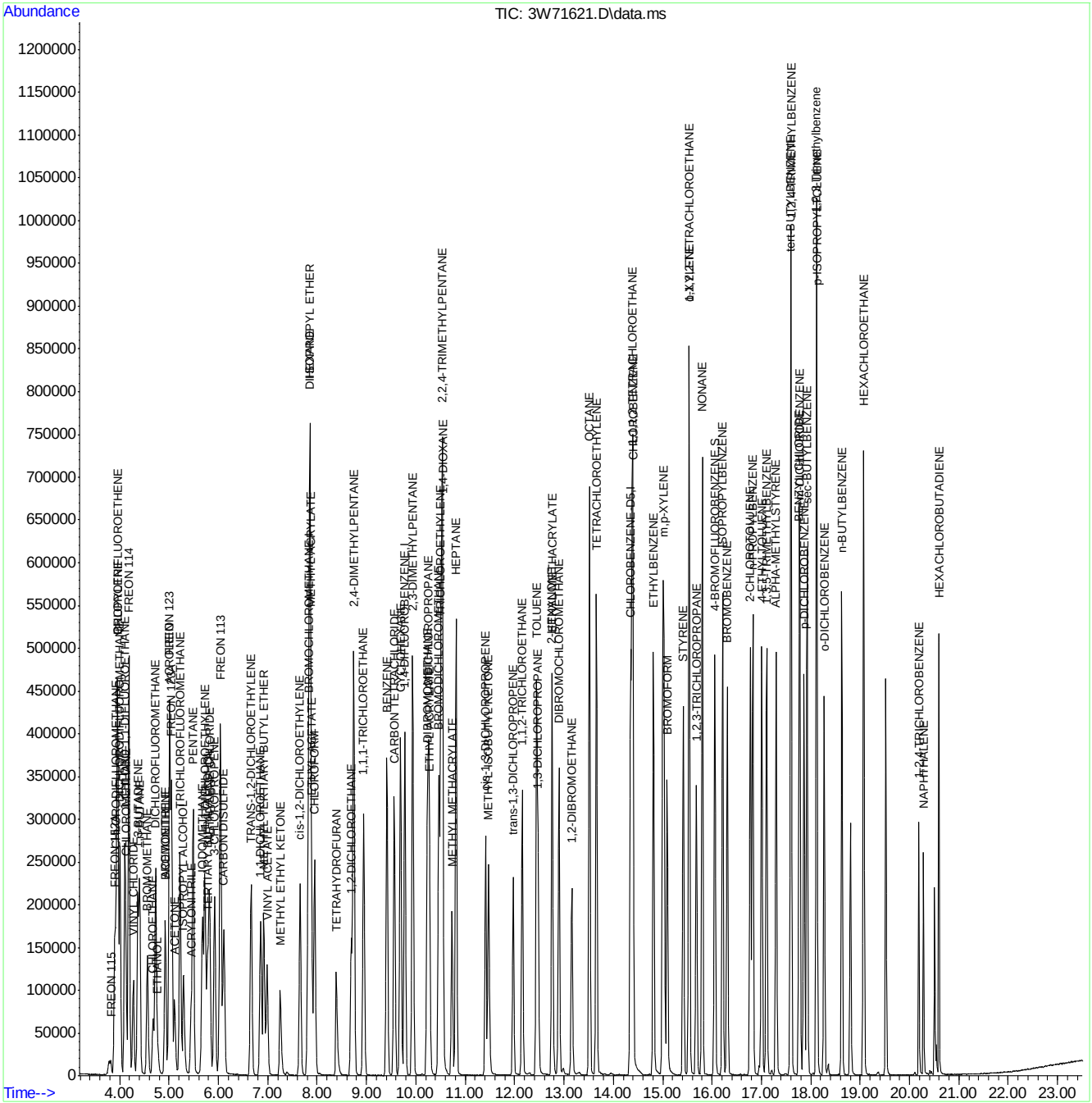
	Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
95)	tert-BUTYLBENZENE	17.592	134	67937	11.40	PPBV	99
96)	1,2,4-TRIMETHYLBENZENE	17.602	105	305824	11.62	PPBV	98
97)	m-DICHLOROBENZENE	17.778	146	209008	11.42	PPBV	99
98)	BENZYL CHLORIDE	17.765	91	268170	11.78	PPBV	100
99)	p-DICHLOROBENZENE	17.862	146	205819	11.11	PPBV	100
100)	sec-BUTYLBENZENE	17.926	134	85228	11.94	PPBV	99
101)	1,2,3-Trimethylbenzene	18.115	105	308617	11.49	PPBV	99
102)	p-ISOPROPYLTOLUENE	18.122	134	89919	12.20	PPBV	100
103)	o-DICHLOROBENZENE	18.272	146	192627	10.92	PPBV	100
104)	n-BUTYLBENZENE	18.632	134	76435	11.91	PPBV	96
105)	HEXACHLOROETHANE	19.072	117	167269	13.52	PPBV	97
106)	HEXACHLOROBUTADIENE	20.596	225	66392	7.35	PPBV	99
107)	1,2,4-TRICHLOROBENZENE	20.191	180	69006	7.79	PPBV	99
108)	NAPHTHALENE	20.284	128	145647	8.76	PPBV	100

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\
Data File : 3W71621.D
Acq On : 12 Feb 2020 11:44 am
Operator : danat
Sample : bs
Misc : MS41043,V3W2807,,,,,1
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Feb 12 13:11:19 2020
Quant Method : C:\msdchem\1\METHODS\M3W2789.M
Quant Title : TO15 by GCMS w/Rtx-1, 60 m X 0.32mm ID X 1.0 um
QLast Update : Wed Jan 15 09:18:27 2020
Response via : Initial Calibration



M3W2789.M Wed Feb 12 14:38:15 2020 GCMS6W Page: 4

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\
Data File : 3W71622.D
Acq On : 12 Feb 2020 12:34 pm
Operator : danat
Sample : bsd
Misc : MS41043,V3W2807,,,,,1
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Feb 12 13:11:44 2020
Quant Method : C:\msdchem\1\METHODS\M3W2789.M
Quant Title : TO15 by GCMS w/Rtx-1, 60 m X 0.32mm ID X 1.0 um
QLast Update : Wed Jan 15 09:18:27 2020
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) BROMOCHLOROMETHANE	7.821	128	101213	10.00	PPBV	0.00
51) 1,4-DIFLUOROBENZENE	9.775	114	381992	10.00	PPBV	-0.01
70) CHLOROBENZENE-D5	14.348	82	187274	10.00	PPBV	-0.01
System Monitoring Compounds						
85) 4-BROMOFLUOROBENZENE	16.055	95	198923	9.67	PPBV	0.00
Spiked Amount 10.000	Range 65 - 128		Recovery = 96.70%			
Target Compounds						Qvalue
2) FREON 115	3.823	119	5611	11.55	PPBV	98
3) FREON 152A	3.900	65	89295	10.26	PPBV	95
4) CHLORODIFLUOROMETHANE	3.932	67	33165	9.22	PPBV	99
5) CHLOROTRIFLUOROETHENE	3.958	116	165856	10.46	PPBV	98
6) DICHLORODIFLUOROMETHANE	4.006	85	335333	9.73	PPBV	98
7) PROPYLENE	3.954	41	137795	10.02	PPBV	97
8) 1-CHLORO-1,1-DIFLUOROE...	4.105	65	245075	9.18	PPBV	99
9) FREON 114	4.185	85	342982	9.79	PPBV	99
10) CHLOROMETHANE	4.124	52	49533	10.87	PPBV	99
11) VINYL CHLORIDE	4.275	62	157471	10.50	PPBV	100
12) 1,3-BUTADIENE	4.368	54	115872	10.31	PPBV	96
13) n-BUTANE	4.404	43	243620	9.48	PPBV	100
14) BROMOMETHANE	4.561	94	126472	9.57	PPBV	100
15) CHLOROETHANE	4.673	64	72986	10.27	PPBV	95
16) DICHLOROFLUOROMETHANE	4.728	67	293499	9.53	PPBV	100
17) ACETONITRILE	4.920	41	73804	6.28	PPBV	95
18) ACROLEIN	5.007	56	38443	6.29	PPBV	97
19) FREON 123	5.010	83	298833	9.68	PPBV	99
20) FREON 123A	5.052	117	139555	9.53	PPBV	97
21) TRICHLOROFLUOROMETHANE	5.222	101	266400	8.84	PPBV	100
22) ISOPROPYL ALCOHOL	5.289	45	205399	8.16	PPBV	96
23) ACETONE	5.113	58	35240	5.89	PPBV	95
24) PENTANE	5.488	42	153693	8.75	PPBV	96
25) IODOMETHANE	5.674	142	283311	9.59	PPBV	96
26) 1,1-DICHLOROETHYLENE	5.726	96	115851	9.39	PPBV	99
27) CARBON DISULFIDE	6.111	76	347773	9.38	PPBV	98
28) ETHANOL	4.769	45	48577	7.95	PPBV	100
29) BROMOETHENE	4.923	106	113845	9.84	PPBV	99
30) ACRYLONITRILE	5.450	52	53600	6.47	PPBV	98
31) METHYLENE CHLORIDE	5.822	84	111544	8.64	PPBV	98
32) 3-CHLOROPROPENE	5.925	76	61892	9.91	PPBV	97
33) FREON 113	6.040	151	166567	9.17	PPBV	99
34) TRANS-1,2-DICHLOROETHY...	6.659	96	115235	9.59	PPBV	97
35) TERTIARY BUTYL ALCOHOL	5.777	59	213317	8.86	PPBV	97
36) METHYL TERTIARY BUTYL ...	6.919	73	209564	6.63	PPBV	98
37) TETRAHYDROFURAN	8.386	72	36005	6.58	PPBV	97
38) HEXANE	7.850	57	207023	9.43	PPBV	90
39) VINYL ACETATE	6.984	86	14430	6.54	PPBV #	92
40) 1,1-DICHLOROETHANE	6.855	63	232802	9.03	PPBV	100
41) METHYL ETHYL KETONE	7.253	72	36896	6.81	PPBV #	87

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\
Data File : 3W71622.D
Acq On : 12 Feb 2020 12:34 pm
Operator : danat
Sample : bsd
Misc : MS41043,V3W2807,,,,,1
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Feb 12 13:11:44 2020
Quant Method : C:\msdchem\1\METHODS\M3W2789.M
Quant Title : TO15 by GCMS w/Rtx-1, 60 m X 0.32mm ID X 1.0 um
QLast Update : Wed Jan 15 09:18:27 2020
Response via : Initial Calibration

	Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
42)	cis-1,2-DICHLOROETHYLENE	7.654	96	125052	9.54	PPBV		97
43)	DIISOPROPYL ETHER	7.856	59	39089	6.86	PPBV	#	94
44)	ETHYL ACETATE	7.888	61	23836	6.31	PPBV	#	96
45)	METHYL ACRYLATE	7.872	55	142590	6.32	PPBV		98
46)	CHLOROFORM	7.949	83	246875	9.01	PPBV		99
47)	2,4-DIMETHYLPENTANE	8.739	57	253340	9.76	PPBV		99
48)	1,1,1-TRICHLOROETHANE	8.944	97	231366	9.00	PPBV		99
49)	CARBON TETRACHLORIDE	9.563	117	229347	9.34	PPBV		100
50)	1,2-DICHLOROETHANE	8.687	62	141118	8.09	PPBV		99
52)	BENZENE	9.413	78	384135	11.40	PPBV		99
53)	CYCLOHEXANE	9.689	84	166000	12.24	PPBV		98
54)	2,3-DIMETHYLPENTANE	9.936	71	90372	12.37	PPBV		97
55)	TRICHLOROETHYLENE	10.504	95	159190	11.88	PPBV		98
56)	1,2-DICHLOROPROPANE	10.260	63	123433	9.65	PPBV		97
57)	DIBROMOMETHANE	10.231	174	120076	10.68	PPBV		99
58)	ETHYL ACRYLATE	10.276	55	178116	9.26	PPBV		100
59)	BROMODICHLOROMETHANE	10.465	83	275790	12.00	PPBV		100
60)	2,2,4-TRIMETHYLPENTANE	10.533	57	687385	12.45	PPBV		100
61)	1,4-DIOXANE	10.539	88	58515	10.44	PPBV	#	10
62)	HEPTANE	10.815	43	260507	12.02	PPBV		99
63)	METHYL METHACRYLATE	10.728	69	81142	8.36	PPBV		98
64)	METHYL ISOBUTYL KETONE	11.473	58	85918	10.43	PPBV		96
65)	cis-1,3-DICHLOROPROPENE	11.412	75	173862	10.24	PPBV		96
66)	TOLUENE	12.445	92	190066	9.20	PPBV		99
67)	1,3-DICHLOROPROPANE	12.477	76	144478	9.01	PPBV	#	100
68)	trans-1,3-DICHLOROPROPENE	11.970	75	132924	9.58	PPBV		96
69)	1,1,2-TRICHLOROETHANE	12.153	83	101788	9.62	PPBV		99
71)	2-HEXANONE	12.756	58	115837	11.97	PPBV		99
72)	ETHYL METHACRYLATE	12.763	69	143855	10.71	PPBV		99
73)	TETRACHLOROETHYLENE	13.658	164	149711	12.57	PPBV		100
74)	DIBROMOCHLOROMETHANE	12.898	129	212280	11.96	PPBV		99
75)	1,2-DIBROMOETHANE	13.157	107	163884	10.19	PPBV		99
76)	OCTANE	13.517	43	344990	12.79	PPBV		100
77)	1,1,1,2-TETRACHLOROETHANE	14.380	131	133639	10.54	PPBV		96
78)	CHLOROBENZENE	14.396	112	254945	10.56	PPBV		98
79)	ETHYLBENZENE	14.813	91	352916	8.34	PPBV		99
80)	m,p-XYLENE	15.019	106	264630	18.34	PPBV		96
81)	o-XYLENE	15.538	106	130725	8.38	PPBV		96
82)	STYRENE	15.417	104	204177	10.30	PPBV		98
83)	NONANE	15.802	43	273495	11.29	PPBV		99
84)	BROMOFORM	15.089	173	168896	11.54	PPBV		99
86)	1,1,2,2-TETRACHLOROETHANE	15.535	83	223101	9.96	PPBV		99
87)	1,2,3-TRICHLOROPROPANE	15.680	75	159728	9.13	PPBV		99
88)	ISOPROPYLBENZENE	16.216	105	377836	9.85	PPBV		99
89)	BROMOBENZENE	16.309	77	209777	9.69	PPBV		99
90)	2-CHLOROTOLUENE	16.774	126	97629	10.54	PPBV		100
91)	n-PROPYLBENZENE	16.825	120	96876	10.36	PPBV		99
92)	4-ETHYLTOLUENE	17.005	105	339839	10.33	PPBV		100
93)	1,3,5-TRIMETHYLBENZENE	17.104	105	280234	10.02	PPBV		98
94)	ALPHA-METHYLSTYRENE	17.300	118	146730	11.12	PPBV		99

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\
Data File : 3W71622.D
Acq On : 12 Feb 2020 12:34 pm
Operator : danat
Sample : bsd
Misc : MS41043,V3W2807,,,,,1
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Feb 12 13:11:44 2020
Quant Method : C:\msdchem\1\METHODS\M3W2789.M
Quant Title : TO15 by GCMS w/Rtx-1, 60 m X 0.32mm ID X 1.0 um
QLast Update : Wed Jan 15 09:18:27 2020
Response via : Initial Calibration

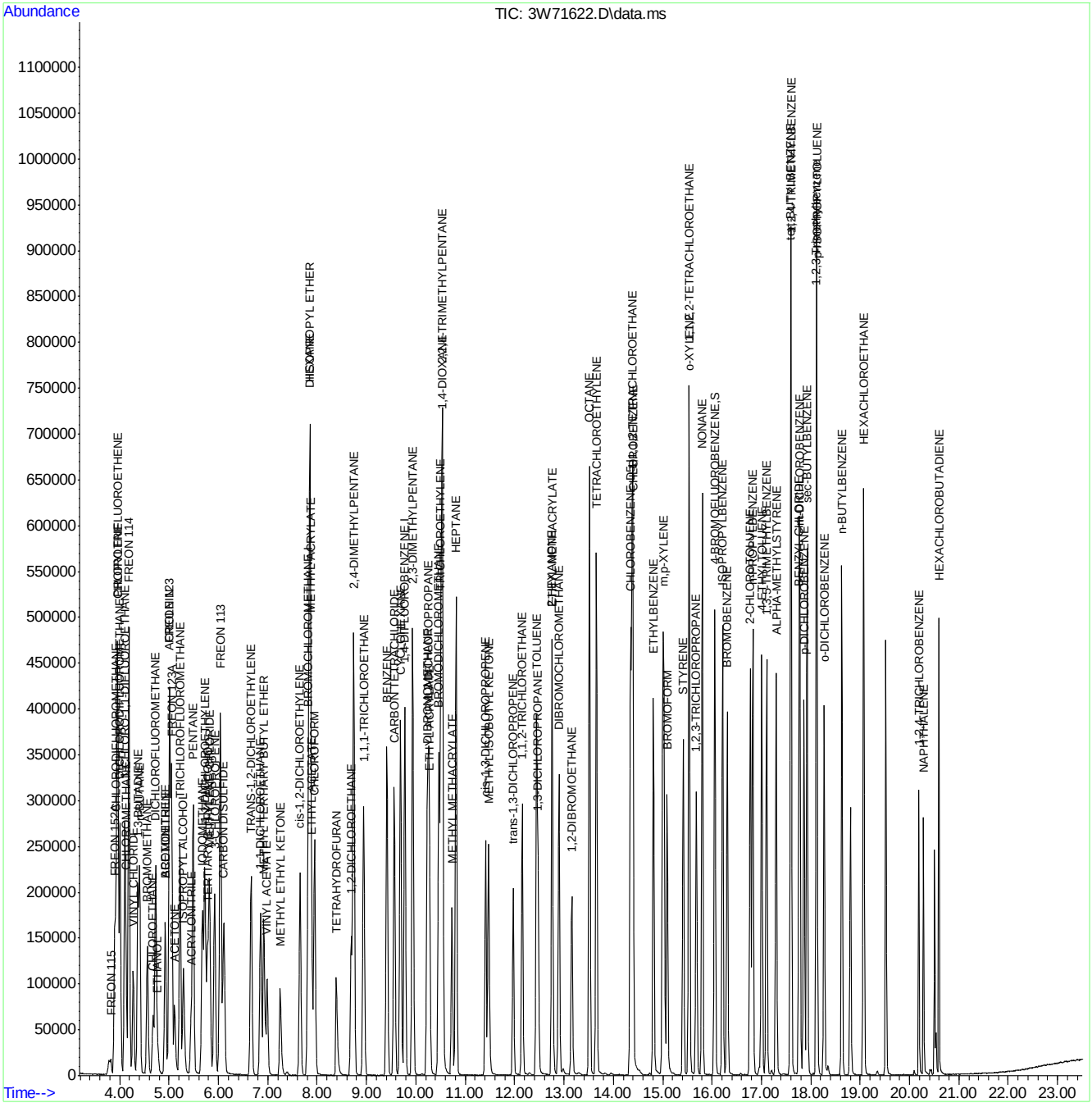
	Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
95)	tert-BUTYLBENZENE	17.592	134	64007	10.60	PPBV	99
96)	1,2,4-TRIMETHYLBENZENE	17.602	105	283814	10.64	PPBV	98
97)	m-DICHLOROBENZENE	17.778	146	185858	10.02	PPBV	100
98)	BENZYL CHLORIDE	17.762	91	256828	11.13	PPBV	99
99)	p-DICHLOROBENZENE	17.862	146	182183	9.70	PPBV	100
100)	sec-BUTYLBENZENE	17.926	134	78757	10.89	PPBV	99
101)	1,2,3-Trimethylbenzene	18.115	105	291779	10.72	PPBV	98
102)	p-ISOPROPYLTOLUENE	18.125	134	87112	11.67	PPBV	100
103)	o-DICHLOROBENZENE	18.272	146	173921	9.73	PPBV	100
104)	n-BUTYLBENZENE	18.632	134	75443	11.60	PPBV	98
105)	HEXACHLOROETHANE	19.071	117	149288	11.90	PPBV	97
106)	HEXACHLOROBUTADIENE	20.596	225	65140	7.11	PPBV	100
107)	1,2,4-TRICHLOROBENZENE	20.191	180	73211	8.16	PPBV	99
108)	NAPHTHALENE	20.284	128	156097	9.26	PPBV	99

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\
Data File : 3W71622.D
Acq On : 12 Feb 2020 12:34 pm
Operator : danat
Sample : bsd
Misc : MS41043,V3W2807,,,,,1
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Feb 12 13:11:44 2020
Quant Method : C:\msdchem\1\METHODS\M3W2789.M
Quant Title : TO15 by GCMS w/Rtx-1, 60 m X 0.32mm ID X 1.0 um
QLast Update : Wed Jan 15 09:18:27 2020
Response via : Initial Calibration



M3W2789.M Wed Feb 12 14:38:27 2020 GCMS6W Page: 4

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\
Data File : 3W71399.D
Acq On : 23 Jan 2020 10:30 am
Operator : thomash
Sample : bs
Misc : MS40366,V3W2796,,,,,1
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Jan 23 10:59:30 2020
Quant Method : C:\msdchem\1\METHODS\M3W2789.M
Quant Title : TO15 by GCMS w/Rtx-1, 60 m X 0.32mm ID X 1.0 um
QLast Update : Wed Jan 15 09:18:27 2020
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) BROMOCHLOROMETHANE	7.827	128	96617	10.00	PPBV	0.00
51) 1,4-DIFLUOROBENZENE	9.782	114	437896	10.00	PPBV	0.00
70) CHLOROBENZENE-D5	14.354	82	216116	10.00	PPBV	0.00
System Monitoring Compounds						
85) 4-BROMOFLUOROBENZENE	16.061	95	236687	9.97	PPBV	0.00
Spiked Amount 10.000	Range 65 - 128		Recovery = 99.70%			
Target Compounds						Qvalue
2) FREON 115	3.816	119	5498	11.85	PPBV	95
3) FREON 152A	3.900	65	73783	8.88	PPBV	99
4) CHLORODIFLUOROMETHANE	3.929	67	29720	8.66	PPBV	100
5) CHLOROTRIFLUOROETHENE	3.961	116	141770	9.37	PPBV	99
6) DICHLORODIFLUOROMETHANE	4.006	85	294722	8.96	PPBV	99
7) PROPYLENE	3.957	41	111718	8.51	PPBV	99
8) 1-CHLORO-1,1-DIFLUOROE...	4.105	65	223481	8.77	PPBV	100
9) FREON 114	4.185	85	298004	8.91	PPBV	100
10) CHLOROMETHANE	4.124	52	40199	9.24	PPBV	92
11) VINYL CHLORIDE	4.272	62	130856	9.14	PPBV	100
12) 1,3-BUTADIENE	4.368	54	95763	8.92	PPBV	100
13) n-BUTANE	4.407	43	206806	8.43	PPBV	100
14) BROMOMETHANE	4.561	94	108902	8.63	PPBV	100
15) CHLOROETHANE	4.676	64	62511	9.21	PPBV	99
16) DICHLOROFLUOROMETHANE	4.728	67	257896	8.77	PPBV	99
17) ACETONITRILE	4.920	41	80261	7.15	PPBV	99
18) ACROLEIN	5.007	56	39373	6.75	PPBV	97
19) FREON 123	5.010	83	261719	8.88	PPBV	100
20) FREON 123A	5.052	117	124373	8.90	PPBV	99
21) TRICHLOROFLUOROMETHANE	5.225	101	251872	8.75	PPBV	100
22) ISOPROPYL ALCOHOL	5.289	45	196585	8.18	PPBV	97
23) ACETONE	5.109	58	40149	7.03	PPBV	99
24) PENTANE	5.491	42	133659	7.97	PPBV	99
25) IODOMETHANE	5.677	142	245320	8.70	PPBV	99
26) 1,1-DICHLOROETHYLENE	5.726	96	100657	8.55	PPBV	99
27) CARBON DISULFIDE	6.114	76	312280	8.82	PPBV	99
28) ETHANOL	4.766	45	47367	8.12	PPBV	99
29) BROMOETHENE	4.923	106	99067	8.97	PPBV	99
30) ACRYLONITRILE	5.450	52	59302	7.50	PPBV	99
31) METHYLENE CHLORIDE	5.822	84	101685	8.25	PPBV	99
32) 3-CHLOROPROPENE	5.924	76	52440	8.80	PPBV	96
33) FREON 113	6.043	151	151313	8.73	PPBV	99
34) TRANS-1,2-DICHLOROETHY...	6.666	96	101666	8.87	PPBV	98
35) TERTIARY BUTYL ALCOHOL	5.777	59	201150	8.75	PPBV	99
36) METHYL TERTIARY BUTYL ...	6.922	73	229922	7.62	PPBV	99
37) TETRAHYDROFURAN	8.392	72	39545	7.57	PPBV	97
38) HEXANE	7.856	57	181269	8.65	PPBV	97
39) VINYL ACETATE	6.990	86	16532	7.85	PPBV #	91
40) 1,1-DICHLOROETHANE	6.858	63	208847	8.49	PPBV	100
41) METHYL ETHYL KETONE	7.253	72	39476	7.63	PPBV #	92

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\
Data File : 3W71399.D
Acq On : 23 Jan 2020 10:30 am
Operator : thomash
Sample : bs
Misc : MS40366,V3W2796,,,,,1
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Jan 23 10:59:30 2020
Quant Method : C:\msdchem\1\METHODS\M3W2789.M
Quant Title : TO15 by GCMS w/Rtx-1, 60 m X 0.32mm ID X 1.0 um
QLast Update : Wed Jan 15 09:18:27 2020
Response via : Initial Calibration

	Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
42)	cis-1,2-DICHLOROETHYLENE	7.660	96	109683	8.76	PPBV		98
43)	DIISOPROPYL ETHER	7.863	59	40867	7.51	PPBV		98
44)	ETHYL ACETATE	7.888	61	27204	7.54	PPBV	#	98
45)	METHYL ACRYLATE	7.875	55	158784	7.37	PPBV		98
46)	CHLOROFORM	7.956	83	226877	8.67	PPBV		99
47)	2,4-DIMETHYLPENTANE	8.745	57	220121	8.89	PPBV		100
48)	1,1,1-TRICHLOROETHANE	8.947	97	217919	8.88	PPBV		99
49)	CARBON TETRACHLORIDE	9.570	117	218046	9.30	PPBV		100
50)	1,2-DICHLOROETHANE	8.694	62	139737	8.39	PPBV		99
52)	BENZENE	9.419	78	348554	9.02	PPBV		99
53)	CYCLOHEXANE	9.695	84	145234	9.34	PPBV		99
54)	2,3-DIMETHYLPENTANE	9.939	71	77695	9.28	PPBV		98
55)	TRICHLOROETHYLENE	10.510	95	144638	9.42	PPBV		99
56)	1,2-DICHLOROPROPANE	10.263	63	121066	8.26	PPBV		99
57)	DIBROMOMETHANE	10.240	174	110392	8.57	PPBV		98
58)	ETHYL ACRYLATE	10.282	55	190169	8.62	PPBV		100
59)	BROMODICHLOROMETHANE	10.468	83	251172	9.53	PPBV		100
60)	2,2,4-TRIMETHYLPENTANE	10.539	57	597025	9.43	PPBV		100
61)	1,4-DIOXANE	10.545	88	58109	9.04	PPBV	#	61
62)	HEPTANE	10.818	43	228018	9.18	PPBV		100
63)	METHYL METHACRYLATE	10.738	69	87948	7.90	PPBV		98
64)	METHYL ISOBUTYL KETONE	11.476	58	85114	9.01	PPBV		99
65)	cis-1,3-DICHLOROPROPENE	11.418	75	169977	8.73	PPBV		99
66)	TOLUENE	12.451	92	198887	8.40	PPBV		100
67)	1,3-DICHLOROPROPANE	12.483	76	153433	8.35	PPBV	#	100
68)	trans-1,3-DICHLOROPROPENE	11.976	75	136286	8.56	PPBV		99
69)	1,1,2-TRICHLOROETHANE	12.159	83	103553	8.54	PPBV		99
71)	2-HEXANONE	12.763	58	113816	10.19	PPBV		100
72)	ETHYL METHACRYLATE	12.769	69	150184	9.69	PPBV		100
73)	TETRACHLOROETHYLENE	13.661	164	137443	10.00	PPBV		99
74)	DIBROMOCHLOROMETHANE	12.904	129	210258	10.26	PPBV		99
75)	1,2-DIBROMOETHANE	13.164	107	166955	8.99	PPBV		100
76)	OCTANE	13.520	43	303775	9.76	PPBV		100
77)	1,1,1,2-TETRACHLOROETHANE	14.386	131	137814	9.42	PPBV		99
78)	CHLOROBENZENE	14.402	112	256712	9.21	PPBV		99
79)	ETHYLBENZENE	14.820	91	388262	7.95	PPBV		100
80)	m,p-XYLENE	15.015	106	287124	17.24	PPBV		97
81)	o-XYLENE	15.542	106	140227	7.79	PPBV		99
82)	STYRENE	15.423	104	218870	9.57	PPBV		99
83)	NONANE	15.808	43	271000	9.69	PPBV		99
84)	BROMOFORM	15.095	173	180255	10.68	PPBV		100
86)	1,1,2,2-TETRACHLOROETHANE	15.542	83	230852	8.93	PPBV		100
87)	1,2,3-TRICHLOROPROPANE	15.686	75	172266	8.53	PPBV		99
88)	ISOPROPYLBENZENE	16.219	105	410434	9.27	PPBV		100
89)	BROMOBENZENE	16.315	77	224348	8.98	PPBV		99
90)	2-CHLOROTOLUENE	16.780	126	100799	9.43	PPBV		100
91)	n-PROPYLBENZENE	16.828	120	104586	9.69	PPBV		100
92)	4-ETHYLTOLUENE	17.011	105	370946	9.77	PPBV		100
93)	1,3,5-TRIMETHYLBENZENE	17.111	105	315809	9.78	PPBV		99
94)	ALPHA-METHYLSTYRENE	17.303	118	157573	10.35	PPBV		100

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\
Data File : 3W71399.D
Acq On : 23 Jan 2020 10:30 am
Operator : thomash
Sample : bs
Misc : MS40366,V3W2796,,,,,1
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Jan 23 10:59:30 2020
Quant Method : C:\msdchem\1\METHODS\M3W2789.M
Quant Title : TO15 by GCMS w/Rtx-1, 60 m X 0.32mm ID X 1.0 um
QLast Update : Wed Jan 15 09:18:27 2020
Response via : Initial Calibration

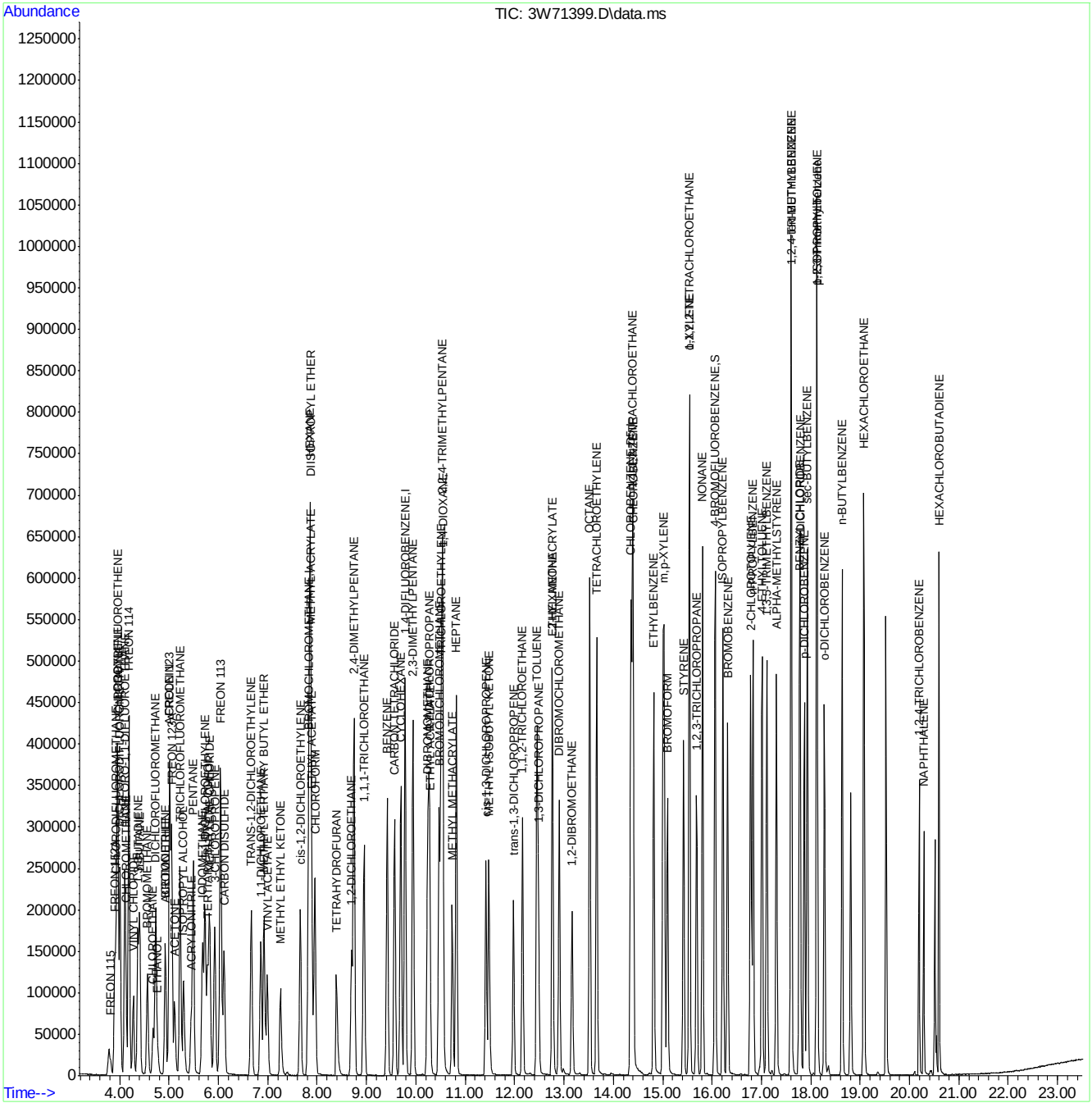
	Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
95)	tert-BUTYLBENZENE	17.598	134	67685	9.72	PPBV	95
96)	1,2,4-TRIMETHYLBENZENE	17.608	105	312686	10.16	PPBV	99
97)	m-DICHLOROBENZENE	17.785	146	202183	9.45	PPBV	99
98)	BENZYL CHLORIDE	17.769	91	274708	10.32	PPBV	100
99)	p-DICHLOROBENZENE	17.868	146	198564	9.16	PPBV	99
100)	sec-BUTYLBENZENE	17.929	134	86051	10.31	PPBV	100
101)	1,2,3-Trimethylbenzene	18.122	105	325121	10.35	PPBV	100
102)	p-ISOPROPYLTOLUENE	18.128	134	94998	11.02	PPBV	99
103)	o-DICHLOROBENZENE	18.276	146	192873	9.35	PPBV	99
104)	n-BUTYLBENZENE	18.635	134	83893	11.18	PPBV	100
105)	HEXACHLOROETHANE	19.075	117	156015	10.78	PPBV	100
106)	HEXACHLOROBUTADIENE	20.599	225	89049	8.43	PPBV	99
107)	1,2,4-TRICHLOROBENZENE	20.194	180	84565	8.16	PPBV	99
108)	NAPHTHALENE	20.288	128	163899	8.43	PPBV	100

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\
Data File : 3W71399.D
Acq On : 23 Jan 2020 10:30 am
Operator : thomash
Sample : bs
Misc : MS40366,V3W2796,,,,,1
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Jan 23 10:59:30 2020
Quant Method : C:\msdchem\1\METHODS\M3W2789.M
Quant Title : TO15 by GCMS w/Rtx-1, 60 m X 0.32mm ID X 1.0 um
QLast Update : Wed Jan 15 09:18:27 2020
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\
Data File : 3W71401.D
Acq On : 23 Jan 2020 12:10 pm
Operator : thomash
Sample : bsd
Misc : MS40366,V3W2796,,,,,1
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Jan 23 12:42:39 2020
Quant Method : C:\msdchem\1\METHODS\M3W2789.M
Quant Title : TO15 by GCMS w/Rtx-1, 60 m X 0.32mm ID X 1.0 um
QLast Update : Wed Jan 15 09:18:27 2020
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) BROMOCHLOROMETHANE	7.824	128	94139	10.00	PPBV	0.00
51) 1,4-DIFLUOROBENZENE	9.782	114	451710	10.00	PPBV	0.00
70) CHLOROBENZENE-D5	14.354	82	215684	10.00	PPBV	0.00
System Monitoring Compounds						
85) 4-BROMOFLUOROBENZENE	16.061	95	239589	10.12	PPBV	0.00
Spiked Amount 10.000	Range 65 - 128		Recovery = 101.20%			
Target Compounds						Qvalue
2) FREON 115	3.816	119	5419	11.99	PPBV	95
3) FREON 152A	3.900	65	76393	9.44	PPBV	99
4) CHLORODIFLUOROMETHANE	3.929	67	31180	9.32	PPBV	98
5) CHLOROTRIFLUOROETHENE	3.958	116	147728	10.02	PPBV	99
6) DICHLORODIFLUOROMETHANE	4.006	85	305463	9.53	PPBV	99
7) PROPYLENE	3.958	41	115956	9.06	PPBV	99
8) 1-CHLORO-1,1-DIFLUOROE...	4.102	65	233051	9.39	PPBV	100
9) FREON 114	4.185	85	310826	9.54	PPBV	100
10) CHLOROMETHANE	4.121	52	41611	9.81	PPBV	96
11) VINYL CHLORIDE	4.272	62	135183	9.69	PPBV	99
12) 1,3-BUTADIENE	4.365	54	99083	9.48	PPBV	100
13) n-BUTANE	4.404	43	211693	8.86	PPBV	100
14) BROMOMETHANE	4.561	94	113213	9.21	PPBV	99
15) CHLOROETHANE	4.676	64	64225	9.71	PPBV	99
16) DICHLOROFLUOROMETHANE	4.728	67	265294	9.26	PPBV	100
17) ACETONITRILE	4.920	41	82975	7.59	PPBV	98
18) ACROLEIN	5.007	56	40897	7.19	PPBV	98
19) FREON 123	5.010	83	264956	9.23	PPBV	100
20) FREON 123A	5.049	117	127440	9.36	PPBV	99
21) TRICHLOROFLUOROMETHANE	5.225	101	260564	9.29	PPBV	100
22) ISOPROPYL ALCOHOL	5.289	45	204768	8.74	PPBV	98
23) ACETONE	5.113	58	43314	7.78	PPBV	98
24) PENTANE	5.488	42	135465	8.29	PPBV	99
25) IODOMETHANE	5.677	142	254183	9.25	PPBV	99
26) 1,1-DICHLOROETHYLENE	5.726	96	104193	9.08	PPBV	99
27) CARBON DISULFIDE	6.114	76	320002	9.28	PPBV	98
28) ETHANOL	4.763	45	49182	8.66	PPBV	99
29) BROMOETHENE	4.923	106	102818	9.55	PPBV	100
30) ACRYLONITRILE	5.446	52	61991	8.05	PPBV	100
31) METHYLENE CHLORIDE	5.822	84	102713	8.55	PPBV	99
32) 3-CHLOROPROPENE	5.928	76	53739	9.25	PPBV	99
33) FREON 113	6.043	151	156861	9.29	PPBV	98
34) TRANS-1,2-DICHLOROETHY...	6.663	96	105490	9.44	PPBV	97
35) TERTIARY BUTYL ALCOHOL	5.777	59	211064	9.42	PPBV	98
36) METHYL TERTIARY BUTYL ...	6.919	73	244820	8.32	PPBV	98
37) TETRAHYDROFURAN	8.386	72	42204	8.29	PPBV	95
38) HEXANE	7.856	57	182784	8.95	PPBV	97
39) VINYL ACETATE	6.990	86	17100	8.33	PPBV #	89
40) 1,1-DICHLOROETHANE	6.858	63	210115	8.77	PPBV	100
41) METHYL ETHYL KETONE	7.253	72	41778	8.29	PPBV #	92

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\
Data File : 3W71401.D
Acq On : 23 Jan 2020 12:10 pm
Operator : thomash
Sample : bsd
Misc : MS40366,V3W2796,,,,,1
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Jan 23 12:42:39 2020
Quant Method : C:\msdchem\1\METHODS\M3W2789.M
Quant Title : TO15 by GCMS w/Rtx-1, 60 m X 0.32mm ID X 1.0 um
QLast Update : Wed Jan 15 09:18:27 2020
Response via : Initial Calibration

	Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
42)	cis-1,2-DICHLOROETHYLENE	7.661	96	112761	9.25	PPBV		97
43)	DIISOPROPYL ETHER	7.856	59	42844	8.08	PPBV		100
44)	ETHYL ACETATE	7.885	61	28068	7.99	PPBV	#	99
45)	METHYL ACRYLATE	7.876	55	166040	7.91	PPBV		99
46)	CHLOROFORM	7.953	83	230312	9.04	PPBV		99
47)	2,4-DIMETHYLPENTANE	8.742	57	220720	9.14	PPBV		99
48)	1,1,1-TRICHLOROETHANE	8.947	97	222619	9.31	PPBV		99
49)	CARBON TETRACHLORIDE	9.570	117	222666	9.75	PPBV		100
50)	1,2-DICHLOROETHANE	8.694	62	143193	8.83	PPBV		99
52)	BENZENE	9.419	78	355538	8.92	PPBV		99
53)	CYCLOHEXANE	9.692	84	147268	9.18	PPBV		99
54)	2,3-DIMETHYLPENTANE	9.939	71	79320	9.18	PPBV		96
55)	TRICHLOROETHYLENE	10.510	95	148229	9.36	PPBV		99
56)	1,2-DICHLOROPROPANE	10.263	63	123079	8.14	PPBV		100
57)	DIBROMOMETHANE	10.237	174	114897	8.64	PPBV		97
58)	ETHYL ACRYLATE	10.282	55	202433	8.90	PPBV		99
59)	BROMODICHLOROMETHANE	10.468	83	256496	9.44	PPBV		99
60)	2,2,4-TRIMETHYLPENTANE	10.539	57	602669	9.23	PPBV		100
61)	1,4-DIOXANE	10.545	88	62072	9.36	PPBV	#	76
62)	HEPTANE	10.821	43	226864	8.85	PPBV		98
63)	METHYL METHACRYLATE	10.735	69	94424	8.22	PPBV		97
64)	METHYL ISOBUTYL KETONE	11.476	58	89975	9.24	PPBV		97
65)	cis-1,3-DICHLOROPROPENE	11.418	75	178500	8.89	PPBV		98
66)	TOLUENE	12.451	92	207326	8.48	PPBV		99
67)	1,3-DICHLOROPROPANE	12.480	76	161361	8.51	PPBV	#	99
68)	trans-1,3-DICHLOROPROPENE	11.977	75	144399	8.80	PPBV		99
69)	1,1,2-TRICHLOROETHANE	12.159	83	107804	8.62	PPBV		100
71)	2-HEXANONE	12.763	58	119635	10.73	PPBV		99
72)	ETHYL METHACRYLATE	12.769	69	160251	10.36	PPBV		99
73)	TETRACHLOROETHYLENE	13.664	164	141602	10.33	PPBV		99
74)	DIBROMOCHLOROMETHANE	12.904	129	221917	10.85	PPBV		100
75)	1,2-DIBROMOETHANE	13.167	107	174101	9.40	PPBV		99
76)	OCTANE	13.520	43	309655	9.96	PPBV		99
77)	1,1,1,2-TETRACHLOROETHANE	14.386	131	143624	9.84	PPBV		99
78)	CHLOROBENZENE	14.402	112	268384	9.65	PPBV		99
79)	ETHYLBENZENE	14.820	91	411484	8.44	PPBV		99
80)	m,p-XYLENE	15.025	106	306608	18.45	PPBV		98
81)	o-XYLENE	15.542	106	149202	8.31	PPBV		99
82)	STYRENE	15.423	104	234918	10.29	PPBV		99
83)	NONANE	15.808	43	282208	10.12	PPBV		99
84)	BROMOFORM	15.096	173	189953	11.27	PPBV		100
86)	1,1,2,2-TETRACHLOROETHANE	15.542	83	244186	9.46	PPBV		100
87)	1,2,3-TRICHLOROPROPANE	15.689	75	183715	9.12	PPBV		100
88)	ISOPROPYLBENZENE	16.219	105	439486	9.94	PPBV		100
89)	BROMOBENZENE	16.315	77	236519	9.48	PPBV		98
90)	2-CHLOROTOLUENE	16.780	126	108215	10.15	PPBV		100
91)	n-PROPYLBENZENE	16.832	120	113519	10.54	PPBV		100
92)	4-ETHYLTOLUENE	17.011	105	404497	10.68	PPBV		100
93)	1,3,5-TRIMETHYLBENZENE	17.111	105	340232	10.56	PPBV		100
94)	ALPHA-METHYLSTYRENE	17.303	118	170899	11.25	PPBV		100

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\
Data File : 3W71401.D
Acq On : 23 Jan 2020 12:10 pm
Operator : thomash
Sample : bsd
Misc : MS40366,V3W2796,,,,,1
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Jan 23 12:42:39 2020
Quant Method : C:\msdchem\1\METHODS\M3W2789.M
Quant Title : TO15 by GCMS w/Rtx-1, 60 m X 0.32mm ID X 1.0 um
QLast Update : Wed Jan 15 09:18:27 2020
Response via : Initial Calibration

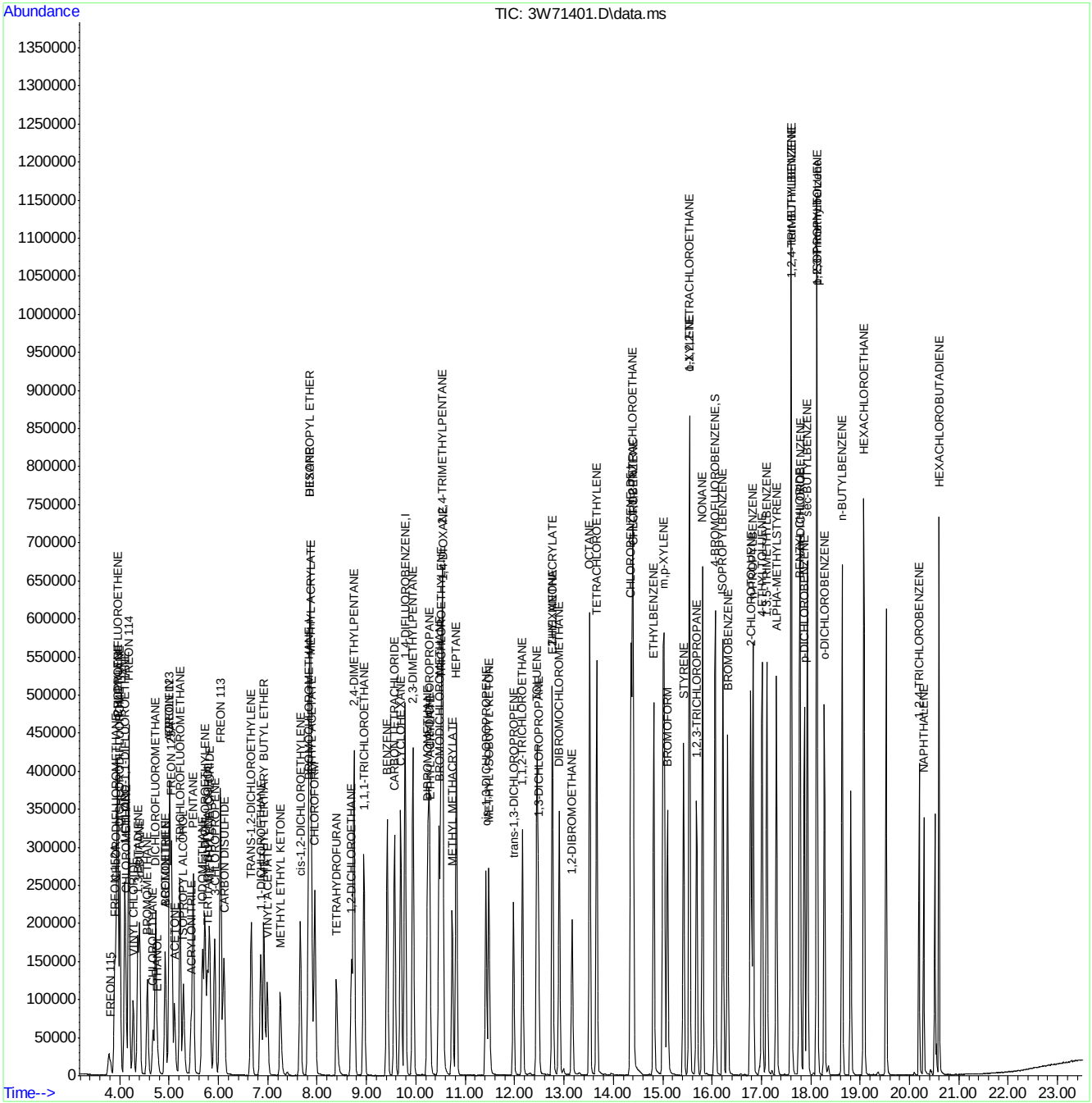
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
95) tert-BUTYLBENZENE	17.599	134	73853	10.62	PPBV	97
96) 1,2,4-TRIMETHYLBENZENE	17.608	105	339476	11.05	PPBV	99
97) m-DICHLOROBENZENE	17.785	146	216728	10.15	PPBV	100
98) BENZYL CHLORIDE	17.769	91	299331	11.27	PPBV	100
99) p-DICHLOROBENZENE	17.868	146	214461	9.92	PPBV	100
100) sec-BUTYLBENZENE	17.929	134	93141	11.18	PPBV	100
101) 1,2,3-Trimethylbenzene	18.122	105	354250	11.30	PPBV	100
102) p-ISOPROPYLTOLUENE	18.128	134	103639	12.05	PPBV	99
103) o-DICHLOROBENZENE	18.276	146	209429	10.17	PPBV	100
104) n-BUTYLBENZENE	18.635	134	91950	12.28	PPBV	100
105) HEXACHLOROETHANE	19.075	117	166981	11.56	PPBV	100
106) HEXACHLOROBUTADIENE	20.599	225	101750	9.65	PPBV	100
107) 1,2,4-TRICHLOROBENZENE	20.195	180	97089	9.39	PPBV	99
108) NAPHTHALENE	20.288	128	192378	9.91	PPBV	100

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\
Data File : 3W71401.D
Acq On : 23 Jan 2020 12:10 pm
Operator : thomash
Sample : bsd
Misc : MS40366,V3W2796,,,,,1
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Jan 23 12:42:39 2020
Quant Method : C:\msdchem\1\METHODS\M3W2789.M
Quant Title : TO15 by GCMS w/Rtx-1, 60 m X 0.32mm ID X 1.0 um
QLast Update : Wed Jan 15 09:18:27 2020
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\
Data File : 3W71602.D
Acq On : 11 Feb 2020 5:13 pm
Operator : danat
Sample : jd2884-1dup
Misc : MS41016,V3W2806,100,,,,1
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Feb 12 09:48:41 2020
Quant Method : C:\msdchem\1\METHODS\M3W2789.M
Quant Title : TO15 by GCMS w/Rtx-1, 60 m X 0.32mm ID X 1.0 um
QLast Update : Wed Jan 15 09:18:27 2020
Response via : Initial Calibration

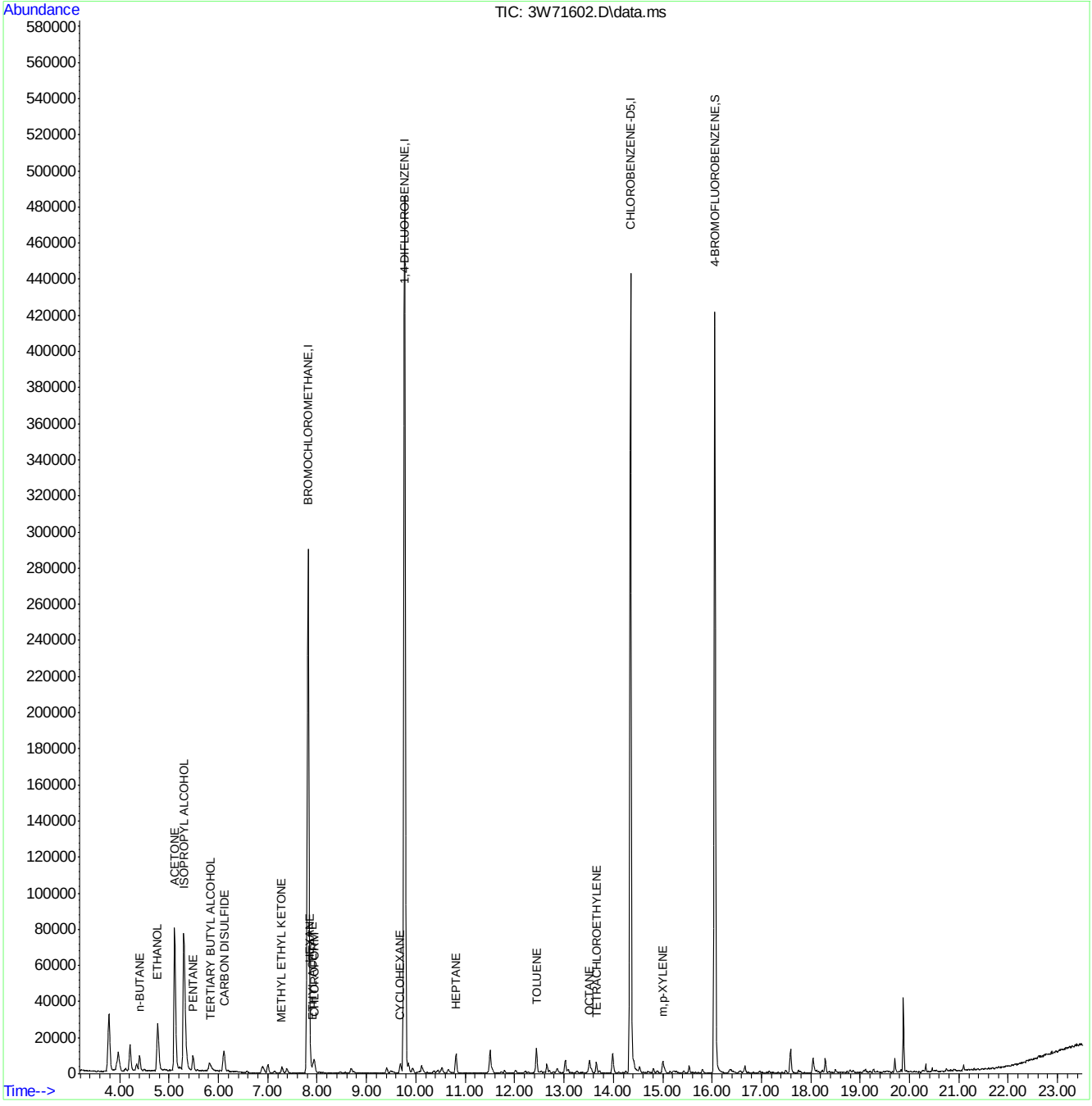
Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) BROMOCHLOROMETHANE	7.814	128	91945	10.00	PPBV		#-0.02
51) 1,4-DIFLUOROBENZENE	9.772	114	444435	10.00	PPBV		-0.02
70) CHLOROBENZENE-D5	14.348	82	169793	10.00	PPBV		-0.01
System Monitoring Compounds							
85) 4-BROMOFLUOROBENZENE	16.055	95	168028	9.01	PPBV		0.00
Spiked Amount 10.000	Range 65 - 128		Recovery = 90.10%				
Target Compounds							Qvalue
13) n-BUTANE	4.400	43	9352	0.40	PPBV	#	96
22) ISOPROPYL ALCOHOL	5.299	45	158175	6.91	PPBV		98
23) ACETONE	5.116	58	34022	6.26	PPBV		94
24) PENTANE	5.485	42	4816	0.30	PPBV		95
27) CARBON DISULFIDE	6.114	76	24502	0.73	PPBV		99
28) ETHANOL	4.769	45	42178	7.60	PPBV		98
35) TERTIARY BUTYL ALCOHOL	5.841	59	4603	0.21	PPBV		76
38) HEXANE	7.853	57	3895	0.20	PPBV	#	84
41) METHYL ETHYL KETONE	7.282	72	1271	0.26	PPBV	#	85
44) ETHYL ACETATE	7.908	61	514	0.15	PPBV	#	37
46) CHLOROFORM	7.946	83	5508	0.22	PPBV		97
53) CYCLOHEXANE	9.685	84	2130	0.13	PPBV		99
62) HEPTANE	10.812	43	5519	0.22	PPBV		93
66) TOLUENE	12.445	92	6431	0.27	PPBV		99
73) TETRACHLOROETHYLENE	13.658	164	1462	0.14	PPBV		98
76) OCTANE	13.517	43	4525	0.18	PPBV		90
80) m,p-XYLENE	15.002	106	2841	0.22	PPBV		89

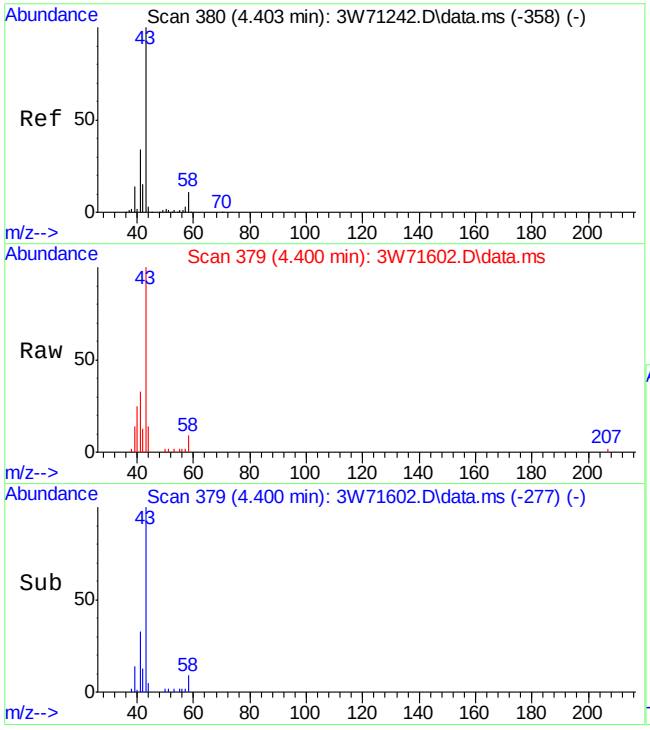
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\
Data File : 3W71602.D
Acq On : 11 Feb 2020 5:13 pm
Operator : danat
Sample : jd2884-1dup
Misc : MS41016,V3W2806,100,,,,1
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Feb 12 09:48:41 2020
Quant Method : C:\msdchem\1\METHODS\M3W2789.M
Quant Title : TO15 by GCMS w/Rtx-1, 60 m X 0.32mm ID X 1.0 um
QLast Update : Wed Jan 15 09:18:27 2020
Response via : Initial Calibration

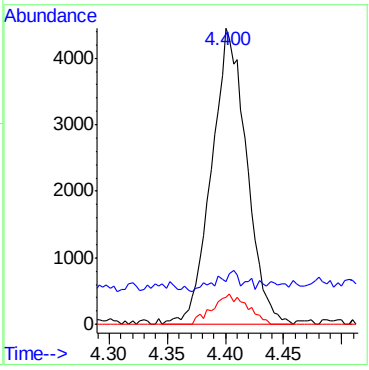


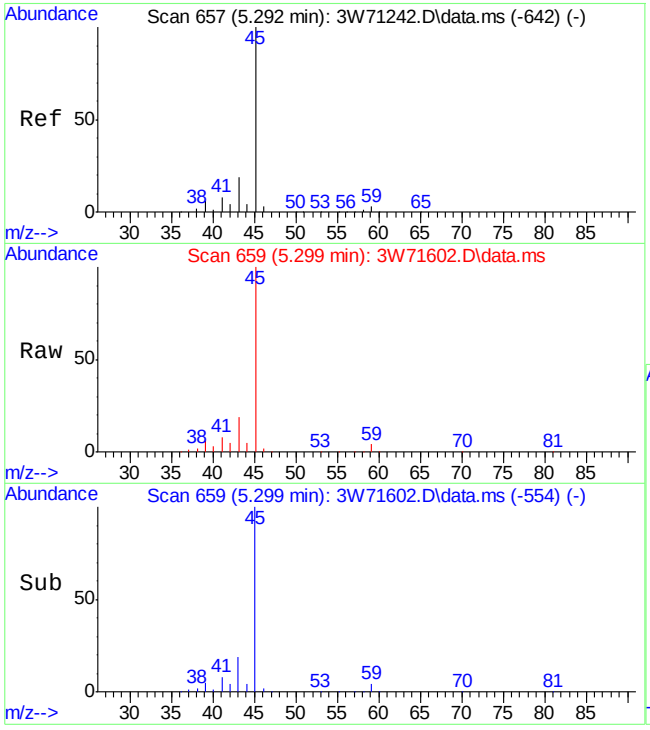


#13
n-BUTANE
Concen: 0.40 PPBV
RT: 4.400 min Scan# 379
Delta R.T. -0.003 min
Lab File: 3W71602.D
Acq: 11 Feb 2020 5:13 pm

Tgt Ion: 43 Resp: 9352

Ion	Ratio	Lower	Upper
43	100		
58	10.2	0.0	30.9
44	0.0	0.0	23.6

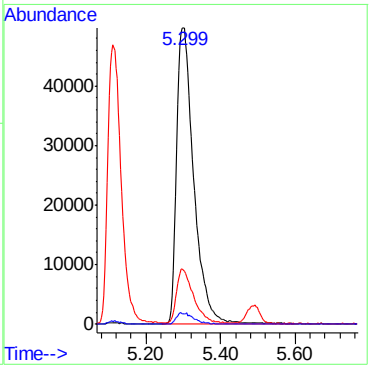


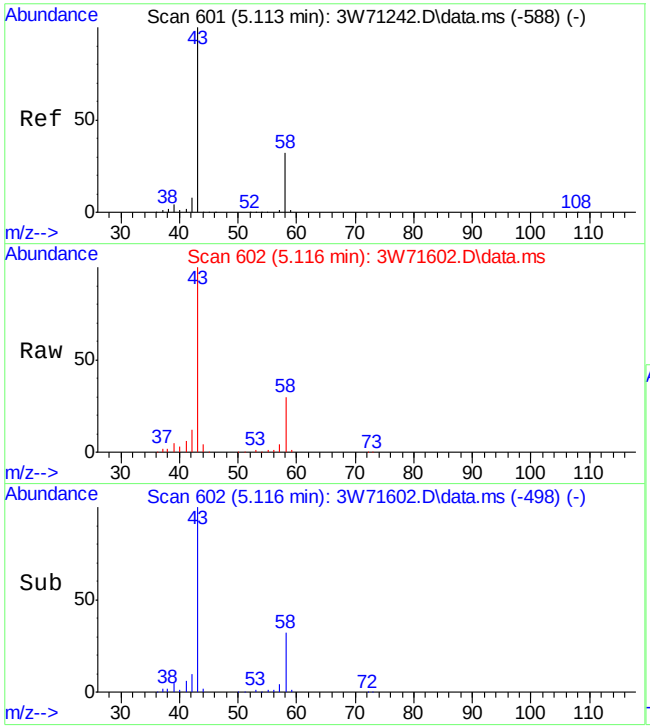


#22
ISOPROPYL ALCOHOL
Concen: 6.91 PPBV
RT: 5.299 min Scan# 659
Delta R.T. 0.006 min
Lab File: 3W71602.D
Acq: 11 Feb 2020 5:13 pm

Tgt Ion: 45 Resp: 158175

Ion	Ratio	Lower	Upper
45	100		
43	18.6	0.0	39.5
59	3.6	0.0	23.5

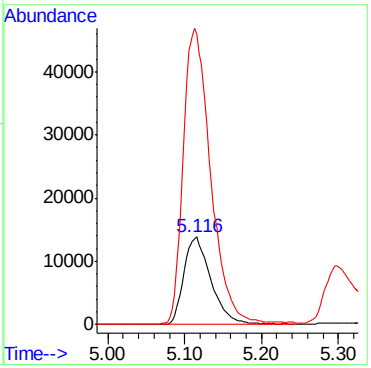


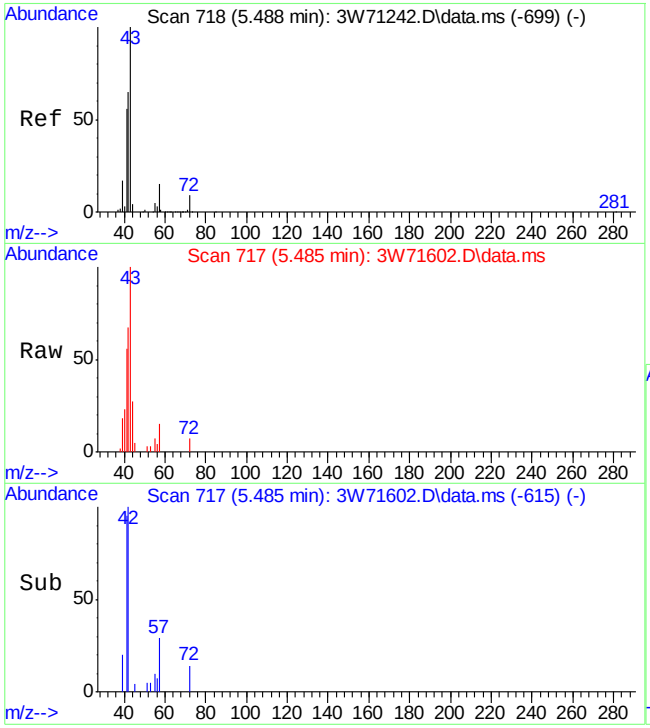


#23
ACETONE
Concen: 6.26 PPBV
RT: 5.116 min Scan# 602
Delta R.T. 0.003 min
Lab File: 3W71602.D
Acq: 11 Feb 2020 5:13 pm

Tgt Ion: 58 Resp: 34022

Ion	Ratio	Lower	Upper
58	100		
43	344.0	311.7	351.7

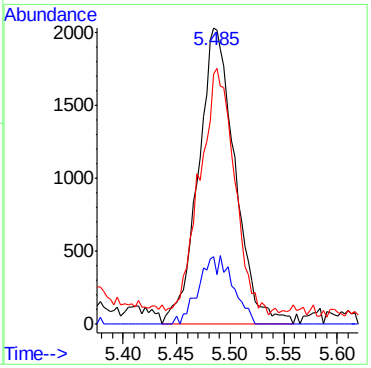


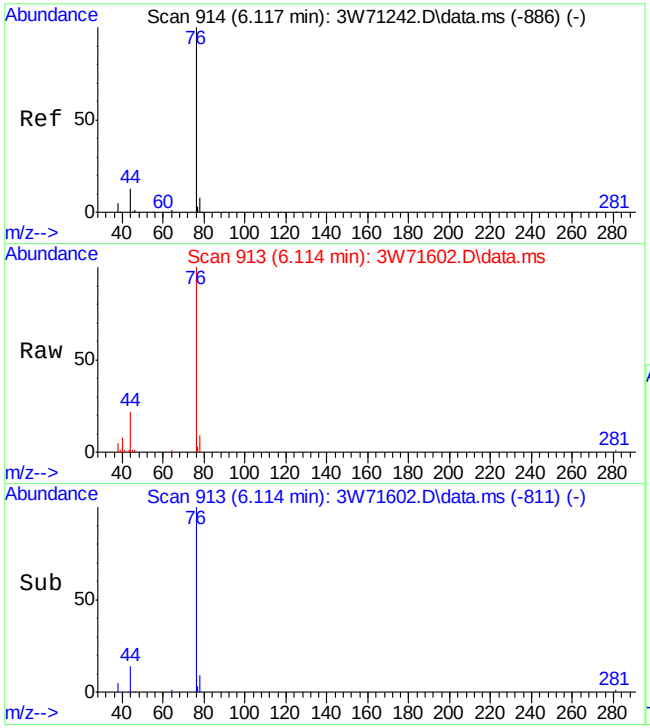


#24
PENTANE
Concen: 0.30 PPBV
RT: 5.485 min Scan# 717
Delta R.T. -0.003 min
Lab File: 3W71602.D
Acq: 11 Feb 2020 5:13 pm

Tgt Ion: 42 Resp: 4816

Ion	Ratio	Lower	Upper
42	100		
41	82.2	66.3	106.3
57	21.3	3.6	43.6

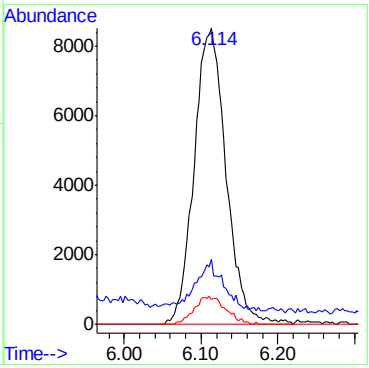


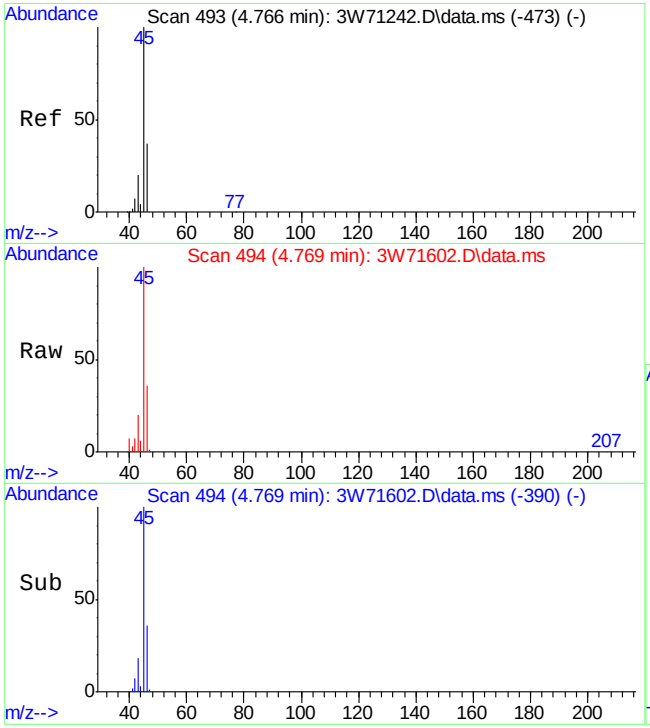


#27
CARBON DISULFIDE
Concen: 0.73 PPBV
RT: 6.114 min Scan# 913
Delta R.T. -0.003 min
Lab File: 3W71602.D
Acq: 11 Feb 2020 5:13 pm

Tgt Ion: 76 Resp: 24502

Ion	Ratio	Lower	Upper
76	100		
78	9.2	0.0	29.1
44	14.5	0.0	33.9

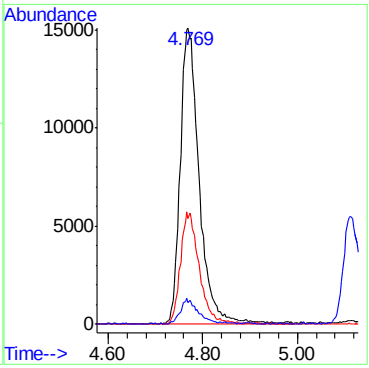


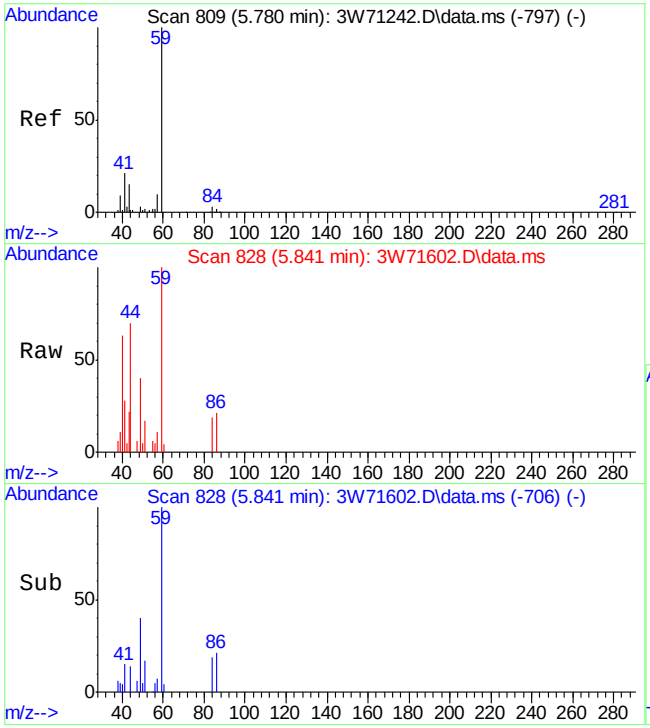


#28
ETHANOL
Concen: 7.60 PPBV
RT: 4.769 min Scan# 494
Delta R.T. 0.003 min
Lab File: 3W71602.D
Acq: 11 Feb 2020 5:13 pm

Tgt Ion: 45 Resp: 42178

Ion	Ratio	Lower	Upper
45	100		
46	37.1	15.7	55.7
42	8.1	0.0	28.1

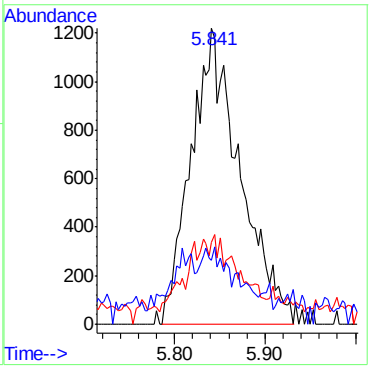


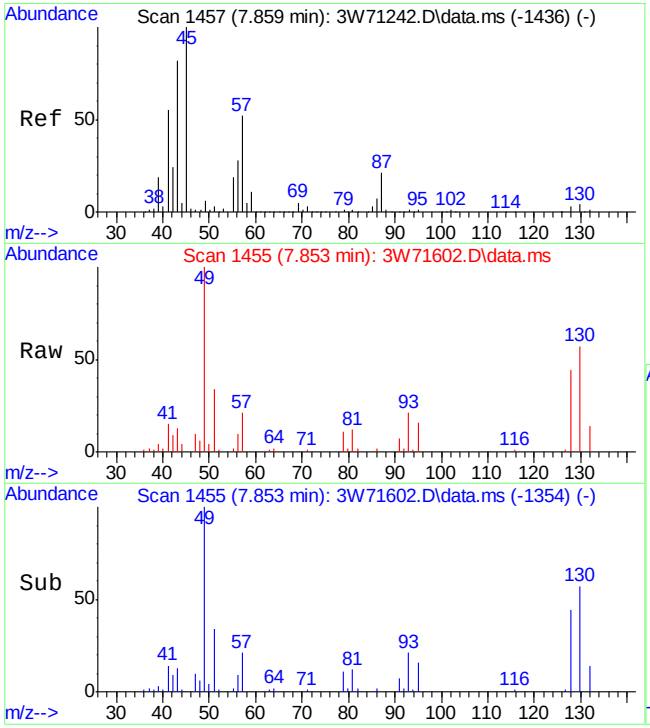


#35
TERTIARY BUTYL ALCOHOL
Concen: 0.21 PPBV
RT: 5.841 min Scan# 828
Delta R.T. 0.061 min
Lab File: 3W71602.D
Acq: 11 Feb 2020 5:13 pm

Tgt Ion: 59 Resp: 4603

Ion	Ratio	Lower	Upper
59	100		
41	33.0	3.3	43.3
43	28.3	0.0	35.6

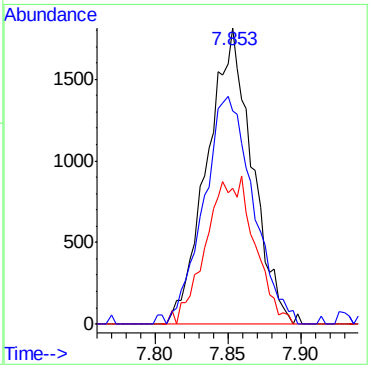


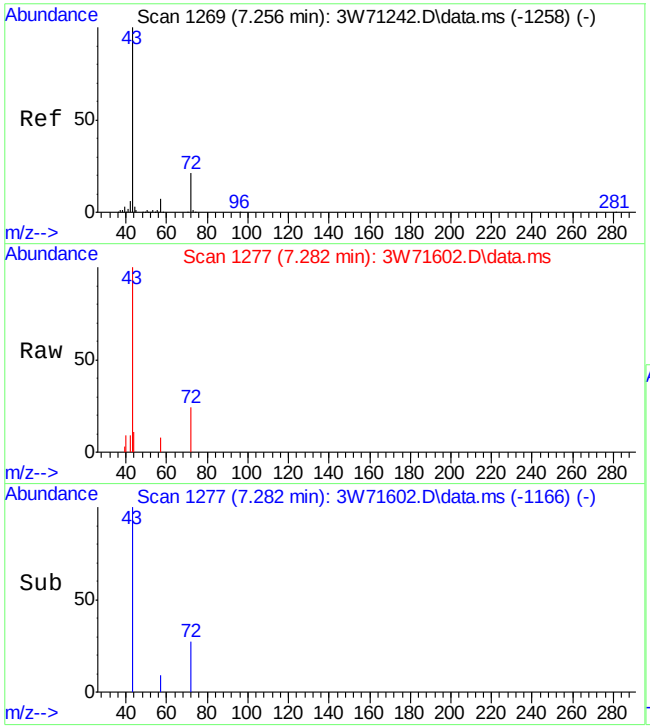


#38
HEXANE
Concen: 0.20 PPBV
RT: 7.853 min Scan# 1455
Delta R.T. -0.006 min
Lab File: 3W71602.D
Acq: 11 Feb 2020 5:13 pm

Tgt Ion: 57 Resp: 3895

Ion	Ratio	Lower	Upper
57	100		
56	53.4	35.4	75.4
41	84.6	88.4	128.4#

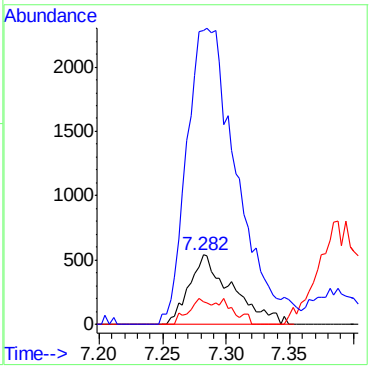


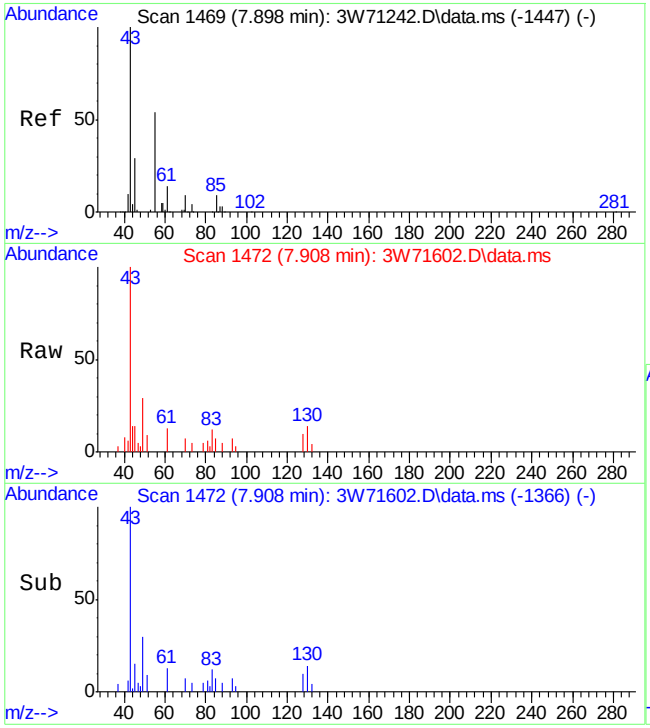


#41
METHYL ETHYL KETONE
Concen: 0.26 PPBV
RT: 7.282 min Scan# 1277
Delta R.T. 0.026 min
Lab File: 3W71602.D
Acq: 11 Feb 2020 5:13 pm

Tgt Ion: 72 Resp: 1271

Ion	Ratio	Lower	Upper
72	100		
57	33.0	12.1	52.1
43	424.5	446.3	486.3#

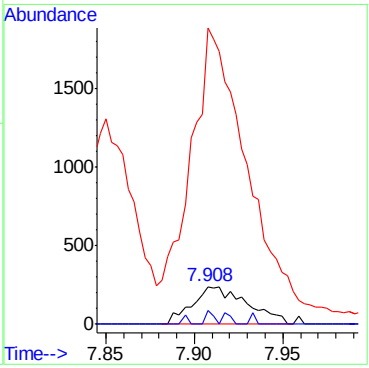


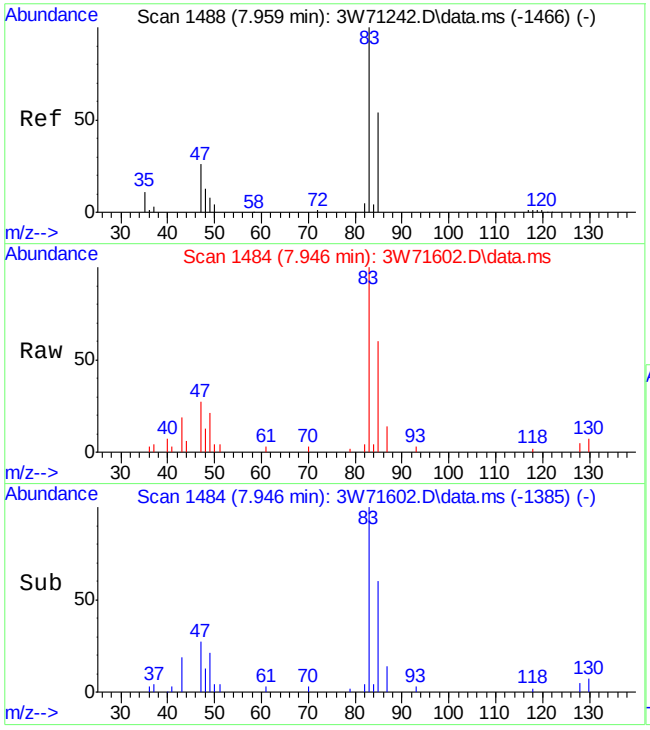


#44
ETHYL ACETATE
Concen: 0.15 PPBV
RT: 7.908 min Scan# 1472
Delta R.T. 0.010 min
Lab File: 3W71602.D
Acq: 11 Feb 2020 5:13 pm

Tgt Ion: 61 Resp: 514

Ion	Ratio	Lower	Upper
61	100		
43	863.2	0.0	20.0#
88	0.0	18.0	58.0#

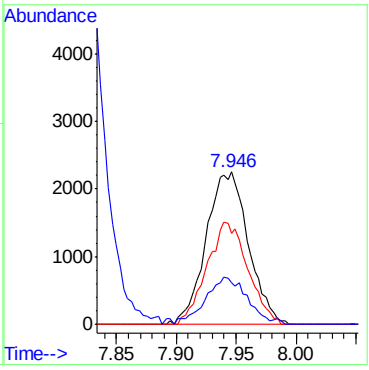


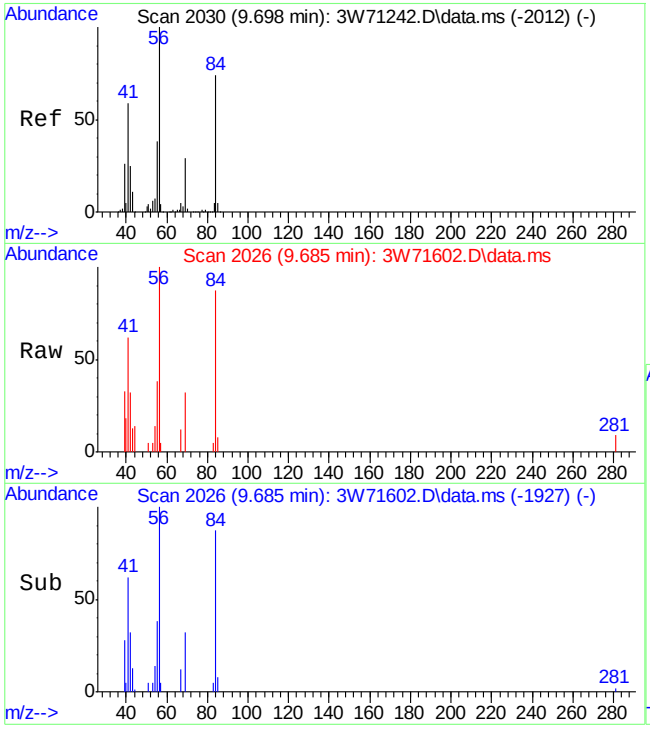


#46
CHLOROFORM
Concen: 0.22 PPBV
RT: 7.946 min Scan# 1484
Delta R.T. -0.013 min
Lab File: 3W71602.D
Acq: 11 Feb 2020 5:13 pm

Tgt Ion: 83 Resp: 5508

Ion	Ratio	Lower	Upper
83	100		
85	65.0	45.0	85.0
47	30.7	6.0	46.0

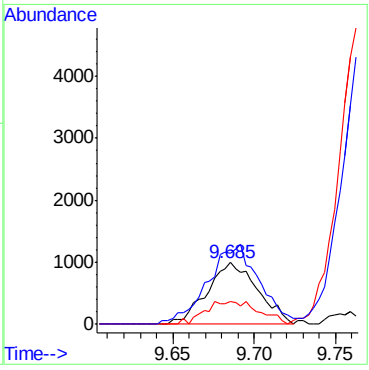


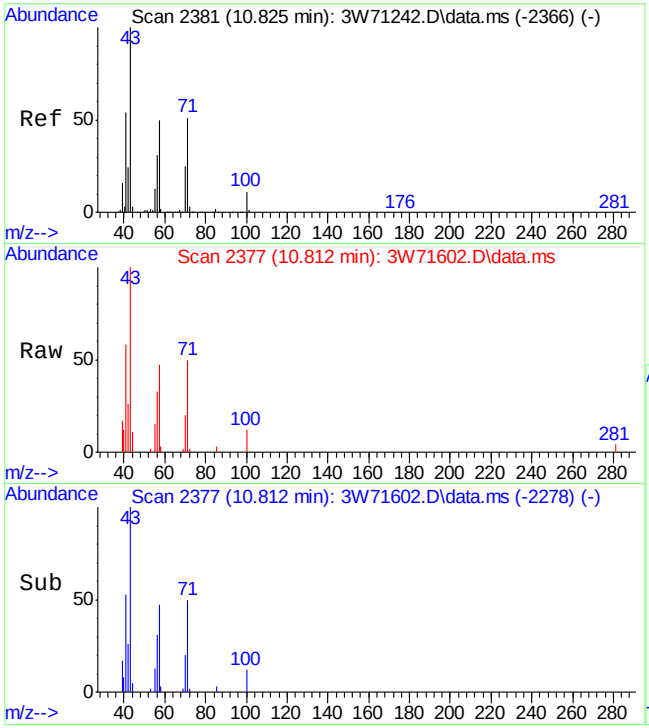


#53
CYCLOHEXANE
Concen: 0.13 PPBV
RT: 9.685 min Scan# 2026
Delta R.T. -0.013 min
Lab File: 3W71602.D
Acq: 11 Feb 2020 5:13 pm

Tgt Ion: 84 Resp: 2130

Ion	Ratio	Lower	Upper
84	100		
69	38.8	19.3	59.3
56	132.1	113.4	153.4

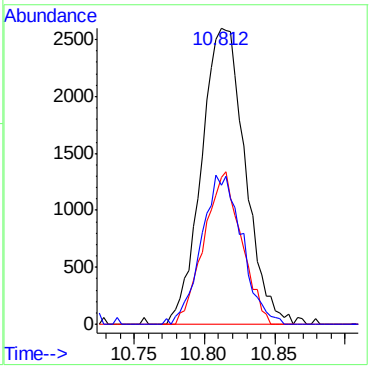


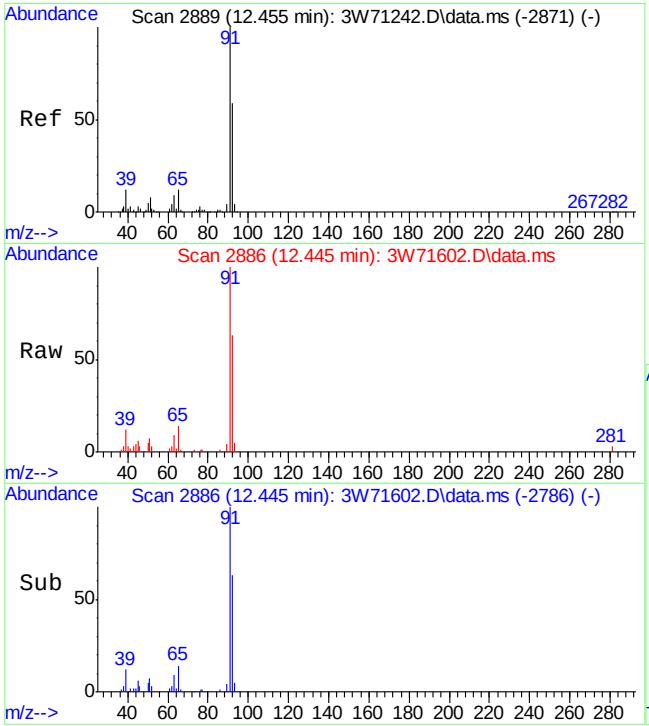


#62
HEPTANE
Concen: 0.22 PPBV
RT: 10.812 min Scan# 2377
Delta R.T. -0.013 min
Lab File: 3W71602.D
Acq: 11 Feb 2020 5:13 pm

Tgt Ion: 43 Resp: 5519

Ion	Ratio	Lower	Upper
43	100		
71	44.0	30.4	70.4
57	47.0	29.9	69.9

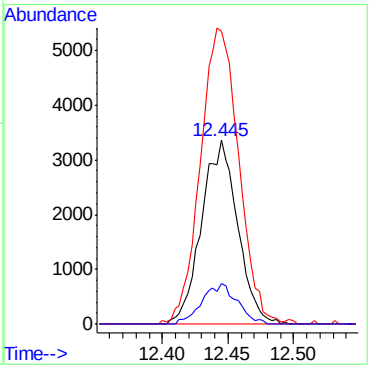


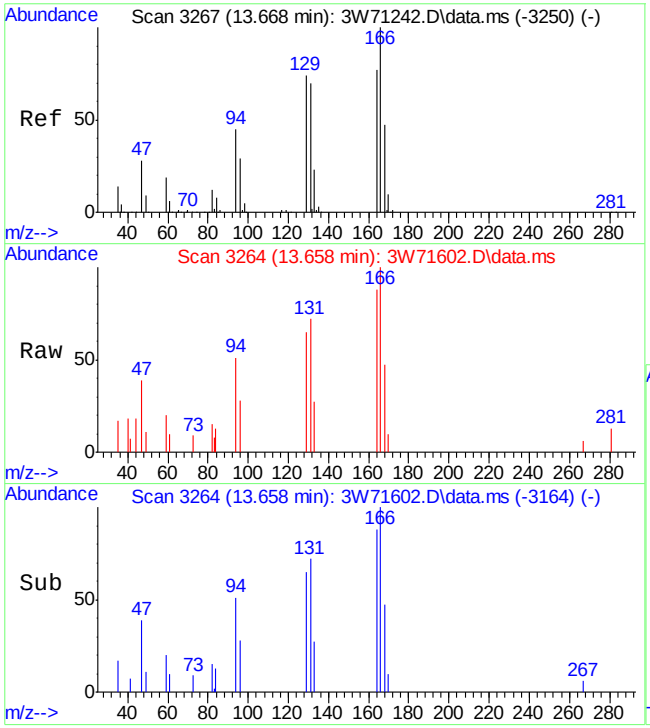


#66
TOLUENE
Concen: 0.27 PPBV
RT: 12.445 min Scan# 2886
Delta R.T. -0.010 min
Lab File: 3W71602.D
Acq: 11 Feb 2020 5:13 pm

Tgt Ion: 92 Resp: 6431

Ion	Ratio	Lower	Upper
92	100		
91	171.6	150.3	190.3
65	21.4	4.0	44.0

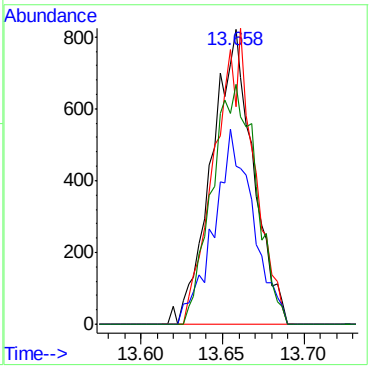


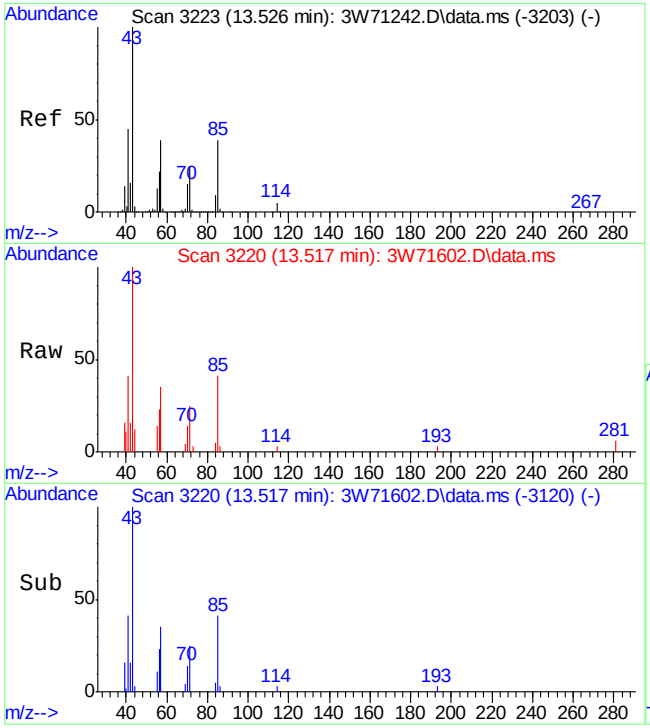


#73
TETRACHLOROETHYLENE
Concen: 0.14 PPBV
RT: 13.658 min Scan# 3264
Delta R.T. -0.010 min
Lab File: 3W71602.D
Acq: 11 Feb 2020 5:13 pm

Tgt Ion:164 Resp: 1462

Ion	Ratio	Lower	Upper
164	100		
129	94.9	75.3	115.3
168	61.8	41.2	81.2
131	86.5	71.6	111.6

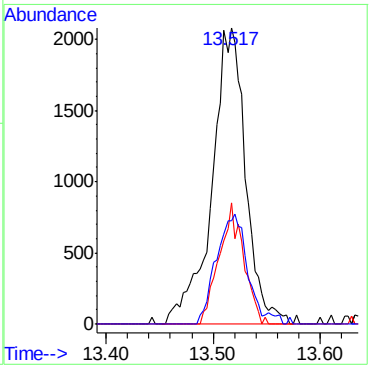


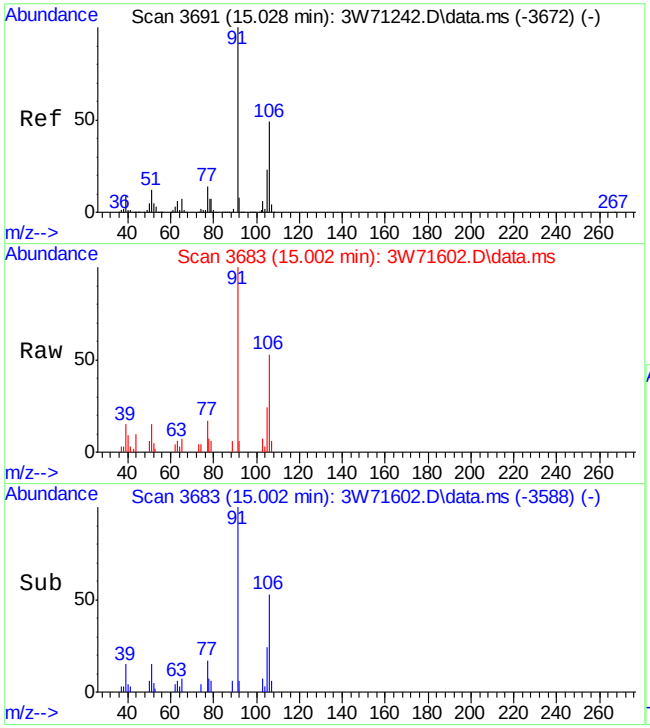


#76
OCTANE
Concen: 0.18 PPBV
RT: 13.517 min Scan# 3220
Delta R.T. -0.010 min
Lab File: 3W71602.D
Acq: 11 Feb 2020 5:13 pm

Tgt Ion: 43 Resp: 4525

Ion	Ratio	Lower	Upper
43	100		
85	29.5	18.0	58.0
57	34.4	18.5	58.5

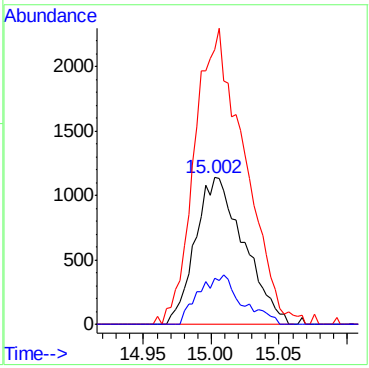




#80
m,p-XYLENE
Concen: 0.22 PPBV
RT: 15.002 min Scan# 3683
Delta R.T. -0.026 min
Lab File: 3W71602.D
Acq: 11 Feb 2020 5:13 pm

Tgt Ion:106 Resp: 2841

Ion	Ratio	Lower	Upper
106	100		
91	187.4	185.1	225.1
77	31.3	8.5	48.5



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\
Data File : 3W71630.D
Acq On : 12 Feb 2020 7:36 pm
Operator : danat
Sample : jd3012-1dup
Misc : MS41051,V3W2807,400,,,,1
ALS Vial : 8 Sample Multiplier: 1

Quant Time: Feb 13 14:57:32 2020
Quant Method : C:\msdchem\1\METHODS\M3W2789.M
Quant Title : TO15 by GCMS w/Rtx-1, 60 m X 0.32mm ID X 1.0 um
QLast Update : Wed Jan 15 09:18:27 2020
Response via : Initial Calibration

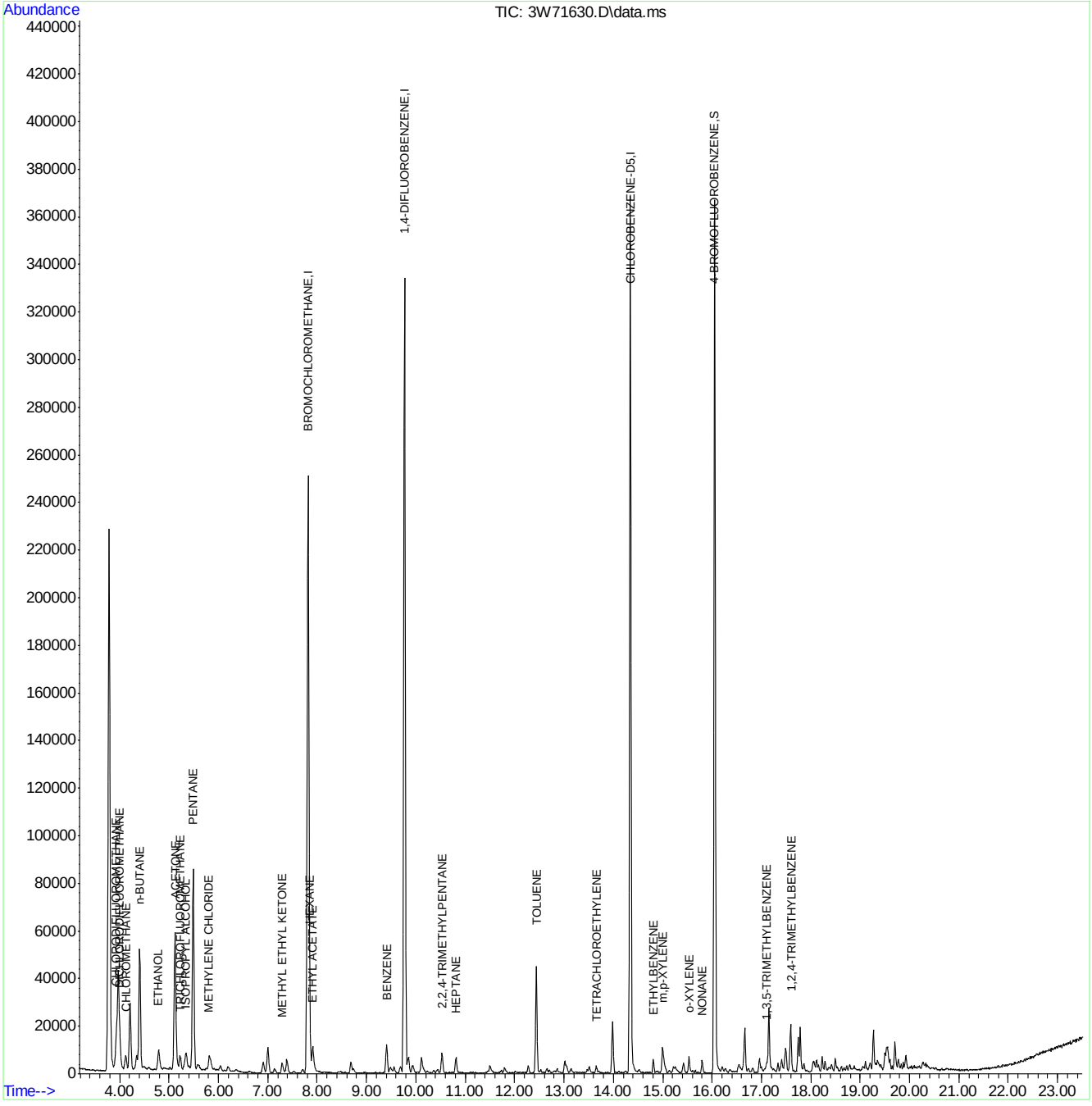
Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) BROMOCHLOROMETHANE	7.815	128	80389	10.00	PPBV		#-0.02
51) 1,4-DIFLUOROBENZENE	9.769	114	300516	10.00	PPBV		-0.02
70) CHLOROBENZENE-D5	14.345	82	136373	10.00	PPBV		-0.01
System Monitoring Compounds							
85) 4-BROMOFLUOROBENZENE	16.052	95	142081	9.49	PPBV		-0.01
Spiked Amount 10.000	Range 65 - 128		Recovery = 94.90%				
Target Compounds							Qvalue
4) CHLORODIFLUOROMETHANE	3.932	67	2987	1.05	PPBV		99
6) DICHLORODIFLUOROMETHANE	4.006	85	13588	0.50	PPBV		99
10) CHLOROMETHANE	4.124	52	2071	0.57	PPBV	#	87
13) n-BUTANE	4.404	43	56860	2.79	PPBV		98
21) TRICHLOROFLUOROMETHANE	5.228	101	5866	0.24	PPBV		99
22) ISOPROPYL ALCOHOL	5.344	45	9703	0.49	PPBV		99
23) ACETONE	5.126	58	13588	2.86	PPBV	#	44
24) PENTANE	5.488	42	45894	3.29	PPBV		94
28) ETHANOL	4.785	45	12653	2.61	PPBV		99
31) METHYLENE CHLORIDE	5.812	84	2772	0.27	PPBV		86
38) HEXANE	7.850	57	5055	0.29	PPBV		88
41) METHYL ETHYL KETONE	7.288	72	1558	0.36	PPBV		99
44) ETHYL ACETATE	7.911	61	1932	0.64	PPBV	#	69
52) BENZENE	9.409	78	12304	0.46	PPBV		99
60) 2,2,4-TRIMETHYLPENTANE	10.529	57	7468	0.17	PPBV		86
62) HEPTANE	10.812	43	3603	0.21	PPBV		86
66) TOLUENE	12.445	92	20197	1.24	PPBV		98
73) TETRACHLOROETHYLENE	13.655	164	715	0.08	PPBV		95
79) ETHYLBENZENE	14.810	91	4759	0.15	PPBV		99
80) m,p-XYLENE	14.996	106	4689	0.45	PPBV	#	84
81) o-XYLENE	15.532	106	2157	0.19	PPBV		98
83) NONANE	15.798	43	2394	0.14	PPBV	#	92
93) 1,3,5-TRIMETHYLBENZENE	17.101	105	1449	0.07	PPBV		98
96) 1,2,4-TRIMETHYLBENZENE	17.602	105	4499	0.23	PPBV	#	38

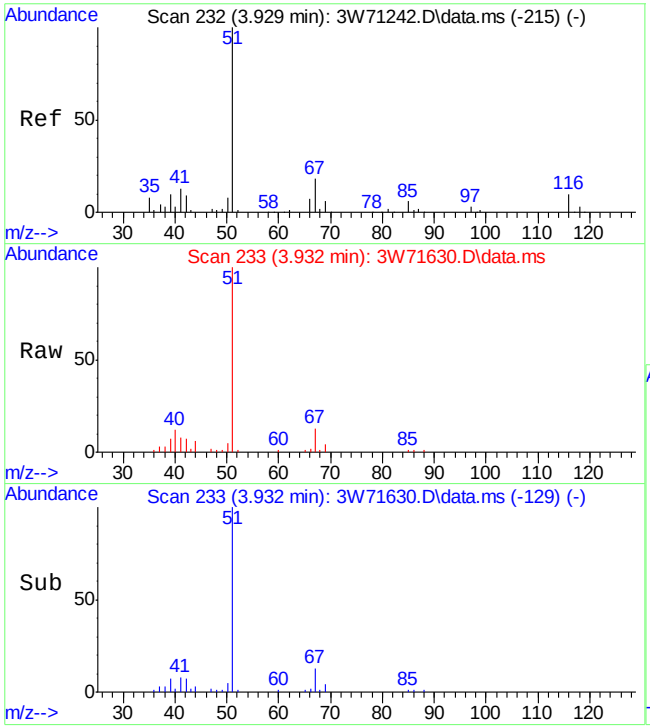
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\
Data File : 3W71630.D
Acq On : 12 Feb 2020 7:36 pm
Operator : danat
Sample : jd3012-1dup
Misc : MS41051,V3W2807,400,,,,1
ALS Vial : 8 Sample Multiplier: 1

Quant Time: Feb 13 14:57:32 2020
Quant Method : C:\msdchem\1\METHODS\M3W2789.M
Quant Title : TO15 by GCMS w/Rtx-1, 60 m X 0.32mm ID X 1.0 um
QLast Update : Wed Jan 15 09:18:27 2020
Response via : Initial Calibration

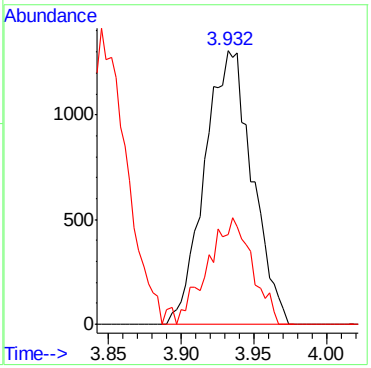


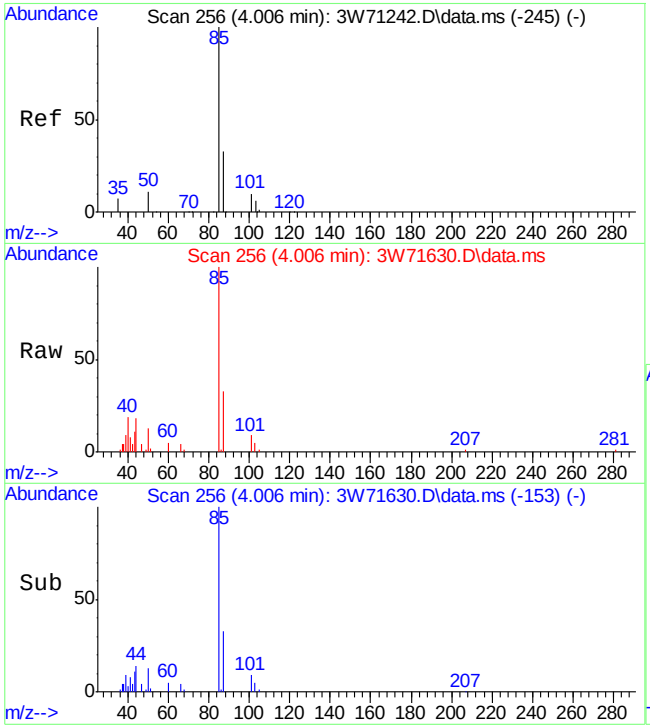


#4
CHLORODIFLUOROMETHANE
Concen: 1.05 PPBV
RT: 3.932 min Scan# 233
Delta R.T. 0.003 min
Lab File: 3W71630.D
Acq: 12 Feb 2020 7:36 pm

Tgt Ion: 67 Resp: 2987

Ion	Ratio	Lower	Upper
67	100		
69	33.0	12.6	52.6

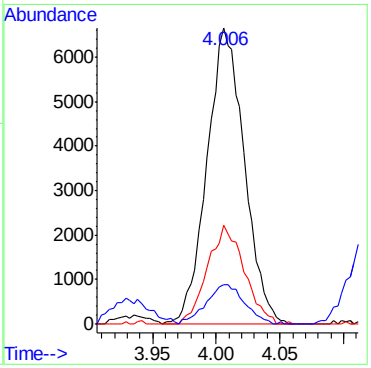


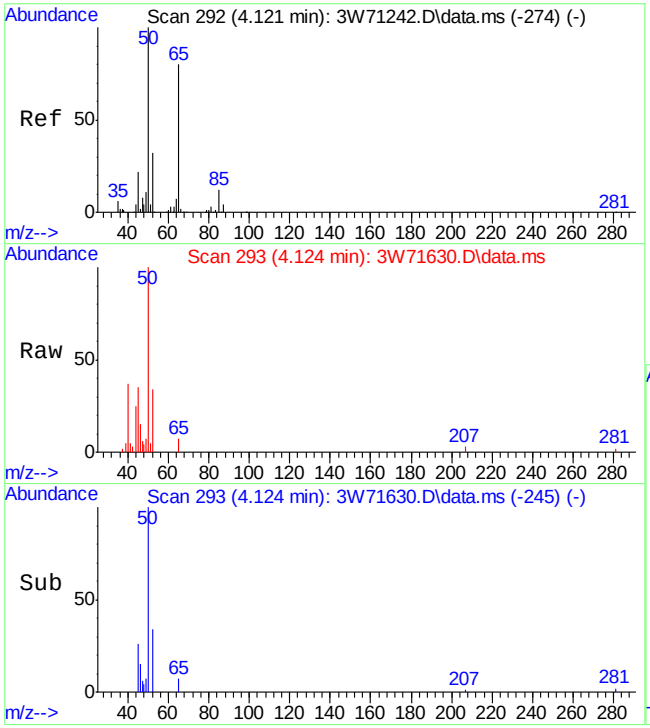


#6
DICHLORODIFLUOROMETHANE
Concen: 0.50 PPBV
RT: 4.006 min Scan# 256
Delta R.T. 0.000 min
Lab File: 3W71630.D
Acq: 12 Feb 2020 7:36 pm

Tgt Ion: 85 Resp: 13588

Ion	Ratio	Lower	Upper
85	100		
87	32.7	12.2	52.2
50	13.5	0.0	32.7

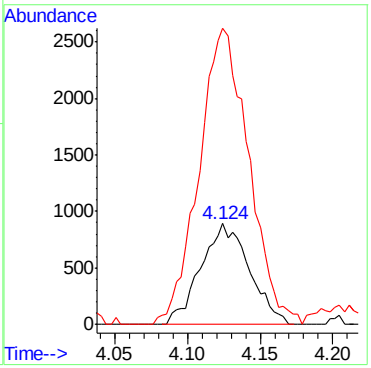


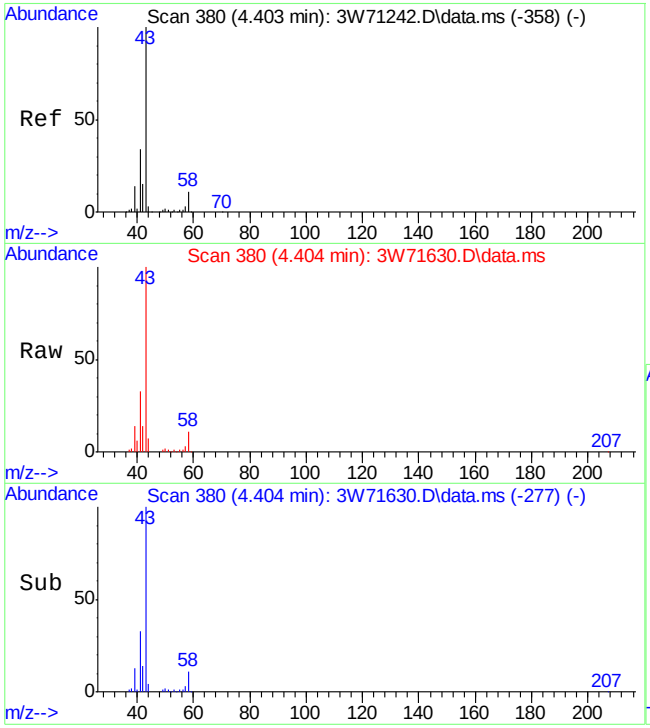


#10
CHLOROMETHANE
Concen: 0.57 PPBV
RT: 4.124 min Scan# 293
Delta R.T. 0.003 min
Lab File: 3W71630.D
Acq: 12 Feb 2020 7:36 pm

Tgt Ion: 52 Resp: 2071

Ion	Ratio	Lower	Upper
52	100		
50	284.0	289.6	329.6#

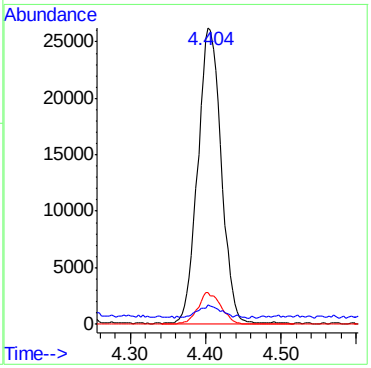


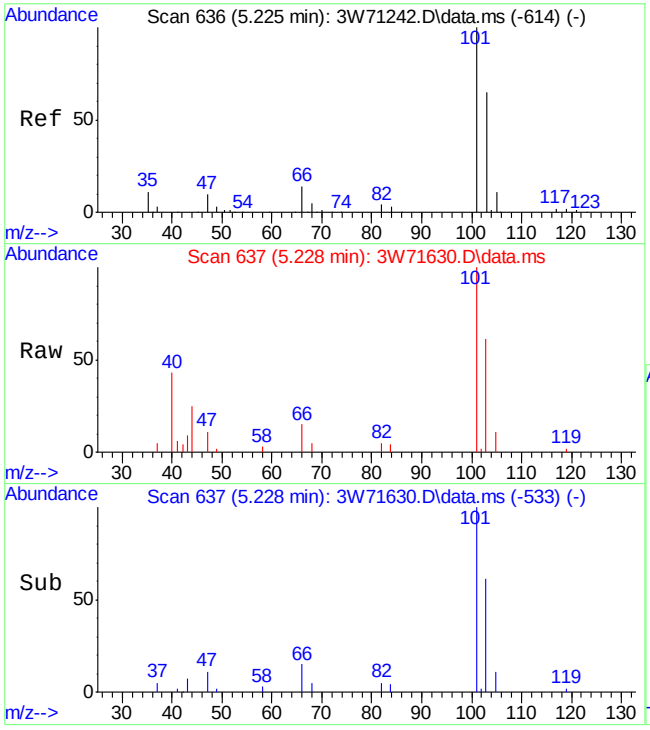


#13
n-BUTANE
Concen: 2.79 PPBV
RT: 4.404 min Scan# 380
Delta R.T. 0.000 min
Lab File: 3W71630.D
Acq: 12 Feb 2020 7:36 pm

Tgt Ion: 43 Resp: 56860

Ion	Ratio	Lower	Upper
43	100		
58	10.4	0.0	30.9
44	4.7	0.0	23.6

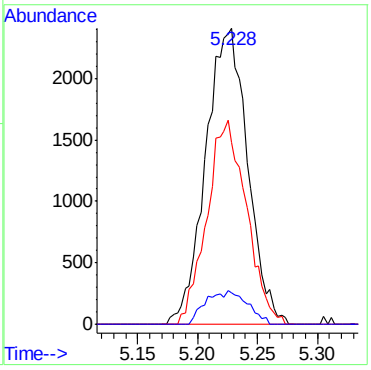


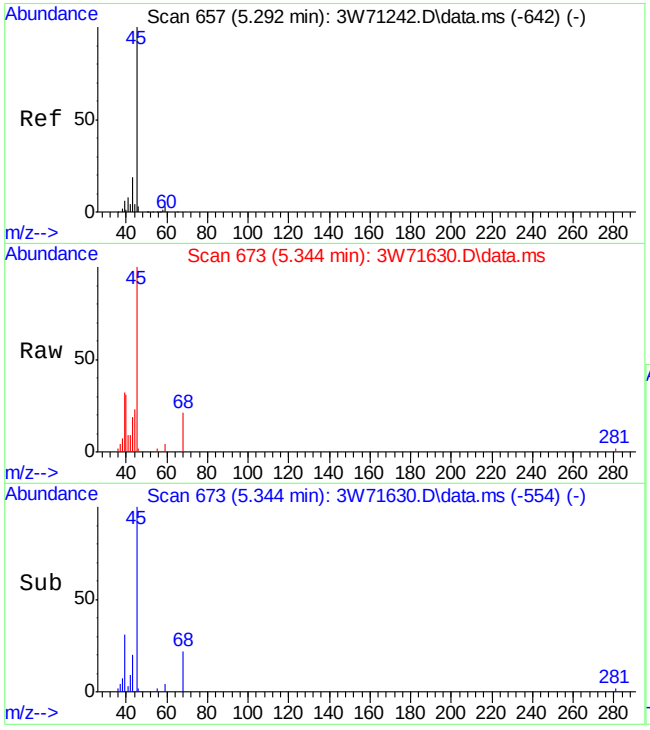


#21
TRICHLOROFLUOROMETHANE
Concen: 0.24 PPBV
RT: 5.228 min Scan# 637
Delta R.T. 0.003 min
Lab File: 3W71630.D
Acq: 12 Feb 2020 7:36 pm

Tgt Ion:101 Resp: 5866

Ion	Ratio	Lower	Upper
101	100		
103	64.7	44.5	84.5
105	11.3	0.0	30.5

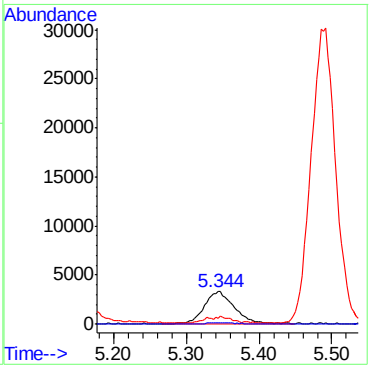


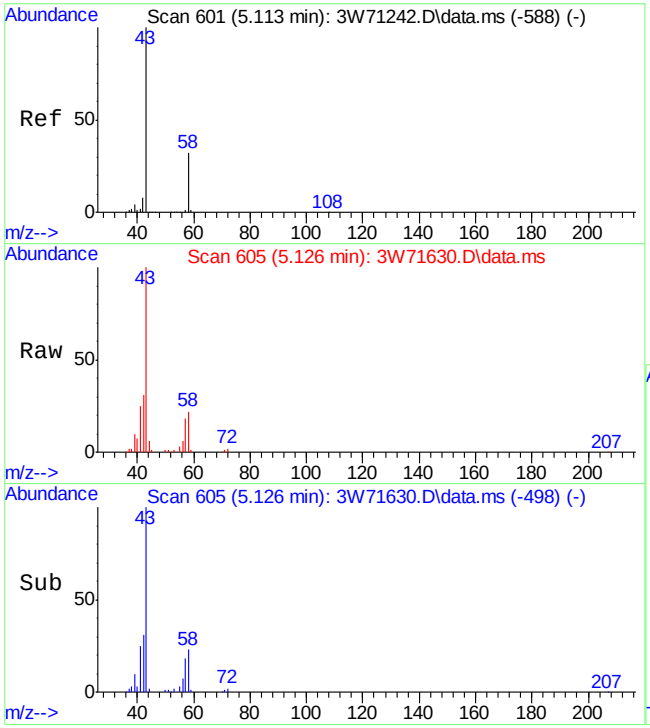


#22
ISOPROPYL ALCOHOL
Concen: 0.49 PPBV
RT: 5.344 min Scan# 673
Delta R.T. 0.051 min
Lab File: 3W71630.D
Acq: 12 Feb 2020 7:36 pm

Tgt Ion: 45 Resp: 9703

Ion	Ratio	Lower	Upper
45	100		
43	19.3	0.0	39.5
59	3.9	0.0	23.5

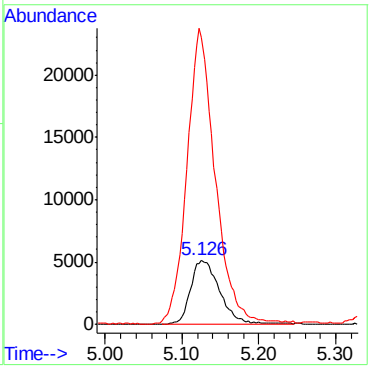


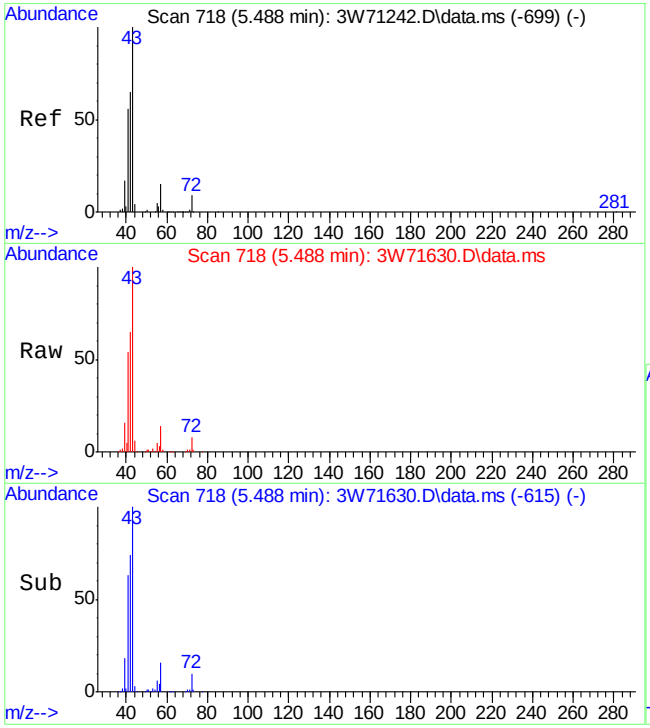


#23
ACETONE
Concen: 2.86 PPBV
RT: 5.126 min Scan# 605
Delta R.T. 0.013 min
Lab File: 3W71630.D
Acq: 12 Feb 2020 7:36 pm

Tgt Ion: 58 Resp: 13588

Ion	Ratio	Lower	Upper
58	100		
43	449.4	311.7	351.7#

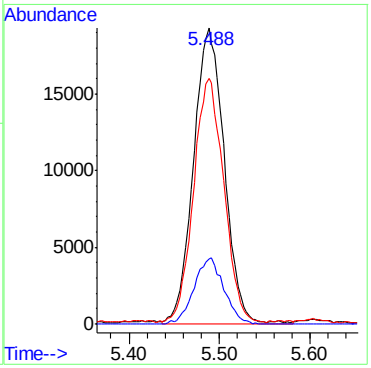


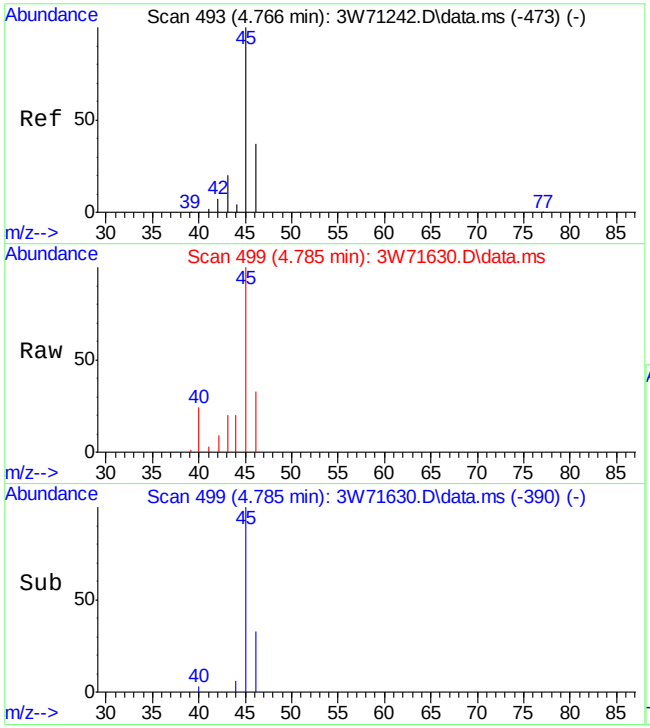


#24
PENTANE
Concen: 3.29 PPBV
RT: 5.488 min Scan# 718
Delta R.T. 0.000 min
Lab File: 3W71630.D
Acq: 12 Feb 2020 7:36 pm

Tgt Ion: 42 Resp: 45894

Ion	Ratio	Lower	Upper
42	100		
41	80.5	66.3	106.3
57	21.4	3.6	43.6

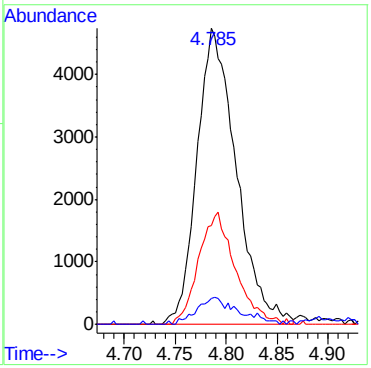


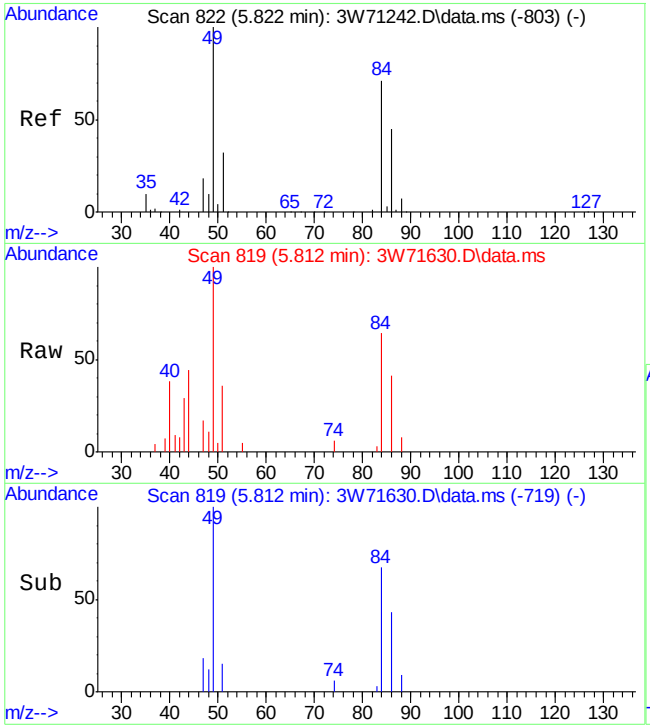


#28
ETHANOL
Concen: 2.61 PPBV
RT: 4.785 min Scan# 499
Delta R.T. 0.019 min
Lab File: 3W71630.D
Acq: 12 Feb 2020 7:36 pm

Tgt Ion: 45 Resp: 12653

Ion	Ratio	Lower	Upper
45	100		
46	35.3	15.7	55.7
42	9.6	0.0	28.1

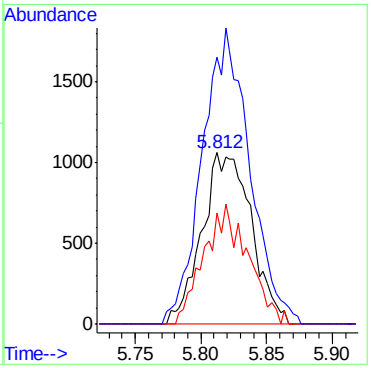


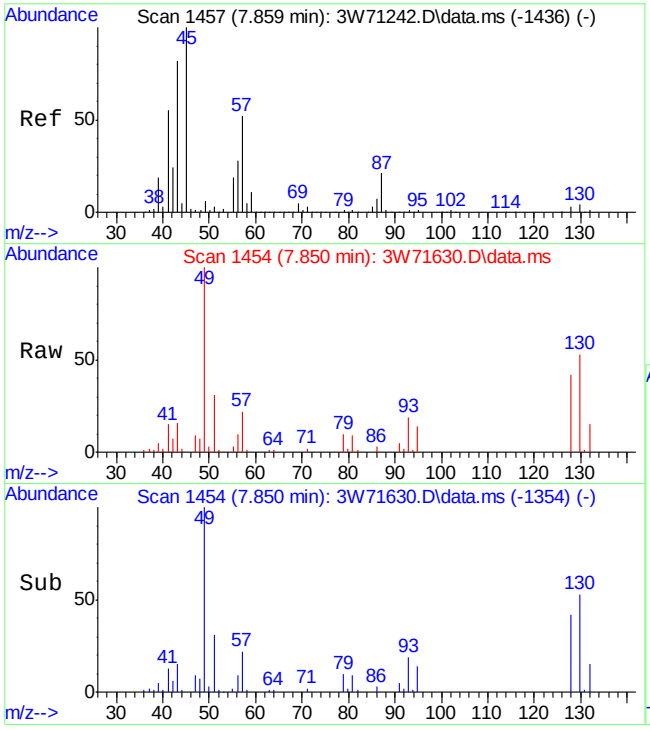


#31
METHYLENE CHLORIDE
Concen: 0.27 PPBV
RT: 5.812 min Scan# 819
Delta R.T. -0.010 min
Lab File: 3W71630.D
Acq: 12 Feb 2020 7:36 pm

Tgt Ion: 84 Resp: 2772

Ion	Ratio	Lower	Upper
84	100		
86	62.2	43.5	83.5
49	166.5	0.0	342.4

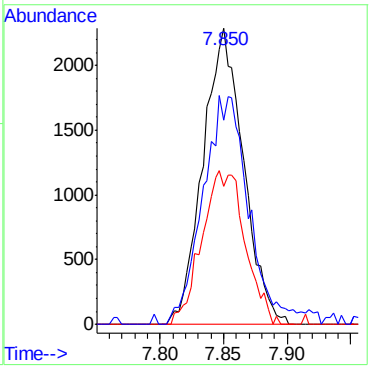


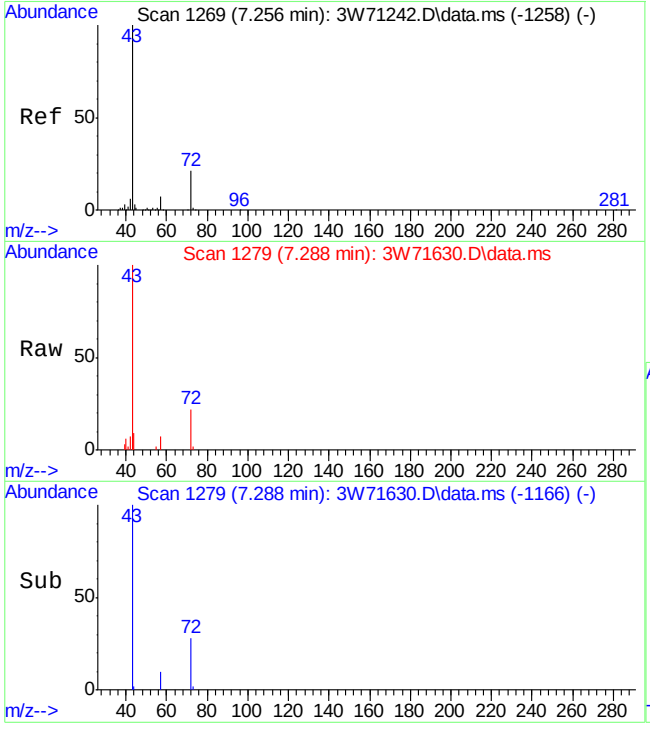


#38
HEXANE
Concen: 0.29 PPBV
RT: 7.850 min Scan# 1454
Delta R.T. -0.010 min
Lab File: 3W71630.D
Acq: 12 Feb 2020 7:36 pm

Tgt Ion: 57 Resp: 5055

Ion	Ratio	Lower	Upper
57	100		
56	55.4	35.4	75.4
41	88.6	88.4	128.4

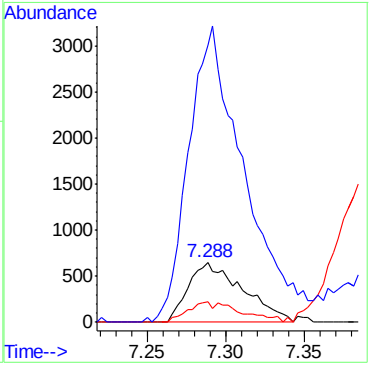


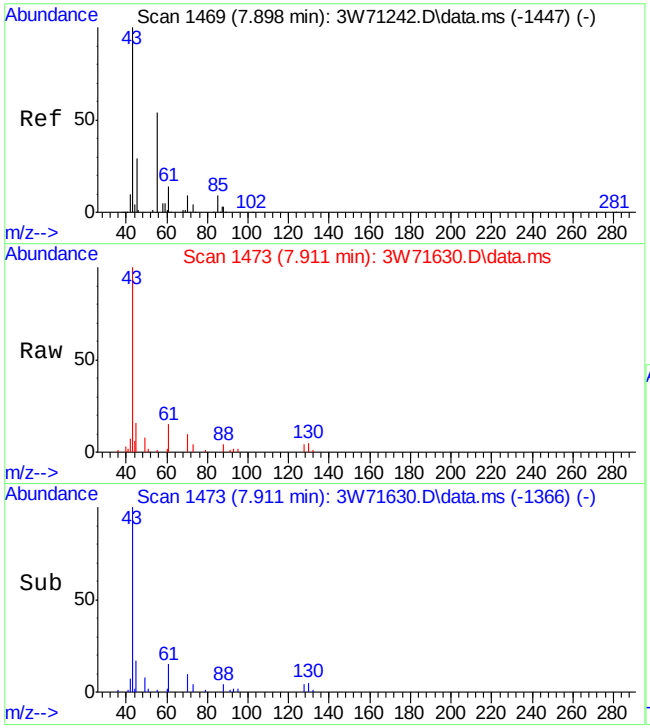


#41
METHYL ETHYL KETONE
Concen: 0.36 PPBV
RT: 7.288 min Scan# 1279
Delta R.T. 0.032 min
Lab File: 3W71630.D
Acq: 12 Feb 2020 7:36 pm

Tgt Ion: 72 Resp: 1558

Ion	Ratio	Lower	Upper
72	100		
57	34.7	12.1	52.1
43	464.3	446.3	486.3

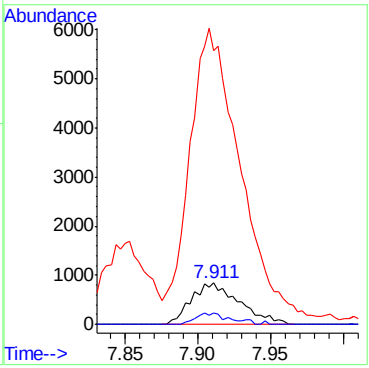


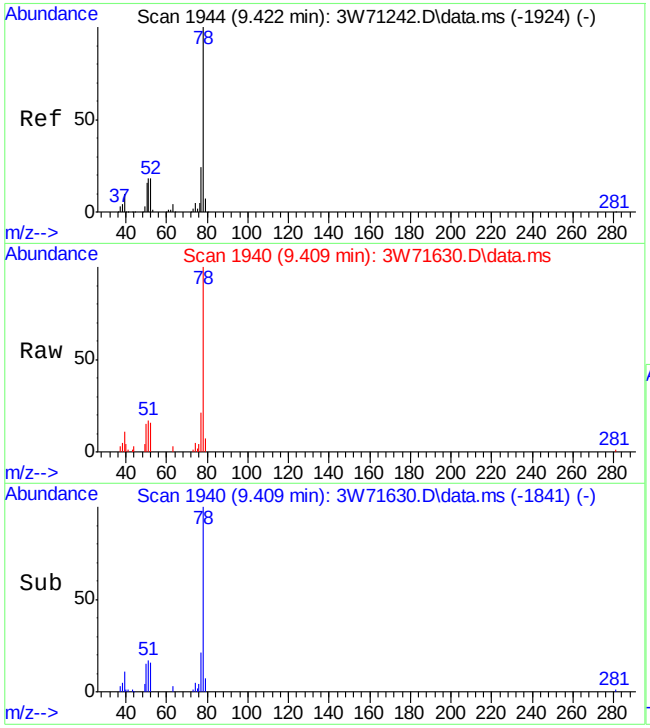


#44
ETHYL ACETATE
Concen: 0.64 PPBV
RT: 7.911 min Scan# 1473
Delta R.T. 0.013 min
Lab File: 3W71630.D
Acq: 12 Feb 2020 7:36 pm

Tgt Ion: 61 Resp: 1932

Ion	Ratio	Lower	Upper
61	100		
43	785.0	0.0	20.0#
88	19.2	18.0	58.0

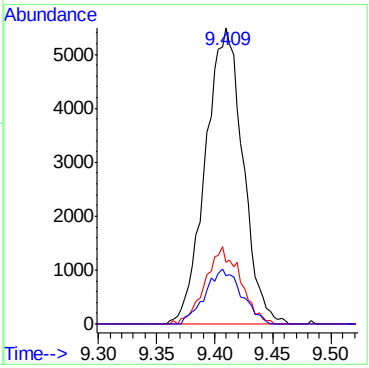


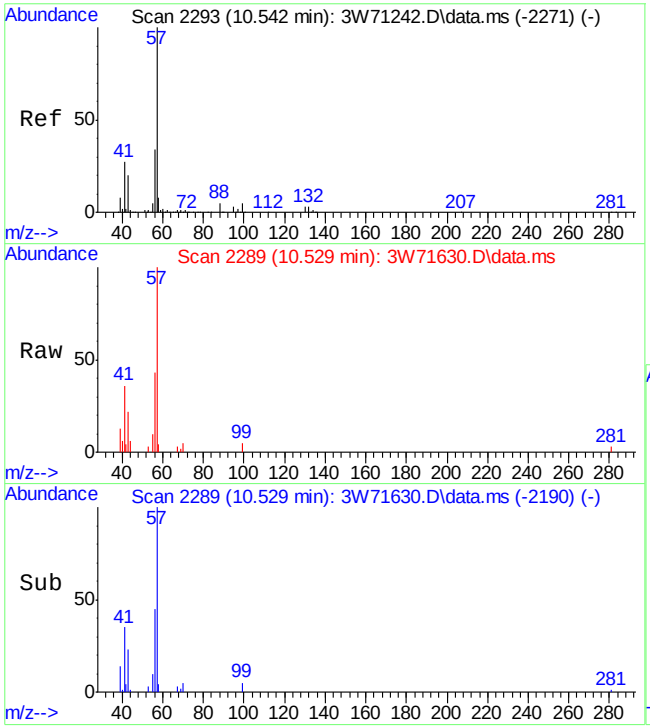


#52
BENZENE
Concen: 0.46 PPBV
RT: 9.409 min Scan# 1940
Delta R.T. -0.013 min
Lab File: 3W71630.D
Acq: 12 Feb 2020 7:36 pm

Tgt Ion: 78 Resp: 12304

Ion	Ratio	Lower	Upper
78	100		
77	24.3	4.1	44.1
52	18.0	0.0	37.6

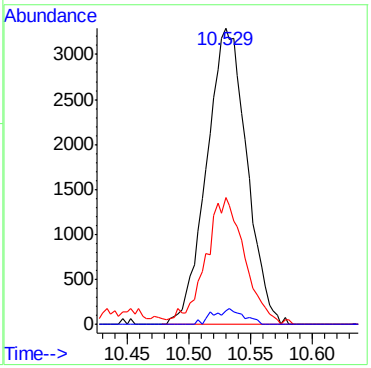


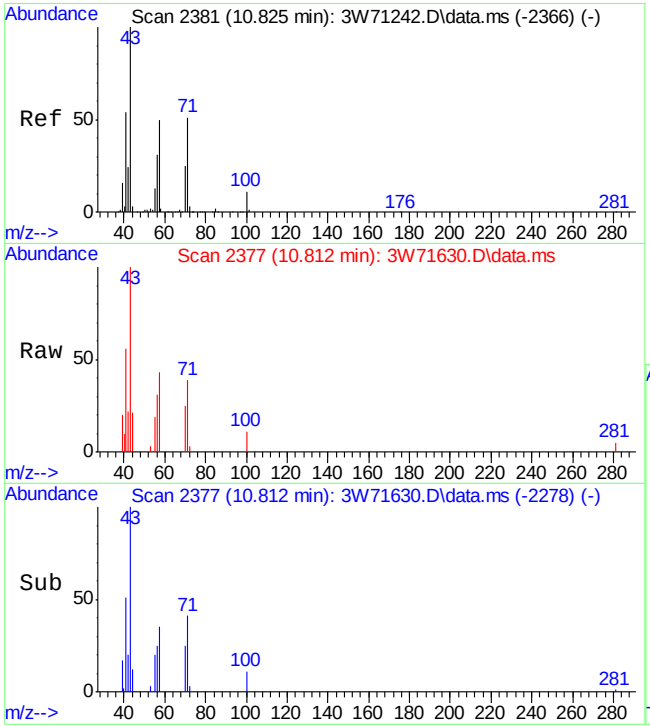


#60
2,2,4-TRIMETHYLPENTANE
Concen: 0.17 PPBV
RT: 10.529 min Scan# 2289
Delta R.T. -0.013 min
Lab File: 3W71630.D
Acq: 12 Feb 2020 7:36 pm

Tgt Ion: 57 Resp: 7468

Ion	Ratio	Lower	Upper
57	100		
56	41.5	13.6	53.6
99	1.5	0.0	26.5

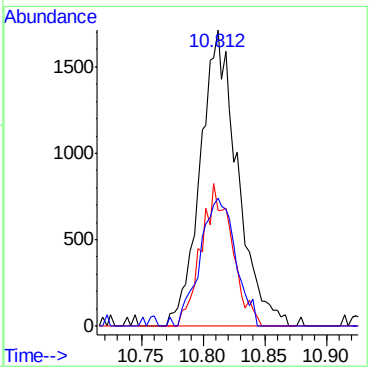


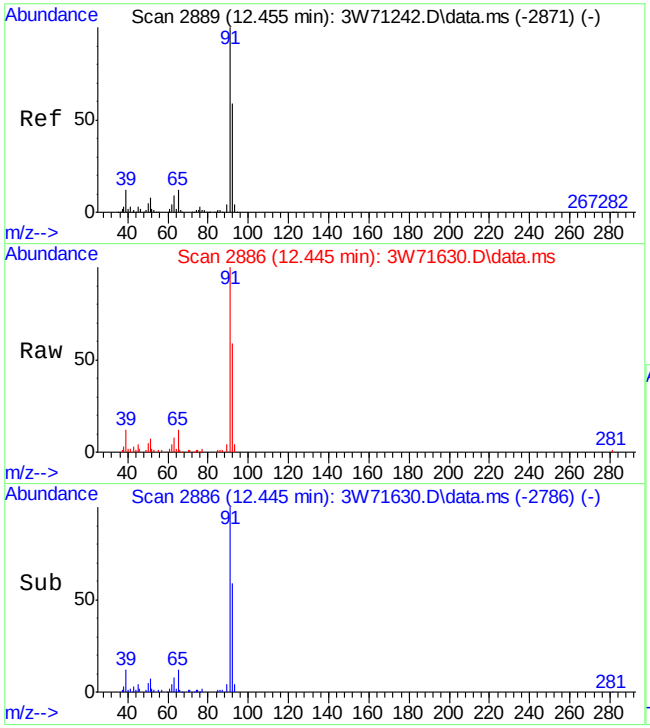


#62
HEPTANE
Concen: 0.21 PPBV
RT: 10.812 min Scan# 2377
Delta R.T. -0.013 min
Lab File: 3W71630.D
Acq: 12 Feb 2020 7:36 pm

Tgt Ion: 43 Resp: 3603

Ion	Ratio	Lower	Upper
43	100		
71	40.0	30.4	70.4
57	41.0	29.9	69.9

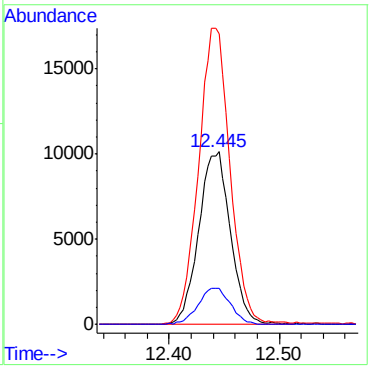


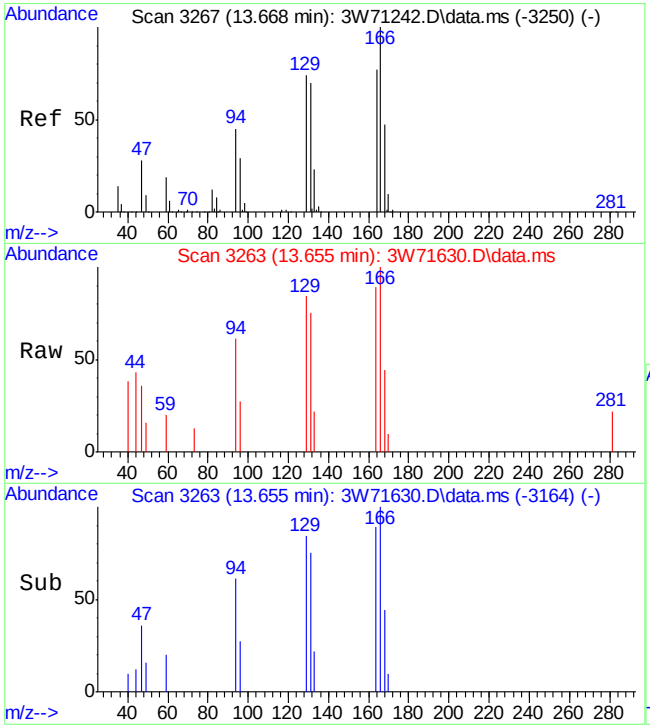


#66
TOLUENE
Concen: 1.24 PPBV
RT: 12.445 min Scan# 2886
Delta R.T. -0.010 min
Lab File: 3W71630.D
Acq: 12 Feb 2020 7:36 pm

Tgt Ion: 92 Resp: 20197

Ion	Ratio	Lower	Upper
92	100		
91	171.8	150.3	190.3
65	21.5	4.0	44.0

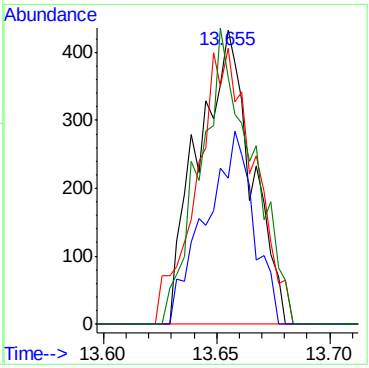


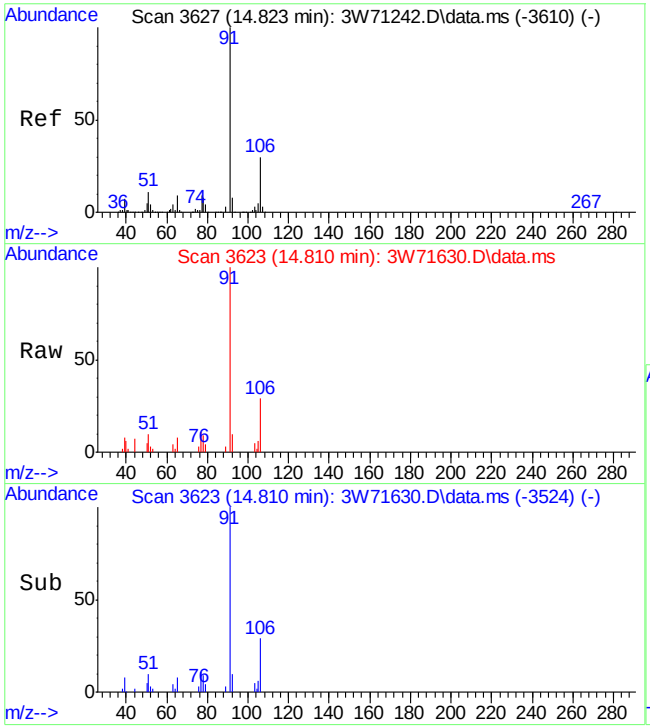


#73
TETRACHLOROETHYLENE
Concen: 0.08 PPBV
RT: 13.655 min Scan# 3263
Delta R.T. -0.013 min
Lab File: 3W71630.D
Acq: 12 Feb 2020 7:36 pm

Tgt Ion:164 Resp: 715

Ion	Ratio	Lower	Upper
164	100		
129	100.6	75.3	115.3
168	58.5	41.2	81.2
131	97.9	71.6	111.6

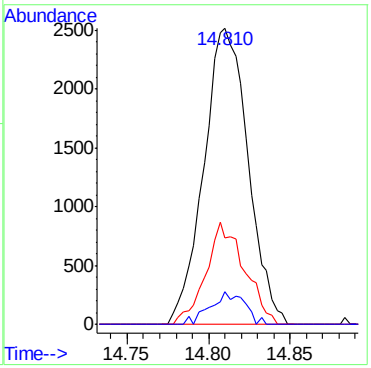


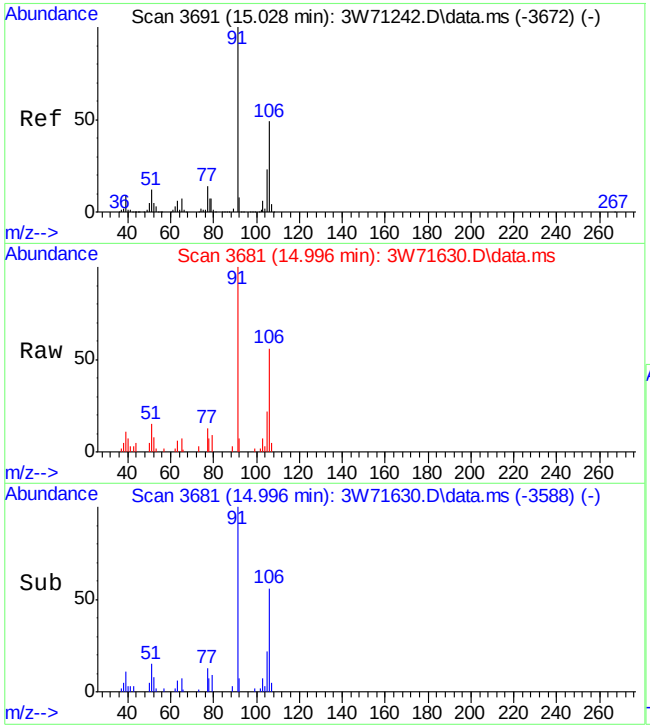


#79
ETHYLBENZENE
Concen: 0.15 PPBV
RT: 14.810 min Scan# 3623
Delta R.T. -0.013 min
Lab File: 3W71630.D
Acq: 12 Feb 2020 7:36 pm

Tgt Ion: 91 Resp: 4759

Ion	Ratio	Lower	Upper
91	100		
106	30.0	10.2	50.2
77	8.5	0.0	29.0

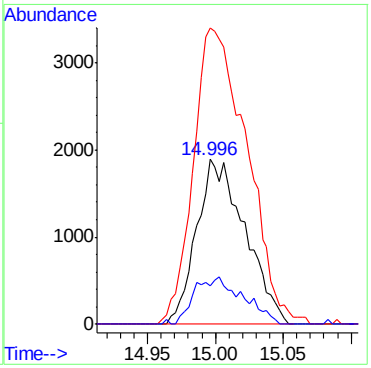


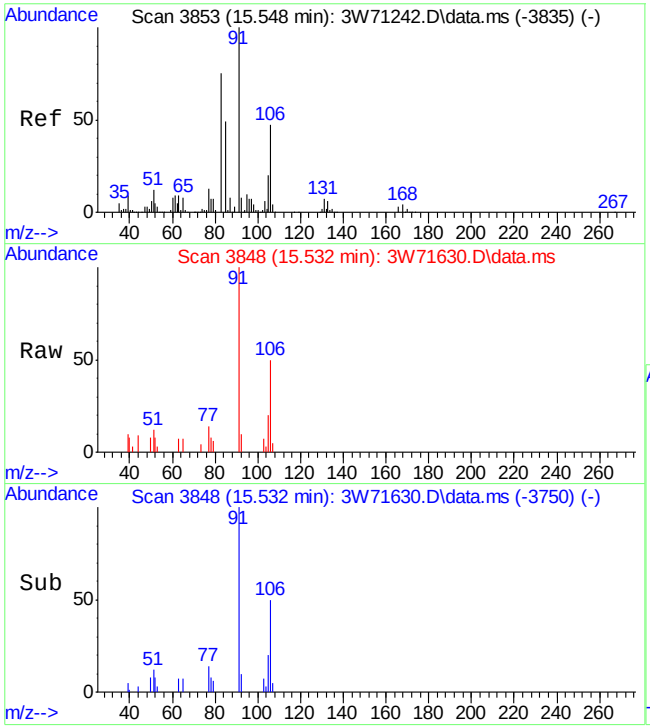


#80
m,p-XYLENE
Concen: 0.45 PPBV
RT: 14.996 min Scan# 3681
Delta R.T. -0.032 min
Lab File: 3W71630.D
Acq: 12 Feb 2020 7:36 pm

Tgt Ion:106 Resp: 4689

Ion	Ratio	Lower	Upper
106	100		
91	179.6	185.1	225.1#
77	23.3	8.5	48.5

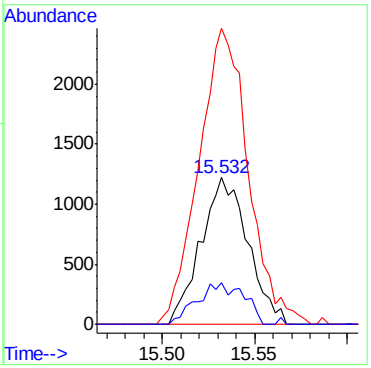


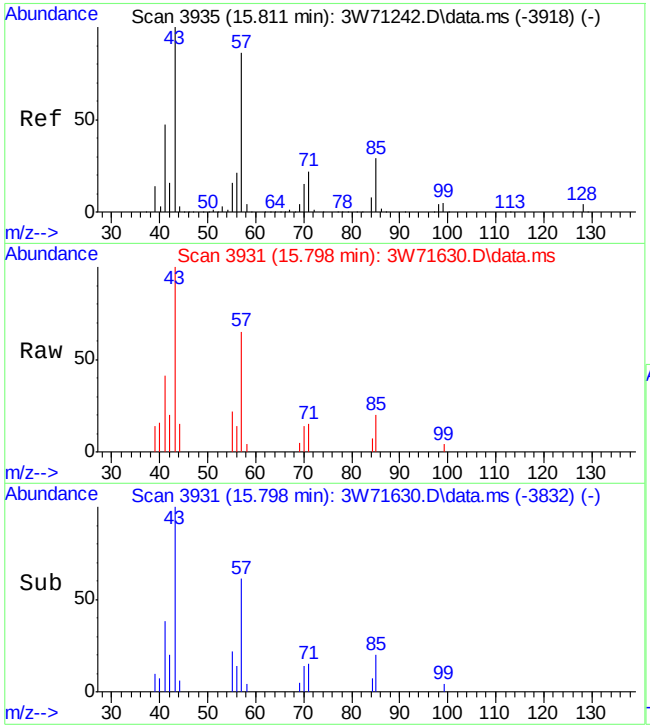


#81
o-XYLENE
Concen: 0.19 PPBV
RT: 15.532 min Scan# 3848
Delta R.T. -0.016 min
Lab File: 3W71630.D
Acq: 12 Feb 2020 7:36 pm

Tgt Ion:106 Resp: 2157

Ion	Ratio	Lower	Upper
106	100		
91	212.3	196.3	236.3
77	28.1	8.4	48.4

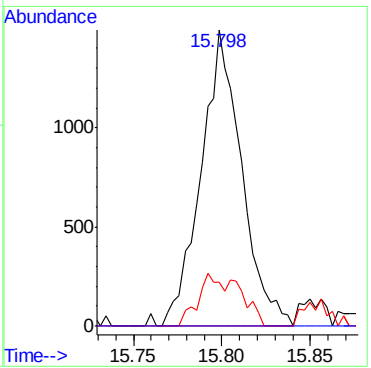


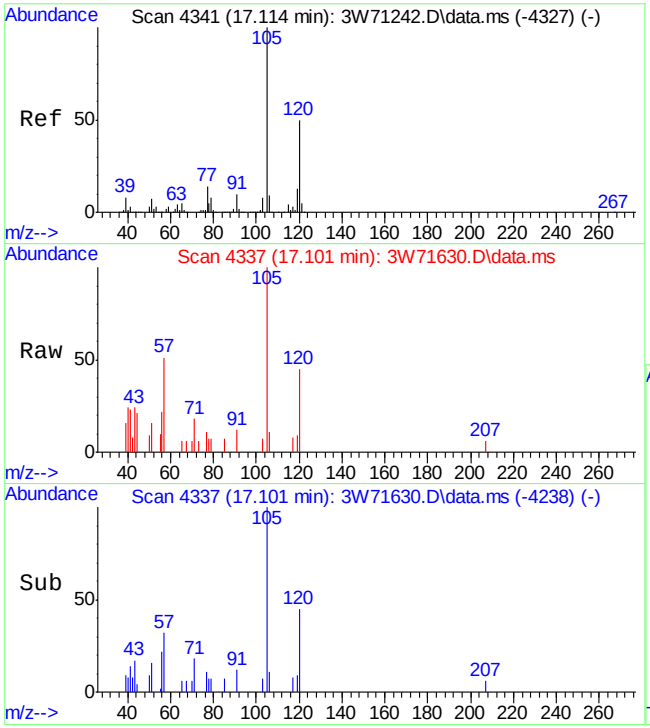


#83
NONANE
Concen: 0.14 PPBV
RT: 15.798 min Scan# 3931
Delta R.T. -0.013 min
Lab File: 3W71630.D
Acq: 12 Feb 2020 7:36 pm

Tgt Ion: 43 Resp: 2394

Ion	Ratio	Lower	Upper
43	100		
71	18.2	1.7	41.7
128	0.0	0.0	24.2

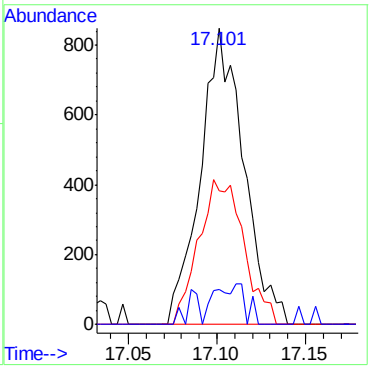


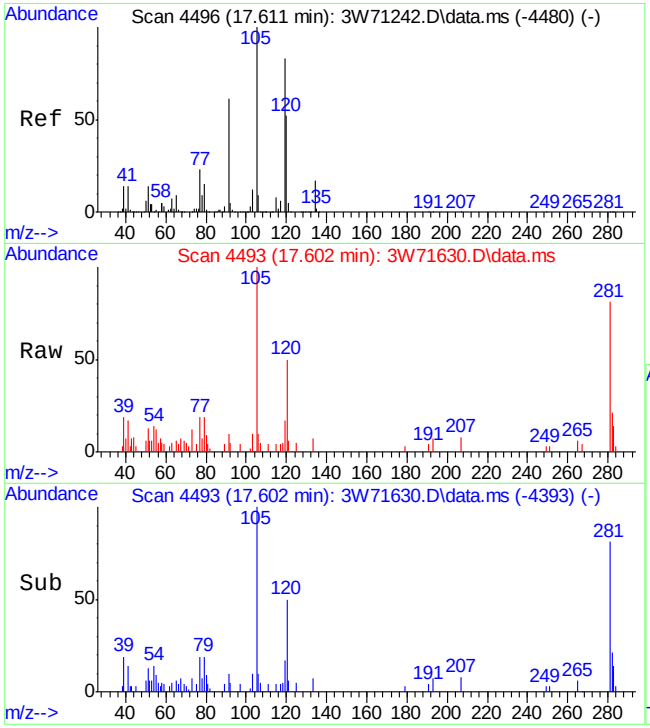


#93
1,3,5-TRIMETHYLBENZENE
Concen: 0.07 PPBV
RT: 17.101 min Scan# 4337
Delta R.T. -0.013 min
Lab File: 3W71630.D
Acq: 12 Feb 2020 7:36 pm

Tgt Ion:105 Resp: 1449

Ion	Ratio	Lower	Upper
105	100		
120	50.6	29.2	69.2
91	9.9	0.0	30.4

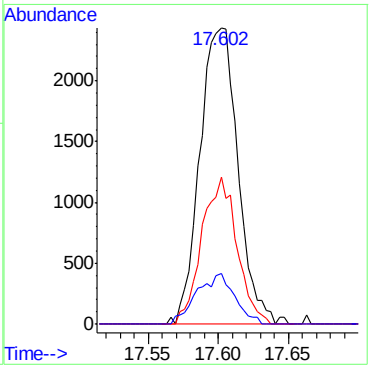




#96
1,2,4-TRIMETHYLBENZENE
Concen: 0.23 PPBV
RT: 17.602 min Scan# 4493
Delta R.T. -0.010 min
Lab File: 3W71630.D
Acq: 12 Feb 2020 7:36 pm

Tgt Ion:105 Resp: 4499

Ion	Ratio	Lower	Upper
105	100		
120	45.5	34.7	74.7
119	17.0	87.2	127.2#



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\
Data File : 3W71421.D
Acq On : 24 Jan 2020 5:28 am
Operator : danat
Sample : scc(m132),cp10668
Misc : MS40588,V3W2796,,,,,1
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Jan 24 09:41:16 2020
Quant Method : C:\msdchem\1\METHODS\M3W2789.M
Quant Title : TO15 by GCMS w/Rtx-1, 60 m X 0.32mm ID X 1.0 um
QLast Update : Wed Jan 15 09:18:27 2020
Response via : Initial Calibration

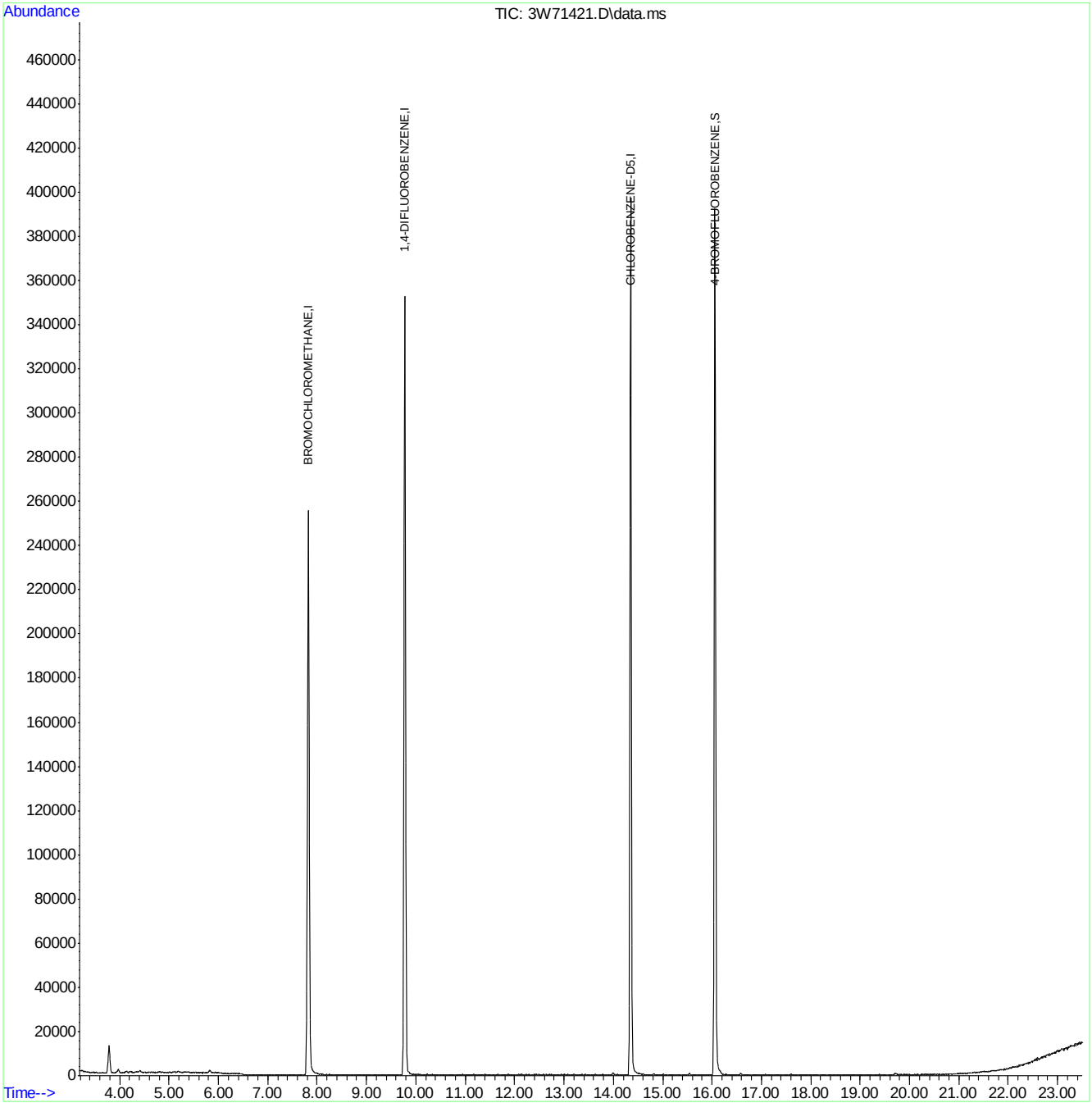
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) BROMOCHLOROMETHANE	7.821	128	86906	10.00	PPBV	0.00
51) 1,4-DIFLUOROBENZENE	9.775	114	319862	10.00	PPBV	-0.01
70) CHLOROBENZENE-D5	14.351	82	148897	10.00	PPBV	0.00
System Monitoring Compounds						
85) 4-BROMOFLUOROBENZENE	16.058	95	154497	9.45	PPBV	0.00
Spiked Amount 10.000	Range 65 - 128		Recovery = 94.50%			
Target Compounds						Qvalue

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\
Data File : 3W71421.D
Acq On : 24 Jan 2020 5:28 am
Operator : danat
Sample : scc(m132),cp10668
Misc : MS40588,V3W2796,,,,,1
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Jan 24 09:41:16 2020
Quant Method : C:\msdchem\1\METHODS\M3W2789.M
Quant Title : TO15 by GCMS w/Rtx-1, 60 m X 0.32mm ID X 1.0 um
QLast Update : Wed Jan 15 09:18:27 2020
Response via : Initial Calibration

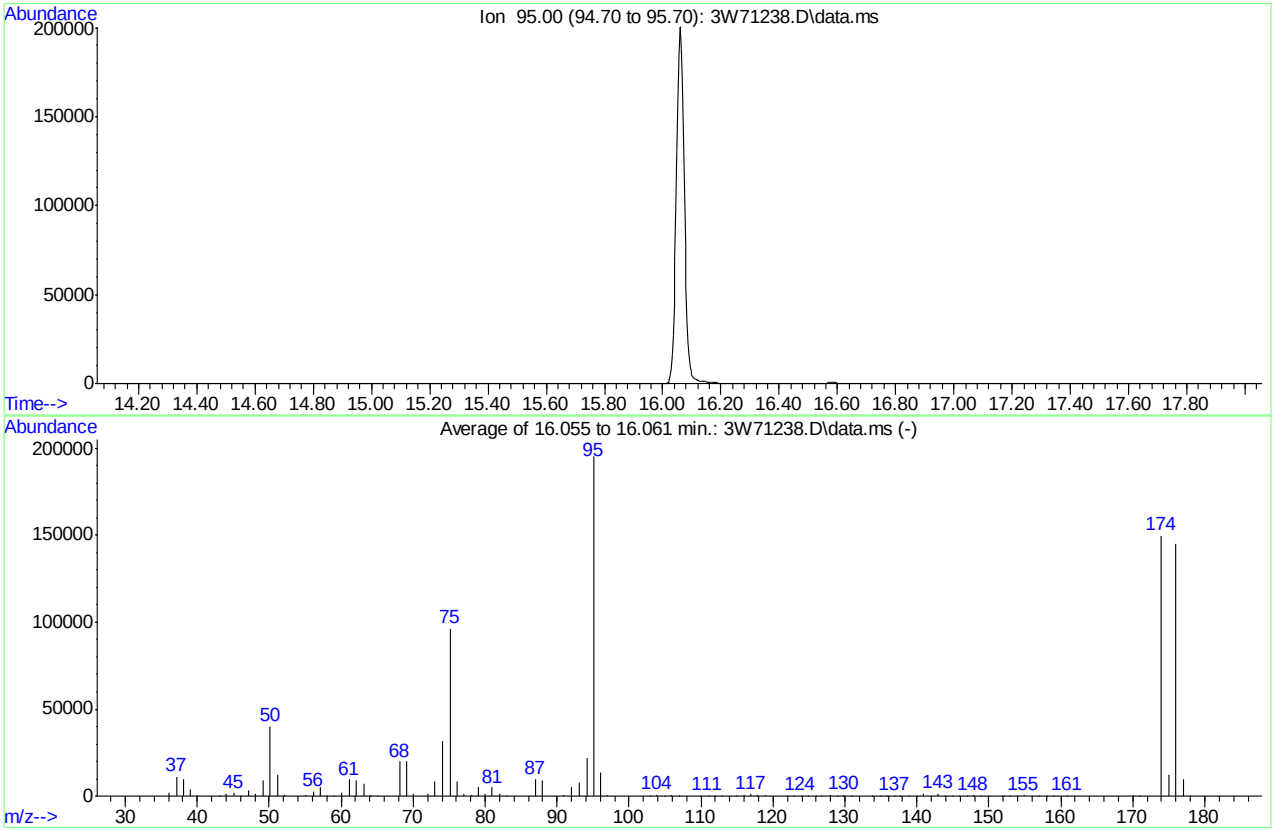


BFB

Data Path : C:\msdchem\1\DATA\
Data File : 3W71238.D
Acq On : 14 Jan 2020 10:53 am
Operator : danat
Sample : bfb
Misc : MS40248,V3W2789,,,,,1
ALS Vial : 1 Sample Multiplier: 1

Integration File: RTEINT1.P

Method : C:\msdchem\1\METHODS\M3W2789.M
Title : TO15 by GCMS w/Rtx-1, 60 m X 0.32mm ID X 1.0 um
Last Update : Wed Jan 15 09:19:47 2020



AutoFind: Scans 4011, 4012, 4013; Background Corrected with Scan 3995

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	8	40	20.6	40331	PASS
75	95	30	66	49.2	96168	PASS
95	95	100	100	100.0	195328	PASS
96	95	5	9	6.9	13484	PASS
173	174	0.00	2	0.0	0	PASS
174	95	50	120	76.8	149952	PASS
175	174	4	9	8.2	12305	PASS
176	174	93	101	97.0	145387	PASS
177	176	5	9	6.7	9679	PASS

Average of 16.055 to 16.061 min.: 3W71238.D\data.ms
bfb
Modified:subtracted

m/z	abund.	m/z	abund.	m/z	abund.	m/z	abund.
36.10	2103	49.10	8979	62.10	9118	76.10	8409
37.10	11026	50.10	40331	63.10	6794	77.05	1274
38.10	9425	51.10	12295	64.05	637	78.05	889
39.10	3570	52.10	540	65.10	64	79.00	5086
40.00	117	55.05	511	68.10	19875	80.00	1419
43.10	122	56.10	2907	69.10	19781	81.00	5067
44.05	1087	57.10	5241	70.05	1416	82.00	1035
45.10	1854	58.05	208	72.05	1134	83.00	110
46.00	59	58.90	24	73.05	8453	87.00	9944
47.10	3144	60.10	2015	74.10	31883	88.00	9147
48.10	1289	61.10	9412	75.10	96168	90.95	701

Average of 16.055 to 16.061 min.: 3W71238.D\data.ms
bfb
Modified:subtracted

m/z	abund.	m/z	abund.	m/z	abund.	m/z	abund.
92.00	5015	109.95	100	123.90	104	136.00	50
93.05	7584	110.95	130	124.85	39	136.90	290
94.10	22165	111.90	106	125.90	40	137.70	17
95.10	195328	112.90	131	126.70	18	138.95	95
96.10	13484	114.90	197	127.90	541	139.90	62
97.00	393	115.95	640	128.90	327	140.95	1571
102.95	82	116.95	1089	129.90	661	142.00	245
103.90	760	117.90	614	130.95	220	142.95	1609
104.90	242	118.95	817	133.80	22	143.90	111
105.90	718	121.95	41	134.95	273	144.90	134
106.95	204	122.80	19	135.80	18	145.90	230

Average of 16.055 to 16.061 min.: 3W71238.D\data.ms
bfb
Modified:subtracted

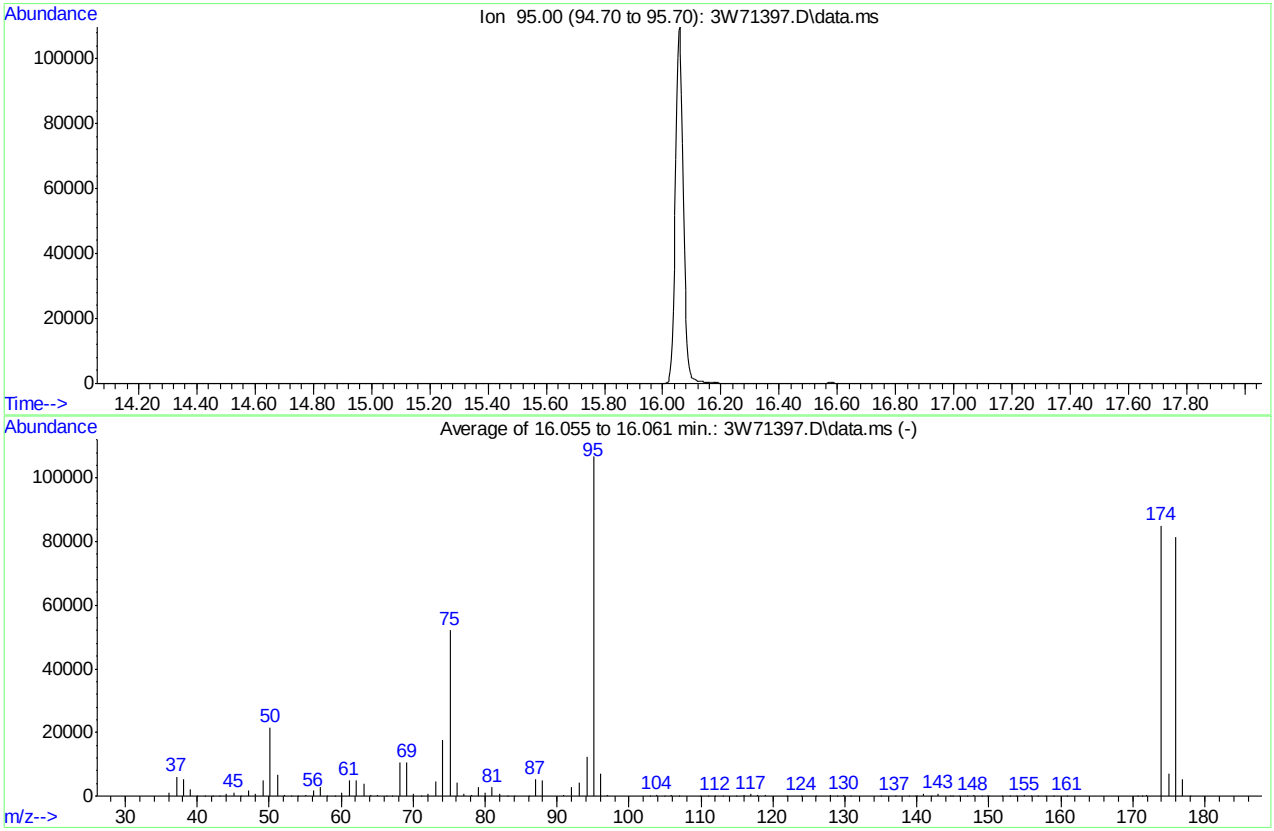
m/z	abund.	m/z	abund.	m/z	abund.	m/z	abund.
146.95	105	158.00	60				
147.90	401	158.90	176				
148.90	123	160.90	193				
149.95	163	170.10	38				
151.80	55	170.90	68				
152.10	29	174.00	149952				
152.95	134	175.00	12305				
153.95	120	176.00	145387				
154.90	386	177.00	9679				
155.95	115	177.95	289				
156.90	319						

BFB

Data Path : C:\msdchem\1\DATA\
Data File : 3W71397.D
Acq On : 23 Jan 2020 8:49 am
Operator : thomash
Sample : bfb
Misc : MS40366,V3W2796,,,,,1
ALS Vial : 1 Sample Multiplier: 1

Integration File: RTEINT1.P

Method : C:\msdchem\1\METHODS\M3W2789.M
Title : TO15 by GCMS w/Rtx-1, 60 m X 0.32mm ID X 1.0 um
Last Update : Wed Jan 15 09:18:26 2020



AutoFind: Scans 4011, 4012, 4013; Background Corrected with Scan 3994

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	8	40	20.3	21667	PASS
75	95	30	66	49.0	52317	PASS
95	95	100	100	100.0	106741	PASS
96	95	5	9	6.8	7208	PASS
173	174	0.00	2	0.0	0	PASS
174	95	50	120	79.6	85003	PASS
175	174	4	9	8.4	7105	PASS
176	174	93	101	95.9	81501	PASS
177	176	5	9	6.7	5475	PASS

Average of 16.055 to 16.061 min.: 3W71397.D\data.ms
bfb
Modified:subtracted

m/z	abund.	m/z	abund.	m/z	abund.	m/z	abund.
36.10	1174	47.10	1723	58.05	118	69.10	10745
37.10	6121	48.05	777	59.10	20	70.05	846
38.10	5185	49.10	4887	60.10	1034	71.10	18
39.10	2131	50.10	21667	61.10	5040	72.05	613
40.00	55	51.10	6718	62.10	4972	73.10	4723
41.05	67	52.10	280	63.10	3725	74.10	17477
42.10	26	53.10	19	64.10	407	75.10	52317
43.05	94	54.00	46	65.05	235	76.10	4382
44.05	643	55.10	442	66.30	17	77.00	695
45.10	1139	56.10	1692	67.10	162	78.05	529
46.05	68	57.10	2871	68.10	10719	79.00	2905

Average of 16.055 to 16.061 min.: 3W71397.D\data.ms
bfb
Modified:subtracted

m/z	abund.	m/z	abund.	m/z	abund.	m/z	abund.
80.00	997	94.10	12277	111.95	75	128.95	156
81.00	2926	95.10	106741	112.95	68	129.90	360
82.00	743	96.10	7208	114.95	112	130.85	130
83.05	99	97.00	217	115.95	329	135.00	129
84.10	23	102.95	39	116.95	606	136.95	148
86.00	58	103.90	410	117.90	357	138.95	56
87.00	5335	104.95	142	118.95	527	139.80	35
88.00	5047	105.90	390	121.90	18	140.00	34
90.95	370	106.95	98	123.95	60	140.95	870
92.00	2701	109.95	50	126.00	21	142.00	154
93.05	4142	111.05	69	127.90	358	142.95	887

Average of 16.055 to 16.061 min.: 3W71397.D\data.ms
bfb
Modified:subtracted

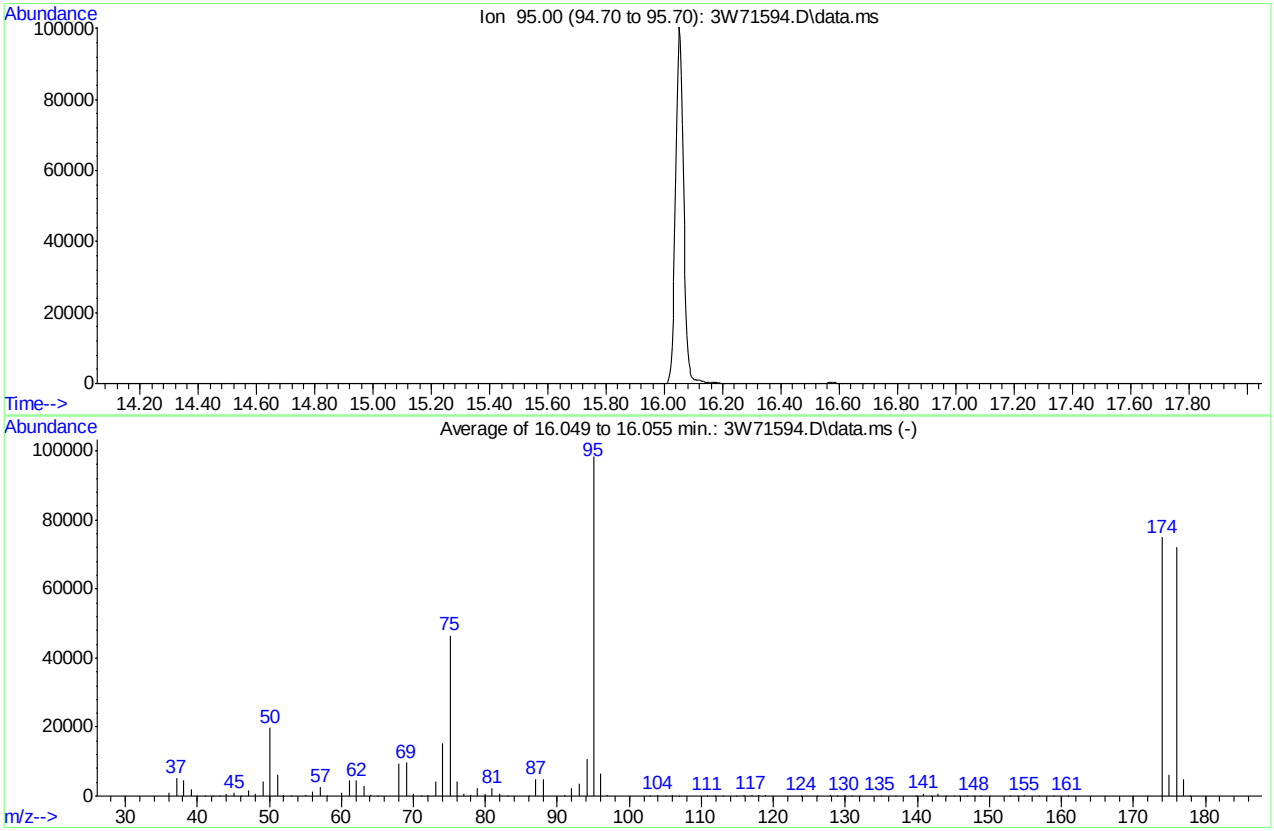
m/z	abund.	m/z	abund.	m/z	abund.	m/z	abund.
144.60	19	154.95	276	176.00	81501		
144.95	95	155.90	46	176.95	5475		
145.95	134	156.85	174	177.95	170		
146.95	88	157.85	56				
147.90	253	158.95	117				
149.00	46	160.85	123				
149.80	24	170.60	21				
149.95	80	171.20	50				
151.85	42	171.95	313				
152.90	67	174.00	85003				
153.80	67	175.00	7105				

BFB

Data Path : C:\msdchem\1\DATA\
Data File : 3W71594.D
Acq On : 11 Feb 2020 9:37 am
Operator : danat
Sample : bfb
Misc : MS40975,V3W2806,,,,,1
ALS Vial : 1 Sample Multiplier: 1

Integration File: RTEINT1.P

Method : C:\msdchem\1\METHODS\M3W2789.M
Title : TO15 by GCMS w/Rtx-1, 60 m X 0.32mm ID X 1.0 um
Last Update : Wed Jan 15 09:18:26 2020



AutoFind: Scans 4009, 4010, 4011; Background Corrected with Scan 3993

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	8	40	20.0	19715	PASS
75	95	30	66	47.3	46509	PASS
95	95	100	100	100.0	98368	PASS
96	95	5	9	6.7	6542	PASS
173	174	0.00	2	0.0	0	PASS
174	95	50	120	76.2	74976	PASS
175	174	4	9	8.1	6037	PASS
176	174	93	101	96.1	72029	PASS
177	176	5	9	6.9	4995	PASS

Average of 16.049 to 16.055 min.: 3W71594.D\data.ms
bfb
Modified:subtracted

m/z	abund.	m/z	abund.	m/z	abund.	m/z	abund.
36.10	1004	47.10	1596	60.05	955	73.05	4174
37.10	5289	48.00	623	61.10	4411	74.05	15181
38.10	4615	49.10	4281	62.10	4477	75.10	46509
39.10	1888	50.10	19715	63.10	3067	76.10	4125
40.00	22	51.10	6028	64.05	272	77.00	644
41.10	48	52.00	300	65.00	48	78.00	476
42.10	18	53.00	17	68.00	9551	78.90	2290
43.10	101	55.05	322	69.05	9643	80.00	764
44.00	542	56.05	1407	70.05	716	80.95	2395
45.10	883	57.10	2641	71.05	34	81.95	576
46.05	61	58.00	109	72.00	492	83.00	57

Average of 16.049 to 16.055 min.: 3W71594.D\data.ms
bfb
Modified:subtracted

m/z	abund.	m/z	abund.	m/z	abund.	m/z	abund.
86.00	103	103.95	340	118.90	389	139.95	42
87.00	5020	104.95	130	123.90	47	140.90	792
88.00	4726	105.95	325	126.00	18	141.95	81
90.95	308	106.95	90	127.95	267	142.90	656
92.00	2409	110.85	69	128.85	134	143.90	42
93.00	3643	111.80	19	129.90	284	145.00	55
94.10	10762	112.90	56	130.85	132	145.85	108
95.05	98368	114.85	88	131.90	22	146.90	25
96.05	6542	115.90	285	134.85	145	147.85	168
96.95	197	116.95	462	136.90	121	148.80	45
102.90	22	117.90	287	139.70	24	150.05	51

Average of 16.049 to 16.055 min.: 3W71594.D\data.ms
bfb
Modified:subtracted

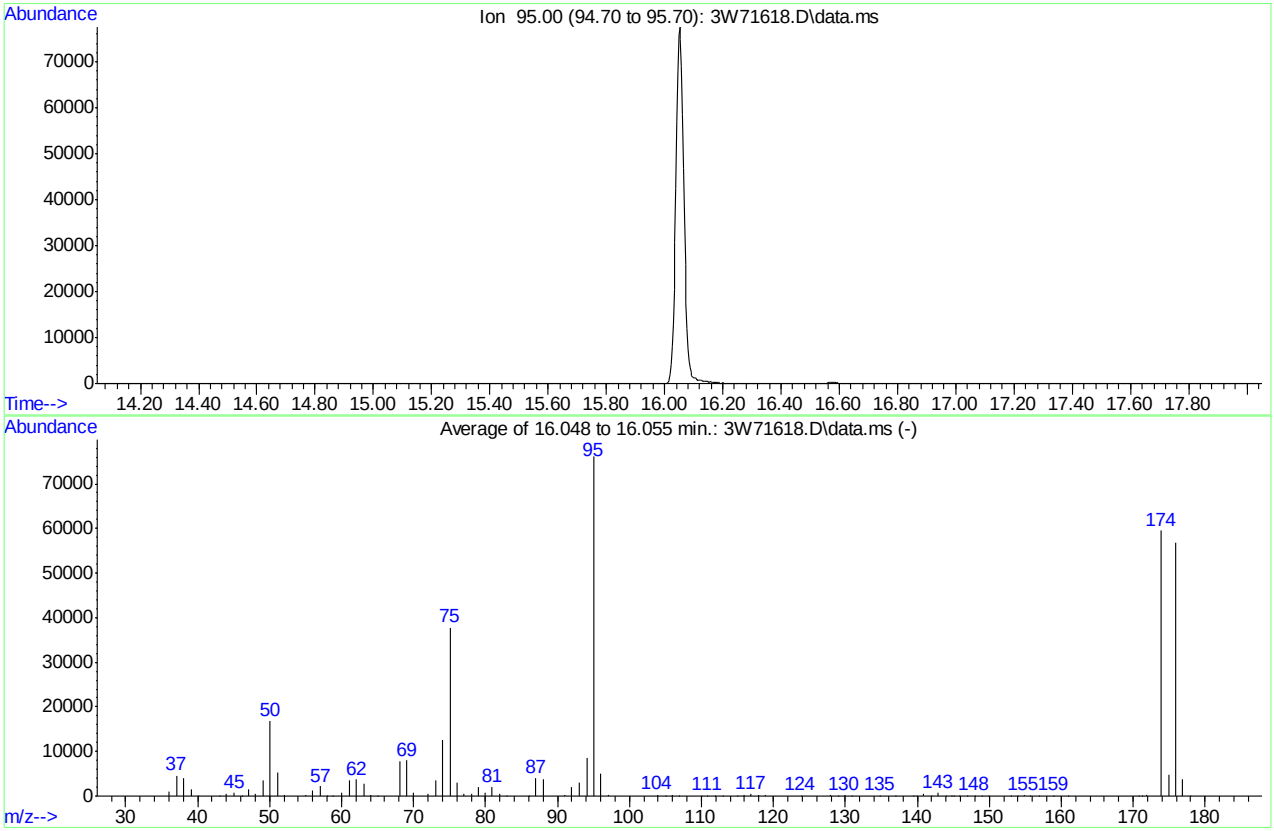
m/z	abund.	m/z	abund.	m/z	abund.	m/z	abund.
152.85	56	177.85	125				
153.90	23						
154.90	198						
156.90	127						
158.85	83						
160.85	88						
172.00	97						
174.00	74976						
175.00	6037						
175.95	72029						
176.95	4995						

BFB

Data Path : C:\msdchem\1\DATA\
Data File : 3W71618.D
Acq On : 12 Feb 2020 9:12 am
Operator : danat
Sample : BFB
Misc : MS41043,V3W2807,,,,,1
ALS Vial : 1 Sample Multiplier: 1

Integration File: RTEINT1.P

Method : C:\msdchem\1\METHODS\M3W2789.M
Title : TO15 by GCMS w/Rtx-1, 60 m X 0.32mm ID X 1.0 um
Last Update : Wed Jan 15 09:18:26 2020



AutoFind: Scans 4009, 4010, 4011; Background Corrected with Scan 3993

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	8	40	22.1	16829	PASS
75	95	30	66	49.6	37744	PASS
95	95	100	100	100.0	76120	PASS
96	95	5	9	6.7	5124	PASS
173	174	0.00	2	0.0	0	PASS
174	95	50	120	78.2	59552	PASS
175	174	4	9	8.2	4882	PASS
176	174	93	101	95.3	56781	PASS
177	176	5	9	6.6	3752	PASS

Average of 16.048 to 16.055 min.: 3W71618.D\data.ms
BFB
Modified:subtracted

m/z	abund.	m/z	abund.	m/z	abund.	m/z	abund.
36.05	907	49.10	3575	62.05	3725	76.05	3053
37.10	4623	50.10	16829	63.10	2757	77.00	554
38.10	4122	51.10	5223	64.05	250	78.00	418
39.10	1552	52.05	227	65.05	90	78.95	1988
40.00	22	55.00	202	68.05	7835	79.95	663
43.05	72	56.00	1275	69.05	8041	80.95	2045
44.00	454	57.05	2241	70.05	663	81.95	497
45.10	733	58.05	115	72.05	448	82.95	41
46.10	63	58.70	18	73.05	3511	86.00	88
47.10	1491	60.00	802	74.10	12559	87.00	4047
48.05	544	61.05	3599	75.10	37744	88.00	3879

Average of 16.048 to 16.055 min.: 3W71618.D\data.ms
BFB
Modified:subtracted

m/z	abund.	m/z	abund.	m/z	abund.	m/z	abund.
90.95	265	110.00	17	128.95	127	144.80	45
92.00	1953	110.85	47	129.90	234	145.00	25
93.00	3014	111.80	19	130.95	60	145.85	83
94.05	8500	112.90	22	134.85	120	146.90	40
95.05	76120	114.95	70	136.95	95	147.95	131
96.05	5124	115.90	254	139.40	18	148.90	39
97.05	166	116.90	456	139.90	72	149.85	74
103.90	320	117.90	270	140.90	584	153.00	25
104.95	78	118.90	346	142.00	67	153.95	48
105.90	300	123.80	49	142.90	676	154.85	157
106.95	78	127.90	212	143.90	34	155.70	19

Average of 16.048 to 16.055 min.: 3W71618.D\data.ms
BFB
Modified:subtracted

m/z	abund.	m/z	abund.	m/z	abund.	m/z	abund.
156.90	110						
158.95	85						
160.90	28						
170.70	18						
171.30	23						
171.90	143						
173.95	59552						
175.00	4882						
175.90	56781						
176.90	3752						
177.90	97						

Manual Integrations APPROVED (compounds with "m" flag)
Dana Tryon
01/15/20 16:07

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\
Data File : 3W71239.D
Acq On : 14 Jan 2020 11:44 am
Operator : danat
Sample : ic2789-0.5
Misc : MS40248,V3W2789,,,,,1
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Jan 14 16:53:22 2020
Quant Method : C:\msdchem\1\METHODS\M3W2789.M
Quant Title : TO15 by GCMS w/Rtx-1, 60 m X 0.32mm ID X 1.0 um
QLast Update : Tue Jan 14 16:52:09 2020
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) BROMOCHLOROMETHANE	7.824	128	108508	10.00	PPBV		0.00
51) 1,4-DIFLUOROBENZENE	9.778	114	496850	10.00	PPBV		0.00
70) CHLOROBENZENE-D5	14.354	82	259801	10.00	PPBV		0.00
System Monitoring Compounds							
85) 4-BROMOFLUOROBENZENE	16.061	95	287041	9.61	PPBV		0.00
Spiked Amount 10.000	Range 65 - 128		Recovery = 96.10%				
Target Compounds							Qvalue
2) FREON 115	3.816	119	299	0.60	PPBV	#	77
3) FREON 152A	3.900	65	4855	0.55	PPBV		97
4) CHLORODIFLUOROMETHANE	3.932	67	2007	0.56	PPBV		86
5) CHLOROTRIFLUOROETHENE	3.957	116	8903	0.54	PPBV		99
6) DICHLORODIFLUOROMETHANE	4.002	85	19635	0.56	PPBV		99
7) PROPYLENE	3.957	41	7435	0.57	PPBV		98
8) 1-CHLORO-1,1-DIFLUOROE...	4.105	65	15145	0.56	PPBV	#	90
9) FREON 114	4.185	85	19811	0.56	PPBV		99
10) CHLOROMETHANE	4.128	52	2586	0.56	PPBV	#	71
11) VINYL CHLORIDE	4.272	62	8139	0.54	PPBV		100
12) 1,3-BUTADIENE	4.365	54	5995	0.53	PPBV		90
13) n-BUTANE	4.404	43	14868	0.63	PPBV	#	97
14) BROMOMETHANE	4.561	94	7301	0.57	PPBV		98
15) CHLOROETHANE	4.679	64	4118	0.56	PPBV		89
16) DICHLOROFLUOROMETHANE	4.731	67	17326	0.57	PPBV		98
17) ACETONITRILE	4.943	41	6985m	0.63	PPBV		
18) ACROLEIN	5.023	56	3212	0.57	PPBV		95
19) FREON 123	5.013	83	17767	0.57	PPBV		100
20) FREON 123A	5.048	117	8523	0.57	PPBV		100
21) TRICHLOROFLUOROMETHANE	5.225	101	17152	0.57	PPBV		99
22) ISOPROPYL ALCOHOL	5.324	45	15145	0.67	PPBV		96
23) ACETONE	5.138	58	3604	0.66	PPBV		97
24) PENTANE	5.491	42	9298	0.59	PPBV		95
25) IODOMETHANE	5.681	142	15703	0.52	PPBV		100
26) 1,1-DICHLOROETHYLENE	5.729	96	6479	0.52	PPBV		97
27) CARBON DISULFIDE	6.111	76	18992	0.51	PPBV		99
28) ETHANOL	4.798	45	4730	0.84	PPBV		98
29) BROMOETHENE	4.927	106	6157	0.52	PPBV		99
30) ACRYLONITRILE	5.459	52	4374	0.52	PPBV		96
31) METHYLENE CHLORIDE	5.822	84	7421	0.62	PPBV		99
32) 3-CHLOROPROPENE	5.925	76	3352	0.52	PPBV	#	86
33) FREON 113	6.043	151	10172	0.56	PPBV		100
34) TRANS-1,2-DICHLOROETHY...	6.669	96	6200	0.50	PPBV		99
35) TERTIARY BUTYL ALCOHOL	5.828	59	12610	0.54	PPBV		99
36) METHYL TERTIARY BUTYL ...	6.958	73	17725	0.55	PPBV		97
37) TETRAHYDROFURAN	8.450	72	2848	0.52	PPBV		96
38) HEXANE	7.859	57	11728	0.53	PPBV		92
39) VINYL ACETATE	6.996	86	1042	0.43	PPBV	#	30
40) 1,1-DICHLOROETHANE	6.858	63	14048	0.54	PPBV		100
41) METHYL ETHYL KETONE	7.295	72	3025	0.57	PPBV	#	77

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\
Data File : 3W71239.D
Acq On : 14 Jan 2020 11:44 am
Operator : danat
Sample : ic2789-0.5
Misc : MS40248,V3W2789,,,,,1
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Jan 14 16:53:22 2020
Quant Method : C:\msdchem\1\METHODS\M3W2789.M
Quant Title : TO15 by GCMS w/Rtx-1, 60 m X 0.32mm ID X 1.0 um
QLast Update : Tue Jan 14 16:52:09 2020
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
42) cis-1,2-DICHLOROETHYLENE	7.657	96	6507	0.48	PPBV		99
43) DIISOPROPYL ETHER	7.879	59	3221	0.56	PPBV	#	92
44) ETHYL ACETATE	7.917	61	1981	0.55	PPBV	#	78
45) METHYL ACRYLATE	7.901	55	12239	0.54	PPBV		96
46) CHLOROFORM	7.949	83	14826	0.53	PPBV		99
47) 2,4-DIMETHYLPENTANE	8.742	57	13844	0.51	PPBV		96
48) 1,1,1-TRICHLOROETHANE	8.947	97	13591	0.52	PPBV		99
49) CARBON TETRACHLORIDE	9.567	117	12332	0.48	PPBV		98
50) 1,2-DICHLOROETHANE	8.694	62	8860	0.49	PPBV		100
52) BENZENE	9.419	78	20816	0.52	PPBV		100
53) CYCLOHEXANE	9.692	84	8806	0.54	PPBV		99
54) 2,3-DIMETHYLPENTANE	9.942	71	5088	0.58	PPBV		98
55) TRICHLOROETHYLENE	10.510	95	8304	0.50	PPBV		99
56) 1,2-DICHLOROPROPANE	10.269	63	8100	0.54	PPBV		99
57) DIBROMOMETHANE	10.237	174	6110	0.49	PPBV		98
58) ETHYL ACRYLATE	10.301	55	12005	0.51	PPBV	#	98
59) BROMODICHLOROMETHANE	10.465	83	14478	0.50	PPBV		98
60) 2,2,4-TRIMETHYLPENTANE	10.539	57	37105	0.55	PPBV		97
61) 1,4-DIOXANE	10.626	88	3753	0.57	PPBV	#	1
62) HEPTANE	10.821	43	13976	0.54	PPBV		99
63) METHYL METHACRYLATE	10.748	69	5670	0.50	PPBV		98
64) METHYL ISOBUTYL KETONE	11.518	58	5225	0.54	PPBV		93
65) cis-1,3-DICHLOROPROPENE	11.425	75	9428	0.44	PPBV		98
66) TOLUENE	12.448	92	11571	0.46	PPBV		98
67) 1,3-DICHLOROPROPANE	12.484	76	9526	0.47	PPBV	#	100
68) trans-1,3-DICHLOROPROPENE	11.977	75	7015	0.39	PPBV		98
69) 1,1,2-TRICHLOROETHANE	12.159	83	6252	0.48	PPBV		97
71) 2-HEXANONE	12.798	58	6332	0.48	PPBV		88
72) ETHYL METHACRYLATE	12.782	69	7683	0.43	PPBV		91
73) TETRACHLOROETHYLENE	13.661	164	6918	0.45	PPBV		98
74) DIBROMOCHLOROMETHANE	12.904	129	9558	0.38	PPBV		99
75) 1,2-DIBROMOETHANE	13.164	107	8644	0.40	PPBV		99
76) OCTANE	13.520	43	16574	0.46	PPBV		98
77) 1,1,1,2-TETRACHLOROETHANE	14.386	131	7473	0.44	PPBV		97
78) CHLOROBENZENE	14.406	112	13336	0.41	PPBV		97
79) ETHYLBENZENE	14.820	91	22233	0.43	PPBV		99
80) m,p-XYLENE	15.022	106	15324	0.79	PPBV		99
81) o-XYLENE	15.545	106	7963	0.42	PPBV		98
82) STYRENE	15.423	104	9298	0.31	PPBV		99
83) NONANE	15.808	43	14179	0.41	PPBV		98
84) BROMOFORM	15.092	173	6583	0.30	PPBV		99
86) 1,1,2,2-TETRACHLOROETHANE	15.545	83	13639	0.45	PPBV		99
87) 1,2,3-TRICHLOROPROPANE	15.689	75	10043	0.44	PPBV		98
88) ISOPROPYLBENZENE	16.222	105	21788	0.39	PPBV		100
89) BROMOBENZENE	16.312	77	10477	0.35	PPBV		98
90) 2-CHLOROTOLUENE	16.780	126	4525	0.34	PPBV		98
91) n-PROPYLBENZENE	16.832	120	4895	0.34	PPBV		100
92) 4-ETHYLTOLUENE	17.015	105	16428	0.32	PPBV		98
93) 1,3,5-TRIMETHYLBENZENE	17.111	105	14112	0.33	PPBV		99
94) ALPHA-METHYLSTYRENE	17.310	118	5829	0.26	PPBV		99

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\
Data File : 3W71239.D
Acq On : 14 Jan 2020 11:44 am
Operator : danat
Sample : ic2789-0.5
Misc : MS40248,V3W2789,,,,,1
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Jan 14 16:53:22 2020
Quant Method : C:\msdchem\1\METHODS\M3W2789.M
Quant Title : TO15 by GCMS w/Rtx-1, 60 m X 0.32mm ID X 1.0 um
QLast Update : Tue Jan 14 16:52:09 2020
Response via : Initial Calibration

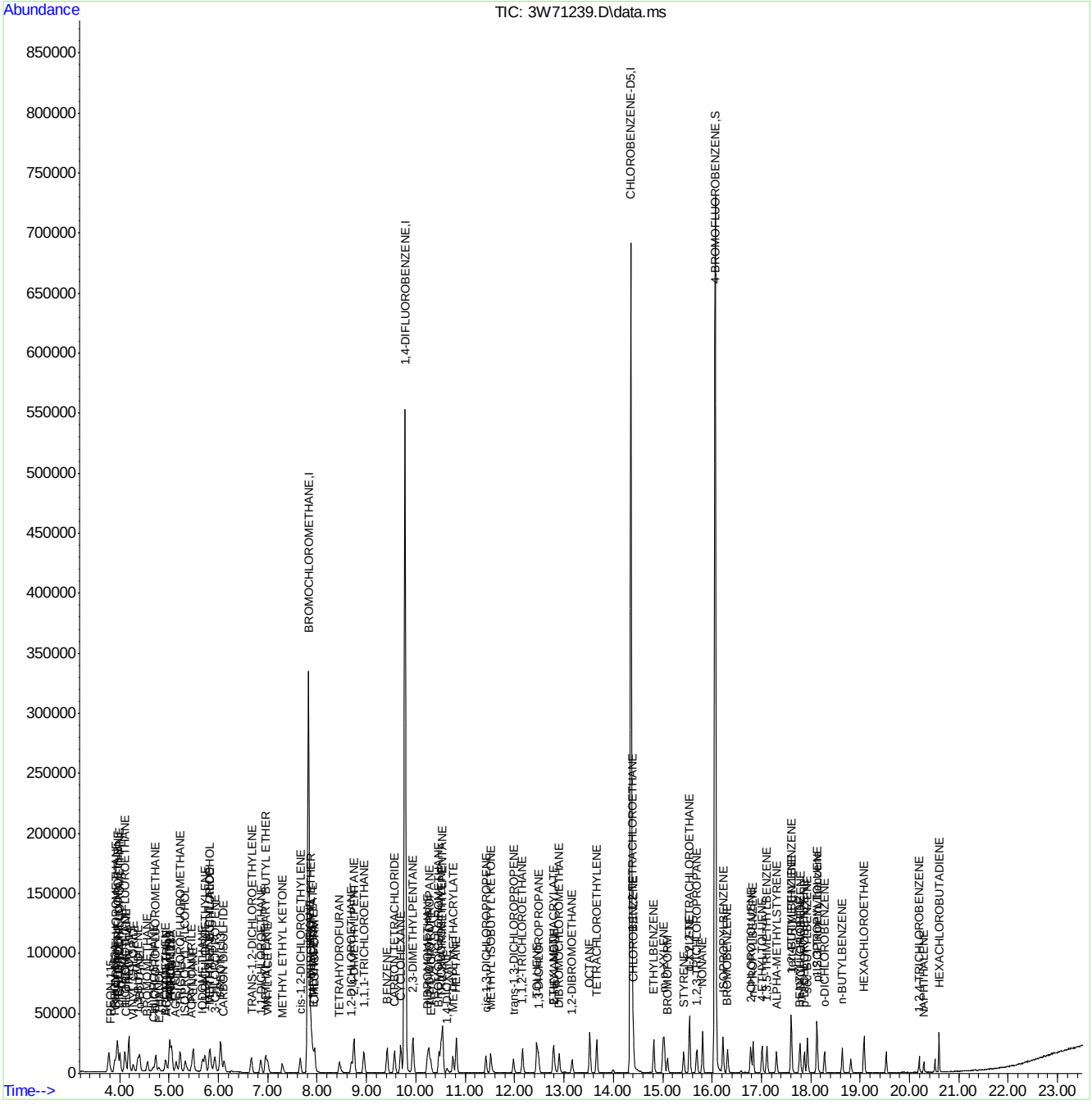
	Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
95)	tert-BUTYLBENZENE	17.602	134	3313	0.36	PPBV		95
96)	1,2,4-TRIMETHYLBENZENE	17.608	105	13556	0.32	PPBV		90
97)	m-DICHLOROBENZENE	17.788	146	8219	0.30	PPBV		99
98)	BENZYL CHLORIDE	17.769	91	8135	0.22	PPBV		99
99)	p-DICHLOROBENZENE	17.868	146	8027	0.29	PPBV		98
100)	sec-BUTYLBENZENE	17.932	134	3850	0.33	PPBV		95
101)	1,2,3-Trimethylbenzene	18.125	105	13533	0.32	PPBV		99
102)	p-ISOPROPYLTOLUENE	18.131	134	3771	0.30	PPBV		94
103)	o-DICHLOROBENZENE	18.279	146	7724	0.29	PPBV		98
104)	n-BUTYLBENZENE	18.635	134	2621	0.24	PPBV	#	81
105)	HEXACHLOROETHANE	19.078	117	5254	0.27	PPBV		99
106)	HEXACHLOROBUTADIENE	20.599	225	4634	0.38	PPBV		99
107)	1,2,4-TRICHLOROBENZENE	20.195	180	3210	0.27	PPBV		100
108)	NAPHTHALENE	20.291	128	5197	0.22	PPBV		99

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\
Data File : 3W71239.D
Acq On : 14 Jan 2020 11:44 am
Operator : danat
Sample : ic2789-0.5
Misc : MS40248,V3W2789,,,,,1
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Jan 14 16:53:22 2020
Quant Method : C:\msdchem\1\METHODS\M3W2789.M
Quant Title : TO15 by GCMS w/Rtx-1, 60 m X 0.32mm ID X 1.0 um
QLast Update : Tue Jan 14 16:52:09 2020
Response via : Initial Calibration



Manual Integration Approval Summary

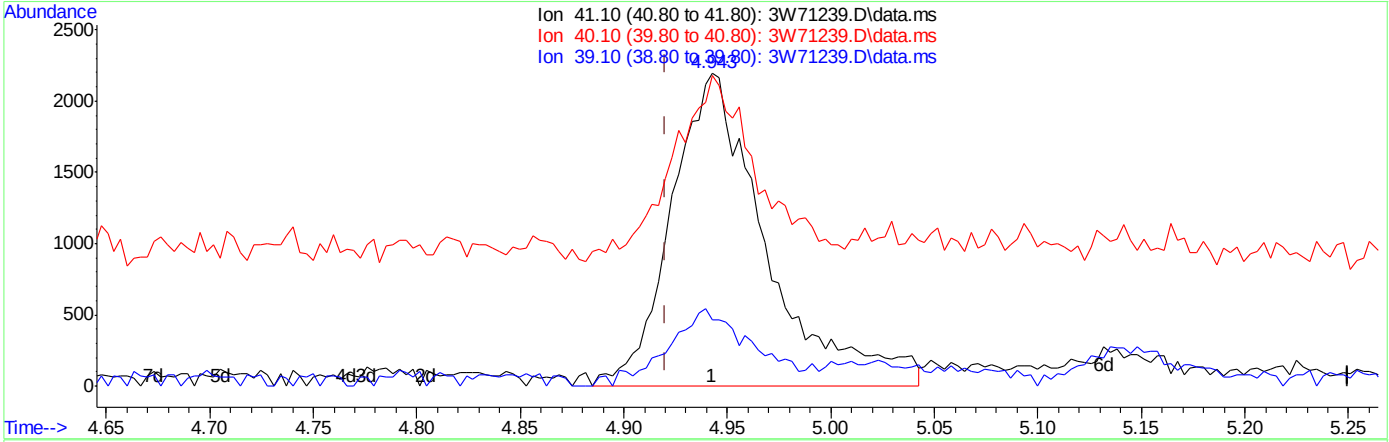
Sample Number: V3W2789-IC2789
Lab FileID: 3W71239.D
Injection Time: 01/14/20 11:44
Method: TO-15
Analyst approved: 01/15/20 09:41 Dana Tryon
Supervisor approved: 01/15/20 16:07 Dana Tryon

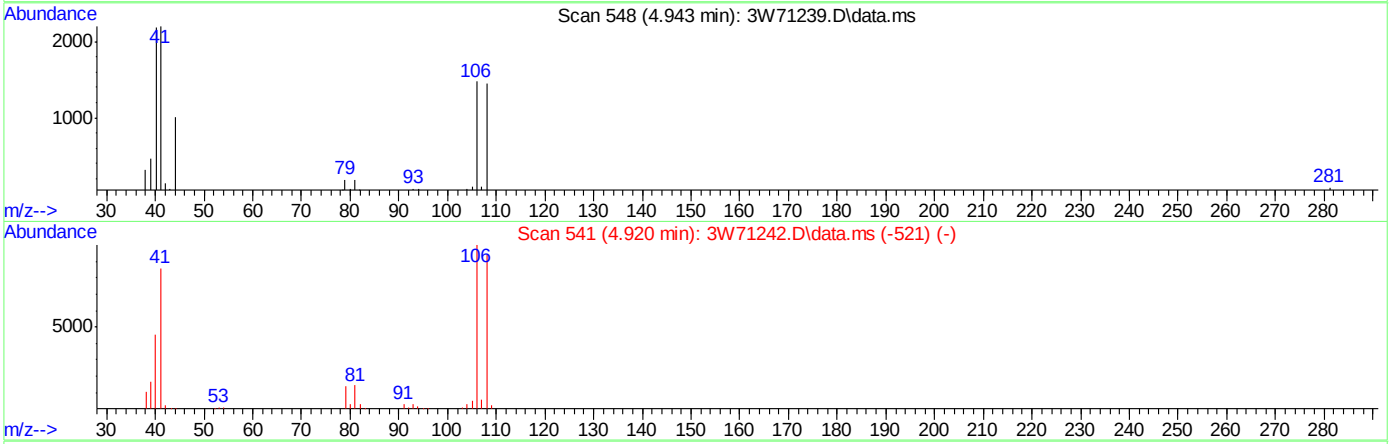
Parameter	CAS	Sig#	R.T. (min.)	Reason
Acetonitrile	75-05-8		4.94	Poor instrument integration

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\
Data File : 3W71239.D
Acq On : 14 Jan 2020 11:44 am
Operator : danat
Sample : ic2789-0.5
Misc : MS40248,V3W2789,,,,,1
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Jan 14 16:52:51 2020
Quant Method : C:\msdchem\1\METHODS\M3W2789.M
Quant Title : TO15 by GCMS w/Rtx-1, 60 m X 0.32mm ID X 1.0 um
QLast Update : Tue Jan 14 16:52:09 2020
Response via : Initial Calibration





TIC: 3W71239.D\data.ms

(17) ACETONITRILE

4.943min (+0.022) 0.63PPBV m

response 6985

Ion	Exp%	Act%
41.10	100	100
40.10	54.20	53.90
39.10	19.60	32.78#
0.00	0.00	0.00

Manual Integrations APPROVED (compounds with "m" flag)
Dana Tryon
01/15/20 16:07

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\
Data File : 3W71241.D
Acq On : 14 Jan 2020 1:41 pm
Operator : danat
Sample : ic2789-0.2
Misc : MS40248,V3W2789,,,,,1
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Jan 14 15:26:02 2020
Quant Method : C:\msdchem\1\METHODS\M3W2789.M
Quant Title : TO15 by GCMS w/Rtx-1, 60 m X 0.32mm ID X 1.0 um
QLast Update : Tue Jan 14 15:18:47 2020
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) BROMOCHLOROMETHANE	7.821	128	108180	10.00	PPBV		0.00
51) 1,4-DIFLUOROBENZENE	9.775	114	488952	10.00	PPBV		-0.01
70) CHLOROBENZENE-D5	14.354	82	249662	10.00	PPBV		0.00
System Monitoring Compounds							
85) 4-BROMOFLUOROBENZENE	16.062	95	278924	9.57	PPBV		0.00
Spiked Amount 10.000	Range 65 - 128		Recovery = 95.70%				
Target Compounds							Qvalue
2) FREON 115	3.816	119	100	0.20	PPBV	#	71
3) FREON 152A	3.900	65	2368	0.28	PPBV		100
4) CHLORODIFLUOROMETHANE	3.922	67	952	0.27	PPBV		96
5) CHLOROTRIFLUOROETHENE	3.958	116	4364	0.27	PPBV		97
6) DICHLORODIFLUOROMETHANE	4.006	85	9700	0.28	PPBV		99
7) PROPYLENE	3.958	41	3715	0.28	PPBV		95
8) 1-CHLORO-1,1-DIFLUOROE...	4.105	65	7356	0.28	PPBV	#	79
9) FREON 114	4.185	85	10090	0.29	PPBV		97
10) CHLOROMETHANE	4.128	52	1319	0.29	PPBV	#	86
11) VINYL CHLORIDE	4.272	62	4185	0.28	PPBV		99
12) 1,3-BUTADIENE	4.362	54	3038	0.28	PPBV	#	84
13) n-BUTANE	4.404	43	8449	0.36	PPBV	#	97
14) BROMOMETHANE	4.561	94	3644	0.29	PPBV		96
15) CHLOROETHANE	4.673	64	2012	0.28	PPBV		90
16) DICHLOROFLUOROMETHANE	4.731	67	8505	0.28	PPBV		98
17) ACETONITRILE	4.946	41	3283m	0.30	PPBV		
18) ACROLEIN	5.029	56	1470	0.26	PPBV		84
19) FREON 123	5.010	83	8747	0.28	PPBV		98
20) FREON 123A	5.052	117	4180	0.28	PPBV		98
21) TRICHLOROFLUOROMETHANE	5.225	101	8341	0.28	PPBV		99
22) ISOPROPYL ALCOHOL	5.341	45	7445	0.33	PPBV		94
23) ACETONE	5.151	58	1702	0.31	PPBV		94
24) PENTANE	5.491	42	4821	0.31	PPBV		97
25) IODOMETHANE	5.678	142	7812	0.27	PPBV		99
26) 1,1-DICHLOROETHYLENE	5.729	96	3322	0.27	PPBV		99
27) CARBON DISULFIDE	6.114	76	9527	0.26	PPBV	#	79
29) BROMOETHENE	4.927	106	3112	0.27	PPBV		98
30) ACRYLONITRILE	5.472	52	2027	0.24	PPBV		94
31) METHYLENE CHLORIDE	5.815	84	3988	0.33	PPBV		96
32) 3-CHLOROPROPENE	5.928	76	1671	0.26	PPBV	#	84
33) FREON 113	6.047	151	4841	0.27	PPBV		97
34) TRANS-1,2-DICHLOROETHY...	6.663	96	3038	0.25	PPBV		96
35) TERTIARY BUTYL ALCOHOL	5.844	59	6585	0.29	PPBV		98
36) METHYL TERTIARY BUTYL ...	6.967	73	8151	0.26	PPBV		95
37) TETRAHYDROFURAN	8.472	72	1319	0.24	PPBV		96
38) HEXANE	7.856	57	5823	0.26	PPBV		94
39) VINYL ACETATE	7.003	86	468	0.20	PPBV	#	19
40) 1,1-DICHLOROETHANE	6.855	63	6910	0.27	PPBV		99
41) METHYL ETHYL KETONE	7.301	72	1248	0.24	PPBV		92
42) cis-1,2-DICHLOROETHYLENE	7.661	96	3206	0.24	PPBV		98

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\
Data File : 3W71241.D
Acq On : 14 Jan 2020 1:41 pm
Operator : danat
Sample : ic2789-0.2
Misc : MS40248,V3W2789,,,,,1
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Jan 14 15:26:02 2020
Quant Method : C:\msdchem\1\METHODS\M3W2789.M
Quant Title : TO15 by GCMS w/Rtx-1, 60 m X 0.32mm ID X 1.0 um
QLast Update : Tue Jan 14 15:18:47 2020
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
43) DIISOPROPYL ETHER	7.888	59	1388	0.24	PPBV	#	85
44) ETHYL ACETATE	7.921	61	920	0.26	PPBV	#	62
45) METHYL ACRYLATE	7.901	55	5520m	0.24	PPBV		
46) CHLOROFORM	7.943	83	7235	0.26	PPBV		90
47) 2,4-DIMETHYLPENTANE	8.745	57	6582	0.25	PPBV		93
48) 1,1,1-TRICHLOROETHANE	8.947	97	6899	0.26	PPBV		98
49) CARBON TETRACHLORIDE	9.563	117	6215	0.24	PPBV		99
50) 1,2-DICHLOROETHANE	8.687	62	4329	0.24	PPBV		98
52) BENZENE	9.413	78	10307	0.26	PPBV		99
53) CYCLOHEXANE	9.695	84	4232	0.26	PPBV		97
54) 2,3-DIMETHYLPENTANE	9.939	71	2432	0.27	PPBV		94
55) TRICHLOROETHYLENE	10.507	95	3943	0.24	PPBV		97
56) 1,2-DICHLOROPROPANE	10.263	63	3972	0.26	PPBV		99
57) DIBROMOMETHANE	10.234	174	3078	0.24	PPBV		97
58) ETHYL ACRYLATE	10.308	55	5308	0.22	PPBV	#	97
59) BROMODICHLOROMETHANE	10.465	83	6740	0.23	PPBV		98
60) 2,2,4-TRIMETHYLPENTANE	10.539	57	17844	0.26	PPBV		96
61) 1,4-DIOXANE	10.648	88	1670	0.26	PPBV	#	1
62) HEPTANE	10.821	43	6811	0.26	PPBV		98
63) METHYL METHACRYLATE	10.757	69	2694	0.24	PPBV		96
64) METHYL ISOBUTYL KETONE	11.527	58	2298	0.24	PPBV		91
65) cis-1,3-DICHLOROPROPENE	11.421	75	4521	0.21	PPBV		98
66) TOLUENE	12.448	92	5582	0.22	PPBV		99
67) 1,3-DICHLOROPROPANE	12.487	76	4443	0.22	PPBV	#	99
68) trans-1,3-DICHLOROPROPENE	11.980	75	3301	0.18	PPBV		95
69) 1,1,2-TRICHLOROETHANE	12.163	83	3082	0.23	PPBV		99
71) 2-HEXANONE	12.804	58	2733	0.22	PPBV	#	86
72) ETHYL METHACRYLATE	12.788	69	3364	0.20	PPBV		89
73) TETRACHLOROETHYLENE	13.661	164	3409	0.22	PPBV		99
74) DIBROMOCHLOROMETHANE	12.904	129	4694	0.19	PPBV		99
75) 1,2-DIBROMOETHANE	13.167	107	4005	0.19	PPBV	#	99
76) OCTANE	13.520	43	8115	0.23	PPBV		98
77) 1,1,1,2-TETRACHLOROETHANE	14.390	131	3691	0.22	PPBV		99
78) CHLOROBENZENE	14.403	112	6518	0.20	PPBV		94
79) ETHYLBENZENE	14.820	91	11120	0.22	PPBV		98
80) m,p-XYLENE	15.022	106	7362	0.38	PPBV		95
81) o-XYLENE	15.542	106	4018	0.21	PPBV		99
82) STYRENE	15.426	104	4261	0.14	PPBV		99
83) NONANE	15.808	43	6674	0.19	PPBV		98
84) BROMOFORM	15.096	173	3329	0.15	PPBV		96
86) 1,1,2,2-TETRACHLOROETHANE	15.542	83	6275	0.20	PPBV		99
87) 1,2,3-TRICHLOROPROPANE	15.689	75	4691	0.20	PPBV		99
88) ISOPROPYLBENZENE	16.222	105	9956	0.18	PPBV		99
89) BROMOBENZENE	16.315	77	5012	0.17	PPBV		96
90) 2-CHLOROTOLUENE	16.784	126	2223	0.17	PPBV		95
91) n-PROPYLBENZENE	16.825	120	2054	0.14	PPBV		99
92) 4-ETHYLTOLUENE	17.015	105	7489m	0.15	PPBV		
93) 1,3,5-TRIMETHYLBENZENE	17.114	105	6462	0.15	PPBV		95
94) ALPHA-METHYLSTYRENE	17.310	118	2551	0.11	PPBV		97
95) tert-BUTYLBENZENE	17.602	134	1480	0.16	PPBV		95

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\
Data File : 3W71241.D
Acq On : 14 Jan 2020 1:41 pm
Operator : danat
Sample : ic2789-0.2
Misc : MS40248,V3W2789,,,,,1
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Jan 14 15:26:02 2020
Quant Method : C:\msdchem\1\METHODS\M3W2789.M
Quant Title : TO15 by GCMS w/Rtx-1, 60 m X 0.32mm ID X 1.0 um
QLast Update : Tue Jan 14 15:18:47 2020
Response via : Initial Calibration

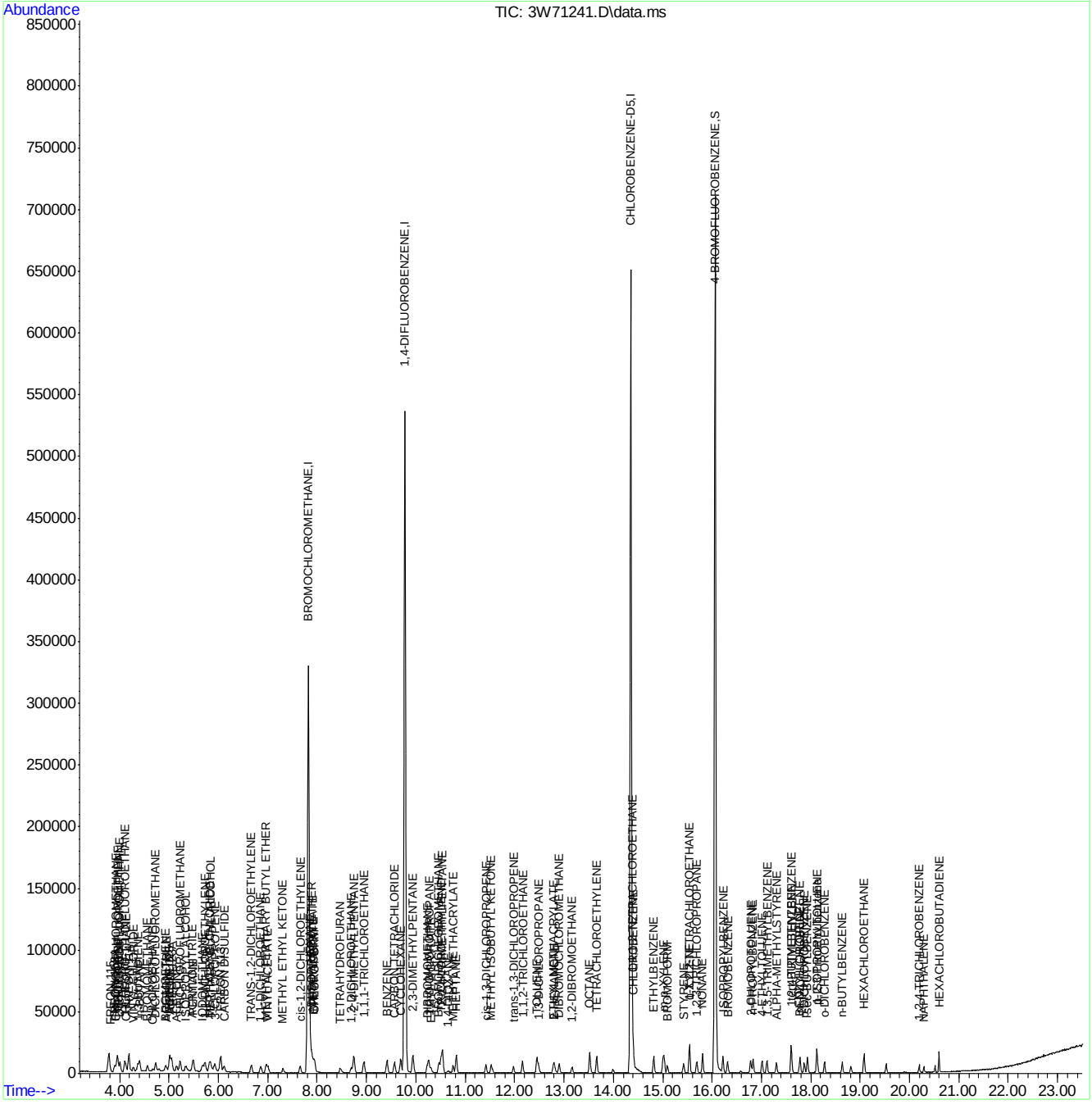
Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
96) 1,2,4-TRIMETHYLBENZENE	17.611	105	5969	0.14	PPBV		88
97) m-DICHLOROBENZENE	17.782	146	3947	0.14	PPBV		99
98) BENZYL CHLORIDE	17.772	91	3911	0.11	PPBV		98
99) p-DICHLOROBENZENE	17.865	146	3827	0.14	PPBV		99
100) sec-BUTYLBENZENE	17.932	134	1627	0.14	PPBV	#	78
101) 1,2,3-Trimethylbenzene	18.125	105	5916	0.13	PPBV		98
102) p-ISOPROPYLTOLUENE	18.128	134	1640	0.13	PPBV	#	90
103) o-DICHLOROBENZENE	18.279	146	3713	0.14	PPBV		99
104) n-BUTYLBENZENE	18.635	134	1206	0.11	PPBV	#	88
105) HEXACHLOROETHANE	19.078	117	2712	0.14	PPBV		96
106) HEXACHLOROBUTADIENE	20.599	225	2222	0.18	PPBV		98
107) 1,2,4-TRICHLOROBENZENE	20.198	180	1635	0.14	PPBV		94
108) NAPHTHALENE	20.291	128	2629	0.12	PPBV		95

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\
Data File : 3W71241.D
Acq On : 14 Jan 2020 1:41 pm
Operator : danat
Sample : ic2789-0.2
Misc : MS40248,V3W2789,,,,,1
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Jan 14 15:26:02 2020
Quant Method : C:\msdchem\1\METHODS\M3W2789.M
Quant Title : TO15 by GCMS w/Rtx-1, 60 m X 0.32mm ID X 1.0 um
QLast Update : Tue Jan 14 15:18:47 2020
Response via : Initial Calibration



Manual Integration Approval Summary

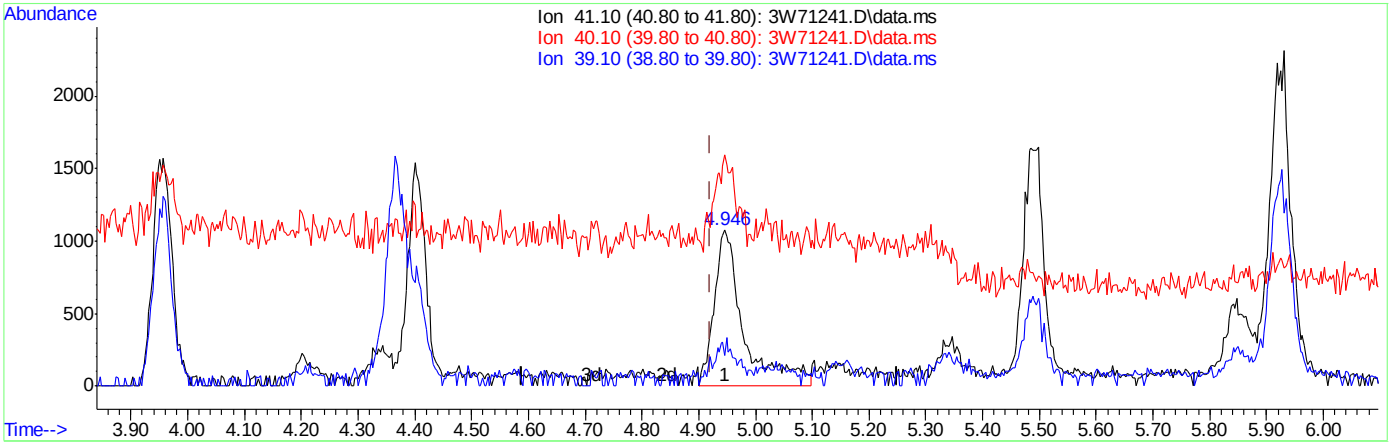
Sample Number: V3W2789-IC2789 **Method:** TO-15
Lab FileID: 3W71241.D **Analyst approved:** 01/15/20 09:41 Dana Tryon
Injection Time: 01/14/20 13:41 **Supervisor approved:** 01/15/20 16:07 Dana Tryon

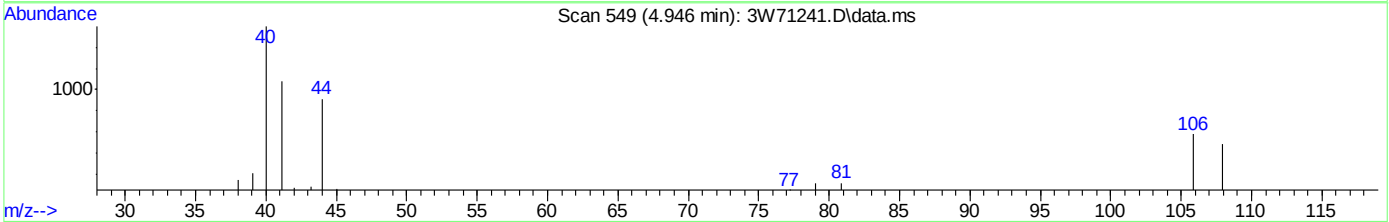
Parameter	CAS	Sig#	R.T. (min.)	Reason
Acetonitrile	75-05-8		4.95	Poor instrument integration
4-Ethyltoluene	622-96-8		17.01	Poor instrument integration

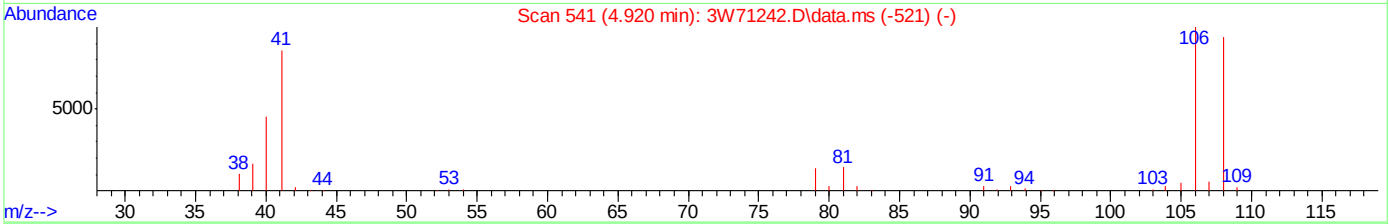
Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\
Data File : 3W71241.D
Acq On : 14 Jan 2020 1:41 pm
Operator : danat
Sample : icc2789-10
Misc : MS40248,V3W2789,,,,,1
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Jan 14 15:18:54 2020
Quant Method : C:\msdchem\1\METHODS\M3W2789.M
Quant Title : TO15 by GCMS w/Rtx-1, 60 m X 0.32mm ID X 1.0 um
QLast Update : Tue Jan 14 15:18:47 2020
Response via : Initial Calibration







TIC: 3W71241.D\data.ms

(17) ACETONITRILE

4.946min (+0.026) 0.35PPBV

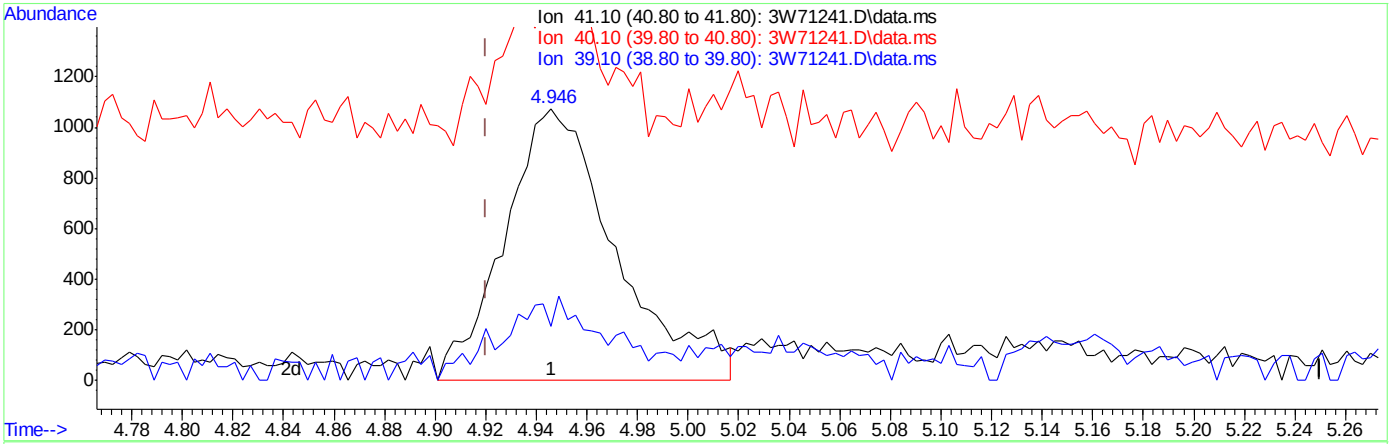
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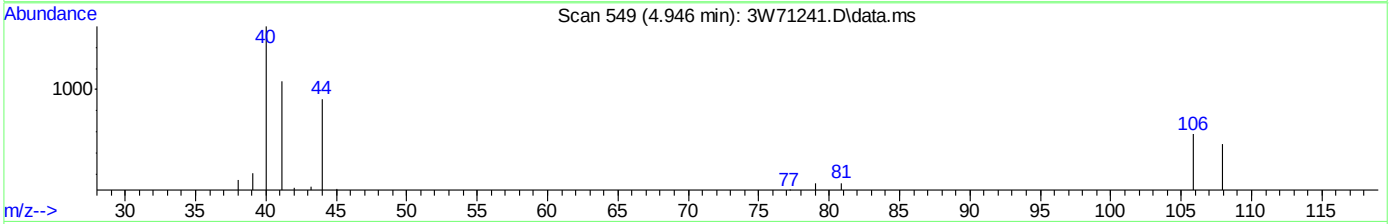
Ion	Exp%	Act%
41.10	100	100
40.10	54.20	48.24
39.10	19.60	15.41#
0.00	0.00	0.00

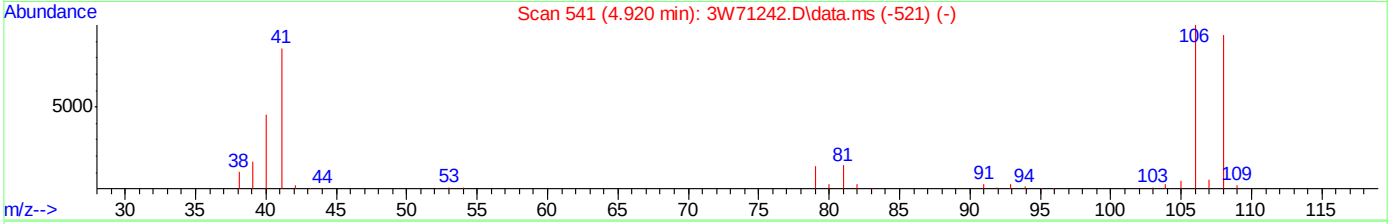
Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\
Data File : 3W71241.D
Acq On : 14 Jan 2020 1:41 pm
Operator : danat
Sample : icc2789-10
Misc : MS40248,V3W2789,,,,,1
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Jan 14 15:18:54 2020
Quant Method : C:\msdchem\1\METHODS\M3W2789.M
Quant Title : TO15 by GCMS w/Rtx-1, 60 m X 0.32mm ID X 1.0 um
QLast Update : Tue Jan 14 15:18:47 2020
Response via : Initial Calibration







TIC: 3W71241.D\data.ms

(17) ACETONITRILE

4.946min (+0.026) 0.30PPBV m

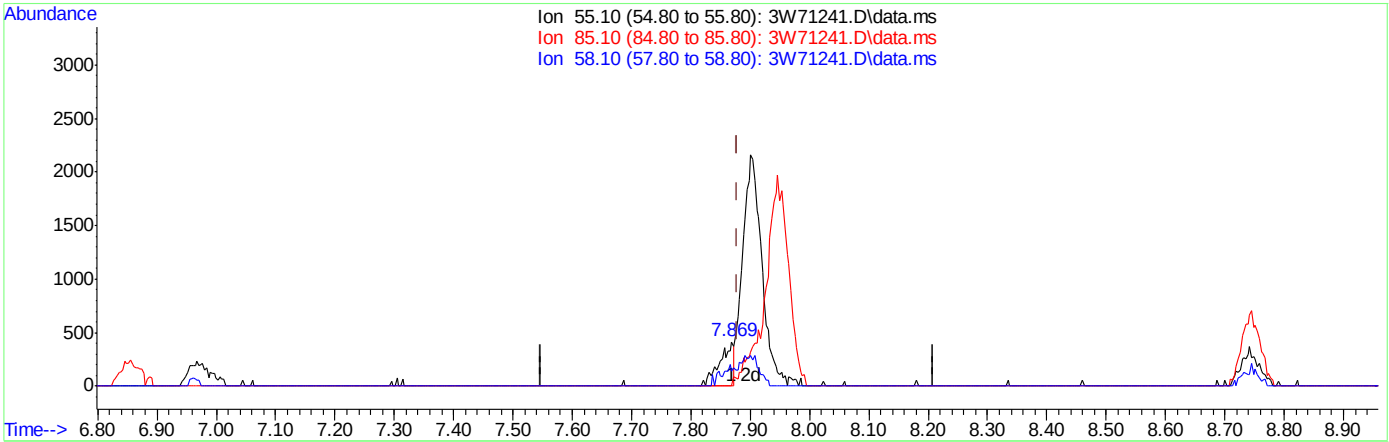
response 3283

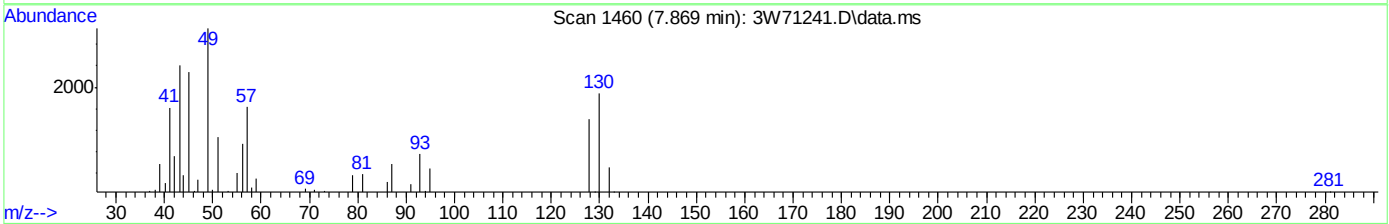
Ion	Exp%	Act%
41.10	100	100
40.10	54.20	56.72
39.10	19.60	18.12
0.00	0.00	0.00

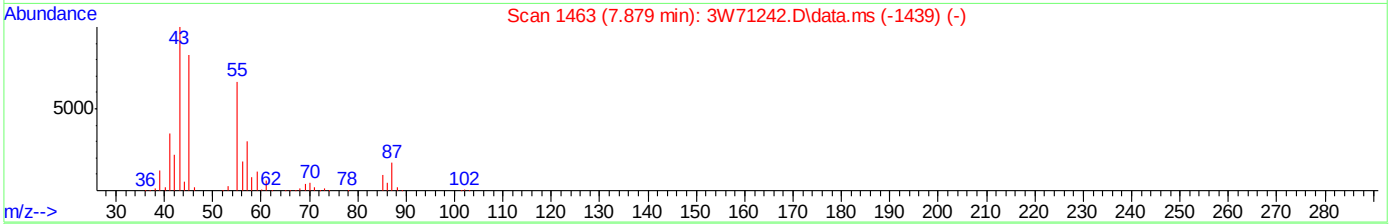
Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\
Data File : 3W71241.D
Acq On : 14 Jan 2020 1:41 pm
Operator : danat
Sample : icc2789-10
Misc : MS40248,V3W2789,,,,,1
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Jan 14 15:18:54 2020
Quant Method : C:\msdchem\1\METHODS\M3W2789.M
Quant Title : TO15 by GCMS w/Rtx-1, 60 m X 0.32mm ID X 1.0 um
QLast Update : Tue Jan 14 15:18:47 2020
Response via : Initial Calibration







TIC: 3W71241.D\data.ms

(45) METHYL ACRYLATE

7.869min (-0.010) 0.03PPBV

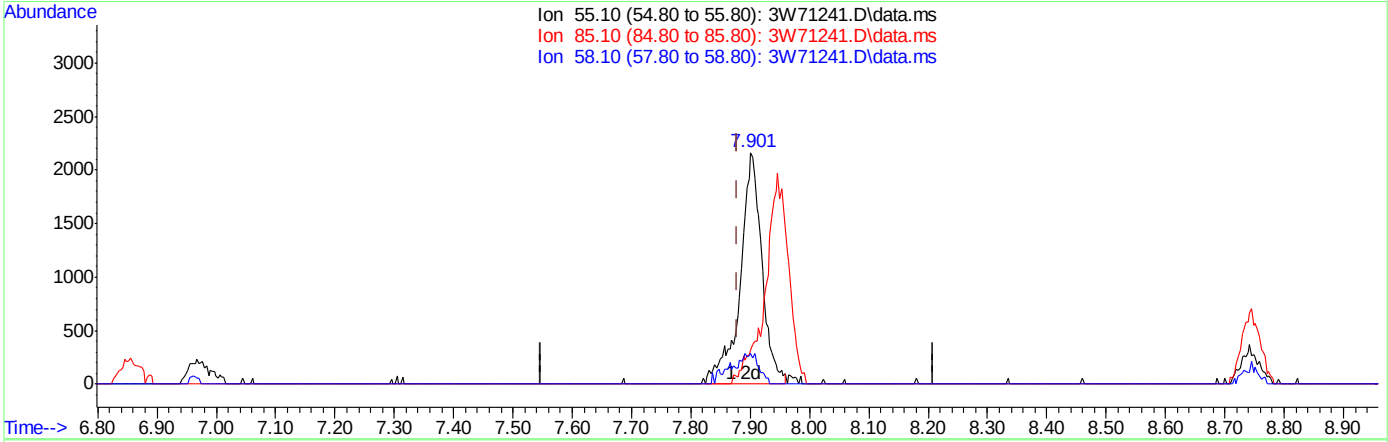
response 689

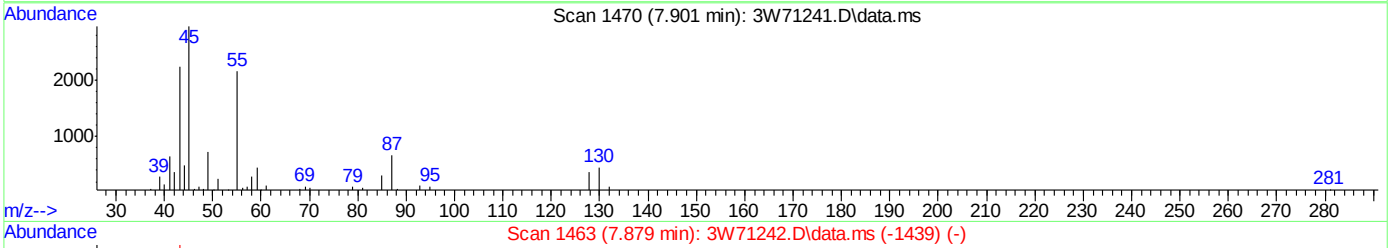
Ion	Exp%	Act%
55.10	100	100
85.10	14.50	0.00#
58.10	14.70	0.00#
0.00	0.00	0.00

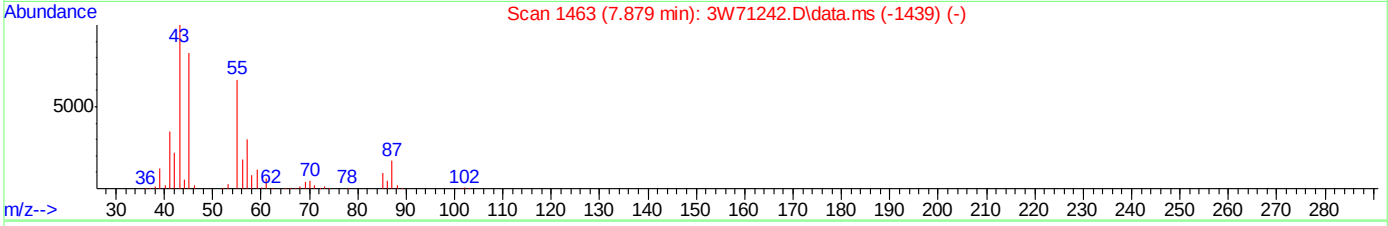
Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\
Data File : 3W71241.D
Acq On : 14 Jan 2020 1:41 pm
Operator : danat
Sample : icc2789-10
Misc : MS40248,V3W2789,,,,,1
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Jan 14 15:18:54 2020
Quant Method : C:\msdchem\1\METHODS\M3W2789.M
Quant Title : TO15 by GCMS w/Rtx-1, 60 m X 0.32mm ID X 1.0 um
QLast Update : Tue Jan 14 15:18:47 2020
Response via : Initial Calibration







TIC: 3W71241.D\data.ms

(45) METHYL ACRYLATE

7.901min (+0.023) 0.24PPBV m

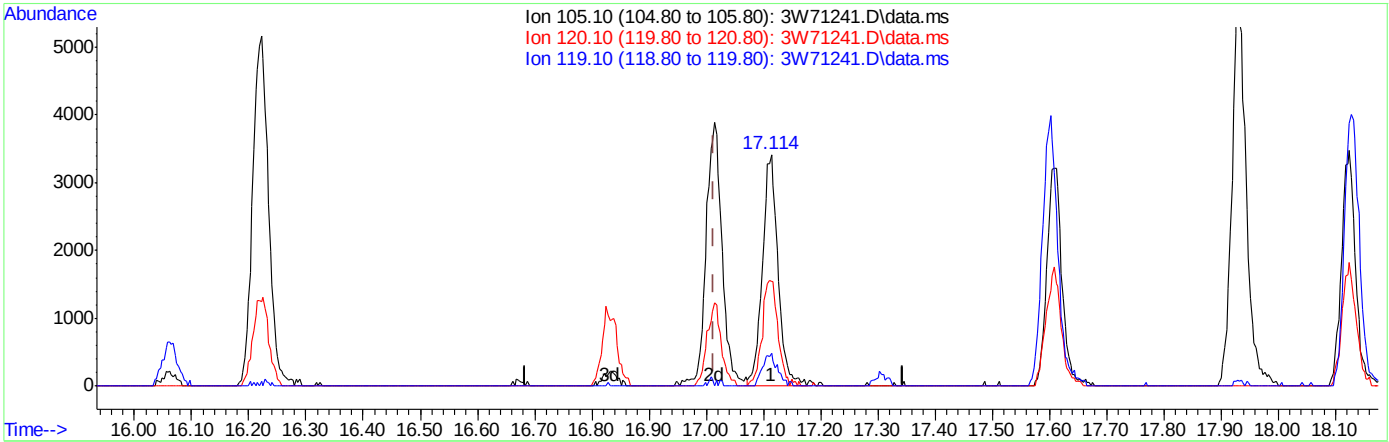
response 5520

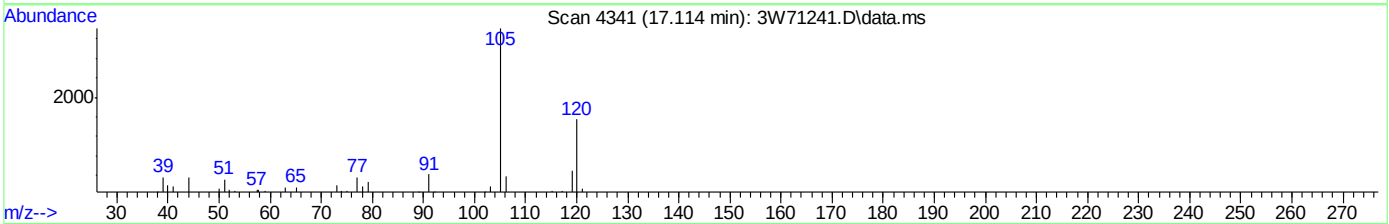
Ion	Exp%	Act%
55.10	100	100
85.10	14.50	0.00#
58.10	14.70	0.00#
0.00	0.00	0.00

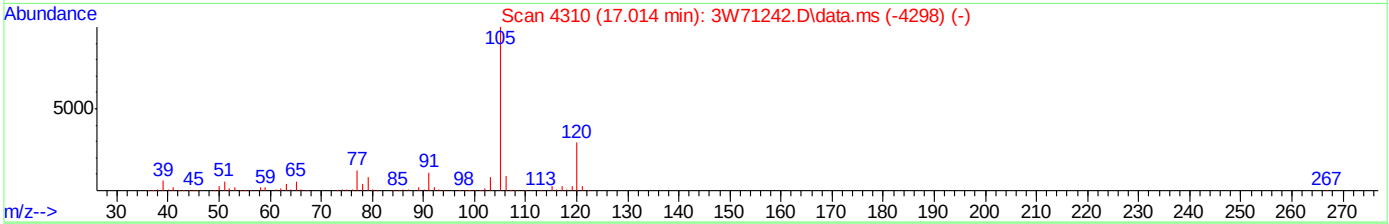
Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\
Data File : 3W71241.D
Acq On : 14 Jan 2020 1:41 pm
Operator : danat
Sample : icc2789-10
Misc : MS40248,V3W2789,,,,,1
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Jan 14 15:18:54 2020
Quant Method : C:\msdchem\1\METHODS\M3W2789.M
Quant Title : TO15 by GCMS w/Rtx-1, 60 m X 0.32mm ID X 1.0 um
QLast Update : Tue Jan 14 15:18:47 2020
Response via : Initial Calibration







TIC: 3W71241.D\data.ms

(92) 4-ETHYLTOLUENE

17.114min (+0.100) 0.13PPBV

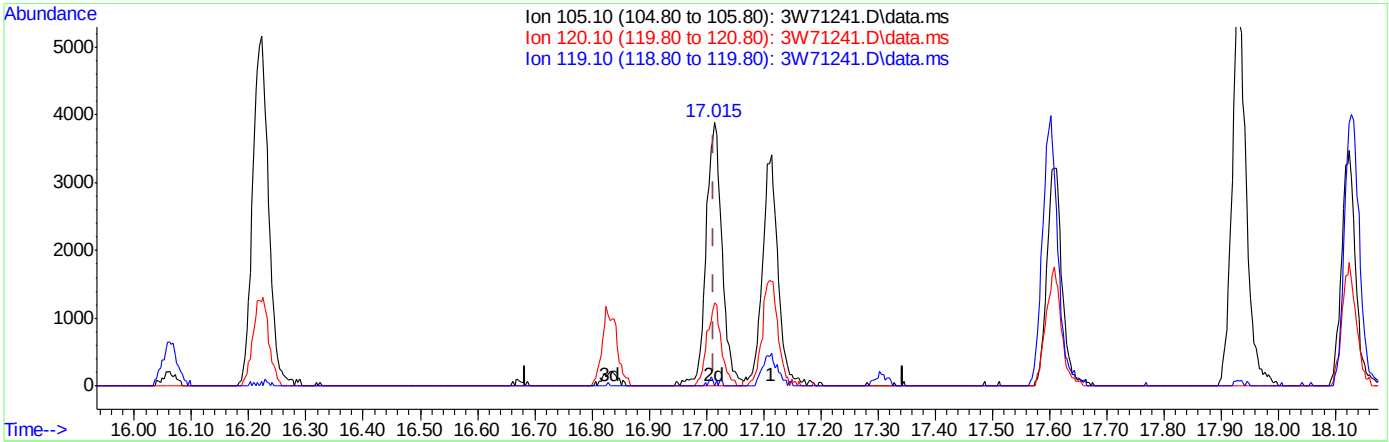
response 6462

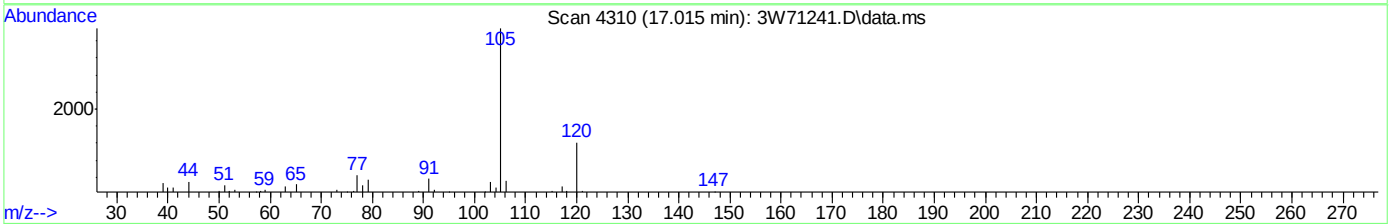
Ion	Exp%	Act%
105.10	100	100
120.10	29.20	46.13
119.10	2.40	13.32
0.00	0.00	0.00

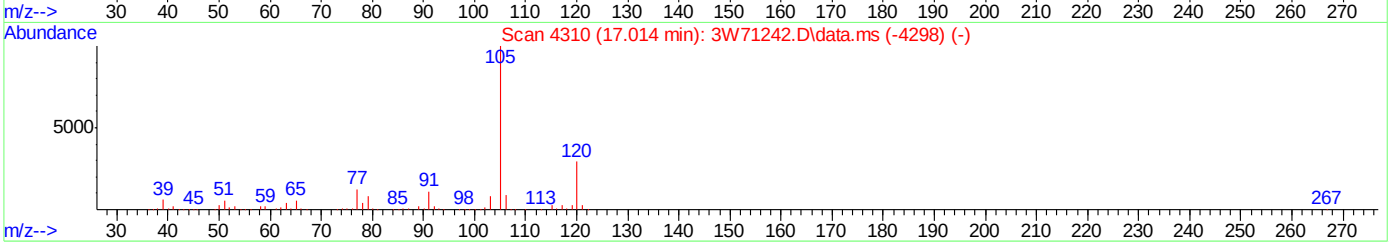
Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\
Data File : 3W71241.D
Acq On : 14 Jan 2020 1:41 pm
Operator : danat
Sample : icc2789-10
Misc : MS40248,V3W2789,,,,,1
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Jan 14 15:18:54 2020
Quant Method : C:\msdchem\1\METHODS\M3W2789.M
Quant Title : TO15 by GCMS w/Rtx-1, 60 m X 0.32mm ID X 1.0 um
QLast Update : Tue Jan 14 15:18:47 2020
Response via : Initial Calibration







TIC: 3W71241.D\data.ms

(92) 4-ETHYLTOLUENE

17.015min (+0.000) 0.15PPBV m

response 7489

Ion	Exp%	Act%
105.10	100	100
120.10	29.20	39.81
119.10	2.40	11.50
0.00	0.00	0.00

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\
Data File : 3W71242.D
Acq On : 14 Jan 2020 2:33 pm
Operator : danat
Sample : icc2789-10
Misc : MS40248,V3W2789,,,,,1
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Jan 14 15:17:17 2020
Quant Method : C:\msdchem\1\METHODS\M3W2789.M
Quant Title : TO15 by GCMS w/Rtx-1, 60 m X 0.32mm ID X 1.0 um
QLast Update : Tue Jan 14 15:16:55 2020
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) BROMOCHLOROMETHANE	7.831	128	107344	10.00	PPBV	0.00
51) 1,4-DIFLUOROBENZENE	9.788	114	517280	10.00	PPBV	0.00
70) CHLOROBENZENE-D5	14.358	82	269710	10.00	PPBV	0.00
System Monitoring Compounds						
85) 4-BROMOFLUOROBENZENE	16.065	95	314885	10.00	PPBV	0.00
Spiked Amount 10.000	Range 65 - 128		Recovery = 100.00%			
Target Compounds						Qvalue
2) FREON 115	3.819	119	4976	10.00	PPBV	100
3) FREON 152A	3.896	65	84482	10.00	PPBV	100
4) CHLORODIFLUOROMETHANE	3.929	67	34482	10.00	PPBV	100
5) CHLOROTRIFLUOROETHENE	3.957	116	160415	10.00	PPBV	100
6) DICHLORODIFLUOROMETHANE	4.006	85	339522	10.00	PPBV	100
7) PROPYLENE	3.954	41	130156	10.00	PPBV	100
8) 1-CHLORO-1,1-DIFLUOROE...	4.102	65	259128	10.00	PPBV	100
9) FREON 114	4.185	85	341517	10.00	PPBV	100
10) CHLOROMETHANE	4.121	52	45498	10.00	PPBV	100
11) VINYL CHLORIDE	4.275	62	146267	10.00	PPBV	100
12) 1,3-BUTADIENE	4.368	54	108938	10.00	PPBV	100
13) n-BUTANE	4.403	43	231997	10.00	PPBV	100
14) BROMOMETHANE	4.561	94	124173	10.00	PPBV	100
15) CHLOROETHANE	4.673	64	71943	10.00	PPBV	100
16) DICHLOROFLUOROMETHANE	4.728	67	301507	10.00	PPBV	100
17) ACETONITRILE	4.920	41	110140	10.00	PPBV	100
18) ACROLEIN	5.007	56	55945	10.00	PPBV	100
19) FREON 123	5.010	83	309640	10.00	PPBV	100
20) FREON 123A	5.052	117	147952	10.00	PPBV	100
21) TRICHLOROFLUOROMETHANE	5.225	101	295615	10.00	PPBV	100
22) ISOPROPYL ALCOHOL	5.292	45	221016	10.00	PPBV	100
23) ACETONE	5.113	58	54104	10.00	PPBV	100
24) PENTANE	5.488	42	156020	10.00	PPBV	100
25) IODOMETHANE	5.674	142	289860	10.00	PPBV	100
26) 1,1-DICHLOROETHYLENE	5.729	96	120671	10.00	PPBV	100
27) CARBON DISULFIDE	6.117	76	364283	10.00	PPBV	100
28) ETHANOL	4.766	45	55714	10.00	PPBV	100
29) BROMOETHENE	4.923	106	114385	10.00	PPBV	100
30) ACRYLONITRILE	5.450	52	83084	10.00	PPBV	100
31) METHYLENE CHLORIDE	5.822	84	119214	10.00	PPBV	100
32) 3-CHLOROPROPENE	5.928	76	63025	10.00	PPBV	100
33) FREON 113	6.043	151	178674	10.00	PPBV	100
34) TRANS-1,2-DICHLOROETHY...	6.666	96	121449	10.00	PPBV	100
35) TERTIARY BUTYL ALCOHOL	5.780	59	226269	10.00	PPBV	100
36) METHYL TERTIARY BUTYL ...	6.922	73	315544	10.00	PPBV	100
37) TETRAHYDROFURAN	8.392	72	54073	10.00	PPBV	100
38) HEXANE	7.859	57	221325	10.00	PPBV	100
39) VINYL ACETATE	6.996	86	23495	10.00	PPBV	100
40) 1,1-DICHLOROETHANE	6.862	63	255442	10.00	PPBV	100
41) METHYL ETHYL KETONE	7.256	72	51782	10.00	PPBV	100

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\
Data File : 3W71242.D
Acq On : 14 Jan 2020 2:33 pm
Operator : danat
Sample : icc2789-10
Misc : MS40248,V3W2789,,,,,1
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Jan 14 15:17:17 2020
Quant Method : C:\msdchem\1\METHODS\M3W2789.M
Quant Title : TO15 by GCMS w/Rtx-1, 60 m X 0.32mm ID X 1.0 um
QLast Update : Tue Jan 14 15:16:55 2020
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
42) cis-1,2-DICHLOROETHYLENE	7.661	96	131894	10.00	PPBV		100
43) DIISOPROPYL ETHER	7.863	59	57705	10.00	PPBV		100
44) ETHYL ACETATE	7.898	61	35300	10.00	PPBV	#	100
45) METHYL ACRYLATE	7.879	55	230959	10.00	PPBV		100
46) CHLOROFORM	7.959	83	274956	10.00	PPBV		100
47) 2,4-DIMETHYLPENTANE	8.745	57	266174	10.00	PPBV		100
48) 1,1,1-TRICHLOROETHANE	8.950	97	259983	10.00	PPBV		100
49) CARBON TETRACHLORIDE	9.573	117	252154	10.00	PPBV		100
50) 1,2-DICHLOROETHANE	8.697	62	178128	10.00	PPBV		100
52) BENZENE	9.422	78	425502	10.00	PPBV		100
53) CYCLOHEXANE	9.698	84	172804	10.00	PPBV		100
54) 2,3-DIMETHYLPENTANE	9.945	71	94206	10.00	PPBV		100
55) TRICHLOROETHYLENE	10.513	95	175621	10.00	PPBV		100
56) 1,2-DICHLOROPROPANE	10.269	63	160735	10.00	PPBV		100
57) DIBROMOMETHANE	10.240	174	134798	10.00	PPBV		100
58) ETHYL ACRYLATE	10.289	55	251511	10.00	PPBV		100
59) BROMODICHLOROMETHANE	10.472	83	307997	10.00	PPBV		100
60) 2,2,4-TRIMETHYLPENTANE	10.542	57	730205	10.00	PPBV		100
61) 1,4-DIOXANE	10.555	88	68483	10.00	PPBV		100
62) HEPTANE	10.825	43	279449	10.00	PPBV		100
63) METHYL METHACRYLATE	10.741	69	120732	10.00	PPBV		100
64) METHYL ISOBUTYL KETONE	11.482	58	100747	10.00	PPBV		100
65) cis-1,3-DICHLOROPROPENE	11.425	75	228112	10.00	PPBV		100
66) TOLUENE	12.455	92	269498	10.00	PPBV		100
67) 1,3-DICHLOROPROPANE	12.487	76	218474	10.00	PPBV	#	100
68) trans-1,3-DICHLOROPROPENE	11.983	75	193225	10.00	PPBV		100
69) 1,1,2-TRICHLOROETHANE	12.163	83	141590	10.00	PPBV		100
71) 2-HEXANONE	12.769	58	134710	10.00	PPBV		100
72) ETHYL METHACRYLATE	12.772	69	184909	10.00	PPBV		100
73) TETRACHLOROETHYLENE	13.668	164	164534	10.00	PPBV		100
74) DIBROMOCHLOROMETHANE	12.907	129	265205	10.00	PPBV		100
75) 1,2-DIBROMOETHANE	13.167	107	227452	10.00	PPBV		100
76) OCTANE	13.526	43	380901	10.00	PPBV		100
77) 1,1,1,2-TETRACHLOROETHANE	14.393	131	183214	10.00	PPBV		100
78) CHLOROBENZENE	14.409	112	345371	10.00	PPBV		100
79) ETHYLBENZENE	14.823	91	556149	10.00	PPBV		100
80) m,p-XYLENE	15.028	106	414705	20.00	PPBV		100
81) o-XYLENE	15.548	106	204840	10.00	PPBV		100
82) STYRENE	15.426	104	322167	10.00	PPBV		100
83) NONANE	15.811	43	376415	10.00	PPBV		100
84) BROMOFORM	15.102	173	234521	10.00	PPBV		100
86) 1,1,2,2-TETRACHLOROETHANE	15.545	83	332909	10.00	PPBV		100
87) 1,2,3-TRICHLOROPROPANE	15.692	75	249322	10.00	PPBV		100
88) ISOPROPYLBENZENE	16.225	105	600699	10.00	PPBV		100
89) BROMOBENZENE	16.318	77	325063	10.00	PPBV		100
90) 2-CHLOROTOLUENE	16.783	126	145133	10.00	PPBV		100
91) n-PROPYLBENZENE	16.835	120	156805	10.00	PPBV		100
92) 4-ETHYLTOLUENE	17.014	105	552647	10.00	PPBV		100
93) 1,3,5-TRIMETHYLBENZENE	17.114	105	469151	10.00	PPBV		100
94) ALPHA-METHYLSTYRENE	17.307	118	240855	10.00	PPBV		100

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\
Data File : 3W71242.D
Acq On : 14 Jan 2020 2:33 pm
Operator : danat
Sample : icc2789-10
Misc : MS40248,V3W2789,,,,,1
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Jan 14 15:17:17 2020
Quant Method : C:\msdchem\1\METHODS\M3W2789.M
Quant Title : TO15 by GCMS w/Rtx-1, 60 m X 0.32mm ID X 1.0 um
QLast Update : Tue Jan 14 15:16:55 2020
Response via : Initial Calibration

	Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
95)	tert-BUTYLBENZENE	17.605	134	101874	10.00	PPBV	100
96)	1,2,4-TRIMETHYLBENZENE	17.611	105	465134	10.00	PPBV	100
97)	m-DICHLOROBENZENE	17.788	146	301149	10.00	PPBV	100
98)	BENZYL CHLORIDE	17.775	91	396619	10.00	PPBV	100
99)	p-DICHLOROBENZENE	17.871	146	297393	10.00	PPBV	100
100)	sec-BUTYLBENZENE	17.932	134	127232	10.00	PPBV	100
101)	1,2,3-Trimethylbenzene	18.125	105	475083	10.00	PPBV #	73
102)	p-ISOPROPYLTOLUENE	18.131	134	136446	10.00	PPBV	100
103)	o-DICHLOROBENZENE	18.282	146	285302	10.00	PPBV	100
104)	n-BUTYLBENZENE	18.638	134	119118	10.00	PPBV	100
105)	HEXACHLOROETHANE	19.078	117	212797	10.00	PPBV	100
106)	HEXACHLOROBUTADIENE	20.599	225	135513	10.00	PPBV	100
107)	1,2,4-TRICHLOROBENZENE	20.195	180	125846	10.00	PPBV	100
108)	NAPHTHALENE	20.291	128	243064	10.00	PPBV	100

(#) = qualifier out of range (m) = manual integration (+) = signals summed

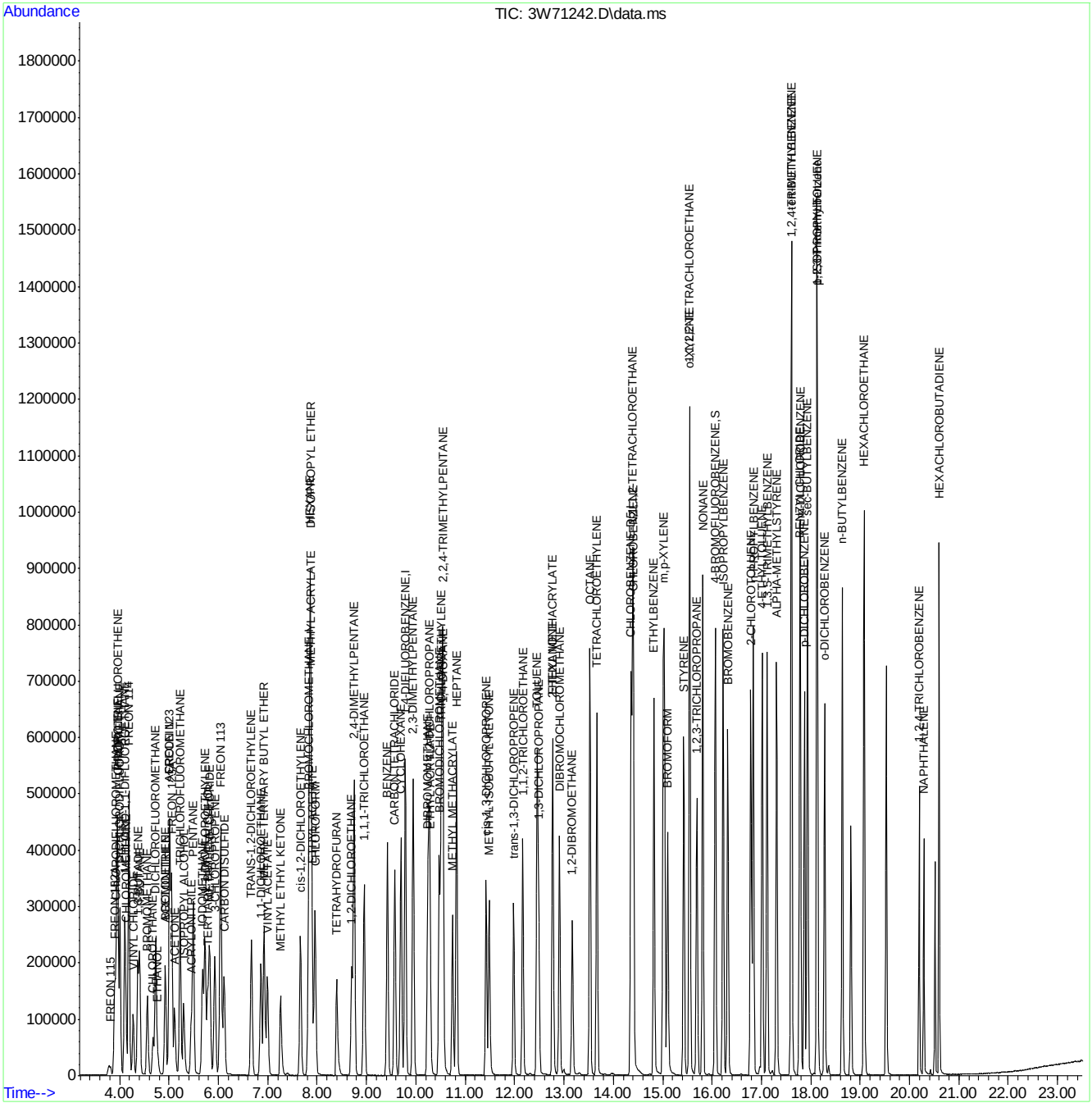
7.7.3

7

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\
Data File : 3W71242.D
Acq On : 14 Jan 2020 2:33 pm
Operator : danat
Sample : icc2789-10
Misc : MS40248,V3W2789,,,,,1
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Jan 14 15:17:17 2020
Quant Method : C:\msdchem\1\METHODS\M3W2789.M
Quant Title : TO15 by GCMS w/Rtx-1, 60 m X 0.32mm ID X 1.0 um
QLast Update : Tue Jan 14 15:16:55 2020
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\
Data File : 3W71243.D
Acq On : 14 Jan 2020 3:37 pm
Operator : danat
Sample : ic2789-5
Misc : MS40248,V3W2789,,,,,1
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Jan 14 16:07:23 2020
Quant Method : C:\msdchem\1\METHODS\M3W2789.M
Quant Title : TO15 by GCMS w/Rtx-1, 60 m X 0.32mm ID X 1.0 um
QLast Update : Tue Jan 14 15:18:47 2020
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) BROMOCHLOROMETHANE	7.824	128	113319	10.00	PPBV		0.00
51) 1,4-DIFLUOROBENZENE	9.782	114	564663	10.00	PPBV		0.00
70) CHLOROBENZENE-D5	14.354	82	275923	10.00	PPBV		0.00
System Monitoring Compounds							
85) 4-BROMOFLUOROBENZENE	16.061	95	318978	9.90	PPBV		0.00
Spiked Amount 10.000	Range 65 - 128		Recovery = 99.00%				
Target Compounds							Qvalue
2) FREON 115	3.813	119	2455	4.67	PPBV		95
3) FREON 152A	3.893	65	45109	5.06	PPBV		100
4) CHLORODIFLUOROMETHANE	3.925	67	18847	5.18	PPBV		100
5) CHLOROTRIFLUOROETHENE	3.954	116	85426	5.04	PPBV		98
6) DICHLORODIFLUOROMETHANE	4.002	85	180443	5.03	PPBV		99
7) PROPYLENE	3.954	41	67626	4.92	PPBV		99
8) 1-CHLORO-1,1-DIFLUOROE...	4.102	65	139095	5.08	PPBV		100
9) FREON 114	4.185	85	184247	5.11	PPBV		100
10) CHLOROMETHANE	4.121	52	24053	5.01	PPBV	#	81
11) VINYL CHLORIDE	4.272	62	78640	5.09	PPBV		100
12) 1,3-BUTADIENE	4.365	54	58010	5.04	PPBV		100
13) n-BUTANE	4.403	43	123498	5.04	PPBV		100
14) BROMOMETHANE	4.557	94	66956	5.11	PPBV		99
15) CHLOROETHANE	4.676	64	37456	4.93	PPBV		89
16) DICHLOROFLUOROMETHANE	4.728	67	155535	4.89	PPBV		100
17) ACETONITRILE	4.920	41	52339	4.50	PPBV	#	94
18) ACROLEIN	5.010	56	26878	4.55	PPBV		94
19) FREON 123	5.007	83	157758	4.83	PPBV		100
20) FREON 123A	5.048	117	75293	4.82	PPBV		100
21) TRICHLOROFLUOROMETHANE	5.222	101	157118	5.03	PPBV		100
22) ISOPROPYL ALCOHOL	5.292	45	104025	4.46	PPBV		97
23) ACETONE	5.116	58	25344	4.44	PPBV		97
24) PENTANE	5.488	42	81930	4.97	PPBV		99
25) IODOMETHANE	5.674	142	154348	5.04	PPBV		99
26) 1,1-DICHLOROETHYLENE	5.726	96	63376	4.98	PPBV		100
27) CARBON DISULFIDE	6.114	76	192222	5.00	PPBV		99
28) ETHANOL	4.766	45	26221	4.46	PPBV		99
29) BROMOETHENE	4.923	106	61356	5.08	PPBV		99
30) ACRYLONITRILE	5.446	52	39235	4.47	PPBV		99
31) METHYLENE CHLORIDE	5.822	84	60756	4.83	PPBV		99
32) 3-CHLOROPROPENE	5.924	76	31947	4.80	PPBV		100
33) FREON 113	6.046	151	91700	4.86	PPBV		100
34) TRANS-1,2-DICHLOROETHY...	6.666	96	62017	4.84	PPBV		100
35) TERTIARY BUTYL ALCOHOL	5.786	59	108951	4.56	PPBV		98
36) METHYL TERTIARY BUTYL ...	6.929	73	147021	4.41	PPBV		100
37) TETRAHYDROFURAN	8.405	72	24630	4.31	PPBV		100
38) HEXANE	7.856	57	112517	4.82	PPBV		98
39) VINYL ACETATE	6.990	86	11030	4.45	PPBV		98
40) 1,1-DICHLOROETHANE	6.858	63	128755	4.77	PPBV		100
41) METHYL ETHYL KETONE	7.263	72	23056	4.22	PPBV		94

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\
Data File : 3W71243.D
Acq On : 14 Jan 2020 3:37 pm
Operator : danat
Sample : ic2789-5
Misc : MS40248,V3W2789,,,,,1
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Jan 14 16:07:23 2020
Quant Method : C:\msdchem\1\METHODS\M3W2789.M
Quant Title : TO15 by GCMS w/Rtx-1, 60 m X 0.32mm ID X 1.0 um
QLast Update : Tue Jan 14 15:18:47 2020
Response via : Initial Calibration

	Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
42)	cis-1,2-DICHLOROETHYLENE	7.657	96	66285	4.76	PPBV		99
43)	DIISOPROPYL ETHER	7.863	59	26159	4.29	PPBV		99
44)	ETHYL ACETATE	7.895	61	15960	4.28	PPBV	#	99
45)	METHYL ACRYLATE	7.879	55	102903	4.22	PPBV		99
46)	CHLOROFORM	7.949	83	139286	4.80	PPBV		99
47)	2,4-DIMETHYLPENTANE	8.745	57	134684	4.79	PPBV		99
48)	1,1,1-TRICHLOROETHANE	8.947	97	131029	4.77	PPBV		100
49)	CARBON TETRACHLORIDE	9.567	117	126552	4.75	PPBV		100
50)	1,2-DICHLOROETHANE	8.694	62	88509	4.71	PPBV		99
52)	BENZENE	9.419	78	213788	4.60	PPBV		100
53)	CYCLOHEXANE	9.695	84	86766	4.60	PPBV		99
54)	2,3-DIMETHYLPENTANE	9.939	71	47067	4.58	PPBV		99
55)	TRICHLOROETHYLENE	10.510	95	87571	4.57	PPBV		99
56)	1,2-DICHLOROPROPANE	10.263	63	78155	4.45	PPBV		100
57)	DIBROMOMETHANE	10.237	174	65729	4.47	PPBV		99
58)	ETHYL ACRYLATE	10.285	55	108966	3.97	PPBV		100
59)	BROMODICHLOROMETHANE	10.468	83	151587	4.51	PPBV		100
60)	2,2,4-TRIMETHYLPENTANE	10.539	57	364247	4.57	PPBV		100
61)	1,4-DIOXANE	10.565	88	31413	4.20	PPBV	#	1
62)	HEPTANE	10.818	43	138426	4.54	PPBV		99
63)	METHYL METHACRYLATE	10.741	69	52210	3.96	PPBV		100
64)	METHYL ISOBUTYL KETONE	11.485	58	45662	4.15	PPBV		100
65)	cis-1,3-DICHLOROPROPENE	11.418	75	110323	4.43	PPBV		100
66)	TOLUENE	12.451	92	128917	4.38	PPBV		99
67)	1,3-DICHLOROPROPANE	12.483	76	101855	4.27	PPBV	#	99
68)	trans-1,3-DICHLOROPROPENE	11.976	75	89483	4.24	PPBV		99
69)	1,1,2-TRICHLOROETHANE	12.163	83	66734	4.32	PPBV		99
71)	2-HEXANONE	12.769	58	61170	4.44	PPBV		99
72)	ETHYL METHACRYLATE	12.772	69	80113	4.24	PPBV		99
73)	TETRACHLOROETHYLENE	13.664	164	79808	4.74	PPBV		99
74)	DIBROMOCHLOROMETHANE	12.904	129	128321	4.73	PPBV		99
75)	1,2-DIBROMOETHANE	13.164	107	107299	4.61	PPBV		100
76)	OCTANE	13.523	43	187954	4.82	PPBV		99
77)	1,1,1,2-TETRACHLOROETHANE	14.386	131	86045	4.59	PPBV		100
78)	CHLOROBENZENE	14.402	112	164034	4.64	PPBV		99
79)	ETHYLBENZENE	14.820	91	257828	4.53	PPBV		99
80)	m,p-XYLENE	15.025	106	189440	8.93	PPBV		98
81)	o-XYLENE	15.542	106	92724	4.42	PPBV		98
82)	STYRENE	15.426	104	143663	4.36	PPBV		99
83)	NONANE	15.808	43	175146	4.55	PPBV		99
84)	BROMOFORM	15.099	173	106110	4.42	PPBV		99
86)	1,1,2,2-TETRACHLOROETHANE	15.542	83	145005	4.26	PPBV		100
87)	1,2,3-TRICHLOROPROPANE	15.689	75	108164	4.24	PPBV		100
88)	ISOPROPYLBENZENE	16.222	105	269439	4.38	PPBV		100
89)	BROMOBENZENE	16.315	77	146739	4.41	PPBV		100
90)	2-CHLOROTOLUENE	16.783	126	65486	4.41	PPBV		99
91)	n-PROPYLBENZENE	16.832	120	66792	4.16	PPBV		99
92)	4-ETHYLTOLUENE	17.014	105	236570	4.18	PPBV		99
93)	1,3,5-TRIMETHYLBENZENE	17.111	105	200642	4.18	PPBV		99
94)	ALPHA-METHYLSTYRENE	17.306	118	101059	4.10	PPBV		99

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\
Data File : 3W71243.D
Acq On : 14 Jan 2020 3:37 pm
Operator : danat
Sample : ic2789-5
Misc : MS40248,V3W2789,,,,,1
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Jan 14 16:07:23 2020
Quant Method : C:\msdchem\1\METHODS\M3W2789.M
Quant Title : TO15 by GCMS w/Rtx-1, 60 m X 0.32mm ID X 1.0 um
QLast Update : Tue Jan 14 15:18:47 2020
Response via : Initial Calibration

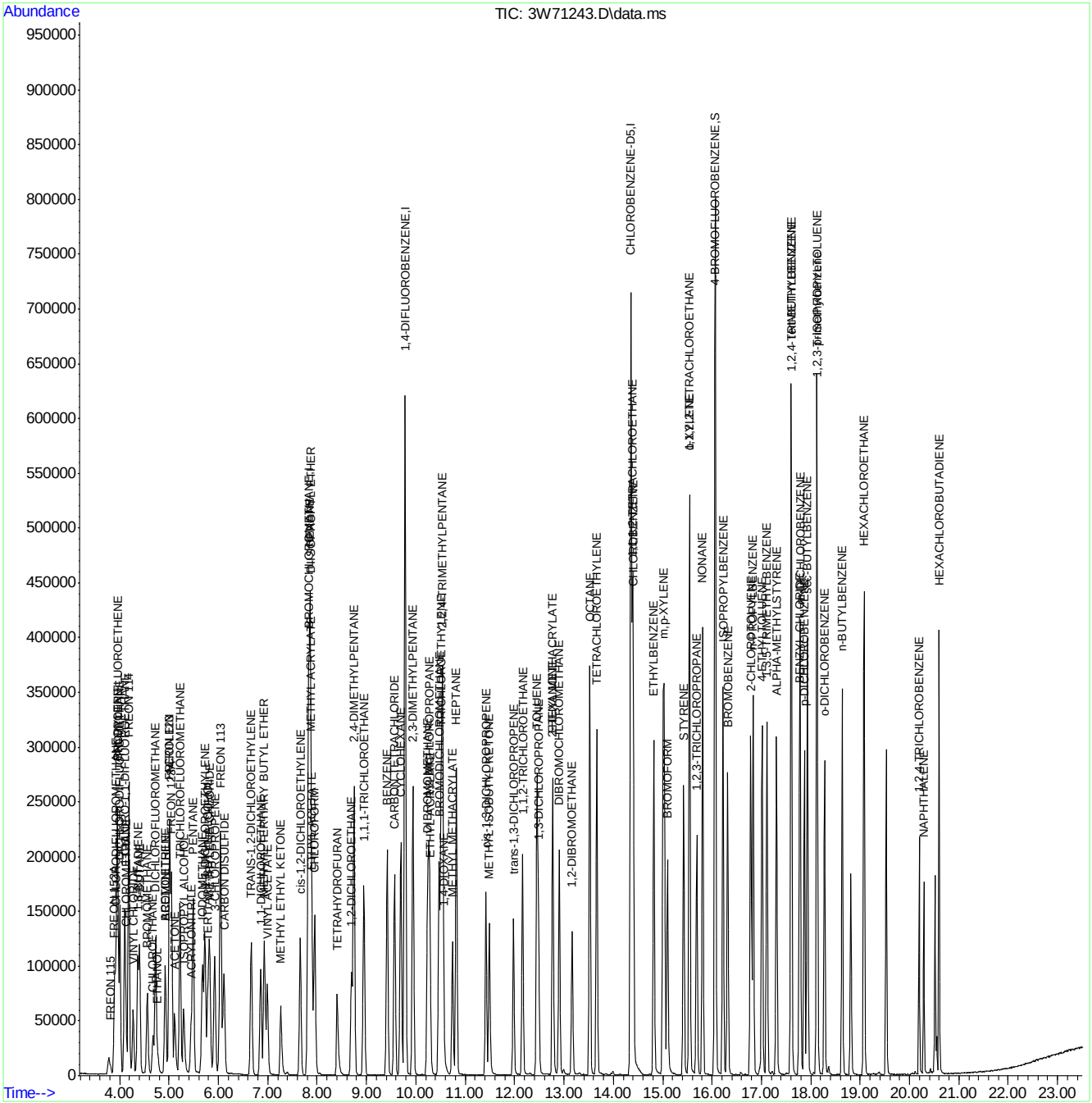
	Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
95)	tert-BUTYLBENZENE	17.602	134	41921	4.02	PPBV	94
96)	1,2,4-TRIMETHYLBENZENE	17.608	105	195293	4.10	PPBV	99
97)	m-DICHLOROBENZENE	17.785	146	130231	4.23	PPBV	100
98)	BENZYL CHLORIDE	17.769	91	159378	3.93	PPBV	100
99)	p-DICHLOROBENZENE	17.868	146	128003	4.21	PPBV	100
100)	sec-BUTYLBENZENE	17.932	134	52350	4.02	PPBV	95
101)	1,2,3-Trimethylbenzene	18.122	105	196178	4.04	PPBV	100
102)	p-ISOPROPYLTOLUENE	18.128	134	55290	3.96	PPBV	95
103)	o-DICHLOROBENZENE	18.279	146	122641	4.20	PPBV	100
104)	n-BUTYLBENZENE	18.638	134	47210	3.87	PPBV	95
105)	HEXACHLOROETHANE	19.078	117	91905	4.22	PPBV	99
106)	HEXACHLOROBUTADIENE	20.599	225	56897	4.10	PPBV	99
107)	1,2,4-TRICHLOROBENZENE	20.194	180	52616	4.09	PPBV	99
108)	NAPHTHALENE	20.291	128	102161	4.11	PPBV	100

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\
Data File : 3W71243.D
Acq On : 14 Jan 2020 3:37 pm
Operator : danat
Sample : ic2789-5
Misc : MS40248,V3W2789,,,,,1
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Jan 14 16:07:23 2020
Quant Method : C:\msdchem\1\METHODS\M3W2789.M
Quant Title : TO15 by GCMS w/Rtx-1, 60 m X 0.32mm ID X 1.0 um
QLast Update : Tue Jan 14 15:18:47 2020
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\
Data File : 3W71244.D
Acq On : 14 Jan 2020 4:28 pm
Operator : danat
Sample : ic2789-20
Misc : MS40248,V3W2789,,,,,1
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Jan 14 16:50:34 2020
Quant Method : C:\msdchem\1\METHODS\M3W2789.M
Quant Title : TO15 by GCMS w/Rtx-1, 60 m X 0.32mm ID X 1.0 um
QLast Update : Tue Jan 14 16:08:48 2020
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) BROMOCHLOROMETHANE	7.837	128	114159	10.00	PPBV	0.00
51) 1,4-DIFLUOROBENZENE	9.791	114	576721	10.00	PPBV	0.00
70) CHLOROBENZENE-D5	14.364	82	305164	10.00	PPBV	0.00
System Monitoring Compounds						
85) 4-BROMOFLUOROBENZENE	16.071	95	343800	9.70	PPBV	0.00
Spiked Amount 10.000	Range 65 - 128		Recovery = 97.00%			
Target Compounds						Qvalue
2) FREON 115	3.820	119	11207	21.89	PPBV	98
3) FREON 152A	3.900	65	192996	21.36	PPBV	100
4) CHLORODIFLUOROMETHANE	3.929	67	78876	21.13	PPBV	99
5) CHLOROTRIFLUOROETHENE	3.958	116	358316	20.91	PPBV	99
6) DICHLORODIFLUOROMETHANE	4.006	85	749338	20.68	PPBV	99
7) PROPYLENE	3.954	41	280015	20.39	PPBV	100
8) 1-CHLORO-1,1-DIFLUOROE...	4.102	65	585006	21.05	PPBV	100
9) FREON 114	4.185	85	760962	20.72	PPBV	99
10) CHLOROMETHANE	4.121	52	99196	20.48	PPBV	100
11) VINYL CHLORIDE	4.275	62	328789	20.94	PPBV	100
12) 1,3-BUTADIENE	4.368	54	245579	21.10	PPBV	99
13) n-BUTANE	4.407	43	499077	20.14	PPBV	99
14) BROMOMETHANE	4.561	94	279608	20.95	PPBV	100
15) CHLOROETHANE	4.676	64	161734	21.28	PPBV	98
16) DICHLOROFLUOROMETHANE	4.728	67	662068	20.88	PPBV	99
17) ACETONITRILE	4.920	41	250555	22.51	PPBV	99
18) ACROLEIN	5.007	56	129735	22.83	PPBV	99
19) FREON 123	5.013	83	672144	20.77	PPBV	100
20) FREON 123A	5.055	117	328165	21.24	PPBV	96
21) TRICHLOROFLUOROMETHANE	5.228	101	652922	20.70	PPBV	100
22) ISOPROPYL ALCOHOL	5.296	45	542558	24.40	PPBV	98
23) ACETONE	5.106	58	128493	23.66	PPBV	97
24) PENTANE	5.491	42	338398	20.45	PPBV	99
25) IODOMETHANE	5.681	142	652689	21.08	PPBV	100
26) 1,1-DICHLOROETHYLENE	5.732	96	271784	21.23	PPBV	98
27) CARBON DISULFIDE	6.117	76	813240	20.99	PPBV	99
28) ETHANOL	4.766	45	130814	23.34	PPBV	100
29) BROMOETHENE	4.927	106	261106	21.29	PPBV	99
30) ACRYLONITRILE	5.456	52	195517	23.36	PPBV	99
31) METHYLENE CHLORIDE	5.825	84	261901	21.02	PPBV	99
32) 3-CHLOROPROPENE	5.931	76	143399	21.83	PPBV	98
33) FREON 113	6.047	151	401779	21.44	PPBV	99
34) TRANS-1,2-DICHLOROETHY...	6.672	96	278364	21.91	PPBV	99
35) TERTIARY BUTYL ALCOHOL	5.783	59	563785	24.50	PPBV	98
36) METHYL TERTIARY BUTYL ...	6.923	73	767503	24.30	PPBV	99
37) TETRAHYDROFURAN	8.389	72	134275	25.07	PPBV	96
38) HEXANE	7.863	57	478360	20.70	PPBV	100
39) VINYL ACETATE	6.996	86	58526	24.79	PPBV #	90
40) 1,1-DICHLOROETHANE	6.865	63	569953	21.46	PPBV	100
41) METHYL ETHYL KETONE	7.259	72	129721	25.55	PPBV #	91

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\
Data File : 3W71244.D
Acq On : 14 Jan 2020 4:28 pm
Operator : danat
Sample : ic2789-20
Misc : MS40248,V3W2789,,,,,1
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Jan 14 16:50:34 2020
Quant Method : C:\msdchem\1\METHODS\M3W2789.M
Quant Title : TO15 by GCMS w/Rtx-1, 60 m X 0.32mm ID X 1.0 um
QLast Update : Tue Jan 14 16:08:48 2020
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
42) cis-1,2-DICHLOROETHYLENE	7.670	96	300775	21.97	PPBV		99
43) DIISOPROPYL ETHER	7.866	59	133035	23.32	PPBV		95
44) ETHYL ACETATE	7.898	61	86875	24.93	PPBV	#	100
45) METHYL ACRYLATE	7.885	55	532314	23.50	PPBV		99
46) CHLOROFORM	7.965	83	612344	21.37	PPBV		100
47) 2,4-DIMETHYLPENTANE	8.752	57	594332	21.44	PPBV		99
48) 1,1,1-TRICHLOROETHANE	8.957	97	583707	21.60	PPBV		99
49) CARBON TETRACHLORIDE	9.576	117	570270	21.80	PPBV		100
50) 1,2-DICHLOROETHANE	8.707	62	401466	21.83	PPBV		100
52) BENZENE	9.429	78	945912	20.76	PPBV		100
53) CYCLOHEXANE	9.701	84	390696	21.12	PPBV		99
54) 2,3-DIMETHYLPENTANE	9.949	71	210781	20.95	PPBV		97
55) TRICHLOROETHYLENE	10.520	95	396328	21.16	PPBV		100
56) 1,2-DICHLOROPROPANE	10.273	63	360333	21.27	PPBV		99
57) DIBROMOMETHANE	10.250	174	307128	21.59	PPBV		99
58) ETHYL ACRYLATE	10.292	55	632294	25.14	PPBV		100
59) BROMODICHLOROMETHANE	10.478	83	690956	21.16	PPBV		100
60) 2,2,4-TRIMETHYLPENTANE	10.549	57	1561359	20.04	PPBV		99
61) 1,4-DIOXANE	10.549	88	177904	25.32	PPBV	#	84
62) HEPTANE	10.828	43	613275	20.64	PPBV		98
63) METHYL METHACRYLATE	10.744	69	307937	25.53	PPBV		98
64) METHYL ISOBUTYL KETONE	11.482	58	262985	25.58	PPBV		96
65) cis-1,3-DICHLOROPROPENE	11.428	75	538054	22.43	PPBV		100
66) TOLUENE	12.461	92	615847	21.85	PPBV		99
67) 1,3-DICHLOROPROPANE	12.490	76	501474	22.21	PPBV	#	100
68) trans-1,3-DICHLOROPROPENE	11.986	75	463700	23.29	PPBV		99
69) 1,1,2-TRICHLOROETHANE	12.169	83	323714	22.01	PPBV		100
71) 2-HEXANONE	12.769	58	345968	24.05	PPBV		98
72) ETHYL METHACRYLATE	12.776	69	476194	24.65	PPBV		98
73) TETRACHLOROETHYLENE	13.671	164	369370	20.37	PPBV		100
74) DIBROMOCHLOROMETHANE	12.914	129	606880	20.79	PPBV		99
75) 1,2-DIBROMOETHANE	13.173	107	529246	21.40	PPBV		100
76) OCTANE	13.530	43	827856	19.55	PPBV		98
77) 1,1,1,2-TETRACHLOROETHANE	14.396	131	412611	20.75	PPBV		100
78) CHLOROBENZENE	14.412	112	772029	20.49	PPBV		100
79) ETHYLBENZENE	14.826	91	1281057	21.36	PPBV		99
80) m,p-XYLENE	15.035	106	953936	42.96	PPBV		98
81) o-XYLENE	15.551	106	463971	21.24	PPBV		98
82) STYRENE	15.433	104	757080	22.19	PPBV		100
83) NONANE	15.814	43	817378	20.10	PPBV		99
84) BROMOFORM	15.108	173	549524	21.98	PPBV		100
86) 1,1,2,2-TETRACHLOROETHANE	15.551	83	748046	21.45	PPBV		100
87) 1,2,3-TRICHLOROPROPANE	15.696	75	582334	22.34	PPBV		99
88) ISOPROPYLBENZENE	16.228	105	1360574	21.33	PPBV		99
89) BROMOBENZENE	16.321	77	736971	21.29	PPBV		99
90) 2-CHLOROTOLUENE	16.790	126	333519	21.58	PPBV		100
91) n-PROPYLBENZENE	16.838	120	366739	22.56	PPBV		100
92) 4-ETHYLTOLUENE	17.021	105	1278965	22.27	PPBV		99
93) 1,3,5-TRIMETHYLBENZENE	17.117	105	1085050	22.27	PPBV		100
94) ALPHA-METHYLSTYRENE	17.313	118	566525	22.84	PPBV		99

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\
Data File : 3W71244.D
Acq On : 14 Jan 2020 4:28 pm
Operator : danat
Sample : ic2789-20
Misc : MS40248,V3W2789,,,,,1
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Jan 14 16:50:34 2020
Quant Method : C:\msdchem\1\METHODS\M3W2789.M
Quant Title : TO15 by GCMS w/Rtx-1, 60 m X 0.32mm ID X 1.0 um
QLast Update : Tue Jan 14 16:08:48 2020
Response via : Initial Calibration

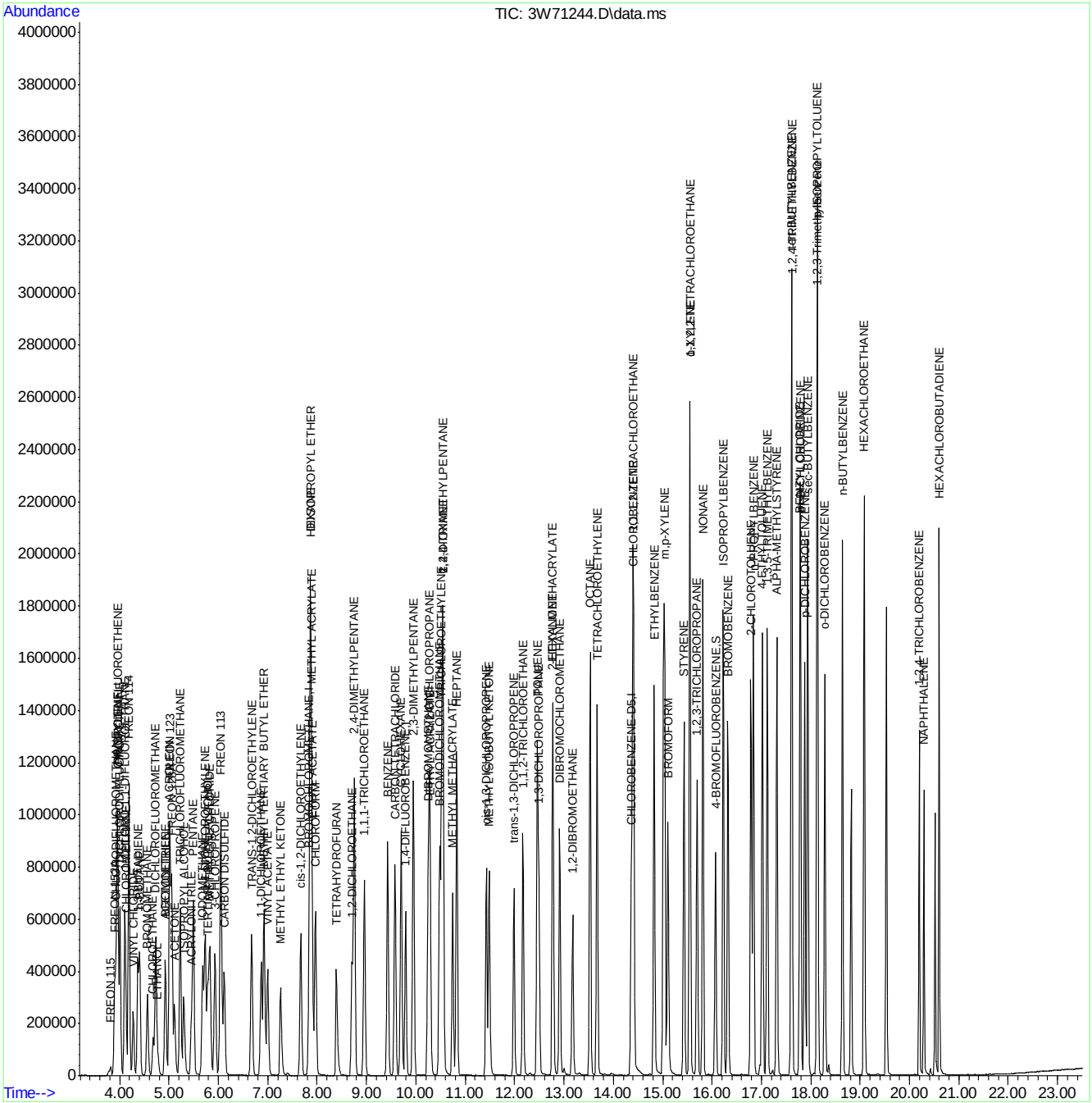
	Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
95)	tert-BUTYLBENZENE	17.608	134	231501	22.26	PPBV		97
96)	1,2,4-TRIMETHYLBENZENE	17.618	105	1045675	21.82	PPBV		99
97)	m-DICHLOROBENZENE	17.794	146	693712	22.06	PPBV		100
98)	BENZYL CHLORIDE	17.778	91	969268	24.19	PPBV		99
99)	p-DICHLOROBENZENE	17.878	146	689703	22.26	PPBV		99
100)	sec-BUTYLBENZENE	17.939	134	300687	23.15	PPBV	#	92
101)	1,2,3-Trimethylbenzene	18.128	105	1075842	22.15	PPBV		99
102)	p-ISOPROPYLTOLUENE	18.138	134	319326	23.08	PPBV		93
103)	o-DICHLOROBENZENE	18.285	146	660914	22.25	PPBV		99
104)	n-BUTYLBENZENE	18.641	134	293818	24.57	PPBV		92
105)	HEXACHLOROETHANE	19.081	117	484398	21.82	PPBV		99
106)	HEXACHLOROBUTADIENE	20.602	225	310018	22.21	PPBV		99
107)	1,2,4-TRICHLOROBENZENE	20.198	180	322591	24.93	PPBV		100
108)	NAPHTHALENE	20.291	128	638274	25.48	PPBV		100

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\
Data File : 3W71244.D
Acq On : 14 Jan 2020 4:28 pm
Operator : danat
Sample : ic2789-20
Misc : MS40248,V3W2789,,,,,1
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Jan 14 16:50:34 2020
Quant Method : C:\msdchem\1\METHODS\M3W2789.M
Quant Title : TO15 by GCMS w/Rtx-1, 60 m X 0.32mm ID X 1.0 um
QLast Update : Tue Jan 14 16:08:48 2020
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\
Data File : 3W71245.D
Acq On : 14 Jan 2020 5:21 pm
Operator : danat
Sample : ic2789-40
Misc : MS40248,V3W2789,,,,,1
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Jan 14 17:41:30 2020
Quant Method : C:\msdchem\1\METHODS\M3W2789.M
Quant Title : TO15 by GCMS w/Rtx-1, 60 m X 0.32mm ID X 1.0 um
QLast Update : Tue Jan 14 17:37:28 2020
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) BROMOCHLOROMETHANE	7.850	128	119865	10.00	PPBV	0.02
51) 1,4-DIFLUOROBENZENE	9.804	114	605934	10.00	PPBV	0.02
70) CHLOROBENZENE-D5	14.370	82	335027	10.00	PPBV	0.01
System Monitoring Compounds						
85) 4-BROMOFLUOROBENZENE	16.078	95	344298	9.06	PPBV	0.01
Spiked Amount 10.000	Range 65 - 128		Recovery = 90.60%			
Target Compounds						Qvalue
2) FREON 115	3.826	119	22981	39.93	PPBV	97
3) FREON 152A	3.906	65	392549	37.07	PPBV	100
4) CHLORODIFLUOROMETHANE	3.935	67	159932	36.87	PPBV	99
5) CHLOROTRIFLUOROETHENE	3.964	116	716080	36.30	PPBV	99
6) DICHLORODIFLUOROMETHANE	4.012	85	1451292	34.14	PPBV	99
7) PROPYLENE	3.961	41	542309	33.66	PPBV	99
8) 1-CHLORO-1,1-DIFLUOROE...	4.108	65	1161452	35.56	PPBV	100
9) FREON 114	4.192	85	1480208	34.15	PPBV	97
10) CHLOROMETHANE	4.131	52	198834	35.01	PPBV	98
11) VINYL CHLORIDE	4.282	62	665162	36.39	PPBV	99
12) 1,3-BUTADIENE	4.375	54	496338	36.82	PPBV	99
13) n-BUTANE	4.410	43	987911	31.28	PPBV	99
14) BROMOMETHANE	4.570	94	565961	35.81	PPBV	100
15) CHLOROETHANE	4.686	64	331575	37.09	PPBV	99
16) DICHLOROFLUOROMETHANE	4.737	67	1323567	35.44	PPBV	99
17) ACETONITRILE	4.930	41	535012	38.14	PPBV	99
18) ACROLEIN	5.020	56	266440	39.20	PPBV	95
19) FREON 123	5.023	83	1311416	34.34	PPBV	99
20) FREON 123A	5.061	117	665454	36.30	PPBV	93
21) TRICHLOROFLUOROMETHANE	5.235	101	1312402	35.54	PPBV	99
22) ISOPROPYL ALCOHOL	5.315	45	1163055	38.80	PPBV	97
23) ACETONE	5.116	58	279003	39.25	PPBV	97
24) PENTANE	5.501	42	679287	34.04	PPBV	99
25) IODOMETHANE	5.690	142	1317398	37.16	PPBV	99
26) 1,1-DICHLOROETHYLENE	5.742	96	562128	38.05	PPBV	97
27) CARBON DISULFIDE	6.127	76	1661590	37.97	PPBV	100
28) ETHANOL	4.782	45	283191	38.95	PPBV	99
29) BROMOETHENE	4.933	106	531242	37.78	PPBV	100
30) ACRYLONITRILE	5.469	52	420412	43.13	PPBV	99
31) METHYLENE CHLORIDE	5.838	84	534075	34.06	PPBV	98
32) 3-CHLOROPROPENE	5.944	76	297535	39.16	PPBV	96
33) FREON 113	6.059	151	835913	38.09	PPBV	98
34) TRANS-1,2-DICHLOROETHY...	6.682	96	583982	40.65	PPBV	98
35) TERTIARY BUTYL ALCOHOL	5.806	59	936965	32.93	PPBV	98
36) METHYL TERTIARY BUTYL ...	6.932	73	1678053	43.94	PPBV	98
37) TETRAHYDROFURAN	8.392	72	301990	47.34	PPBV	95
38) HEXANE	7.869	57	906274	34.38	PPBV	98
39) VINYL ACETATE	7.012	86	133794	51.76	PPBV #	81
40) 1,1-DICHLOROETHANE	6.878	63	1169317	37.72	PPBV	99
41) METHYL ETHYL KETONE	7.269	72	297302	47.85	PPBV #	90

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\
Data File : 3W71245.D
Acq On : 14 Jan 2020 5:21 pm
Operator : danat
Sample : ic2789-40
Misc : MS40248,V3W2789,,,,,1
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Jan 14 17:41:30 2020
Quant Method : C:\msdchem\1\METHODS\M3W2789.M
Quant Title : TO15 by GCMS w/Rtx-1, 60 m X 0.32mm ID X 1.0 um
QLast Update : Tue Jan 14 17:37:28 2020
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
42) cis-1,2-DICHLOROETHYLENE	7.680	96	629898	41.07	PPBV		98
43) DIISOPROPYL ETHER	7.879	59	270469	40.05	PPBV	#	89
44) ETHYL ACETATE	7.908	61	189469	44.37	PPBV	#	99
45) METHYL ACRYLATE	7.898	55	1092034	41.01	PPBV		97
46) CHLOROFORM	7.978	83	1254817	37.99	PPBV		100
47) 2,4-DIMETHYLPENTANE	8.761	57	1193015	38.12	PPBV		99
48) 1,1,1-TRICHLOROETHANE	8.967	97	1200463	38.56	PPBV		99
49) CARBON TETRACHLORIDE	9.586	117	1167915	39.85	PPBV		100
50) 1,2-DICHLOROETHANE	8.716	62	830120	40.20	PPBV		99
52) BENZENE	9.438	78	1911439	36.75	PPBV		99
53) CYCLOHEXANE	9.708	84	808850	37.77	PPBV		98
54) 2,3-DIMETHYLPENTANE	9.958	71	436741	36.58	PPBV		92
55) TRICHLOROETHYLENE	10.529	95	795199	37.91	PPBV		100
56) 1,2-DICHLOROPROPANE	10.285	63	715781	36.19	PPBV		98
57) DIBROMOMETHANE	10.260	174	636477	39.78	PPBV		97
58) ETHYL ACRYLATE	10.302	55	1393354	47.00	PPBV		99
59) BROMODICHLOROMETHANE	10.491	83	1394513	38.31	PPBV		99
60) 2,2,4-TRIMETHYLPENTANE	10.558	57	2902238	32.48	PPBV		98
61) 1,4-DIOXANE	10.555	88	389785	44.69	PPBV	#	85
62) HEPTANE	10.837	43	1224240	35.81	PPBV		97
63) METHYL METHACRYLATE	10.754	69	709184	49.22	PPBV		96
64) METHYL ISOBUTYL KETONE	11.492	58	595365	47.71	PPBV		94
65) cis-1,3-DICHLOROPROPENE	11.437	75	1126137	43.42	PPBV		99
66) TOLUENE	12.468	92	1256316	40.68	PPBV		98
67) 1,3-DICHLOROPROPANE	12.500	76	1043635	41.89	PPBV	#	100
68) trans-1,3-DICHLOROPROPENE	11.996	75	1000370	48.20	PPBV		100
69) 1,1,2-TRICHLOROETHANE	12.182	83	672928	40.90	PPBV		99
71) 2-HEXANONE	12.779	58	746132	43.76	PPBV		95
72) ETHYL METHACRYLATE	12.788	69	1040200	46.88	PPBV		96
73) TETRACHLOROETHYLENE	13.677	164	746910	37.05	PPBV		100
74) DIBROMOCHLOROMETHANE	12.926	129	1224845	39.88	PPBV		99
75) 1,2-DIBROMOETHANE	13.186	107	1102428	41.59	PPBV		100
76) OCTANE	13.536	43	1584928	33.64	PPBV		95
77) 1,1,1,2-TETRACHLOROETHANE	14.402	131	818439	37.09	PPBV		99
78) CHLOROBENZENE	14.422	112	1522574	37.46	PPBV		99
79) ETHYLBENZENE	14.836	91	2586987	38.73	PPBV		97
80) m,p-XYLENE	15.044	106	1906342	79.83	PPBV		96
81) o-XYLENE	15.558	106	911756	37.70	PPBV		96
82) STYRENE	15.439	104	1570432	46.45	PPBV		99
83) NONANE	15.821	43	1566171	36.34	PPBV		97
84) BROMOFORM	15.121	173	1143018	45.95	PPBV		99
86) 1,1,2,2-TETRACHLOROETHANE	15.561	83	1431373	36.72	PPBV		99
87) 1,2,3-TRICHLOROPROPANE	15.709	75	1209829	41.27	PPBV		98
88) ISOPROPYLBENZENE	16.238	105	2665265	39.46	PPBV		97
89) BROMOBENZENE	16.331	77	1484603	41.91	PPBV		97
90) 2-CHLOROTOLUENE	16.796	126	691576	43.87	PPBV		100
91) n-PROPYLBENZENE	16.848	120	761556	46.30	PPBV		100
92) 4-ETHYLTOLUENE	17.027	105	2605561	45.09	PPBV		97
93) 1,3,5-TRIMETHYLBENZENE	17.127	105	2168473	44.02	PPBV		98
94) ALPHA-METHYLSTYRENE	17.319	118	1157487	49.17	PPBV		99

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\
Data File : 3W71245.D
Acq On : 14 Jan 2020 5:21 pm
Operator : danat
Sample : ic2789-40
Misc : MS40248,V3W2789,,,,,1
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Jan 14 17:41:30 2020
Quant Method : C:\msdchem\1\METHODS\M3W2789.M
Quant Title : TO15 by GCMS w/Rtx-1, 60 m X 0.32mm ID X 1.0 um
QLast Update : Tue Jan 14 17:37:28 2020
Response via : Initial Calibration

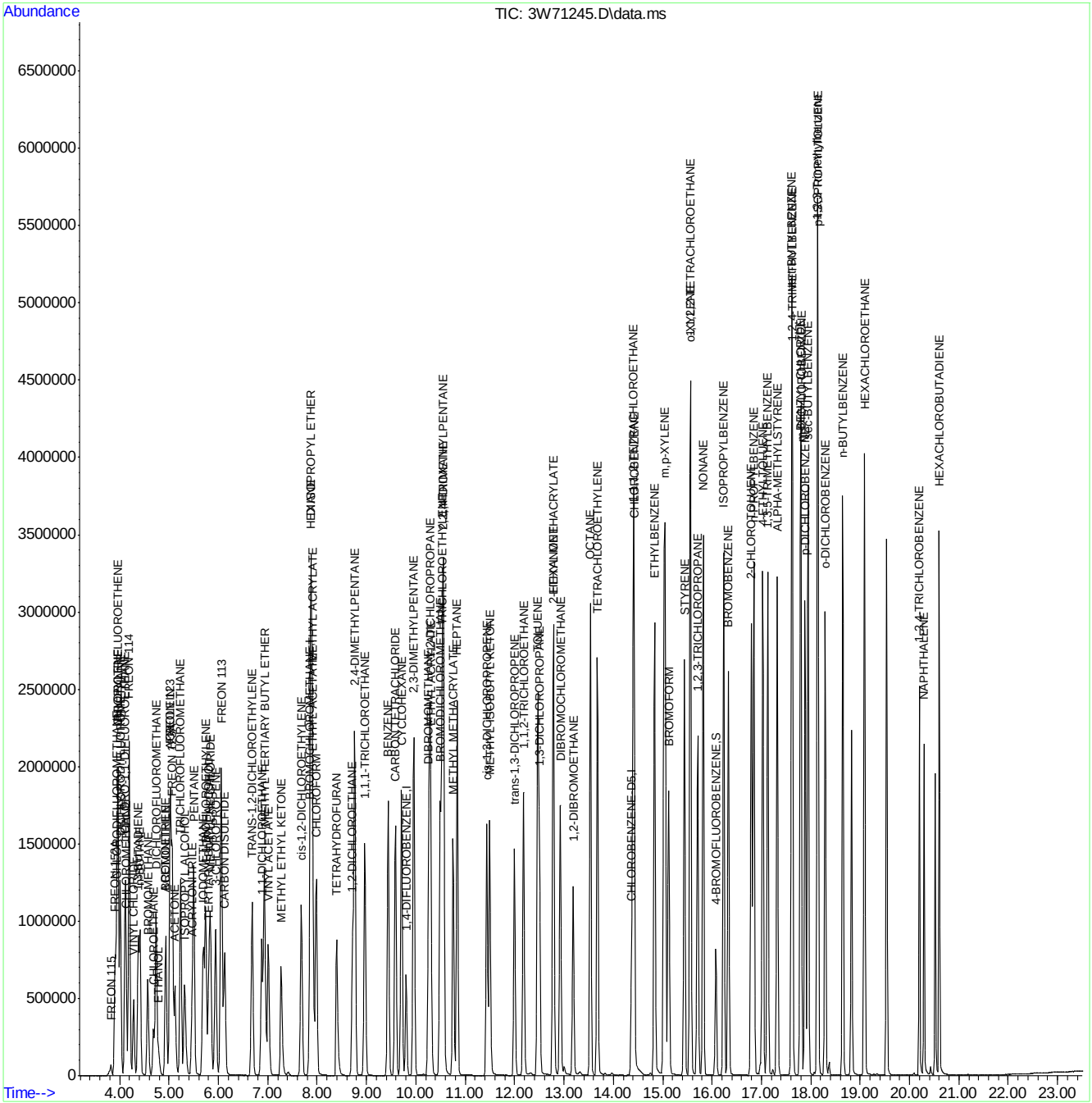
	Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
95)	tert-BUTYLBENZENE	17.615	134	447793	41.45	PPBV	#	91
96)	1,2,4-TRIMETHYLBENZENE	17.631	105	1961795	41.28	PPBV		99
97)	m-DICHLOROBENZENE	17.804	146	1362951	44.02	PPBV		99
98)	BENZYL CHLORIDE	17.788	91	1913271	50.78	PPBV		97
99)	p-DICHLOROBENZENE	17.884	146	1386767	45.54	PPBV		98
100)	sec-BUTYLBENZENE	17.945	134	616860	46.82	PPBV	#	79
101)	1,2,3-Trimethylbenzene	18.134	105	1988256	41.37	PPBV		98
102)	p-ISOPROPYLTOLUENE	18.147	134	605460	44.11	PPBV	#	86
103)	o-DICHLOROBENZENE	18.295	146	1339579	45.77	PPBV		99
104)	n-BUTYLBENZENE	18.651	134	605649	52.90	PPBV	#	82
105)	HEXACHLOROETHANE	19.087	117	920456	42.98	PPBV		97
106)	HEXACHLOROBUTADIENE	20.602	225	552453	37.06	PPBV		99
107)	1,2,4-TRICHLOROBENZENE	20.201	180	639956	48.95	PPBV		99
108)	NAPHTHALENE	20.294	128	1269756	52.43	PPBV		98

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\
Data File : 3W71245.D
Acq On : 14 Jan 2020 5:21 pm
Operator : danat
Sample : ic2789-40
Misc : MS40248,V3W2789,,,,,1
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Jan 14 17:41:30 2020
Quant Method : C:\msdchem\1\METHODS\M3W2789.M
Quant Title : TO15 by GCMS w/Rtx-1, 60 m X 0.32mm ID X 1.0 um
QLast Update : Tue Jan 14 17:37:28 2020
Response via : Initial Calibration



3W71248.D

Manual Integrations APPROVED (compounds with "m" flag)

Dana Tryon 01/15/20 16:07

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\
Data File : 3W71248.D
Acq On : 14 Jan 2020 7:51 pm
Operator : danat
Sample : ic2789-0.1
Misc : MS40248,V3W2789,,,,,1
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Jan 15 09:12:25 2020
Quant Method : C:\msdchem\1\METHODS\M3W2789.M
Quant Title : TO15 by GCMS w/Rtx-1, 60 m X 0.32mm ID X 1.0 um
QLast Update : Tue Jan 14 17:42:34 2020
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) BROMOCHLOROMETHANE	7.824	128	112196	10.00	PPBV		0.00
51) 1,4-DIFLUOROBENZENE	9.778	114	514733	10.00	PPBV		0.00
70) CHLOROBENZENE-D5	14.354	82	236051	10.00	PPBV		0.00
System Monitoring Compounds							
85) 4-BROMOFLUOROBENZENE	16.062	95	254527	9.66	PPBV		0.00
Spiked Amount 10.000	Range 65 - 128		Recovery = 96.60%				
Target Compounds							Qvalue
3) FREON 152A	3.903	65	961	0.10	PPBV		74
4) CHLORODIFLUOROMETHANE	3.935	67	386	0.10	PPBV		90
5) CHLOROTRIFLUOROETHENE	3.961	116	1707	0.09	PPBV		95
6) DICHLORODIFLUOROMETHANE	4.002	85	3851	0.10	PPBV		99
7) PROPYLENE	3.954	41	1864	0.13	PPBV		96
8) 1-CHLORO-1,1-DIFLUOROE...	4.102	65	2839	0.09	PPBV	#	46
9) FREON 114	4.189	85	3859	0.10	PPBV		99
10) CHLOROMETHANE	4.124	52	489	0.09	PPBV	#	87
11) VINYL CHLORIDE	4.275	62	1715	0.10	PPBV		96
12) 1,3-BUTADIENE	4.368	54	1237	0.10	PPBV	#	67
14) BROMOMETHANE	4.561	94	1528	0.11	PPBV		95
15) CHLOROETHANE	4.667	64	802	0.10	PPBV		86
16) DICHLOROFLUOROMETHANE	4.728	67	3353	0.10	PPBV		98
18) ACROLEIN	5.033	56	787	0.12	PPBV	#	62
19) FREON 123	5.013	83	3444	0.10	PPBV		99
20) FREON 123A	5.049	117	1483	0.09	PPBV	#	79
21) TRICHLOROFLUOROMETHANE	5.222	101	3390	0.10	PPBV		98
24) PENTANE	5.488	42	2166	0.12	PPBV		88
25) IODOMETHANE	5.671	142	3394	0.10	PPBV		97
26) 1,1-DICHLOROETHYLENE	5.729	96	1391	0.10	PPBV		98
27) CARBON DISULFIDE	6.120	76	4438	0.11	PPBV		77
29) BROMOETHENE	4.923	106	1284	0.10	PPBV	#	93
30) ACRYLONITRILE	5.479	52	1049	0.11	PPBV		91
32) 3-CHLOROPROPENE	5.931	76	707	0.10	PPBV	#	60
33) FREON 113	6.047	151	1959	0.10	PPBV		97
34) TRANS-1,2-DICHLOROETHY...	6.666	96	1351	0.10	PPBV		94
35) TERTIARY BUTYL ALCOHOL	5.870	59	3249	0.13	PPBV		92
36) METHYL TERTIARY BUTYL ...	6.980	73	3340	0.09	PPBV		94
37) TETRAHYDROFURAN	8.489	72	658	0.11	PPBV	#	80
38) HEXANE	7.863	57	2551	0.11	PPBV		94
39) VINYL ACETATE	7.009	86	189m	0.07	PPBV		
40) 1,1-DICHLOROETHANE	6.858	63	2901	0.10	PPBV		96
42) cis-1,2-DICHLOROETHYLENE	7.664	96	1496	0.10	PPBV		95
43) DIISOPROPYL ETHER	7.898	59	631	0.10	PPBV		98
44) ETHYL ACETATE	7.940	61	490	0.12	PPBV	#	37
46) CHLOROFORM	7.946	83	3084	0.10	PPBV		83
47) 2,4-DIMETHYLPENTANE	8.752	57	2997	0.10	PPBV		99
48) 1,1,1-TRICHLOROETHANE	8.951	97	2851	0.10	PPBV		98
49) CARBON TETRACHLORIDE	9.567	117	2759	0.10	PPBV		98
50) 1,2-DICHLOROETHANE	8.697	62	2087	0.11	PPBV	#	68

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\
Data File : 3W71248.D
Acq On : 14 Jan 2020 7:51 pm
Operator : danat
Sample : ic2789-0.1
Misc : MS40248,V3W2789,,,,,1
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Jan 15 09:12:25 2020
Quant Method : C:\msdchem\1\METHODS\M3W2789.M
Quant Title : TO15 by GCMS w/Rtx-1, 60 m X 0.32mm ID X 1.0 um
QLast Update : Tue Jan 14 17:42:34 2020
Response via : Initial Calibration

	Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
52)	BENZENE	9.416	78	4846	0.11	PPBV		98
53)	CYCLOHEXANE	9.695	84	1955	0.11	PPBV		99
54)	2,3-DIMETHYLPENTANE	9.939	71	972	0.10	PPBV	#	82
55)	TRICHLOROETHYLENE	10.510	95	1957	0.11	PPBV		97
56)	1,2-DICHLOROPROPANE	10.266	63	1832	0.11	PPBV		99
57)	DIBROMOMETHANE	10.237	174	1794	0.13	PPBV		97
59)	BROMODICHLOROMETHANE	10.465	83	3173	0.10	PPBV		99
60)	2,2,4-TRIMETHYLPENTANE	10.542	57	7715	0.10	PPBV	#	94
62)	HEPTANE	10.818	43	3130	0.11	PPBV		97
63)	METHYL METHACRYLATE	10.760	69	1423	0.11	PPBV		96
64)	METHYL ISOBUTYL KETONE	11.537	58	1150	0.11	PPBV	#	88
65)	cis-1,3-DICHLOROPROPENE	11.421	75	2380	0.11	PPBV		97
66)	TOLUENE	12.452	92	2860	0.11	PPBV		97
67)	1,3-DICHLOROPROPANE	12.493	76	2262	0.11	PPBV	#	96
68)	trans-1,3-DICHLOROPROPENE	11.977	75	2020	0.11	PPBV		94
69)	1,1,2-TRICHLOROETHANE	12.160	83	1486	0.11	PPBV		99
72)	ETHYL METHACRYLATE	12.792	69	1955	0.12	PPBV	#	66
73)	TETRACHLOROETHYLENE	13.661	164	1808	0.13	PPBV		98
74)	DIBROMOCHLOROMETHANE	12.907	129	2453	0.11	PPBV		100
75)	1,2-DIBROMOETHANE	13.164	107	2508	0.13	PPBV	#	99
76)	OCTANE	13.523	43	3949	0.12	PPBV		97
77)	1,1,1,2-TETRACHLOROETHANE	14.386	131	1796	0.12	PPBV		97
78)	CHLOROBENZENE	14.403	112	3740	0.13	PPBV	#	44
79)	ETHYLBENZENE	14.820	91	6649	0.14	PPBV		100
80)	m,p-XYLENE	15.009	106	4306	0.26	PPBV	#	82
81)	o-XYLENE	15.542	106	2521	0.15	PPBV		99
82)	STYRENE	15.423	104	2790	0.11	PPBV		97
83)	NONANE	15.808	43	3350	0.11	PPBV	#	98
84)	BROMOFORM	15.099	173	2078	0.12	PPBV		99
86)	1,1,2,2-TETRACHLOROETHANE	15.548	83	3271	0.12	PPBV		97
87)	1,2,3-TRICHLOROPROPANE	15.689	75	2716	0.13	PPBV		95
88)	ISOPROPYLBENZENE	16.219	105	5397	0.11	PPBV		98
89)	BROMOBENZENE	16.315	77	3434	0.14	PPBV		98
90)	2-CHLOROTOLUENE	16.784	126	1368	0.12	PPBV		99
91)	n-PROPYLBENZENE	16.838	120	1252	0.11	PPBV		92
92)	4-ETHYLTOLUENE	17.018	105	4396m	0.11	PPBV		
93)	1,3,5-TRIMETHYLBENZENE	17.111	105	3782	0.11	PPBV		98
94)	ALPHA-METHYLSTYRENE	17.307	118	1568	0.09	PPBV		94
95)	tert-BUTYLBENZENE	17.599	134	821	0.11	PPBV	#	93
96)	1,2,4-TRIMETHYLBENZENE	17.611	105	3609	0.11	PPBV		94
97)	m-DICHLOROBENZENE	17.788	146	2926	0.13	PPBV		96
98)	BENZYL CHLORIDE	17.772	91	3451	0.12	PPBV		97
99)	p-DICHLOROBENZENE	17.871	146	2986	0.14	PPBV		97
100)	sec-BUTYLBENZENE	17.936	134	910	0.10	PPBV	#	81
101)	1,2,3-Trimethylbenzene	18.122	105	3784	0.11	PPBV		98
102)	p-ISOPROPYLTOLUENE	18.128	134	934	0.09	PPBV	#	84
103)	o-DICHLOROBENZENE	18.279	146	2677	0.13	PPBV		96
104)	n-BUTYLBENZENE	18.638	134	794	0.09	PPBV	#	87
105)	HEXACHLOROETHANE	19.078	117	1790	0.12	PPBV		95
106)	HEXACHLOROBUTADIENE	20.599	225	1497	0.14	PPBV		96

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\
Data File : 3W71248.D
Acq On : 14 Jan 2020 7:51 pm
Operator : danat
Sample : ic2789-0.1
Misc : MS40248,V3W2789,,,,,1
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Jan 15 09:12:25 2020
Quant Method : C:\msdchem\1\METHODS\M3W2789.M
Quant Title : TO15 by GCMS w/Rtx-1, 60 m X 0.32mm ID X 1.0 um
QLast Update : Tue Jan 14 17:42:34 2020
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
107) 1,2,4-TRICHLOROBENZENE	20.198	180	1605	0.17	PPBV	99
108) NAPHTHALENE	20.291	128	3090	0.17	PPBV	96

(#) = qualifier out of range (m) = manual integration (+) = signals summed

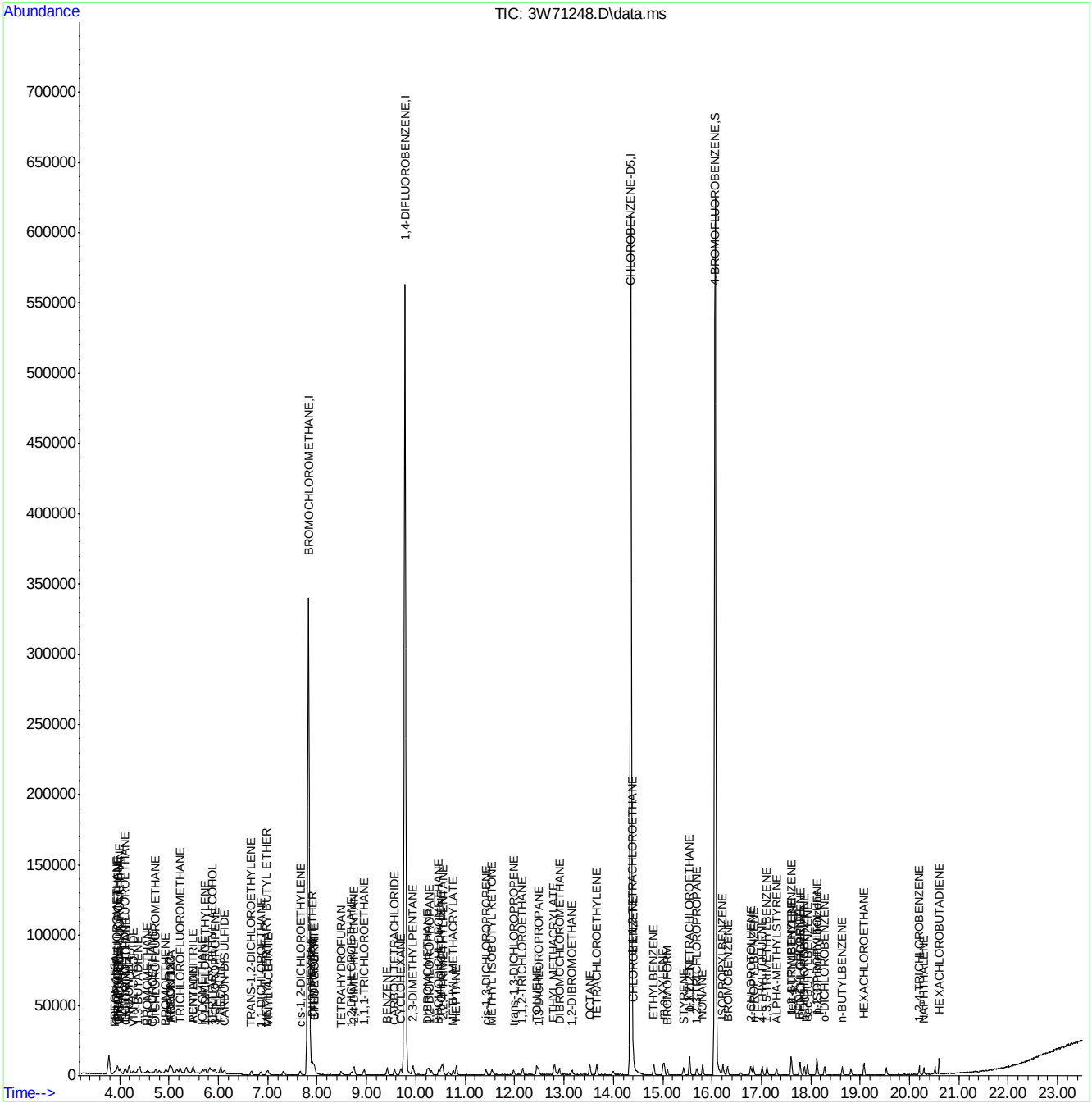
7.2.7

7

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\
Data File : 3W71248.D
Acq On : 14 Jan 2020 7:51 pm
Operator : danat
Sample : ic2789-0.1
Misc : MS40248,V3W2789,,,,,1
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Jan 15 09:12:25 2020
Quant Method : C:\msdchem\1\METHODS\M3W2789.M
Quant Title : TO15 by GCMS w/Rtx-1, 60 m X 0.32mm ID X 1.0 um
QLast Update : Tue Jan 14 17:42:34 2020
Response via : Initial Calibration



M3W2789.M Wed Jan 15 09:24:45 2020 GCMS6W Page: 4

Manual Integration Approval Summary

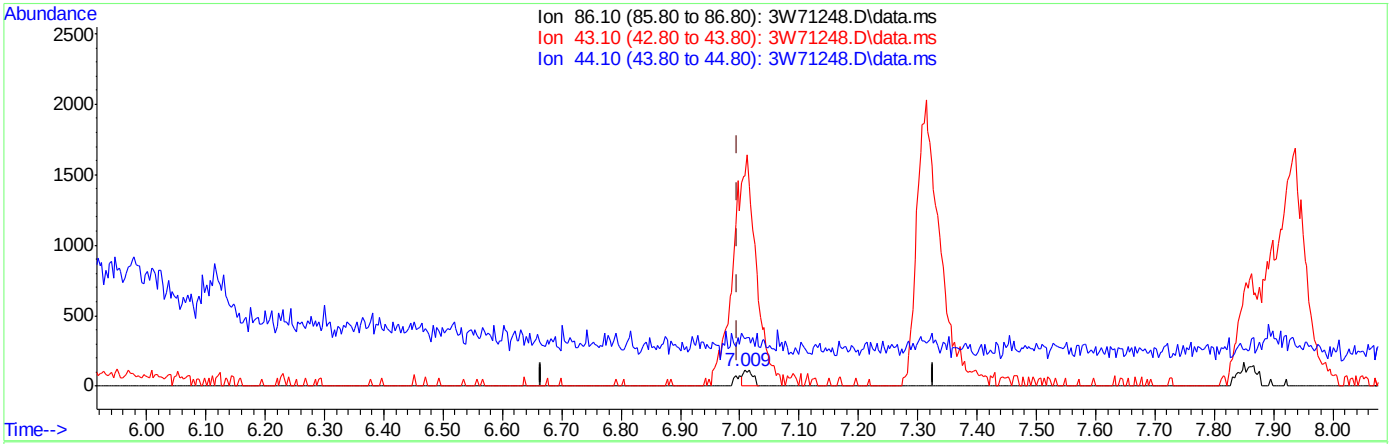
Sample Number: V3W2789-IC2789 **Method:** TO-15
Lab FileID: 3W71248.D **Analyst approved:** 01/15/20 09:41 Dana Tryon
Injection Time: 01/14/20 19:51 **Supervisor approved:** 01/15/20 16:07 Dana Tryon

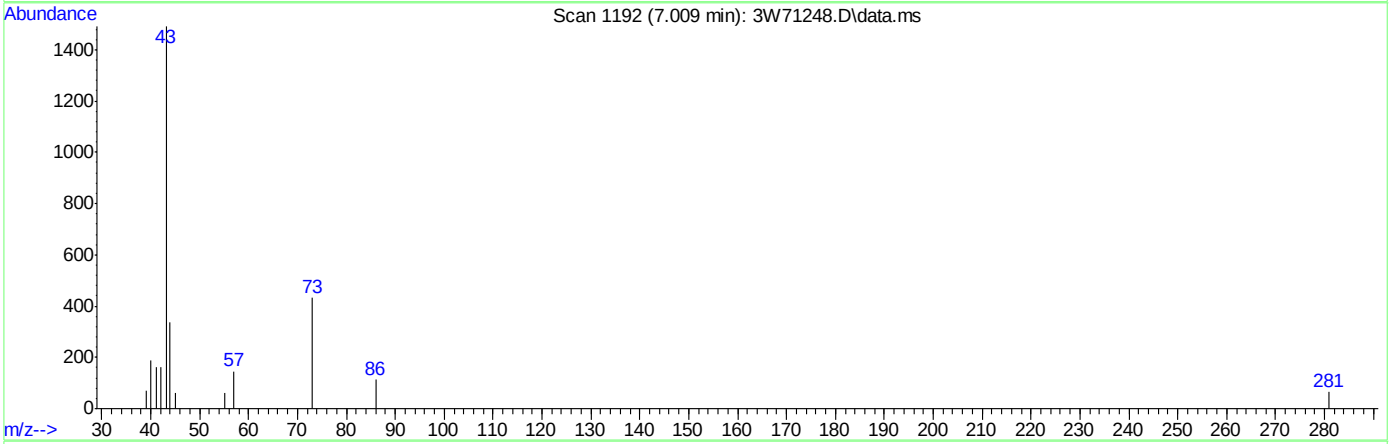
Parameter	CAS	Sig#	R.T. (min.)	Reason
Vinyl Acetate	108-05-4		7.01	Poor instrument integration
4-Ethyltoluene	622-96-8		17.02	Poor instrument integration

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\
Data File : 3W71248.D
Acq On : 14 Jan 2020 7:51 pm
Operator : danat
Sample : ic2789-0.1
Misc : MS40248,V3W2789,,,,,1
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Jan 15 09:09:13 2020
Quant Method : C:\msdchem\1\METHODS\M3W2789.M
Quant Title : TO15 by GCMS w/Rtx-1, 60 m X 0.32mm ID X 1.0 um
QLast Update : Tue Jan 14 17:42:34 2020
Response via : Initial Calibration





TIC: 3W71248.D\data.ms

(39) VINYL ACETATE

7.009min (+0.013) 0.05PPBV

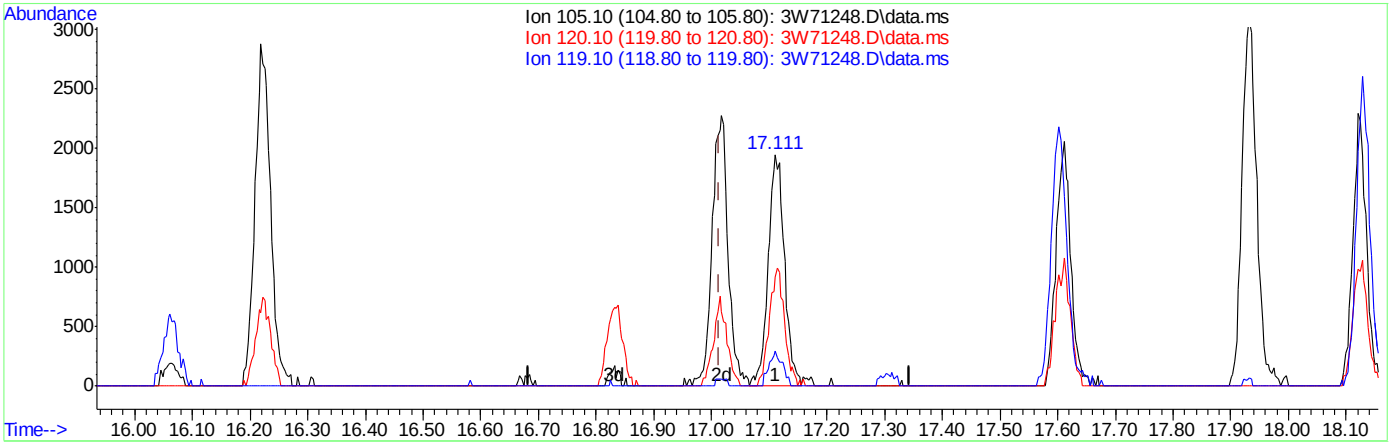
response 127

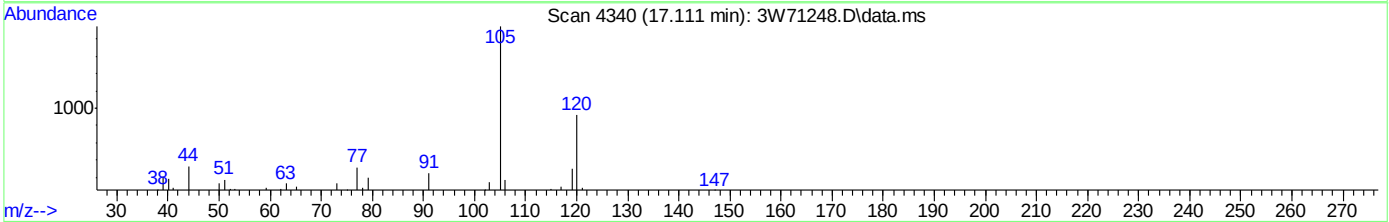
Ion	Exp%	Act%
86.10	100	100
43.10	1493.40	3537.01#
44.10	84.20	0.00#
0.00	0.00	0.00

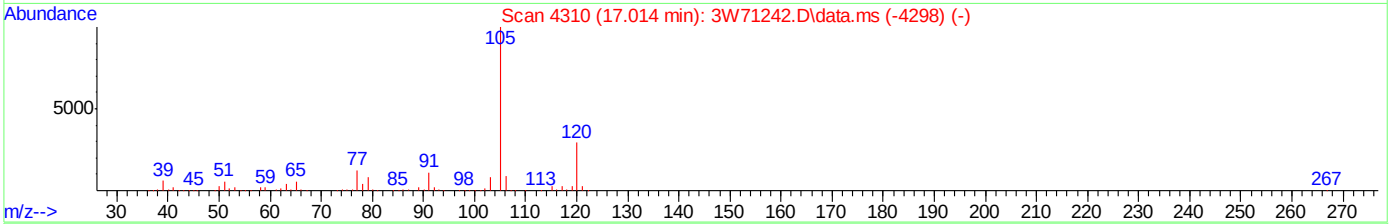
Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\
Data File : 3W71248.D
Acq On : 14 Jan 2020 7:51 pm
Operator : danat
Sample : ic2789-0.1
Misc : MS40248,V3W2789,,,,,1
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Jan 15 09:09:13 2020
Quant Method : C:\msdchem\1\METHODS\M3W2789.M
Quant Title : TO15 by GCMS w/Rtx-1, 60 m X 0.32mm ID X 1.0 um
QLast Update : Tue Jan 14 17:42:34 2020
Response via : Initial Calibration







TIC: 3W71248.D\data.ms

(92) 4-ETHYLTOLUENE

17.111min (+0.096) 0.09PPBV

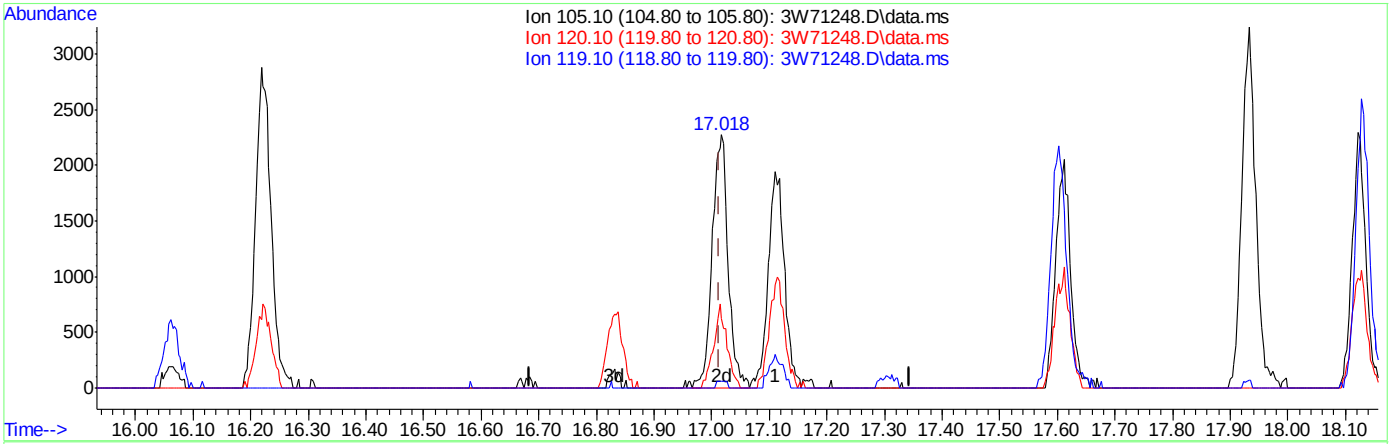
response 3782

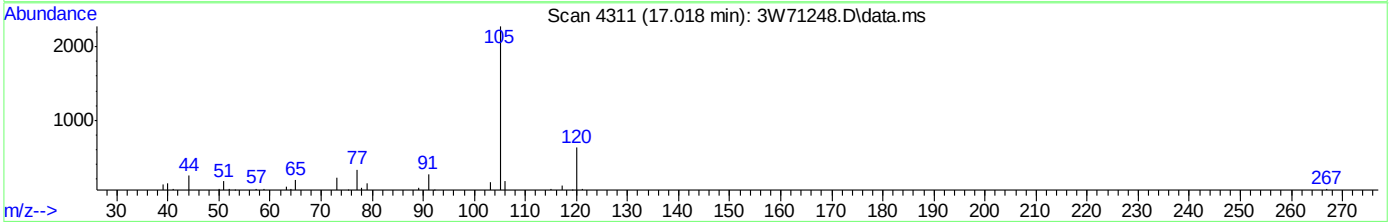
Ion	Exp%	Act%
105.10	100	100
120.10	29.20	47.54
119.10	2.40	12.53
0.00	0.00	0.00

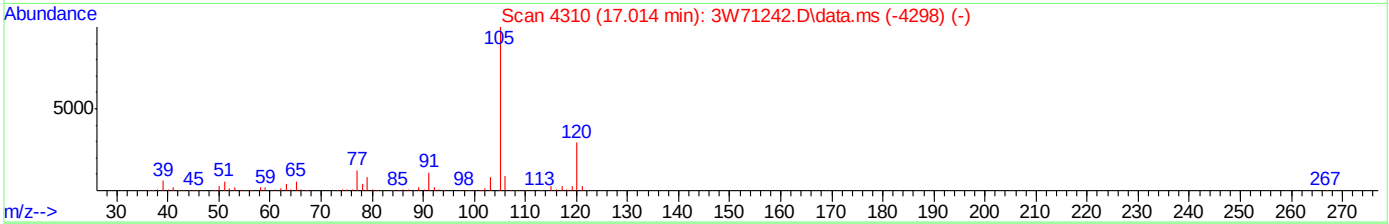
Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\
Data File : 3W71248.D
Acq On : 14 Jan 2020 7:51 pm
Operator : danat
Sample : ic2789-0.1
Misc : MS40248,V3W2789,,,,,1
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Jan 15 09:09:13 2020
Quant Method : C:\msdchem\1\METHODS\M3W2789.M
Quant Title : TO15 by GCMS w/Rtx-1, 60 m X 0.32mm ID X 1.0 um
QLast Update : Tue Jan 14 17:42:34 2020
Response via : Initial Calibration







TIC: 3W71248.D\data.ms

(92) 4-ETHYLTOLUENE

17.018min (+0.003) 0.11PPBV m

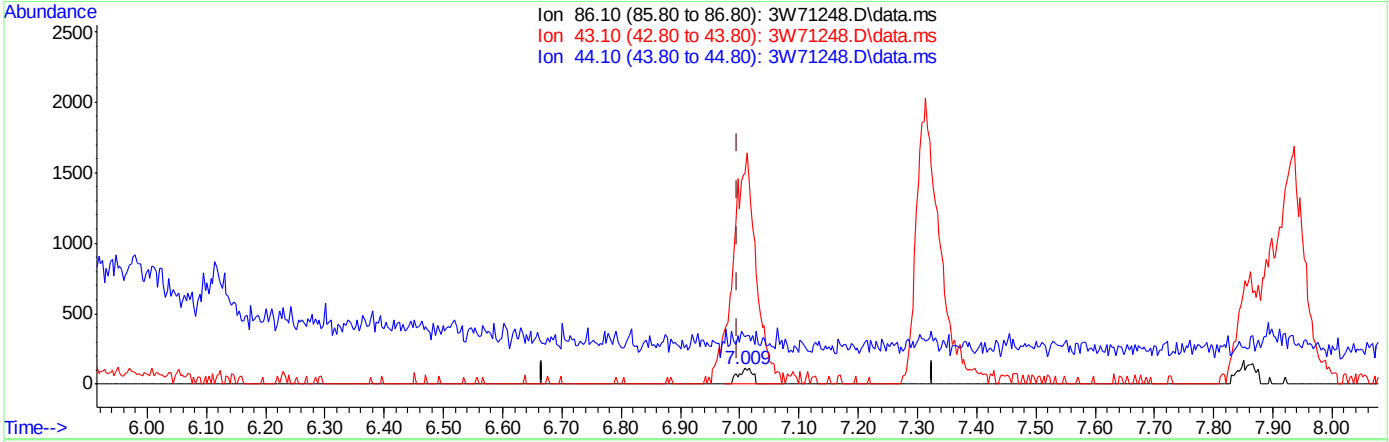
response 4396

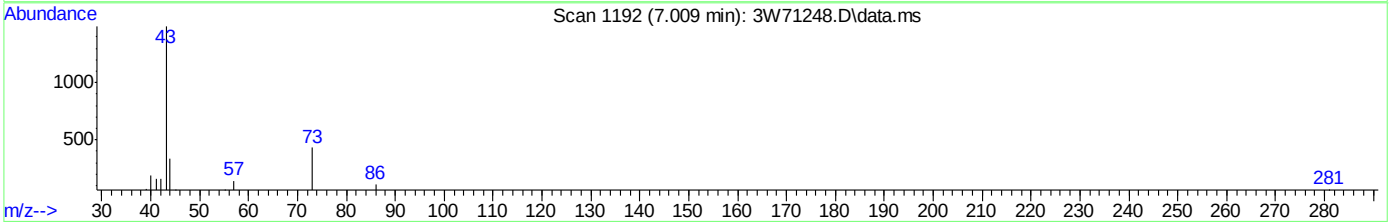
Ion	Exp%	Act%
105.10	100	100
120.10	29.20	40.90
119.10	2.40	10.78
0.00	0.00	0.00

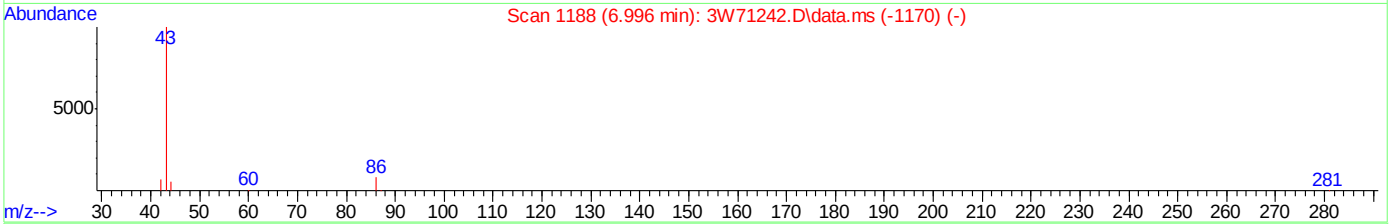
Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\
Data File : 3W71248.D
Acq On : 14 Jan 2020 7:51 pm
Operator : danat
Sample : ic2789-0.1
Misc : MS40248,V3W2789,,,,,1
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Jan 15 09:12:25 2020
Quant Method : C:\msdchem\1\METHODS\M3W2789.M
Quant Title : TO15 by GCMS w/Rtx-1, 60 m X 0.32mm ID X 1.0 um
QLast Update : Tue Jan 14 17:42:34 2020
Response via : Initial Calibration







TIC: 3W71248.D\data.ms

(39) VINYL ACETATE

7.009min (+0.013) 0.07PPBV m

response 189

Ion	Exp%	Act%
86.10	100	100
43.10	1493.40	2376.72#
44.10	84.20	0.00#
0.00	0.00	0.00

Manual Integrations APPROVED (compounds with "m" flag)
Dana Tryon 01/15/20 16:07

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\
Data File : 3W71249.D
Acq On : 14 Jan 2020 8:40 pm
Operator : danat
Sample : ic2789-0.04
Misc : MS40248,V3W2789,,,,,1
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Jan 15 09:18:04 2020
Quant Method : C:\msdchem\1\METHODS\M3W2789.M
Quant Title : TO15 by GCMS w/Rtx-1, 60 m X 0.32mm ID X 1.0 um
QLast Update : Wed Jan 15 09:13:04 2020
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) BROMOCHLOROMETHANE	7.824	128	112706	10.00	PPBV		0.00
51) 1,4-DIFLUOROBENZENE	9.778	114	462257	10.00	PPBV		0.00
70) CHLOROBENZENE-D5	14.354	82	217910	10.00	PPBV		0.00
System Monitoring Compounds							
85) 4-BROMOFLUOROBENZENE	16.061	95	219536	9.07	PPBV		0.00
Spiked Amount 10.000	Range 65 - 128		Recovery = 90.70%				
Target Compounds							Qvalue
3) FREON 152A	3.903	65	353	0.04	PPBV	#	45
5) CHLOROTRIFLUOROETHENE	3.957	116	579	0.03	PPBV		95
6) DICHLORODIFLUOROMETHANE	4.006	85	1377	0.04	PPBV		95
8) 1-CHLORO-1,1-DIFLUOROE...	4.105	65	1135	0.04	PPBV	#	1
9) FREON 114	4.185	85	1390	0.04	PPBV		98
10) CHLOROMETHANE	4.134	52	173	0.03	PPBV	#	1
11) VINYL CHLORIDE	4.278	62	593	0.03	PPBV	#	74
12) 1,3-BUTADIENE	4.375	54	507	0.04	PPBV	#	1
14) BROMOMETHANE	4.564	94	590	0.04	PPBV	#	80
15) CHLOROETHANE	4.679	64	218	0.03	PPBV	#	37
16) DICHLOROFLUOROMETHANE	4.728	67	1360	0.04	PPBV	#	94
18) ACROLEIN	5.036	56	334	0.05	PPBV		92
19) FREON 123	5.007	83	1201	0.03	PPBV	#	79
20) FREON 123A	5.055	117	548	0.03	PPBV	#	86
21) TRICHLOROFLUOROMETHANE	5.231	101	1202	0.04	PPBV	#	93
24) PENTANE	5.491	42	996	0.05	PPBV	#	74
25) IODOMETHANE	5.681	142	1253	0.04	PPBV		95
26) 1,1-DICHLOROETHYLENE	5.729	96	531	0.04	PPBV		94
27) CARBON DISULFIDE	6.123	76	1643	0.04	PPBV	#	57
29) BROMOETHENE	4.920	106	465	0.04	PPBV	#	93
30) ACRYLONITRILE	5.485	52	300	0.03	PPBV	#	68
32) 3-CHLOROPROPENE	5.934	76	232	0.03	PPBV	#	1
33) FREON 113	6.043	151	770	0.04	PPBV		94
34) TRANS-1,2-DICHLOROETHY...	6.675	96	487	0.04	PPBV		96
35) TERTIARY BUTYL ALCOHOL	5.892	59	1043	0.04	PPBV	#	68
36) METHYL TERTIARY BUTYL ...	6.993	73	1167	0.03	PPBV	#	66
37) TETRAHYDROFURAN	8.495	72	202	0.03	PPBV	#	57
38) HEXANE	7.856	57	989	0.04	PPBV		90
40) 1,1-DICHLOROETHANE	6.865	63	1087	0.04	PPBV	#	89
42) cis-1,2-DICHLOROETHYLENE	7.657	96	595	0.04	PPBV	#	77
46) CHLOROFORM	7.953	83	1134	0.04	PPBV	#	70
47) 2,4-DIMETHYLPENTANE	8.739	57	1036	0.04	PPBV		92
48) 1,1,1-TRICHLOROETHANE	8.954	97	1037	0.04	PPBV		98
49) CARBON TETRACHLORIDE	9.563	117	1034	0.04	PPBV		96
50) 1,2-DICHLOROETHANE	8.691	62	712	0.04	PPBV	#	94
52) BENZENE	9.419	78	1915	0.05	PPBV		98
53) CYCLOHEXANE	9.689	84	665	0.04	PPBV		97
54) 2,3-DIMETHYLPENTANE	9.942	71	325	0.04	PPBV	#	64
55) TRICHLOROETHYLENE	10.507	95	677	0.04	PPBV		97
56) 1,2-DICHLOROPROPANE	10.269	63	731	0.05	PPBV		76

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\
Data File : 3W71249.D
Acq On : 14 Jan 2020 8:40 pm
Operator : danat
Sample : ic2789-0.04
Misc : MS40248,V3W2789,,,,,1
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Jan 15 09:18:04 2020
Quant Method : C:\msdchem\1\METHODS\M3W2789.M
Quant Title : TO15 by GCMS w/Rtx-1, 60 m X 0.32mm ID X 1.0 um
QLast Update : Wed Jan 15 09:13:04 2020
Response via : Initial Calibration

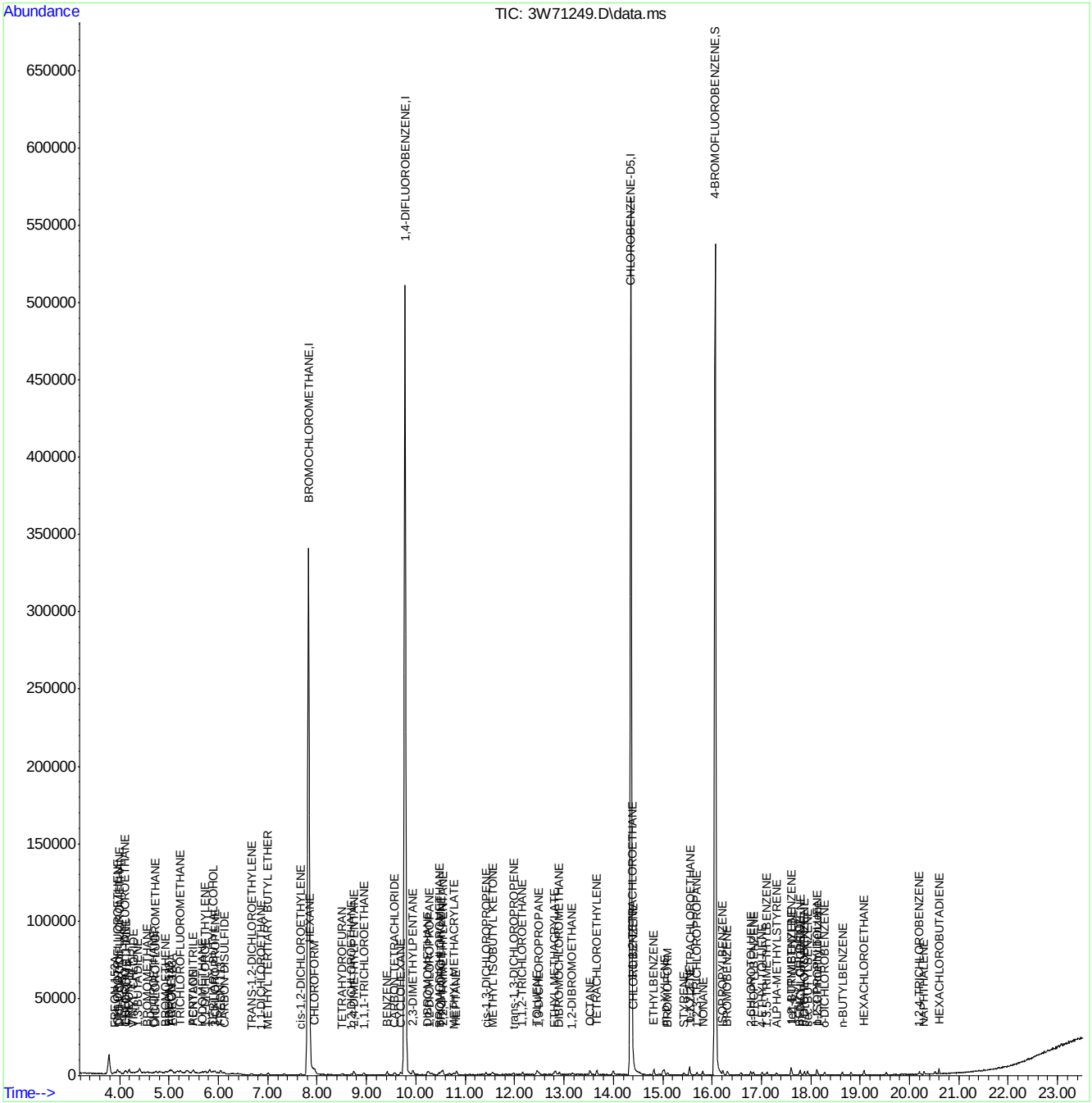
	Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
57)	DIBROMOMETHANE	10.237	174	781	0.06	PPBV		93
59)	BROMODICHLOROMETHANE	10.468	83	1144	0.04	PPBV		99
60)	2,2,4-TRIMETHYLPENTANE	10.542	57	2767	0.04	PPBV	#	92
62)	HEPTANE	10.821	43	1117	0.04	PPBV		96
63)	METHYL METHACRYLATE	10.773	69	510	0.04	PPBV	#	79
64)	METHYL ISOBUTYL KETONE	11.550	58	419	0.04	PPBV	#	74
65)	cis-1,3-DICHLOROPROPENE	11.421	75	906	0.04	PPBV		92
66)	TOLUENE	12.451	92	1305	0.05	PPBV		94
67)	1,3-DICHLOROPROPANE	12.487	76	798	0.04	PPBV	#	93
68)	trans-1,3-DICHLOROPROPENE	11.977	75	720	0.04	PPBV		94
69)	1,1,2-TRICHLOROETHANE	12.159	83	538	0.04	PPBV		96
72)	ETHYL METHACRYLATE	12.798	69	717	0.05	PPBV	#	87
73)	TETRACHLOROETHYLENE	13.668	164	657	0.05	PPBV		94
74)	DIBROMOCHLOROMETHANE	12.901	129	912	0.04	PPBV	#	87
75)	1,2-DIBROMOETHANE	13.164	107	900	0.05	PPBV	#	98
76)	OCTANE	13.526	43	1428	0.05	PPBV		94
77)	1,1,1,2-TETRACHLOROETHANE	14.390	131	653	0.04	PPBV		100
78)	CHLOROBENZENE	14.402	112	1332	0.05	PPBV	#	45
79)	ETHYLBENZENE	14.820	91	2928	0.06	PPBV		98
80)	m,p-XYLENE	15.031	106	1705	0.11	PPBV	#	77
81)	o-XYLENE	15.548	106	1137	0.07	PPBV		94
82)	STYRENE	15.429	104	932	0.04	PPBV		94
83)	NONANE	15.811	43	1157	0.04	PPBV	#	88
84)	BROMOFORM	15.099	173	701	0.04	PPBV	#	95
86)	1,1,2,2-TETRACHLOROETHANE	15.551	83	1133	0.04	PPBV	#	91
87)	1,2,3-TRICHLOROPROPANE	15.689	75	909	0.05	PPBV		99
88)	ISOPROPYLBENZENE	16.219	105	1777	0.04	PPBV		98
89)	BROMOBENZENE	16.309	77	1223	0.05	PPBV		97
90)	2-CHLOROTOLUENE	16.780	126	442	0.04	PPBV		85
91)	n-PROPYLBENZENE	16.835	120	384	0.03	PPBV	#	61
92)	4-ETHYLTOLUENE	17.015	105	1414m	0.04	PPBV		
93)	1,3,5-TRIMETHYLBENZENE	17.108	105	1202	0.04	PPBV		94
94)	ALPHA-METHYLSTYRENE	17.307	118	519	0.03	PPBV		94
95)	tert-BUTYLBENZENE	17.599	134	248	0.03	PPBV	#	90
96)	1,2,4-TRIMETHYLBENZENE	17.608	105	1142	0.04	PPBV		95
97)	m-DICHLOROBENZENE	17.785	146	909	0.04	PPBV		97
98)	BENZYL CHLORIDE	17.772	91	1169	0.04	PPBV		93
99)	p-DICHLOROBENZENE	17.868	146	1025	0.05	PPBV		92
100)	sec-BUTYLBENZENE	17.939	134	243	0.03	PPBV	#	33
101)	1,2,3-Trimethylbenzene	18.122	105	1190	0.04	PPBV		98
102)	p-ISOPROPYLTOLUENE	18.134	134	256	0.03	PPBV	#	62
103)	o-DICHLOROBENZENE	18.279	146	990	0.05	PPBV		93
104)	n-BUTYLBENZENE	18.641	134	245	0.03	PPBV	#	75
105)	HEXACHLOROETHANE	19.075	117	624	0.04	PPBV		95
106)	HEXACHLOROBUTADIENE	20.596	225	558	0.05	PPBV		92
107)	1,2,4-TRICHLOROBENZENE	20.198	180	633	0.07	PPBV		94
108)	NAPHTHALENE	20.291	128	1158	0.06	PPBV		93

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\
Data File : 3W71249.D
Acq On : 14 Jan 2020 8:40 pm
Operator : danat
Sample : ic2789-0.04
Misc : MS40248,V3W2789,,,,,1
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Jan 15 09:18:04 2020
Quant Method : C:\msdchem\1\METHODS\M3W2789.M
Quant Title : TO15 by GCMS w/Rtx-1, 60 m X 0.32mm ID X 1.0 um
QLast Update : Wed Jan 15 09:13:04 2020
Response via : Initial Calibration



M3W2789.M Wed Jan 15 09:24:53 2020 GCMS6W Page: 3

Manual Integration Approval Summary

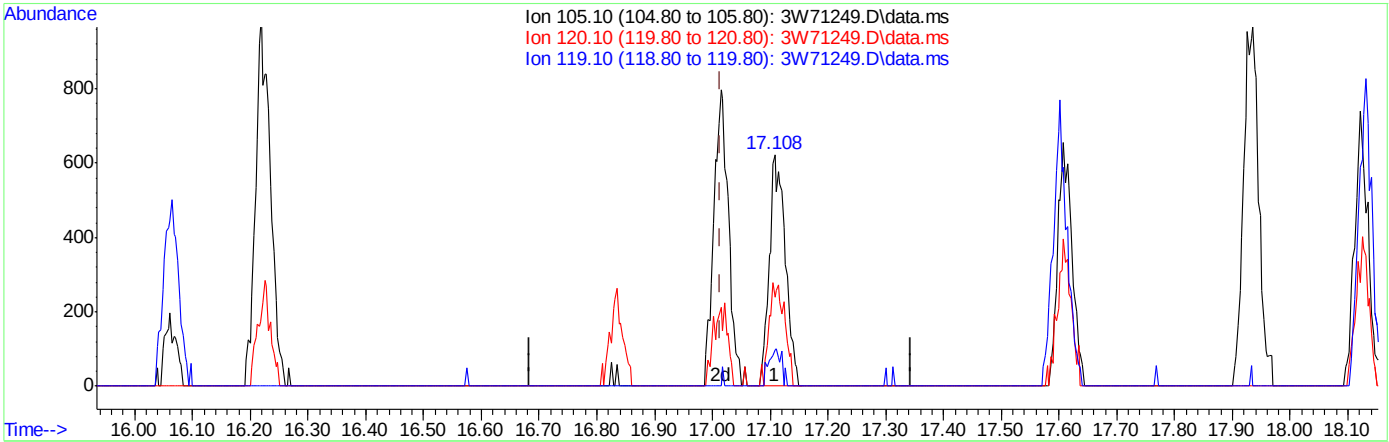
Sample Number:	V3W2789-IC2789	**Method:**	TO-15
Lab FileID:	3W71249.D	**Analyst approved:**	01/15/20 09:41 Dana Tryon
Injection Time:	01/14/20 20:40	**Supervisor approved:**	01/15/20 16:07 Dana Tryon

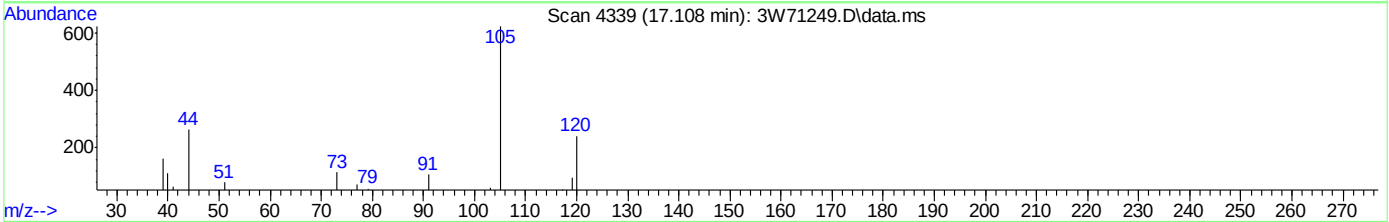
Parameter	CAS	Sig#	R.T. (min.)	Reason
4-Ethyltoluene	622-96-8		17.01	Poor instrument integration

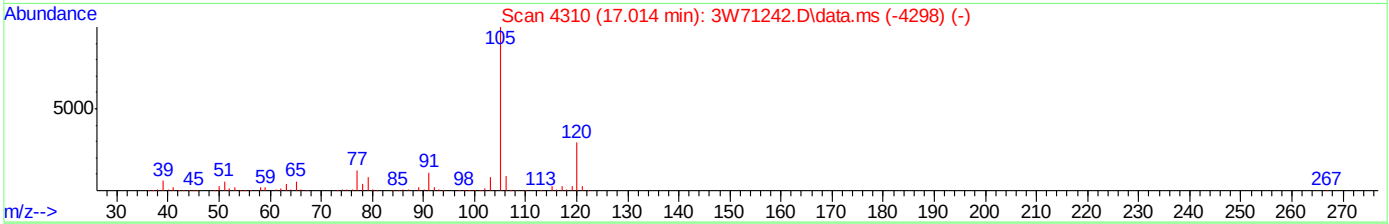
Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\
Data File : 3W71249.D
Acq On : 14 Jan 2020 8:40 pm
Operator : danat
Sample : ic2789-0.04
Misc : MS40248,V3W2789,,,,,1
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Jan 15 09:13:48 2020
Quant Method : C:\msdchem\1\METHODS\M3W2789.M
Quant Title : TO15 by GCMS w/Rtx-1, 60 m X 0.32mm ID X 1.0 um
QLast Update : Wed Jan 15 09:13:04 2020
Response via : Initial Calibration







TIC: 3W71249.D\data.ms

(92) 4-ETHYLTOLUENE

17.108min (+0.093) 0.03PPBV

response 1202

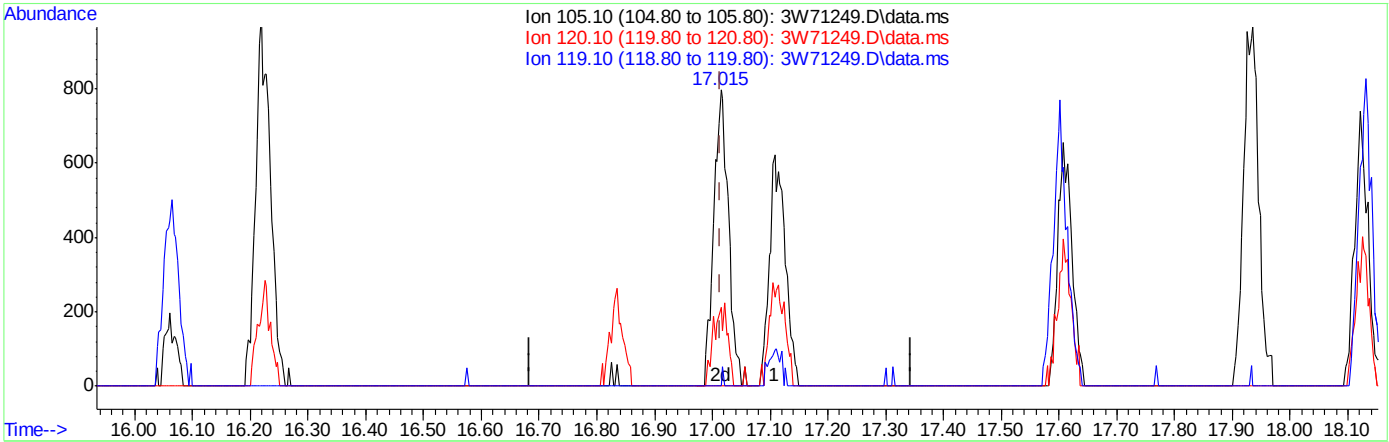
Ion	Exp%	Act%
105.10	100	100
120.10	29.20	44.51
119.10	2.40	13.31
0.00	0.00	0.00

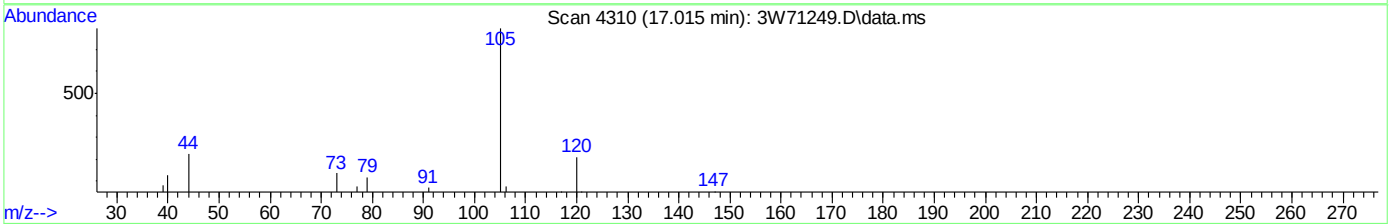
3W71249.D edits: 4-ETHYLTOLUENE

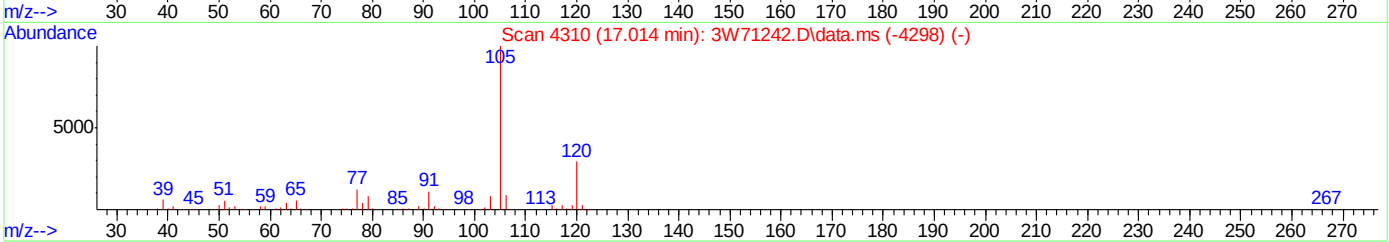
Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\
Data File : 3W71249.D
Acq On : 14 Jan 2020 8:40 pm
Operator : danat
Sample : ic2789-0.04
Misc : MS40248,V3W2789,,,,,1
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Jan 15 09:13:48 2020
Quant Method : C:\msdchem\1\METHODS\M3W2789.M
Quant Title : TO15 by GCMS w/Rtx-1, 60 m X 0.32mm ID X 1.0 um
QLast Update : Wed Jan 15 09:13:04 2020
Response via : Initial Calibration







TIC: 3W71249.D\data.ms

(92) 4-ETHYLTOLUENE

17.015min (+0.000) 0.04PPBV m

response 1414

Ion	Exp%	Act%
105.10	100	100
120.10	29.20	37.84
119.10	2.40	11.32
0.00	0.00	0.00

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\
Data File : 3W71250.D
Acq On : 14 Jan 2020 9:30 pm
Operator : danat
Sample : icv2789-10
Misc : MS40248,V3W2789,,,,,1
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Jan 15 09:19:54 2020
Quant Method : C:\msdchem\1\METHODS\M3W2789.M
Quant Title : TO15 by GCMS w/Rtx-1, 60 m X 0.32mm ID X 1.0 um
QLast Update : Wed Jan 15 09:18:27 2020
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) BROMOCHLOROMETHANE	7.831	128	109451	10.00	PPBV	0.00
51) 1,4-DIFLUOROBENZENE	9.785	114	555619	10.00	PPBV	0.00
70) CHLOROBENZENE-D5	14.361	82	265468	10.00	PPBV	0.00
System Monitoring Compounds						
85) 4-BROMOFLUOROBENZENE	16.065	95	280699	9.63	PPBV	0.00
Spiked Amount 10.000	Range 65 - 128		Recovery = 96.30%			
Target Compounds						Qvalue
2) FREON 115	3.819	119	5148	9.80	PPBV	99
3) FREON 152A	3.900	65	80488	8.56	PPBV	99
4) CHLORODIFLUOROMETHANE	3.929	67	33062	8.50	PPBV	99
5) CHLOROTRIFLUOROETHENE	3.957	116	155944	9.10	PPBV	99
6) DICHLORODIFLUOROMETHANE	4.006	85	324240	8.70	PPBV	100
7) PROPYLENE	3.954	41	127841	8.60	PPBV	100
8) 1-CHLORO-1,1-DIFLUOROE...	4.105	65	246418	8.54	PPBV	100
9) FREON 114	4.185	85	318380	8.40	PPBV	100
10) CHLOROMETHANE	4.124	52	42645	8.65	PPBV	98
11) VINYL CHLORIDE	4.275	62	137806	8.50	PPBV	100
12) 1,3-BUTADIENE	4.368	54	104129	8.57	PPBV	100
13) n-BUTANE	4.403	43	219916	7.91	PPBV	100
14) BROMOMETHANE	4.561	94	116441	8.15	PPBV	99
15) CHLOROETHANE	4.676	64	66974	8.71	PPBV	99
16) DICHLOROFLUOROMETHANE	4.728	67	275524	8.27	PPBV	100
17) ACETONITRILE	4.923	41	94579	7.44	PPBV	99
18) ACROLEIN	5.007	56	49781	7.53	PPBV	97
19) FREON 123	5.010	83	301863	9.04	PPBV	99
20) FREON 123A	5.052	117	153197	9.68	PPBV	99
21) TRICHLOROFLUOROMETHANE	5.228	101	275302	8.44	PPBV	100
22) ISOPROPYL ALCOHOL	5.292	45	205824	7.56	PPBV	98
23) ACETONE	5.116	58	48883	7.55	PPBV	99
24) PENTANE	5.491	42	147978	7.79	PPBV	99
25) IODOMETHANE	5.677	142	274346	8.59	PPBV	99
26) 1,1-DICHLOROETHYLENE	5.729	96	114635	8.59	PPBV	100
27) CARBON DISULFIDE	6.117	76	370365	9.23	PPBV	99
28) ETHANOL	4.769	45	50061	7.58	PPBV	100
29) BROMOETHENE	4.926	106	111070	8.87	PPBV	99
30) ACRYLONITRILE	5.453	52	73638	8.23	PPBV	99
31) METHYLENE CHLORIDE	5.822	84	111236	7.97	PPBV	100
32) 3-CHLOROPROPENE	5.924	76	59050	8.75	PPBV	98
33) FREON 113	6.046	151	165073	8.41	PPBV	99
34) TRANS-1,2-DICHLOROETHY...	6.669	96	118299	9.11	PPBV	99
35) TERTIARY BUTYL ALCOHOL	5.780	59	197615	7.59	PPBV	100
36) METHYL TERTIARY BUTYL ...	6.926	73	285801	8.36	PPBV	100
37) TETRAHYDROFURAN	8.395	72	47935	8.10	PPBV	99
38) HEXANE	7.863	57	214238	9.02	PPBV	98
39) VINYL ACETATE	6.999	86	21091	8.84	PPBV	99
40) 1,1-DICHLOROETHANE	6.861	63	243927	8.75	PPBV	100
41) METHYL ETHYL KETONE	7.259	72	47491	8.11	PPBV	95

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\
Data File : 3W71250.D
Acq On : 14 Jan 2020 9:30 pm
Operator : danat
Sample : icv2789-10
Misc : MS40248,V3W2789,,,,,1
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Jan 15 09:19:54 2020
Quant Method : C:\msdchem\1\METHODS\M3W2789.M
Quant Title : TO15 by GCMS w/Rtx-1, 60 m X 0.32mm ID X 1.0 um
QLast Update : Wed Jan 15 09:18:27 2020
Response via : Initial Calibration

	Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
42)	cis-1,2-DICHLOROETHYLENE	7.664	96	125452	8.85	PPBV		100
43)	DIISOPROPYL ETHER	7.866	59	50930	8.26	PPBV		96
44)	ETHYL ACETATE	7.895	61	35364	8.65	PPBV	#	97
45)	METHYL ACRYLATE	7.882	55	201510	8.25	PPBV		99
46)	CHLOROFORM	7.959	83	263934	8.91	PPBV		100
47)	2,4-DIMETHYLPENTANE	8.745	57	252155	8.99	PPBV		99
48)	1,1,1-TRICHLOROETHANE	8.950	97	251566	9.04	PPBV		99
49)	CARBON TETRACHLORIDE	9.576	117	244793	9.22	PPBV		100
50)	1,2-DICHLOROETHANE	8.697	62	171801	9.11	PPBV		100
52)	BENZENE	9.425	78	408631	8.34	PPBV		100
53)	CYCLOHEXANE	9.698	84	164701	8.35	PPBV		99
54)	2,3-DIMETHYLPENTANE	9.945	71	89322	8.41	PPBV		99
55)	TRICHLOROETHYLENE	10.513	95	170242	8.74	PPBV		99
56)	1,2-DICHLOROPROPANE	10.269	63	158571	8.52	PPBV		100
57)	DIBROMOMETHANE	10.240	174	126820	7.76	PPBV		100
58)	ETHYL ACRYLATE	10.289	55	232174	8.30	PPBV		100
59)	BROMODICHLOROMETHANE	10.475	83	291605	8.72	PPBV		100
60)	2,2,4-TRIMETHYLPENTANE	10.545	57	691736	8.61	PPBV		100
61)	1,4-DIOXANE	10.555	88	66030	8.10	PPBV		97
62)	HEPTANE	10.824	43	266589	8.46	PPBV		100
63)	METHYL METHACRYLATE	10.741	69	109116	7.72	PPBV		99
64)	METHYL ISOBUTYL KETONE	11.482	58	100810	8.41	PPBV		99
65)	cis-1,3-DICHLOROPROPENE	11.425	75	238852	9.67	PPBV		99
66)	TOLUENE	12.455	92	256094	8.52	PPBV		99
67)	1,3-DICHLOROPROPANE	12.490	76	197969	8.49	PPBV	#	100
68)	trans-1,3-DICHLOROPROPENE	11.983	75	182837	9.06	PPBV		100
69)	1,1,2-TRICHLOROETHANE	12.166	83	133408	8.67	PPBV		99
71)	2-HEXANONE	12.769	58	132848	9.68	PPBV		99
72)	ETHYL METHACRYLATE	12.772	69	179108	9.41	PPBV		100
73)	TETRACHLOROETHYLENE	13.668	164	154754	9.17	PPBV		99
74)	DIBROMOCHLOROMETHANE	12.910	129	254888	10.13	PPBV		99
75)	1,2-DIBROMOETHANE	13.170	107	214204	9.39	PPBV		100
76)	OCTANE	13.526	43	360446	9.42	PPBV		100
77)	1,1,1,2-TETRACHLOROETHANE	14.390	131	167927	9.35	PPBV		99
78)	CHLOROBENZENE	14.406	112	322925	9.43	PPBV		100
79)	ETHYLBENZENE	14.823	91	500742	8.35	PPBV		100
80)	m,p-XYLENE	15.025	106	369592	18.07	PPBV		99
81)	o-XYLENE	15.545	106	179536	8.12	PPBV		99
82)	STYRENE	15.426	104	284328	10.12	PPBV		99
83)	NONANE	15.811	43	339752	9.89	PPBV		99
84)	BROMOFORM	15.102	173	214911	10.36	PPBV		99
86)	1,1,2,2-TETRACHLOROETHANE	15.545	83	284718	8.96	PPBV		100
87)	1,2,3-TRICHLOROPROPANE	15.692	75	211497	8.53	PPBV		100
88)	ISOPROPYLBENZENE	16.225	105	518652	9.53	PPBV		100
89)	BROMOBENZENE	16.318	77	286680	9.34	PPBV		100
90)	2-CHLOROTOLUENE	16.787	126	126408	9.63	PPBV		100
91)	n-PROPYLBENZENE	16.835	120	133139	10.05	PPBV		99
92)	4-ETHYLTOLUENE	17.014	105	475168	10.19	PPBV		100
93)	1,3,5-TRIMETHYLBENZENE	17.114	105	396913	10.01	PPBV		99
94)	ALPHA-METHYLSTYRENE	17.306	118	199482	10.66	PPBV		100

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\
Data File : 3W71250.D
Acq On : 14 Jan 2020 9:30 pm
Operator : danat
Sample : icv2789-10
Misc : MS40248,V3W2789,,,,,1
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Jan 15 09:19:54 2020
Quant Method : C:\msdchem\1\METHODS\M3W2789.M
Quant Title : TO15 by GCMS w/Rtx-1, 60 m X 0.32mm ID X 1.0 um
QLast Update : Wed Jan 15 09:18:27 2020
Response via : Initial Calibration

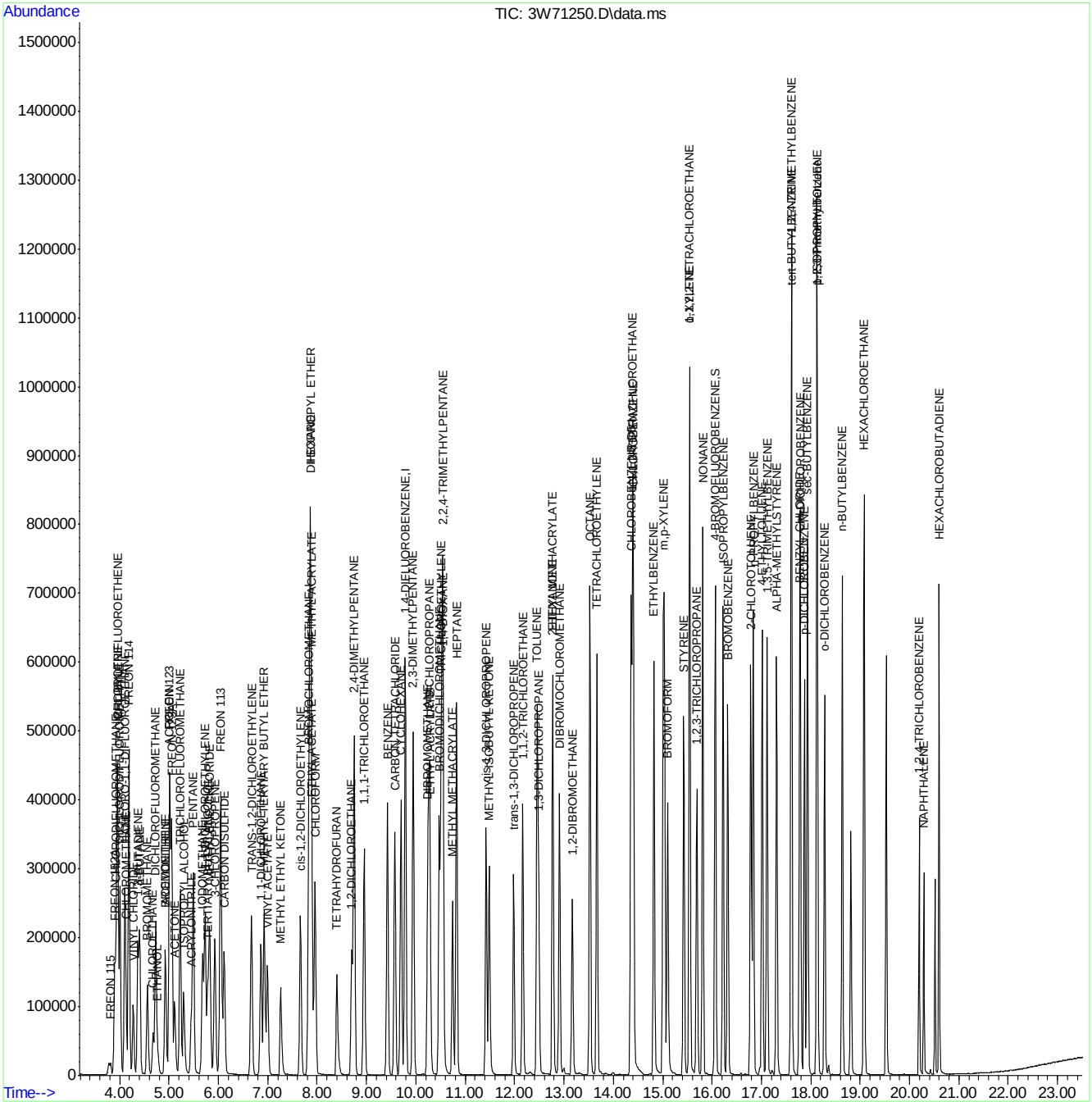
	Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
95)	tert-BUTYLBENZENE	17.605	134	82934	9.69	PPBV	97
96)	1,2,4-TRIMETHYLBENZENE	17.611	105	390719	10.33	PPBV	99
97)	m-DICHLOROBENZENE	17.788	146	251861	9.58	PPBV	100
98)	BENZYL CHLORIDE	17.772	91	323263	9.89	PPBV	100
99)	p-DICHLOROBENZENE	17.871	146	247230	9.29	PPBV	100
100)	sec-BUTYLBENZENE	17.932	134	105987	10.33	PPBV	99
101)	1,2,3-Trimethylbenzene	18.125	105	385809	10.00	PPBV	99
102)	p-ISOPROPYLTOLUENE	18.131	134	112149	10.60	PPBV	98
103)	o-DICHLOROBENZENE	18.279	146	233728	9.22	PPBV	100
104)	n-BUTYLBENZENE	18.638	134	98785	10.72	PPBV	98
105)	HEXACHLOROETHANE	19.078	117	183291	10.31	PPBV	100
106)	HEXACHLOROBUTADIENE	20.599	225	100475	7.74	PPBV	100
107)	1,2,4-TRICHLOROBENZENE	20.194	180	91009	7.15	PPBV	100
108)	NAPHTHALENE	20.291	128	167022	7.50	PPBV	100

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\
Data File : 3W71250.D
Acq On : 14 Jan 2020 9:30 pm
Operator : danat
Sample : icv2789-10
Misc : MS40248,V3W2789,,,,,1
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Jan 15 09:19:54 2020
Quant Method : C:\msdchem\1\METHODS\M3W2789.M
Quant Title : TO15 by GCMS w/Rtx-1, 60 m X 0.32mm ID X 1.0 um
QLast Update : Wed Jan 15 09:18:27 2020
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\
Data File : 3W71398.D
Acq On : 23 Jan 2020 9:39 am
Operator : thomash
Sample : cc2789-10
Misc : MS40366,V3W2796,,,,,1
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Jan 23 13:28:42 2020
Quant Method : C:\msdchem\1\METHODS\M3W2789.M
Quant Title : TO15 by GCMS w/Rtx-1, 60 m X 0.32mm ID X 1.0 um
QLast Update : Wed Jan 15 09:18:27 2020
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) BROMOCHLOROMETHANE	7.827	128	94752	10.00	PPBV	0.00
51) 1,4-DIFLUOROBENZENE	9.782	114	437897	10.00	PPBV	0.00
70) CHLOROBENZENE-D5	14.354	82	204902	10.00	PPBV	0.00
System Monitoring Compounds						
85) 4-BROMOFLUOROBENZENE	16.061	95	217493	9.67	PPBV	0.00
Spiked Amount 10.000	Range 65 - 128		Recovery = 96.70%			
Target Compounds						Qvalue
2) FREON 115	3.819	119	4880	10.73	PPBV	95
3) FREON 152A	3.900	65	70744	8.69	PPBV	99
4) CHLORODIFLUOROMETHANE	3.932	67	28558	8.48	PPBV	97
5) CHLOROTRIFLUOROETHENE	3.957	116	135016	9.10	PPBV	98
6) DICHLORODIFLUOROMETHANE	4.005	85	281967	8.74	PPBV	100
7) PROPYLENE	3.957	41	108067	8.39	PPBV	100
8) 1-CHLORO-1,1-DIFLUOROE...	4.102	65	213370	8.54	PPBV	100
9) FREON 114	4.185	85	286730	8.74	PPBV	100
10) CHLOROMETHANE	4.121	52	39295	9.21	PPBV	97
11) VINYL CHLORIDE	4.275	62	122939	8.75	PPBV	99
12) 1,3-BUTADIENE	4.371	54	91184	8.66	PPBV	99
13) n-BUTANE	4.407	43	199034	8.27	PPBV	100
14) BROMOMETHANE	4.561	94	104813	8.47	PPBV	99
15) CHLOROETHANE	4.676	64	60312	9.06	PPBV	99
16) DICHLOROFLUOROMETHANE	4.728	67	252255	8.75	PPBV	100
17) ACETONITRILE	4.920	41	82105	7.46	PPBV	99
18) ACROLEIN	5.010	56	38710	6.76	PPBV	97
19) FREON 123	5.010	83	256259	8.87	PPBV	99
20) FREON 123A	5.048	117	121745	8.88	PPBV	98
21) TRICHLOROFLUOROMETHANE	5.225	101	248933	8.82	PPBV	100
22) ISOPROPYL ALCOHOL	5.292	45	201717	8.56	PPBV	99
23) ACETONE	5.109	58	42268	7.55	PPBV	99
24) PENTANE	5.488	42	135078	8.22	PPBV	98
25) IODOMETHANE	5.677	142	236675	8.56	PPBV	97
26) 1,1-DICHLOROETHYLENE	5.729	96	98876	8.56	PPBV	97
27) CARBON DISULFIDE	6.114	76	307094	8.84	PPBV	99
28) ETHANOL	4.763	45	48581	8.50	PPBV	98
29) BROMOETHENE	4.926	106	94252	8.70	PPBV	99
30) ACRYLONITRILE	5.446	52	60178	7.77	PPBV	100
31) METHYLENE CHLORIDE	5.819	84	101029	8.36	PPBV	97
32) 3-CHLOROPROPENE	5.924	76	51201	8.76	PPBV	95
33) FREON 113	6.043	151	149491	8.79	PPBV	100
34) TRANS-1,2-DICHLOROETHY...	6.662	96	99324	8.83	PPBV	99
35) TERTIARY BUTYL ALCOHOL	5.780	59	208361	9.24	PPBV	99
36) METHYL TERTIARY BUTYL ...	6.919	73	236475	7.99	PPBV	99
37) TETRAHYDROFURAN	8.392	72	40433	7.89	PPBV	100
38) HEXANE	7.856	57	182344	8.87	PPBV	99
39) VINYL ACETATE	6.990	86	16851	8.16	PPBV	99
40) 1,1-DICHLOROETHANE	6.858	63	209370	8.68	PPBV	100
41) METHYL ETHYL KETONE	7.253	72	40885	8.06	PPBV	96

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\
Data File : 3W71398.D
Acq On : 23 Jan 2020 9:39 am
Operator : thomash
Sample : cc2789-10
Misc : MS40366,V3W2796,,,,,1
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Jan 23 13:28:42 2020
Quant Method : C:\msdchem\1\METHODS\M3W2789.M
Quant Title : TO15 by GCMS w/Rtx-1, 60 m X 0.32mm ID X 1.0 um
QLast Update : Wed Jan 15 09:18:27 2020
Response via : Initial Calibration

	Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
42)	cis-1,2-DICHLOROETHYLENE	7.660	96	107492	8.76	PPBV		99
43)	DIISOPROPYL ETHER	7.863	59	43876	8.22	PPBV		96
44)	ETHYL ACETATE	7.888	61	28222	7.98	PPBV	#	99
45)	METHYL ACRYLATE	7.879	55	167738	7.94	PPBV		99
46)	CHLOROFORM	7.952	83	227287	8.86	PPBV		99
47)	2,4-DIMETHYLPENTANE	8.742	57	218540	9.00	PPBV		99
48)	1,1,1-TRICHLOROETHANE	8.947	97	216080	8.97	PPBV		99
49)	CARBON TETRACHLORIDE	9.570	117	215031	9.35	PPBV		100
50)	1,2-DICHLOROETHANE	8.694	62	141547	8.67	PPBV		99
52)	BENZENE	9.419	78	343841	8.90	PPBV		100
53)	CYCLOHEXANE	9.692	84	141819	9.12	PPBV		100
54)	2,3-DIMETHYLPENTANE	9.942	71	76703	9.16	PPBV		100
55)	TRICHLOROETHYLENE	10.507	95	143471	9.34	PPBV		100
56)	1,2-DICHLOROPROPANE	10.266	63	123768	8.44	PPBV		100
57)	DIBROMOMETHANE	10.237	174	109901	8.53	PPBV		99
58)	ETHYL ACRYLATE	10.282	55	200739	9.10	PPBV		100
59)	BROMODICHLOROMETHANE	10.468	83	252638	9.59	PPBV		100
60)	2,2,4-TRIMETHYLPENTANE	10.539	57	604638	9.55	PPBV		100
61)	1,4-DIOXANE	10.548	88	58204	9.06	PPBV	#	82
62)	HEPTANE	10.821	43	230031	9.26	PPBV		100
63)	METHYL METHACRYLATE	10.738	69	91718	8.24	PPBV		99
64)	METHYL ISOBUTYL KETONE	11.476	58	90425	9.57	PPBV		100
65)	cis-1,3-DICHLOROPROPENE	11.418	75	173042	8.89	PPBV		99
66)	TOLUENE	12.451	92	199764	8.43	PPBV		99
67)	1,3-DICHLOROPROPANE	12.483	76	160865	8.75	PPBV	#	99
68)	trans-1,3-DICHLOROPROPENE	11.976	75	140185	8.81	PPBV		100
69)	1,1,2-TRICHLOROETHANE	12.156	83	107473	8.86	PPBV		100
71)	2-HEXANONE	12.763	58	120384	11.37	PPBV		98
72)	ETHYL METHACRYLATE	12.769	69	159028	10.82	PPBV		99
73)	TETRACHLOROETHYLENE	13.664	164	135407	10.39	PPBV		99
74)	DIBROMOCHLOROMETHANE	12.904	129	216700	11.16	PPBV		99
75)	1,2-DIBROMOETHANE	13.164	107	170418	9.68	PPBV		99
76)	OCTANE	13.523	43	313100	10.61	PPBV		99
77)	1,1,1,2-TETRACHLOROETHANE	14.386	131	142620	10.28	PPBV		99
78)	CHLOROBENZENE	14.402	112	262823	9.95	PPBV		99
79)	ETHYLBENZENE	14.820	91	402306	8.69	PPBV		100
80)	m,p-XYLENE	15.025	106	300726	19.04	PPBV		99
81)	o-XYLENE	15.542	106	147724	8.66	PPBV		99
82)	STYRENE	15.423	104	228547	10.54	PPBV		99
83)	NONANE	15.808	43	288293	10.88	PPBV		99
84)	BROMOFORM	15.099	173	185593	11.59	PPBV		99
86)	1,1,2,2-TETRACHLOROETHANE	15.542	83	250084	10.20	PPBV		100
87)	1,2,3-TRICHLOROPROPANE	15.689	75	183513	9.59	PPBV		100
88)	ISOPROPYLBENZENE	16.219	105	436232	10.39	PPBV		100
89)	BROMOBENZENE	16.315	77	233921	9.87	PPBV		99
90)	2-CHLOROTOLUENE	16.780	126	106514	10.51	PPBV		99
91)	n-PROPYLBENZENE	16.828	120	111681	10.92	PPBV		100
92)	4-ETHYLTOLUENE	17.011	105	393999	10.95	PPBV		100
93)	1,3,5-TRIMETHYLBENZENE	17.111	105	335883	10.97	PPBV		100
94)	ALPHA-METHYLSTYRENE	17.303	118	168298	11.66	PPBV		100

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\
Data File : 3W71398.D
Acq On : 23 Jan 2020 9:39 am
Operator : thomash
Sample : cc2789-10
Misc : MS40366,V3W2796,,,,,1
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Jan 23 13:28:42 2020
Quant Method : C:\msdchem\1\METHODS\M3W2789.M
Quant Title : TO15 by GCMS w/Rtx-1, 60 m X 0.32mm ID X 1.0 um
QLast Update : Wed Jan 15 09:18:27 2020
Response via : Initial Calibration

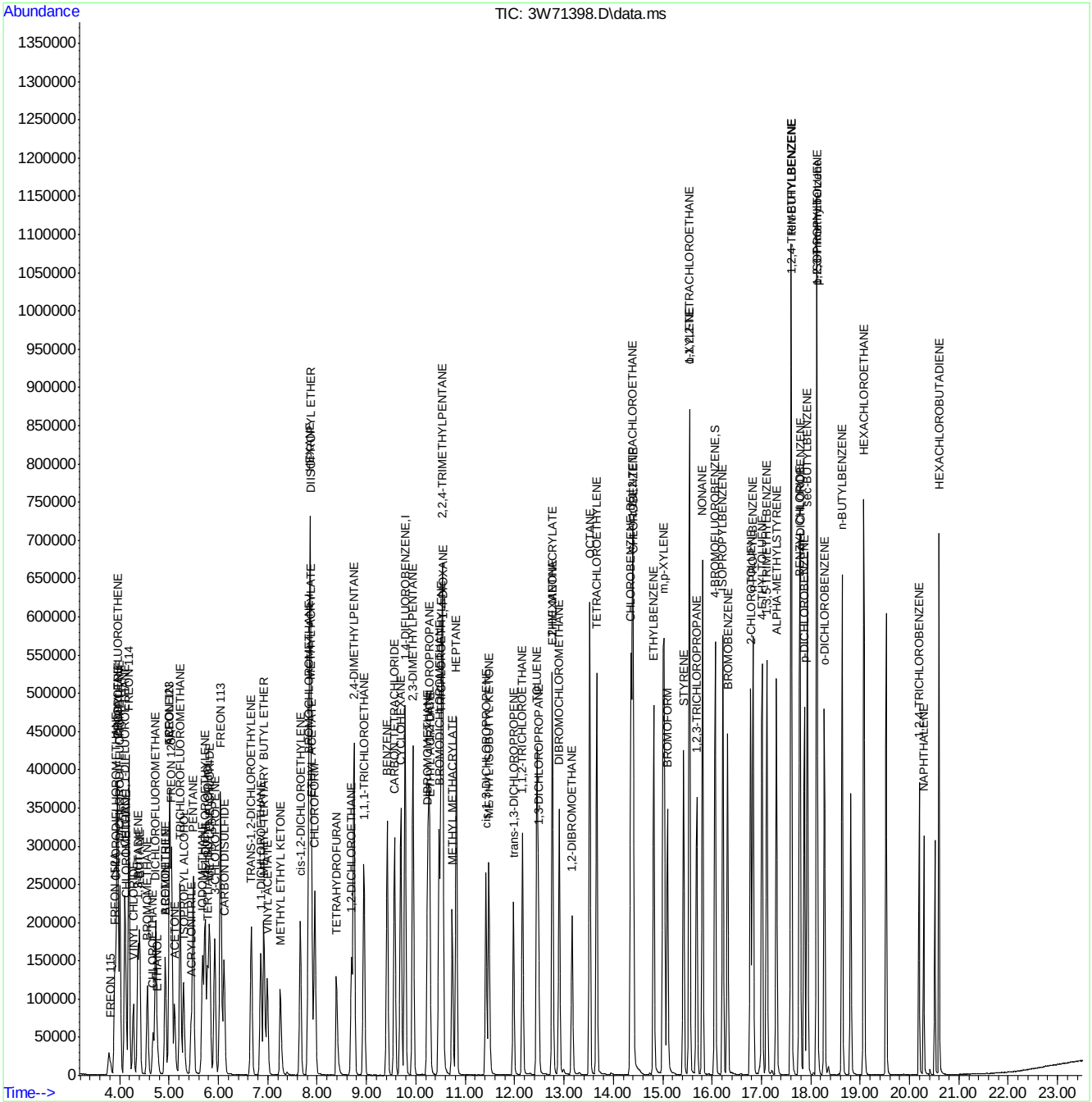
	Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
95)	tert-BUTYLBENZENE	17.598	134	73040	11.06	PPBV	97
96)	1,2,4-TRIMETHYLBENZENE	17.608	105	336779	11.54	PPBV	100
97)	m-DICHLOROBENZENE	17.785	146	216326	10.66	PPBV	100
98)	BENZYL CHLORIDE	17.769	91	294427	11.67	PPBV	100
99)	p-DICHLOROBENZENE	17.868	146	211183	10.28	PPBV	100
100)	sec-BUTYLBENZENE	17.929	134	92434	11.68	PPBV	98
101)	1,2,3-Trimethylbenzene	18.121	105	348541	11.71	PPBV	99
102)	p-ISOPROPYLTOLUENE	18.128	134	102531	12.55	PPBV	99
103)	o-DICHLOROBENZENE	18.276	146	207131	10.59	PPBV	100
104)	n-BUTYLBENZENE	18.635	134	89306	12.55	PPBV	99
105)	HEXACHLOROETHANE	19.075	117	165685	12.07	PPBV	100
106)	HEXACHLOROBUTADIENE	20.596	225	99128	9.90	PPBV	99
107)	1,2,4-TRICHLOROBENZENE	20.194	180	92905	9.46	PPBV	99
108)	NAPHTHALENE	20.287	128	175938	9.54	PPBV	100

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\
Data File : 3W71398.D
Acq On : 23 Jan 2020 9:39 am
Operator : thomash
Sample : cc2789-10
Misc : MS40366,V3W2796,,,,,1
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Jan 23 13:28:42 2020
Quant Method : C:\msdchem\1\METHODS\M3W2789.M
Quant Title : TO15 by GCMS w/Rtx-1, 60 m X 0.32mm ID X 1.0 um
QLast Update : Wed Jan 15 09:18:27 2020
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\
Data File : 3W71596.D
Acq On : 11 Feb 2020 11:15 am
Operator : danat
Sample : cc2789-10
Misc : MS40975,V3W2806,,,,,1
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Feb 11 11:46:47 2020
Quant Method : C:\msdchem\1\METHODS\M3W2789.M
Quant Title : TO15 by GCMS w/Rtx-1, 60 m X 0.32mm ID X 1.0 um
QLast Update : Wed Jan 15 09:18:27 2020
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) BROMOCHLOROMETHANE	7.824	128	101258	10.00	PPBV		0.00
51) 1,4-DIFLUOROBENZENE	9.778	114	428959	10.00	PPBV		0.00
70) CHLOROBENZENE-D5	14.354	82	204698	10.00	PPBV		0.00
System Monitoring Compounds							
85) 4-BROMOFLUOROBENZENE	16.058	95	219587	9.77	PPBV		0.00
Spiked Amount 10.000	Range 65 - 128		Recovery = 97.70%				
Target Compounds							Qvalue
2) FREON 115	3.820	119	5766	11.86	PPBV		99
3) FREON 152A	3.900	65	94172	10.82	PPBV		97
4) CHLORODIFLUOROMETHANE	3.932	67	34993	9.73	PPBV		100
5) CHLOROTRIFLUOROETHENE	3.958	116	170404	10.75	PPBV		99
6) DICHLORODIFLUOROMETHANE	4.006	85	347605	10.08	PPBV		99
7) PROPYLENE	3.958	41	145503	10.57	PPBV		98
8) 1-CHLORO-1,1-DIFLUOROE...	4.105	65	261515	9.80	PPBV		99
9) FREON 114	4.185	85	365027	10.41	PPBV		97
10) CHLOROMETHANE	4.121	52	51196	11.22	PPBV	#	88
11) VINYL CHLORIDE	4.275	62	165653	11.04	PPBV		99
12) 1,3-BUTADIENE	4.368	54	125612	11.17	PPBV		97
13) n-BUTANE	4.404	43	264470	10.29	PPBV		100
14) BROMOMETHANE	4.558	94	132894	10.05	PPBV		100
15) CHLOROETHANE	4.676	64	79191	11.14	PPBV		97
16) DICHLOROFLUOROMETHANE	4.728	67	320596	10.40	PPBV		99
17) ACETONITRILE	4.923	41	95423	8.11	PPBV		97
18) ACROLEIN	5.010	56	49064	8.02	PPBV		99
19) FREON 123	5.010	83	318702	10.32	PPBV		99
20) FREON 123A	5.049	117	147585	10.08	PPBV		93
21) TRICHLOROFLUOROMETHANE	5.225	101	286451	9.50	PPBV		100
22) ISOPROPYL ALCOHOL	5.292	45	216136	8.58	PPBV		95
23) ACETONE	5.113	58	42573	7.11	PPBV		95
24) PENTANE	5.488	42	170511	9.71	PPBV		98
25) IODOMETHANE	5.674	142	302623	10.24	PPBV		97
26) 1,1-DICHLOROETHYLENE	5.726	96	124369	10.08	PPBV		98
27) CARBON DISULFIDE	6.111	76	369702	9.96	PPBV		98
28) ETHANOL	4.766	45	52486	8.59	PPBV		99
29) BROMOETHENE	4.923	106	121149	10.46	PPBV		100
30) ACRYLONITRILE	5.450	52	69463	8.39	PPBV		99
31) METHYLENE CHLORIDE	5.819	84	120601	9.34	PPBV		96
32) 3-CHLOROPROPENE	5.925	76	67155	10.75	PPBV		96
33) FREON 113	6.040	151	178776	9.84	PPBV		99
34) TRANS-1,2-DICHLOROETHY...	6.663	96	124580	10.37	PPBV		99
35) TERTIARY BUTYL ALCOHOL	5.774	59	221731	9.20	PPBV		99
36) METHYL TERTIARY BUTYL ...	6.919	73	239538	7.57	PPBV		98
37) TETRAHYDROFURAN	8.389	72	42358	7.74	PPBV		99
38) HEXANE	7.853	57	228427	10.40	PPBV		92
39) VINYL ACETATE	6.990	86	18295	8.29	PPBV		98
40) 1,1-DICHLOROETHANE	6.855	63	256138	9.94	PPBV		99
41) METHYL ETHYL KETONE	7.253	72	40924	7.55	PPBV		93

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\
Data File : 3W71596.D
Acq On : 11 Feb 2020 11:15 am
Operator : danat
Sample : cc2789-10
Misc : MS40975,V3W2806,,,,,1
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Feb 11 11:46:47 2020
Quant Method : C:\msdchem\1\METHODS\M3W2789.M
Quant Title : TO15 by GCMS w/Rtx-1, 60 m X 0.32mm ID X 1.0 um
QLast Update : Wed Jan 15 09:18:27 2020
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
42) cis-1,2-DICHLOROETHYLENE	7.654	96	134360	10.24	PPBV		99
43) DIISOPROPYL ETHER	7.860	59	44630	7.82	PPBV		95
44) ETHYL ACETATE	7.885	61	27051	7.16	PPBV	#	99
45) METHYL ACRYLATE	7.872	55	170905	7.57	PPBV		98
46) CHLOROFORM	7.953	83	266199	9.71	PPBV		99
47) 2,4-DIMETHYLPENTANE	8.742	57	279187	10.75	PPBV		99
48) 1,1,1-TRICHLOROETHANE	8.944	97	249991	9.72	PPBV		100
49) CARBON TETRACHLORIDE	9.563	117	246026	10.01	PPBV		99
50) 1,2-DICHLOROETHANE	8.691	62	164071	9.40	PPBV		99
52) BENZENE	9.416	78	429239	11.34	PPBV		99
53) CYCLOHEXANE	9.689	84	178703	11.73	PPBV		99
54) 2,3-DIMETHYLPENTANE	9.939	71	98568	12.02	PPBV		97
55) TRICHLOROETHYLENE	10.507	95	170778	11.35	PPBV		98
56) 1,2-DICHLOROPROPANE	10.260	63	146943	10.23	PPBV		97
57) DIBROMOMETHANE	10.234	174	128616	10.19	PPBV		99
58) ETHYL ACRYLATE	10.279	55	196952	9.12	PPBV		100
59) BROMODICHLOROMETHANE	10.465	83	297823	11.54	PPBV		100
60) 2,2,4-TRIMETHYLPENTANE	10.536	57	756716	12.20	PPBV		99
61) 1,4-DIOXANE	10.545	88	62938	10.00	PPBV	#	45
62) HEPTANE	10.818	43	291306	11.97	PPBV		99
63) METHYL METHACRYLATE	10.735	69	91343	8.38	PPBV		99
64) METHYL ISOBUTYL KETONE	11.473	58	91238	9.86	PPBV		99
65) cis-1,3-DICHLOROPROPENE	11.415	75	206583	10.83	PPBV		97
66) TOLUENE	12.448	92	231019	9.96	PPBV		99
67) 1,3-DICHLOROPROPANE	12.480	76	178256	9.90	PPBV	#	99
68) trans-1,3-DICHLOROPROPENE	11.977	75	162243	10.41	PPBV		98
69) 1,1,2-TRICHLOROETHANE	12.156	83	121617	10.24	PPBV		100
71) 2-HEXANONE	12.760	58	127048	12.01	PPBV		98
72) ETHYL METHACRYLATE	12.766	69	154194	10.50	PPBV		97
73) TETRACHLOROETHYLENE	13.661	164	156554	12.03	PPBV		99
74) DIBROMOCHLOROMETHANE	12.904	129	239709	12.35	PPBV		100
75) 1,2-DIBROMOETHANE	13.161	107	192817	10.96	PPBV		100
76) OCTANE	13.520	43	396356	13.44	PPBV		98
77) 1,1,1,2-TETRACHLOROETHANE	14.383	131	154256	11.13	PPBV		96
78) CHLOROBENZENE	14.399	112	298174	11.30	PPBV		98
79) ETHYLBENZENE	14.816	91	430450	9.31	PPBV		99
80) m,p-XYLENE	15.022	106	320971	20.35	PPBV		99
81) o-XYLENE	15.538	106	156232	9.16	PPBV		98
82) STYRENE	15.420	104	248672	11.48	PPBV		98
83) NONANE	15.805	43	338188	12.77	PPBV		98
84) BROMOFORM	15.092	173	193081	12.07	PPBV		99
86) 1,1,2,2-TETRACHLOROETHANE	15.538	83	252912	10.33	PPBV		99
87) 1,2,3-TRICHLOROPROPANE	15.686	75	186165	9.74	PPBV		98
88) ISOPROPYLBENZENE	16.219	105	444068	10.59	PPBV		99
89) BROMOBENZENE	16.309	77	255753	10.80	PPBV		98
90) 2-CHLOROTOLUENE	16.777	126	114650	11.33	PPBV		99
91) n-PROPYLBENZENE	16.825	120	113342	11.09	PPBV		100
92) 4-ETHYLTOLUENE	17.008	105	387494	10.78	PPBV		100
93) 1,3,5-TRIMETHYLBENZENE	17.108	105	323232	10.57	PPBV		99
94) ALPHA-METHYLSTYRENE	17.300	118	168946	11.71	PPBV		99

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\
Data File : 3W71596.D
Acq On : 11 Feb 2020 11:15 am
Operator : danat
Sample : cc2789-10
Misc : MS40975,V3W2806,,,,,1
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Feb 11 11:46:47 2020
Quant Method : C:\msdchem\1\METHODS\M3W2789.M
Quant Title : TO15 by GCMS w/Rtx-1, 60 m X 0.32mm ID X 1.0 um
QLast Update : Wed Jan 15 09:18:27 2020
Response via : Initial Calibration

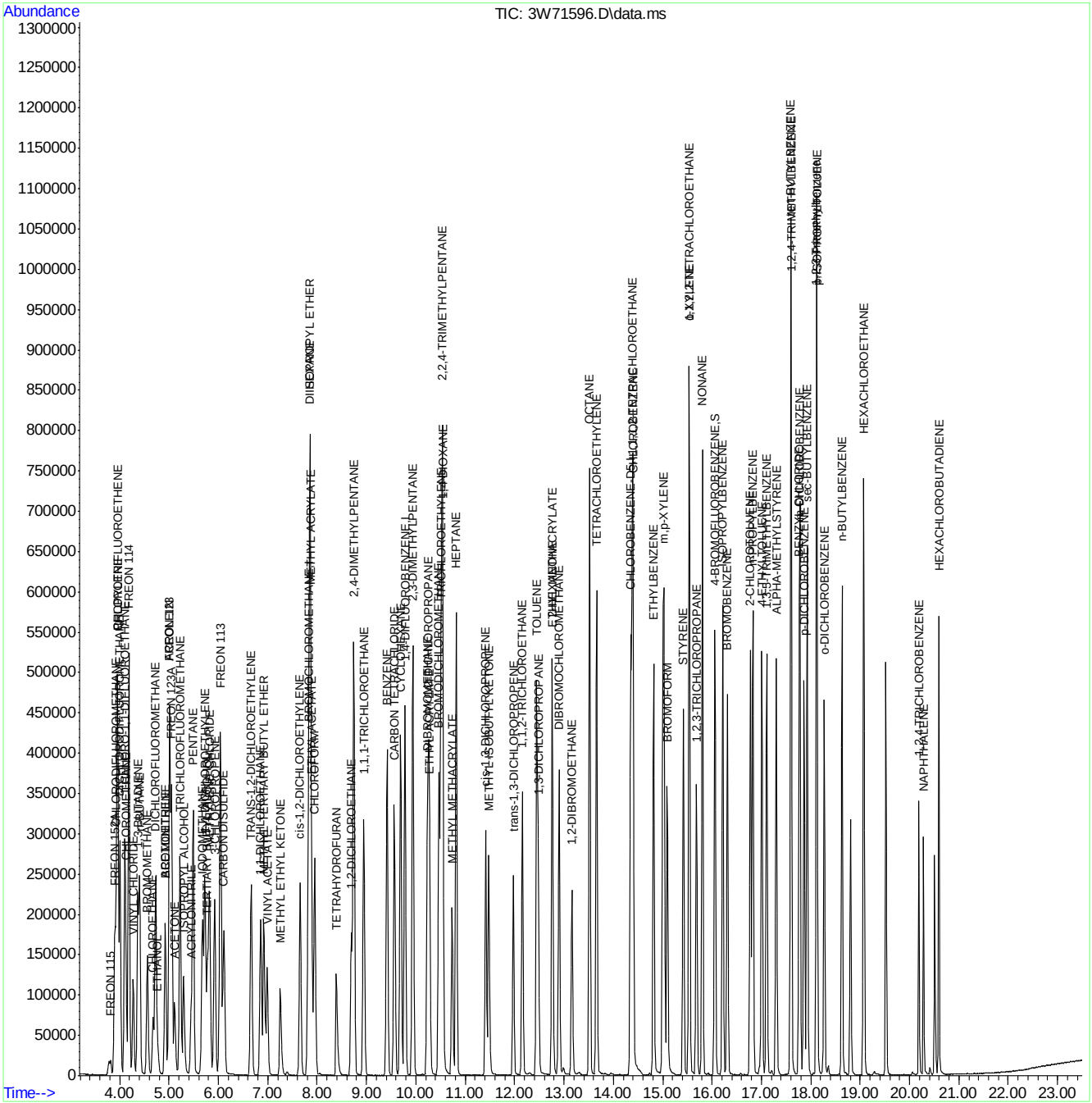
	Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
95)	tert-BUTYLBENZENE	17.595	134	71450	10.83	PPBV	100
96)	1,2,4-TRIMETHYLBENZENE	17.605	105	321982	11.04	PPBV	99
97)	m-DICHLOROBENZENE	17.781	146	217590	10.74	PPBV	99
98)	BENZYL CHLORIDE	17.765	91	289841	11.50	PPBV	100
99)	p-DICHLOROBENZENE	17.865	146	212600	10.36	PPBV	100
100)	sec-BUTYLBENZENE	17.926	134	89275	11.29	PPBV	99
101)	1,2,3-Trimethylbenzene	18.118	105	325441	10.94	PPBV	99
102)	p-ISOPROPYLTOLUENE	18.125	134	95364	11.68	PPBV	100
103)	o-DICHLOROBENZENE	18.272	146	197513	10.11	PPBV	100
104)	n-BUTYLBENZENE	18.632	134	82146	11.56	PPBV	95
105)	HEXACHLOROETHANE	19.071	117	172583	12.59	PPBV	96
106)	HEXACHLOROBUTADIENE	20.596	225	73495	7.34	PPBV	100
107)	1,2,4-TRICHLOROBENZENE	20.191	180	77917	7.94	PPBV	99
108)	NAPHTHALENE	20.284	128	166739	9.05	PPBV	99

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\
Data File : 3W71596.D
Acq On : 11 Feb 2020 11:15 am
Operator : danat
Sample : cc2789-10
Misc : MS40975,V3W2806,,,,,1
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Feb 11 11:46:47 2020
Quant Method : C:\msdchem\1\METHODS\M3W2789.M
Quant Title : TO15 by GCMS w/Rtx-1, 60 m X 0.32mm ID X 1.0 um
QLast Update : Wed Jan 15 09:18:27 2020
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\
Data File : 3W71620.D
Acq On : 12 Feb 2020 10:54 am
Operator : danat
Sample : CC2789-10
Misc : MS41043,V3W2807,,,,,1
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Feb 12 11:16:55 2020
Quant Method : C:\msdchem\1\METHODS\M3W2789.M
Quant Title : TO15 by GCMS w/Rtx-1, 60 m X 0.32mm ID X 1.0 um
QLast Update : Wed Jan 15 09:18:27 2020
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) BROMOCHLOROMETHANE	7.821	128	95038	10.00	PPBV	-0.01
51) 1,4-DIFLUOROBENZENE	9.778	114	363996	10.00	PPBV	0.00
70) CHLOROBENZENE-D5	14.351	82	180611	10.00	PPBV	0.00
System Monitoring Compounds						
85) 4-BROMOFLUOROBENZENE	16.055	95	191816	9.67	PPBV	0.00
Spiked Amount 10.000	Range 65 - 128		Recovery = 96.70%			
Target Compounds						Qvalue
2) FREON 115	3.819	119	5758	12.62	PPBV	97
3) FREON 152A	3.896	65	89166	10.92	PPBV	96
4) CHLORODIFLUOROMETHANE	3.932	67	33650	9.97	PPBV	98
5) CHLOROTRIFLUOROETHENE	3.957	116	162778	10.94	PPBV	98
6) DICHLORODIFLUOROMETHANE	4.009	85	329757	10.19	PPBV	99
7) PROPYLENE	3.957	41	136901	10.60	PPBV	98
8) 1-CHLORO-1,1-DIFLUOROE...	4.105	65	248814	9.93	PPBV	99
9) FREON 114	4.185	85	343541	10.44	PPBV	98
10) CHLOROMETHANE	4.124	52	48852	11.41	PPBV	94
11) VINYL CHLORIDE	4.275	62	157198	11.16	PPBV	99
12) 1,3-BUTADIENE	4.365	54	119682	11.34	PPBV	97
13) n-BUTANE	4.403	43	250799	10.39	PPBV	100
14) BROMOMETHANE	4.561	94	126826	10.22	PPBV	99
15) CHLOROETHANE	4.673	64	74952	11.23	PPBV	98
16) DICHLOROFLUOROMETHANE	4.727	67	304937	10.54	PPBV	100
17) ACETONITRILE	4.920	41	82025	7.43	PPBV	99
18) ACROLEIN	5.003	56	40585	7.07	PPBV	98
19) FREON 123	5.007	83	304937	10.52	PPBV	99
20) FREON 123A	5.048	117	140741	10.24	PPBV	93
21) TRICHLOROFLUOROMETHANE	5.222	101	271889	9.60	PPBV	100
22) ISOPROPYL ALCOHOL	5.292	45	209815	8.87	PPBV	95
23) ACETONE	5.112	58	37815	6.73	PPBV	98
24) PENTANE	5.488	42	166598	10.10	PPBV	96
25) IODOMETHANE	5.671	142	284565	10.26	PPBV	97
26) 1,1-DICHLOROETHYLENE	5.722	96	116888	10.09	PPBV	96
27) CARBON DISULFIDE	6.110	76	349379	10.03	PPBV	98
28) ETHANOL	4.763	45	49609	8.65	PPBV	99
29) BROMOETHENE	4.923	106	114360	10.52	PPBV	99
30) ACRYLONITRILE	5.446	52	58152	7.48	PPBV	98
31) METHYLENE CHLORIDE	5.818	84	114213	9.42	PPBV	94
32) 3-CHLOROPROPENE	5.921	76	63710	10.87	PPBV	94
33) FREON 113	6.040	151	164952	9.67	PPBV	100
34) TRANS-1,2-DICHLOROETHY...	6.662	96	115040	10.20	PPBV	99
35) TERTIARY BUTYL ALCOHOL	5.777	59	214739	9.50	PPBV	99
36) METHYL TERTIARY BUTYL ...	6.919	73	207101	6.97	PPBV	99
37) TETRAHYDROFURAN	8.386	72	36403	7.08	PPBV	97
38) HEXANE	7.853	57	213238	10.34	PPBV	92
39) VINYL ACETATE	6.986	86	14751	7.12	PPBV #	94
40) 1,1-DICHLOROETHANE	6.855	63	240103	9.92	PPBV	99
41) METHYL ETHYL KETONE	7.250	72	36674	7.21	PPBV #	90

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\
Data File : 3W71620.D
Acq On : 12 Feb 2020 10:54 am
Operator : danat
Sample : CC2789-10
Misc : MS41043,V3W2807,,,,,1
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Feb 12 11:16:55 2020
Quant Method : C:\msdchem\1\METHODS\M3W2789.M
Quant Title : TO15 by GCMS w/Rtx-1, 60 m X 0.32mm ID X 1.0 um
QLast Update : Wed Jan 15 09:18:27 2020
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
42) cis-1,2-DICHLOROETHYLENE	7.654	96	123263	10.01	PPBV		99
43) DIISOPROPYL ETHER	7.853	59	38878	7.26	PPBV	#	87
44) ETHYL ACETATE	7.882	61	23900	6.74	PPBV	#	99
45) METHYL ACRYLATE	7.869	55	149714	7.06	PPBV		98
46) CHLOROFORM	7.946	83	246997	9.60	PPBV		99
47) 2,4-DIMETHYLPENTANE	8.739	57	259272	10.64	PPBV		99
48) 1,1,1-TRICHLOROETHANE	8.941	97	229610	9.51	PPBV		99
49) CARBON TETRACHLORIDE	9.563	117	225333	9.77	PPBV		100
50) 1,2-DICHLOROETHANE	8.690	62	144844	8.85	PPBV		99
52) BENZENE	9.412	78	383460	11.94	PPBV		99
53) CYCLOHEXANE	9.692	84	162951	12.61	PPBV		98
54) 2,3-DIMETHYLPENTANE	9.935	71	89878	12.91	PPBV		100
55) TRICHLOROETHYLENE	10.507	95	155993	12.22	PPBV		99
56) 1,2-DICHLOROPROPANE	10.260	63	125560	10.30	PPBV		97
57) DIBROMOMETHANE	10.231	174	115896	10.82	PPBV		99
58) ETHYL ACRYLATE	10.276	55	176678	9.64	PPBV		100
59) BROMODICHLOROMETHANE	10.462	83	274018	12.51	PPBV		100
60) 2,2,4-TRIMETHYLPENTANE	10.536	57	703094	13.36	PPBV		100
61) 1,4-DIOXANE	10.539	88	56100	10.50	PPBV	#	1
62) HEPTANE	10.815	43	271908	13.17	PPBV		98
63) METHYL METHACRYLATE	10.728	69	80496	8.70	PPBV		98
64) METHYL ISOBUTYL KETONE	11.469	58	83757	10.67	PPBV		99
65) cis-1,3-DICHLOROPROPENE	11.412	75	172639	10.67	PPBV		98
66) TOLUENE	12.445	92	187051	9.50	PPBV		100
67) 1,3-DICHLOROPROPANE	12.477	76	145573	9.53	PPBV	#	99
68) trans-1,3-DICHLOROPROPENE	11.973	75	131536	9.94	PPBV		99
69) 1,1,2-TRICHLOROETHANE	12.153	83	99895	9.91	PPBV		99
71) 2-HEXANONE	12.756	58	115641	12.39	PPBV		97
72) ETHYL METHACRYLATE	12.759	69	140897	10.88	PPBV		96
73) TETRACHLOROETHYLENE	13.658	164	143659	12.51	PPBV		99
74) DIBROMOCHLOROMETHANE	12.897	129	205109	11.98	PPBV		99
75) 1,2-DIBROMOETHANE	13.157	107	159653	10.29	PPBV		100
76) OCTANE	13.517	43	357564	13.74	PPBV		97
77) 1,1,1,2-TETRACHLOROETHANE	14.380	131	128527	10.51	PPBV		96
78) CHLOROBENZENE	14.399	112	248704	10.68	PPBV		98
79) ETHYLBENZENE	14.813	91	346382	8.49	PPBV		99
80) m,p-XYLENE	15.012	106	258362	18.56	PPBV		95
81) o-XYLENE	15.535	106	126004	8.38	PPBV		98
82) STYRENE	15.416	104	198816	10.40	PPBV		98
83) NONANE	15.801	43	278466	11.92	PPBV		97
84) BROMOFORM	15.089	173	161178	11.42	PPBV		99
86) 1,1,2,2-TETRACHLOROETHANE	15.535	83	214464	9.92	PPBV		99
87) 1,2,3-TRICHLOROPROPANE	15.683	75	154337	9.15	PPBV		98
88) ISOPROPYLBENZENE	16.215	105	363963	9.83	PPBV		99
89) BROMOBENZENE	16.308	77	206820	9.90	PPBV		100
90) 2-CHLOROTOLUENE	16.774	126	93151	10.43	PPBV		99
91) n-PROPYLBENZENE	16.825	120	91977	10.20	PPBV		100
92) 4-ETHYLTOLUENE	17.005	105	324833	10.24	PPBV		100
93) 1,3,5-TRIMETHYLBENZENE	17.104	105	271332	10.06	PPBV		99
94) ALPHA-METHYLSTYRENE	17.297	118	139845	10.99	PPBV		99

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\
Data File : 3W71620.D
Acq On : 12 Feb 2020 10:54 am
Operator : danat
Sample : CC2789-10
Misc : MS41043,V3W2807,,,,,1
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Feb 12 11:16:55 2020
Quant Method : C:\msdchem\1\METHODS\M3W2789.M
Quant Title : TO15 by GCMS w/Rtx-1, 60 m X 0.32mm ID X 1.0 um
QLast Update : Wed Jan 15 09:18:27 2020
Response via : Initial Calibration

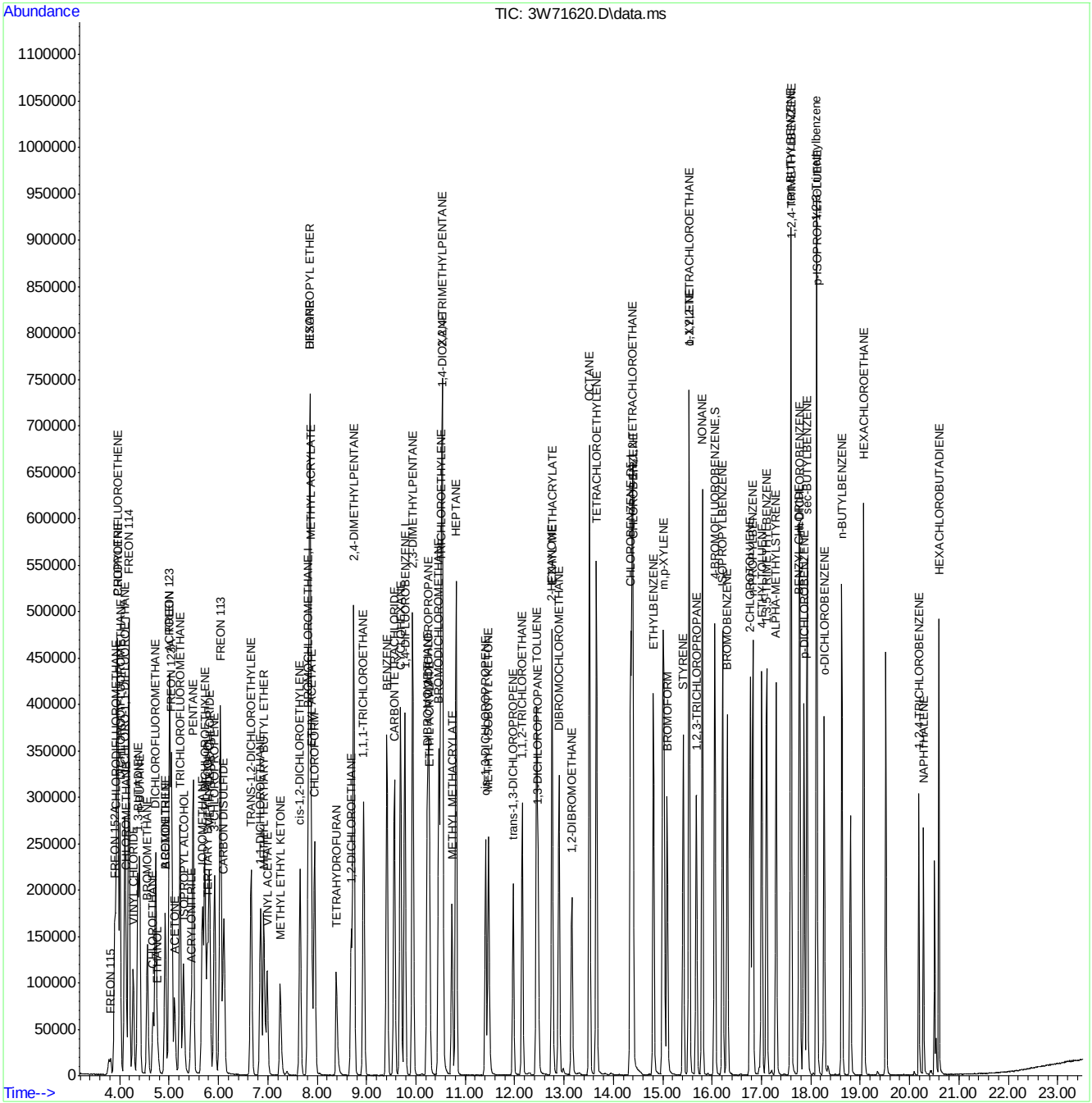
	Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
95)	tert-BUTYLBENZENE	17.595	134	60710	10.43	PPBV	100
96)	1,2,4-TRIMETHYLBENZENE	17.602	105	273536	10.63	PPBV	99
97)	m-DICHLOROBENZENE	17.778	146	178512	9.98	PPBV	99
98)	BENZYL CHLORIDE	17.762	91	247037	11.10	PPBV	99
99)	p-DICHLOROBENZENE	17.861	146	175918	9.72	PPBV	100
100)	sec-BUTYLBENZENE	17.926	134	76064	10.90	PPBV	99
101)	1,2,3-Trimethylbenzene	18.115	105	279951	10.67	PPBV	98
102)	p-ISOPROPYLTOLUENE	18.121	134	82854	11.51	PPBV	100
103)	o-DICHLOROBENZENE	18.272	146	165660	9.61	PPBV	100
104)	n-BUTYLBENZENE	18.628	134	72363	11.54	PPBV	97
105)	HEXACHLOROETHANE	19.071	117	144250	11.93	PPBV	97
106)	HEXACHLOROBUTADIENE	20.595	225	63377	7.18	PPBV	99
107)	1,2,4-TRICHLOROBENZENE	20.191	180	69920	8.08	PPBV	100
108)	NAPHTHALENE	20.284	128	149630	9.21	PPBV	99

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\
Data File : 3W71620.D
Acq On : 12 Feb 2020 10:54 am
Operator : danat
Sample : CC2789-10
Misc : MS41043,V3W2807,,,,,1
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Feb 12 11:16:55 2020
Quant Method : C:\msdchem\1\METHODS\M3W2789.M
Quant Title : TO15 by GCMS w/Rtx-1, 60 m X 0.32mm ID X 1.0 um
QLast Update : Wed Jan 15 09:18:27 2020
Response via : Initial Calibration



TO-15

Batch ID: 3W2789

Date: 1/14/20

Analyst Signature:

Columns: RTX-624 60m x 0.32mm x 1.8µm

Method: TO15.3W

Seq. File: 3W20200114.S

Initial Cal. Method: M3W2789

AS Data

Method: TO15.MPT

Standard Data

Lot #	Description	Conc.
AS8700	TO15 LCS (A970)	40 ppbv

Standard Data

Lot #	Description	Conc.
AS8454	Int/Surr	100 ppbv
AS8710	TO15 Std (A968)	40 ppbv
AS8709	TO15 Std (A981)	1.0 ppbv
AS8711	TO15 Std (A964)	0.4 ppbv

(M) Manually integrated chromatographic peaks in the following reportable file have been reviewed and verified to comply with the crite of SGS SOP EQA044.

Supervisor Signature: Date: 1/16/20

AS #	Data File	Sample ID	TEST	Canister Serial #	Vol Sample	Dil Fact	TICS	Int. STD Areas	Surr	Status Data	Comment
1	3W71238	BFB		A981	20					OK	time 1053
1	3W71239	IC2389-0.5		A981	200			✓	✓	OK	
2	3W71240	IC2389-0.2		A964	200			✓	✓	OK	
3	3W71241	IC2389-40		A968	200			✓	✓	OK	autos ampleream autosampler error
3	3W71242	IC2389-10		A968	100			✓	✓	OK	
3	3W71243	IC2389-5		A968	50			✓	✓	OK	
3	3W71244	IC2389-20		A968	200			✓	✓	OK	
3	3W71245	IC2389-40		A968	400			✓	✓	OK	
4	3W71246	ICB		A959	100						
4	3W71247	ICB		A959	100						
2	3W71248	IC2389-0.1		A964	100			✓	✓	OK	
2	3W71249	IC2389-0.04		A964	40			✓	✓	OK	
5	3W71250	ICV2389-10		A970	100			✓	✓	OK	

1/15/20

All strikeouts must be initial and dated. Comment is require for anything other than a transcription error.

TO-15

Batch ID: V3W2796

Date: 1/23/20

Analyst Signature:

Columns: RTX-1 60m x 0.32mm x 1.0um
Method: TO15 3W.M
Seq. File: 3W20200123.S
Initial Cal. Method: M3W2789.M

AS Data

Method: TO15.M8T

Standard Data

Lot #	Description	Conc.

Standard Data

Lot #	Description	Conc.
BS8459	Int./Surr.	100ppbv
BS8710	TO15 STD (A968)	40 ppbv

(M) Manually integrated chromatographic peaks in the following reportable file have been reviewed and verified to comply with the crite of SGS SOP EQA044.

Supervisor Signature: Date: 1/23/2020

AS #	Data File	Sample ID	TEST	Canister Serial #	Vol Sample	Dil Fact	TICS	Int. STD Areas	Surr	Status Data	Comment
1	3W71397	BFB		open position	400					ok	time 849
2	3W71398	CC 2789-10		A968	100			✓	✓	ok	
2	3W71399	BS		A968	100			✓	✓	ok	
2	3W71400	BSD		A968	100						
2	3W71401	DSO		A968	100			✓	✓	ok	low
3	3W71402	IB		A959	100						
3	3W71403	MB		A959	400		+	✓	✓	ok	
4	3W71404	JD1970-3	TO15STD+	A608	100	✓	+	✓	✓	ok	
5	3W71405	JD1970-4	MS40653	A1233	100	✓	+	✓	✓	ok	
6	3W71406	JD1970-4 dup		A1233	100	✓		✓	✓	ok	
6	3W71407	JD1840-2	TO15SC	A014	400	✓		✓	✓	ok	
7	3W71408	JD1840-3	MS40587	A1168	400	✓		✓	✓	ok	
8	3W71409	JD1840-5		A852	400	✓		✓	✓	ok	
9	3W71410	JD1840-1		M198	100	✓		✓	✓	ok	
10	3W71411	JD1840-4	"	M465	100	✓		✓	✓	ok	
11	3W71412	JD1838-1	TO15STD	A1055	100	✓		✓	✓	ok	
12	3W71413	JD1838-2	MS40581	A763	100	✓		✓	✓	ok/qc	M10x, XCET
13	3W71414	JD1849-1	TO15STD MS40582	A1185	100	✓		✓	✓	ok	
14	3W71415	JD1839-3	TO15STD/DUP	A603	100	✓		✓	✓	ok	
15	3W71416	JD1839-4	MS40588	A620	100	✓		✓	✓	ok	11:ka cmd) 1x slot. possible
16	3W71417	JD1839-5		A1109	100	✓		✓	✓	ok	
1	3W71418	Scc CP10663		A596	100	✓		✓	✓	ok	
2	3W71419	Scc CP10676		A1245	100	✓		✓	✓	ok	
3	3W71420	Scc CP10656		A586	100	✓		✓	✓	ok	
4	3W71421	Scc CP10668		M132	400	✓		✓	✓	ok	
5	3W71422	Scc CP10669		A788	400	✓		✓	✓	ok	

1/24/20

All strikeouts must be initial and dated. Comment is require for anything other than a transcription error.

131

3W7593

TO-15

Batch ID: V3W2806

Date: 2/11/20

Analyst Signature:

Columns: RTX-624 60m x 0.32mm x 1.0µm

Method: TO15W.m

Seq. File: 3W20200211.S

Initial Cal. Method: M3W2478

AS Data

Method: TO15.mpt

Standard Data

Lot #	Description	Conc.

Standard Data

Lot #	Description	Conc.
AS8459	Int Std	100 ppbv
AS8446	TO15 Std (A971)	40 ppbv

(M) Manually integrated chromatographic peaks in the following reportable file have been reviewed and verified to comply with the cr of SGS SOP EQA044.

Supervisor Signature: Date: 2/13/20

AS #	Data File	Sample ID	TEST	Canister Serial #	Vol Sample	Dil Fact	TICS	Int STD Areas	Surr	Status Data	Commer
1	3W71594	CCB		Open	400			✓	✓	ok	
2	3W71595	CC2784-10		A971	100			✓	✓	~~ok~~	time 937 per acetone
2	3W1596	CC2779-10		A971	100			✓	✓	ok	
2	3W71597	BS		A971	100			✓	✓	ok	
2	3W71598	BSD		A971	100			✓	✓	ok	
3	3W71599	ICV		A959	100			✓	✓	ok	
3	3W71600	MB		A959	400			✓	✓		
4	3W71601	JD2884-1	VTO15STD NMP	A501	100	1		✓	✓	ok	
4	3W71602	JD2884-1dup		A501	100	1		✓	✓	ok	
5	3W71603	JD2884-2	MS41016	A527	100	1		✓	✓	ok	
6	3W71604	JD1945-4R	MS40916	A1033	400	1		✓	✓	ok	Acetone
7	3W71605	JD2759-1	VTO15STD	A1078	400	1		✓	✓	ok	
8	3W71606	JD2759-2	MS41053	A345	400	1		✓	✓	ok	
9	3W71607	JD2759-3		A647	400	1		✓	✓	ok	
10	3W71608	JD2759-4		A207	400	1		✓	✓	ok	
11	3W71609	JD2616-9X2	VTO15MU	A1050	800	1.58 1.6		✓	✓	ok	
12	3W71610	JD2616-4	MS40889	A892	790	1.58		✓	✓	ok	
13	3W71611	JD2616-1	MSVU	A993	632	1.58		✓	✓	ok	
14	3W71612	JD2616-3		A369	663	1.52		✓	✓	ok	over cal 4X, FIL3
15	3W71613	JD2778-1 JD2728-1		A627	400	1		✓	✓	ok	over cal 4X, PCE
16	3W71614	JD2728-2	VTO15STD MSV	A884	400	1		✓	✓	ok	
1	3W71615	JD2728-3	MS40935	M404	400	1		✓	✓	ok	
2	3W71616	JD2974-1	VTO15 STD MS41043	M407	20	1		✓	✓	ok	over cal M40X, CIS12D
3	3W71617	FP892		A859	400	1		3↓	✓	possible, using mc250 c/o	
	3W71618										

2/12/20

All strikeouts must be initial and dated. Comment is require for anything other than a transcription error.

TO-15

Batch ID: V3W2807

Date: 2/12/20

Analyst Signature:

Columns: RTX-1 60m x 0.32mm x 1.0µ

Method: TO15 3W.m

Seq. File: 3W20200212.S

Initial Cal. Method: IMSW2789

AS Data

Method: TO15.MPT

Standard Data

Lot #	Description	Conc.

Standard Data

Lot #	Description	Conc.
AS8459	IS/Surr	100 ppbV
AS8746	TO15 STD (A971)	40 ppbV

(M) Manually integrated chromatographic peaks in the following reportable file have been reviewed and verified to comply with the cri of SGS SOP EQA044.

Supervisor Signature: Date: 2/13/20

AS #	Data File	Sample ID	TEST	Canister Serial #	Vol Sample	Dil Fact	TICS	Int. STD Areas	Surr	Status Data	Commen
1	3W71618	BFB		0981	400					dl	time 9/2
2	3W71619	CC2789-10		M971	100					dl	
2	3W71620	CC2789-10		M971	100			✓	✓	dl	for short
2	3W71621	BS		M971	100			✓	✓	dl	1,3 Chlorinate
2	3W71622	BSD		M971	100			✓	✓	dl	
3	3W71623	IB		M959	100					dl	
3	3W71624	MB		A959	400			✓	✓	dl	
4	3W71625	JD2616-1	VTO15STD/SUC	A993	400	1.58		✓	✓	dl/dl	
5	3W71626	JD2616-3	MS40889	A969	152	1.52		✓	✓	dl/dl	
6	3W71627	JD2974-1	VTO15STDMID MS41043	M967	10	1		✓	✓	dl/dl	
7	3W71628	IB		A959	100	1					
8	3W71629	JD3012-1	VTO15PCE	M118	400	1		✓	✓	dl	
8	3W71630	JD3012-1dup	MS41051	M118	400	1		✓	✓	dl	
9	3W71631	JD3012-2		M037	400	1		✓	✓	dl	
10	3W71632	JD3012-3		A324	400	1		✓	✓	dl	
11	3W71633	JD3012-4		A348	400	1		✓	✓	dl	
12	3W71634	FP892		A859	400	1		✓	✓	dl	using IAC250
13	3W71635	FP893		M214	400	1		autosampler	not run	using IAC2	
14	3W71636	FP891		M120	400	1		frozen by	not run	using FC471	
15	3W71637	FP890		A243	400	1		module 2	not run	using FC348	
16	3W71638	FP889		A1087	400	1			not run	using FC72	

2/13/20

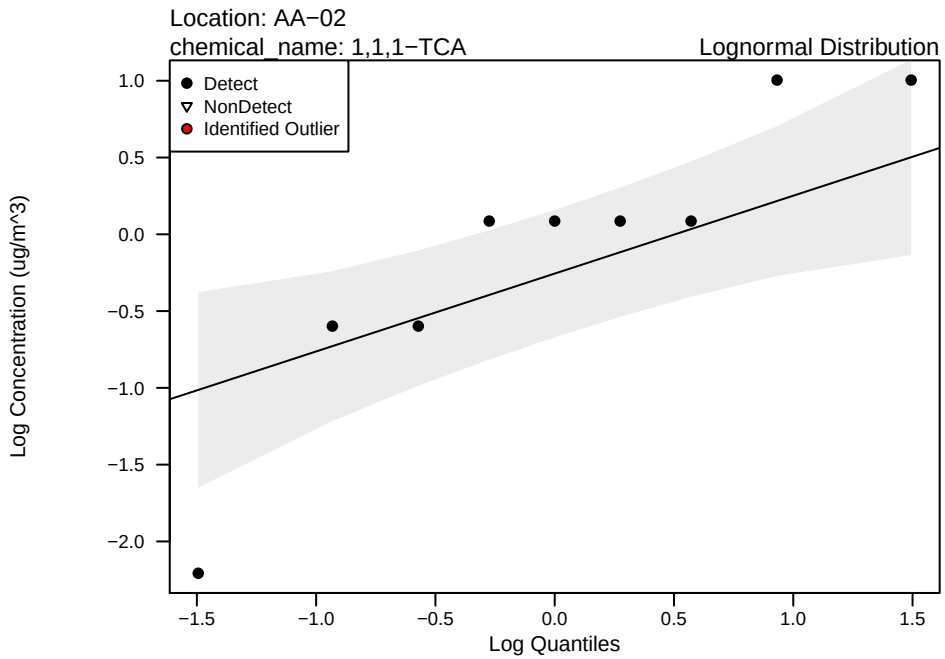
All strikeouts must be initial and dated. Comment is require for anything other than a transcription error.

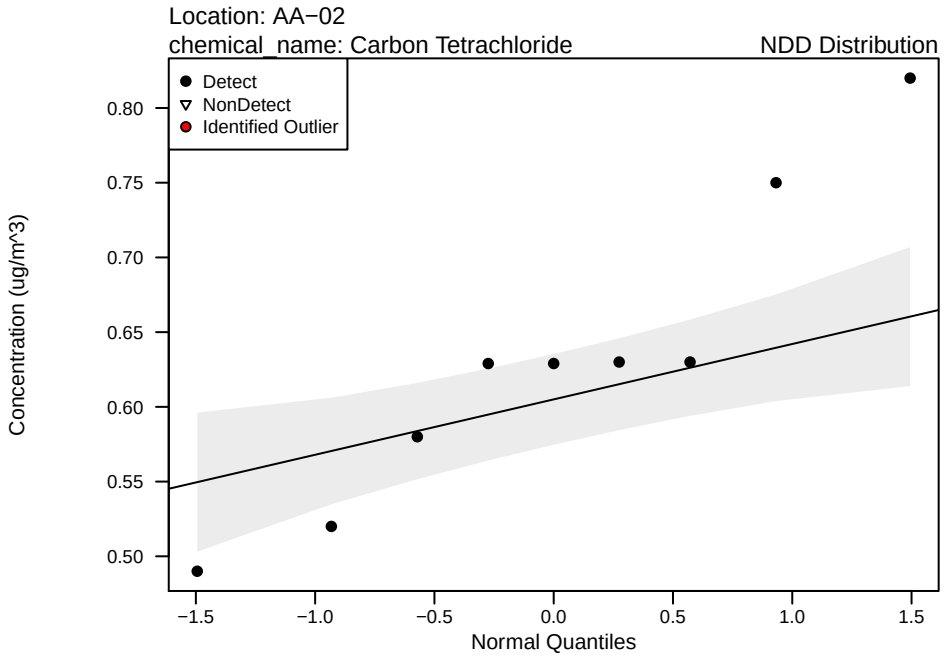
APPENDIX D QQ PLOTS

`

Figure 1
QQ Plots

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not Normal/NDD distribution.





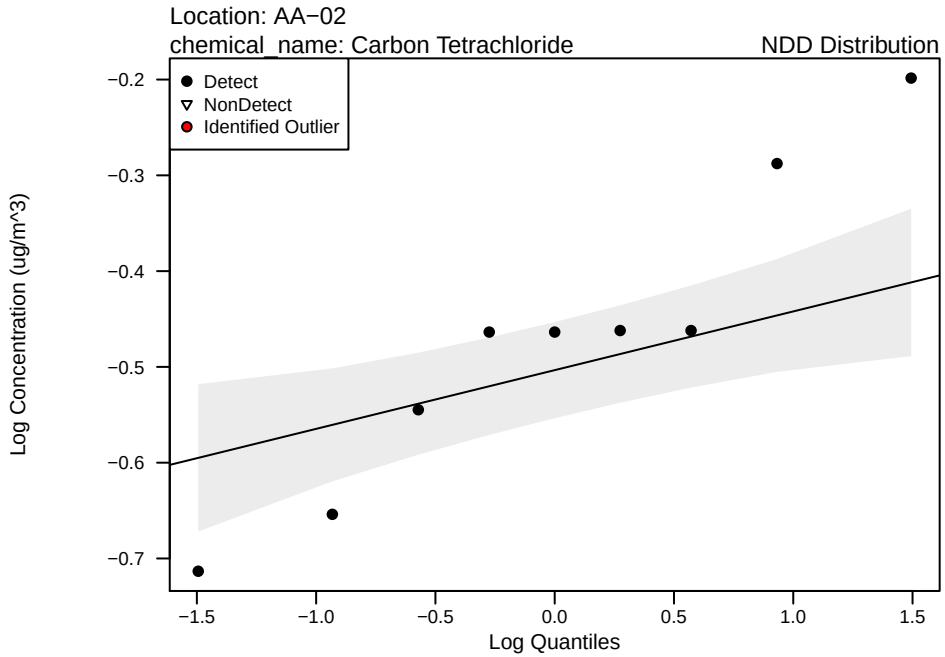
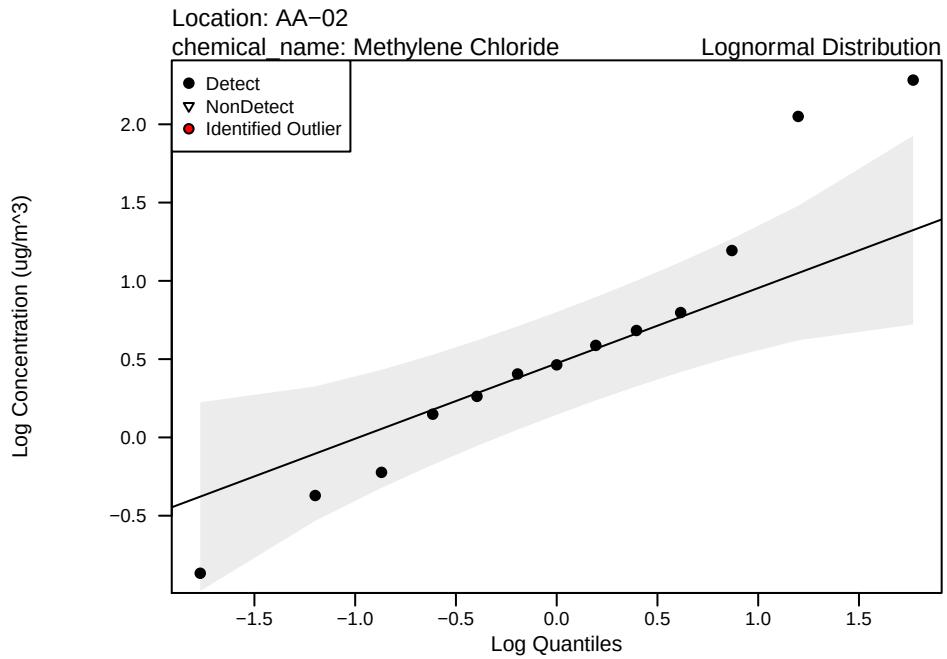


Figure 1
QQ Plots

Intentionally left blank,
not Normal/NDD distribution.



Intentionally left blank,
not Normal/NDD distribution.

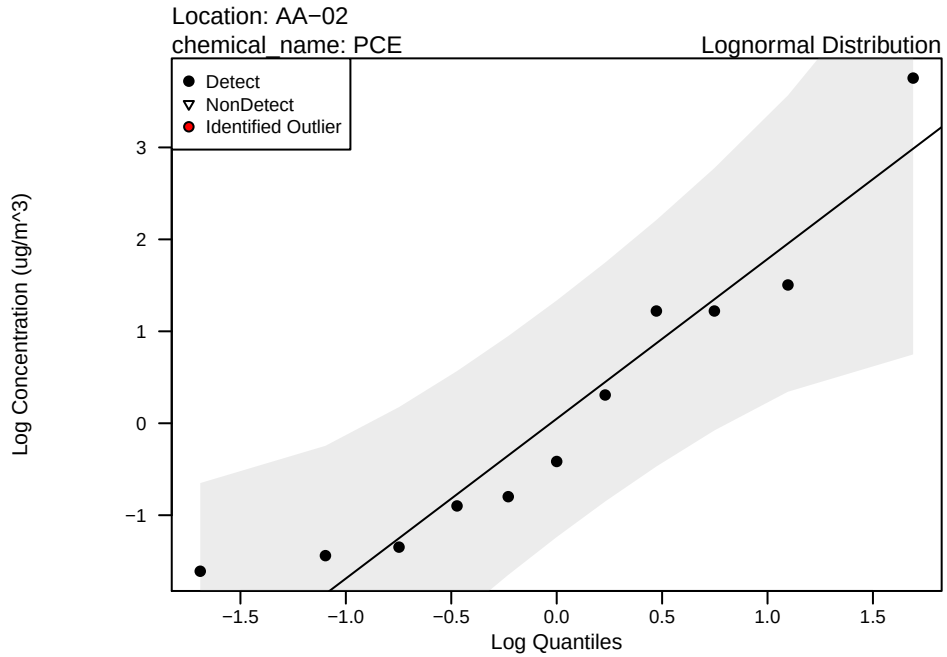
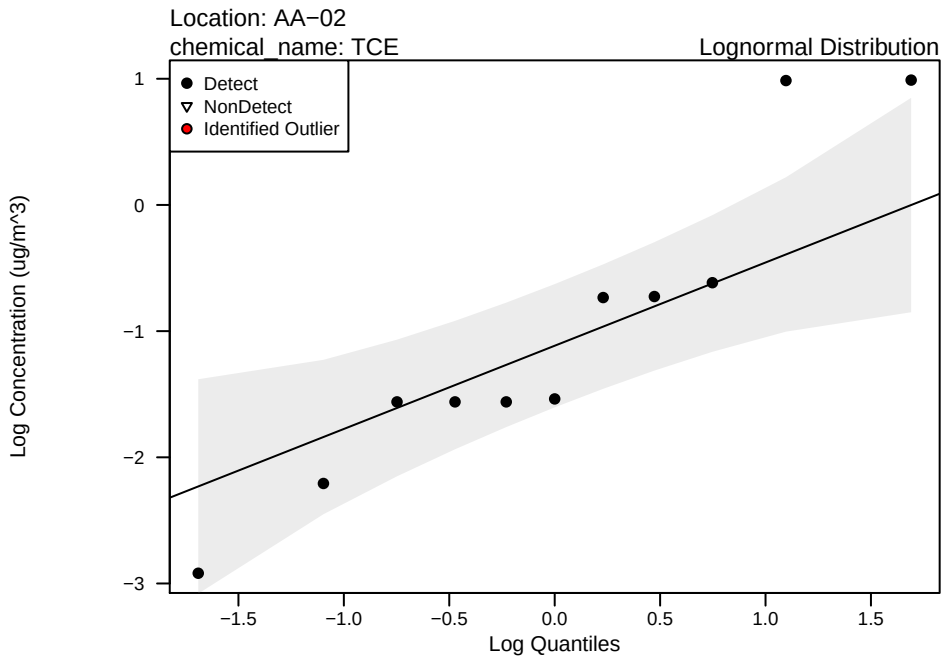


Figure 1
QQ Plots

Intentionally left blank,
not Normal/NDD distribution.



Intentionally left blank,
not Normal/NDD distribution.

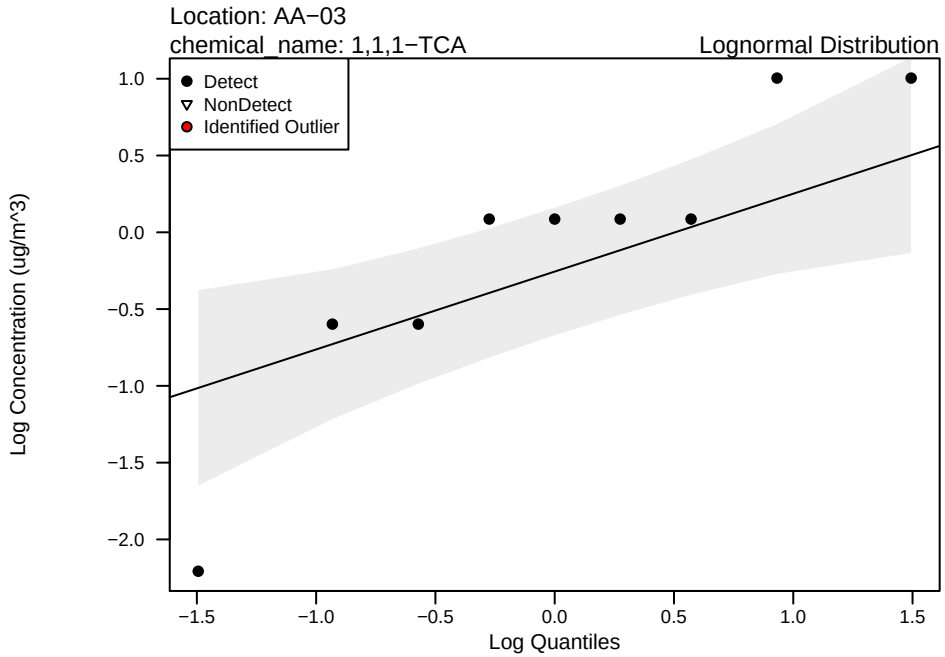
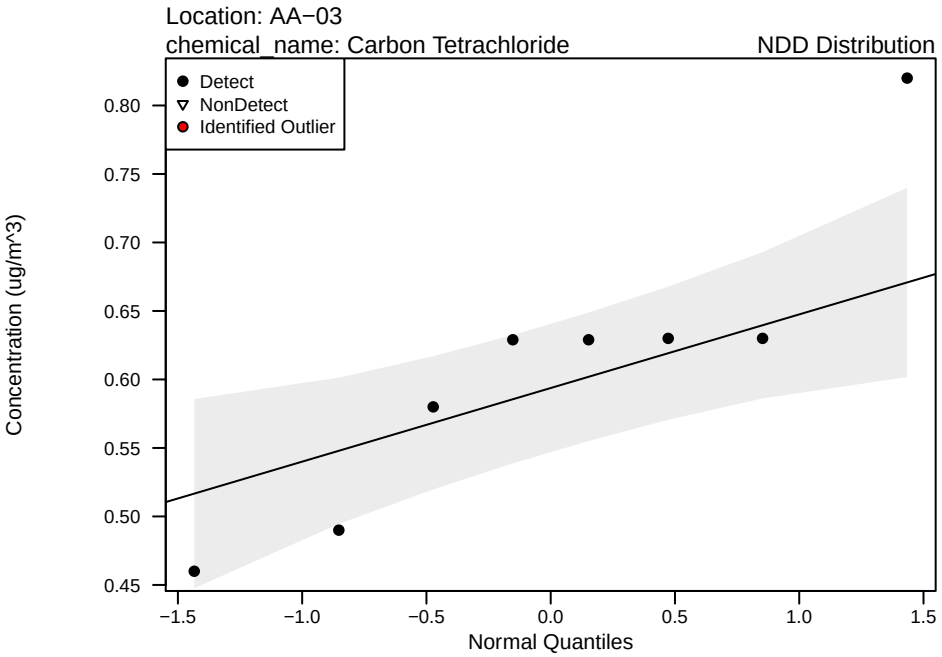
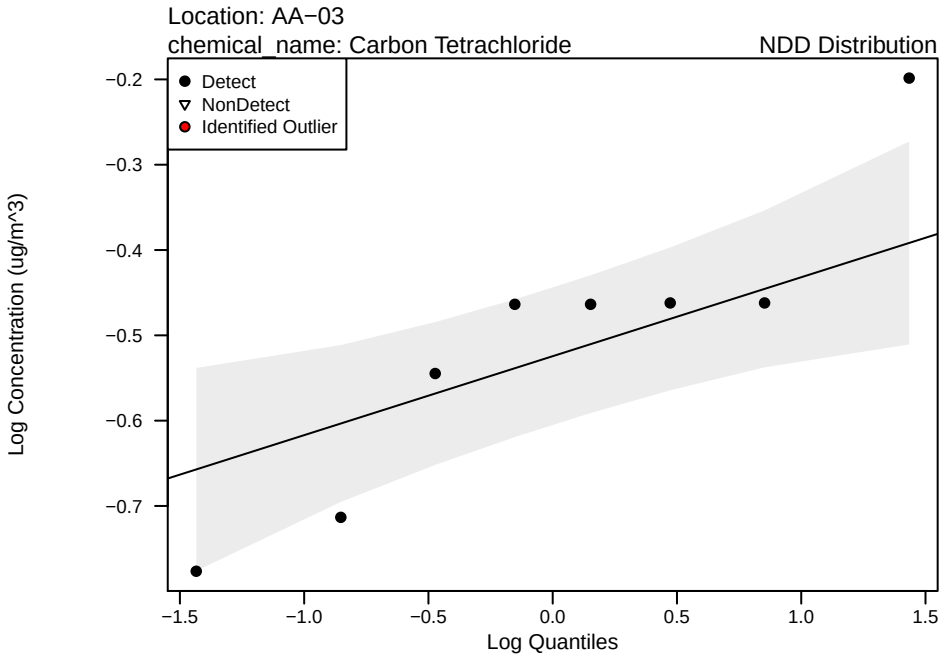


Figure 1
QQ Plots





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not Normal/NDD distribution.

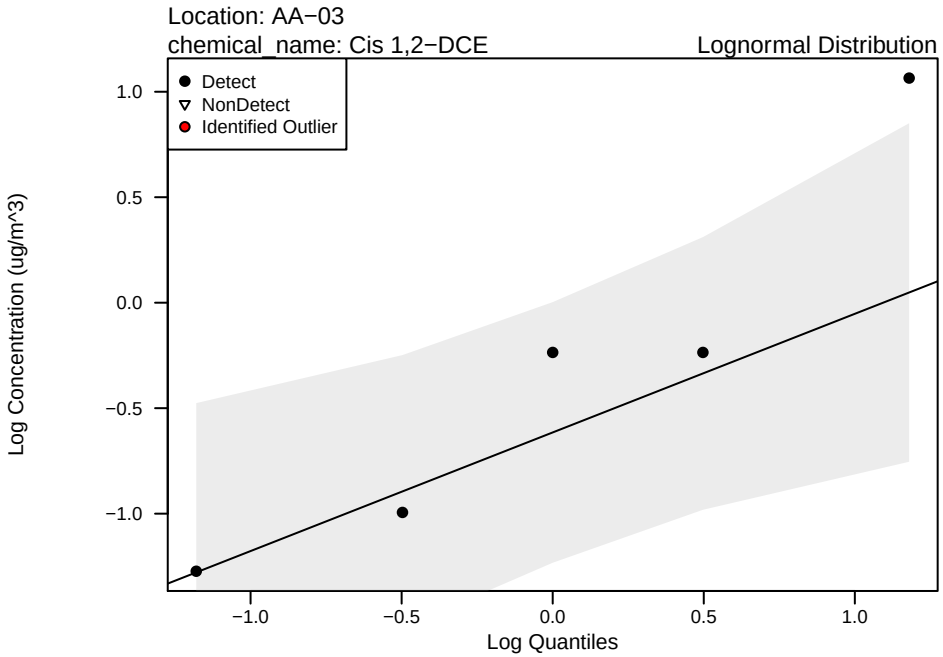
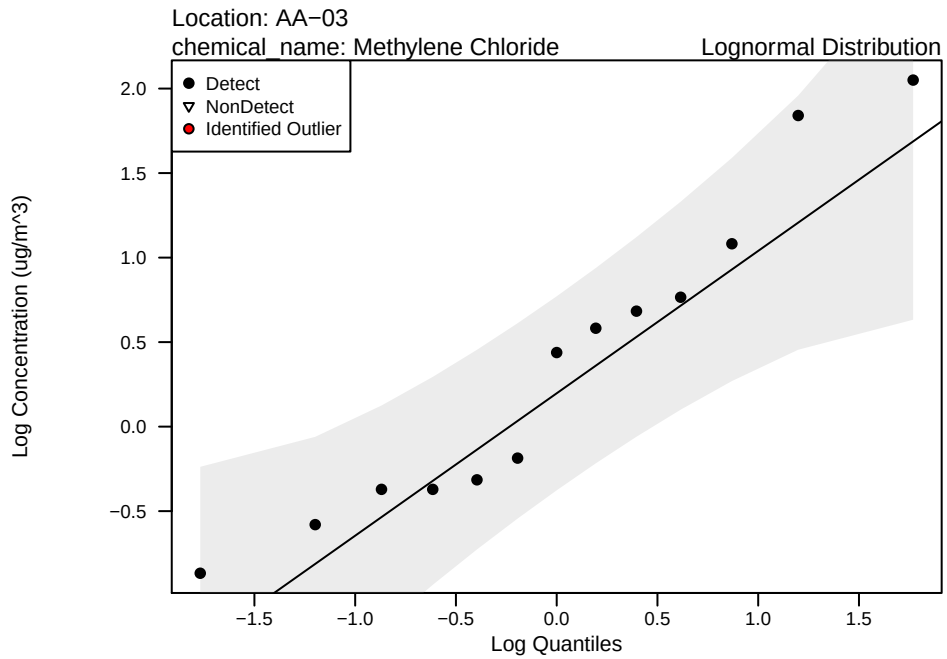


Figure 1
QQ Plots

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not Normal/NDD distribution.



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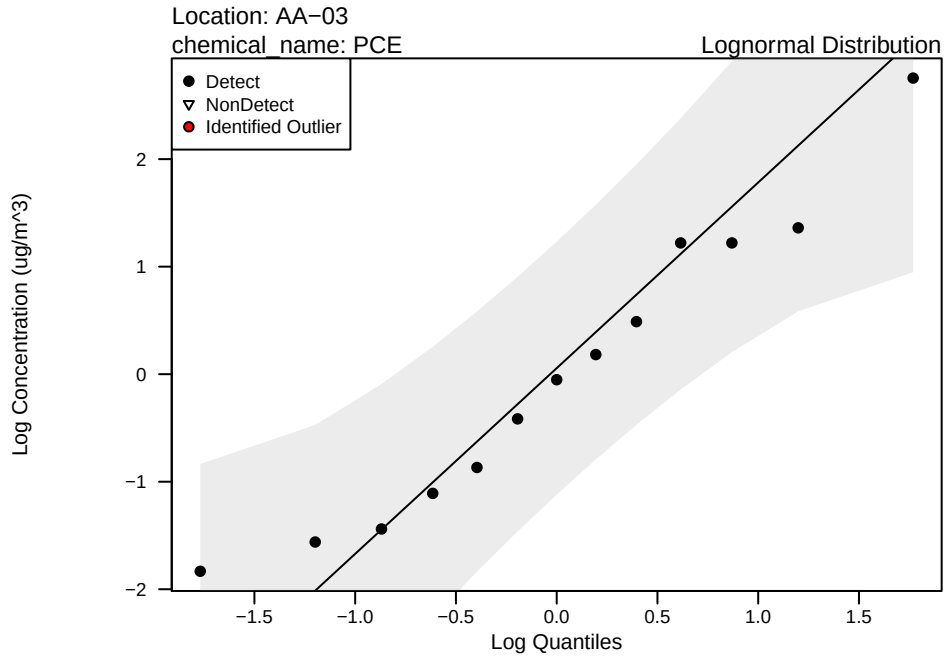
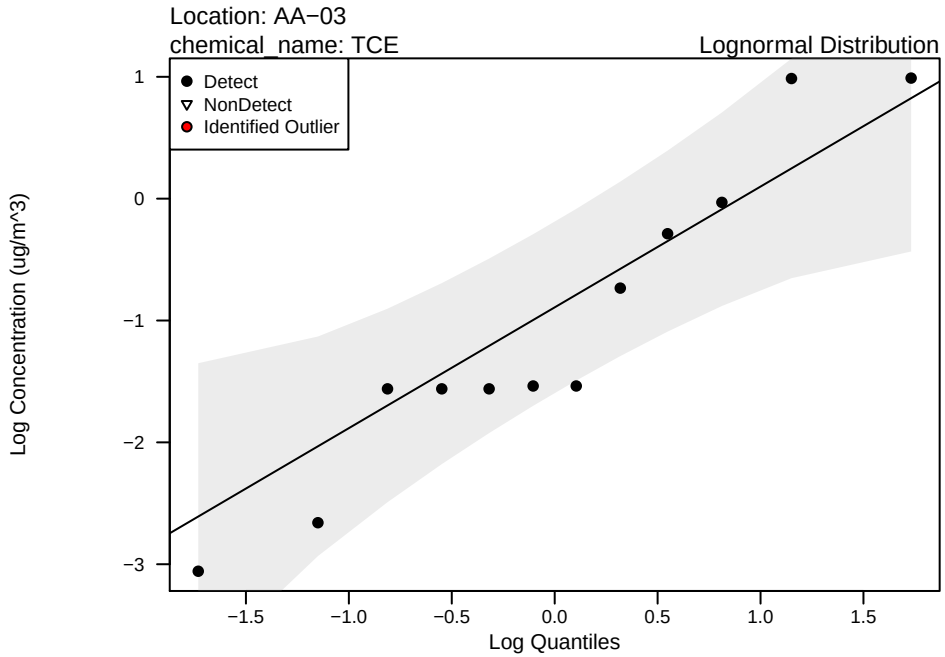
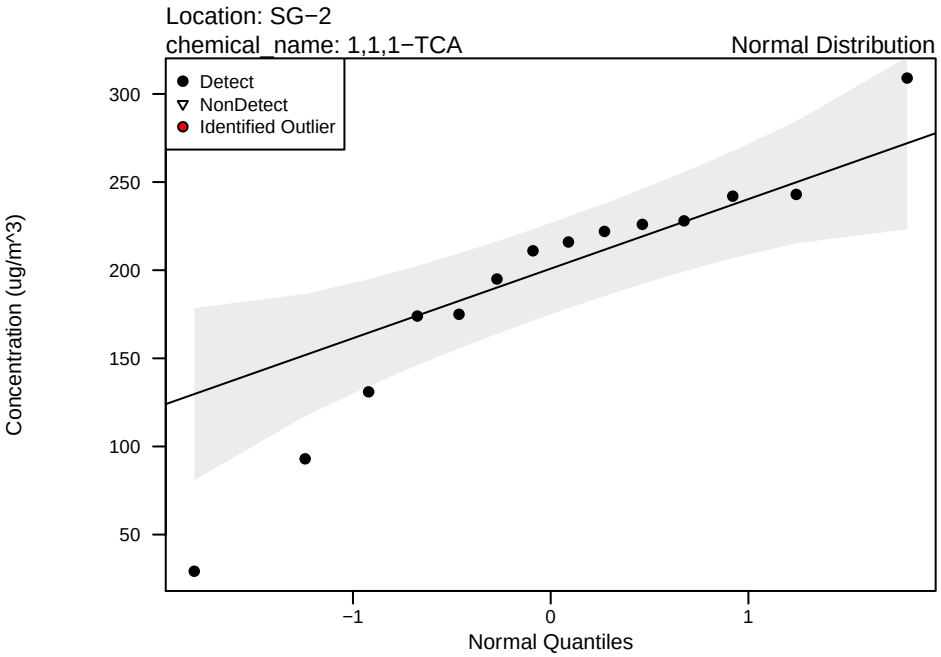


Figure 1
QQ Plots

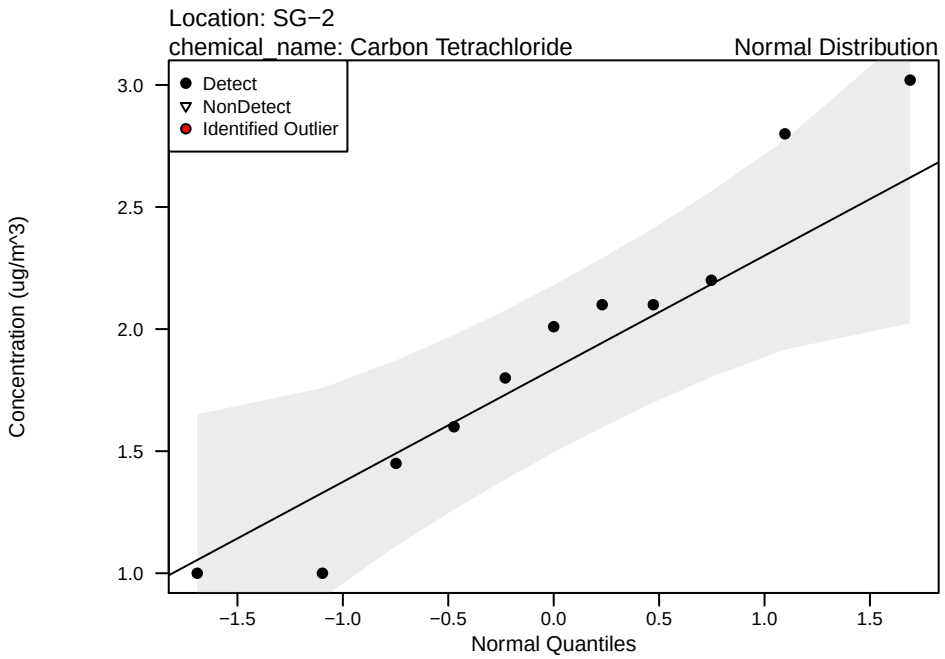
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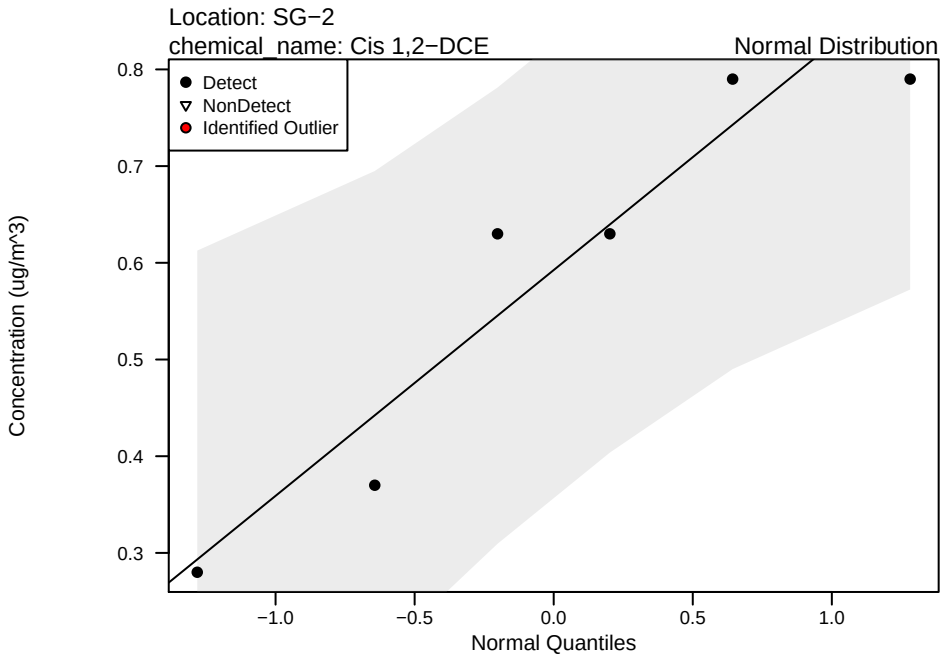


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Figure 1
QQ Plots



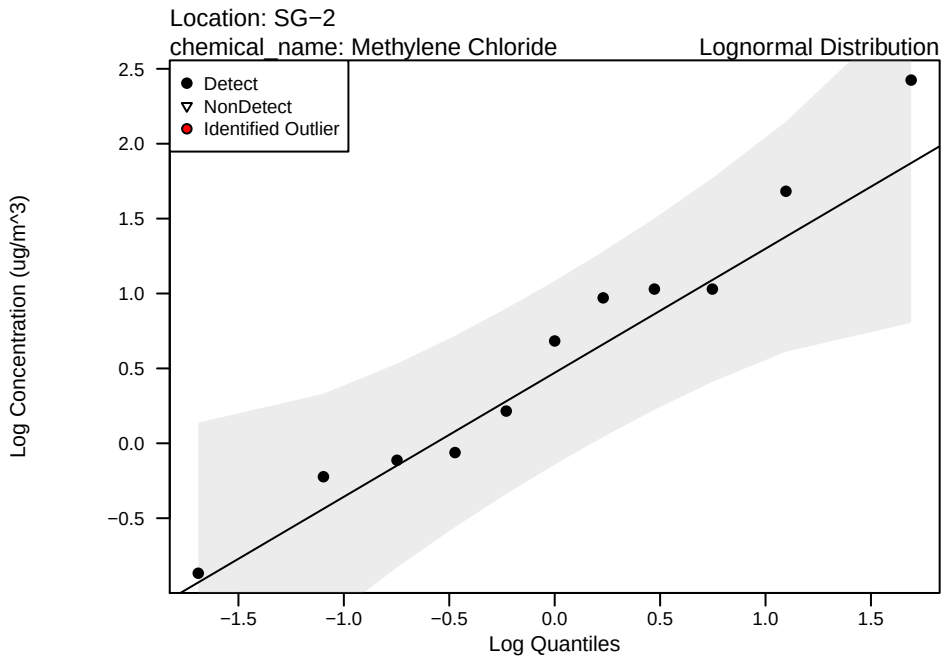
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not Lognormal/NDD distribution.



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not Lognormal/NDD distribution.

Figure 1
QQ Plots

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not Normal/NDD distribution.



Intentionally left blank,
not Normal/NDD distribution.

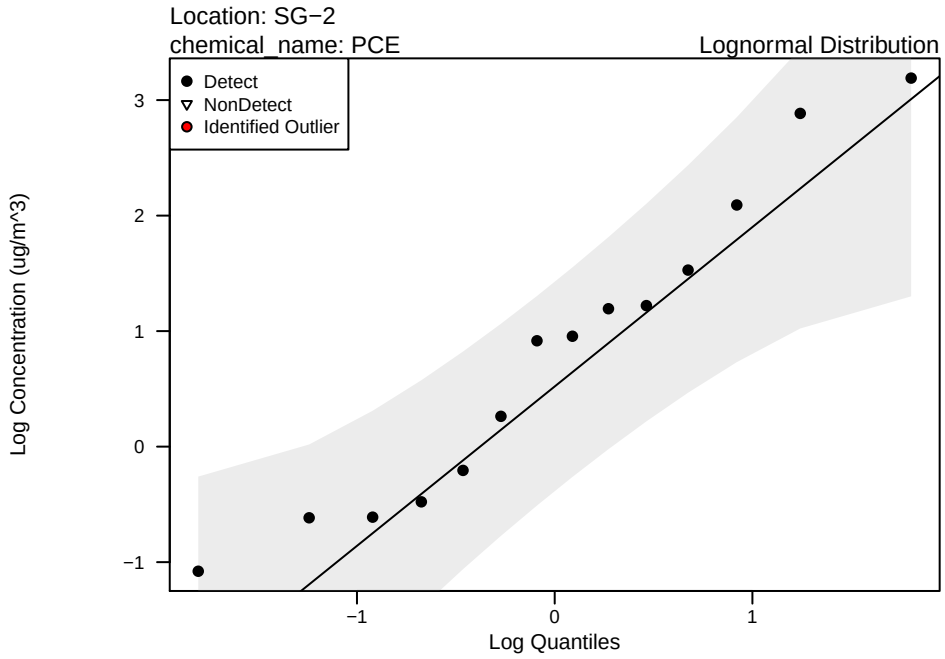
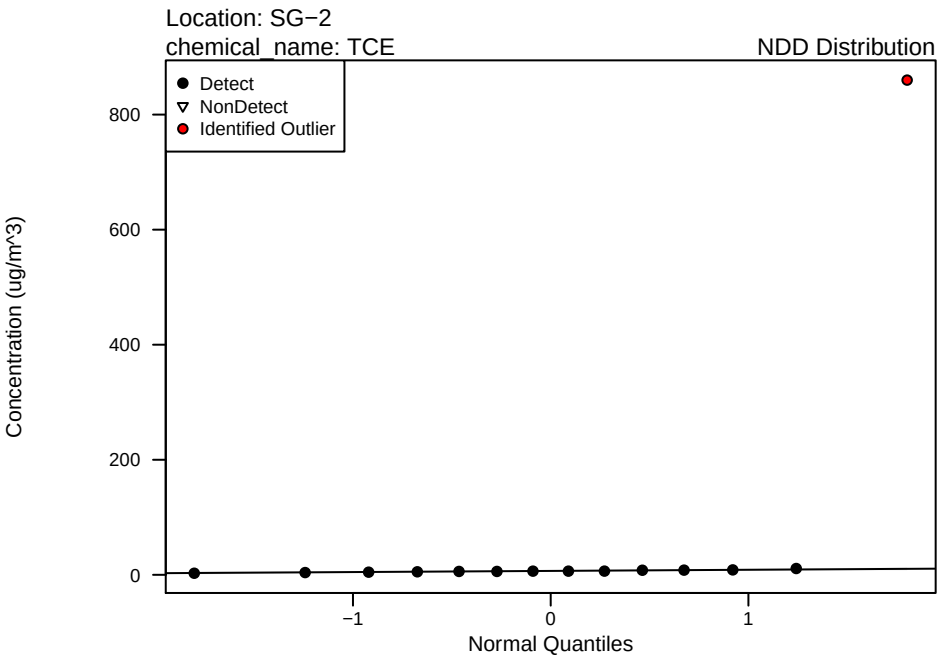
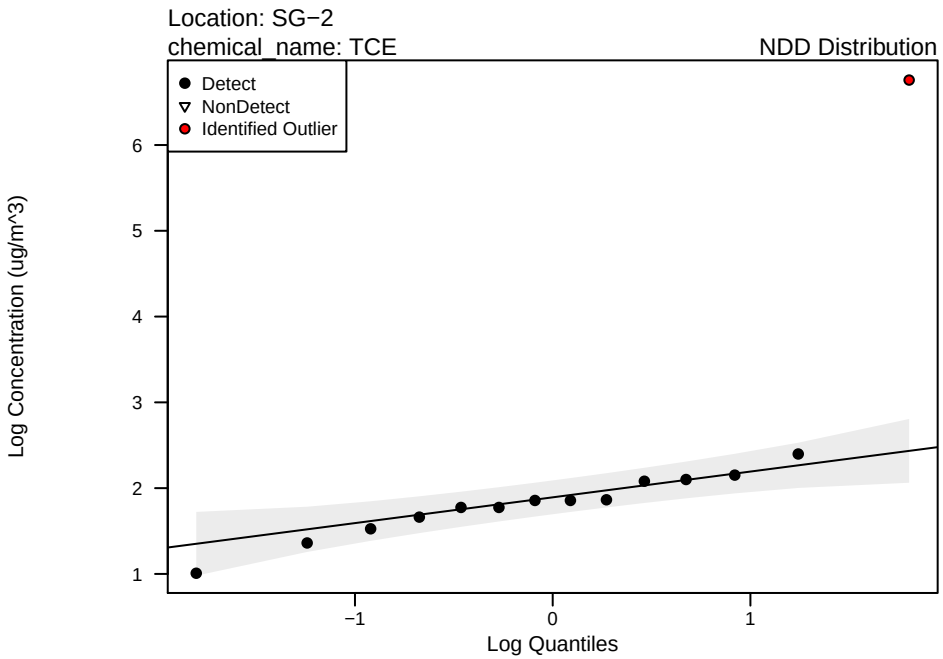


Figure 1
QQ Plots





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not Normal/NDD distribution.

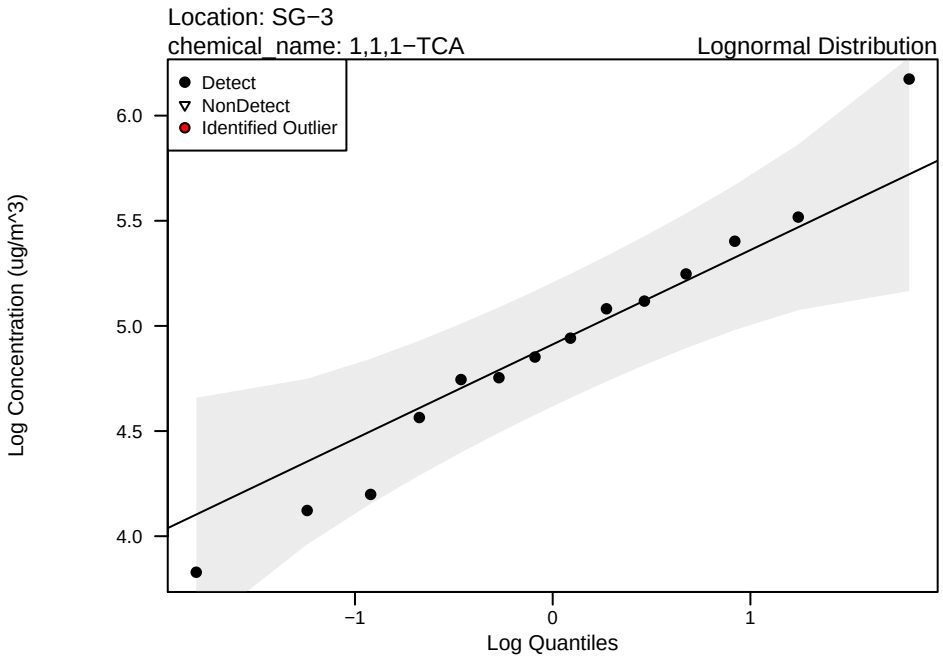
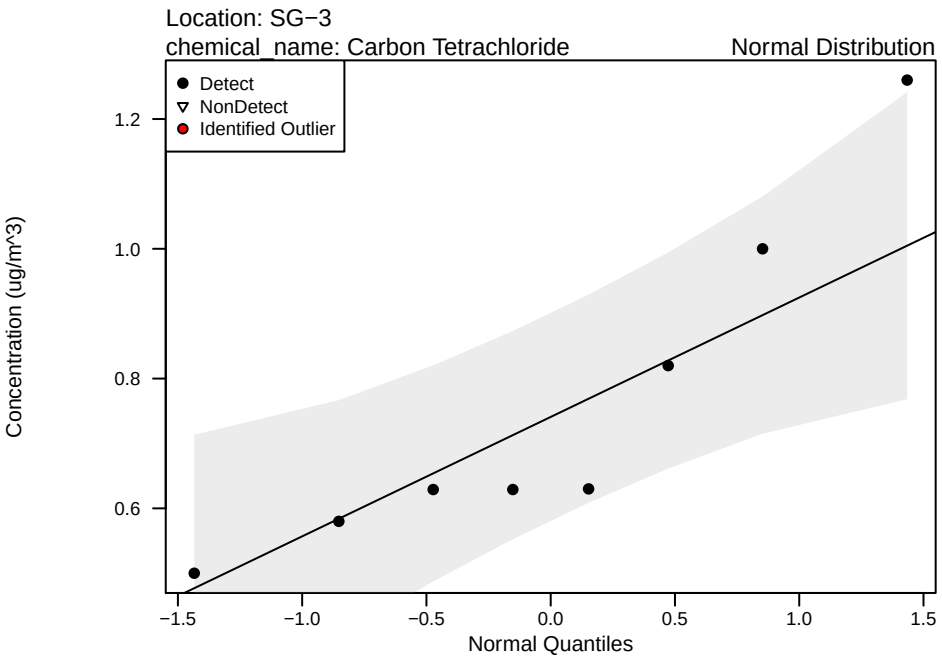
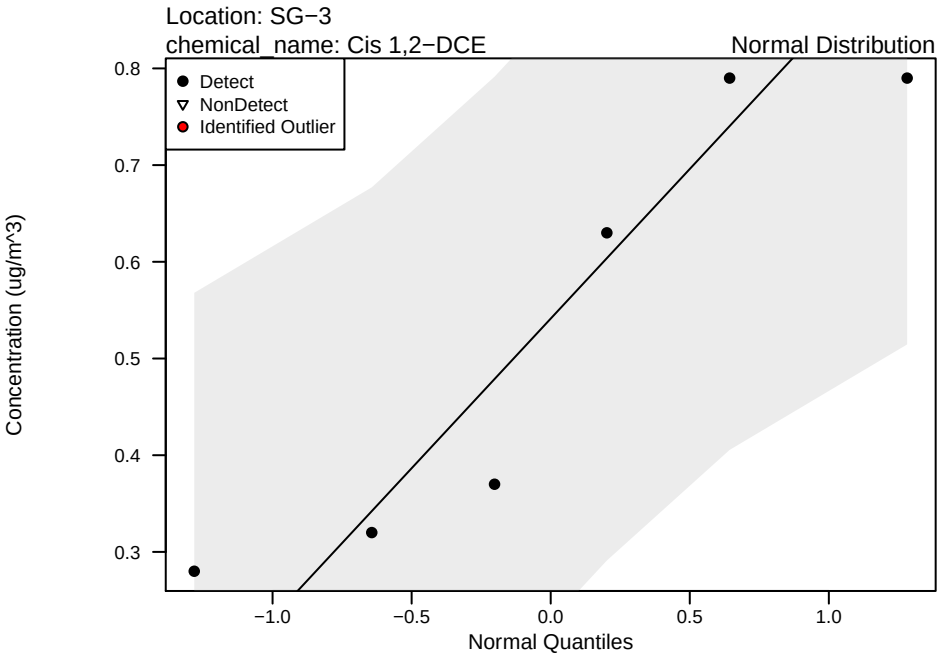


Figure 1
QQ Plots

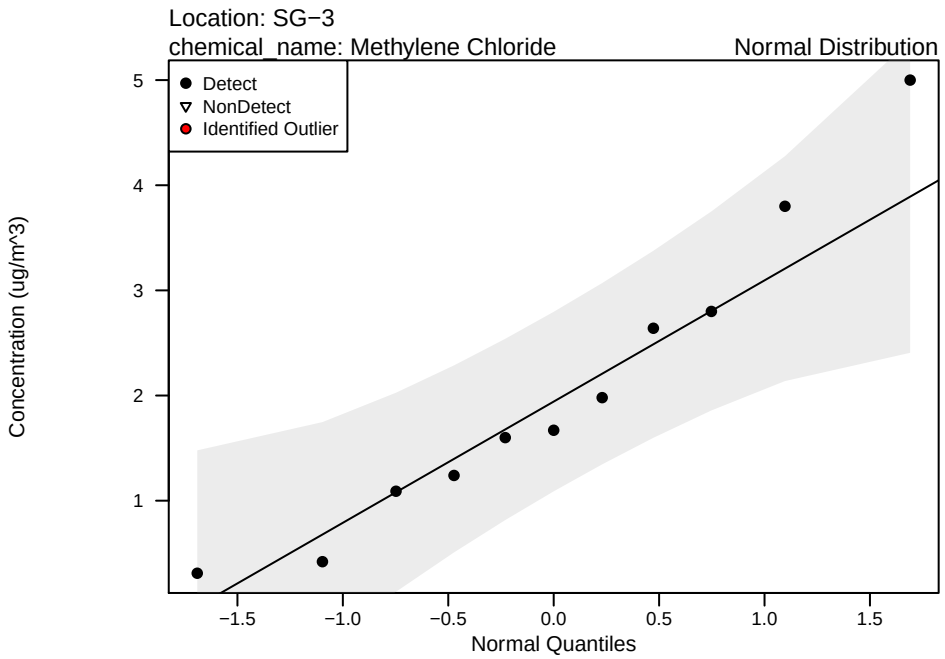


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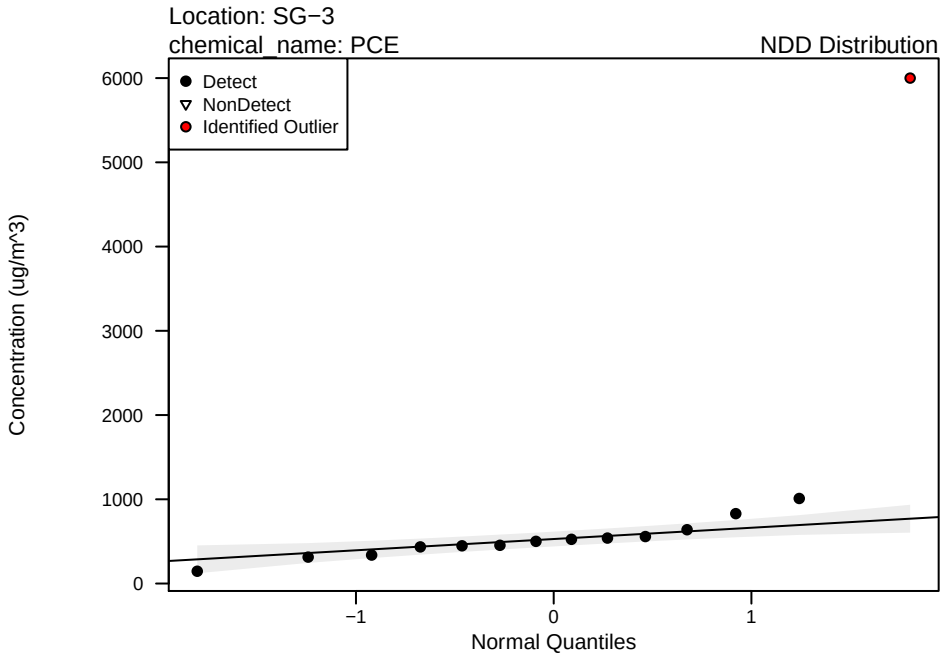


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Figure 1
QQ Plots



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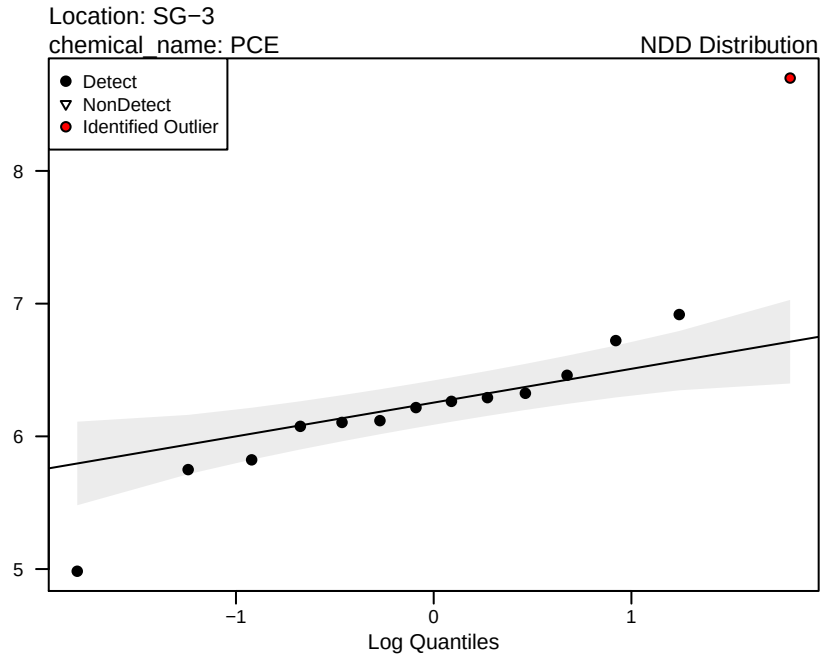
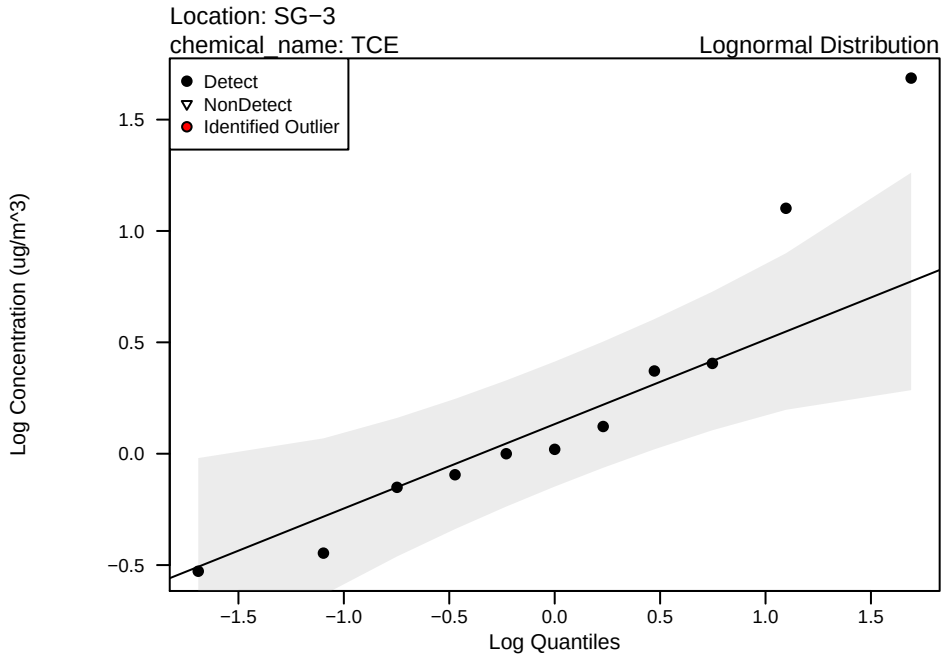
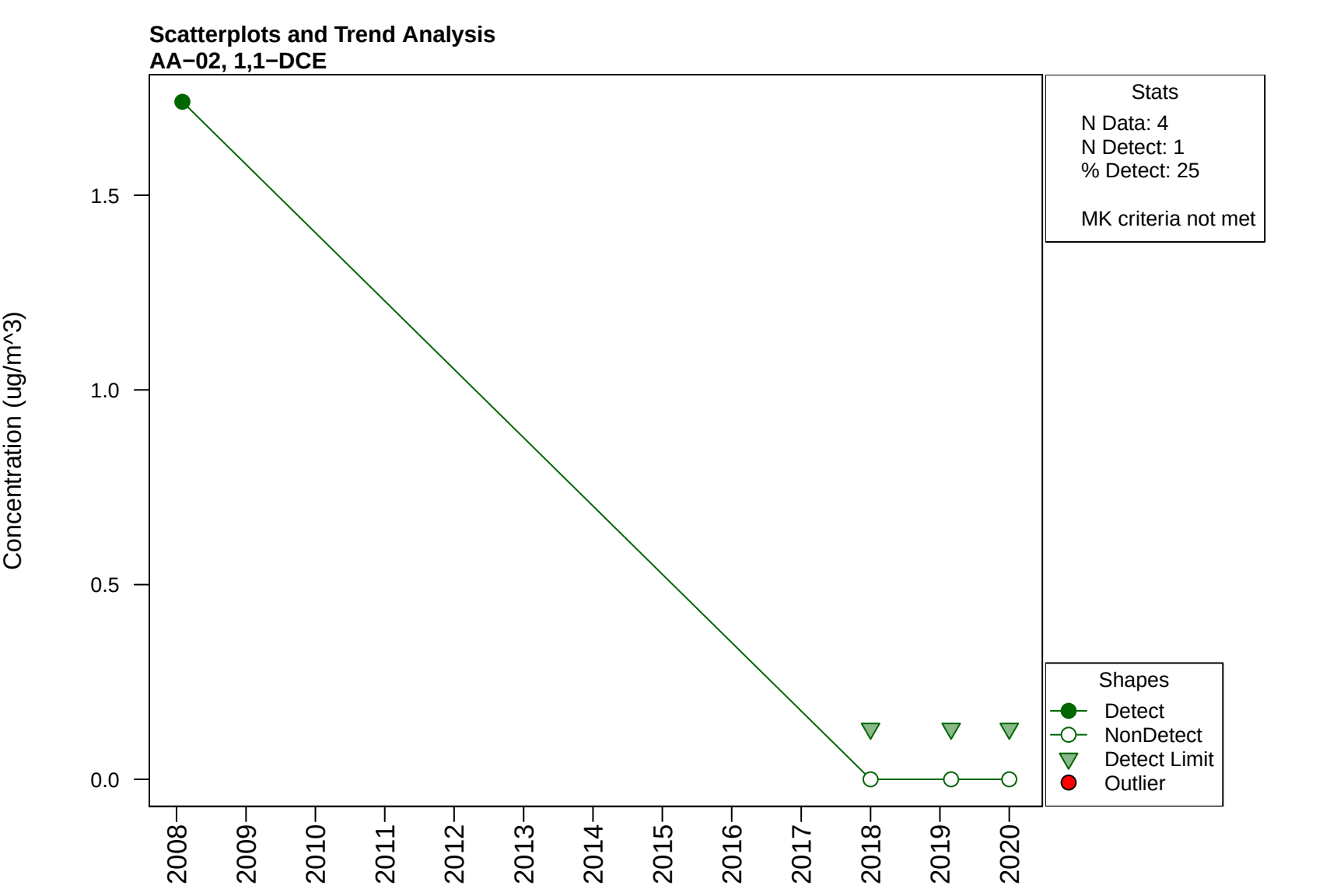


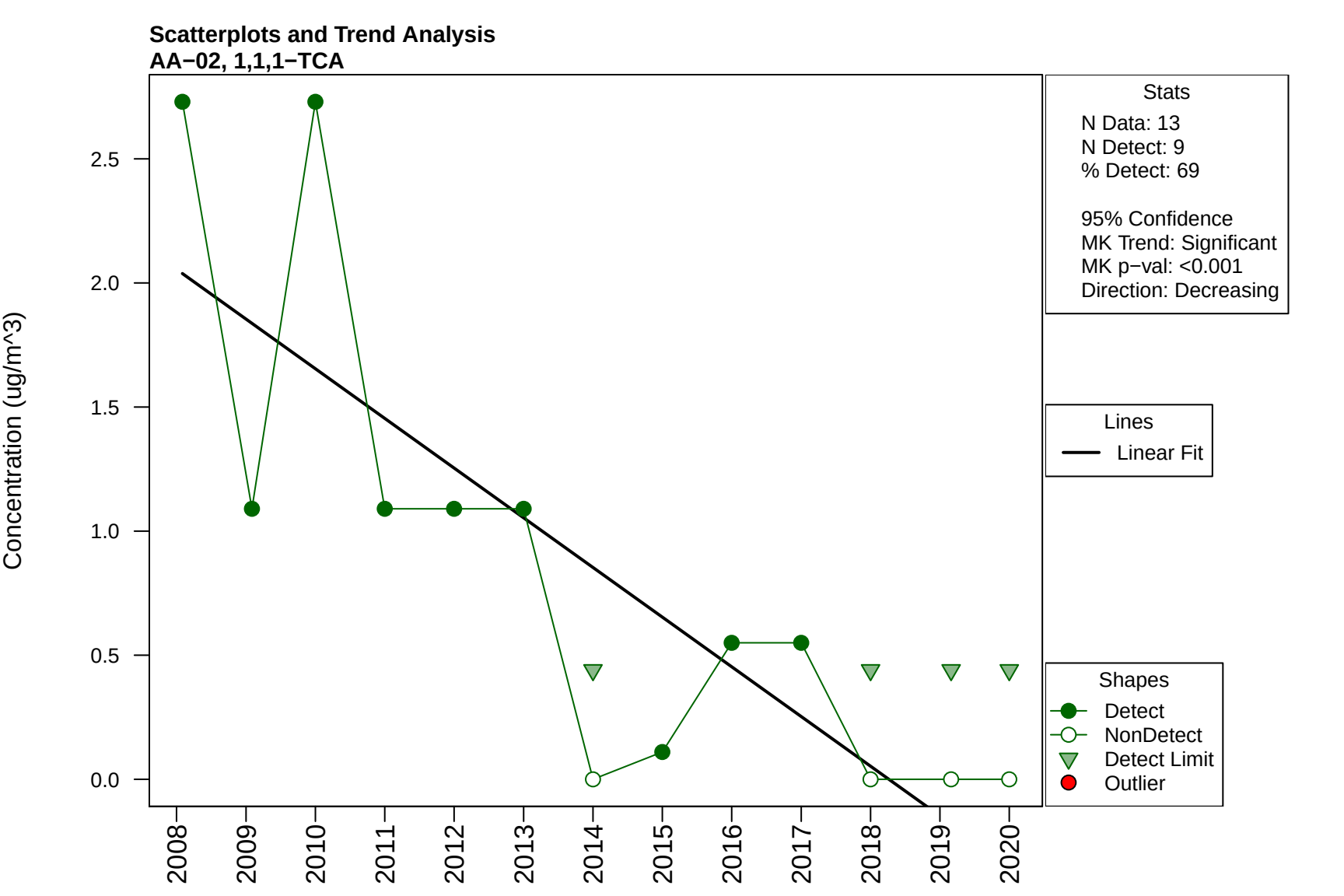
Figure 1
QQ Plots

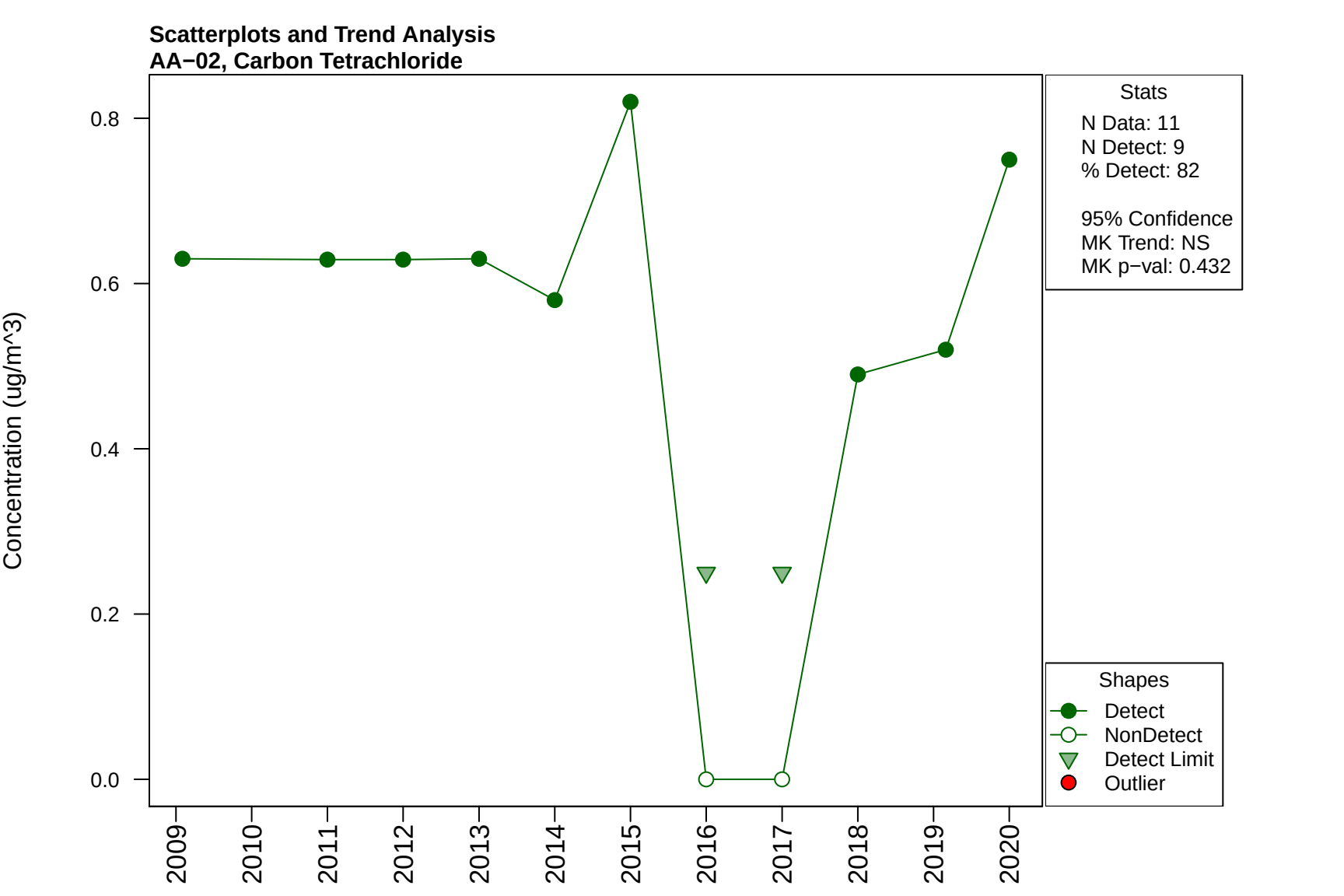
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not Normal/NDD distribution.

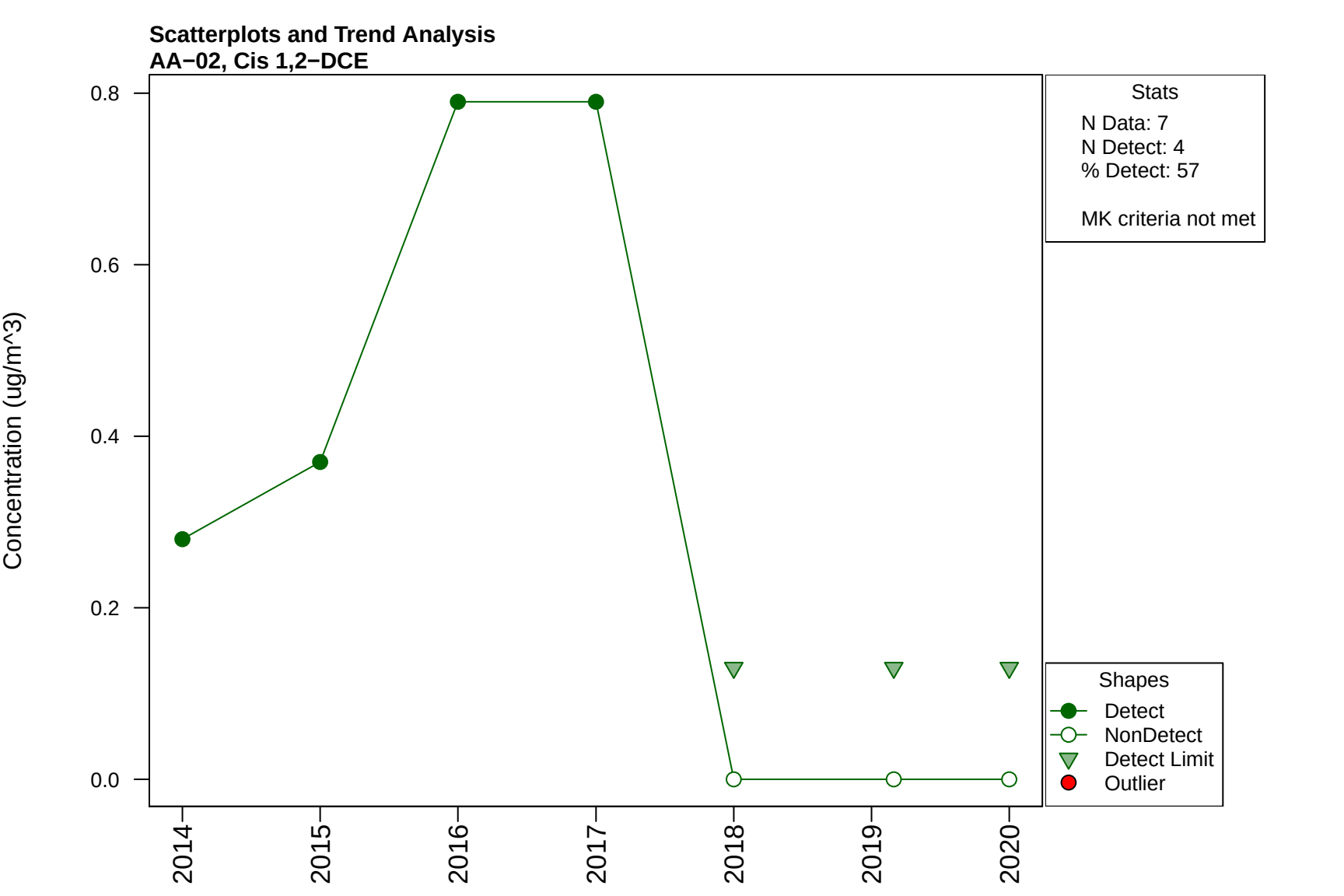


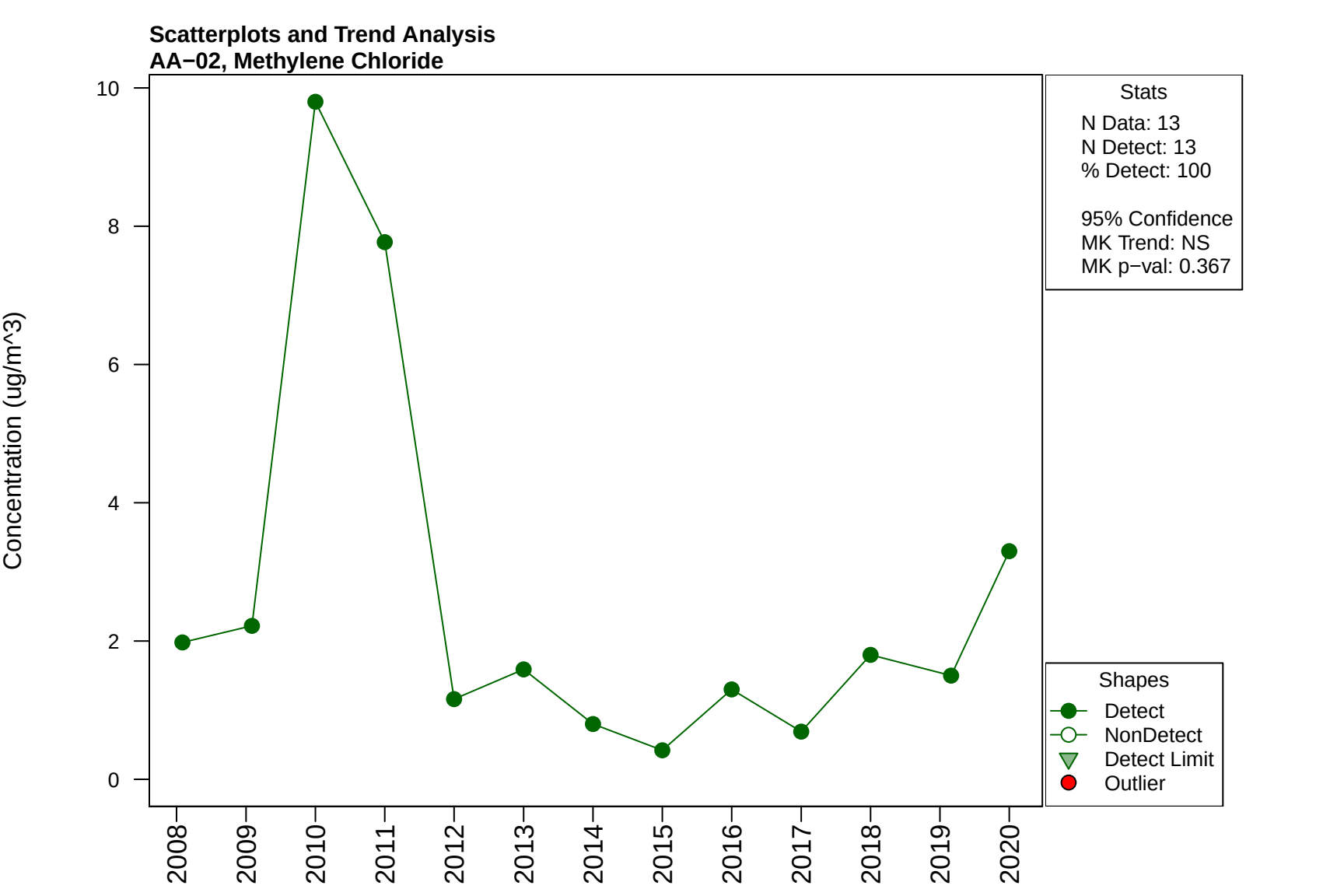
APPENDIX E SCATTER PLOTS

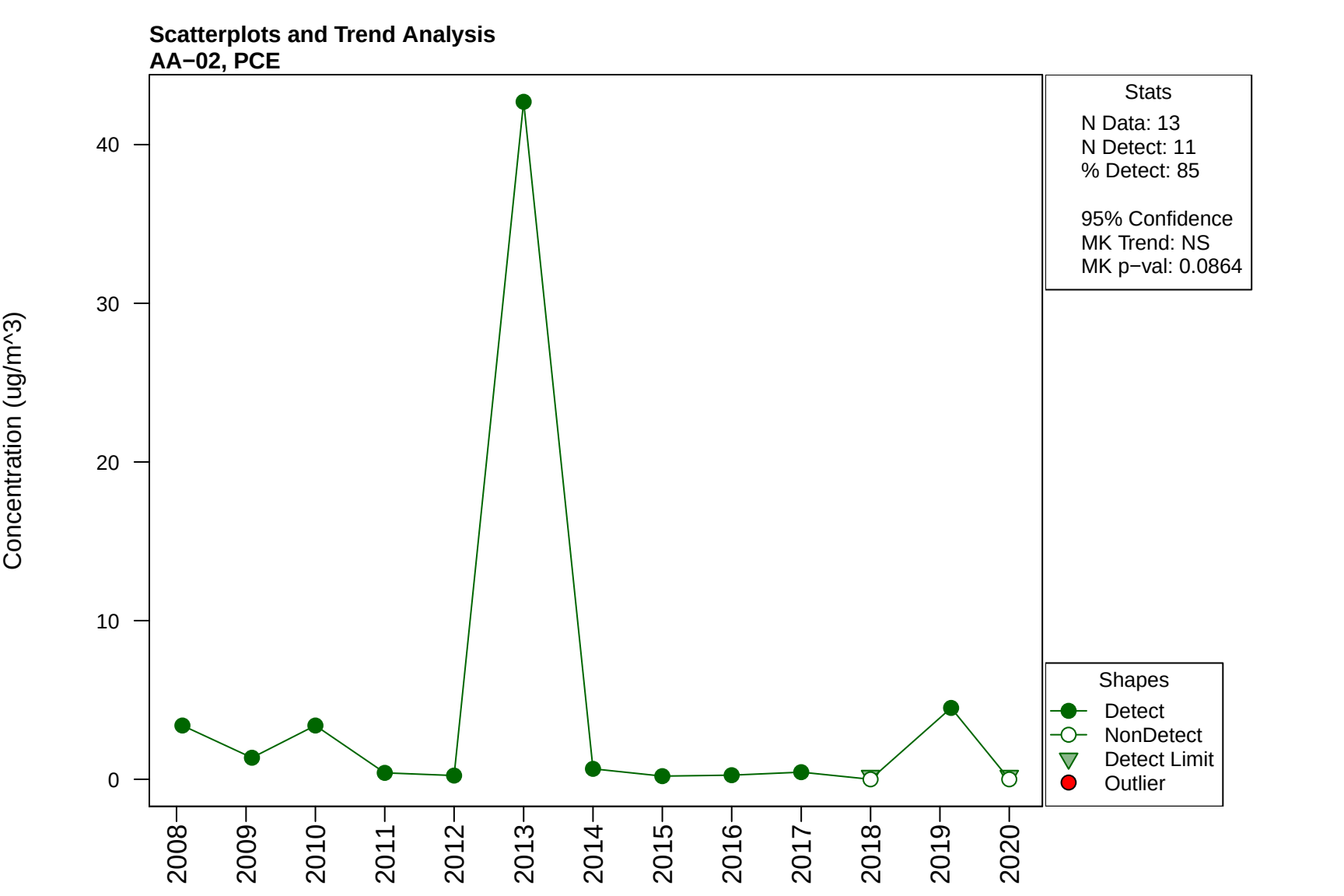

Scatterplots and Trend Analysis
AA−02, 1,1−DCE
Concentration (ug/m^3)
0.0
0.5
1.0
1.5
2008
2009
2010
2011
2012
2013
2014
2015
2016
2017
2018
2019
2020
Stats
N Data: 4
N Detect: 1
% Detect: 25
MK criteria not met
Shapes
Detect
NonDetect
Detect Limit
Outlier

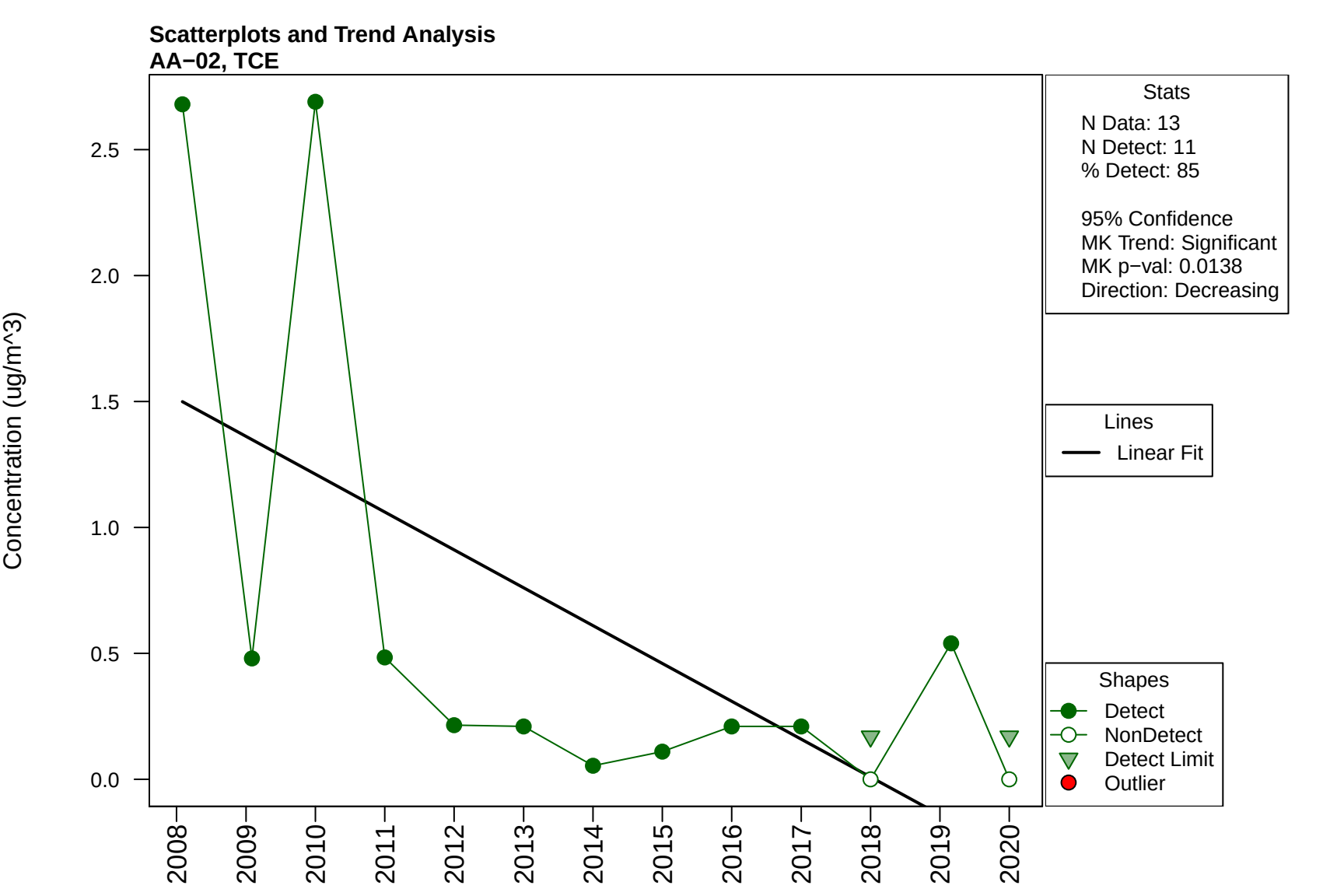

Scatterplots and Trend Analysis
AA−02, 1,1,1−TCA
Concentration (ug/m^3)
2.5
2.0
1.5
1.0
0.5
0.0
2008
2009
2010
2011
2012
2013
2014
2015
2016
2017
2018
2019
2020
Stats
N Data: 13
N Detect: 9
% Detect: 69
95% Confidence
MK Trend: Significant
MK p−val: <0.001
Direction: Decreasing
Lines
Linear Fit
Shapes
Detect
NonDetect
Detect Limit
Outlier

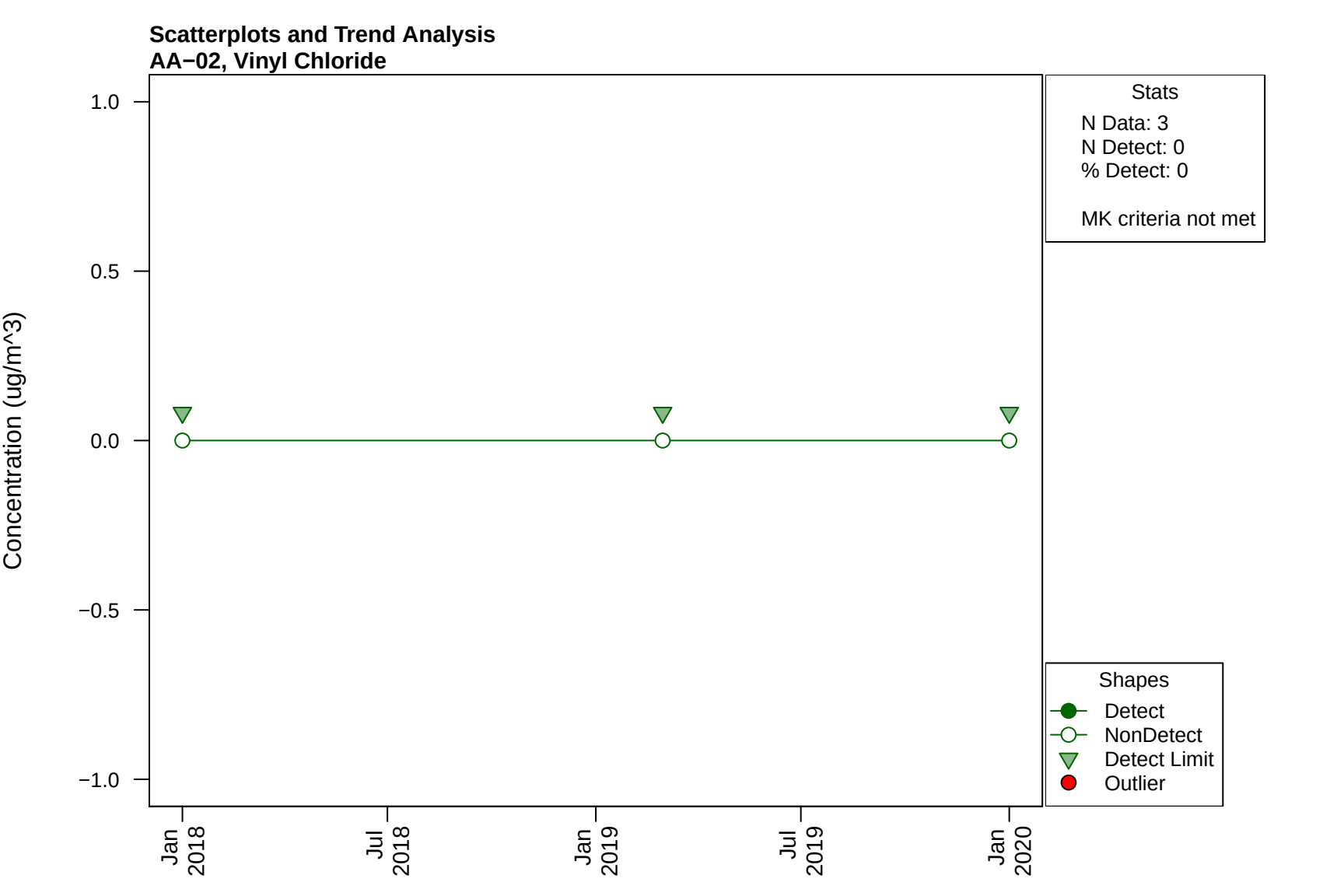

Scatterplots and Trend Analysis
AA−02, Carbon Tetrachloride
Concentration (ug/m^3)
0.0
0.2
0.4
0.6
0.8
2009
2010
2011
2012
2013
2014
2015
2016
2017
2018
2019
2020
Stats
N Data: 11
N Detect: 9
% Detect: 82
95% Confidence
MK Trend: NS
MK p−val: 0.432
Shapes
Detect
NonDetect
Detect Limit
Outlier

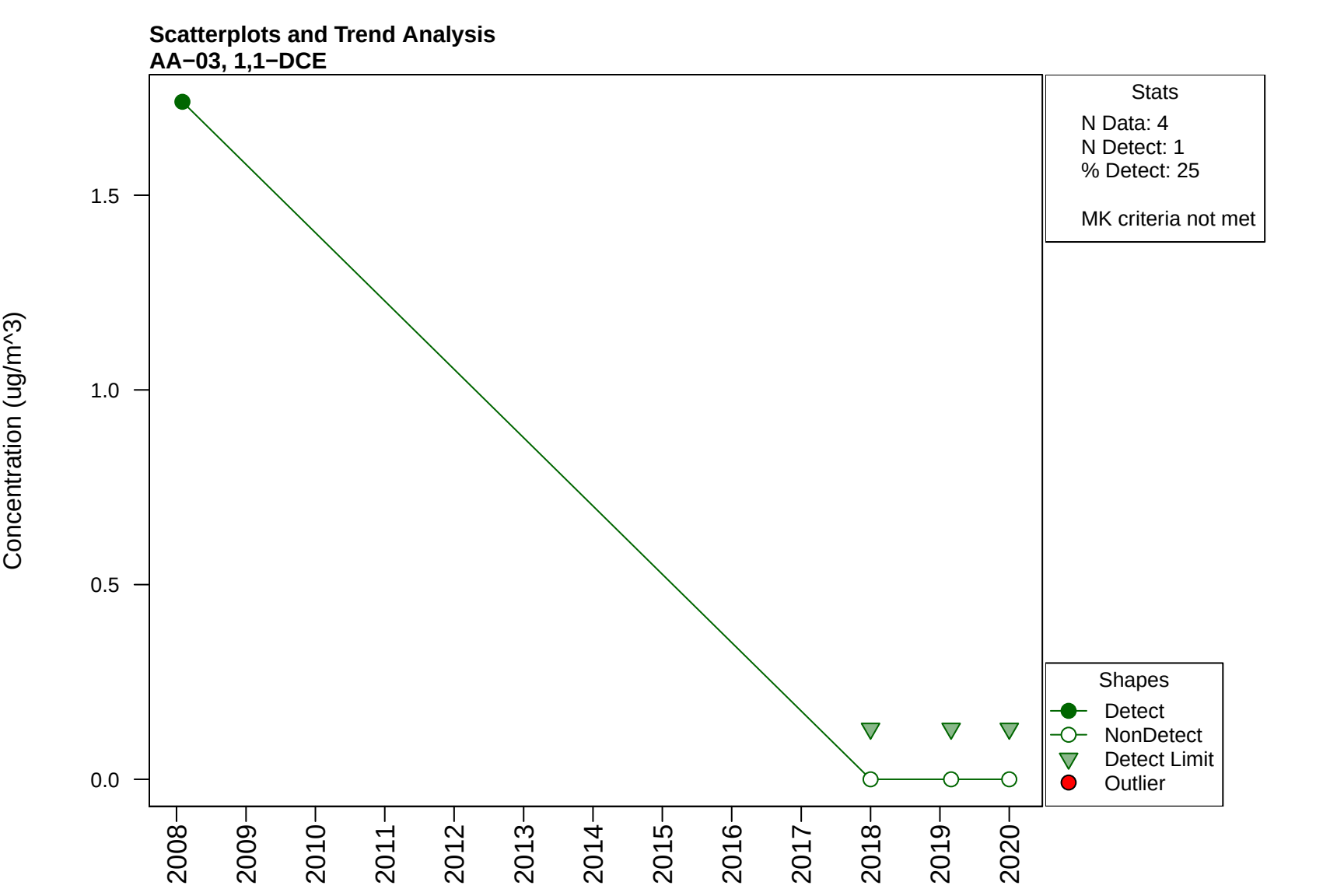

Scatterplots and Trend Analysis
AA−02, Cis 1,2−DCE
Concentration (ug/m^3)
0.0
0.2
0.4
0.6
0.8
2014
2015
2016
2017
2018
2019
2020
Stats
N Data: 7
N Detect: 4
% Detect: 57
MK criteria not met
Shapes
Detect
NonDetect
Detect Limit
Outlier

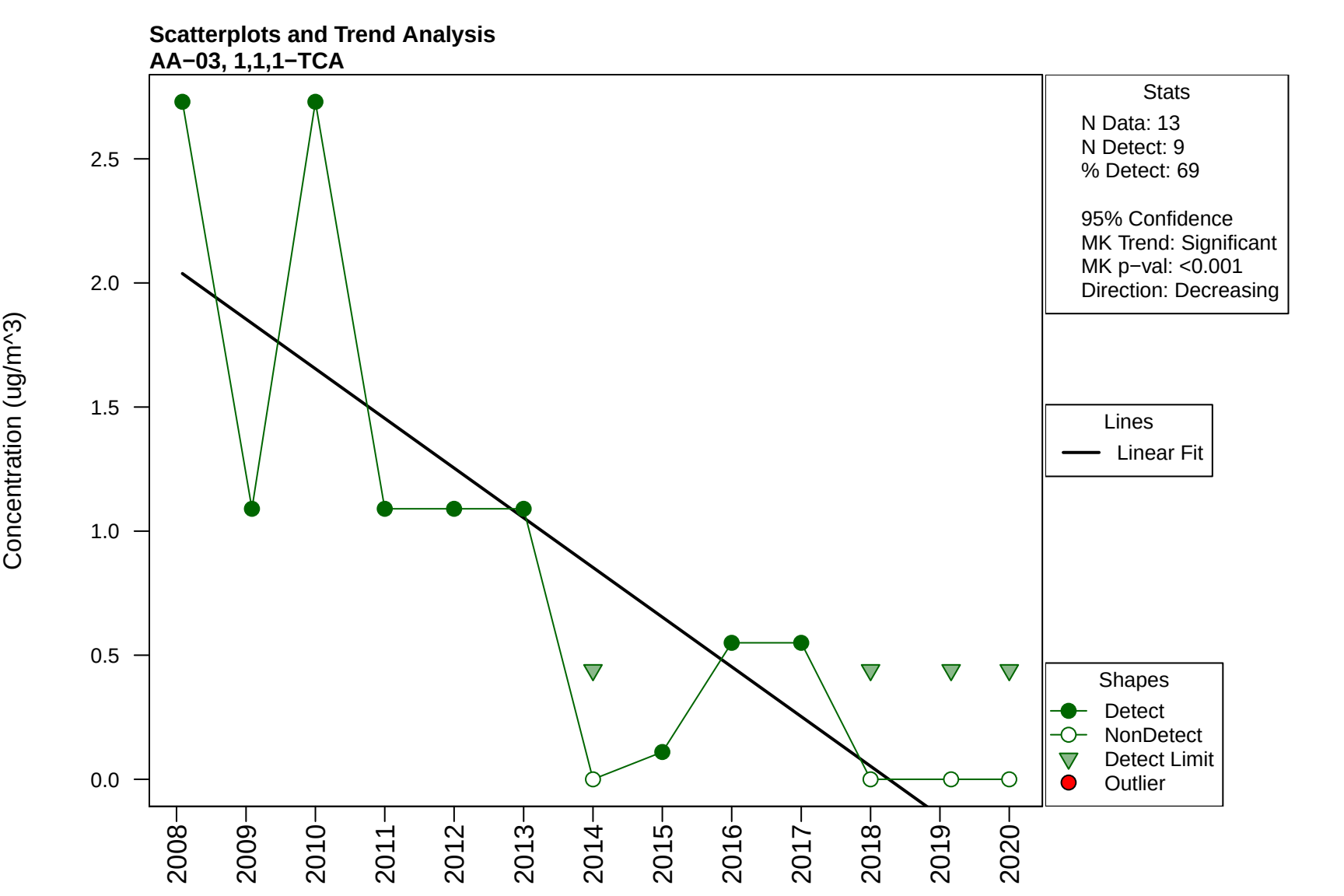

Scatterplots and Trend Analysis
AA−02, Methylene Chloride
Concentration (ug/m^3)
10
8
6
4
2
0
2008
2009
2010
2011
2012
2013
2014
2015
2016
2017
2018
2019
2020
Stats
N Data: 13
N Detect: 13
% Detect: 100
95% Confidence
MK Trend: NS
MK p−val: 0.367
Shapes
Detect
NonDetect
Detect Limit
Outlier

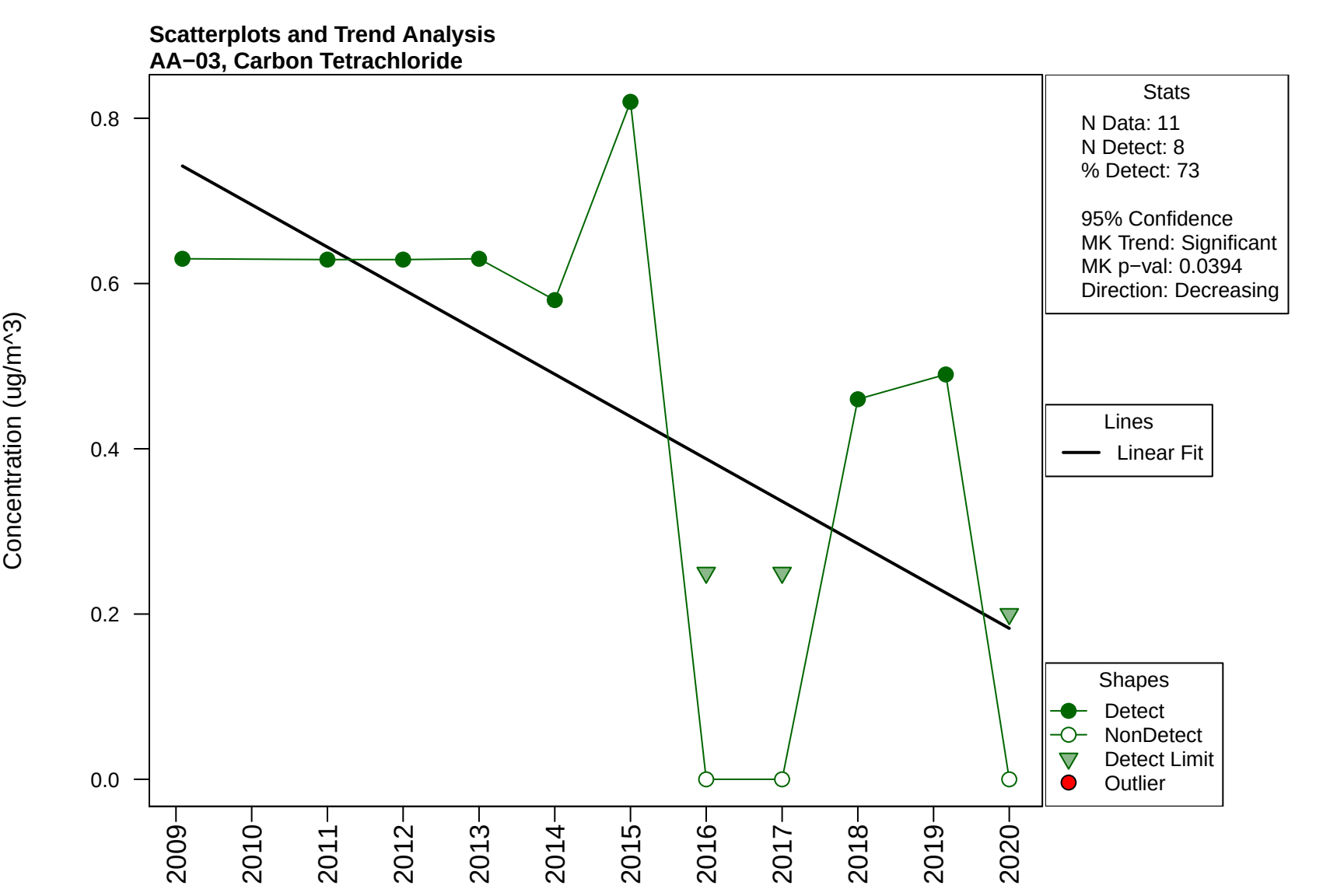

Scatterplots and Trend Analysis
AA−02, PCE
Concentration (ug/m^3)
0
10
20
30
40
2008
2009
2010
2011
2012
2013
2014
2015
2016
2017
2018
2019
2020
Stats
N Data: 13
N Detect: 11
% Detect: 85
95% Confidence
MK Trend: NS
MK p−val: 0.0864
Shapes
Detect
NonDetect
Detect Limit
Outlier

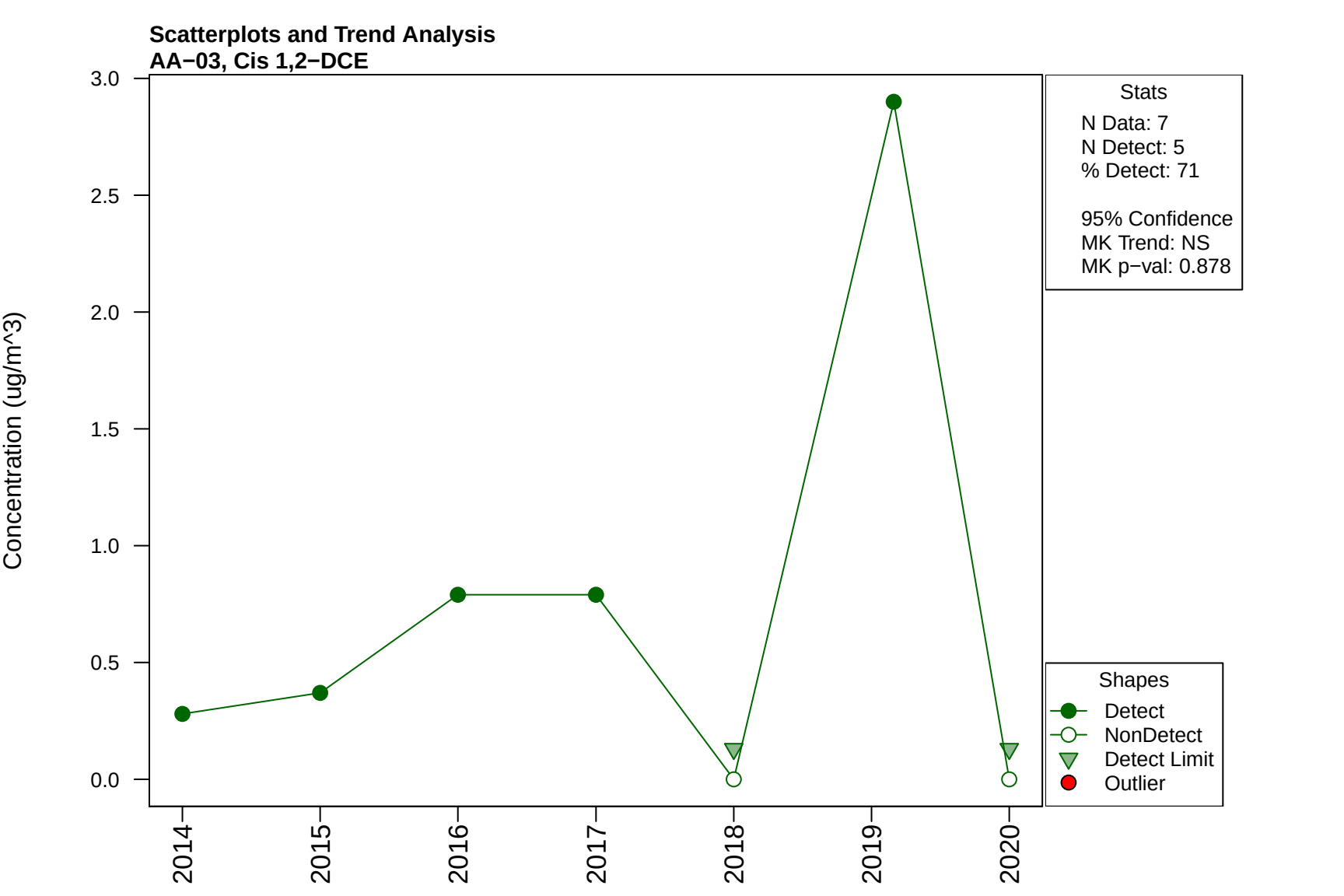

Scatterplots and Trend Analysis
AA−02, TCE
Concentration (ug/m^3)
0.0
0.5
1.0
1.5
2.0
2.5
2008
2009
2010
2011
2012
2013
2014
2015
2016
2017
2018
2019
2020
Stats
N Data: 13
N Detect: 11
% Detect: 85
95% Confidence
MK Trend: Significant
MK p−val: 0.0138
Direction: Decreasing
Lines
Linear Fit
Shapes
Detect
NonDetect
Detect Limit
Outlier

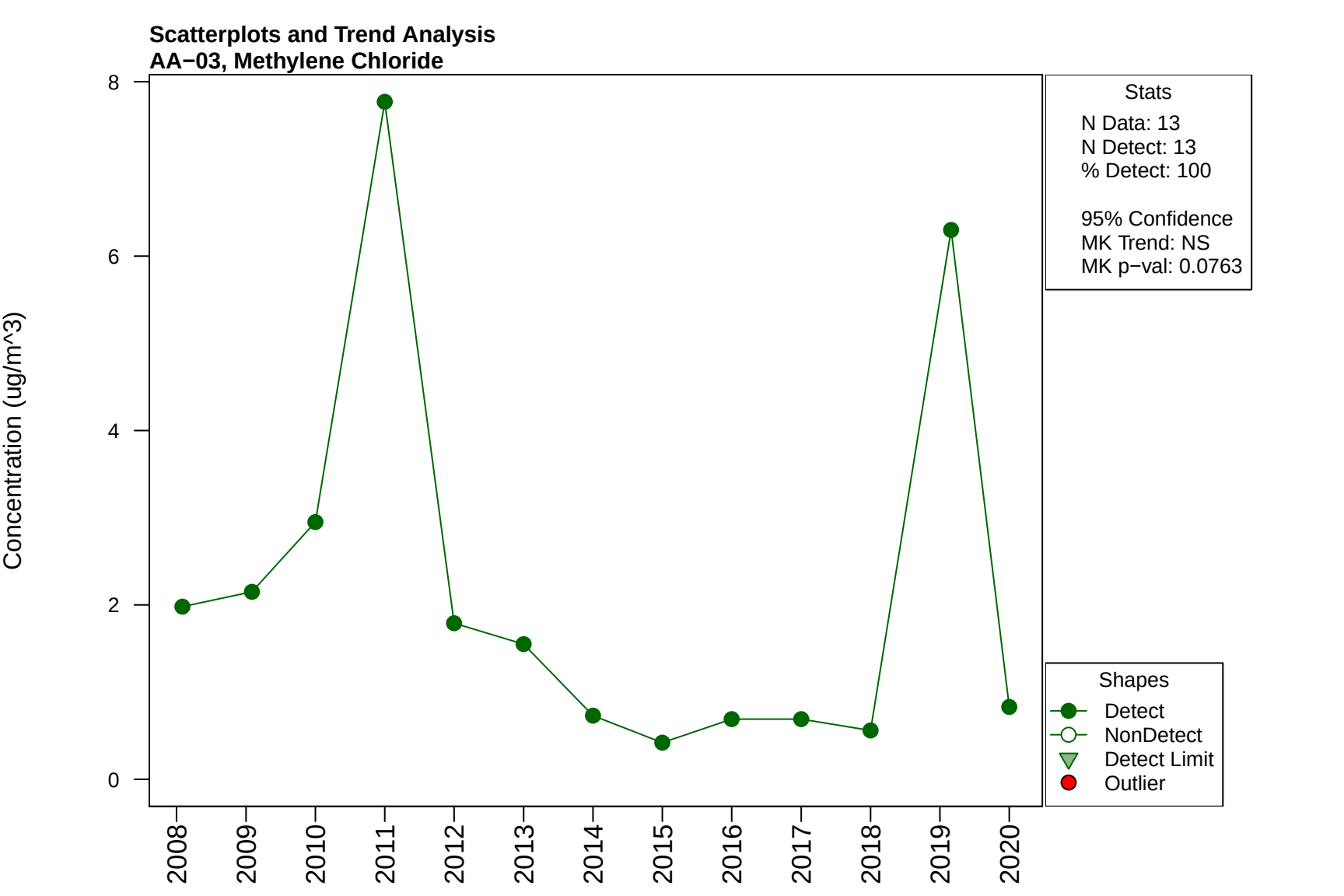

Scatterplots and Trend Analysis
AA−02, Vinyl Chloride
Concentration (ug/m^3)
1.0
0.5
0.0
−0.5
−1.0
Jan 2018
Jul 2018
Jan 2019
Jul 2019
Jan 2020
Stats
N Data: 3
N Detect: 0
% Detect: 0
MK criteria not met
Shapes
Detect
NonDetect
Detect Limit
Outlier

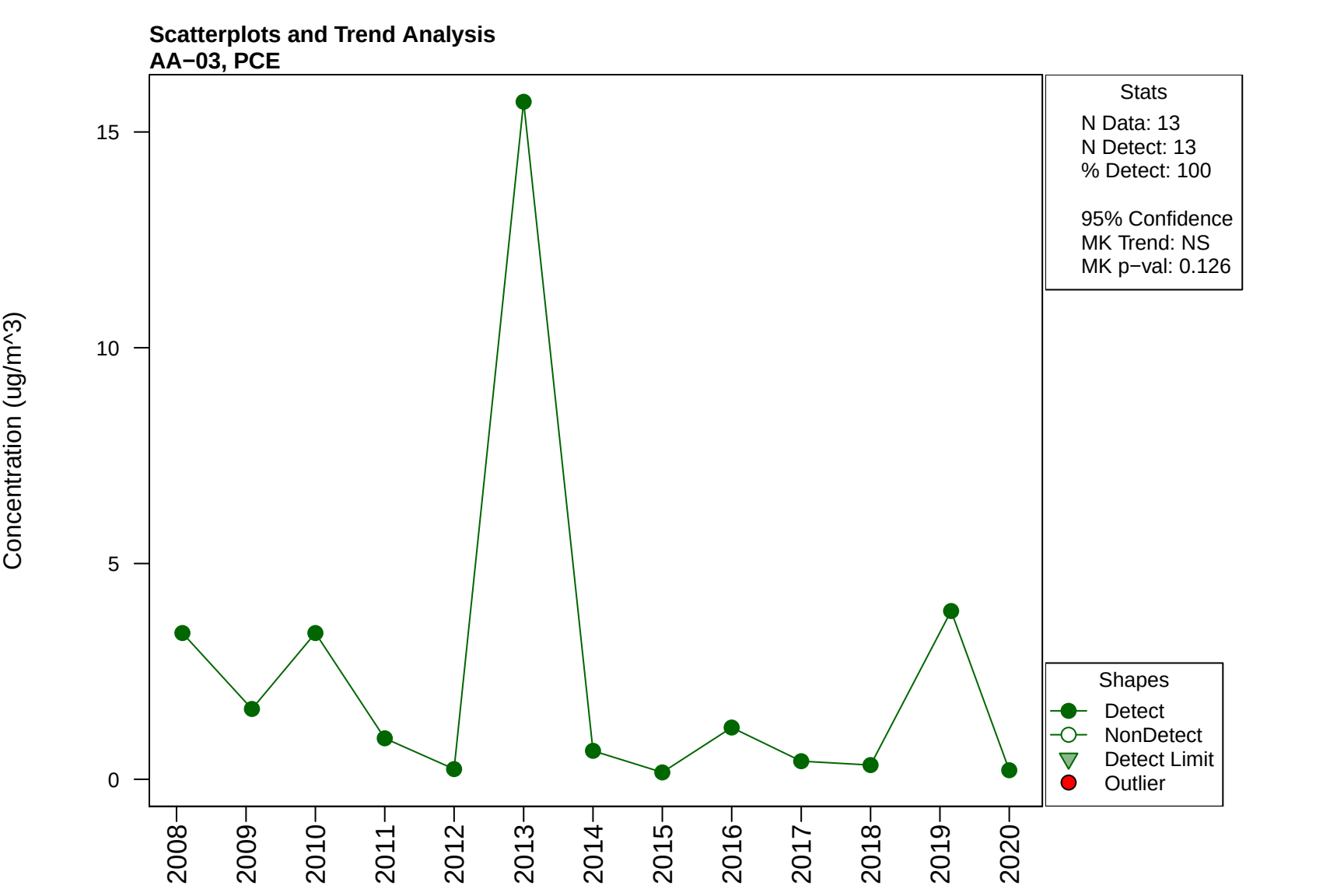

Scatterplots and Trend Analysis
AA−03, 1,1−DCE
Concentration (ug/m^3)
0.0
0.5
1.0
1.5
2008
2009
2010
2011
2012
2013
2014
2015
2016
2017
2018
2019
2020
Stats
N Data: 4
N Detect: 1
% Detect: 25
MK criteria not met
Shapes
Detect
NonDetect
Detect Limit
Outlier

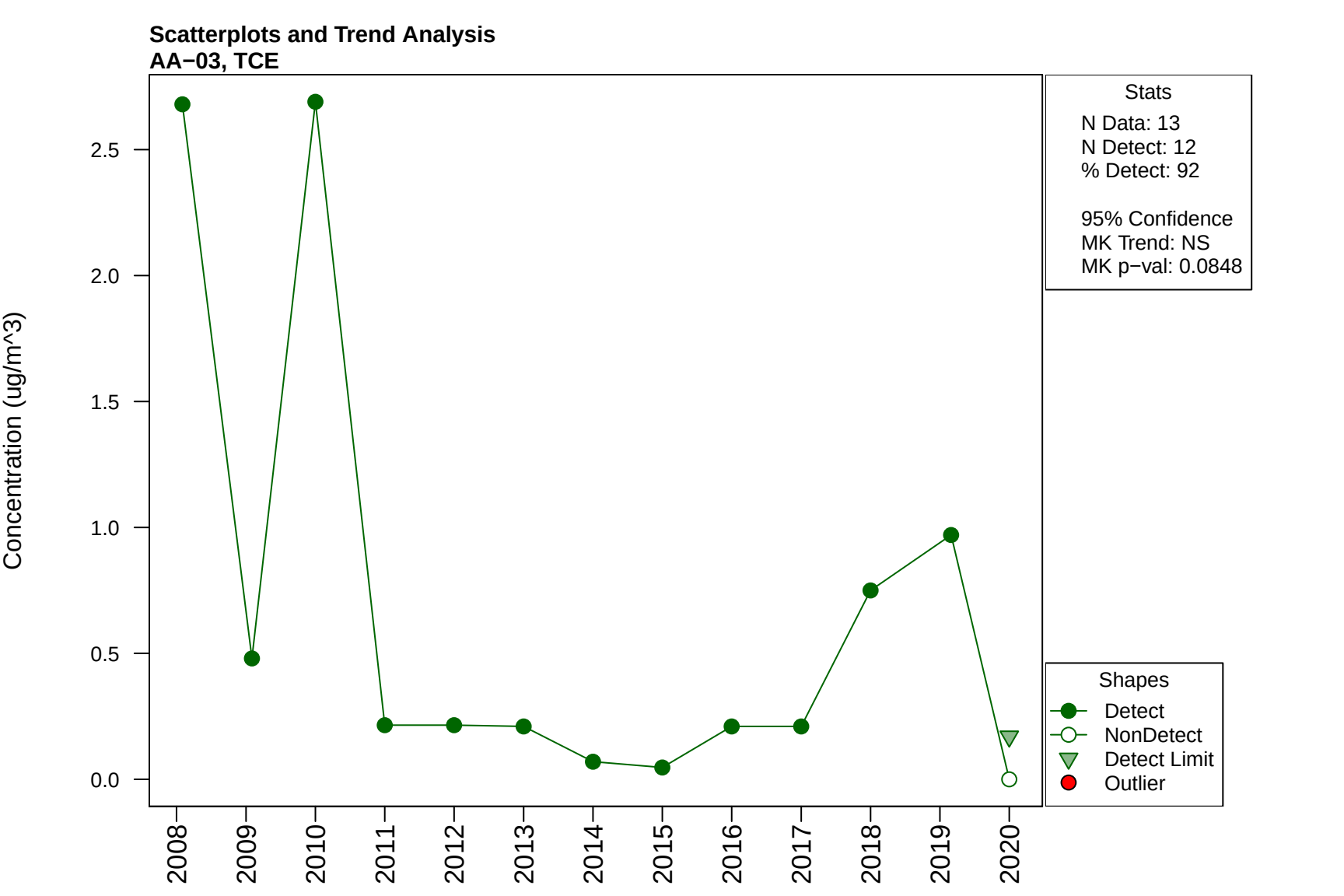

Scatterplots and Trend Analysis
AA−03, 1,1,1−TCA
Concentration (ug/m^3)
0.0
0.5
1.0
1.5
2.0
2.5
2008
2009
2010
2011
2012
2013
2014
2015
2016
2017
2018
2019
2020
Stats
N Data: 13
N Detect: 9
% Detect: 69
95% Confidence
MK Trend: Significant
MK p−val: <0.001
Direction: Decreasing
Lines
Linear Fit
Shapes
Detect
NonDetect
Detect Limit
Outlier

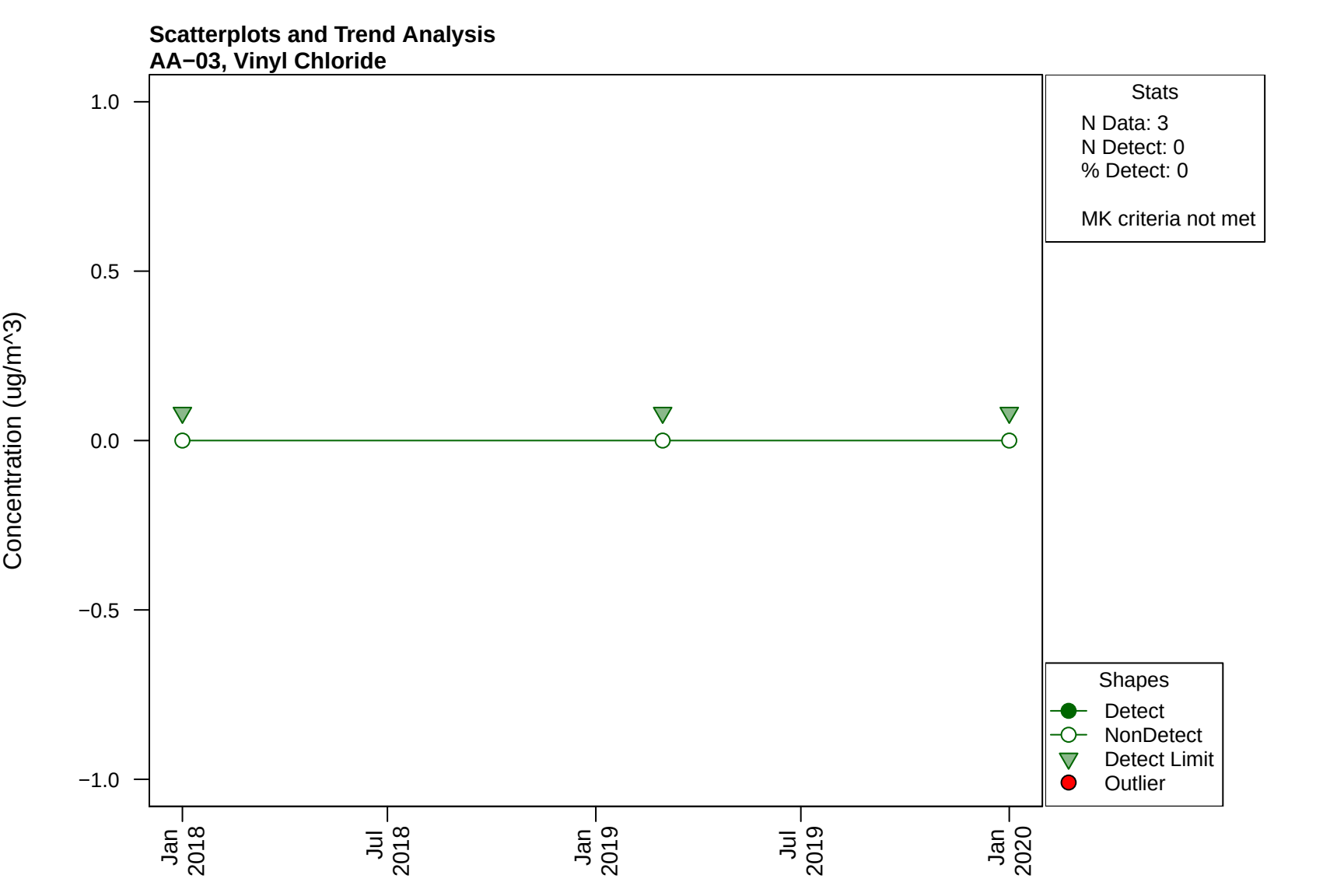

Scatterplots and Trend Analysis
AA−03, Carbon Tetrachloride
Concentration (ug/m^3)
0.0
0.2
0.4
0.6
0.8
2009
2010
2011
2012
2013
2014
2015
2016
2017
2018
2019
2020
Stats
N Data: 11
N Detect: 8
% Detect: 73
95% Confidence
MK Trend: Significant
MK p−val: 0.0394
Direction: Decreasing
Lines
Linear Fit
Shapes
Detect
NonDetect
Detect Limit
Outlier

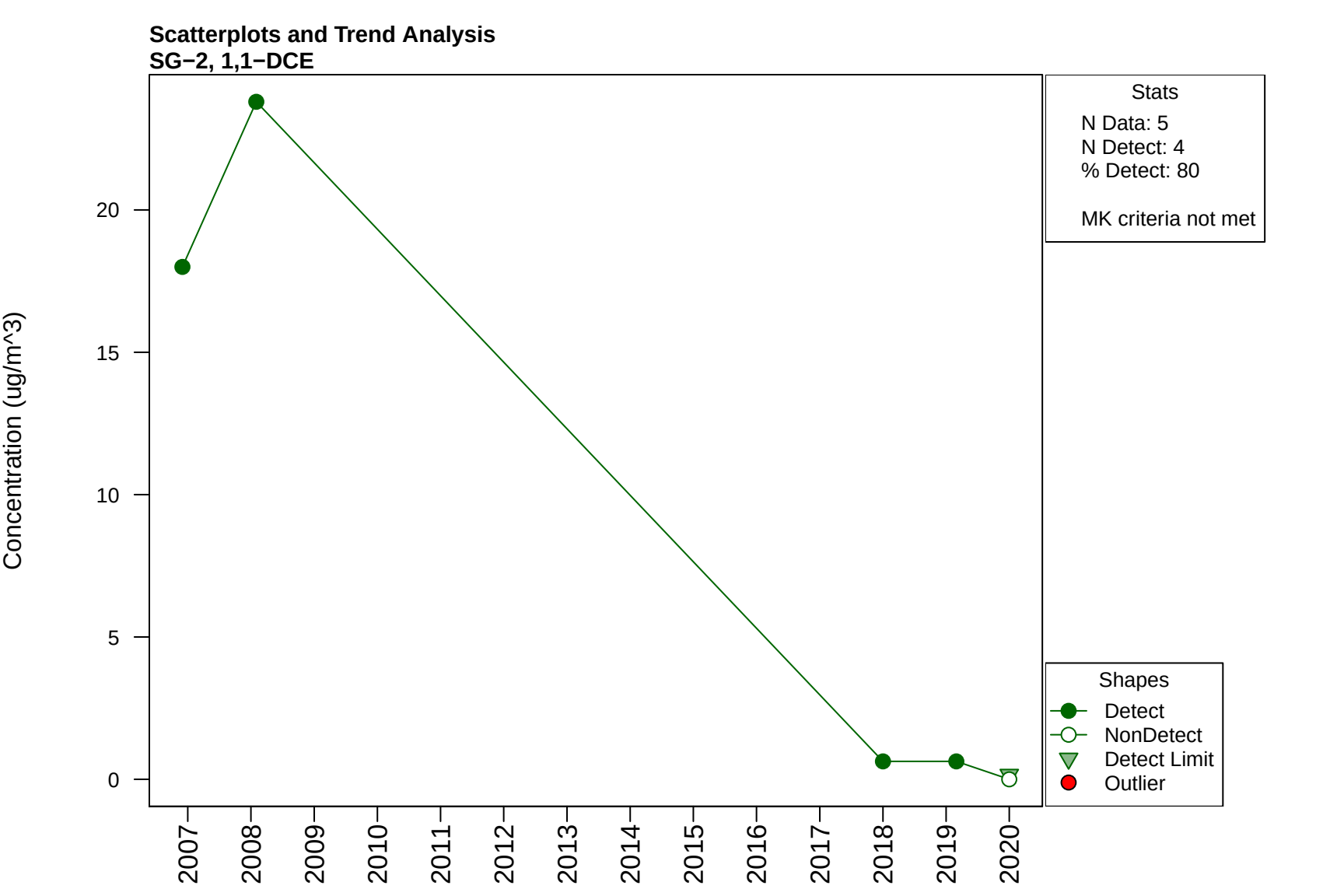

Scatterplots and Trend Analysis
AA−03, Cis 1,2−DCE
Concentration (ug/m^3)
3.0
2.5
2.0
1.5
1.0
0.5
0.0
2014
2015
2016
2017
2018
2019
2020
Stats
N Data: 7
N Detect: 5
% Detect: 71
95% Confidence
MK Trend: NS
MK p−val: 0.878
Shapes
Detect
NonDetect
Detect Limit
Outlier

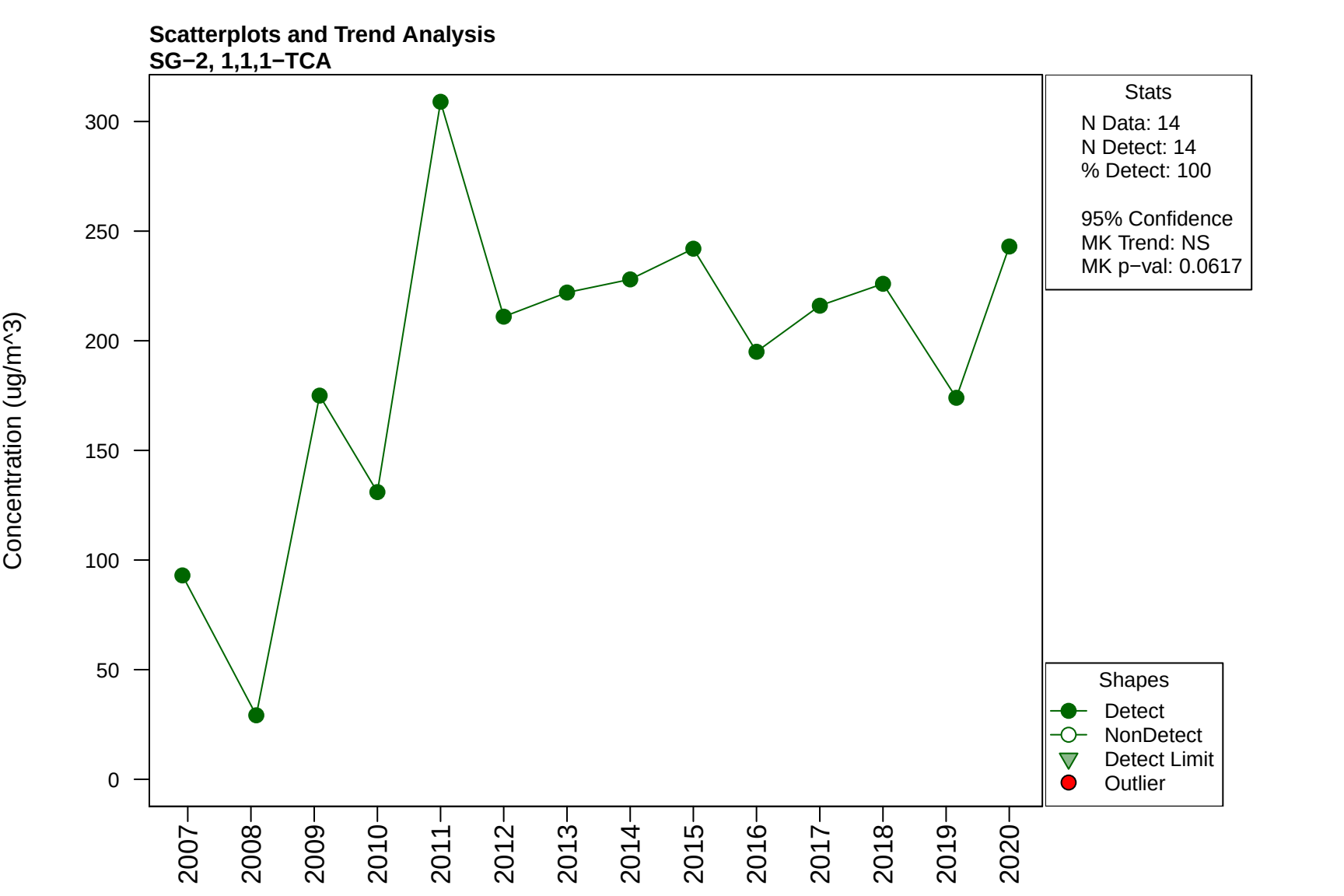

Scatterplots and Trend Analysis
AA−03, Methylene Chloride
Concentration (ug/m^3)
0
2
4
6
8
2008
2009
2010
2011
2012
2013
2014
2015
2016
2017
2018
2019
2020
Stats
N Data: 13
N Detect: 13
% Detect: 100
95% Confidence
MK Trend: NS
MK p−val: 0.0763
Shapes
Detect
NonDetect
Detect Limit
Outlier

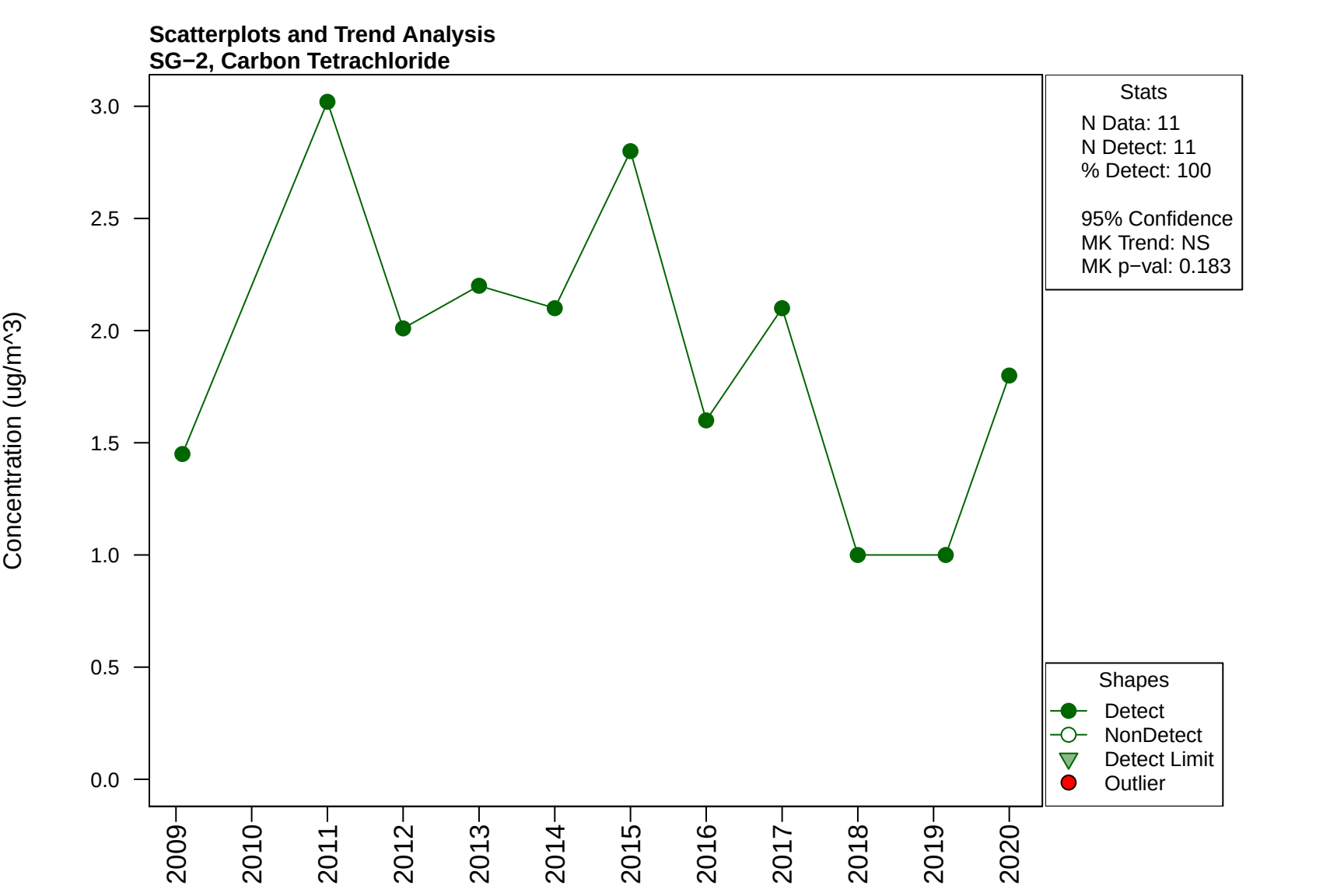

Scatterplots and Trend Analysis
AA−03, PCE
Concentration (ug/m^3)
0
5
10
15
2008
2009
2010
2011
2012
2013
2014
2015
2016
2017
2018
2019
2020
Stats
N Data: 13
N Detect: 13
% Detect: 100
95% Confidence
MK Trend: NS
MK p−val: 0.126
Shapes
Detect
NonDetect
Detect Limit
Outlier

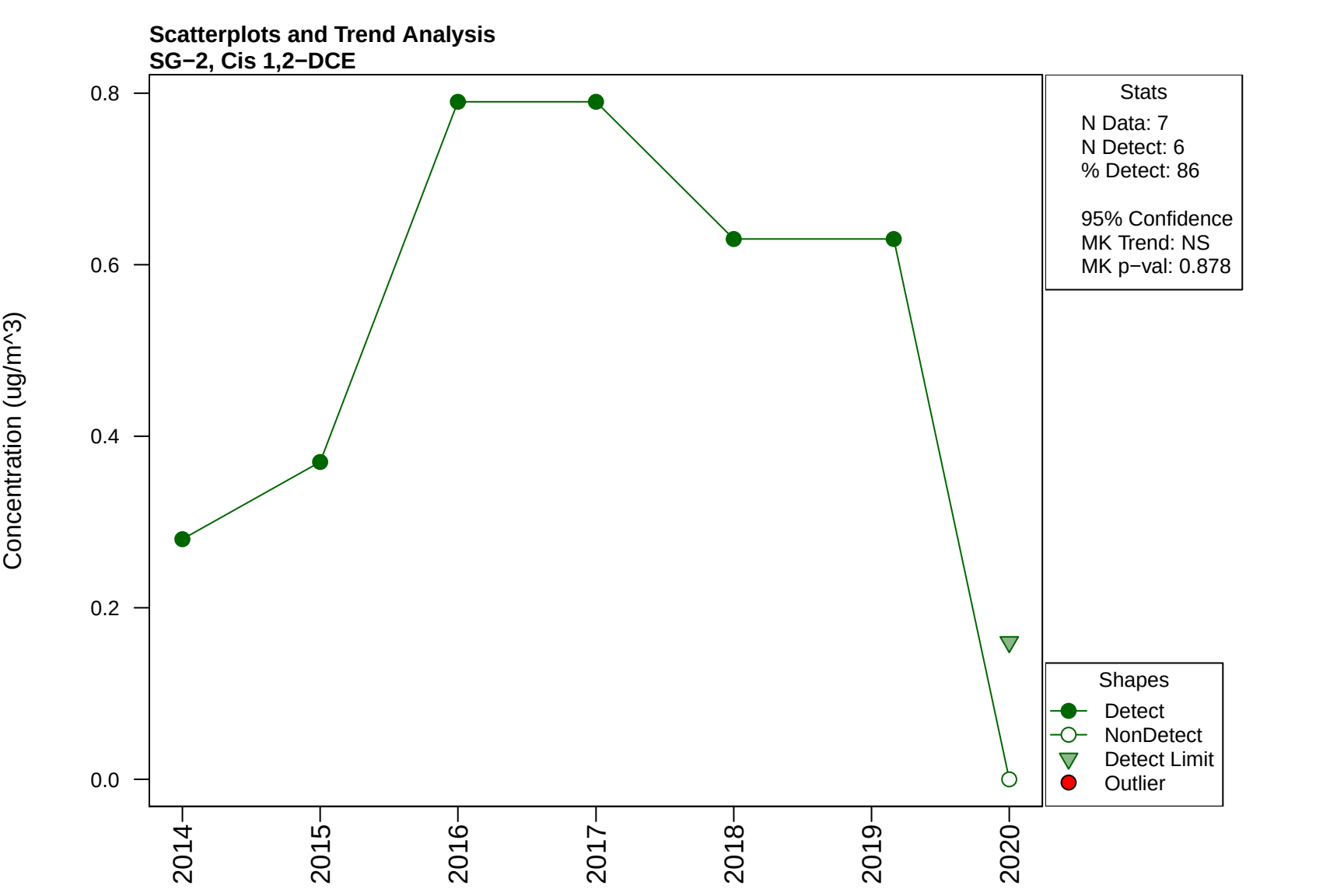

Scatterplots and Trend Analysis
AA−03, TCE
Concentration (ug/m^3)
0.0
0.5
1.0
1.5
2.0
2.5
2008
2009
2010
2011
2012
2013
2014
2015
2016
2017
2018
2019
2020
Stats
N Data: 13
N Detect: 12
% Detect: 92
95% Confidence
MK Trend: NS
MK p−val: 0.0848
Shapes
Detect
NonDetect
Detect Limit
Outlier

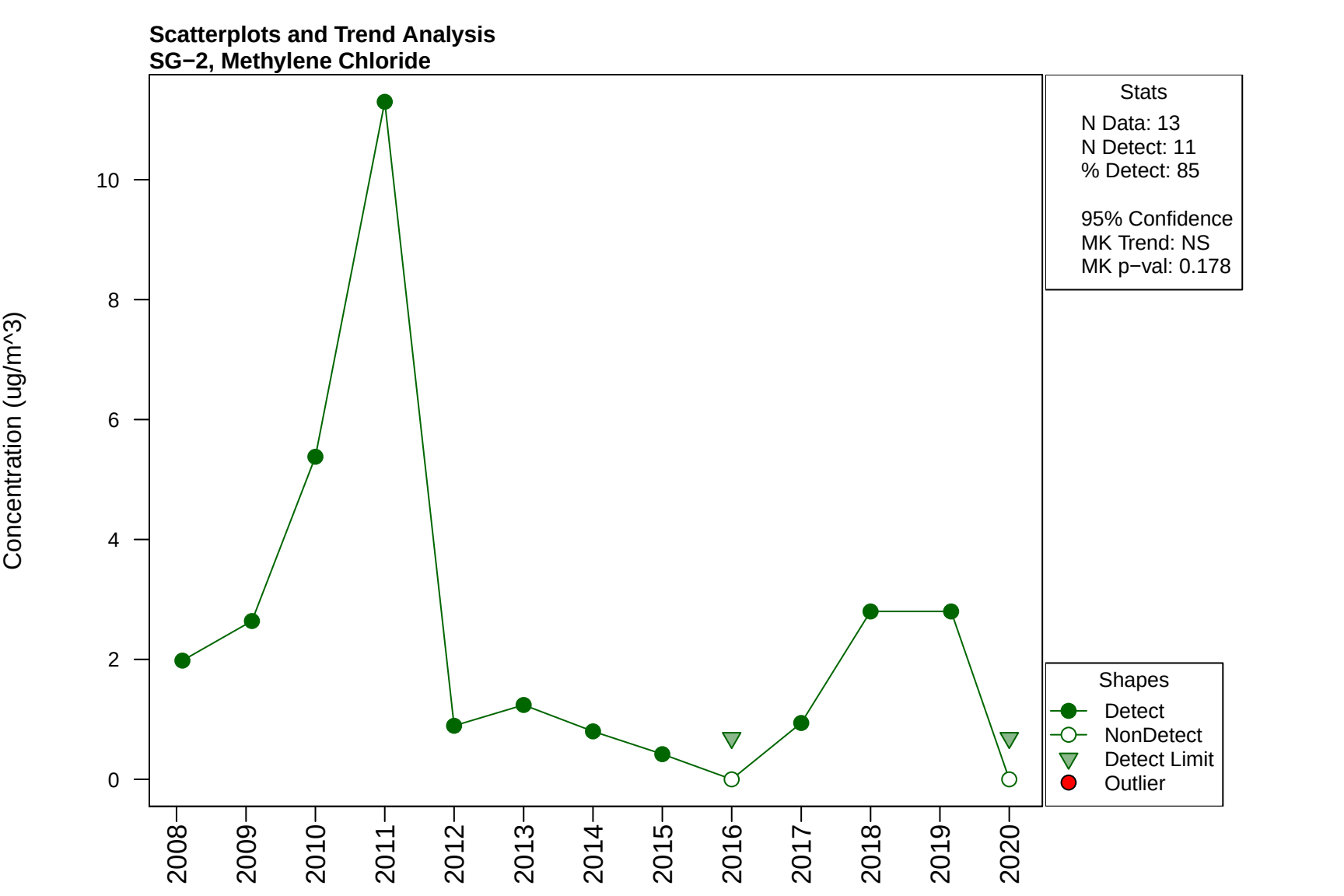

Scatterplots and Trend Analysis
AA−03, Vinyl Chloride
Concentration (ug/m^3)
1.0
0.5
0.0
−0.5
−1.0
Jan 2018
Jul 2018
Jan 2019
Jul 2019
Jan 2020
Stats
N Data: 3
N Detect: 0
% Detect: 0
MK criteria not met
Shapes
Detect
NonDetect
Detect Limit
Outlier

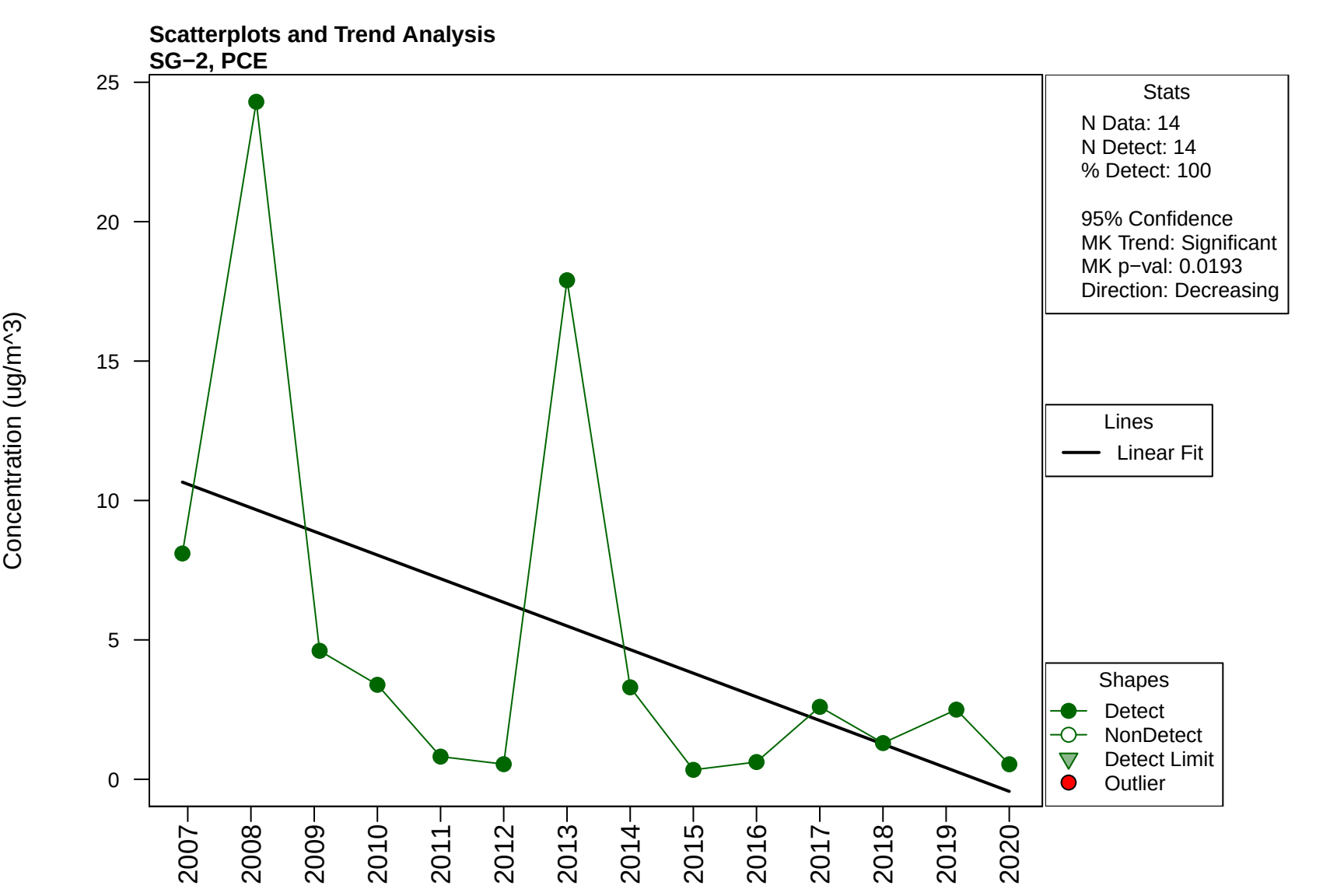

Scatterplots and Trend Analysis
SG−2, 1,1−DCE
Stats
N Data: 5
N Detect: 4
% Detect: 80
MK criteria not met
Shapes
Detect
NonDetect
Detect Limit
Outlier
Concentration (ug/m^3)
0
5
10
15
20
2007
2008
2009
2010
2011
2012
2013
2014
2015
2016
2017
2018
2019
2020

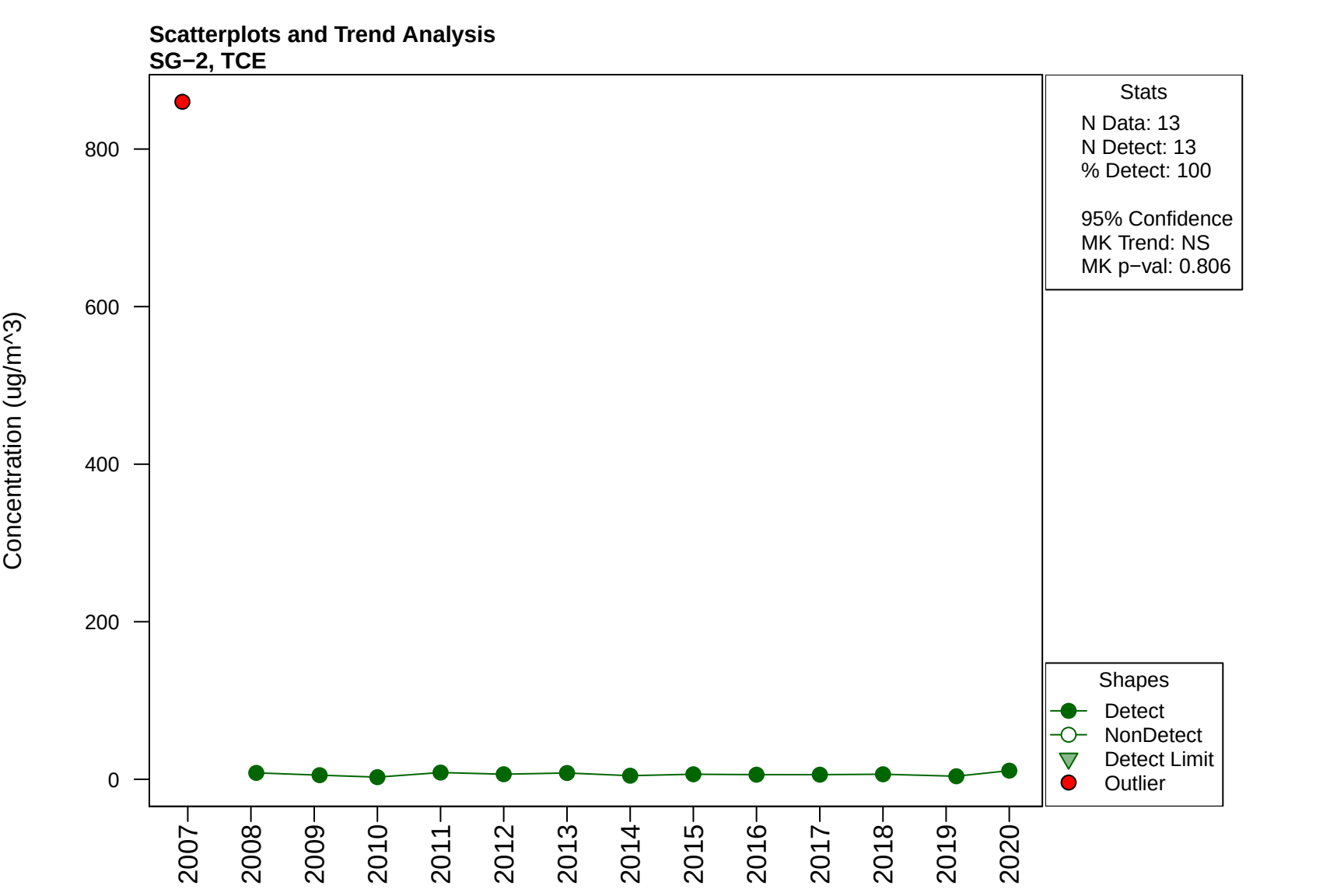

Scatterplots and Trend Analysis
SG−2, 1,1,1−TCA
Concentration (ug/m^3)
0
50
100
150
200
250
300
2007
2008
2009
2010
2011
2012
2013
2014
2015
2016
2017
2018
2019
2020
Stats
N Data: 14
N Detect: 14
% Detect: 100
95% Confidence
MK Trend: NS
MK p−val: 0.0617
Shapes
Detect
NonDetect
Detect Limit
Outlier

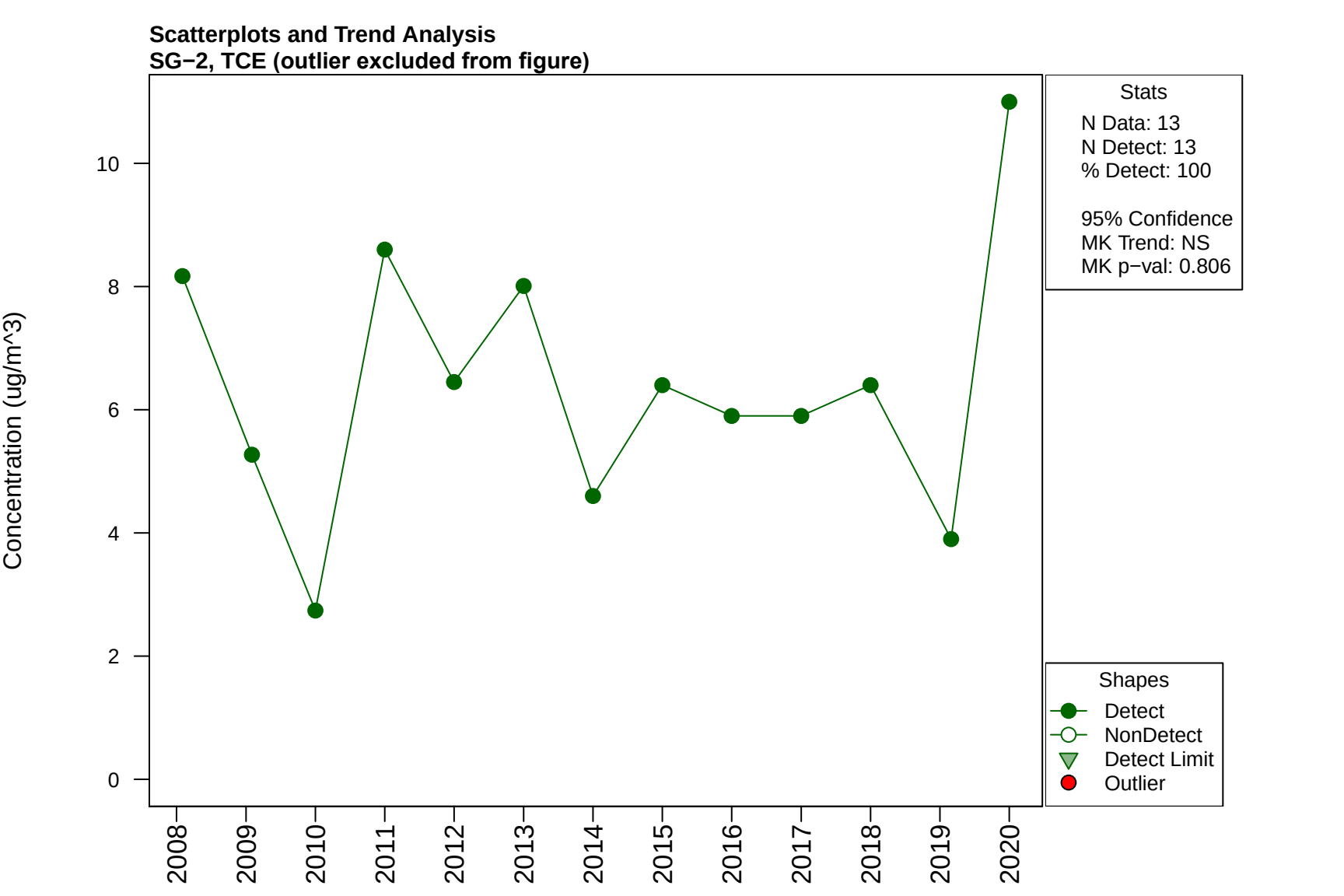

Scatterplots and Trend Analysis
SG−2, Carbon Tetrachloride
Concentration (ug/m^3)
3.0
2.5
2.0
1.5
1.0
0.5
0.0
2009
2010
2011
2012
2013
2014
2015
2016
2017
2018
2019
2020
Stats
N Data: 11
N Detect: 11
% Detect: 100
95% Confidence
MK Trend: NS
MK p−val: 0.183
Shapes
Detect
NonDetect
Detect Limit
Outlier

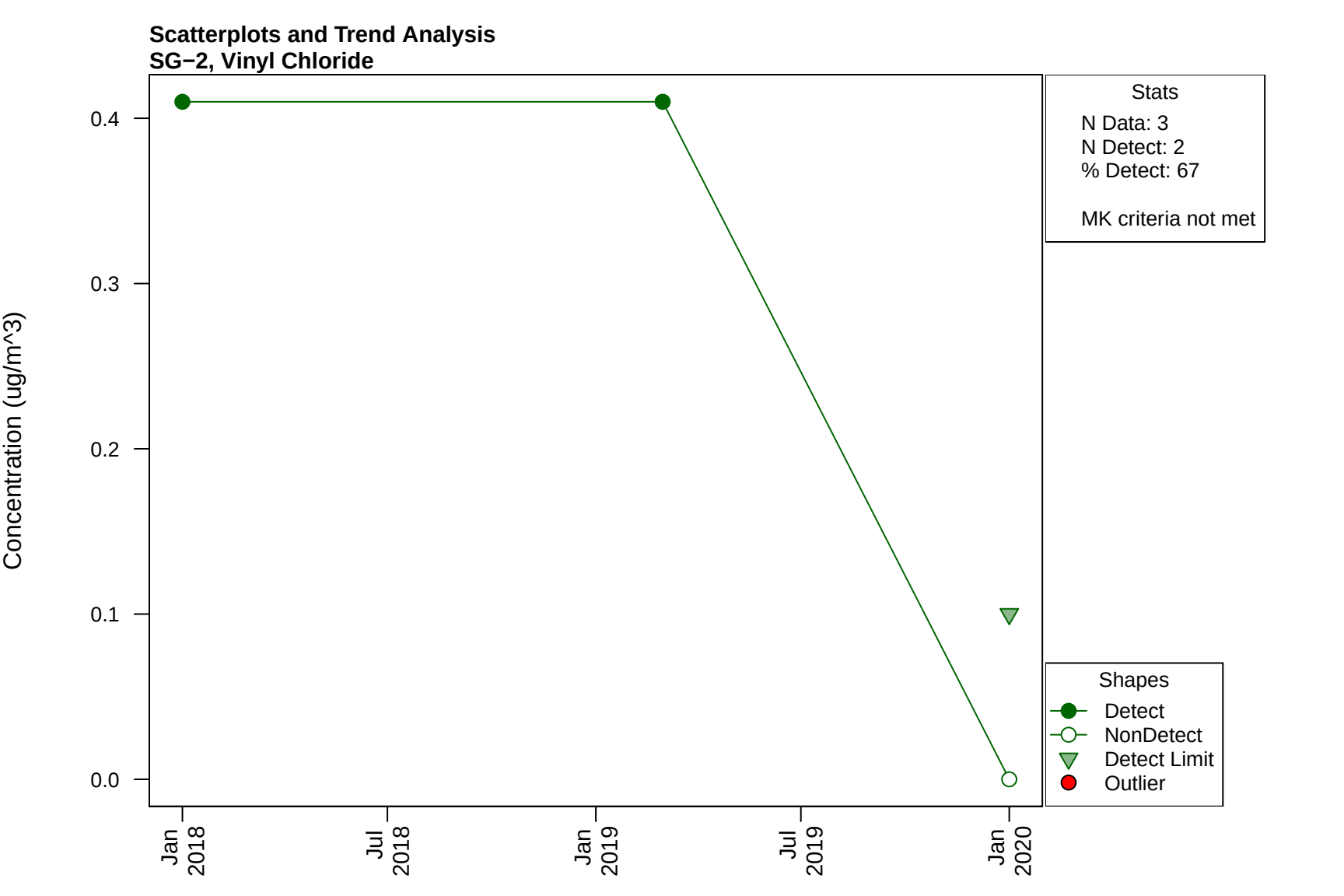

Scatterplots and Trend Analysis
SG−2, Cis 1,2−DCE
Concentration (ug/m^3)
0.0
0.2
0.4
0.6
0.8
2014
2015
2016
2017
2018
2019
2020
Stats
N Data: 7
N Detect: 6
% Detect: 86
95% Confidence
MK Trend: NS
MK p−val: 0.878
Shapes
Detect
NonDetect
Detect Limit
Outlier

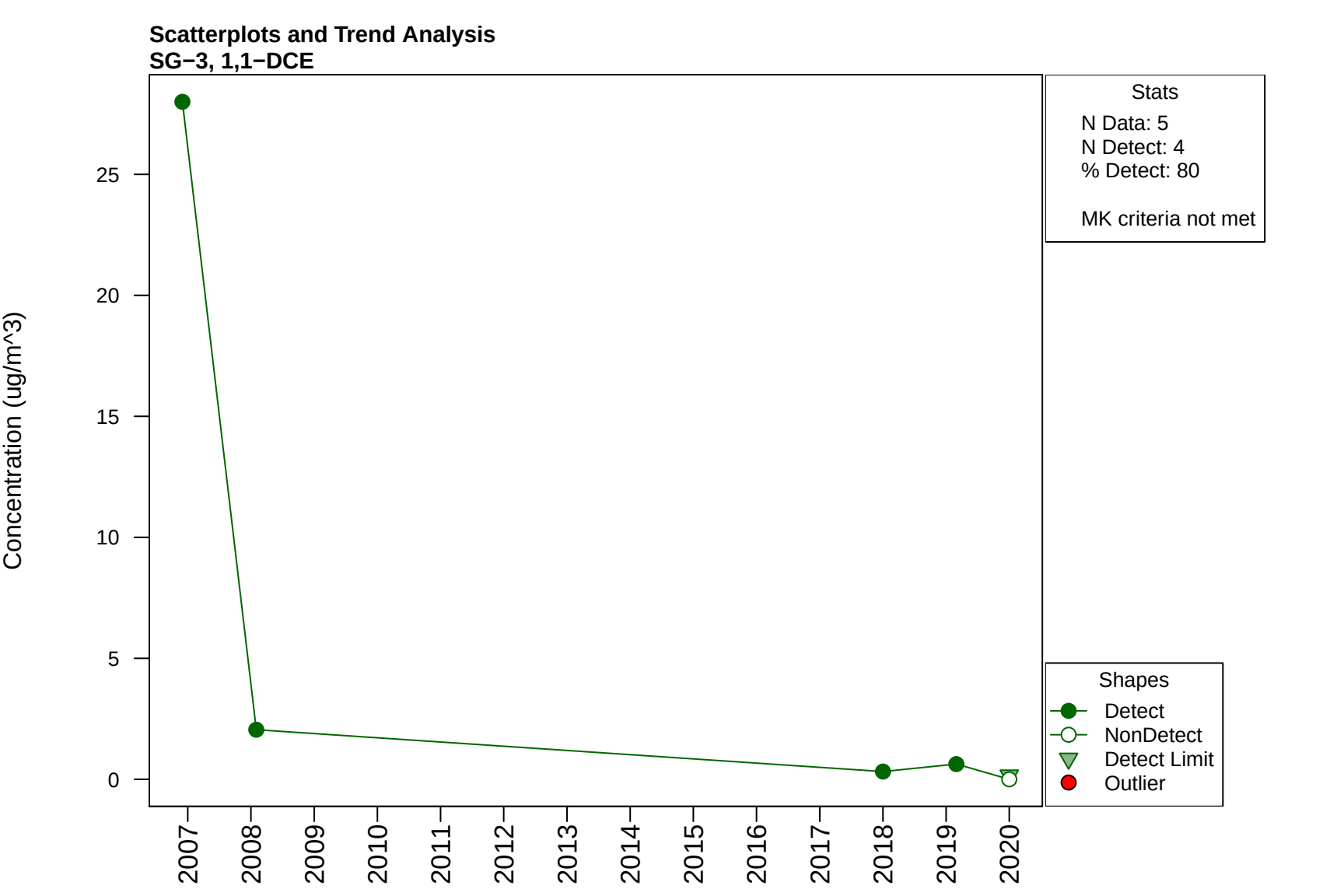

Scatterplots and Trend Analysis
SG−2, Methylene Chloride
Concentration (ug/m^3)
0
2
4
6
8
10
2008
2009
2010
2011
2012
2013
2014
2015
2016
2017
2018
2019
2020
Stats
N Data: 13
N Detect: 11
% Detect: 85
95% Confidence
MK Trend: NS
MK p−val: 0.178
Shapes
Detect
NonDetect
Detect Limit
Outlier

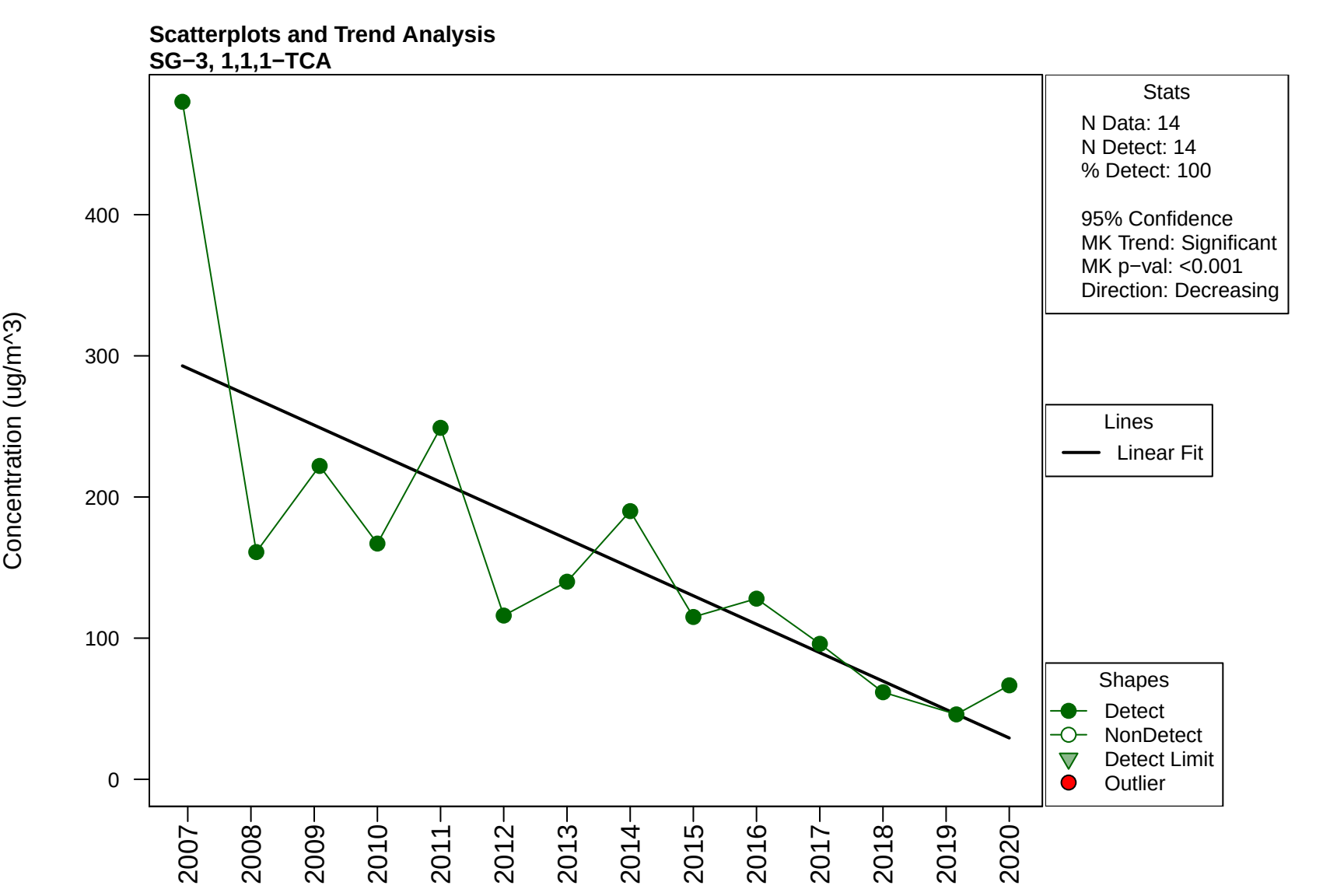

Scatterplots and Trend Analysis
SG−2, PCE
Concentration (ug/m^3)
25
20
15
10
5
0
2007
2008
2009
2010
2011
2012
2013
2014
2015
2016
2017
2018
2019
2020
Stats
N Data: 14
N Detect: 14
% Detect: 100
95% Confidence
MK Trend: Significant
MK p−val: 0.0193
Direction: Decreasing
Lines
Linear Fit
Shapes
Detect
NonDetect
Detect Limit
Outlier

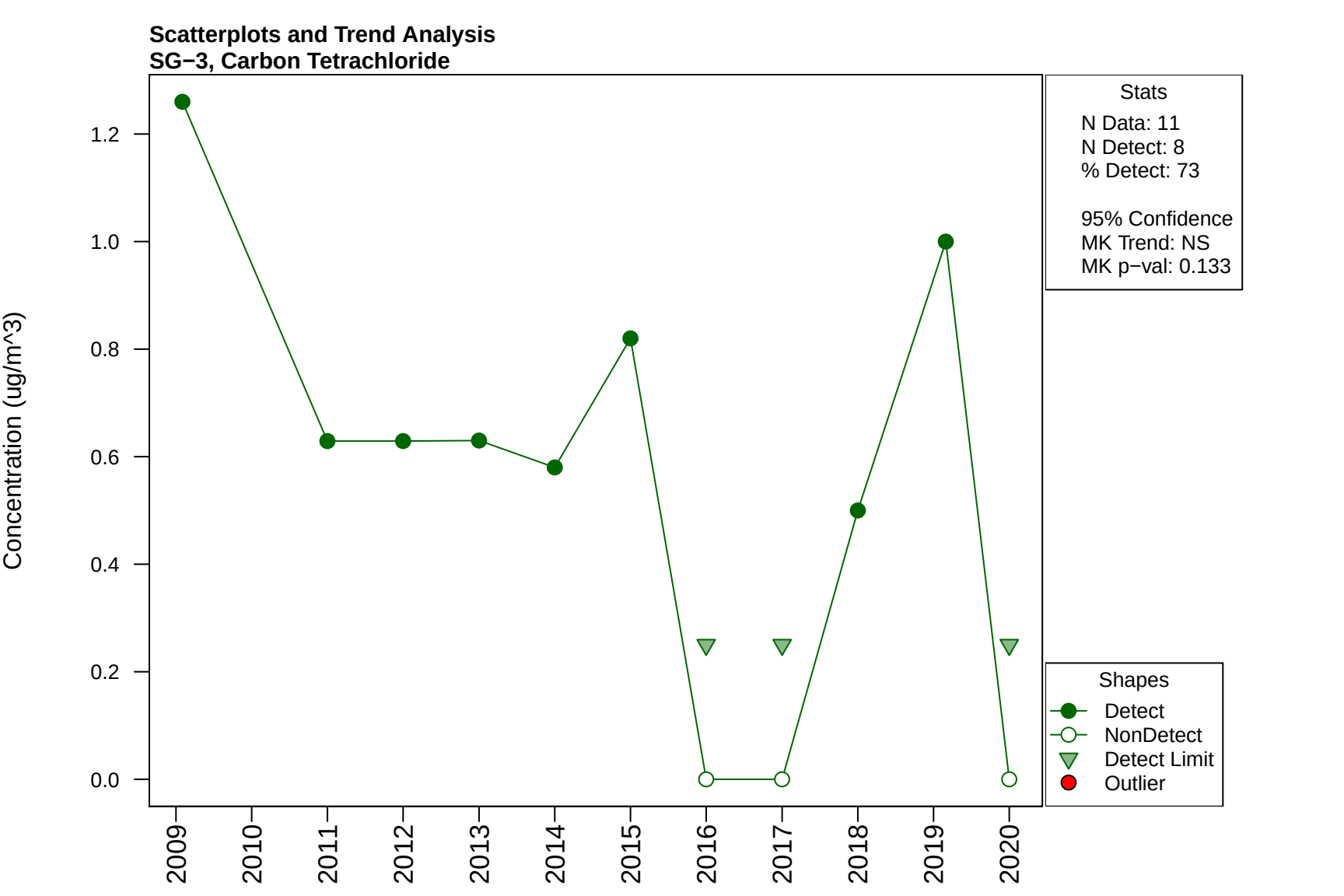

Scatterplots and Trend Analysis
SG−2, TCE
Concentration (ug/m^3)
800
600
400
200
0
2007
2008
2009
2010
2011
2012
2013
2014
2015
2016
2017
2018
2019
2020
Stats
N Data: 13
N Detect: 13
% Detect: 100
95% Confidence
MK Trend: NS
MK p−val: 0.806
Shapes
Detect
NonDetect
Detect Limit
Outlier

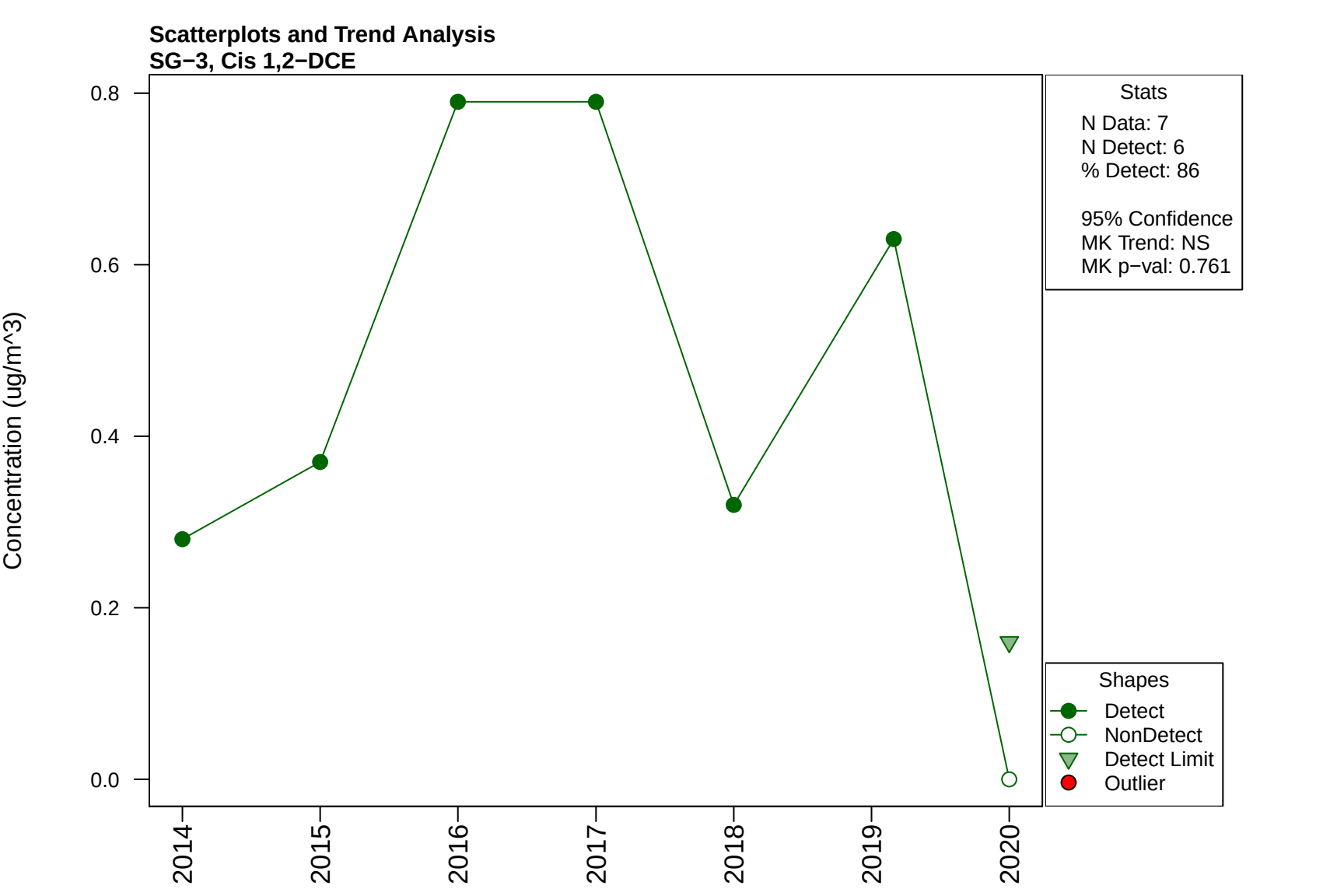

Scatterplots and Trend Analysis
SG−2, TCE (outlier excluded from figure)
Concentration (ug/m^3)
0
2
4
6
8
10
2008
2009
2010
2011
2012
2013
2014
2015
2016
2017
2018
2019
2020
Stats
N Data: 13
N Detect: 13
% Detect: 100
95% Confidence
MK Trend: NS
MK p−val: 0.806
Shapes
Detect
NonDetect
Detect Limit
Outlier

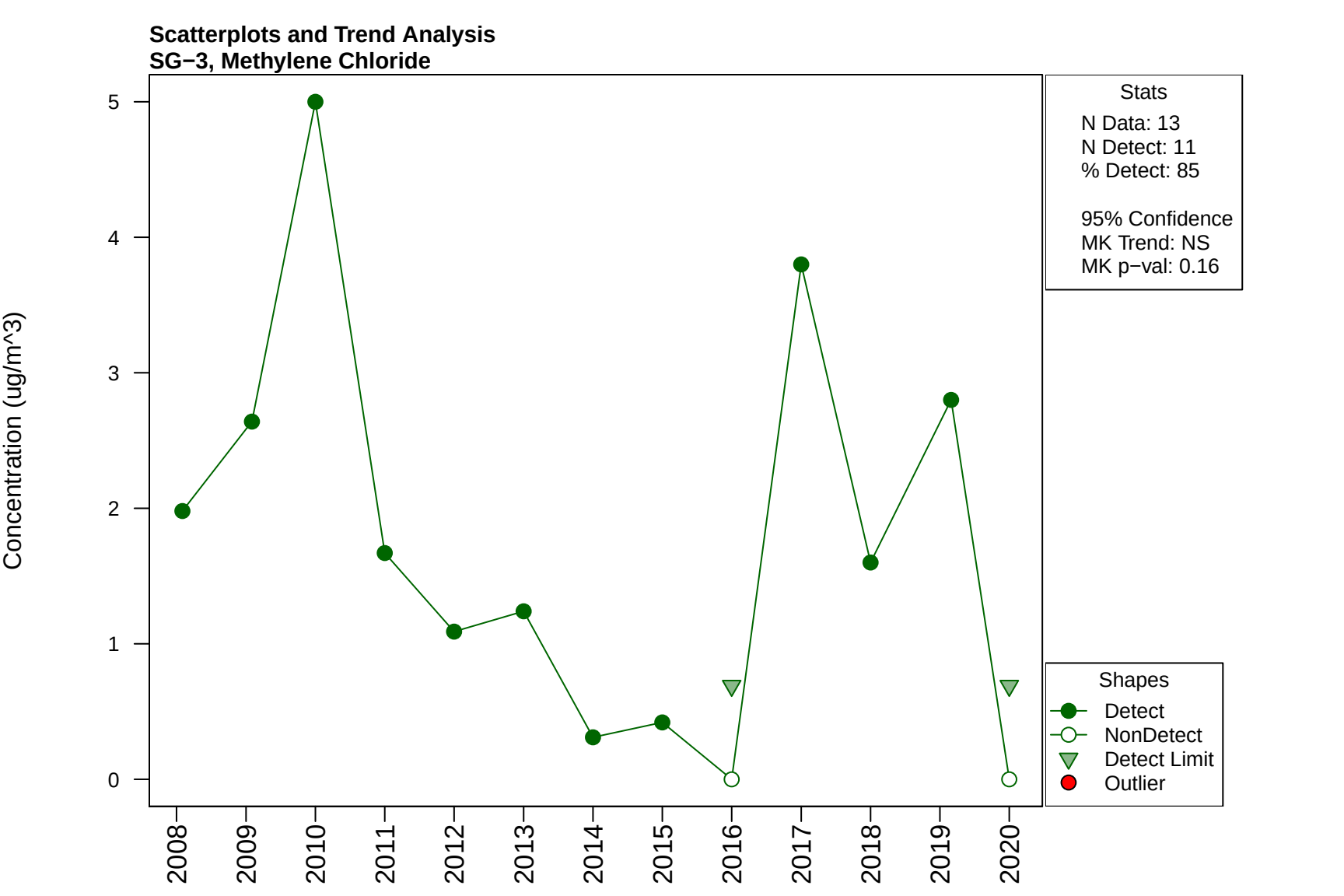

Scatterplots and Trend Analysis
SG−2, Vinyl Chloride
Concentration (ug/m^3)
0.4
0.3
0.2
0.1
0.0
Jan 2018
Jul 2018
Jan 2019
Jul 2019
Jan 2020
Stats
N Data: 3
N Detect: 2
% Detect: 67
MK criteria not met
Shapes
Detect
NonDetect
Detect Limit
Outlier

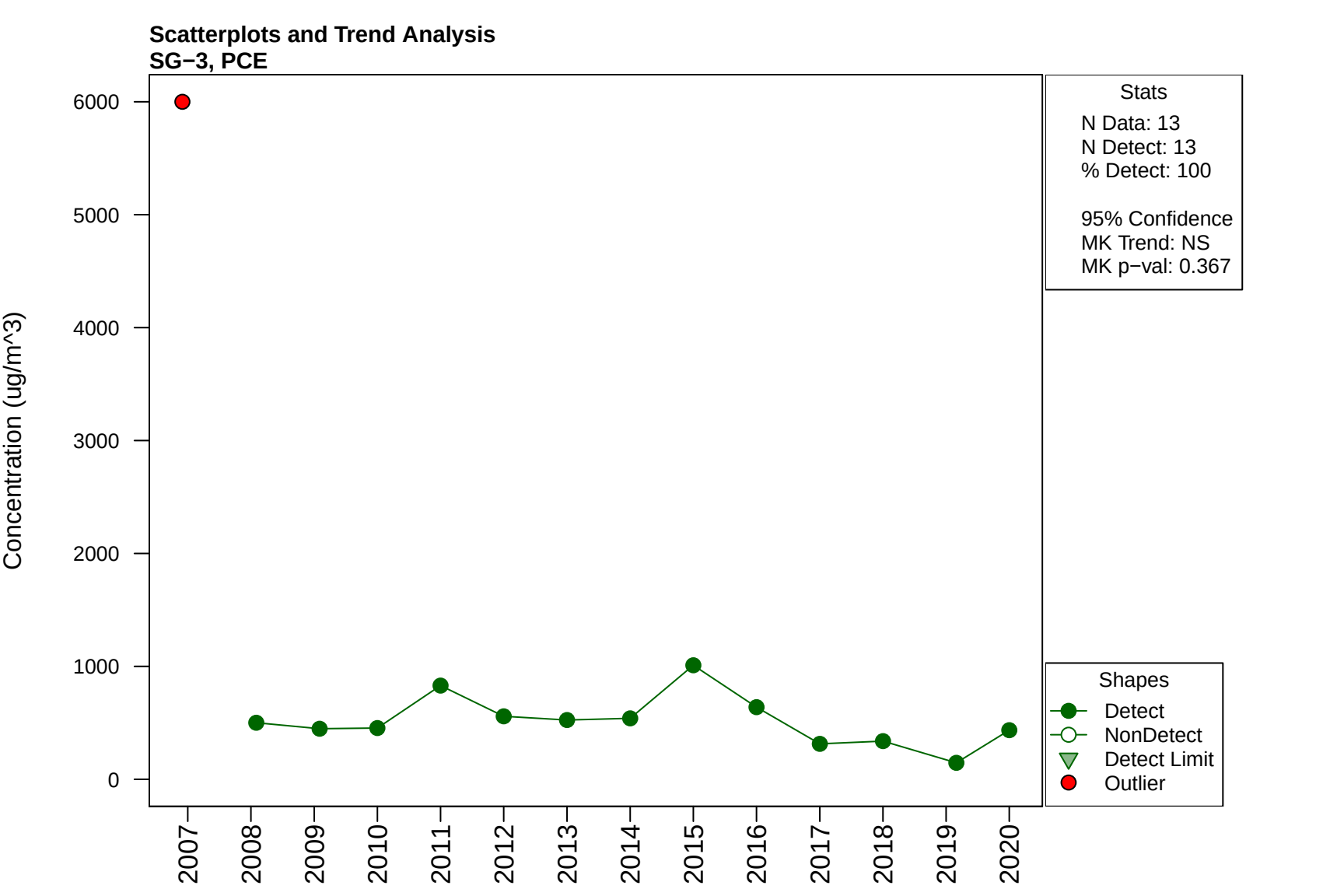

Scatterplots and Trend Analysis
SG−3, 1,1−DCE
Concentration (ug/m^3)
0
5
10
15
20
25
2007
2008
2009
2010
2011
2012
2013
2014
2015
2016
2017
2018
2019
2020
Stats
N Data: 5
N Detect: 4
% Detect: 80
MK criteria not met
Shapes
Detect
NonDetect
Detect Limit
Outlier

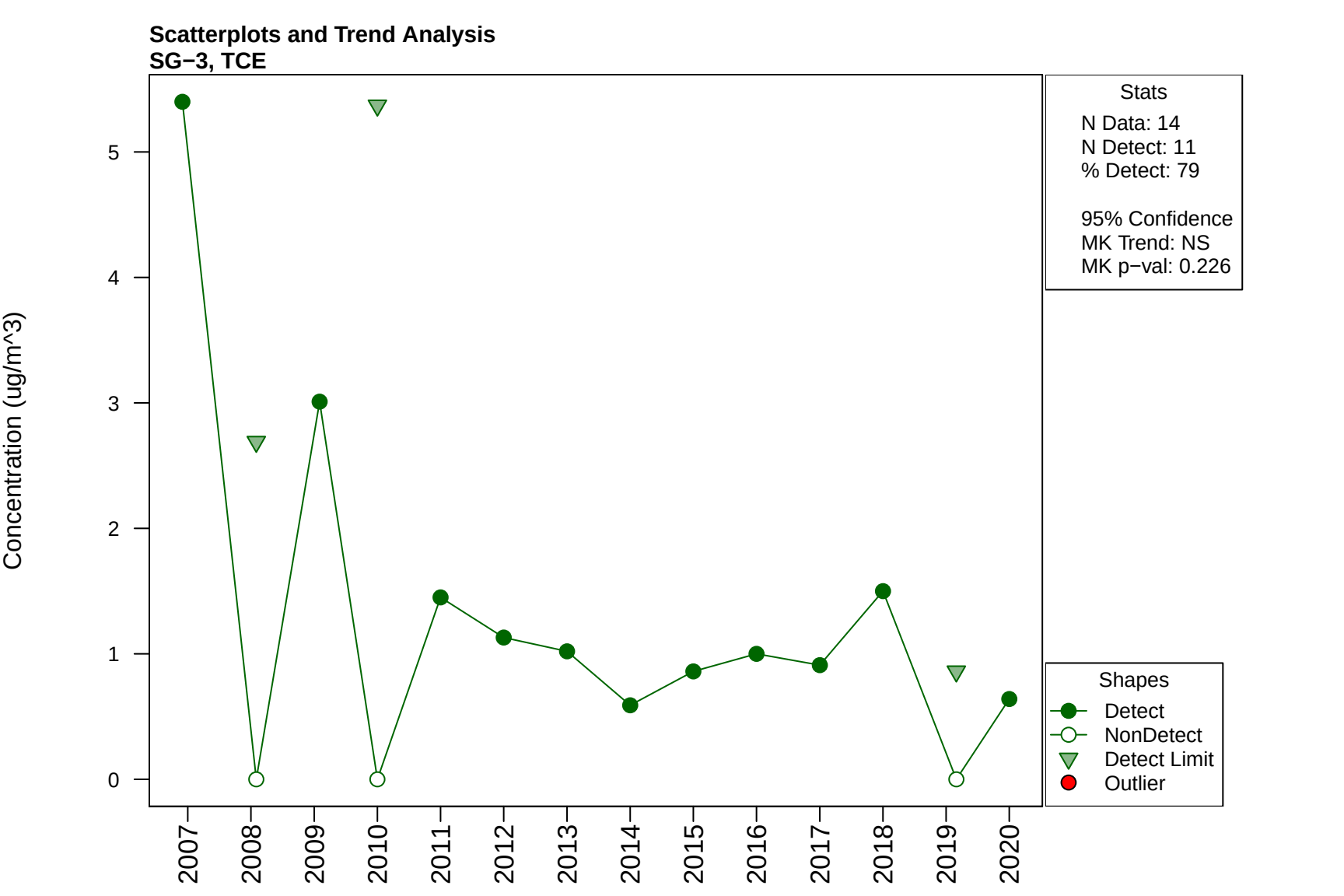

Scatterplots and Trend Analysis
SG−3, 1,1,1−TCA
Concentration (ug/m^3)
0
100
200
300
400
2007
2008
2009
2010
2011
2012
2013
2014
2015
2016
2017
2018
2019
2020
Stats
N Data: 14
N Detect: 14
% Detect: 100
95% Confidence
MK Trend: Significant
MK p−val: <0.001
Direction: Decreasing
Lines
Linear Fit
Shapes
Detect
NonDetect
Detect Limit
Outlier

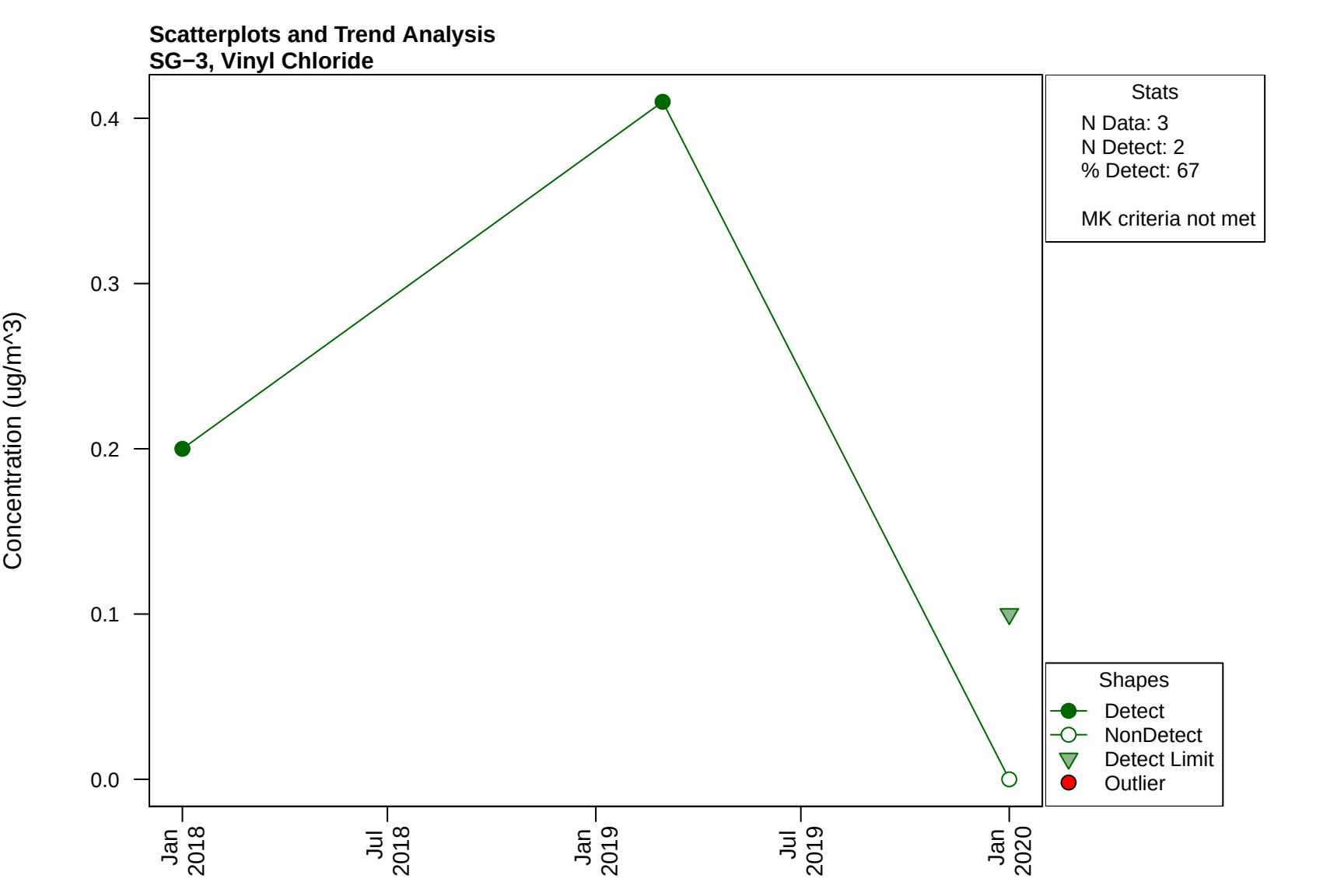

Scatterplots and Trend Analysis
SG−3, Carbon Tetrachloride
Concentration (ug/m^3)
0.0
0.2
0.4
0.6
0.8
1.0
1.2
2009
2010
2011
2012
2013
2014
2015
2016
2017
2018
2019
2020
Stats
N Data: 11
N Detect: 8
% Detect: 73
95% Confidence
MK Trend: NS
MK p−val: 0.133
Shapes
Detect
NonDetect
Detect Limit
Outlier


Scatterplots and Trend Analysis
SG−3, Cis 1,2−DCE
Concentration (ug/m^3)
0.0
0.2
0.4
0.6
0.8
2014
2015
2016
2017
2018
2019
2020
Stats
N Data: 7
N Detect: 6
% Detect: 86
95% Confidence
MK Trend: NS
MK p−val: 0.761
Shapes
Detect
NonDetect
Detect Limit
Outlier


Scatterplots and Trend Analysis
SG−3, Methylene Chloride
Concentration (ug/m^3)
0
1
2
3
4
5
2008
2009
2010
2011
2012
2013
2014
2015
2016
2017
2018
2019
2020
Stats
N Data: 13
N Detect: 11
% Detect: 85
95% Confidence
MK Trend: NS
MK p−val: 0.16
Shapes
Detect
NonDetect
Detect Limit
Outlier


Scatterplots and Trend Analysis
SG−3, PCE
Concentration (ug/m^3)
6000
5000
4000
3000
2000
1000
0
2007
2008
2009
2010
2011
2012
2013
2014
2015
2016
2017
2018
2019
2020
Stats
N Data: 13
N Detect: 13
% Detect: 100
95% Confidence
MK Trend: NS
MK p−val: 0.367
Shapes
Detect
NonDetect
Detect Limit
Outlier


Scatterplots and Trend Analysis
SG−3, TCE
Concentration (ug/m^3)
0
1
2
3
4
5
2007
2008
2009
2010
2011
2012
2013
2014
2015
2016
2017
2018
2019
2020
Stats
N Data: 14
N Detect: 11
% Detect: 79
95% Confidence
MK Trend: NS
MK p−val: 0.226
Shapes
Detect
NonDetect
Detect Limit
Outlier


Scatterplots and Trend Analysis
SG−3, Vinyl Chloride
Concentration (ug/m^3)
0.0
0.1
0.2
0.3
0.4
Jan 2018
Jul 2018
Jan 2019
Jul 2019
Jan 2020
Stats
N Data: 3
N Detect: 2
% Detect: 67
MK criteria not met
Shapes
Detect
NonDetect
Detect Limit
Outlier

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