



284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Cover Page

Order ID : O5252

Project ID : 245 Greenwood Ave

Client : RMJ Environomics, Inc.

Lab Sample Number

O5252-01
O5252-03

Client Sample Number

WASTE
WASTE-VOC

I certify that the data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hard copy data package has been authorized by the laboratory manager or his designee, as verified by the following signature.

Signature : _____

Date: 11/21/2023

NYDOH CERTIFICATION NO - 11376

NJDEP CERTIFICATION NO - 20012

DATA REPORTING QUALIFIERS- ORGANIC

For reporting results, the following "Results Qualifiers" are used:

Value	If the result is a value greater than or equal to the detection limit, report the value
U	Indicates the compound was analyzed for but was not detected. Report the minimum detection limit for the sample with the U, i.e. "10 U". This is not necessarily the instrument detection limit attainable for this particular sample based on any concentration or dilution that may have been required.
ND	Indicates the analyte was analyzed for, but not detected
J	Indicates an estimated value. This flag is used: (1) When estimating a concentration for a tentatively identified compound (library search hits, where a 1:1 response is assumed.) (2) When the mass spectral data indicated the identification, however the result was less than the specified detection limit greater than zero. If the detection limit was 10ug/L and a concentration of 3 ug/L was calculated report as 3 J. This flag is used when similar situation arise on any organic parameter i.e. Pest, PCB and others.
B	Indicates the analyte was found in the blank as well as the sample report as "12 B".
E	Indicates the analyte 's concentration exceeds the calibrated range of the instrument for that specific analysis.
D	This flag identifies all compounds identified in an analysis at a secondary dilution factor.
P	This flag is used for Pesticide/PCB target analyte when there is >25% difference for detected concentrations between the two GC columns. The lower of the two values is reported on Form 1 and flagged with a "P".
N	This flag indicates presumptive evidence of a compound. This is only used for tentatively identified compounds (TICs), where the identification is based on a mass spectral library search. It applies to all TIC results. For generic characterization of a TIC, such as chlorinated hydrocarbon, the flag is not used.
A	This flag indicates that a Tentatively Identified Compound is a suspected aldol-condensation product.
Q	Indicates the LCS did not meet the control limits requirements

APPENDIX A**QA REVIEW GENERAL DOCUMENTATION**

Project #: 05252

Completed

For thorough review, the report must have the following:

GENERAL:

Are all original paperwork present (chain of custody, record of communication,airbill, sample management lab chronicle, login page)

✓

Check chain-of-custody for proper relinquish/return of samples

✓

Is the chain of custody signed and complete

✓

Check internal chain-of-custody for proper relinquish/return of samples /sample extracts

✓

Collect information for each project id from server. Were all requirements followed

✓

COVER PAGE:

Do numbers of samples correspond to the number of samples in the Chain of Custody on login page

✓

Do lab numbers and client Ids on cover page agree with the Chain of Custody

✓

CHAIN OF CUSTODY:

Do requested analyses on Chain of Custody agree with form I results

✓

Do requested analyses on Chain of Custody agree with the log-in page

✓

Were the correct method log-in for analysis according to the Analytical Request and Chain of Castody

✓

Were the samples received within hold time

✓

Were any problems found with the samples at arrival recorded in the Sample Management Laboratory Chronicle

✓

ANALYTICAL:

Was method requirement followed?

✓

Was client requirement followed?

✓

Does the case narrative summarize all QC failure?

✓

All runlogs and manual integration are reviewed for requirements

✓

All manual calculations and /or hand notations verified

✓

1st Level QA Review Signature: KETAN PATEL

Date: 11/21/2023

2nd Level QA Review Signature: _____

Date: _____



284 Sheffield Street, Mountainside, New Jersey - 07092

Phone: (908) 789 8900 Fax: (908) 789 8922

LAB CHRONICLE

OrderID: O5252
Client: RMJ Environomics, Inc.
Contact: Jonathan Pereira

OrderDate: 11/3/2023 2:14:16 PM
Project: 245 Greenwood Ave
Location: I31,VOA Ref. #2 Soil

LabID	ClientID	Matrix	Test	Method	Sample Date	Prep Date	Anal Date	Received
05252-01	WASTE	SOIL			11/03/23			11/03/23
			PCB	8082A		11/06/23	11/06/23	
			Pesticide-TCL	8081B		11/06/23	11/06/23	
			EPH	NJEPH		11/07/23	11/08/23	
05252-01DL	WASTEDL	Solid			11/03/23			11/03/23
			EPH	NJEPH		11/07/23	11/08/23	

QC
SUMMARY



SOIL EPH SURROGATE RECOVERY

Lab Name: CHEMTECH Contract: RMJE02
Lab Code: CHEM CASE No.: 05252 SAS No.: 05252 SDG No.: 05252
Run Number: FC110723AL

Client SAMPLE NO.	1-chlorooctadecane (SURR)			TOT OUT
T-1MS	68			0
T-1MSD	70			0
WASTE	83			0
PB156949BL	90			0
PB156949BS	79			0
PB156949BSD	79			0

QC LIMITS

1-chlorooctadecane (SURR)

(40-140)

Column to be used to flag recovery values
* Values outside of contract required QC Limits
D Surrogate diluted out



SOIL EPH SURROGATE RECOVERY

Lab Name: CHEMTECH Contract: RMJE02

Lab Code: CHEM CASE No.: 05252 SAS No.: 05252 SDG No.: 05252

Run Number: FC110823AL

Client SAMPLE NO.	1-chlorooctadecane (SURR)			TOT OUT
WASTEDL	76			0

QC LIMITS

1-chlorooctadecane (SURR)

(40-140)

Column to be used to flag recovery values
* Values outside of contract required QC Limits
D Surrogate diluted out



SOIL EPH SURROGATE RECOVERY

Lab Name: CHEMTECH

Contract: RMJE02

Lab Code: CHEM

CASE No.: 05252

SAS No.: 05252

SDG No.: 05252

Run Number: FD110723AR

Client SAMPLE NO.	2-Bromonaphthalene (SURR)	2-Flurobiphenyl (SURR)	ortho-Terphenyl (SURR)	TOT OUT
T-1MS	87	74	61	0
T-1MSD	88	75	62	0
WASTE	110	94	78	0
PB156949BL	74	67	81	0
PB156949BS	92	81	82	0
PB156949BSD	93	82	82	0

QC LIMITS

2-Bromonaphthalene (SURR)	(40-140)
2-Flurobiphenyl (SURR)	(40-140)
ortho-Terphenyl (SURR)	(40-140)

Column to be used to flag recovery values
* Values outside of contract required QC Limits
D Surrogate diluted out



SOIL EPH SURROGATE RECOVERY

QC LIMITS

2-Bromonaphthalene (SURRE)	(40-140)
2-Fluorobiphenyl (SURRE)	(40-140)
ortho-Terphenyl (SURRE)	(40-140)

Column to be used to flag recovery values
* Values outside of contract required QC Limits
D Surrogate diluted out



SOLID EPH MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: Chemtech Client: RMJ Environomics, Inc.
Lab Code: CHEM Cas No: O5252 SAS No : O5252 SDG No: O5252
Sample No : O5251-01MS Datafile: FC065043.D
Client ID : T-1MS

COMPOUND	SPIKE ADDED mg/kg	SAMPLE CONCENTRATION mg/kg	MS/MSD CONCENTRATION mg/kg	% REC	Qual	QC LIMITS
Aliphatic C9-C12	12.2	0	6.13	50		(40-140)
Aliphatic C12-C16	8.2	0.22	5.72	67		(40-140)
Aliphatic C16-C21	12.2	0	8.93	73		(40-140)
Aliphatic C21-C28	16.3	0	12.0	74		(40-140)
Aliphatic C28-C40	24.5	0	17.2	70		(40-140)



SOLID EPH MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: Chemtech Client: RMJ Environomics, Inc.
Lab Code: CHEM Cas No: O5252 SAS No : O5252 SDG No: O5252
Sample No : O5251-01MSD Datafile: FC065044.D
Client ID : T-1MSD

COMPOUND	SPIKE ADDED mg/kg	SAMPLE CONCENTRATION mg/kg	MS/MSD CONCENTRATION mg/kg	% REC	Qual	RPD QC LIMITS QC Limit Of RPD
Aliphatic C9-C12	12.2	0	6.34	52		3.34 (40-140) 25
Aliphatic C12-C16	8.2	0.22	5.91	70		3.36 (40-140) 25
Aliphatic C16-C21	12.2	0	9.17	75		2.71 (40-140) 25
Aliphatic C21-C28	16.3	0	12.3	75		2.55 (40-140) 25
Aliphatic C28-C40	24.5	0	17.8	73		3.5 (40-140) 25



SOLID EPH MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: Chemtech Client: RMJ Environomics, Inc.
Lab Code: CHEM Cas No: O5252 SAS No : O5252 SDG No: O5252
Sample No : O5251-01MS Datafile: FD046844.D
Client ID : T-1MS

COMPOUND	SPIKE ADDED mg/kg	SAMPLE CONCENTRATION mg/kg	MS/MSD CONCENTRATION mg/kg	% REC	Qual	QC LIMITS
Aromatic C10-C12	8.2	0.27	4.78	55		(40-140)
Aromatic C12-C16	12.2	0.37	8.94	70		(40-140)
Aromatic C16-C21	20.4	0.98	18.9	88		(40-140)
Aromatic C21-C36	32.7	1.99	31.8	91		(40-140)



SOLID EPH MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name:

Chemtech

Client:

RMJ Environomics, Inc.

Lab Code:

CHEM

Cas No:

O5252

SAS No :

O5252

SDG No:

O5252

Sample No :

O5251-01MSD

Datafile:

FD046845.D

Client ID :

T-1MSD

COMPOUND	SPIKE ADDED mg/kg	SAMPLE CONCENTRATION mg/kg	MS/MSD CONCENTRATION mg/kg	% REC	Qual	RPD QC LIMITS	QC Limit Of RPD
Aromatic C10-C12	8.2	0.27	4.79	56		0.36 (40-140)	25
Aromatic C12-C16	12.2	0.37	9.07	71		1.56 (40-140)	25
Aromatic C16-C21	20.4	0.98	19.1	89		1.25 (40-140)	25
Aromatic C21-C36	32.6	1.99	32.3	93		1.74 (40-140)	25



SOLID EPH LABORATORY CONTROL SPIKE/LABORATORY CONTROL SPIKE DUPLICATE RECOVERY

Lab Name:

Chemtech

Client:

RMJ Environomics, Inc.

Lab Code:

CHEM

Cas No:

O5252

SAS No :

O5252

SDG No:

O5252

Sample No :

PB156949BS

Datafile:

FC065039.D

Client ID :

PB156949BS

COMPOUND	SPIKE ADDED mg/kg	LCS/LCSD CONCENTRATION mg/kg	% REC	Qual	QC LIMITS
Aliphatic C9-C12	10.0	5.48	55		(40-140)
Aliphatic C12-C16	6.7	4.93	74		(40-140)
Aliphatic C16-C21	10.0	8.55	86		(40-140)
Aliphatic C21-C28	13.3	11.8	88		(40-140)
Aliphatic C28-C40	20.0	17.2	86		(40-140)



SOLID EPH LABORATORY CONTROL SPIKE/LABORATORY CONTROL SPIKE DUPLICATE RECOVERY

Lab Name:

Chemtech

Client:

RMJ Environomics, Inc.

Lab Code:

CHEM

Cas No:

O5252

SAS No :

O5252

SDG No:

O5252

Sample No :

PB156949BSD

Datafile:

FC065040.D

Client ID :

PB156949BSD

COMPOUND	SPIKE ADDED mg/kg	LCS/LCSD CONCENTRATION mg/kg	% REC	Qual	RPD QC LIMITS	QC Limit Of RPD
Aliphatic C9-C12	10	5.62	56		2.6 (40-140)	50
Aliphatic C12-C16	6.7	5.08	76		3 (40-140)	50
Aliphatic C16-C21	10	8.85	89		3.5 (40-140)	50
Aliphatic C21-C28	13.3	12.2	92		3.4 (40-140)	50
Aliphatic C28-C40	20.0	17.5	88		1.8 (40-140)	50



SOLID EPH LABORATORY CONTROL SPIKE/LABORATORY CONTROL SPIKE DUPLICATE RECOVERY

Lab Name:

Chemtech

Client:

RMJ Environomics, Inc.

Lab Code:

CHEM

Cas No:

O5252

SAS No :

O5252

SDG No:

O5252

Sample No :

PB156949BS

Datafile:

FD046840.D

Client ID :

PB156949BS

COMPOUND	SPIKE ADDED mg/kg	LCS/LCSD CONCENTRATION mg/kg	% REC	Qual	QC LIMITS
Aromatic C10-C12	6.7	3.97	60		(40-140)
Aromatic C12-C16	10.0	7.36	74		(40-140)
Aromatic C16-C21	16.7	14.6	88		(40-140)
Aromatic C21-C36	26.7	23.5	88		(40-140)



SOLID EPH LABORATORY CONTROL SPIKE/LABORATORY CONTROL SPIKE DUPLICATE RECOVERY

Lab Name:

Chemtech

Client:

RMJ Environomics, Inc.

Lab Code:

CHEM

Cas No:

O5252

SAS No :

O5252

SDG No:

O5252

Sample No :

PB156949BSD

Datafile:

FD046841.D

Client ID :

PB156949BSD

COMPOUND	SPIKE ADDED mg/kg	LCS/LCSD CONCENTRATION mg/kg	% REC	Qual	RPD QC LIMITS	QC Limit Of RPD
Aromatic C10-C12	6.7	4.04	61		1.8 (40-140)	50
Aromatic C12-C16	10	7.45	75		1.3 (40-140)	50
Aromatic C16-C21	16.7	14.8	89		1.5 (40-140)	50
Aromatic C21-C36	26.6	24.2	91		3.1 (40-140)	50



4B
METHOD BLANK SUMMARY

EPA SAMPLE NO.

PB156949BL

Lab Name: CHEMTECH

Contract: RMJE02

Lab Code: CHEM Case No.: O5252

SAS No.: O5252 SDG NO.: O5252

Instrument ID: FID_C

Lab Sample ID: PB156949BL

Matrix: (soil/water) Solid

Date Extracted: 11/7/2023 8:55:00 A

Level: (low/med) low

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS AND MSD:

EPA SAMPLE NO.	LAB SAMPLE ID
PB156949BS	PB156949BS
PB156949BSD	PB156949BSD
T-1MS	O5251-01MS
T-1MSD	O5251-01MSD
WASTE	O5252-01

COMMENTS: _____

SAMPLE DATA

Report of Analysis

Client:	RMJ Environomics, Inc.	Date Collected:	11/03/23
Project:	245 Greenwood Ave	Date Received:	11/03/23
Client Sample ID:	WASTE	SDG No.:	O5252
Lab Sample ID:	O5252-01	Matrix:	Solid
Analytical Method:	NJEPH	% Solid:	90.6
Sample Wt/Vol:	30.05 Units: g	Final Vol:	2000 uL
Soil Aliquot Vol:	uL	Test:	EPH
Prep Method :			

Prep Date :	Date Analyzed :	Prep Batch ID
11/07/23 08:55	11/08/23 7:14	PB156949

Datafile

CAS Number	Parameter	Conc.	Qualifier	Dilution	MDL	LOQ / CRQL	Units(Dry Weight)	
TARGETS								
Aliphatic C9-C12	Aliphatic C9-C12	1.09	J	1	0.26	1.10	mg/kg	FC065055.D
Aliphatic C12-C16	Aliphatic C12-C16	1.36		1	0.15	0.74	mg/kg	FC065055.D
Aliphatic C16-C21	Aliphatic C16-C21	15.3		1	0.23	1.10	mg/kg	FC065055.D
Aliphatic C21-C28	Aliphatic C21-C28	27.2		2	1.01	2.94	mg/kg	FC065062.D
Aliphatic C28-C40	Aliphatic C28-C40	21.9		1	1.12	2.20	mg/kg	FC065055.D
Aromatic C10-C12	Aromatic C10-C12	0.76		1	0.17	0.74	mg/kg	FD046856.D
Aromatic C12-C16	Aromatic C12-C16	4.92		1	0.17	1.10	mg/kg	FD046856.D
Aromatic C16-C21	Aromatic C16-C21	10.1		1	0.33	1.84	mg/kg	FD046856.D
Aromatic C21-C36	Aromatic C21-C36	44.4		1	0.43	2.94	mg/kg	FD046856.D
Total AliphaticEPH	Total AliphaticEPH	66.8			2.78	8.07	mg/kg	
Total AromaticEPH	Total AromaticEPH	60.2			1.09	6.62	mg/kg	
Total EPH	Total EPH	127			3.87	14.7	mg/kg	

U = Not Detected

LOQ = Limit of Quantitation

MDL = Method Detection Limit

LOD = Limit of Detection

E = Value Exceeds Calibration Range

Q = indicates LCS control criteria did not meet requirements

J = Estimated Value

B = Analyte Found in Associated Method Blank

N = Presumptive Evidence of a Compound

* = Values outside of QC limits

D = Dilution



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Report of Analysis

Client:	RMJ Environomics, Inc.	Date Collected:	11/03/23
Project:	245 Greenwood Ave	Date Received:	11/03/23
Client Sample ID:	WASTE	SDG No.:	O5252
Lab Sample ID:	O5252-01	Matrix:	Solid
Analytical Method:	NJEPH	% Solid:	90.6
Sample Wt/Vol:	30.05	Units:	g
Soil Aliquot Vol:		Final Vol:	2000 uL
Prep Method :		Test:	EPH

File ID :	Dilution:	Prep Date :	Date Analyzed :	Prep Batch ID
FC065055.D	1	11/07/23	11/08/23	PB156949

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units
TARGETS						
Aliphatic C9-C12	Aliphatic C9-C12	1.09	J	0.26	1.10	mg/kg
Aliphatic C12-C16	Aliphatic C12-C16	1.36		0.15	0.74	mg/kg
Aliphatic C16-C21	Aliphatic C16-C21	15.3		0.23	1.10	mg/kg
Aliphatic C21-C28	Aliphatic C21-C28	35.6	E	0.51	1.47	mg/kg
Aliphatic C28-C40	Aliphatic C28-C40	21.9		1.12	2.20	mg/kg
SURROGATES						
3383-33-2	1-chlorooctadecane (SURR)	41.5		40 - 140	83%	SPK: 50
84-15-1	ortho-Terphenyl (SURR)	0.00		40 - 140	0%	SPK: 50



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Quantitation Report For Aliphatic EPH Range.

Lab Sample ID:	O5252-01	Acq On:	08 Nov 2023 07:14
Client Sample ID:	WASTE	Operator:	YP/AJ
Data file:	FC065055.D	Misc:	
Instrument:	FID_C	ALS Vial:	36
Dilution Factor:	1	Sample Multiplier:	1.00

Compound	R.T.		Response	Conc	highest_standard	Units
Aliphatic C9-C12	3.211	6.483	2830580	14.836	300	ug/ml
Aliphatic C12-C16	6.484	9.865	3483584	18.446	200	ug/ml
Aliphatic C16-C21	9.866	13.214	37843544	208.666	300	ug/ml
Aliphatic C21-C28	13.215	16.858	79415581	484.731	400	ug/ml
Aliphatic C28-C40	16.859	21.689	45572394	298.606	600	ug/ml
Aliphatic EPH	3.211	21.689	169145683	1030		ug/ml
ortho-Terphenyl (SURR)	0.000	0.000	0	0		ug/ml
1-chlorooctadecane (SURR)	12.946	12.946	6560449	41.5		ug/ml
Aliphatic C9-C28	3.211	16.858	123573289	726.679	1200	ug/ml

Data Path : Z:\pestpcbsrv\HPCHEM1\FID_C\Data\FC110723AL\
 Data File : FC065055.D
 Signal(s) : FID1A.ch
 Acq On : 08 Nov 2023 07:14
 Operator : YP/AJ
 Sample : 05252-01
 Misc :
 ALS Vial : 36 Sample Multiplier: 1

Instrument :
 FID_C
 ClientSampleId :
 WASTE

Manual Integrations
 APPROVED

Reviewed By :Yogesh Patel 11/08/2023
 Supervised By :Ankita Jodhani 11/08/2023

Integration File: autoint1.e
 Quant Time: Nov 08 07:54:20 2023
 Quant Method : Z:\pestpcbsrv\HPCHEM1\FID_C\Method\Aliphatic EPH 102823.M
 Quant Title : GC Extractables
 QLast Update : Sat Oct 28 02:12:00 2023
 Response via : Initial Calibration
 Integrator: ChemStation

Volume Inj. : 1 ul
 Signal Phase : Rxi-1ms
 Signal Info : 20M x 0.18mm x 0.18um

Compound	R.T.	Response	Conc Units

System Monitoring Compounds			
12) S 1-chlorooctadecane (S...	12.946	6560449	41.500 ug/mlm
Spiked Amount	50.000	Recovery	= 83.00%

Target Compounds

(f)=RT Delta > 1/2 Window

(m)=manual int.

Data Path : Z:\pestpcbsrv\HPCHEM1\FID_C\Data\FC110723AL\
Data File : FC065055.D
Signal(s) : FID1A.ch
Acq On : 08 Nov 2023 07:14
Operator : YP/AJ
Sample : 05252-01
Misc :
ALS Vial : 36 Sample Multiplier: 1

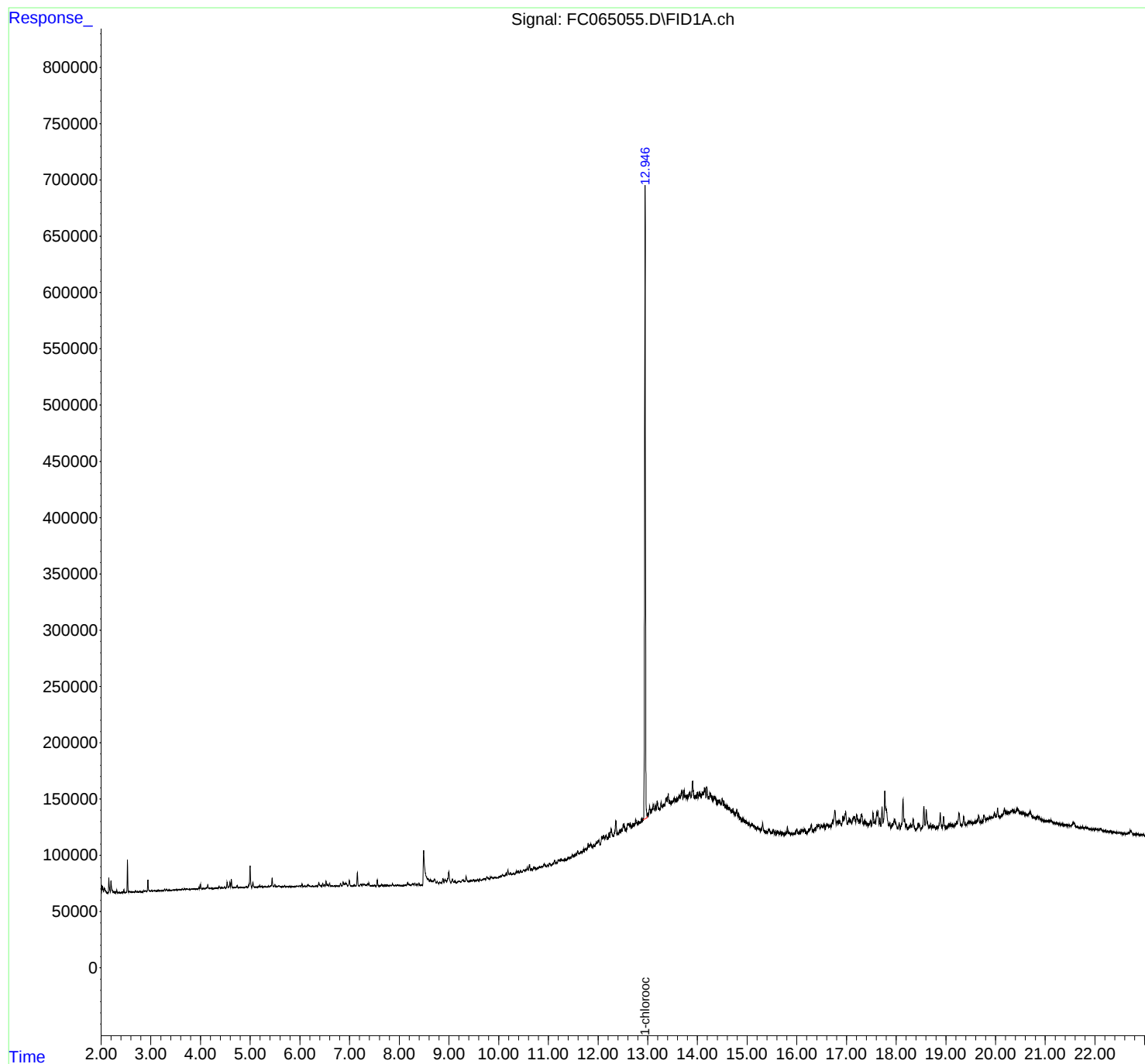
Instrument :
FID_C
ClientSampleId :
WASTE

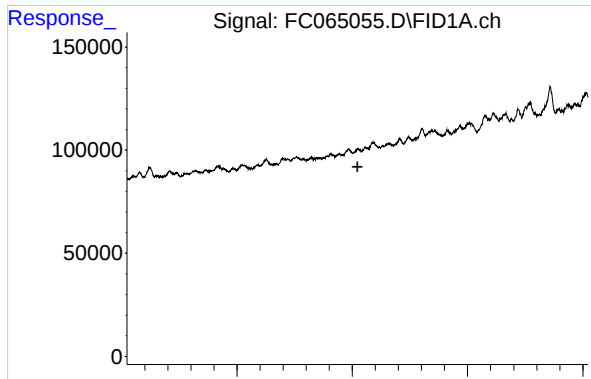
Manual Integrations
APPROVED

Reviewed By :Yogesh Patel 11/08/2023
Supervised By :Ankita Jodhani 11/08/2023

Integration File: autoint1.e
Quant Time: Nov 08 07:54:20 2023
Quant Method : Z:\pestpcbsrv\HPCHEM1\FID_C\Method\Aliphatic EPH 102823.M
Quant Title : GC Extractables
QLast Update : Sat Oct 28 02:12:00 2023
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. : 1 ul
Signal Phase : Rxi-1ms
Signal Info : 20M x 0.18mm x 0.18um





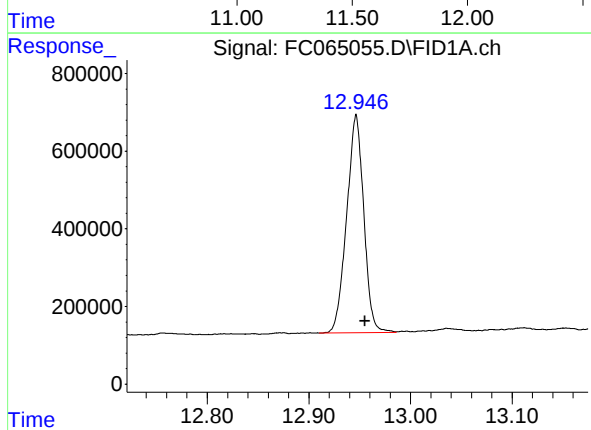
#9 ortho-Terphenyl (SURR)

R.T.: 0.000 min
Exp R.T.: 11.523 min
Response: 0
Conc: N.D.

Instrument :
FID_C
ClientSampleId :
WASTE

Manual Integrations
APPROVED

Reviewed By :Yogesh Patel 11/08/2023
Supervised By :Ankita Jodhani 11/08/2023



#12 1-chlorooctadecane (SURR)

R.T.: 12.946 min
Delta R.T.: -0.009 min
Response: 6560449
Conc: 41.50 ug/ml m

Instrument :

FID_C

ClientSampleId :

WASTE

rteres

Area Percent Report

Manual IntegrationsAPPROVED

Data Path : Z:\pestpcbsrv\HPCHEM1\FID_C\Data\F0

Data File : FC065055.D

Signal(s) : FID1A.ch

Acq On : 08 Nov 2023 07:14

Sample : 05252-01

Misc :

ALS Vial : 36 Sample Multiplier: 1

Reviewed By :Yogesh Patel 11/08/2023

Supervised By :Ankita Jodhani 11/08/2023

Integration File: sample.E

Method : Z:\pestpcbsrv\HPCHEM1\FID_C\Method\Aliphatic EPH 102823.M

Title : GC Extractables

Signal : FID1A.ch

peak #	R.T. min	Start min	End min	PK TY	peak height	peak area	peak % max.	% of total
1	3.586	3.542	3.598	VV	729	11632	0.12%	0.007%
2	3.630	3.598	3.650	VV	1322	18814	0.19%	0.011%
3	3.678	3.650	3.693	VV	1149	15711	0.16%	0.009%
4	3.716	3.693	3.768	VV	850	30212	0.31%	0.017%
5	3.846	3.785	3.861	VV	820	29567	0.31%	0.017%
6	3.889	3.861	3.925	VV	875	27184	0.28%	0.015%
7	3.972	3.925	3.984	VV	2267	37334	0.39%	0.021%
8	4.001	3.984	4.051	VV	4678	69671	0.72%	0.039%
9	4.067	4.051	4.085	VV	1161	19067	0.20%	0.011%
10	4.117	4.085	4.127	VV	1578	27512	0.28%	0.015%
11	4.147	4.127	4.188	VV	4192	65837	0.68%	0.037%
12	4.200	4.188	4.246	VV	997	31496	0.33%	0.018%
13	4.320	4.246	4.338	VV	1177	54612	0.57%	0.031%
14	4.373	4.338	4.412	VV	2615	65612	0.68%	0.037%
15	4.421	4.412	4.455	VV	1228	29768	0.31%	0.017%
16	4.484	4.455	4.505	VV	2318	43599	0.45%	0.024%
17	4.536	4.505	4.558	VV	6202	88562	0.92%	0.050%
18	4.592	4.558	4.606	VV	5948	86138	0.89%	0.048%
19	4.621	4.606	4.697	VV	8931	143585	1.49%	0.080%
20	4.737	4.697	4.784	VV	3201	85292	0.88%	0.048%
21	4.811	4.784	4.826	VV	1539	33638	0.35%	0.019%
22	4.839	4.826	4.878	VV	1361	38236	0.40%	0.021%
23	4.920	4.878	4.948	VV	2241	64140	0.66%	0.036%
24	4.998	4.948	5.031	VV	20445	300378	3.11%	0.168%
25	5.055	5.031	5.092	VV	5700	95352	0.99%	0.053%
26	5.108	5.092	5.138	VV	1598	39515	0.41%	0.022%
27	5.190	5.138	5.212	VV	2541	73756	0.76%	0.041%
28	5.229	5.212	5.271	VV	1908	54231	0.56%	0.030%
29	5.292	5.271	5.318	VV	1519	38977	0.40%	0.022%
30	5.327	5.318	5.341	VV	1355	18271	0.19%	0.010%
31	5.367	5.341	5.385	VV	2068	41831	0.43%	0.023%

32	5.406	5.385	5.425	VV	2285	45931	0.48%	0.026%
33	5.442	5.425	5.477	VV	9282	12503		
34	5.498	5.477	5.528	VV	3187	6067		
35	5.581	5.528	5.621	VV	2068	8776		
36	5.650	5.621	5.668	VV	1277	3355		
37	5.693	5.668	5.727	VV	1863	49250	0.51%	0.028%
38	5.747	5.727	5.793	VV	1529	49897	0.52%	0.028%
39	5.808	5.793	5.841	VV	1357	32570	0.34%	0.018%
40	5.852	5.841	5.858	VV	1175	11529	0.12%	0.006%
41	5.926	5.858	5.938	VV	1332	58560	0.61%	0.033%
42	5.952	5.938	5.978	VV	1488	31919	0.33%	0.018%
43	5.999	5.978	6.019	VV	1971	37998	0.39%	0.021%
44	6.041	6.019	6.078	VV	3322	64454	0.67%	0.036%
45	6.101	6.078	6.124	VV	1551	36418	0.38%	0.020%
46	6.171	6.124	6.201	VV	2397	73729	0.76%	0.041%
47	6.215	6.201	6.242	VV	1135	25880	0.27%	0.014%
48	6.280	6.242	6.296	VV	1079	33748	0.35%	0.019%
49	6.308	6.296	6.331	VV	1091	22036	0.23%	0.012%
50	6.344	6.331	6.356	VV	1187	16823	0.17%	0.009%
51	6.382	6.356	6.407	VV	4352	72083	0.75%	0.040%
52	6.419	6.407	6.438	VV	1708	27478	0.28%	0.015%
53	6.461	6.438	6.480	VV	3659	53782	0.56%	0.030%
54	6.498	6.480	6.509	VV	2363	30822	0.32%	0.017%
55	6.527	6.509	6.547	VV	5573	71965	0.74%	0.040%
56	6.561	6.547	6.580	VV	2534	34452	0.36%	0.019%
57	6.600	6.580	6.671	VV	3295	74343	0.77%	0.042%
58	6.698	6.671	6.724	VV	1019	27533	0.29%	0.015%
59	6.744	6.724	6.792	VV	1193	35830	0.37%	0.020%
60	6.819	6.792	6.848	VV	3403	55449	0.57%	0.031%
61	6.871	6.848	6.904	VV	4617	88200	0.91%	0.049%
62	6.920	6.904	6.966	VV	3598	85670	0.89%	0.048%
63	6.997	6.966	7.023	VV	5741	86711	0.90%	0.048%
64	7.031	7.023	7.057	VV	815	14247	0.15%	0.008%
65	7.101	7.057	7.121	VV	1597	38396	0.40%	0.021%
66	7.158	7.121	7.194	VV	12319	154777	1.60%	0.087%
67	7.233	7.194	7.249	VV	1992	47477	0.49%	0.027%
68	7.266	7.249	7.278	VV	2422	29547	0.31%	0.017%
69	7.293	7.278	7.320	VV	2080	41410	0.43%	0.023%
70	7.362	7.320	7.375	VV	2577	51855	0.54%	0.029%
71	7.390	7.375	7.416	VV	3112	39523	0.41%	0.022%
72	7.457	7.416	7.489	VV	760	26683	0.28%	0.015%
73	7.505	7.489	7.528	VV	767	11898	0.12%	0.007%
74	7.559	7.528	7.598	VV	5705	69278	0.72%	0.039%
75	7.643	7.598	7.684	VV	1061	28817	0.30%	0.016%
76	7.725	7.684	7.742	VV	828	22707	0.24%	0.013%
77	7.754	7.742	7.805	VV	686	18037	0.19%	0.010%
78	7.821	7.805	7.842	VV	727	10918	0.11%	0.006%
79	7.864	7.842	7.886	VV	1741	22004	0.23%	0.012%

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80	7.922	7.886	7.937	VV	602	12766	0.13%	0.007%
81	7.956	7.937	7.981	VV	843	1498		
82	8.169	8.127	8.187	VV	2920	4164		
83	8.197	8.187	8.239	VV	1154	2116		
84	8.278	8.239	8.296	VV	1725	3906		
85	8.315	8.296	8.341	VV	1780	27895	0.29%	0.016%
86	8.360	8.341	8.379	VV	1490	19504	0.20%	0.011%
87	8.397	8.379	8.437	VV	2148	26782	0.28%	0.015%
88	8.492	8.467	8.605	PV	30922	850341	8.80%	0.476%
89	8.623	8.605	8.641	VV	4616	86329	0.89%	0.048%
90	8.652	8.641	8.666	VV	3686	47657	0.49%	0.027%
91	8.706	8.666	8.745	VV	4272	150067	1.55%	0.084%
92	8.765	8.745	8.796	VV	2693	46973	0.49%	0.026%
93	8.817	8.796	8.838	VV	1873	29505	0.31%	0.017%
94	8.880	8.838	8.904	VV	4447	88089	0.91%	0.049%
95	8.921	8.904	8.955	VV	4037	81851	0.85%	0.046%
96	8.999	8.955	9.040	VV	10127	211656	2.19%	0.118%
97	9.071	9.040	9.095	VV	3514	53664	0.56%	0.030%
98	9.119	9.095	9.154	VV	1891	29497	0.31%	0.016%
99	9.200	9.154	9.240	VV	1143	27961	0.29%	0.016%
100	9.269	9.240	9.277	VV	1894	22989	0.24%	0.013%
101	9.287	9.277	9.305	VV	2099	22958	0.24%	0.013%
102	9.347	9.305	9.398	VV	4703	75071	0.78%	0.042%
103	9.448	9.432	9.467	VV	856	11110	0.12%	0.006%
104	9.490	9.467	9.525	VV	1343	20742	0.21%	0.012%
105	9.574	9.551	9.592	VV	995	14434	0.15%	0.008%
106	9.622	9.592	9.636	VV	941	14153	0.15%	0.008%
107	9.685	9.662	9.697	VV	974	14431	0.15%	0.008%
108	9.719	9.697	9.741	VV	1443	26232	0.27%	0.015%
109	9.764	9.741	9.814	VV	3102	67821	0.70%	0.038%
110	9.859	9.814	9.886	VV	2085	67826	0.70%	0.038%
111	9.916	9.886	9.945	VV	1768	51694	0.54%	0.029%
112	9.963	9.945	9.984	VV	1346	27057	0.28%	0.015%
113	10.008	9.984	10.021	VV	1978	34698	0.36%	0.019%
114	10.037	10.021	10.053	VV	2496	39113	0.40%	0.022%
115	10.078	10.053	10.095	VV	3731	70723	0.73%	0.040%
116	10.106	10.095	10.122	VV	2694	39112	0.40%	0.022%
117	10.150	10.122	10.167	VV	4791	93227	0.97%	0.052%
118	10.188	10.167	10.212	VV	7098	128489	1.33%	0.072%
119	10.237	10.212	10.258	VV	4688	103186	1.07%	0.058%
120	10.268	10.258	10.275	VV	3151	30753	0.32%	0.017%
121	10.296	10.275	10.325	VV	3861	100301	1.04%	0.056%
122	10.358	10.325	10.372	VV	5285	113168	1.17%	0.063%
123	10.391	10.372	10.412	VV	5518	111715	1.16%	0.062%
124	10.439	10.412	10.458	VV	5469	127736	1.32%	0.071%
125	10.510	10.458	10.531	VV	6090	224343	2.32%	0.125%
126	10.552	10.531	10.561	VV	6330	104255	1.08%	0.058%

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127	10.578	10.561	10.595	VV	8079	141600	1.47%	0.079%
128	10.622	10.595	10.641	VV	10148	21792		
129	10.654	10.641	10.674	VV	5895	11416		
130	10.708	10.674	10.725	VV	8057	20361		
131	10.738	10.725	10.755	VV	7313	11815		
132	10.822	10.755	10.848	VV	8047	383272	3.97%	0.214%
133	10.866	10.848	10.881	VV	7991	148411	1.54%	0.083%
134	10.919	10.881	10.965	VV	9845	415250	4.30%	0.232%
135	10.982	10.965	10.999	VV	8357	159411	1.65%	0.089%
136	11.031	10.999	11.058	VV	9776	317072	3.28%	0.177%
137	11.127	11.058	11.151	VV	12296	545646	5.65%	0.305%
138	11.199	11.151	11.234	VV	12376	538888	5.58%	0.301%
139	11.258	11.234	11.300	VV	12987	475986	4.93%	0.266%
140	11.323	11.300	11.337	VV	12429	257603	2.67%	0.144%
141	11.358	11.337	11.371	VV	11956	245114	2.54%	0.137%
142	11.407	11.371	11.427	VV	14023	426471	4.41%	0.239%
143	11.444	11.427	11.459	VV	13579	251675	2.61%	0.141%
144	11.484	11.459	11.502	VV	15823	376991	3.90%	0.211%
145	11.525	11.502	11.545	VV	15648	378288	3.92%	0.212%
146	11.591	11.545	11.621	VV	18305	763983	7.91%	0.427%
147	11.659	11.621	11.678	VV	17850	584794	6.05%	0.327%
148	11.706	11.678	11.723	VV	20011	493544	5.11%	0.276%
149	11.745	11.723	11.760	VV	20699	426861	4.42%	0.239%
150	11.803	11.760	11.818	VV	24568	743133	7.69%	0.416%
151	11.857	11.818	11.890	VV	23560	968294	10.02%	0.542%
152	11.912	11.890	11.930	VV	23156	519434	5.38%	0.291%
153	11.968	11.930	11.979	VV	25233	692936	7.17%	0.388%
154	12.007	11.979	12.041	VV	26344	922561	9.55%	0.516%
155	12.076	12.041	12.094	VV	29677	846044	8.76%	0.473%
156	12.113	12.094	12.135	VV	30726	707686	7.33%	0.396%
157	12.165	12.135	12.183	VV	30321	815990	8.45%	0.456%
158	12.220	12.183	12.235	VV	32343	915612	9.48%	0.512%
159	12.270	12.235	12.301	VV	34968	1263357	13.08%	0.707%
160	12.358	12.301	12.382	VV	42694	1626290	16.83%	0.910%
161	12.436	12.382	12.451	VV	33080	1320334	13.67%	0.738%
162	12.465	12.451	12.486	VV	34310	702220	7.27%	0.393%
163	12.515	12.486	12.551	VV	39297	1406227	14.56%	0.786%
164	12.562	12.551	12.567	VV	33665	312898	3.24%	0.175%
165	12.595	12.567	12.606	VV	38990	856126	8.86%	0.479%
166	12.618	12.606	12.631	VV	38919	557697	5.77%	0.312%
167	12.646	12.631	12.665	VV	39434	763302	7.90%	0.427%
168	12.705	12.665	12.737	VV	38786	1607768	16.64%	0.899%
169	12.758	12.737	12.798	VV	42002	1417390	14.67%	0.793%
170	12.819	12.798	12.851	VV	39713	1261043	13.05%	0.705%
171	12.873	12.851	12.883	VV	42068	766800	7.94%	0.429%
172	12.946	12.883	13.005	VV	599094	9660239	100.00%	5.403%
173	13.037	13.005	13.061	VV	52477	1656248	17.15%	0.926%
174	13.111	13.061	13.135	VV	54212	2212354	22.90%	1.237%

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175	13.152	13.135	13.168	VV	53282	1031709	10.68%	0.577%
176	13.189	13.168	13.251	VV	56672	256586		
177	13.268	13.251	13.289	VV	55620	118721		
178	13.308	13.289	13.317	VV	52937	89609		
179	13.329	13.317	13.345	VV	53367	87984		
180	13.368	13.345	13.378	VV	58338	1096072	11.35%	0.613%
181	13.383	13.378	13.393	VV	57275	499897	5.17%	0.280%
182	13.413	13.393	13.431	VV	62453	1355918	14.04%	0.758%
183	13.443	13.431	13.471	VV	56456	1310173	13.56%	0.733%
184	13.533	13.471	13.573	VV	58759	3430586	35.51%	1.919%
185	13.635	13.573	13.655	VV	60266	2814781	29.14%	1.574%
186	13.687	13.655	13.709	VV	63811	1997520	20.68%	1.117%
187	13.732	13.709	13.758	VV	64536	1776859	18.39%	0.994%
188	13.764	13.758	13.788	VV	58908	1049691	10.87%	0.587%
189	13.794	13.788	13.805	VV	59268	613356	6.35%	0.343%
190	13.849	13.805	13.870	VV	62116	2297944	23.79%	1.285%
191	13.902	13.870	13.981	VV	71780	4085680	42.29%	2.285%
192	14.004	13.981	14.016	VV	61635	1228433	12.72%	0.687%
193	14.038	14.016	14.048	VV	61671	1141168	11.81%	0.638%
194	14.056	14.048	14.075	VV	60027	951902	9.85%	0.532%
195	14.102	14.075	14.118	VV	61248	1531318	15.85%	0.856%
196	14.142	14.118	14.170	VV	64857	1935982	20.04%	1.083%
197	14.189	14.170	14.237	VV	64799	2336922	24.19%	1.307%
198	14.260	14.237	14.317	VV	60289	2726739	28.23%	1.525%
199	14.353	14.317	14.399	VV	56267	2642971	27.36%	1.478%
200	14.425	14.399	14.437	VV	52532	1172760	12.14%	0.656%
201	14.447	14.437	14.466	VV	53345	862277	8.93%	0.482%
202	14.498	14.466	14.518	VV	54322	1599371	16.56%	0.894%
203	14.533	14.518	14.588	VV	51137	2007597	20.78%	1.123%
204	14.604	14.588	14.626	VV	47618	1054246	10.91%	0.590%
205	14.637	14.626	14.653	VV	45326	705796	7.31%	0.395%
206	14.660	14.653	14.704	VV	43916	1306769	13.53%	0.731%
207	14.716	14.704	14.748	VV	44367	1093608	11.32%	0.612%
208	14.793	14.748	14.828	VV	43147	1910287	19.77%	1.068%
209	14.833	14.828	14.851	VV	39188	512155	5.30%	0.286%
210	14.865	14.851	14.908	VV	35839	1151067	11.92%	0.644%
211	14.917	14.908	14.958	VV	34425	983419	10.18%	0.550%
212	14.965	14.958	15.022	VV	32673	1191595	12.34%	0.666%
213	15.035	15.022	15.063	VV	30034	701082	7.26%	0.392%
214	15.105	15.063	15.138	VV	29574	1266512	13.11%	0.708%
215	15.144	15.138	15.164	VV	27432	414422	4.29%	0.232%
216	15.174	15.164	15.201	VV	25487	556389	5.76%	0.311%
217	15.215	15.201	15.269	VV	26113	993203	10.28%	0.555%
218	15.311	15.269	15.356	VV	29636	1258181	13.02%	0.704%
219	15.365	15.356	15.408	VV	22142	648764	6.72%	0.363%
220	15.432	15.408	15.474	VV	23347	860629	8.91%	0.481%
221	15.494	15.474	15.507	VV	20544	388999	4.03%	0.218%

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222	15.525	15.507	15.544	VV	22747	467705	4.84%	0.262%
223	15.561	15.544	15.581	VV	20882	43118		
224	15.609	15.581	15.619	VV	21110	43826		
225	15.625	15.619	15.648	VV	20199	33571		
226	15.673	15.648	15.696	VV	19495	54558		
227	15.703	15.696	15.758	VV	18710	663165	6.86%	0.371%
228	15.776	15.758	15.787	VV	18818	317231	3.28%	0.177%
229	15.808	15.787	15.877	VV	23710	1039149	10.76%	0.581%
230	15.898	15.877	15.924	VV	18064	483403	5.00%	0.270%
231	15.943	15.924	15.958	VV	17412	343189	3.55%	0.192%
232	16.001	15.958	16.038	VV	21297	892152	9.24%	0.499%
233	16.049	16.038	16.070	VV	17779	334785	3.47%	0.187%
234	16.097	16.070	16.111	VV	20511	468001	4.84%	0.262%
235	16.126	16.111	16.135	VV	19737	271235	2.81%	0.152%
236	16.161	16.135	16.179	VV	20414	506069	5.24%	0.283%
237	16.190	16.179	16.207	VV	18298	289427	3.00%	0.162%
238	16.245	16.207	16.255	VV	19981	527607	5.46%	0.295%
239	16.292	16.255	16.318	VV	24412	788411	8.16%	0.441%
240	16.371	16.318	16.384	VV	21338	754125	7.81%	0.422%
241	16.404	16.384	16.462	VV	23762	1033729	10.70%	0.578%
242	16.498	16.462	16.523	VV	23000	781498	8.09%	0.437%
243	16.548	16.523	16.573	VV	23230	643226	6.66%	0.360%
244	16.606	16.573	16.655	VV	23412	1064155	11.02%	0.595%
245	16.766	16.655	16.792	VV	34598	2075628	21.49%	1.161%
246	16.810	16.792	16.824	VV	25124	463948	4.80%	0.259%
247	16.840	16.824	16.898	VV	25222	1030807	10.67%	0.576%
248	16.927	16.898	16.951	VV	28115	802972	8.31%	0.449%
249	16.983	16.951	17.018	VV	32808	1101680	11.40%	0.616%
250	17.059	17.018	17.107	VV	25973	1268335	13.13%	0.709%
251	17.153	17.107	17.186	VV	27740	1199042	12.41%	0.671%
252	17.205	17.186	17.247	VV	29276	949616	9.83%	0.531%
253	17.264	17.247	17.277	VV	24182	414929	4.30%	0.232%
254	17.302	17.277	17.342	VV	29323	972086	10.06%	0.544%
255	17.362	17.342	17.376	VV	23135	448642	4.64%	0.251%
256	17.390	17.376	17.443	VV	22706	808972	8.37%	0.452%
257	17.483	17.443	17.507	VV	22887	783601	8.11%	0.438%
258	17.532	17.507	17.555	VV	29892	692003	7.16%	0.387%
259	17.572	17.555	17.585	VV	22819	379327	3.93%	0.212%
260	17.632	17.585	17.655	VV	30307	1074972	11.13%	0.601%
261	17.671	17.655	17.690	VV	24365	449019	4.65%	0.251%
262	17.714	17.690	17.735	VV	34403	672822	6.96%	0.376%
263	17.770	17.735	17.858	VV	47562	2045390	21.17%	1.144%
264	17.873	17.858	17.898	VV	19540	416433	4.31%	0.233%
265	17.922	17.898	17.935	VV	18550	367624	3.81%	0.206%
266	17.970	17.935	18.022	VV	22815	972483	10.07%	0.544%
267	18.031	18.022	18.039	VV	14463	144119	1.49%	0.081%
268	18.059	18.039	18.079	VV	18873	388310	4.02%	0.217%
269	18.137	18.079	18.159	VV	39100	1090697	11.29%	0.610%

Instrument :

FID_C

ClientSampleId :

WASTE

Manual IntegrationsAPPROVED

Reviewed By :Yogesh Patel 11/08/2023

Supervised By :Ankita Jodhani 11/08/2023

270	18.168	18.159	18.189	VV	21728	341175	3.53%	0.191%
271	18.201	18.189	18.233	VV	16824	38938		
272	18.256	18.233	18.265	VV	14942	26745		
273	18.290	18.265	18.302	VV	16097	32899		
274	18.308	18.302	18.314	VV	15055	11122		
275	18.340	18.314	18.387	VV	20964	682988	7.07%	0.382%
276	18.462	18.387	18.492	VV	16209	846972	8.77%	0.474%
277	18.556	18.492	18.580	VV	31269	920740	9.53%	0.515%
278	18.605	18.580	18.650	VV	27960	793272	8.21%	0.444%
279	18.661	18.650	18.677	VV	13528	207923	2.15%	0.116%
280	18.694	18.677	18.715	VV	14607	296363	3.07%	0.166%
281	18.737	18.715	18.756	VV	14373	321086	3.32%	0.180%
282	18.770	18.756	18.813	VV	13715	402195	4.16%	0.225%
283	18.835	18.813	18.844	VV	11841	210715	2.18%	0.118%
284	18.886	18.844	18.924	VV	24445	744143	7.70%	0.416%
285	18.953	18.924	18.989	VV	20904	565485	5.85%	0.316%
286	19.001	18.989	19.012	VV	11300	142857	1.48%	0.080%
287	19.067	19.012	19.084	VV	14262	529623	5.48%	0.296%
288	19.098	19.084	19.145	VV	12755	447227	4.63%	0.250%
289	19.151	19.145	19.167	VV	12088	158319	1.64%	0.089%
290	19.263	19.167	19.319	VV	22372	1353516	14.01%	0.757%
291	19.357	19.319	19.421	VV	19568	836894	8.66%	0.468%
292	19.482	19.421	19.515	VV	14594	760954	7.88%	0.426%
293	19.524	19.515	19.537	VV	13129	169092	1.75%	0.095%
294	19.548	19.537	19.560	VV	13180	179886	1.86%	0.101%
295	19.585	19.560	19.611	VV	14392	407538	4.22%	0.228%
296	19.623	19.611	19.638	VV	14866	231158	2.39%	0.129%
297	19.657	19.638	19.686	VV	19215	456750	4.73%	0.255%
298	19.698	19.686	19.718	VV	13602	252878	2.62%	0.141%
299	19.731	19.718	19.744	VV	14722	210852	2.18%	0.118%
300	19.765	19.744	19.817	VV	19155	704614	7.29%	0.394%
301	19.828	19.817	19.836	VV	15810	171356	1.77%	0.096%
302	19.842	19.836	19.861	VV	16007	227963	2.36%	0.127%
303	19.887	19.861	19.931	VV	16090	673988	6.98%	0.377%
304	19.977	19.931	20.011	VV	19804	823973	8.53%	0.461%
305	20.041	20.011	20.068	VV	24442	665386	6.89%	0.372%
306	20.075	20.068	20.096	VV	17233	275287	2.85%	0.154%
307	20.178	20.096	20.200	VV	23549	1169529	12.11%	0.654%
308	20.212	20.200	20.231	VV	19858	359736	3.72%	0.201%
309	20.251	20.231	20.285	VV	20070	625196	6.47%	0.350%
310	20.338	20.285	20.368	VV	21422	994847	10.30%	0.556%
311	20.377	20.368	20.400	VV	20604	379993	3.93%	0.213%
312	20.428	20.400	20.448	VV	22338	594478	6.15%	0.332%
313	20.454	20.448	20.495	VV	21586	546398	5.66%	0.306%
314	20.500	20.495	20.518	VV	18815	256457	2.65%	0.143%
315	20.527	20.518	20.544	VV	18806	276616	2.86%	0.155%
316	20.561	20.544	20.604	VV	18018	602877	6.24%	0.337%

Instrument :

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WASTE

Manual IntegrationsAPPROVED

 Reviewed By :Yogesh Patel 11/08/2023
 Supervised By :Ankita Jodhani 11/08/2023

317	20.617	20.604	20.635	VV	16612	297840	3.08%	0.167%
318	20.652	20.635	20.665	VV	16591	28524		
319	20.695	20.665	20.778	VV	18525	105048		
320	20.787	20.778	20.811	VV	13306	24706		
321	20.822	20.811	20.838	VV	13603	21388		
322	20.853	20.838	20.865	VV	13258	207034	2.14%	0.116%
323	20.874	20.865	20.925	VV	13020	417801	4.32%	0.234%
324	20.934	20.925	20.966	VV	11098	241022	2.49%	0.135%
325	20.972	20.966	20.991	VV	9788	140151	1.45%	0.078%
326	21.012	20.991	21.028	VV	9451	198679	2.06%	0.111%
327	21.054	21.028	21.066	VV	9215	193898	2.01%	0.108%
328	21.079	21.066	21.104	VV	9189	194977	2.02%	0.109%
329	21.119	21.104	21.267	VV	9207	667550	6.91%	0.373%
330	21.278	21.267	21.308	VV	5731	123401	1.28%	0.069%
331	21.340	21.308	21.371	VV	5060	166650	1.73%	0.093%
332	21.382	21.371	21.399	VV	4399	66996	0.69%	0.037%
333	21.408	21.399	21.429	VV	4227	67939	0.70%	0.038%
334	21.438	21.429	21.458	VV	4017	60811	0.63%	0.034%
335	21.479	21.458	21.516	VV	3606	103147	1.07%	0.058%
336	21.572	21.516	21.695	VV	5228	268447	2.78%	0.150%
Sum of corrected areas:						178805917		

Instrument :
FID_C
ClientSampleId :
WASTE

Manual IntegrationsAPPROVED

Reviewed By :Yogesh Patel 11/08/2023
Supervised By :Ankita Jodhani 11/08/2023

Aliphatic EPH 102823.M Wed Nov 08 07:56:00 2023

Report of Analysis

Client:	RMJ Environomics, Inc.	Date Collected:	11/03/23
Project:	245 Greenwood Ave	Date Received:	11/03/23
Client Sample ID:	WASTE	SDG No.:	O5252
Lab Sample ID:	O5252-01	Matrix:	Solid
Analytical Method:	NJEPH	% Solid:	90.6
Sample Wt/Vol:	30.05 Units: g	Final Vol:	2000 uL
Soil Aliquot Vol:	uL	Test:	EPH
Prep Method :			

File ID :	Dilution:	Prep Date :	Date Analyzed :	Prep Batch ID
FD046856.D	1	11/07/23	11/08/23	PB156949

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units
TARGETS						
Aromatic C10-C12	Aromatic C10-C12	0.76		0.17	0.74	mg/kg
Aromatic C12-C16	Aromatic C12-C16	4.92		0.17	1.10	mg/kg
Aromatic C16-C21	Aromatic C16-C21	10.1		0.33	1.84	mg/kg
Aromatic C21-C36	Aromatic C21-C36	44.4		0.43	2.94	mg/kg
SURROGATES						
580-13-2	2-Bromonaphthalene (SURR)	55.0		40 - 140	110%	SPK: 50
321-60-8	2-Fluorobiphenyl (SURR)	47.0		40 - 140	94%	SPK: 50
84-15-1	ortho-Terphenyl (SURR)	38.8		40 - 140	78%	SPK: 50



284 Sheffield Street, Mountainside NJ 07092 (908)-789-8900 Fax : 908 789 8922

Quantitation Report For Aromatic EPH Range.

Lab Sample ID:	O5252-01	Acq On:	08 Nov 2023 04:09
Client Sample ID:	WASTE	Operator:	YP/AJ
Data file:	FD046856.D	Misc:	
Instrument:	FID_D	ALS Vial:	78
Dilution Factor:	1	Sample Multiplier:	1.00

Compound	R.T.		Response	Conc	highest_standard	Units
Aromatic C10-C12	4.196	5.923	2045792	10.401	200	ug/ml
Aromatic C12-C16	5.924	8.535	12957254	66.928	300	ug/ml
Aromatic C16-C21	8.536	12.798	24045543	137.488	500	ug/ml
Aromatic C21-C36	12.799	18.185	87521663	603.732	800	ug/ml
Aromatic EPH	4.196	18.185	126570252	818.549		ug/ml
ortho-Terphenyl (SURR)	11.376	11.376	8219948	38.82		ug/ml
2-Bromonaphthalene (SURR)	7.485	7.485	10037702	55.04		ug/ml
2-Fluorobiphenyl (SURR)	8.338	8.338	5529205	46.98		ug/ml

Data Path : Z:\pestpcbsrv\HPCHEM1\FID_D\Data\FD110723AR\
 Data File : FD046856.D
 Signal(s) : FID2B.ch
 Acq On : 08 Nov 2023 04:09
 Operator : YP/AJ
 Sample : 05252-01
 Misc :
 ALS Vial : 78 Sample Multiplier: 1

Instrument :
 FID_D
 ClientSampleId :
 WASTE

Integration File: autoint1.e
 Quant Time: Nov 08 04:59:15 2023
 Quant Method : Z:\pestpcbsrv\HPCHEM1\FID_D\methods\Aromatic EPH 102723.M
 Quant Title : GC Extractables
 QLast Update : Sat Oct 28 02:49:53 2023
 Response via : Initial Calibration
 Integrator: ChemStation

Volume Inj. : 1 µl
 Signal Phase : Rxi-1ms
 Signal Info : 20M x 0.18mm x 0.18µm

Compound	R.T.	Response	Conc Units

System Monitoring Compounds			
4) S 2-Bromonaphthalene (S...	7.485	10037702	55.039 ug/ml
Spiked Amount 50.000		Recovery =	110.08%
6) S 2-Fluorobiphenyl (SURR)	8.338	5529205	46.984 ug/ml
Spiked Amount 50.000 Range 0 - 131		Recovery =	93.97%
11) S ortho-Terphenyl (SURR)	11.376	8219948	38.818 ug/ml
Spiked Amount 50.000		Recovery =	77.64%

Target Compounds

(f)=RT Delta > 1/2 Window

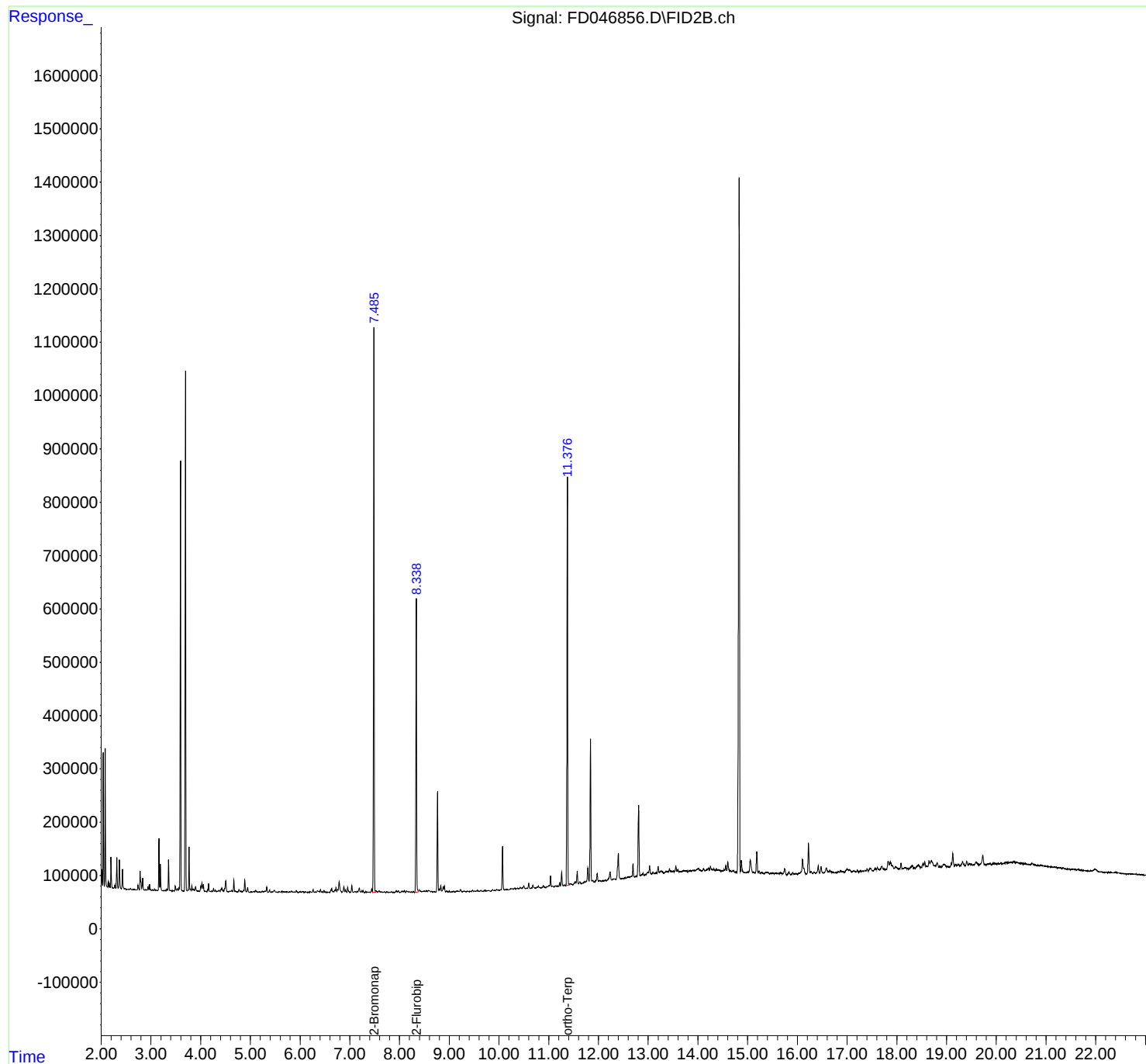
(m)=manual int.

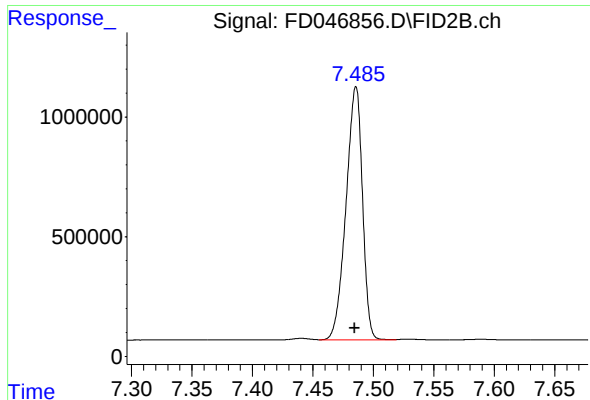
Data Path : Z:\pestpcbsrv\HPCHEM1\FID_D\Data\FD110723AR\
Data File : FD046856.D
Signal(s) : FID2B.ch
Acq On : 08 Nov 2023 04:09
Operator : YP/AJ
Sample : 05252-01
Misc :
ALS Vial : 78 Sample Multiplier: 1

Instrument :
FID_D
ClientSampleId :
WASTE

Integration File: autoint1.e
Quant Time: Nov 08 04:59:15 2023
Quant Method : Z:\pestpcbsrv\HPCHEM1\FID_D\methods\Aromatic EPH 102723.M
Quant Title : GC Extractables
QLast Update : Sat Oct 28 02:49:53 2023
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. : 1 µl
Signal Phase : Rxi-1ms
Signal Info : 20M x 0.18mm x 0.18µm

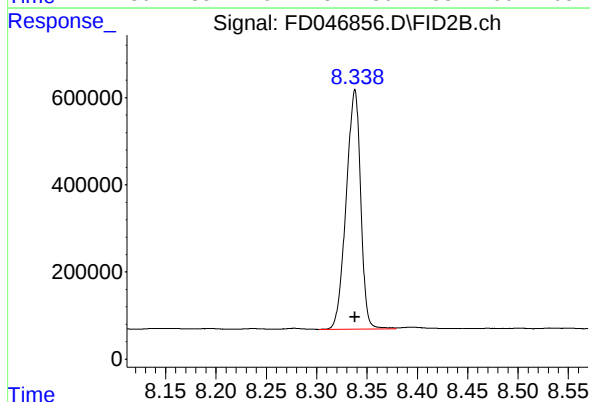




#4 2-Bromonaphthalene (SURR)

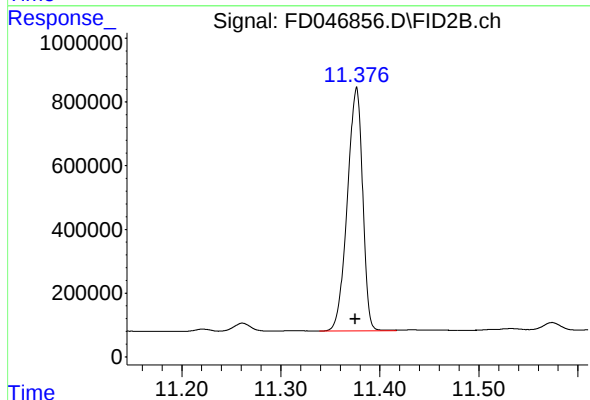
R.T.: 7.485 min
Delta R.T.: 0.000 min
Response: 10037702
Conc: 55.04 ug/ml

Instrument :
FID_D
ClientSampleId :
WASTE



#6 2-Fluorobiphenyl (SURR)

R.T.: 8.338 min
Delta R.T.: 0.000 min
Response: 5529205
Conc: 46.98 ug/ml



#11 ortho-Terphenyl (SURR)

R.T.: 11.376 min
Delta R.T.: 0.000 min
Response: 8219948
Conc: 38.82 ug/ml

rteres

Area Percent Report

Data Path : Z:\pestpcbsrv\HPCHEM1\FID_D\Data\FD110723AR\
 Data File : FD046856.D
 Signal(s) : FID2B.ch
 Acq On : 08 Nov 2023 04:09
 Sample : 05252-01
 Misc :
 ALS Vial : 78 Sample Multiplier: 1

Integration File: sample.E

Method : Z:\pestpcbsrv\HPCHEM1\FID_D\methods\Aromatic EPH 102723.M
 Title : GC Extractables

Signal : FID2B.ch

peak #	R.T. min	Start min	End min	PK TY	peak height	peak area	peak % max.	% of total
1	4.221	4.202	4.240	BV	1512	14025	0.08%	0.010%
2	4.259	4.240	4.278	PV	5893	57751	0.32%	0.041%
3	4.294	4.278	4.317	VV	2245	25726	0.14%	0.018%
4	4.331	4.317	4.342	VV	821	7536	0.04%	0.005%
5	4.358	4.342	4.362	VV	1680	15242	0.08%	0.011%
6	4.374	4.362	4.390	VV	2675	28109	0.15%	0.020%
7	4.408	4.390	4.415	VV	4844	42467	0.23%	0.030%
8	4.427	4.415	4.443	VV	7519	81218	0.45%	0.058%
9	4.454	4.443	4.468	VV	3233	32901	0.18%	0.023%
10	4.505	4.468	4.531	VV	20687	334794	1.84%	0.238%
11	4.541	4.531	4.557	VV	580	5609	0.03%	0.004%
12	4.591	4.557	4.614	VV	1877	29359	0.16%	0.021%
13	4.627	4.614	4.648	VV	3424	37049	0.20%	0.026%
14	4.668	4.648	4.688	VV	22646	207208	1.14%	0.147%
15	4.701	4.688	4.739	VV	1782	25981	0.14%	0.018%
16	4.770	4.739	4.797	PV	4995	62423	0.34%	0.044%
17	4.810	4.797	4.838	VV	1707	27099	0.15%	0.019%
18	4.864	4.838	4.872	VV	4249	44636	0.24%	0.032%
19	4.888	4.872	4.922	VV	22953	254831	1.40%	0.181%
20	4.945	4.922	4.979	VV	9044	98970	0.54%	0.070%
21	4.997	4.979	5.020	PV	703	9392	0.05%	0.007%
22	5.023	5.020	5.035	VV	317	1770	0.01%	0.001%
23	5.049	5.035	5.062	VV	709	7455	0.04%	0.005%
24	5.077	5.062	5.090	VV	1669	17220	0.09%	0.012%
25	5.108	5.090	5.152	VV	4015	51791	0.28%	0.037%
26	5.178	5.152	5.192	VV	423	7882	0.04%	0.006%
27	5.206	5.192	5.222	VV	510	6228	0.03%	0.004%
28	5.238	5.222	5.274	VV	2472	38778	0.21%	0.028%
29	5.289	5.274	5.304	VV	2210	27898	0.15%	0.020%
30	5.329	5.304	5.350	VV	9910	110105	0.60%	0.078%
31	5.360	5.350	5.366	PV	326	2245	0.01%	0.002%

					rteres			
32	5.386	5.366	5.415	VV	5069	51081	0.28%	0.036%
33	5.449	5.415	5.458	VV	1072	16805	0.09%	0.012%
34	5.478	5.458	5.517	VV	3799	69057	0.38%	0.049%
35	5.531	5.517	5.550	VV	862	9905	0.05%	0.007%
36	5.580	5.550	5.602	VV	1621	21040	0.12%	0.015%
37	5.624	5.602	5.639	VV	2001	23187	0.13%	0.016%
38	5.652	5.639	5.677	VV	2191	26821	0.15%	0.019%
39	5.687	5.677	5.700	VV	921	9879	0.05%	0.007%
40	5.710	5.700	5.721	VV	875	8840	0.05%	0.006%
41	5.737	5.721	5.757	VV	1795	21850	0.12%	0.016%
42	5.771	5.757	5.781	VV	814	7820	0.04%	0.006%
43	5.787	5.781	5.797	VV	681	5095	0.03%	0.004%
44	5.824	5.797	5.862	VV	2488	44902	0.25%	0.032%
45	5.882	5.862	5.901	VV	1431	15812	0.09%	0.011%
46	5.924	5.901	5.952	VV	3601	38742	0.21%	0.028%
47	5.961	5.952	5.975	VV	324	2945	0.02%	0.002%
48	5.997	5.975	6.025	VV	1228	26242	0.14%	0.019%
49	6.057	6.025	6.087	VV	1859	34951	0.19%	0.025%
50	6.108	6.087	6.135	VV	1702	20561	0.11%	0.015%
51	6.156	6.144	6.164	VV	354	2982	0.02%	0.002%
52	6.176	6.164	6.186	VV	436	3572	0.02%	0.003%
53	6.203	6.186	6.222	VV	1993	21988	0.12%	0.016%
54	6.226	6.222	6.237	VV	538	3979	0.02%	0.003%
55	6.261	6.237	6.289	VV	5402	61039	0.33%	0.043%
56	6.308	6.289	6.317	PV	813	7429	0.04%	0.005%
57	6.347	6.317	6.372	VV	3124	58471	0.32%	0.042%
58	6.379	6.372	6.394	VV	2435	23256	0.13%	0.017%
59	6.410	6.394	6.429	VV	5503	57545	0.32%	0.041%
60	6.445	6.429	6.462	VV	1752	17414	0.10%	0.012%
61	6.482	6.462	6.524	VV	3725	47264	0.26%	0.034%
62	6.536	6.524	6.544	VV	486	4502	0.02%	0.003%
63	6.567	6.544	6.574	VV	676	9215	0.05%	0.007%
64	6.580	6.574	6.596	VV	579	5625	0.03%	0.004%
65	6.619	6.596	6.624	VV	4582	40200	0.22%	0.029%
66	6.636	6.624	6.660	VV	8011	93458	0.51%	0.066%
67	6.672	6.660	6.681	VV	2280	21065	0.12%	0.015%
68	6.699	6.681	6.710	VV	4502	57811	0.32%	0.041%
69	6.724	6.710	6.740	VV	9366	97829	0.54%	0.070%
70	6.757	6.740	6.765	VV	5640	66847	0.37%	0.048%
71	6.785	6.765	6.845	VV	20095	360511	1.98%	0.256%
72	6.881	6.845	6.902	VV	11334	153765	0.84%	0.109%
73	6.914	6.902	6.939	VV	5089	56870	0.31%	0.040%
74	6.958	6.939	7.005	VV	9739	122767	0.67%	0.087%
75	7.008	7.005	7.017	VV	524	3077	0.02%	0.002%
76	7.041	7.017	7.075	VV	13295	148864	0.82%	0.106%
77	7.100	7.075	7.112	VV	2123	28136	0.15%	0.020%
78	7.117	7.112	7.132	VV	1634	14522	0.08%	0.010%
79	7.147	7.132	7.159	VV	2274	23930	0.13%	0.017%

80	7.191	7.159	7.213	VV	8629	135696	0.74%	0.096%
81	7.218	7.213	7.224	VV	1242	8100	0.04%	0.006%
82	7.245	7.224	7.258	VV	3033	40730	0.22%	0.029%
83	7.272	7.258	7.296	VV	3299	35505	0.19%	0.025%
84	7.322	7.296	7.338	PV	1249	17428	0.10%	0.012%
85	7.357	7.338	7.368	VV	1178	16295	0.09%	0.012%
86	7.376	7.368	7.409	VV	845	16222	0.09%	0.012%
87	7.440	7.409	7.456	VV	7237	82850	0.45%	0.059%
88	7.486	7.456	7.519	VV	1060077	10057778	55.17%	7.152%
89	7.529	7.519	7.560	VV	3414	53796	0.30%	0.038%
90	7.589	7.560	7.628	VV	3309	67809	0.37%	0.048%
91	7.636	7.628	7.660	VV	1011	11903	0.07%	0.008%
92	7.664	7.660	7.668	VV	626	2304	0.01%	0.002%
93	7.698	7.668	7.727	VV	985	19730	0.11%	0.014%
94	7.743	7.727	7.762	VV	2011	23408	0.13%	0.017%
95	7.787	7.762	7.812	VV	757	14062	0.08%	0.010%
96	7.838	7.812	7.874	VV	1254	27702	0.15%	0.020%
97	7.877	7.874	7.901	VV	641	6445	0.04%	0.005%
98	7.935	7.901	7.957	VV	4007	54630	0.30%	0.039%
99	7.976	7.957	8.010	VV	3300	46281	0.25%	0.033%
100	8.046	8.010	8.060	VV	2938	39155	0.21%	0.028%
101	8.071	8.060	8.086	VV	2145	25896	0.14%	0.018%
102	8.101	8.086	8.125	VV	3732	44189	0.24%	0.031%
103	8.141	8.125	8.152	VV	2244	26853	0.15%	0.019%
104	8.156	8.152	8.176	VV	2015	23083	0.13%	0.016%
105	8.195	8.176	8.222	VV	2054	31382	0.17%	0.022%
106	8.237	8.222	8.260	VV	1761	23128	0.13%	0.016%
107	8.278	8.260	8.303	VV	2417	27321	0.15%	0.019%
108	8.338	8.303	8.379	PV	552404	5549619	30.44%	3.946%
109	8.395	8.379	8.445	VV	4935	120080	0.66%	0.085%
110	8.470	8.445	8.481	VV	2229	40448	0.22%	0.029%
111	8.485	8.481	8.489	VV	2130	9893	0.05%	0.007%
112	8.501	8.489	8.516	VV	2524	32812	0.18%	0.023%
113	8.532	8.516	8.544	VV	2825	36966	0.20%	0.026%
114	8.552	8.544	8.567	VV	2231	26648	0.15%	0.019%
115	8.582	8.567	8.597	VV	3274	49331	0.27%	0.035%
116	8.601	8.597	8.628	VV	3230	37814	0.21%	0.027%
117	8.645	8.628	8.679	VV	2161	30937	0.17%	0.022%
118	8.694	8.679	8.722	VV	1704	25030	0.14%	0.018%
119	8.764	8.722	8.788	VV	188926	1898111	10.41%	1.350%
120	8.801	8.788	8.813	VV	6053	70420	0.39%	0.050%
121	8.831	8.813	8.854	VV	12504	157891	0.87%	0.112%
122	8.879	8.854	8.891	VV	9659	128175	0.70%	0.091%
123	8.903	8.891	8.929	VV	11449	128611	0.71%	0.091%
124	8.949	8.929	8.975	VV	2578	30406	0.17%	0.022%
125	8.998	8.975	9.023	VV	1684	20052	0.11%	0.014%
126	9.055	9.023	9.065	VV	738	9944	0.05%	0.007%

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127	9.080	9.065	9.118	VV	1630	28073	0.15%	0.020%
128	9.145	9.118	9.156	PV	1821	23719	0.13%	0.017%
129	9.165	9.156	9.180	VV	1839	20130	0.11%	0.014%
130	9.187	9.180	9.200	VV	1231	11560	0.06%	0.008%
131	9.226	9.200	9.260	VV	4847	74749	0.41%	0.053%
132	9.295	9.260	9.311	VV	1102	18718	0.10%	0.013%
133	9.322	9.311	9.344	VV	801	10608	0.06%	0.008%
134	9.365	9.344	9.392	VV	1831	25210	0.14%	0.018%
135	9.426	9.392	9.444	VV	1060	17630	0.10%	0.013%
136	9.465	9.444	9.485	VV	2625	38980	0.21%	0.028%
137	9.499	9.485	9.526	VV	1443	23321	0.13%	0.017%
138	9.568	9.526	9.604	VV	2067	47809	0.26%	0.034%
139	9.636	9.604	9.664	VV	2377	34177	0.19%	0.024%
140	9.715	9.673	9.757	PV	1709	51256	0.28%	0.036%
141	9.775	9.757	9.784	VV	1559	18969	0.10%	0.013%
142	9.789	9.784	9.792	VV	1348	6310	0.03%	0.004%
143	9.795	9.792	9.830	VV	1317	18279	0.10%	0.013%
144	9.872	9.830	9.893	VV	3322	50459	0.28%	0.036%
145	9.913	9.893	9.920	VV	1319	18351	0.10%	0.013%
146	9.957	9.920	9.966	VV	2410	50820	0.28%	0.036%
147	9.975	9.966	9.992	VV	2263	28196	0.15%	0.020%
148	10.008	9.992	10.015	VV	1746	20491	0.11%	0.015%
149	10.033	10.015	10.041	VV	2275	31078	0.17%	0.022%
150	10.072	10.041	10.112	VV	84074	935978	5.13%	0.666%
151	10.122	10.112	10.132	VV	1884	21276	0.12%	0.015%
152	10.147	10.132	10.168	VV	2882	49641	0.27%	0.035%
153	10.178	10.168	10.198	VV	2035	30820	0.17%	0.022%
154	10.235	10.198	10.244	VV	3218	67040	0.37%	0.048%
155	10.261	10.244	10.285	VV	4077	83273	0.46%	0.059%
156	10.317	10.285	10.339	VV	4468	105970	0.58%	0.075%
157	10.366	10.339	10.380	VV	3845	86310	0.47%	0.061%
158	10.385	10.380	10.399	VV	3225	33715	0.18%	0.024%
159	10.427	10.399	10.446	VV	5694	118815	0.65%	0.084%
160	10.461	10.446	10.470	VV	4099	55999	0.31%	0.040%
161	10.499	10.470	10.528	VV	8109	179590	0.99%	0.128%
162	10.541	10.528	10.552	VV	3468	48421	0.27%	0.034%
163	10.564	10.552	10.571	VV	3626	38206	0.21%	0.027%
164	10.599	10.571	10.628	VV	12555	211813	1.16%	0.151%
165	10.647	10.628	10.655	VV	3407	50165	0.28%	0.036%
166	10.683	10.655	10.722	VV	9124	205535	1.13%	0.146%
167	10.740	10.722	10.746	VV	3341	45804	0.25%	0.033%
168	10.764	10.746	10.773	VV	5076	68317	0.37%	0.049%
169	10.795	10.773	10.813	VV	6776	127968	0.70%	0.091%
170	10.823	10.813	10.849	VV	3745	74038	0.41%	0.053%
171	10.892	10.849	10.943	VV	7372	257900	1.41%	0.183%
172	10.962	10.943	10.985	VV	5460	115743	0.63%	0.082%
173	11.002	10.985	11.015	VV	7227	114685	0.63%	0.082%
174	11.038	11.015	11.059	VV	25053	340409	1.87%	0.242%

175	11.073	11.059	11.108	VV	rteres 6214	155533	0.85%	0.111%
176	11.139	11.108	11.168	VV	6532	198706	1.09%	0.141%
177	11.184	11.168	11.200	VV	5664	105593	0.58%	0.075%
178	11.221	11.200	11.238	VV	12173	188664	1.03%	0.134%
179	11.261	11.238	11.292	VV	30783	473352	2.60%	0.337%
180	11.314	11.292	11.338	VV	7287	179108	0.98%	0.127%
181	11.376	11.338	11.416	VV	772725	8516528	46.72%	6.056%
182	11.433	11.416	11.447	VV	9307	160179	0.88%	0.114%
183	11.453	11.447	11.490	VV	8785	209760	1.15%	0.149%
184	11.533	11.490	11.552	VV	12926	383122	2.10%	0.272%
185	11.574	11.552	11.600	VV	31866	518672	2.85%	0.369%
186	11.625	11.600	11.651	VV	12250	309351	1.70%	0.220%
187	11.664	11.651	11.672	VV	9414	116312	0.64%	0.083%
188	11.720	11.672	11.741	VV	12047	441369	2.42%	0.314%
189	11.758	11.741	11.762	VV	13022	151151	0.83%	0.107%
190	11.788	11.762	11.809	VV	37949	671691	3.68%	0.478%
191	11.842	11.809	11.865	VV	279277	3395356	18.63%	2.414%
192	11.873	11.865	11.876	VV	13396	86826	0.48%	0.062%
193	11.886	11.876	11.915	VV	14268	292354	1.60%	0.208%
194	11.975	11.915	12.008	VV	26488	850668	4.67%	0.605%
195	12.024	12.008	12.043	VV	14007	274132	1.50%	0.195%
196	12.053	12.043	12.059	VV	12251	109560	0.60%	0.078%
197	12.078	12.059	12.092	VV	13173	245926	1.35%	0.175%
198	12.111	12.092	12.115	VV	12900	177306	0.97%	0.126%
199	12.138	12.115	12.152	VV	14391	293154	1.61%	0.208%
200	12.235	12.152	12.263	VV	29343	1173130	6.44%	0.834%
201	12.269	12.263	12.274	VV	13813	85196	0.47%	0.061%
202	12.311	12.274	12.345	VV	15657	642992	3.53%	0.457%
203	12.401	12.345	12.450	VV	62858	1717884	9.42%	1.222%
204	12.467	12.450	12.474	VV	16048	222452	1.22%	0.158%
205	12.480	12.474	12.487	VV	15971	128694	0.71%	0.092%
206	12.498	12.487	12.502	VV	16384	141050	0.77%	0.100%
207	12.507	12.502	12.513	VV	16557	104468	0.57%	0.074%
208	12.516	12.513	12.520	VV	16254	75399	0.41%	0.054%
209	12.538	12.520	12.553	VV	17805	329434	1.81%	0.234%
210	12.590	12.553	12.612	VV	18702	627183	3.44%	0.446%
211	12.635	12.612	12.644	VV	18783	340117	1.87%	0.242%
212	12.647	12.644	12.655	VV	18751	131933	0.72%	0.094%
213	12.696	12.655	12.725	VV	42479	1040314	5.71%	0.740%
214	12.754	12.725	12.774	VV	19874	547758	3.00%	0.389%
215	12.808	12.774	12.838	VV	151842	2384510	13.08%	1.696%
216	12.874	12.838	12.880	VV	21742	522259	2.86%	0.371%
217	12.896	12.880	12.915	VV	24130	477003	2.62%	0.339%
218	12.939	12.915	12.955	VV	22141	505775	2.77%	0.360%
219	12.988	12.955	12.997	VV	25805	601674	3.30%	0.428%
220	13.003	12.997	13.008	VV	25747	171179	0.94%	0.122%
221	13.029	13.008	13.069	VV	38208	1036269	5.68%	0.737%

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222	13.095	13.069	13.119	VV	25928	707449	3.88%	0.503%
223	13.132	13.119	13.137	VV	24403	258418	1.42%	0.184%
224	13.159	13.137	13.179	VV	24284	597053	3.28%	0.425%
225	13.200	13.179	13.226	VV	35626	828576	4.55%	0.589%
226	13.231	13.226	13.236	VV	25899	145456	0.80%	0.103%
227	13.241	13.236	13.243	VV	25780	115308	0.63%	0.082%
228	13.259	13.243	13.270	VV	27711	426861	2.34%	0.304%
229	13.283	13.270	13.307	VV	27311	576116	3.16%	0.410%
230	13.324	13.307	13.330	VV	24262	325767	1.79%	0.232%
231	13.372	13.330	13.387	VV	26694	874854	4.80%	0.622%
232	13.396	13.387	13.414	VV	26516	414812	2.28%	0.295%
233	13.430	13.414	13.459	VV	31464	756453	4.15%	0.538%
234	13.479	13.459	13.485	VV	26799	419345	2.30%	0.298%
235	13.514	13.485	13.529	VV	27033	679896	3.73%	0.483%
236	13.557	13.529	13.580	VV	36107	913806	5.01%	0.650%
237	13.598	13.580	13.638	VV	29552	922575	5.06%	0.656%
238	13.657	13.638	13.669	VV	25835	471546	2.59%	0.335%
239	13.686	13.669	13.691	VV	26451	332820	1.83%	0.237%
240	13.695	13.691	13.702	VV	26423	169056	0.93%	0.120%
241	13.712	13.702	13.732	VV	27084	478093	2.62%	0.340%
242	13.746	13.732	13.764	VV	26700	505500	2.77%	0.359%
243	13.769	13.764	13.798	VV	26246	520115	2.85%	0.370%
244	13.820	13.798	13.842	VV	26826	672829	3.69%	0.478%
245	13.864	13.842	13.881	VV	26260	592582	3.25%	0.421%
246	13.900	13.881	13.937	VV	27129	893358	4.90%	0.635%
247	13.942	13.937	13.948	VV	26292	167988	0.92%	0.119%
248	13.991	13.948	14.001	VV	29147	894266	4.91%	0.636%
249	14.014	14.001	14.033	VV	30934	551843	3.03%	0.392%
250	14.041	14.033	14.060	VV	27385	428460	2.35%	0.305%
251	14.065	14.060	14.074	VV	25633	216171	1.19%	0.154%
252	14.113	14.074	14.146	VV	29122	1134370	6.22%	0.807%
253	14.181	14.146	14.188	VV	27918	679605	3.73%	0.483%
254	14.193	14.188	14.197	VV	27980	144024	0.79%	0.102%
255	14.214	14.197	14.229	VV	30731	543927	2.98%	0.387%
256	14.252	14.229	14.270	VV	33380	733243	4.02%	0.521%
257	14.280	14.270	14.304	VV	28621	554079	3.04%	0.394%
258	14.322	14.304	14.350	VV	27511	713044	3.91%	0.507%
259	14.370	14.350	14.393	VV	27955	690695	3.79%	0.491%
260	14.398	14.393	14.404	VV	25819	160693	0.88%	0.114%
261	14.413	14.404	14.435	VV	26526	488356	2.68%	0.347%
262	14.442	14.435	14.449	VV	25406	205821	1.13%	0.146%
263	14.454	14.449	14.474	VV	24987	364435	2.00%	0.259%
264	14.490	14.474	14.507	VV	25017	470976	2.58%	0.335%
265	14.509	14.507	14.511	VV	24088	62924	0.35%	0.045%
266	14.530	14.511	14.540	VV	26206	433212	2.38%	0.308%
267	14.560	14.540	14.579	VV	34229	672427	3.69%	0.478%
268	14.601	14.579	14.638	VV	40070	1058305	5.81%	0.753%
269	14.652	14.638	14.682	VV	24421	613675	3.37%	0.436%

270	14.700	14.682	14.708	VV	rteres 23849	361525	1.98%	0.257%
271	14.719	14.708	14.742	VV	24440	456230	2.50%	0.324%
272	14.754	14.742	14.777	VV	21642	441807	2.42%	0.314%
273	14.829	14.777	14.853	VV	1322304	18229908	100.00%	12.962%
274	14.872	14.853	14.930	VV	42251	1206835	6.62%	0.858%
275	14.943	14.930	14.968	VV	19888	441817	2.42%	0.314%
276	15.004	14.968	15.022	VV	20559	629371	3.45%	0.448%
277	15.053	15.022	15.122	VV	42938	1613110	8.85%	1.147%
278	15.132	15.122	15.152	VV	19337	339810	1.86%	0.242%
279	15.184	15.152	15.211	VV	57967	1144765	6.28%	0.814%
280	15.233	15.211	15.255	VV	21974	516782	2.83%	0.367%
281	15.281	15.255	15.325	VV	19072	727697	3.99%	0.517%
282	15.331	15.325	15.344	VV	16795	190628	1.05%	0.136%
283	15.380	15.344	15.387	VV	18846	464921	2.55%	0.331%
284	15.394	15.387	15.404	VV	19036	190652	1.05%	0.136%
285	15.408	15.404	15.437	VV	18435	341646	1.87%	0.243%
286	15.439	15.437	15.442	VV	15535	44938	0.25%	0.032%
287	15.478	15.442	15.495	VV	17466	525793	2.88%	0.374%
288	15.514	15.495	15.521	VV	16838	254037	1.39%	0.181%
289	15.525	15.521	15.534	VV	16498	121848	0.67%	0.087%
290	15.563	15.534	15.578	VV	17137	427333	2.34%	0.304%
291	15.585	15.578	15.589	VV	16091	110261	0.60%	0.078%
292	15.595	15.589	15.608	VV	16208	177869	0.98%	0.126%
293	15.617	15.608	15.640	VV	15556	292541	1.60%	0.208%
294	15.666	15.640	15.686	VV	17404	448245	2.46%	0.319%
295	15.692	15.686	15.710	VV	16019	216692	1.19%	0.154%
296	15.745	15.710	15.788	VV	24064	821471	4.51%	0.584%
297	15.830	15.788	15.872	VV	18608	737471	4.05%	0.524%
298	15.878	15.872	15.880	VV	13291	64000	0.35%	0.046%
299	15.906	15.880	15.922	VV	16961	373961	2.05%	0.266%
300	15.930	15.922	15.945	VV	14335	194202	1.07%	0.138%
301	15.951	15.945	15.959	VV	13904	112156	0.62%	0.080%
302	15.970	15.959	15.984	VV	14720	207391	1.14%	0.147%
303	15.996	15.984	16.007	VV	13722	186370	1.02%	0.133%
304	16.025	16.007	16.042	VV	15391	303992	1.67%	0.216%
305	16.103	16.042	16.125	VV	40829	1166616	6.40%	0.830%
306	16.130	16.125	16.163	VV	23940	418456	2.30%	0.298%
307	16.166	16.163	16.175	VV	14181	103720	0.57%	0.074%
308	16.222	16.175	16.259	VV	71173	1413743	7.76%	1.005%
309	16.278	16.259	16.310	VV	17330	469838	2.58%	0.334%
310	16.335	16.310	16.367	VV	16560	515840	2.83%	0.367%
311	16.377	16.367	16.381	VV	14633	119234	0.65%	0.085%
312	16.419	16.381	16.443	VV	28223	719893	3.95%	0.512%
313	16.476	16.443	16.518	VV	26048	801696	4.40%	0.570%
314	16.525	16.518	16.530	VV	14377	103172	0.57%	0.073%
315	16.538	16.530	16.542	VV	14840	106097	0.58%	0.075%
316	16.582	16.542	16.635	VV	23127	997331	5.47%	0.709%

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317	16.656	16.635	16.671	VV	18231	358546	1.97%	0.255%
318	16.687	16.671	16.701	VV	15946	273958	1.50%	0.195%
319	16.716	16.701	16.739	VV	15487	322788	1.77%	0.230%
320	16.744	16.739	16.749	VV	13938	87384	0.48%	0.062%
321	16.761	16.749	16.765	VV	13970	126250	0.69%	0.090%
322	16.769	16.765	16.775	VV	14240	81914	0.45%	0.058%
323	16.786	16.775	16.804	VV	14489	245374	1.35%	0.174%
324	16.822	16.804	16.834	VV	15566	265298	1.46%	0.189%
325	16.840	16.834	16.849	VV	15176	135718	0.74%	0.097%
326	16.854	16.849	16.858	VV	14897	79385	0.44%	0.056%
327	16.872	16.858	16.896	VV	17401	361901	1.99%	0.257%
328	16.909	16.896	16.921	VV	15720	233539	1.28%	0.166%
329	16.925	16.921	16.946	VV	15087	218192	1.20%	0.155%
330	16.997	16.946	17.030	VV	20311	875551	4.80%	0.623%
331	17.045	17.030	17.108	VV	18481	759798	4.17%	0.540%
332	17.135	17.108	17.157	VV	16682	454424	2.49%	0.323%
333	17.171	17.157	17.182	VV	14837	214141	1.17%	0.152%
334	17.207	17.182	17.237	VV	17390	498122	2.73%	0.354%
335	17.254	17.237	17.262	VV	15180	215846	1.18%	0.153%
336	17.266	17.262	17.285	VV	15447	201734	1.11%	0.143%
337	17.304	17.285	17.335	VV	15485	442241	2.43%	0.314%
338	17.365	17.335	17.382	VV	16106	437829	2.40%	0.311%
339	17.405	17.382	17.425	VV	18543	430146	2.36%	0.306%
340	17.477	17.425	17.503	VV	19834	819151	4.49%	0.582%
341	17.510	17.503	17.528	VV	15536	223928	1.23%	0.159%
342	17.575	17.528	17.591	VV	19608	664923	3.65%	0.473%
343	17.607	17.591	17.625	VV	21192	391767	2.15%	0.279%
344	17.641	17.625	17.658	VV	17748	331172	1.82%	0.235%
345	17.698	17.658	17.732	VV	23028	862057	4.73%	0.613%
346	17.744	17.732	17.776	VV	18143	443458	2.43%	0.315%
347	17.790	17.776	17.795	VV	17408	190890	1.05%	0.136%
348	17.823	17.795	17.847	VV	31145	809121	4.44%	0.575%
349	17.861	17.847	17.865	VV	29005	290886	1.60%	0.207%
350	17.870	17.865	17.906	VV	29297	646093	3.54%	0.459%
351	17.911	17.906	17.944	VV	23879	472638	2.59%	0.336%
352	17.972	17.944	17.991	VV	21348	558721	3.06%	0.397%
353	17.998	17.991	18.031	VV	20326	442993	2.43%	0.315%
354	18.054	18.031	18.062	VV	17468	320036	1.76%	0.228%
355	18.085	18.062	18.119	VV	27710	695650	3.82%	0.495%
356	18.155	18.119	18.162	VV	18807	462360	2.54%	0.329%
357	18.172	18.162	18.200	VBA	19446	442177	2.43%	0.314%
					Sum of corrected areas:	140636395		

Aromatic EPH 102723.M Wed Nov 08 04:58:35 2023



284 Sheffield Street, Mountainside NJ 07092 Phone: 908 789 8900 Fax : 908 789 8922

Report of Analysis

Client:	RMJ Environomics, Inc.	Date Collected:	11/03/23
Project:	245 Greenwood Ave	Date Received:	11/03/23
Client Sample ID:	WASTEDL	SDG No.:	O5252
Lab Sample ID:	O5252-01DL	Matrix:	Solid
Analytical Method:	NJEPH	% Solid:	90.6
Sample Wt/Vol:	30.05	Units:	g
Soil Aliquot Vol:		Final Vol:	2000 uL
Prep Method :		Test:	EPH

File ID :	Dilution:	Prep Date :	Date Analyzed :	Prep Batch ID
FC065062.D	2	11/07/23	11/08/23	PB156949

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units
TARGETS						
Aliphatic C9-C12	Aliphatic C9-C12	1.42	J	0.53	2.20	mg/kg
Aliphatic C12-C16	Aliphatic C12-C16	1.44	J	0.31	1.47	mg/kg
Aliphatic C16-C21	Aliphatic C16-C21	14.5		0.46	2.20	mg/kg
Aliphatic C21-C28	Aliphatic C21-C28	27.2		1.01	2.94	mg/kg
Aliphatic C28-C40	Aliphatic C28-C40	24.9		2.25	4.41	mg/kg
SURROGATES						
3383-33-2	1-chlorooctadecane (SURR)	19.0		40 - 140	76%	SPK: 50
84-15-1	ortho-Terphenyl (SURR)	0.00		40 - 140	0%	SPK: 50



284 Sheffield Street, Mountainside NJ 07092 (908)-789-8900 Fax : 908 789 8922

Quantitation Report For Aliphatic EPH Range.

Lab Sample ID:	O5252-01DL	Acq On:	08 Nov 2023 11:35
Client Sample ID:	O5252-01DL	Operator:	YP/AJ
Data file:	FC065062.D	Misc:	
Instrument:	FID_C	ALS Vial:	15
Dilution Factor:	2	Sample Multiplier:	1.00

Compound	R.T.		Response	Conc	highest_standard	Units
Aliphatic C9-C12	3.210	6.479	1837534	9.631	300	ug/ml
Aliphatic C12-C16	6.480	9.862	1847263	9.781	200	ug/ml
Aliphatic C16-C21	9.863	13.209	17849549	98.421	300	ug/ml
Aliphatic C21-C28	13.210	16.852	30350323	185.25	400	ug/ml
Aliphatic C28-C40	16.853	21.679	25885594	169.612	600	ug/ml
Aliphatic EPH	3.210	21.679	77770263	472.694		ug/ml
ortho-Terphenyl (SURR)	0.000	0.000	0	0		ug/ml
1-chlorooctadecane (SURR)	12.942	12.942	2997036	18.96		ug/ml
Aliphatic C9-C28	3.210	16.852	51884669	303.083	1200	ug/ml

Data Path : Z:\pestpcbsrv\HPCHEM1\FID_C\Data\FC110823AL\
Data File : FC065062.D
Signal(s) : FID1A.ch
Acq On : 08 Nov 2023 11:35
Operator : YP/AJ
Sample : 05252-01DL 2X
Misc :
ALS Vial : 15 Sample Multiplier: 1

Instrument :
FID_C
ClientSampleId :
WASTEDL

Integration File: autoint1.e
Quant Time: Nov 08 23:07:44 2023
Quant Method : Z:\pestpcbsrv\HPCHEM1\FID_C\Method\Aliphatic EPH 102823.M
Quant Title : GC Extractables
QLast Update : Sat Oct 28 02:12:00 2023
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. : 1 ul
Signal Phase : Rxi-1ms
Signal Info : 20M x 0.18mm x 0.18um

Compound	R.T.	Response	Conc Units

System Monitoring Compounds			
12) S 1-chlorooctadecane (S...	12.942	2997036	18.958 ug/ml
Spiked Amount	50.000	Recovery	= 37.92%

Target Compounds

(f)=RT Delta > 1/2 Window

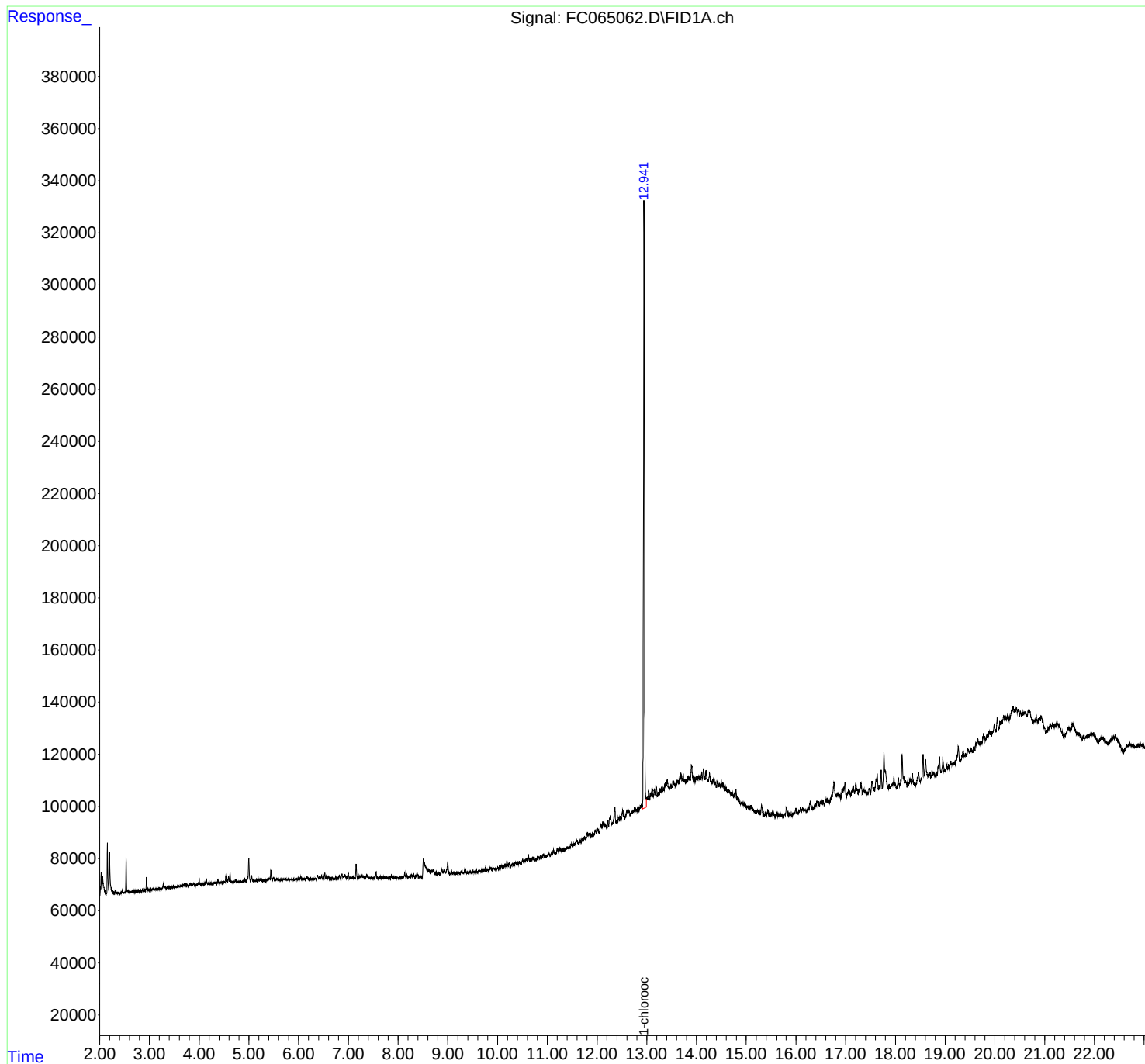
(m)=manual int.

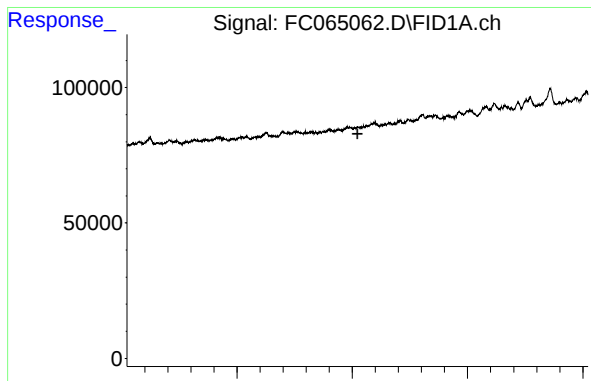
Data Path : Z:\pestpcbsrv\HPCHEM1\FID_C\Data\FC110823AL\
Data File : FC065062.D
Signal(s) : FID1A.ch
Acq On : 08 Nov 2023 11:35
Operator : YP/AJ
Sample : 05252-01DL 2X
Misc :
ALS Vial : 15 Sample Multiplier: 1

Instrument :
FID_C
ClientSampleId :
WASTEDL

Integration File: autoint1.e
Quant Time: Nov 08 23:07:44 2023
Quant Method : Z:\pestpcbsrv\HPCHEM1\FID_C\Method\Aliphatic EPH 102823.M
Quant Title : GC Extractables
QLast Update : Sat Oct 28 02:12:00 2023
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. : 1 ul
Signal Phase : Rxi-1ms
Signal Info : 20M x 0.18mm x 0.18um

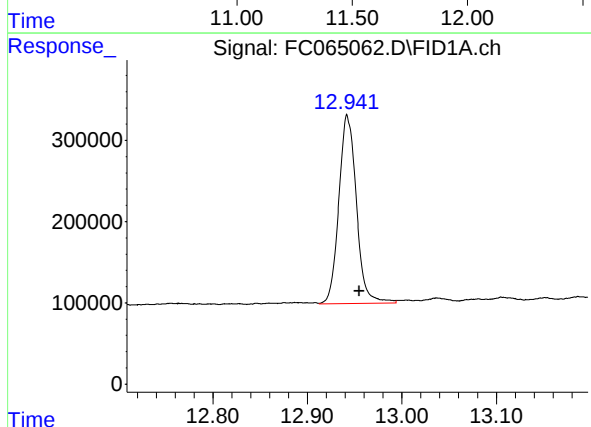




#9 ortho-Terphenyl (SURR)

R.T.: 0.000 min
Exp R.T.: 11.523 min
Response: 0
Conc: N.D.

Instrument :
FID_C
ClientSampleId :
WASTEDL



#12 1-chlorooctadecane (SURR)

R.T.: 12.942 min
Delta R.T.: -0.013 min
Response: 2997036
Conc: 18.96 ug/ml

rteres

Area Percent Report

Data Path : Z:\pestpcbsrv\HPCHEM1\FID_C\Data\FC110823AL\
 Data File : FC065062.D
 Signal(s) : FID1A.ch
 Acq On : 08 Nov 2023 11:35
 Sample : 05252-01DL 2X
 Misc :
 ALS Vial : 15 Sample Multiplier: 1

Integration File: sample.E

Method : Z:\pestpcbsrv\HPCHEM1\FID_C\Method\Aliphatic EPH 102823.M
 Title : GC Extractables

Signal : FID1A.ch

peak #	R.T. min	Start min	End min	PK TY	peak height	peak area	peak % max.	% of total
1	3.588	3.528	3.605	VV	454	12223	0.32%	0.016%
2	3.630	3.605	3.654	VV	848	13925	0.37%	0.018%
3	3.677	3.654	3.691	VV	845	12383	0.33%	0.016%
4	3.714	3.691	3.784	VV	1512	45448	1.20%	0.058%
5	3.818	3.784	3.865	VV	1104	36868	0.98%	0.047%
6	3.883	3.865	3.928	VV	1126	31405	0.83%	0.040%
7	3.973	3.942	3.984	VV	1389	23595	0.62%	0.030%
8	4.001	3.984	4.058	VV	2562	50626	1.34%	0.065%
9	4.069	4.058	4.088	VV	899	15229	0.40%	0.020%
10	4.116	4.088	4.131	VV	1280	25054	0.66%	0.032%
11	4.147	4.131	4.171	VV	2434	36275	0.96%	0.047%
12	4.207	4.171	4.222	VV	969	27743	0.73%	0.036%
13	4.375	4.351	4.398	VV	1792	38504	1.02%	0.050%
14	4.417	4.398	4.439	VV	1235	29012	0.77%	0.037%
15	4.483	4.439	4.501	VV	1621	46929	1.24%	0.060%
16	4.537	4.501	4.558	VV	3506	63412	1.68%	0.082%
17	4.592	4.558	4.606	VV	3337	58637	1.55%	0.075%
18	4.622	4.606	4.667	VV	4778	79254	2.10%	0.102%
19	4.778	4.771	4.792	VV	1327	15683	0.41%	0.020%
20	4.814	4.792	4.854	VV	1363	47893	1.27%	0.062%
21	4.920	4.854	4.942	VV	1750	72618	1.92%	0.093%
22	4.998	4.942	5.033	VV	10041	183246	4.85%	0.236%
23	5.056	5.033	5.088	VV	3407	65071	1.72%	0.084%
24	5.108	5.088	5.138	VV	1488	41293	1.09%	0.053%
25	5.230	5.213	5.266	VV	1641	45243	1.20%	0.058%
26	5.366	5.337	5.385	VV	1697	41398	1.09%	0.053%
27	5.442	5.421	5.468	VV	5013	77289	2.04%	0.099%
28	5.497	5.468	5.532	VV	2344	64325	1.70%	0.083%
29	5.650	5.635	5.665	VV	1337	23232	0.61%	0.030%
30	5.690	5.665	5.730	VV	1666	53736	1.42%	0.069%
31	5.786	5.765	5.808	VV	1294	32838	0.87%	0.042%

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32	5.815	5.808	5.825	VV	1314	12666	0.34%	0.016%
33	5.853	5.825	5.901	VV	1332	56893	1.50%	0.073%
34	5.949	5.901	5.975	VV	1422	57560	1.52%	0.074%
35	5.998	5.975	6.020	VV	1651	36957	0.98%	0.048%
36	6.173	6.120	6.235	VV	1849	91803	2.43%	0.118%
37	6.294	6.272	6.308	VV	1127	24258	0.64%	0.031%
38	6.382	6.308	6.406	VV	2435	82229	2.17%	0.106%
39	6.420	6.406	6.440	VV	1431	26658	0.71%	0.034%
40	6.461	6.440	6.481	VV	2266	38123	1.01%	0.049%
41	6.498	6.481	6.510	VV	1681	24037	0.64%	0.031%
42	6.528	6.510	6.548	VV	3199	45765	1.21%	0.059%
43	6.601	6.580	6.621	VV	2102	35112	0.93%	0.045%
44	6.635	6.621	6.664	VV	1045	24987	0.66%	0.032%
45	6.691	6.664	6.725	VV	984	33503	0.89%	0.043%
46	6.744	6.725	6.765	VV	1166	24078	0.64%	0.031%
47	6.775	6.765	6.797	VV	904	16929	0.45%	0.022%
48	6.818	6.797	6.850	VV	2065	40813	1.08%	0.052%
49	6.871	6.850	6.908	VV	2545	58918	1.56%	0.076%
50	6.920	6.908	6.967	VV	2225	54919	1.45%	0.071%
51	6.998	6.967	7.031	VV	2984	58793	1.56%	0.076%
52	7.038	7.031	7.058	VV	904	12518	0.33%	0.016%
53	7.101	7.058	7.125	VV	1186	34836	0.92%	0.045%
54	7.158	7.125	7.195	VV	6089	88080	2.33%	0.113%
55	7.220	7.195	7.249	VV	1258	35333	0.93%	0.045%
56	7.266	7.249	7.278	VV	1568	21606	0.57%	0.028%
57	7.293	7.278	7.324	VV	1353	30592	0.81%	0.039%
58	7.335	7.324	7.344	VV	990	11192	0.30%	0.014%
59	7.363	7.344	7.376	VV	1545	23053	0.61%	0.030%
60	7.390	7.376	7.418	VV	1784	25691	0.68%	0.033%
61	7.457	7.445	7.491	VV	636	14804	0.39%	0.019%
62	7.505	7.491	7.526	VV	579	10502	0.28%	0.014%
63	7.559	7.526	7.601	VV	2912	44875	1.19%	0.058%
64	7.643	7.601	7.676	VV	777	23148	0.61%	0.030%
65	7.702	7.676	7.716	VV	586	12084	0.32%	0.016%
66	7.752	7.741	7.805	VV	530	15144	0.40%	0.019%
67	7.865	7.843	7.888	VV	977	15212	0.40%	0.020%
68	7.919	7.888	7.935	VV	438	10712	0.28%	0.014%
69	8.135	8.068	8.154	VV	1921	34832	0.92%	0.045%
70	8.169	8.154	8.191	VV	1532	21686	0.57%	0.028%
71	8.200	8.191	8.241	VV	732	12259	0.32%	0.016%
72	8.279	8.241	8.297	VV	900	20767	0.55%	0.027%
73	8.314	8.297	8.339	VV	965	15288	0.40%	0.020%
74	8.360	8.339	8.378	VV	780	11134	0.29%	0.014%
75	8.397	8.378	8.473	VV	1060	16428	0.43%	0.021%
76	8.514	8.473	8.606	PV	7124	283601	7.50%	0.365%
77	8.623	8.606	8.642	VV	2744	52700	1.39%	0.068%
78	8.654	8.642	8.688	VV	2164	51780	1.37%	0.067%
79	8.704	8.688	8.746	VV	2500	62875	1.66%	0.081%

80	8.765	8.746	8.797	VV	rteres 1479	28118	0.74%	0.036%
81	8.816	8.797	8.838	VV	1090	18110	0.48%	0.023%
82	8.881	8.838	8.904	VV	2353	49772	1.32%	0.064%
83	8.921	8.904	8.956	VV	2014	42903	1.13%	0.055%
84	8.999	8.956	9.046	VV	4903	102628	2.71%	0.132%
85	9.072	9.046	9.097	VV	1618	24012	0.64%	0.031%
86	9.120	9.097	9.153	VV	955	14602	0.39%	0.019%
87	9.201	9.153	9.245	VV	586	15915	0.42%	0.020%
88	9.273	9.245	9.305	VV	897	20250	0.54%	0.026%
89	9.347	9.305	9.401	VV	2064	33208	0.88%	0.043%
90	9.575	9.513	9.595	VV	463	10691	0.28%	0.014%
91	9.723	9.698	9.741	VV	578	10083	0.27%	0.013%
92	9.763	9.741	9.815	VV	1400	25243	0.67%	0.032%
93	9.857	9.815	9.890	VV	629	21142	0.56%	0.027%
94	9.913	9.890	9.944	VV	545	12800	0.34%	0.016%
95	10.079	10.047	10.118	VV	1097	30421	0.80%	0.039%
96	10.150	10.118	10.167	VV	1622	29227	0.77%	0.038%
97	10.188	10.167	10.212	VV	2721	42257	1.12%	0.054%
98	10.234	10.212	10.254	VV	1548	28274	0.75%	0.036%
99	10.266	10.254	10.278	VV	772	10258	0.27%	0.013%
100	10.297	10.278	10.321	VV	1211	22637	0.60%	0.029%
101	10.358	10.321	10.370	VV	1570	31564	0.83%	0.041%
102	10.384	10.370	10.415	VV	1662	36131	0.96%	0.046%
103	10.438	10.415	10.456	VV	1587	33871	0.90%	0.044%
104	10.500	10.456	10.532	VV	2107	70665	1.87%	0.091%
105	10.552	10.532	10.560	VV	1918	29811	0.79%	0.038%
106	10.576	10.560	10.593	VV	2422	41459	1.10%	0.053%
107	10.622	10.593	10.643	VV	3833	78861	2.09%	0.101%
108	10.656	10.643	10.677	VV	1848	34017	0.90%	0.044%
109	10.707	10.677	10.727	VV	2724	62477	1.65%	0.080%
110	10.738	10.727	10.761	VV	2329	38693	1.02%	0.050%
111	10.781	10.761	10.790	VV	2006	29892	0.79%	0.038%
112	10.816	10.790	10.848	VV	2552	75804	2.01%	0.097%
113	10.865	10.848	10.878	VV	2481	40555	1.07%	0.052%
114	10.919	10.878	10.963	VV	3218	131203	3.47%	0.169%
115	10.984	10.963	10.995	VV	2536	43316	1.15%	0.056%
116	11.041	10.995	11.059	VV	3057	105708	2.80%	0.136%
117	11.127	11.059	11.181	VV	4470	228197	6.04%	0.293%
118	11.199	11.181	11.235	VV	4482	127468	3.37%	0.164%
119	11.261	11.235	11.288	VV	4409	127986	3.39%	0.165%
120	11.321	11.288	11.351	VV	4040	145565	3.85%	0.187%
121	11.402	11.351	11.418	VV	4708	166795	4.41%	0.214%
122	11.439	11.418	11.452	VV	4663	88925	2.35%	0.114%
123	11.479	11.452	11.504	VV	5550	153584	4.06%	0.197%
124	11.596	11.504	11.618	VV	6535	388082	10.26%	0.499%
125	11.662	11.618	11.675	VV	6351	205410	5.43%	0.264%
126	11.708	11.675	11.722	VV	7202	181926	4.81%	0.234%

					rteres			
127	11.742	11.722	11.768	VV	7636	191901	5.08%	0.247%
128	11.805	11.768	11.818	VV	9210	241598	6.39%	0.311%
129	11.860	11.818	11.883	VV	8901	326080	8.62%	0.419%
130	11.920	11.883	11.938	VV	8385	259939	6.88%	0.334%
131	11.964	11.938	11.981	VV	9755	231868	6.13%	0.298%
132	12.011	11.981	12.042	VV	10049	340370	9.00%	0.438%
133	12.080	12.042	12.093	VV	11214	309819	8.19%	0.398%
134	12.116	12.093	12.138	VV	12367	302374	8.00%	0.389%
135	12.162	12.138	12.199	VV	11483	389668	10.31%	0.501%
136	12.219	12.199	12.234	VV	12499	238938	6.32%	0.307%
137	12.271	12.234	12.301	VV	14076	496031	13.12%	0.638%
138	12.358	12.301	12.384	VV	17214	652260	17.25%	0.839%
139	12.432	12.384	12.450	VV	13054	479918	12.69%	0.617%
140	12.468	12.450	12.484	VV	13457	268045	7.09%	0.345%
141	12.515	12.484	12.561	VV	15703	639367	16.91%	0.822%
142	12.601	12.561	12.673	VV	15593	969764	25.65%	1.247%
143	12.682	12.673	12.688	VV	14113	122446	3.24%	0.157%
144	12.766	12.688	12.779	VV	15919	816354	21.59%	1.050%
145	12.784	12.779	12.792	VV	15263	116104	3.07%	0.149%
146	12.799	12.792	12.807	VV	15120	133832	3.54%	0.172%
147	12.826	12.807	12.836	VV	15535	268069	7.09%	0.345%
148	12.888	12.836	12.910	VV	16649	706398	18.68%	0.908%
149	12.943	12.910	12.995	VV	247265	3780693	100.00%	4.861%
150	13.005	12.995	13.021	VV	19280	303629	8.03%	0.390%
151	13.038	13.021	13.061	VV	21843	481811	12.74%	0.620%
152	13.107	13.061	13.131	VV	22377	861230	22.78%	1.107%
153	13.152	13.131	13.165	VV	22019	414052	10.95%	0.532%
154	13.188	13.165	13.214	VV	23089	633152	16.75%	0.814%
155	13.233	13.214	13.246	VV	20482	380990	10.08%	0.490%
156	13.268	13.246	13.281	VV	21566	440686	11.66%	0.567%
157	13.292	13.281	13.308	VV	21840	343120	9.08%	0.441%
158	13.383	13.308	13.395	VV	23759	1161719	30.73%	1.494%
159	13.411	13.395	13.455	VV	24795	817557	21.62%	1.051%
160	13.495	13.455	13.508	VV	22630	703357	18.60%	0.904%
161	13.541	13.508	13.571	VV	24082	875022	23.14%	1.125%
162	13.625	13.571	13.645	VV	24077	1030133	27.25%	1.325%
163	13.686	13.645	13.715	VV	26662	1035948	27.40%	1.332%
164	13.731	13.715	13.775	VV	26550	890843	23.56%	1.145%
165	13.784	13.775	13.794	VV	23795	263079	6.96%	0.338%
166	13.825	13.794	13.868	VV	24831	1080299	28.57%	1.389%
167	13.899	13.868	13.950	VV	29341	1255630	33.21%	1.615%
168	13.967	13.950	13.978	VV	24440	388525	10.28%	0.500%
169	14.003	13.978	14.019	VV	24603	589184	15.58%	0.758%
170	14.044	14.019	14.065	VV	24529	654404	17.31%	0.841%
171	14.070	14.065	14.081	VV	23981	237375	6.28%	0.305%
172	14.104	14.081	14.119	VV	26001	551778	14.59%	0.709%
173	14.139	14.119	14.171	VV	26715	777910	20.58%	1.000%
174	14.189	14.171	14.237	VV	26371	953128	25.21%	1.226%

175	14.261	14.237	14.317	VV	rteres 25331	1081029	28.59%	1.390%
176	14.355	14.317	14.368	VV	22823	677683	17.92%	0.871%
177	14.379	14.368	14.398	VV	21428	371243	9.82%	0.477%
178	14.421	14.398	14.448	VV	21530	619444	16.38%	0.797%
179	14.459	14.448	14.480	VV	20314	383061	10.13%	0.493%
180	14.496	14.480	14.518	VV	22238	467660	12.37%	0.601%
181	14.532	14.518	14.559	VV	20749	473239	12.52%	0.609%
182	14.595	14.559	14.619	VV	18830	643919	17.03%	0.828%
183	14.635	14.619	14.689	VV	17883	721579	19.09%	0.928%
184	14.711	14.689	14.751	VV	16975	591673	15.65%	0.761%
185	14.758	14.751	14.777	VV	15768	235359	6.23%	0.303%
186	14.792	14.777	14.814	VV	17422	348021	9.21%	0.447%
187	14.824	14.814	14.845	VV	14207	246821	6.53%	0.317%
188	14.855	14.845	14.885	VV	13724	303521	8.03%	0.390%
189	14.915	14.885	15.005	VV	12315	823216	21.77%	1.059%
190	15.023	15.005	15.058	VV	10321	320982	8.49%	0.413%
191	15.093	15.058	15.119	VV	10493	350936	9.28%	0.451%
192	15.124	15.119	15.181	VV	9572	320935	8.49%	0.413%
193	15.197	15.181	15.208	VV	8295	127347	3.37%	0.164%
194	15.228	15.208	15.252	VV	8458	205705	5.44%	0.265%
195	15.262	15.252	15.280	VV	7665	126926	3.36%	0.163%
196	15.307	15.280	15.362	VV	10106	376755	9.97%	0.484%
197	15.372	15.362	15.408	VV	6466	171822	4.54%	0.221%
198	15.432	15.408	15.459	VV	8046	203264	5.38%	0.261%
199	15.481	15.459	15.503	VV	6735	159132	4.21%	0.205%
200	15.520	15.503	15.541	VV	6728	140228	3.71%	0.180%
201	15.552	15.541	15.575	VV	6087	116196	3.07%	0.149%
202	15.616	15.575	15.649	VV	6182	249345	6.60%	0.321%
203	15.687	15.649	15.704	VV	5953	174261	4.61%	0.224%
204	15.712	15.704	15.728	VV	5241	70596	1.87%	0.091%
205	15.769	15.728	15.781	VV	5268	156743	4.15%	0.202%
206	15.808	15.781	15.843	VV	7523	228314	6.04%	0.294%
207	15.860	15.843	15.881	VV	5510	116115	3.07%	0.149%
208	15.897	15.881	15.914	VV	5119	95330	2.52%	0.123%
209	15.923	15.914	15.932	VV	5091	52495	1.39%	0.067%
210	16.000	15.932	16.043	VV	6450	365697	9.67%	0.470%
211	16.089	16.043	16.117	VV	6646	257729	6.82%	0.331%
212	16.132	16.117	16.214	VV	6346	343471	9.08%	0.442%
213	16.249	16.214	16.262	VV	6858	174773	4.62%	0.225%
214	16.288	16.262	16.318	VV	8860	238267	6.30%	0.306%
215	16.328	16.318	16.338	VV	6065	71259	1.88%	0.092%
216	16.379	16.338	16.387	VV	7153	188833	4.99%	0.243%
217	16.396	16.387	16.407	VV	7293	86979	2.30%	0.112%
218	16.421	16.407	16.442	VV	8480	165669	4.38%	0.213%
219	16.452	16.442	16.473	VV	8207	138557	3.66%	0.178%
220	16.495	16.473	16.508	VV	8026	158002	4.18%	0.203%
221	16.513	16.508	16.531	VV	8308	106425	2.81%	0.137%

					rteres			
222	16.547	16.531	16.569	VV	8373	170264	4.50%	0.219%
223	16.625	16.569	16.661	VV	8837	446422	11.81%	0.574%
224	16.722	16.661	16.730	VV	10223	358392	9.48%	0.461%
225	16.765	16.730	16.814	VV	14670	579208	15.32%	0.745%
226	16.849	16.814	16.868	VV	10402	318794	8.43%	0.410%
227	16.879	16.868	16.900	VV	9691	180504	4.77%	0.232%
228	16.929	16.900	16.945	VV	12040	286073	7.57%	0.368%
229	16.984	16.945	17.011	VV	14200	462481	12.23%	0.595%
230	17.058	17.011	17.104	VV	11115	550015	14.55%	0.707%
231	17.154	17.104	17.178	VV	12415	475325	12.57%	0.611%
232	17.203	17.178	17.255	VV	13182	506505	13.40%	0.651%
233	17.266	17.255	17.278	VV	10556	142990	3.78%	0.184%
234	17.303	17.278	17.339	VV	13003	405348	10.72%	0.521%
235	17.363	17.339	17.381	VV	10292	249990	6.61%	0.321%
236	17.392	17.381	17.415	VV	9810	185427	4.90%	0.238%
237	17.428	17.415	17.448	VV	9344	175165	4.63%	0.225%
238	17.476	17.448	17.498	VV	10703	287829	7.61%	0.370%
239	17.528	17.498	17.561	VV	13022	412651	10.91%	0.531%
240	17.568	17.561	17.585	VV	10379	142337	3.76%	0.183%
241	17.632	17.585	17.657	VV	15685	547695	14.49%	0.704%
242	17.670	17.657	17.688	VV	10995	194313	5.14%	0.250%
243	17.713	17.688	17.735	VV	16628	354356	9.37%	0.456%
244	17.769	17.735	17.858	VV	23421	1057963	27.98%	1.360%
245	17.870	17.858	17.885	VV	11157	167856	4.44%	0.216%
246	17.970	17.885	18.019	VV	13551	856486	22.65%	1.101%
247	18.057	18.019	18.094	VV	12852	479145	12.67%	0.616%
248	18.134	18.094	18.156	VV	21579	552204	14.61%	0.710%
249	18.165	18.156	18.185	VV	13162	213824	5.66%	0.275%
250	18.195	18.185	18.232	VV	11531	302719	8.01%	0.389%
251	18.251	18.232	18.268	VV	10701	221985	5.87%	0.285%
252	18.290	18.268	18.314	VV	11966	301893	7.99%	0.388%
253	18.338	18.314	18.403	VV	13746	584657	15.46%	0.752%
254	18.465	18.403	18.500	VV	13779	656911	17.38%	0.845%
255	18.555	18.500	18.578	VV	20581	649706	17.18%	0.835%
256	18.604	18.578	18.655	VV	18429	669138	17.70%	0.860%
257	18.695	18.655	18.714	VV	13538	447049	11.82%	0.575%
258	18.735	18.714	18.755	VV	13354	303771	8.03%	0.391%
259	18.765	18.755	18.801	VV	13152	349284	9.24%	0.449%
260	18.822	18.801	18.841	VV	12735	292265	7.73%	0.376%
261	18.885	18.841	18.922	VV	18828	727623	19.25%	0.936%
262	18.953	18.922	18.985	VV	17433	555757	14.70%	0.715%
263	18.992	18.985	19.009	VV	13590	195640	5.17%	0.252%
264	19.033	19.009	19.051	VV	15504	357847	9.47%	0.460%
265	19.068	19.051	19.085	VV	15192	290117	7.67%	0.373%
266	19.114	19.085	19.139	VV	16436	495530	13.11%	0.637%
267	19.149	19.139	19.161	VV	15511	205995	5.45%	0.265%
268	19.169	19.161	19.178	VV	15645	154916	4.10%	0.199%
269	19.192	19.178	19.202	VV	15828	225398	5.96%	0.290%

					rteres			
270	19.264	19.202	19.314	VV	21821	1183567	31.31%	1.522%
271	19.361	19.314	19.388	VV	20168	801822	21.21%	1.031%
272	19.409	19.388	19.435	VV	18570	508891	13.46%	0.654%
273	19.458	19.435	19.488	VV	20122	613641	16.23%	0.789%
274	19.530	19.488	19.554	VV	20181	761787	20.15%	0.980%
275	19.582	19.554	19.598	VV	20876	532738	14.09%	0.685%
276	19.625	19.598	19.635	VV	22119	464454	12.28%	0.597%
277	19.657	19.635	19.695	VV	23664	796464	21.07%	1.024%
278	19.730	19.695	19.740	VV	22300	596988	15.79%	0.768%
279	19.773	19.740	19.807	VV	25006	947333	25.06%	1.218%
280	19.896	19.807	19.906	VV	25798	1439591	38.08%	1.851%
281	19.915	19.906	19.930	VV	24909	363635	9.62%	0.468%
					Sum of corrected areas:		77770266	

Aliphatic EPH 102823.M Thu Nov 09 03:35:30 2023

CALIBRATION SUMMARY

Initial Calibration Report for SequenceID : FC102823AL

AreaCount

Parameter Range	FC064937.D	FC064938.D	FC064939.D	FC064940.D	FC064941.D	
Aliphatic C9-C12	52899943.000	26115406.000	11884224.000	5997498.000	3083241.000	
Aliphatic C12-C16	35159776.000	17391285.000	7856026.000	3968434.000	1997483.000	
Aliphatic C16-C21	49863891.000	24975646.000	11265008.000	5791628.000	2899148.000	
Aliphatic C21-C28	59063975.000	29904099.000	13639476.000	6988011.000	3535962.000	
Aliphatic C28-C40	80569418.000	41297731.000	18935333.000	9798155.000	5101387.000	
Aliphatic EPH	277557003.000	139684167.000	63580067.000	32543726.000	16617221.000	

AVG Response Factor

Parameter Range	AVG RF	% RSD				
Aliphatic C9-C12	190794.4499998	7.603				
Aliphatic C12-C16	188856.476	6.806				
Aliphatic C16-C21	181359.6419996	7.649				
Aliphatic C21-C28	163834.4515	8.616				
Aliphatic C28-C40	152616.9449996	10.384				
Aliphatic EPH	170289.7057774	8.523				

Concentration

Parameter Range	FC064937.D	FC064938.D	FC064939.D	FC064940.D	FC064941.D	
Aliphatic C9-C12	300.000	150.000	60.000	30.000	15.000	
Aliphatic C12-C16	200.000	100.000	40.000	20.000	10.000	
Aliphatic C16-C21	300.000	150.000	60.000	30.000	15.000	
Aliphatic C21-C28	400.000	200.000	80.000	40.000	20.000	
Aliphatic C28-C40	600.000	300.000	120.000	60.000	30.000	
Aliphatic EPH	1800.000	900.000	360.000	180.000	90.000	

Response Factor

Parameter Range	FC064937.D	FC064938.D	FC064939.D	FC064940.D	FC064941.D	
Aliphatic C9-C12	176333.143333	174102.706666	198070.400000	199916.600000	205549.400000	
Aliphatic C12-C16	175798.880000	173912.850000	196400.650000	198421.700000	199748.300000	
Aliphatic C16-C21	166212.970000	166504.306666	187750.133333	193054.266666	193276.533333	
Aliphatic C21-C28	147659.937500	149520.495000	170493.450000	174700.275000	176798.100000	
Aliphatic C28-C40	134282.363333	137659.103333	157794.441666	163302.583333	170046.233333	



284 Sheffield Street, Mountainside, New Jersey 07092 Phone : 908 789 8900 Fax : 908 789 8922

Initial Calibration Report for SequenceID : FC102823AL

Aliphatic EPH	154198.335000	155204.630000	176611.297222	180798.477777	184635.788888	
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Initial Calibration Report for SequenceID : FD102723AR

AreaCount

Parameter Range	FD046794.D	FD046795.D	FD046796.D	FD046797.D	FD046798.D	
Aromatic C10-C12	35141278.000	18095173.000	7951699.000	4137135.000	2211143.000	
Aromatic C12-C16	52673601.000	26984555.000	11788474.000	6101200.000	3190101.000	
Aromatic C16-C21	65864998.000	33243577.000	14272519.000	7220355.000	3693279.000	
Aromatic C21-C36	121049761.000	61092446.000	26388828.000	13572229.000	7072710.000	
Aromatic EPH	274729638.000	139415751.000	60401520.000	31030919.000	16167233.000	

AVG Response Factor

Parameter Range	AVG RF	% RSD				
Aromatic C10-C12	196684.329	9.486				
Aromatic C12-C16	193599.4006664	8.085				
Aromatic C16-C21	174891.9385	5.108				
Aromatic C21-C36	144967.8406664	6.723				
Aromatic EPH	165469.1766664	6.96				

Concentration

Parameter Range	FD046794.D	FD046795.D	FD046796.D	FD046797.D	FD046798.D	
Aromatic C10-C12	200.000	100.000	40.000	20.000	10.000	
Aromatic C12-C16	300.000	150.000	60.000	30.000	15.000	
Aromatic C16-C21	400.000	200.000	80.000	40.000	20.000	
Aromatic C21-C36	900.000	450.000	180.000	90.000	45.000	
Aromatic EPH	1800.000	900.000	360.000	180.000	90.000	

Response Factor

Parameter Range	FD046794.D	FD046795.D	FD046796.D	FD046797.D	FD046798.D	
Aromatic C10-C12	175706.390000	180951.730000	198792.475000	206856.750000	221114.300000	
Aromatic C12-C16	175578.670000	179897.033333	196474.566666	203373.333333	212673.400000	
Aromatic C16-C21	164662.495000	166217.885000	178406.487500	180508.875000	184663.950000	
Aromatic C21-C36	134499.734444	135760.991111	146604.600000	150802.544444	157171.333333	
Aromatic EPH	152627.576666	154906.390000	167782.000000	172393.994444	179635.922222	



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Continuing Calibration Report for SequenceID : FC110723AL

Parameter	AreaCount	Conc.	RT_Min	RT_Max	Response Factor	AVGRF	%DEV
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File ID : FC065037.D

Aliphatic C9-C12	11419136.000	60.000	3.211	6.483	190318.933	190794.450	0.249
Aliphatic C12-C16	7505684.000	40.000	6.484	9.865	187642.100	188856.476	0.643
Aliphatic C16-C21	10583830.000	60.000	9.866	13.214	176397.167	181359.642	2.736
Aliphatic C21-C28	12712462.000	80.000	13.215	16.858	158905.775	163834.452	3.008
Aliphatic C28-C40	18660728.000	120.000	16.859	21.689	155506.067	152616.945	-1.893
Aliphatic EPH	60881840.000	360.000	3.211	21.689	169116.222	170289.706	0.689



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Lab Sample ID:	20 PPM ALIPHATIC HC 9	Acq On:	07 Nov 2023 19:24
Client Sample ID:		Operator:	YP/AJ
Data file:	FC065037.D	Misc:	
Instrument:	FID_C	ALS Vial:	6
Dilution Factor:	1	Sample Multiplier:	1.00

Compound	R.T.		Response	Conc	Units
Aliphatic C9-C12	3.211	6.483	11419136.000	60.000	ug/ml
Aliphatic C12-C16	6.484	9.865	7505684.000	40.000	ug/ml
Aliphatic C16-C21	9.866	13.214	10583830.000	60.000	ug/ml
Aliphatic C21-C28	13.215	16.858	12712462.000	80.000	ug/ml
Aliphatic C28-C40	16.859	21.689	18660728.000	120.000	ug/ml
Aliphatic EPH	3.211	21.689	60881840.000	360.000	ug/ml

Data Path : Z:\pestpcbsrv\HPCHEM1\FID_C\Data\F110723AL\
 Data File : FC065037.D
 Signal(s) : FID1A.ch
 Acq On : 07 Nov 2023 19:24
 Operator : YP/AJ
 Sample : 20 PPM ALIPHATIC HC STD
 Misc :
 ALS Vial : 6 Sample Multiplier: 1

Instrument :
 FID_C
 ClientSampleId :
 20 PPM ALIPHATIC HC STD

Manual Integrations
 APPROVED

Reviewed By :Yogesh Patel 11/08/2023
 Supervised By :Ankita Jodhani 11/08/2023

Integration File: autoint1.e
 Quant Time: Nov 07 22:03:03 2023
 Quant Method : Z:\pestpcbsrv\HPCHEM1\FID_C\Method\Aliphatic EPH 102823.M
 Quant Title : GC Extractables
 QLast Update : Sat Oct 28 02:12:00 2023
 Response via : Initial Calibration
 Integrator: ChemStation

Volume Inj. : 1 ul
 Signal Phase : Rxi-1ms
 Signal Info : 20M x 0.18mm x 0.18um

Compound	R.T.	Response	Conc Units

System Monitoring Compounds			
9) S ortho-Terphenyl (SURR)	11.514	4272132	19.411 ug/ml
Spiked Amount 50.000		Recovery =	38.82%
12) S 1-chlorooctadecane (S...	12.947	3087980	19.534 ug/ml
Spiked Amount 50.000		Recovery =	39.07%
Target Compounds			
1) T n-Nonane (C9)	3.311	3763756	19.907 ug/ml
2) T n-Decane (C10)	4.372	3810106	20.038 ug/ml
3) T A~Naphthalene (C11.7)	5.953	3932027	20.365 ug/ml
4) T n-Dodecane (C12)	6.383	3845274	19.906 ug/ml
5) T A~2-methylnaphthalene...	7.007	3755694	20.438 ug/ml
6) T n-Tetradecane (C14)	8.171	3751536	19.882 ug/ml
7) T n-Hexadecane (C16)	9.765	3754148	19.861 ug/ml
8) T n-Octadecane (C18)	11.201	3690547	19.555 ug/ml
10) T n-Eicosane (C20)	12.504	3494106	19.435 ug/ml
11) T n-Heneicosane (C21)	13.114	3399177	19.361 ug/ml
13) T n-Docosane (C22)	13.697	3325384	19.359 ug/ml
14) T n-Tetracosane (C24)	14.795	3217026	19.315 ug/ml
15) T n-Hexacosane (C26)	15.812	3107642	19.361 ug/ml
16) T n-Octacosane (C28)	16.758	3062410	19.568 ug/ml
17) T n-Tricontane (C30)	17.643	3147943	19.874 ug/ml
18) T n-Dotriacontane (C32)	18.471	3142134	19.900 ug/ml
19) T n-Tetratriacontane (C34)	19.251	3036143	19.891 ug/mlm
20) T n-Hexatriacontane (C36)	19.989	3007084	19.930 ug/ml
21) T n-Octatriacontane (C38)	20.710	3199902	21.502 ug/ml
22) T n-Tetracontane (C40)	21.589	3127522	21.264 ug/ml

(f)=RT Delta > 1/2 Window

(m)=manual int.

Data Path : Z:\pestpcbsrv\HPCHEM1\FID_C\Data\FC110723AL\
Data File : FC065037.D
Signal(s) : FID1A.ch
Acq On : 07 Nov 2023 19:24
Operator : YP/AJ
Sample : 20 PPM ALIPHATIC HC STD
Misc :
ALS Vial : 6 Sample Multiplier: 1

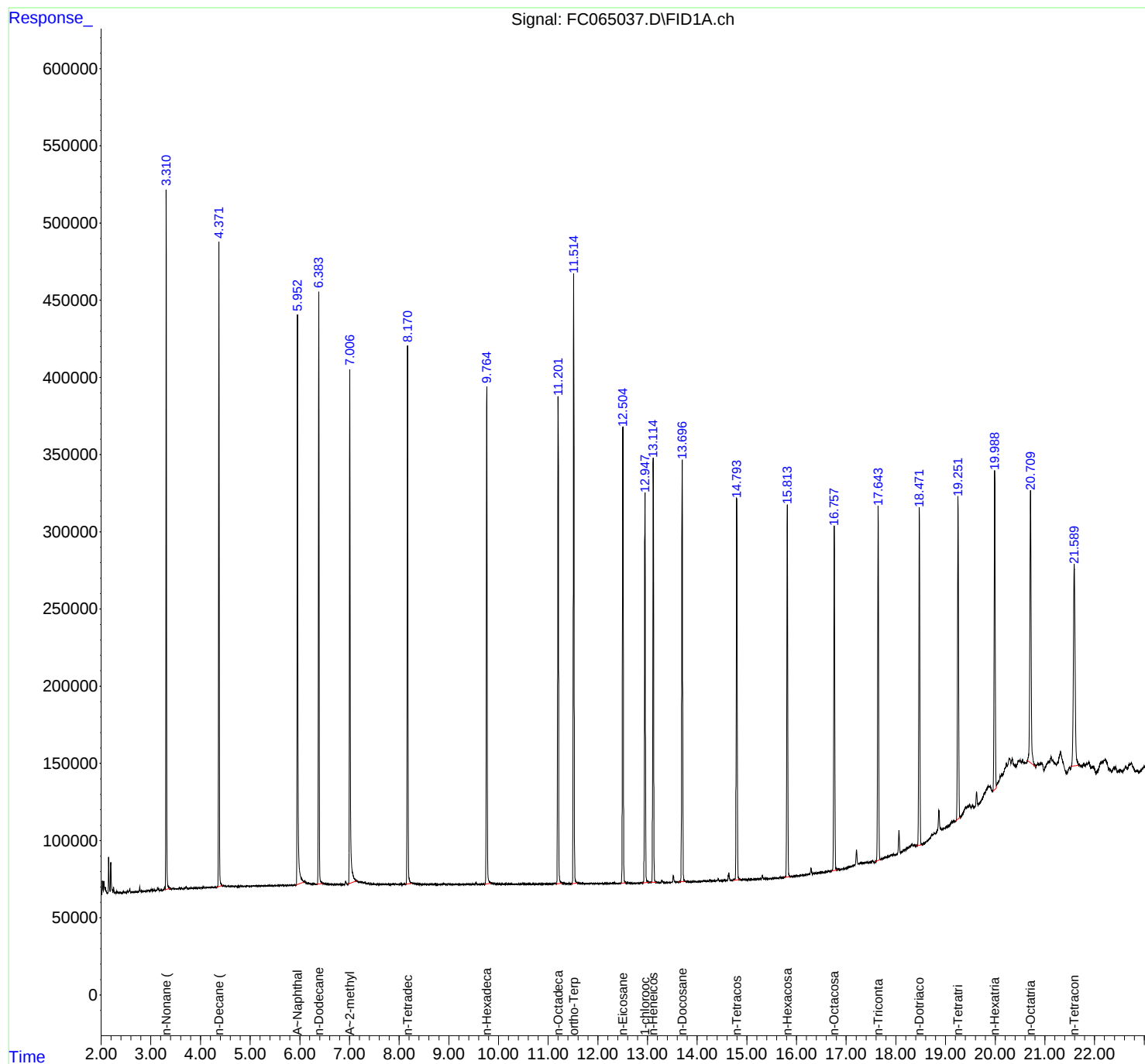
Instrument :
FID_C
ClientSampleId :
20 PPM ALIPHATIC HC STD

Manual Integrations
APPROVED

Reviewed By :Yogesh Patel 11/08/2023
Supervised By :Ankita Jodhani 11/08/2023

Integration File: autoint1.e
Quant Time: Nov 07 22:03:03 2023
Quant Method : Z:\pestpcbsrv\HPCHEM1\FID_C\Method\Aliphatic EPH 102823.M
Quant Title : GC Extractables
QLast Update : Sat Oct 28 02:12:00 2023
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. : 1 ul
Signal Phase : Rxi-1ms
Signal Info : 20M x 0.18mm x 0.18um



Instrument :
FID_C
LabSampleId :
20 PPM ALIPHATIC HC STD

Area Percent Report

Manual IntegrationsAPPROVED

Reviewed By :Yogesh Patel 11/08/2023
Supervised By :Ankita Jodhani 11/08/2023

rteres

Data Path : Z:\pestpcbsrv\HPCHEM1\FID_C\Data\FC
Data File : FC065037.D
Signal(s) : FID1A.ch
Acq On : 07 Nov 2023 19:24
Sample : 20 PPM ALIPHATIC HC STD
Misc :
ALS Vial : 6 Sample Multiplier: 1

Integration File: autoint1.e

Method : Z:\pestpcbsrv\HPCHEM1\FID_C\Method\Aliphatic EPH 102823.M
Title : GC Extractables

Signal : FID1A.ch

peak #	R.T. min	Start min	End min	PK TY	peak height	peak area	peak % max.	% of total
1	3.311	3.288	3.388	VB	452419	3763756	88.10%	4.959%
2	4.372	4.327	4.445	BB	417301	3810106	89.19%	5.020%
3	5.953	5.913	6.085	BB	367820	3932027	92.04%	5.181%
4	6.383	6.333	6.461	BB	383599	3845274	90.01%	5.066%
5	7.007	6.964	7.138	BB	331974	3755694	87.91%	4.948%
6	8.171	8.121	8.248	BB	348517	3751536	87.81%	4.943%
7	9.765	9.718	9.853	BB	321663	3754148	87.88%	4.946%
8	11.201	11.154	11.278	BB	315382	3690547	86.39%	4.863%
9	11.514	11.470	11.591	BB	394635	4272132	100.00%	5.629%
10	12.504	12.454	12.568	BB	295493	3494106	81.79%	4.604%
11	12.947	12.894	13.022	BB	252561	3087980	72.28%	4.069%
12	13.114	13.058	13.177	BB	274638	3399177	79.57%	4.479%
13	13.697	13.621	13.759	BB	273147	3325384	77.84%	4.381%
14	14.795	14.724	14.865	BB	246880	3217026	75.30%	4.239%
15	15.812	15.758	15.876	BB	239860	3107642	72.74%	4.095%
16	16.758	16.701	16.822	BB	221604	3062410	71.68%	4.035%
17	17.643	17.583	17.688	BV	229633	3147943	73.69%	4.148%
18	18.471	18.416	18.510	BB	218860	3142134	73.55%	4.140%
19	19.251	19.204	19.301	M	209353	3047988	71.35%	4.016%
20	19.988	19.951	20.024	M	205790	2962306	69.34%	3.903%
21	20.710	20.650	20.822	BV	175873	3199902	74.90%	4.216%
22	21.589	21.530	21.682	BV	130843	3127522	73.21%	4.121%
Sum of corrected areas:						75896740		

Aliphatic EPH 102823.M Tue Nov 07 23:47:57 2023



284 Sheffield Street, Mountainside NJ 07092 (908)-789-8900 Fax : 908 789 8922

Continuing Calibration Report for SequenceID : FC110723AL

Parameter	AreaCount	Conc.	RT_Min	RT_Max	Response Factor	AVGRF	%DEV
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File ID : FC065057.D

Aliphatic C9-C12	11973745.000	60.000	3.211	6.483	199562.417	190794.450	-4.596
Aliphatic C12-C16	7732592.000	40.000	6.484	9.865	193314.800	188856.476	-2.361
Aliphatic C16-C21	10770619.000	60.000	9.866	13.214	179510.317	181359.642	1.020
Aliphatic C21-C28	12900481.000	80.000	13.215	16.858	161256.013	163834.452	1.574
Aliphatic C28-C40	18438248.000	120.000	16.859	21.689	153652.067	152616.945	-0.678
Aliphatic EPH	61815685.000	360.000	3.211	21.689	171710.236	170289.706	-0.834



284 Sheffield Street, Mountainside NJ 07092 (908)-789-8900 Fax : 908 789 8922

Lab Sample ID: 20 PPM ALIPHATIC HC 9 Acq On: 08 Nov 2023 08:29
Client Sample ID: Operator: YP/AJ
Data file: FC065057.D Misc:
Instrument: FID_C ALS Vial: 6
Dilution Factor: 1 Sample Multiplier: 1.00

Compound	R.T.		Response	Conc	Units
Aliphatic C9-C12	3.211	6.483	11973745.000	60.000	ug/ml
Aliphatic C12-C16	6.484	9.865	7732592.000	40.000	ug/ml
Aliphatic C16-C21	9.866	13.214	10770619.000	60.000	ug/ml
Aliphatic C21-C28	13.215	16.858	12900481.000	80.000	ug/ml
Aliphatic C28-C40	16.859	21.689	18438248.000	120.000	ug/ml
Aliphatic EPH	3.211	21.689	61815685.000	360.000	ug/ml

Data Path : Z:\pestpcbsrv\HPCHEM1\FID_C\Data\F110723AL\
 Data File : FC065057.D
 Signal(s) : FID1A.ch
 Acq On : 08 Nov 2023 08:29
 Operator : YP/AJ
 Sample : 20 PPM ALIPHATIC HC STD
 Misc :
 ALS Vial : 6 Sample Multiplier: 1

Instrument :
 FID_C
 ClientSampleId :
 20 PPM ALIPHATIC HC STD

Integration File: autoint1.e
 Quant Time: Nov 08 10:23:00 2023
 Quant Method : Z:\pestpcbsrv\HPCHEM1\FID_C\Method\Aliphatic EPH 102823.M
 Quant Title : GC Extractables
 QLast Update : Sat Oct 28 02:12:00 2023
 Response via : Initial Calibration
 Integrator: ChemStation

Volume Inj. : 1 ul
 Signal Phase : Rxi-1ms
 Signal Info : 20M x 0.18mm x 0.18um

Compound	R.T.	Response	Conc Units

System Monitoring Compounds			
9) S ortho-Terphenyl (SURR)	11.511	4338430	19.713 ug/ml
Spiked Amount 50.000		Recovery =	39.43%
12) S 1-chlorooctadecane (S...	12.943	3125510	19.771 ug/ml
Spiked Amount 50.000		Recovery =	39.54%
Target Compounds			
1) T n-Nonane (C9)	3.309	3957280	20.931 ug/ml
2) T n-Decane (C10)	4.369	3999941	21.036 ug/ml
3) T A~Naphthalene (C11.7)	5.949	4054816	21.001 ug/ml
4) T n-Dodecane (C12)	6.379	4016524	20.792 ug/ml
5) T A~2-methylnaphthalene...	7.003	3891145	21.175 ug/ml
6) T n-Tetradecane (C14)	8.168	3883739	20.583 ug/ml
7) T n-Hexadecane (C16)	9.762	3848853	20.362 ug/ml
8) T n-Octadecane (C18)	11.197	3768165	19.966 ug/ml
10) T n-Eicosane (C20)	12.501	3547075	19.730 ug/ml
11) T n-Heneicosane (C21)	13.110	3455379	19.681 ug/ml
13) T n-Docosane (C22)	13.693	3382989	19.695 ug/ml
14) T n-Tetracosane (C24)	14.791	3265895	19.608 ug/ml
15) T n-Hexacosane (C26)	15.806	3145932	19.600 ug/ml
16) T n-Octacosane (C28)	16.752	3105665	19.844 ug/ml
17) T n-Tricontane (C30)	17.637	3199022	20.197 ug/ml
18) T n-Dotriacontane (C32)	18.465	3208982	20.324 ug/ml
19) T n-Tetratriacontane (C34)	19.245	3093669	20.268 ug/ml
20) T n-Hexatriacontane (C36)	19.983	2996222	19.858 ug/ml
21) T n-Octatriacontane (C38)	20.700	2973765	19.983 ug/ml
22) T n-Tetracontane (C40)	21.583	2966588	20.170 ug/ml

(f)=RT Delta > 1/2 Window

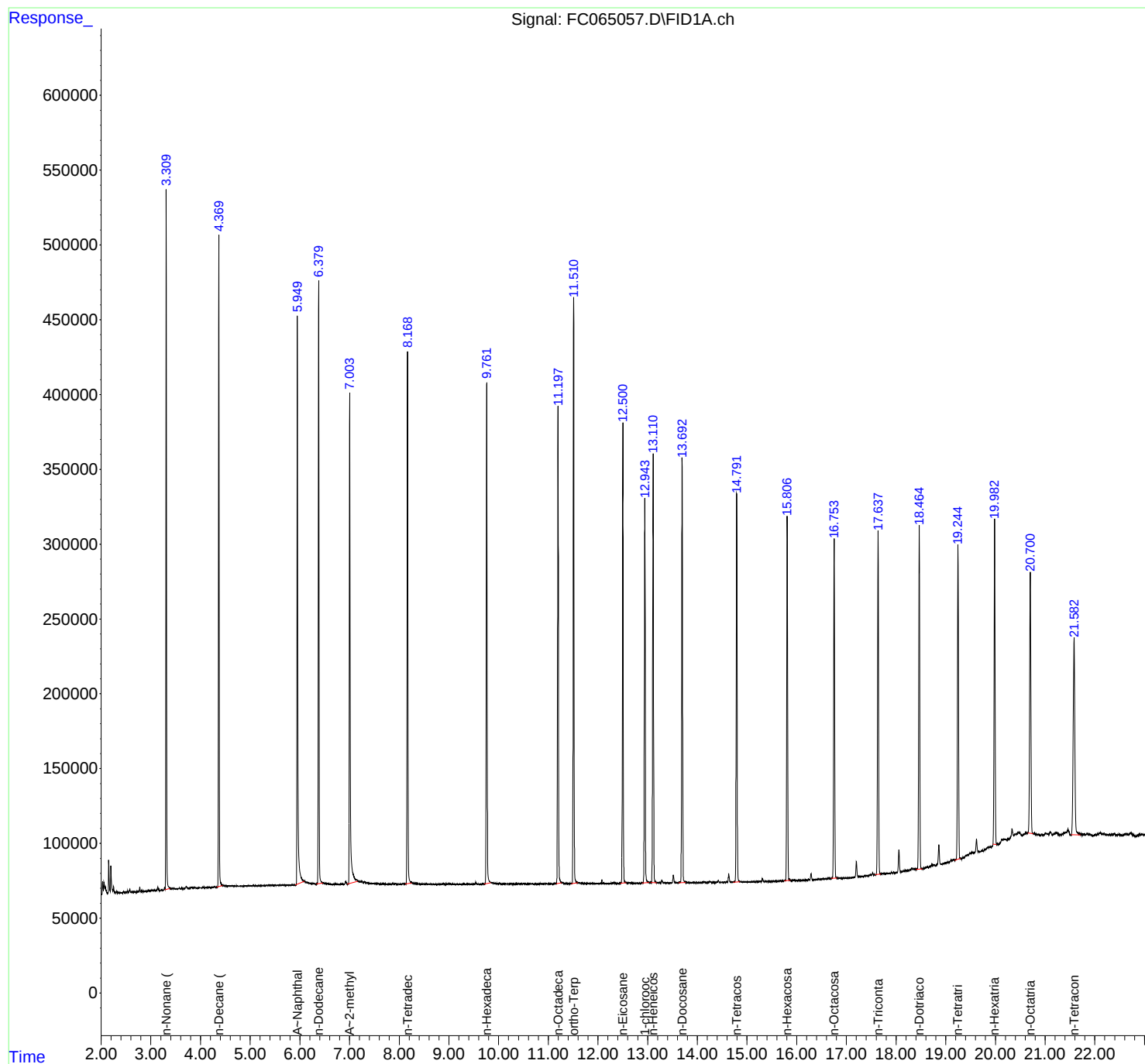
(m)=manual int.

Data Path : Z:\pestpcbsrv\HPCHEM1\FID_C\Data\FC110723AL\
Data File : FC065057.D
Signal(s) : FID1A.ch
Acq On : 08 Nov 2023 08:29
Operator : YP/AJ
Sample : 20 PPM ALIPHATIC HC STD
Misc :
ALS Vial : 6 Sample Multiplier: 1

Instrument :
FID_C
ClientSampleId :
20 PPM ALIPHATIC HC STD

Integration File: autoint1.e
Quant Time: Nov 08 10:23:00 2023
Quant Method : Z:\pestpcbsrv\HPCHEM1\FID_C\Method\Aliphatic EPH 102823.M
Quant Title : GC Extractables
QLast Update : Sat Oct 28 02:12:00 2023
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. : 1 ul
Signal Phase : Rxi-1ms
Signal Info : 20M x 0.18mm x 0.18um



rteres

Area Percent Report

Data Path : Z:\pestpcbsrv\HPCHEM1\FID_C\Data\FC110723AL\
Data File : FC065057.D
Signal(s) : FID1A.ch
Acq On : 08 Nov 2023 08:29
Sample : 20 PPM ALIPHATIC HC STD
Misc :
ALS Vial : 6 Sample Multiplier: 1

Integration File: autoint1.e

Method : Z:\pestpcbsrv\HPCHEM1\FID_C\Method\Aliphatic EPH 102823.M
Title : GC Extractables

Signal : FID1A.ch

peak #	R.T. min	Start min	End min	PK TY	peak height	peak area	peak % max.	% of total
1	3.310	3.288	3.387	VB	467217	3957280	91.21%	5.124%
2	4.369	4.324	4.447	BB	435134	3999941	92.20%	5.180%
3	5.949	5.908	6.091	BB	380170	4054816	93.46%	5.251%
4	6.379	6.329	6.464	BB	403127	4016524	92.58%	5.201%
5	7.003	6.959	7.166	BB	327643	3891145	89.69%	5.039%
6	8.168	8.116	8.254	BB	355664	3883739	89.52%	5.029%
7	9.762	9.712	9.844	BB	334618	3848853	88.72%	4.984%
8	11.197	11.159	11.270	BB	319471	3768165	86.86%	4.879%
9	11.511	11.463	11.589	BB	391505	4338430	100.00%	5.618%
10	12.501	12.447	12.562	BB	307495	3547075	81.76%	4.593%
11	12.943	12.893	13.021	BB	257088	3125510	72.04%	4.047%
12	13.110	13.055	13.178	BB	286831	3455379	79.65%	4.474%
13	13.693	13.619	13.763	BB	283604	3382989	77.98%	4.381%
14	14.791	14.721	14.860	BB	259886	3265895	75.28%	4.229%
15	15.806	15.758	15.865	BB	243278	3145932	72.51%	4.074%
16	16.752	16.701	16.816	BB	225792	3105665	71.58%	4.022%
17	17.637	17.579	17.687	BB	229058	3199022	73.74%	4.142%
18	18.465	18.401	18.523	BB	229377	3208982	73.97%	4.155%
19	19.245	19.186	19.289	BB	210128	3093669	71.31%	4.006%
20	19.983	19.950	20.021	BV	216325	2996222	69.06%	3.880%
21	20.700	20.650	20.760	BV	173905	2973765	68.54%	3.851%
22	21.583	21.530	21.712	BB	131851	2966588	68.38%	3.841%
Sum of corrected areas:						77225584		

Aliphatic EPH 102823.M Wed Nov 08 10:25:04 2023



284 Sheffield Street, Mountainside NJ 07092 (908)-789-8900 Fax : 908 789 8922

Continuing Calibration Report for SequenceID : FC110823AL

Parameter	AreaCount	Conc.	RT_Min	RT_Max	Response Factor	AVGRF	%DEV
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File ID : FC065060.D

Aliphatic C9-C12	12192589.000	60.000	3.210	6.479	203209.817	190794.450	-6.507
Aliphatic C12-C16	7855125.000	40.000	6.480	9.862	196378.125	188856.476	-3.983
Aliphatic C16-C21	10932343.000	60.000	9.863	13.209	182205.717	181359.642	-0.467
Aliphatic C21-C28	13078488.000	80.000	13.210	16.852	163481.100	163834.452	0.216
Aliphatic C28-C40	18666955.000	120.000	16.853	21.679	155557.958	152616.945	-1.927
Aliphatic EPH	62725500.000	360.000	3.210	21.679	174237.500	170289.706	-2.318



284 Sheffield Street, Mountainside NJ 07092 (908)-789-8900 Fax : 908 789 8922

Lab Sample ID:	20 PPM ALIPHATIC HC 9	Acq On:	08 Nov 2023 10:21
Client Sample ID:		Operator:	YP/AJ
Data file:	FC065060.D	Misc:	
Instrument:	FID_C	ALS Vial:	6
Dilution Factor:	1	Sample Multiplier:	1.00

Compound	R.T.		Response	Conc	Units
Aliphatic C9-C12	3.210	6.479	12192589.000	60.000	ug/ml
Aliphatic C12-C16	6.480	9.862	7855125.000	40.000	ug/ml
Aliphatic C16-C21	9.863	13.209	10932343.000	60.000	ug/ml
Aliphatic C21-C28	13.210	16.852	13078488.000	80.000	ug/ml
Aliphatic C28-C40	16.853	21.679	18666955.000	120.000	ug/ml
Aliphatic EPH	3.210	21.679	62725500.000	360.000	ug/ml

Data Path : Z:\pestpcbsrv\HPCHEM1\FID_C\Data\F110823AL\
 Data File : FC065060.D
 Signal(s) : FID1A.ch
 Acq On : 08 Nov 2023 10:21
 Operator : YP/AJ
 Sample : 20 PPM ALIPHATIC HC STD
 Misc :
 ALS Vial : 6 Sample Multiplier: 1

Instrument :
 FID_C
 ClientSampleId :
 20 PPM ALIPHATIC HC STD

Manual Integrations
 APPROVED

Reviewed By :Yogesh Patel 11/09/2023
 Supervised By :Ankita Jodhani 11/09/2023

Integration File: autoint1.e
 Quant Time: Nov 08 23:07:27 2023
 Quant Method : Z:\pestpcbsrv\HPCHEM1\FID_C\Method\Aliphatic EPH 102823.M
 Quant Title : GC Extractables
 QLast Update : Sat Oct 28 02:12:00 2023
 Response via : Initial Calibration
 Integrator: ChemStation

Volume Inj. : 1 ul
 Signal Phase : Rxi-1ms
 Signal Info : 20M x 0.18mm x 0.18um

Compound	R.T.	Response	Conc Units

System Monitoring Compounds			
9) S ortho-Terphenyl (SURR)	11.510	4393917	19.965 ug/ml
Spiked Amount 50.000		Recovery =	39.93%
12) S 1-chlorooctadecane (S...	12.941	3164507	20.018 ug/ml
Spiked Amount 50.000		Recovery =	40.04%
Target Compounds			
1) T n-Nonane (C9)	3.310	4036478	21.350 ug/ml
2) T n-Decane (C10)	4.369	4075040	21.431 ug/ml
3) T A~Naphthalene (C11.7)	5.950	4111645	21.296 ug/ml
4) T n-Dodecane (C12)	6.379	4081071	21.126 ug/ml
5) T A~2-methylnaphthalene...	7.004	3899817	21.222 ug/ml
6) T n-Tetradecane (C14)	8.168	3944744	20.906 ug/ml
7) T n-Hexadecane (C16)	9.762	3910381	20.687 ug/ml
8) T n-Octadecane (C18)	11.196	3832438	20.307 ug/ml
10) T n-Eicosane (C20)	12.499	3597043	20.008 ug/ml
11) T n-Heneicosane (C21)	13.109	3502862	19.951 ug/ml
13) T n-Docosane (C22)	13.692	3421210	19.917 ug/ml
14) T n-Tetracosane (C24)	14.789	3310013	19.873 ug/ml
15) T n-Hexacosane (C26)	15.807	3194076	19.900 ug/ml
16) T n-Octacosane (C28)	16.752	3153189	20.148 ug/ml
17) T n-Tricontane (C30)	17.636	3247671	20.504 ug/ml
18) T n-Dotriacontane (C32)	18.464	3247397	20.567 ug/ml
19) T n-Tetratriacontane (C34)	19.244	3140110	20.572 ug/ml
20) T n-Hexatriacontane (C36)	19.980	3073023	20.367 ug/mlm
21) T n-Octatriacontane (C38)	20.700	3015307	20.262 ug/ml
22) T n-Tetracontane (C40)	21.579	2943447	20.013 ug/ml

(f)=RT Delta > 1/2 Window

(m)=manual int.

Data Path : Z:\pestpcbsrv\HPCHEM1\FID_C\Data\FC110823AL\
Data File : FC065060.D
Signal(s) : FID1A.ch
Acq On : 08 Nov 2023 10:21
Operator : YP/AJ
Sample : 20 PPM ALIPHATIC HC STD
Misc :
ALS Vial : 6 Sample Multiplier: 1

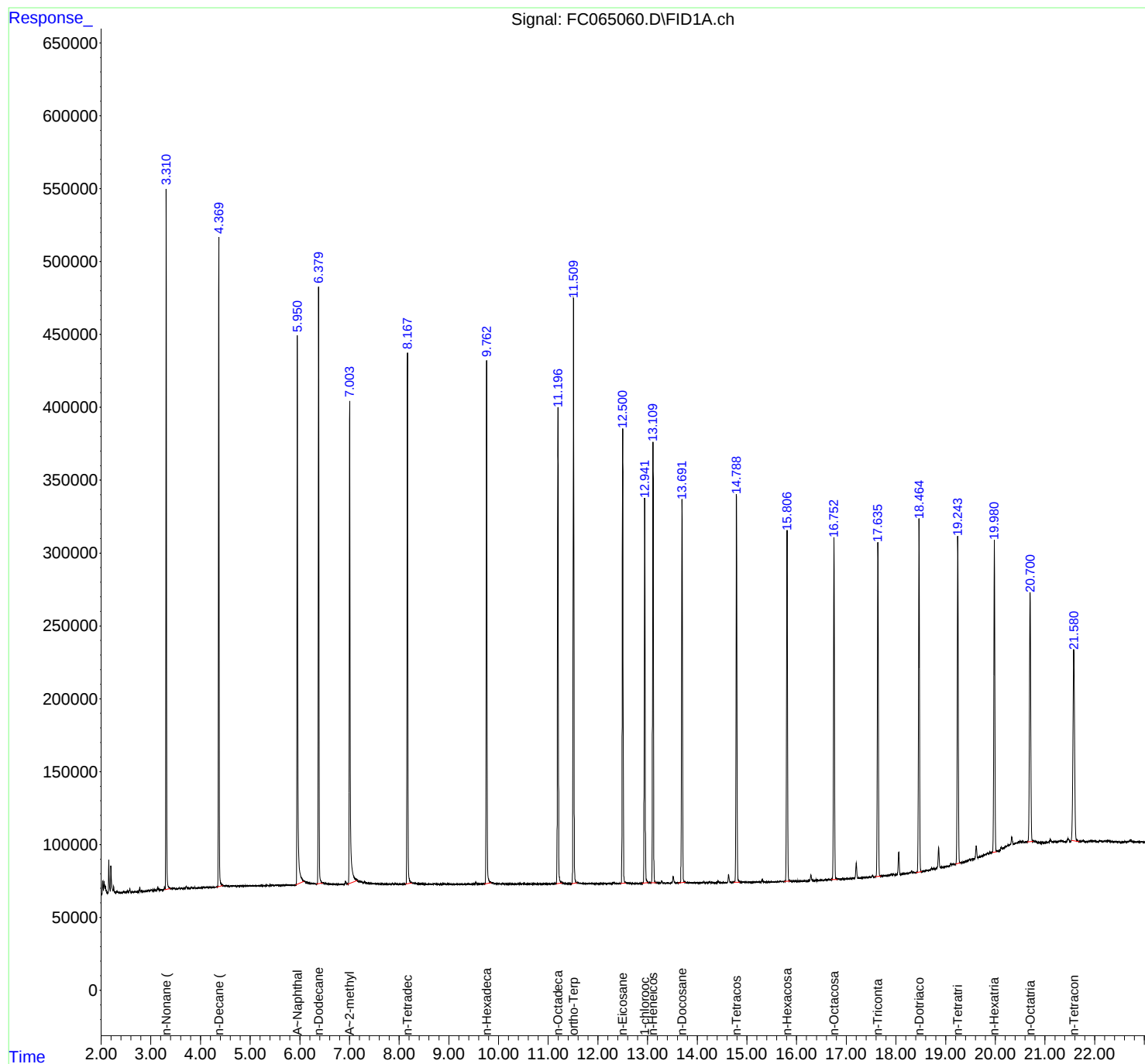
Instrument :
FID_C
ClientSampleId :
20 PPM ALIPHATIC HC STD

Manual Integrations
APPROVED

Reviewed By :Yogesh Patel 11/09/2023
Supervised By :Ankita Jodhani 11/09/2023

Integration File: autoint1.e
Quant Time: Nov 08 23:07:27 2023
Quant Method : Z:\pestpcbsrv\HPCHEM1\FID_C\Method\Aliphatic EPH 102823.M
Quant Title : GC Extractables
QLast Update : Sat Oct 28 02:12:00 2023
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. : 1 ul
Signal Phase : Rxi-1ms
Signal Info : 20M x 0.18mm x 0.18um



Instrument :
FID_C
LabSampleId :
20 PPM ALIPHATIC HC STD

rtres

Area Percent Report

Manual IntegrationsAPPROVED

Data Path : Z:\pestpcbsrv\HPCHEM1\FID_C\Data\F0
Data File : FC065060.D
Signal(s) : FID1A.ch
Acq On : 08 Nov 2023 10:21
Sample : 20 PPM ALIPHATIC HC STD
Misc :
ALS Vial : 6 Sample Multiplier: 1

Reviewed By :Yogesh Patel 11/09/2023
Supervised By :Ankita Jodhani 11/09/2023

Integration File: autoint1.e

Method : Z:\pestpcbsrv\HPCHEM1\FID_C\Method\Aliphatic EPH 102823.M
Title : GC Extractables

Signal : FID1A.ch

peak #	R.T. min	Start min	End min	PK TY	peak height	peak area	peak % max.	% of total
1	3.310	3.289	3.393	VB	480150	4036478	91.87%	5.160%
2	4.369	4.327	4.452	BB	445417	4075040	92.74%	5.209%
3	5.950	5.912	6.088	BB	376441	4111645	93.58%	5.256%
4	6.379	6.334	6.463	BB	408836	4081071	92.88%	5.217%
5	7.004	6.962	7.154	BB	330673	3899817	88.75%	4.985%
6	8.168	8.122	8.255	BB	364025	3944744	89.78%	5.042%
7	9.762	9.711	9.853	BB	357859	3910381	89.00%	4.999%
8	11.196	11.163	11.277	BB	326240	3832438	87.22%	4.899%
9	11.510	11.466	11.586	BB	399741	4393917	100.00%	5.617%
10	12.499	12.452	12.565	BB	311191	3597043	81.86%	4.598%
11	12.941	12.890	13.022	BB	264043	3164507	72.02%	4.045%
12	13.109	13.057	13.180	BB	302619	3502862	79.72%	4.478%
13	13.692	13.619	13.757	BB	258753	3421210	77.86%	4.373%
14	14.789	14.731	14.860	BB	266064	3310013	75.33%	4.231%
15	15.807	15.750	15.867	BB	240749	3194076	72.69%	4.083%
16	16.752	16.699	16.816	BB	234611	3153189	71.76%	4.031%
17	17.636	17.574	17.695	BB	228472	3247671	73.91%	4.151%
18	18.464	18.408	18.514	BB	242249	3247397	73.91%	4.151%
19	19.244	19.195	19.294	BB	223389	3140110	71.46%	4.014%
20	19.981	19.951	20.025	BB	212342	3007872	68.46%	3.845%
21	20.700	20.651	20.761	BB	170731	3015307	68.62%	3.854%
22	21.579	21.530	21.687	BV	131300	2943447	66.99%	3.763%
Sum of corrected areas:						78230232		

Aliphatic EPH 102823.M Thu Nov 09 00:06:56 2023



284 Sheffield Street, Mountainside NJ 07092 (908)-789-8900 Fax : 908 789 8922

Continuing Calibration Report for SequenceID : FC110823AL

Parameter	AreaCount	Conc.	RT_Min	RT_Max	Response Factor	AVGRF	%DEV
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File ID : FC065064.D

Aliphatic C9-C12	12004076.000	60.000	3.210	6.479	200067.933	190794.450	-4.860
Aliphatic C12-C16	7833771.000	40.000	6.480	9.862	195844.275	188856.476	-3.700
Aliphatic C16-C21	10957602.000	60.000	9.863	13.209	182626.700	181359.642	-0.699
Aliphatic C21-C28	13143703.000	80.000	13.210	16.852	164296.288	163834.452	-0.282
Aliphatic C28-C40	18759699.000	120.000	16.853	21.679	156330.825	152616.945	-2.433
Aliphatic EPH	62698851.000	360.000	3.210	21.679	174163.475	170289.706	-2.275



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Lab Sample ID:	20 PPM ALIPHATIC HC 9	Acq On:	08 Nov 2023 13:26
Client Sample ID:		Operator:	YP/AJ
Data file:	FC065064.D	Misc:	
Instrument:	FID_C	ALS Vial:	6
Dilution Factor:	1	Sample Multiplier:	1.00

Compound	R.T.		Response	Conc	Units
Aliphatic C9-C12	3.210	6.479	12004076.000	60.000	ug/ml
Aliphatic C12-C16	6.480	9.862	7833771.000	40.000	ug/ml
Aliphatic C16-C21	9.863	13.209	10957602.000	60.000	ug/ml
Aliphatic C21-C28	13.210	16.852	13143703.000	80.000	ug/ml
Aliphatic C28-C40	16.853	21.679	18759699.000	120.000	ug/ml
Aliphatic EPH	3.210	21.679	62698851.000	360.000	ug/ml

Data Path : Z:\pestpcbsrv\HPCHEM1\FID_C\Data\F110823AL\
 Data File : FC065064.D
 Signal(s) : FID1A.ch
 Acq On : 08 Nov 2023 13:26
 Operator : YP/AJ
 Sample : 20 PPM ALIPHATIC HC STD
 Misc :
 ALS Vial : 6 Sample Multiplier: 1

Instrument :
 FID_C
 ClientSampleId :
 20 PPM ALIPHATIC HC STD

Manual Integrations
 APPROVED

Reviewed By :Yogesh Patel 11/09/2023
 Supervised By :Ankita Jodhani 11/09/2023

Integration File: autoint1.e
 Quant Time: Nov 08 23:08:00 2023
 Quant Method : Z:\pestpcbsrv\HPCHEM1\FID_C\Method\Aliphatic EPH 102823.M
 Quant Title : GC Extractables
 QLast Update : Sat Oct 28 02:12:00 2023
 Response via : Initial Calibration
 Integrator: ChemStation

Volume Inj. : 1 ul
 Signal Phase : Rxi-1ms
 Signal Info : 20M x 0.18mm x 0.18um

Compound	R.T.	Response	Conc Units

System Monitoring Compounds			
9) S ortho-Terphenyl (SURR)	11.510	4406728	20.023 ug/ml
Spiked Amount 50.000		Recovery =	40.05%
12) S 1-chlorooctadecane (S...	12.942	3182172	20.130 ug/ml
Spiked Amount 50.000		Recovery =	40.26%
Target Compounds			
1) T n-Nonane (C9)	3.309	3959365	20.942 ug/ml
2) T n-Decane (C10)	4.369	4005718	21.067 ug/ml
3) T A~Naphthalene (C11.7)	5.949	4085691	21.161 ug/ml
4) T n-Dodecane (C12)	6.379	4038993	20.909 ug/ml
5) T A~2-methylnaphthalene...	7.003	3865528	21.035 ug/ml
6) T n-Tetradecane (C14)	8.167	3933555	20.847 ug/ml
7) T n-Hexadecane (C16)	9.761	3900216	20.633 ug/ml
8) T n-Octadecane (C18)	11.196	3836598	20.329 ug/ml
10) T n-Eicosane (C20)	12.500	3607132	20.064 ug/ml
11) T n-Heneicosane (C21)	13.108	3513872	20.014 ug/ml
13) T n-Docosane (C22)	13.694	3437636	20.013 ug/ml
14) T n-Tetracosane (C24)	14.790	3329127	19.988 ug/ml
15) T n-Hexacosane (C26)	15.807	3209044	19.993 ug/ml
16) T n-Octacosane (C28)	16.753	3167896	20.242 ug/ml
17) T n-Tricontane (C30)	17.636	3259964	20.582 ug/ml
18) T n-Dotriacontane (C32)	18.466	3266295	20.687 ug/ml
19) T n-Tetratriacontane (C34)	19.245	3143828	20.596 ug/ml
20) T n-Hexatriacontane (C36)	19.981	3064354	20.310 ug/mlm
21) T n-Octatriacontane (C38)	20.701	3055293	20.531 ug/ml
22) T n-Tetracontane (C40)	21.581	2969965	20.193 ug/ml

(f)=RT Delta > 1/2 Window

(m)=manual int.

Data Path : Z:\pestpcbsrv\HPCHEM1\FID_C\Data\FC110823AL\
Data File : FC065064.D
Signal(s) : FID1A.ch
Acq On : 08 Nov 2023 13:26
Operator : YP/AJ
Sample : 20 PPM ALIPHATIC HC STD
Misc :
ALS Vial : 6 Sample Multiplier: 1

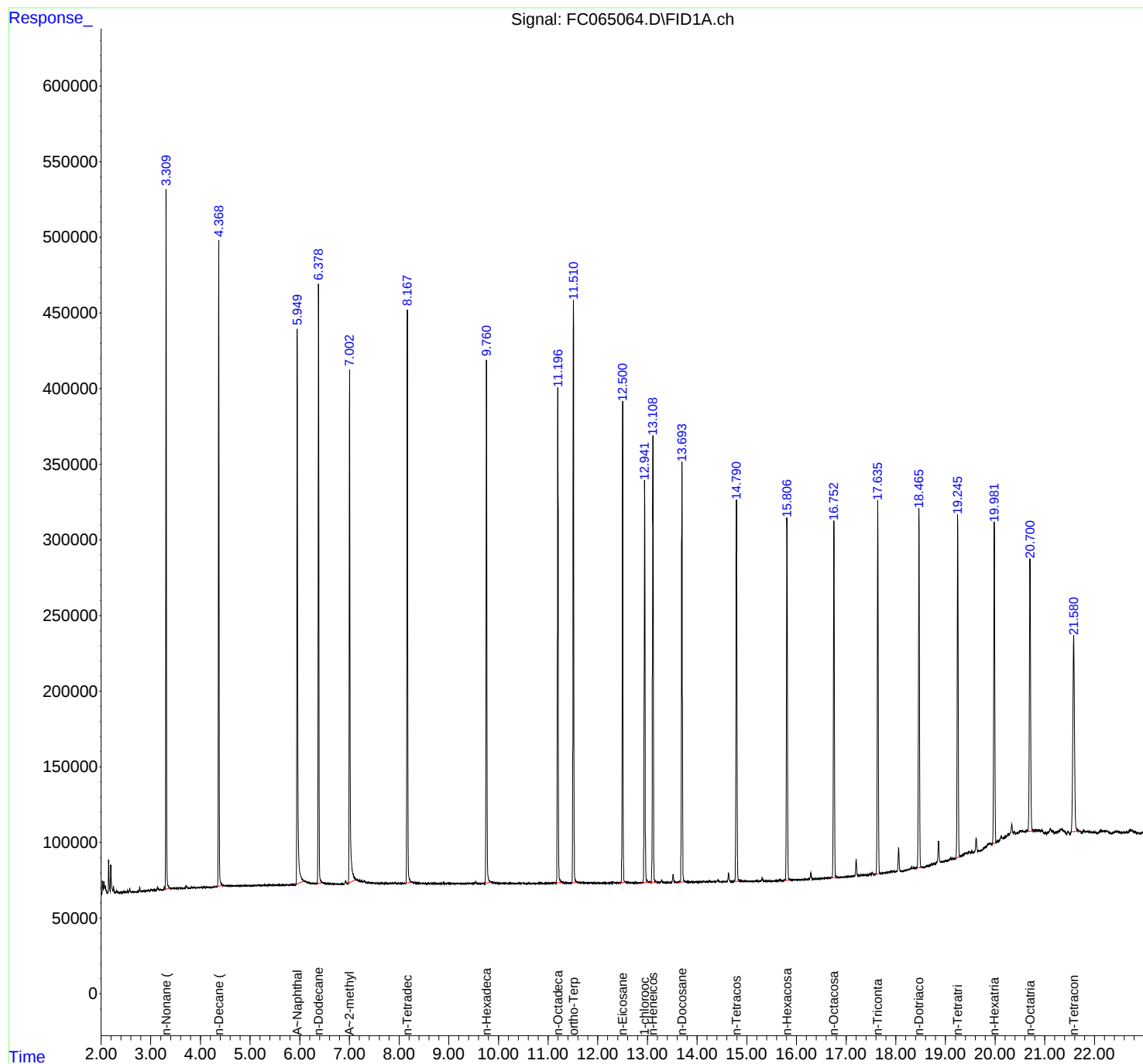
Instrument :
FID_C
ClientSampleId :
20 PPM ALIPHATIC HC STD

Manual Integrations
APPROVED

Reviewed By :Yogesh Patel 11/09/2023
Supervised By :Ankita Jodhani 11/09/2023

Integration File: autoint1.e
Quant Time: Nov 08 23:08:00 2023
Quant Method : Z:\pestpcbsrv\HPCHEM1\FID_C\Method\Aliphatic EPH 102823.M
Quant Title : GC Extractables
QLast Update : Sat Oct 28 02:12:00 2023
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. : 1 ul
Signal Phase : Rxi-1ms
Signal Info : 20M x 0.18mm x 0.18um



Instrument :
FID_C
LabSampleId :
20 PPM ALIPHATIC HC STD

Area Percent Report

Manual IntegrationsAPPROVED

Reviewed By :Yogesh Patel 11/09/2023
Supervised By :Ankita Jodhani 11/09/2023

rteres

Data Path : Z:\pestpcbsrv\HPCHEM1\FID_C\Data\F0
Data File : FC065064.D
Signal(s) : FID1A.ch
Acq On : 08 Nov 2023 13:26
Sample : 20 PPM ALIPHATIC HC STD
Misc :
ALS Vial : 6 Sample Multiplier: 1

Integration File: autoint1.e

Method : Z:\pestpcbsrv\HPCHEM1\FID_C\Method\Aliphatic EPH 102823.M
Title : GC Extractables

Signal : FID1A.ch

peak #	R.T. min	Start min	End min	PK TY	peak height	peak area	peak % max.	% of total
1	3.309	3.287	3.392	VB	461933	3959365	89.85%	5.063%
2	4.369	4.325	4.450	BB	426178	4005718	90.90%	5.122%
3	5.949	5.909	6.085	BB	366170	4085691	92.71%	5.224%
4	6.379	6.330	6.462	BB	395922	4038993	91.66%	5.165%
5	7.003	6.957	7.133	BB	339096	3865528	87.72%	4.943%
6	8.167	8.118	8.256	BB	379066	3933555	89.26%	5.030%
7	9.761	9.707	9.845	BB	345409	3900216	88.51%	4.987%
8	11.196	11.099	11.279	BB	327426	3836598	87.06%	4.906%
9	11.510	11.462	11.581	BB	385321	4406728	100.00%	5.635%
10	12.500	12.451	12.559	BB	317614	3607132	81.86%	4.612%
11	12.942	12.892	13.021	BB	265861	3182172	72.21%	4.069%
12	13.108	13.056	13.181	BB	294781	3513872	79.74%	4.493%
13	13.694	13.617	13.758	BB	278128	3437636	78.01%	4.396%
14	14.790	14.730	14.867	BB	252062	3329127	75.55%	4.257%
15	15.807	15.750	15.871	BB	239496	3209044	72.82%	4.103%
16	16.753	16.693	16.818	BB	235831	3167896	71.89%	4.051%
17	17.636	17.578	17.689	BB	246143	3259964	73.98%	4.169%
18	18.466	18.408	18.518	BB	237320	3266295	74.12%	4.177%
19	19.245	19.201	19.286	BB	226207	3143828	71.34%	4.020%
20	19.982	19.951	20.018	BV	211084	3029981	68.76%	3.874%
21	20.701	20.651	20.771	BB	179428	3055293	69.33%	3.907%
22	21.581	21.531	21.688	BB	129430	2969965	67.40%	3.798%
Sum of corrected areas:						78204597		

Aliphatic EPH 102823.M Thu Nov 09 00:07:43 2023



284 Sheffield Street, Mountainside NJ 07092 (908)-789-8900 Fax : 908 789 8922

Continuing Calibration Report for SequenceID : FD110723AR

Parameter	AreaCount	Conc.	RT_Min	RT_Max	Response Factor	AVGRF	%DEV
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File ID : FD046838.D

Aromatic C10-C12	7666603.000	40.000	4.196	5.923	191665.075	196684.329	2.552
Aromatic C12-C16	11384136.000	60.000	5.924	8.535	189735.600	193599.401	1.996
Aromatic C16-C21	13373136.000	80.000	8.536	12.798	167164.200	174891.939	4.419
Aromatic C21-C36	24866167.000	180.000	12.799	18.185	138145.372	144967.841	4.706
Aromatic EPH	57290042.000	360.000	4.196	18.185	159139.006	165469.177	3.826



284 Sheffield Street, Mountainside NJ 07092 (908)-789-8900 Fax : 908 789 8922

Lab Sample ID:	20 PPM AROMATIC HC	Acq On:	07 Nov 2023 14:15
Client Sample ID:		Operator:	YP/AJ
Data file:	FD046838.D	Misc:	
Instrument:	FID_D	ALS Vial:	53
Dilution Factor:	1	Sample Multiplier:	1.00

Compound	R.T.		Response	Conc	Units
Aromatic C10-C12	4.196	5.923	7666603.000	40.000	ug/ml
Aromatic C12-C16	5.924	8.535	11384136.000	60.000	ug/ml
Aromatic C16-C21	8.536	12.798	13373136.000	80.000	ug/ml
Aromatic C21-C36	12.799	18.185	24866167.000	180.000	ug/ml
Aromatic EPH	4.196	18.185	57290042.000	360.000	ug/ml

Data Path : Z:\pestpcbsrv\HPCHEM1\FID_D\Data\FD110723AR\
 Data File : FD046838.D
 Signal(s) : FID2B.ch
 Acq On : 07 Nov 2023 14:15
 Operator : YP/AJ
 Sample : 20 PPM AROMATIC HC STD
 Misc :
 ALS Vial : 53 Sample Multiplier: 1

Instrument :
 FID_D
 ClientSampleId :
 20 PPM AROMATIC HC STD

Integration File: autoint1.e
 Quant Time: Nov 07 22:02:36 2023
 Quant Method : Z:\pestpcbsrv\HPCHEM1\FID_D\methods\Aromatic EPH 102723.M
 Quant Title : GC Extractables
 QLast Update : Sat Oct 28 02:49:53 2023
 Response via : Initial Calibration
 Integrator: ChemStation

Volume Inj. : 1 µl
 Signal Phase : Rxi-1ms
 Signal Info : 20M x 0.18mm x 0.18µm

Compound	R.T.	Response	Conc Units

System Monitoring Compounds			
4) S 2-Bromonaphthalene (S...	7.483	3573838	19.596 ug/ml
Spiked Amount 50.000		Recovery =	39.19%
6) S 2-Fluorobiphenyl (SURR)	8.336	2291203	19.469 ug/ml
Spiked Amount 50.000 Range 0 - 131		Recovery =	38.94%
11) S ortho-Terphenyl (SURR)	11.373	4227257	19.963 ug/ml
Spiked Amount 50.000		Recovery =	39.93%
Target Compounds			
1) T 1,2,3-Trimethylbenzen...	4.296	3757006	19.454 ug/ml
2) T Naphthalene (C11.7)	5.823	3909597	19.524 ug/ml
3) T 2-Methylnaphthalene (...)	6.871	3932933	19.568 ug/ml
5) T Acenaphthylene (C15.06)	8.140	3594812	19.545 ug/ml
7) T Acenaphthene (C15.5)	8.435	3856391	19.687 ug/ml
8) T Fluorene (C16.55)	9.213	3626111	19.604 ug/ml
9) T Phenanthrene (C19.36)	10.602	3477867	19.549 ug/ml
10) T Anthracene (C19.43)	10.675	2940966	17.257 ug/ml
12) T Fluoranthene (C21.85)	12.404	3437196	19.902 ug/ml
13) T Pyrene (C20.8)	12.698	3328192	20.016 ug/ml
14) T Benzo[a]anthracene (C...	14.562	2701754	19.203 ug/ml
15) T Chrysene (C27.41)	14.603	3013740	19.324 ug/ml
16) T benzo[b]fluoranthene ...	16.103	2803511	19.588 ug/ml
17) T Bnezo[k]fluoranthene ...	16.135	2846482	19.443 ug/ml
18) T Benzo[a]pyrene (C31.34)	16.478	2661252	18.986 ug/ml
19) T Indeno[1,2,3-cd]pyren...	17.835	2293066	18.152 ug/ml
20) T Dibenz[a,h]anthracene...	17.875	2494933	17.859 ug/ml
21) T Benzo[g,h,i]perylene ...	18.085	2614233	18.723 ug/ml

(f)=RT Delta > 1/2 Window

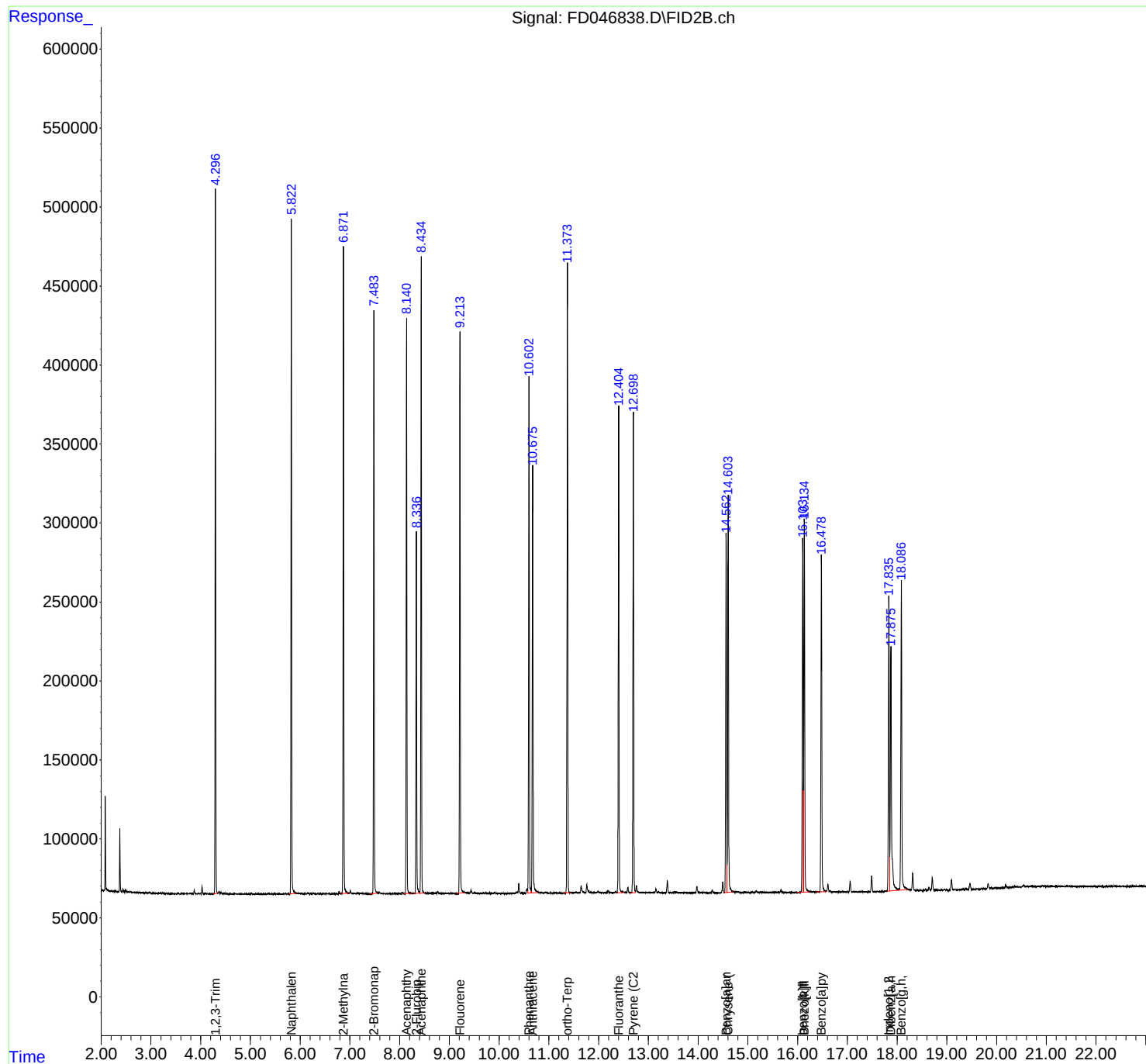
(m)=manual int.

Data Path : Z:\pestpcbsrv\HPCHEM1\FID_D\Data\FD110723AR\
Data File : FD046838.D
Signal(s) : FID2B.ch
Acq On : 07 Nov 2023 14:15
Operator : YP/AJ
Sample : 20 PPM AROMATIC HC STD
Misc :
ALS Vial : 53 Sample Multiplier: 1

Instrument :
FID_D
ClientSampleId :
20 PPM AROMATIC HC STD

Integration File: autoint1.e
Quant Time: Nov 07 22:02:36 2023
Quant Method : Z:\pestpcbsrv\HPCHEM1\FID_D\methods\Aromatic EPH 102723.M
Quant Title : GC Extractables
QLast Update : Sat Oct 28 02:49:53 2023
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. : 1 µl
Signal Phase : Rxi-1ms
Signal Info : 20M x 0.18mm x 0.18µm



rteres

Area Percent Report

Data Path : Z:\pestpcbsrv\HPCHEM1\FID_D\Data\FD110723AR\
Data File : FD046838.D
Signal(s) : FID2B.ch
Acq On : 07 Nov 2023 14:15
Sample : 20 PPM AROMATIC HC STD
Misc :
ALS Vial : 53 Sample Multiplier: 1

Integration File: autoint1.e

Method : Z:\pestpcbsrv\HPCHEM1\FID_D\methods\Aromatic EPH 102723.M
Title : GC Extractables

Signal : FID2B.ch

peak #	R.T. min	Start min	End min	PK TY	peak height	peak area	peak % max.	% of total
1	4.296	4.250	4.347	BV	445371	3757006	88.88%	5.576%
2	5.823	5.769	5.929	BB	426160	3909597	92.49%	5.802%
3	6.871	6.810	6.992	BB	408473	3932933	93.04%	5.837%
4	7.483	7.405	7.559	BB	368220	3573838	84.54%	5.304%
5	8.140	8.082	8.239	BB	364411	3594812	85.04%	5.335%
6	8.336	8.274	8.407	BV	229588	2291203	54.20%	3.400%
7	8.435	8.407	8.507	VB	403061	3856391	91.23%	5.723%
8	9.213	9.145	9.315	BB	356202	3626111	85.78%	5.381%
9	10.602	10.575	10.647	VV	327289	3477867	82.27%	5.161%
10	10.675	10.647	10.787	VB	270720	2940966	69.57%	4.365%
11	11.373	11.292	11.450	BB	399405	4227257	100.00%	6.274%
12	12.404	12.367	12.514	PB	308534	3437196	81.31%	5.101%
13	12.698	12.642	12.742	BV	304723	3328192	78.73%	4.939%
14	14.562	14.527	14.582	PV	226761	2701754	63.91%	4.010%
15	14.603	14.582	14.719	VB	252016	3013740	71.29%	4.473%
16	16.103	15.989	16.118	BV	224962	2803511	66.32%	4.161%
17	16.135	16.118	16.245	VB	235863	2846482	67.34%	4.224%
18	16.478	16.370	16.575	BV	213881	2661252	62.95%	3.949%
19	17.835	17.800	17.854	BV	187789	2293066	54.24%	3.403%
20	17.875	17.854	18.044	VV	154644	2494933	59.02%	3.703%
21	18.085	18.044	18.220	VBA	195701	2614233	61.84%	3.880%
Sum of corrected areas:						67382339		

Aromatic EPH 102723.M Tue Nov 07 23:32:45 2023



284 Sheffield Street, Mountainside NJ 07092 (908)-789-8900 Fax : 908 789 8922

Continuing Calibration Report for SequenceID : FD110723AR

Parameter	AreaCount	Conc.	RT_Min	RT_Max	Response Factor	AVGRF	%DEV
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File ID : FD046858.D

Aromatic C10-C12	7968125.000	40.000	4.196	5.923	199203.125	196684.329	-1.281
Aromatic C12-C16	11850876.000	60.000	5.924	8.535	197514.600	193599.401	-2.022
Aromatic C16-C21	14143623.000	80.000	8.536	12.798	176795.288	174891.939	-1.088
Aromatic C21-C36	26730883.000	180.000	12.799	18.185	148504.906	144967.841	-2.440
Aromatic EPH	60693507.000	360.000	4.196	18.185	168593.075	165469.177	-1.888



284 Sheffield Street, Mountainside NJ 07092 (908)-789-8900 Fax : 908 789 8922

Lab Sample ID:	20 PPM AROMATIC HC	Acq On:	08 Nov 2023 05:59
Client Sample ID:		Operator:	YP/AJ
Data file:	FD046858.D	Misc:	
Instrument:	FID_D	ALS Vial:	53
Dilution Factor:	1	Sample Multiplier:	1.00

Compound	R.T.		Response	Conc	Units
Aromatic C10-C12	4.196	5.923	7968125.000	40.000	ug/ml
Aromatic C12-C16	5.924	8.535	11850876.000	60.000	ug/ml
Aromatic C16-C21	8.536	12.798	14143623.000	80.000	ug/ml
Aromatic C21-C36	12.799	18.185	26730883.000	180.000	ug/ml
Aromatic EPH	4.196	18.185	60693507.000	360.000	ug/ml

Data Path : Z:\pestpcbsrv\HPCHEM1\FID_D\Data\FD110723AR\
 Data File : FD046858.D
 Signal(s) : FID2B.ch
 Acq On : 08 Nov 2023 05:59
 Operator : YP/AJ
 Sample : 20 PPM AROMATIC HC STD
 Misc :
 ALS Vial : 53 Sample Multiplier: 1

Instrument :
 FID_D
 ClientSampleId :
 20 PPM AROMATIC HC STD

Integration File: autoint1.e
 Quant Time: Nov 08 06:32:44 2023
 Quant Method : Z:\pestpcbsrv\HPCHEM1\FID_D\methods\Aromatic EPH 102723.M
 Quant Title : GC Extractables
 QLast Update : Sat Oct 28 02:49:53 2023
 Response via : Initial Calibration
 Integrator: ChemStation

Volume Inj. : 1 µl
 Signal Phase : Rxi-1ms
 Signal Info : 20M x 0.18mm x 0.18µm

Compound	R.T.	Response	Conc Units

System Monitoring Compounds			
4) S 2-Bromonaphthalene (S...	7.482	3742263	20.520 ug/ml
Spiked Amount 50.000		Recovery =	41.04%
6) S 2-Fluorobiphenyl (SURR)	8.336	2421844	20.579 ug/ml
Spiked Amount 50.000 Range 0 - 131		Recovery =	41.16%
11) S ortho-Terphenyl (SURR)	11.373	4366082	20.618 ug/ml
Spiked Amount 50.000		Recovery =	41.24%
Target Compounds			
1) T 1,2,3-Trimethylbenzen...	4.297	3902621	20.208 ug/ml
2) T Naphthalene (C11.7)	5.822	4065504	20.303 ug/ml
3) T 2-Methylnaphthalene (...)	6.870	4103050	20.415 ug/ml
5) T Acenaphthylene (C15.06)	8.139	3735141	20.308 ug/ml
7) T Acenaphthene (C15.5)	8.435	4012685	20.485 ug/ml
8) T Fluorene (C16.55)	9.213	3863758	20.889 ug/ml
9) T Phenanthrene (C19.36)	10.601	3666940	20.612 ug/ml
10) T Anthracene (C19.43)	10.675	3156447	18.522 ug/ml
12) T Fluoranthene (C21.85)	12.403	3578612	20.720 ug/ml
13) T Pyrene (C20.8)	12.697	3456478	20.787 ug/ml
14) T Benzo[a]anthracene (C...	14.561	2869103	20.393 ug/ml
15) T Chrysene (C27.41)	14.603	3079457	19.746 ug/ml
16) T benzo[b]fluoranthene ...	16.102	2920055	20.402 ug/ml
17) T Bnezo[k]fluoranthene ...	16.134	2957045	20.198 ug/ml
18) T Benzo[a]pyrene (C31.34)	16.477	2842464	20.279 ug/ml
19) T Indeno[1,2,3-cd]pyren...	17.835	2731469	21.622 ug/ml
20) T Dibenz[a,h]anthracene...	17.876	2913461	20.855 ug/ml
21) T Benzo[g,h,i]perylene ...	18.087	2839217	20.335 ug/ml

(f)=RT Delta > 1/2 Window

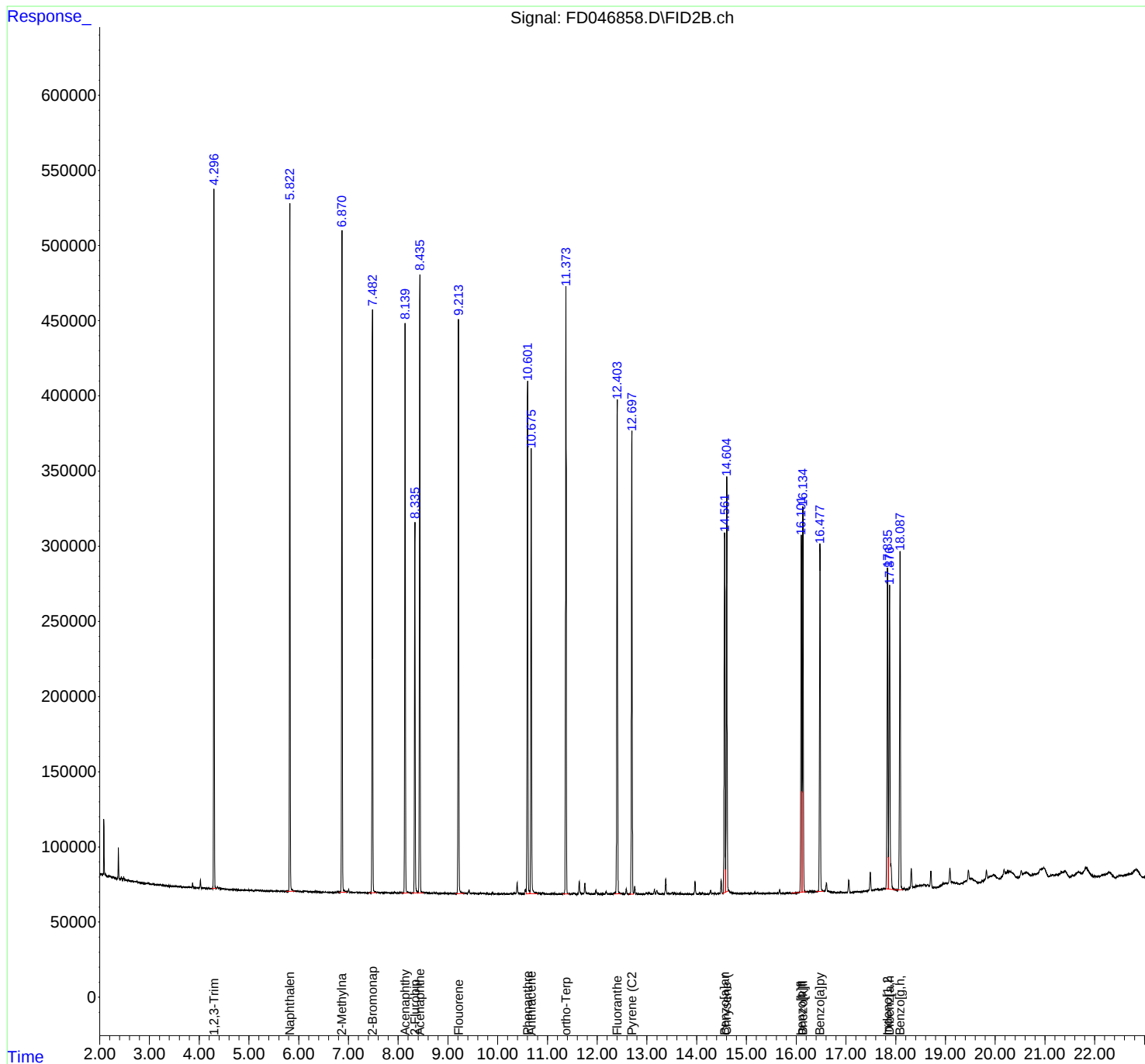
(m)=manual int.

Data Path : Z:\pestpcbsrv\HPCHEM1\FID_D\Data\FD110723AR\
Data File : FD046858.D
Signal(s) : FID2B.ch
Acq On : 08 Nov 2023 05:59
Operator : YP/AJ
Sample : 20 PPM AROMATIC HC STD
Misc :
ALS Vial : 53 Sample Multiplier: 1

Instrument :
FID_D
ClientSampleId :
20 PPM AROMATIC HC STD

Integration File: autoint1.e
Quant Time: Nov 08 06:32:44 2023
Quant Method : Z:\pestpcbsrv\HPCHEM1\FID_D\methods\Aromatic EPH 102723.M
Quant Title : GC Extractables
QLast Update : Sat Oct 28 02:49:53 2023
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. : 1 µl
Signal Phase : Rxi-1ms
Signal Info : 20M x 0.18mm x 0.18µm



rteres

Area Percent Report

Data Path : Z:\pestpcbsrv\HPCHEM1\FID_D\Data\FD110723AR\
Data File : FD046858.D
Signal(s) : FID2B.ch
Acq On : 08 Nov 2023 05:59
Sample : 20 PPM AROMATIC HC STD
Misc :
ALS Vial : 53 Sample Multiplier: 1

Integration File: autoint1.e

Method : Z:\pestpcbsrv\HPCHEM1\FID_D\methods\Aromatic EPH 102723.M
Title : GC Extractables

Signal : FID2B.ch

peak #	R.T. min	Start min	End min	PK TY	peak height	peak area	peak % max.	% of total
1	4.297	4.250	4.345	BV	465383	3902621	89.38%	5.479%
2	5.822	5.754	5.915	BB	457015	4065504	93.12%	5.708%
3	6.870	6.810	6.962	BB	440099	4103050	93.98%	5.761%
4	7.482	7.415	7.569	BB	387438	3742263	85.71%	5.254%
5	8.139	8.070	8.210	BB	377952	3735141	85.55%	5.244%
6	8.336	8.267	8.404	BV	246778	2421844	55.47%	3.400%
7	8.435	8.404	8.514	VB	411626	4012685	91.91%	5.634%
8	9.213	9.145	9.337	BB	381715	3863758	88.49%	5.425%
9	10.601	10.574	10.647	VV	342016	3666940	83.99%	5.148%
10	10.675	10.647	10.809	VB	296795	3156447	72.29%	4.432%
11	11.373	11.307	11.429	BB	406266	4366082	100.00%	6.130%
12	12.403	12.354	12.475	VB	328520	3578612	81.96%	5.024%
13	12.697	12.639	12.734	BV	308613	3456478	79.17%	4.853%
14	14.561	14.519	14.581	PV	238903	2869103	65.71%	4.028%
15	14.603	14.581	14.640	VV	276263	3079457	70.53%	4.324%
16	16.102	15.900	16.117	BV	237313	2920055	66.88%	4.100%
17	16.134	16.117	16.209	VB	255736	2957045	67.73%	4.152%
18	16.477	16.407	16.554	BB	229874	2842464	65.10%	3.991%
19	17.835	17.800	17.853	BV	213650	2731469	62.56%	3.835%
20	17.876	17.853	18.015	VB	202160	2913461	66.73%	4.091%
21	18.087	18.015	18.139	BV	225146	2839217	65.03%	3.986%
Sum of corrected areas:						71223696		

Aromatic EPH 102723.M Wed Nov 08 06:34:09 2023

QC SAMPLE DATA

Report of Analysis

Client:	RMJ Environomics, Inc.	Date Collected:	
Project:	245 Greenwood Ave	Date Received:	
Client Sample ID:	PB156949BL	SDG No.:	O5252
Lab Sample ID:	PB156949BL	Matrix:	Solid
Analytical Method:	NJEPH	% Solid:	100
Sample Wt/Vol:	30.01 Units: g	Final Vol:	2000 uL
Soil Aliquot Vol:	uL	Test:	EPH
Prep Method :			

Prep Date :	Date Analyzed :	Prep Batch ID
11/07/23 08:55	11/07/23 20:40	PB156949

Datafile

CAS Number	Parameter	Conc.	Qualifier	Dilution	MDL	LOQ / CRQL	Units(Dry Weight)	
TARGETS								
Aliphatic C9-C12	Aliphatic C9-C12	0.24	U	1	0.24	1.00	mg/kg	FC065038.D
Aliphatic C12-C16	Aliphatic C12-C16	0.14	U	1	0.14	0.67	mg/kg	FC065038.D
Aliphatic C16-C21	Aliphatic C16-C21	0.21	U	1	0.21	1.00	mg/kg	FC065038.D
Aliphatic C21-C28	Aliphatic C21-C28	0.46	U	1	0.46	1.33	mg/kg	FC065038.D
Aliphatic C28-C40	Aliphatic C28-C40	1.02	U	1	1.02	2.00	mg/kg	FC065038.D
Aromatic C10-C12	Aromatic C10-C12	0.15	U	1	0.15	0.67	mg/kg	FD046839.D
Aromatic C12-C16	Aromatic C12-C16	0.15	U	1	0.15	1.00	mg/kg	FD046839.D
Aromatic C16-C21	Aromatic C16-C21	0.30	U	1	0.30	1.67	mg/kg	FD046839.D
Aromatic C21-C36	Aromatic C21-C36	0.39	U	1	0.39	2.67	mg/kg	FD046839.D
Total AliphaticEPH	Total AliphaticEPH	2.07	U		2.07	6.00	mg/kg	
Total AromaticEPH	Total AromaticEPH	0.99	U		0.99	6.01	mg/kg	
Total EPH	Total EPH	3.06	U		3.06	12.0	mg/kg	

U = Not Detected

LOQ = Limit of Quantitation

MDL = Method Detection Limit

LOD = Limit of Detection

E = Value Exceeds Calibration Range

Q = indicates LCS control criteria did not meet requirements

J = Estimated Value

B = Analyte Found in Associated Method Blank

N = Presumptive Evidence of a Compound

* = Values outside of QC limits

D = Dilution



284 Sheffield Street, Mountainside NJ 07092 Phone: 908 789 8900 Fax : 908 789 8922

Report of Analysis

Client:	RMJ Environomics, Inc.	Date Collected:	
Project:	245 Greenwood Ave	Date Received:	
Client Sample ID:	PB156949BL	SDG No.:	O5252
Lab Sample ID:	PB156949BL	Matrix:	Solid
Analytical Method:	NJEPH	% Solid:	100
Sample Wt/Vol:	30.01	Units:	g
Soil Aliquot Vol:		Final Vol:	2000 uL
Prep Method :		Test:	EPH

File ID :	Dilution:	Prep Date :	Date Analyzed :	Prep Batch ID
FC065038.D	1	11/07/23	11/07/23	PB156949

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units
TARGETS						
Aliphatic C9-C12	Aliphatic C9-C12	0.24	U	0.24	1.00	mg/kg
Aliphatic C12-C16	Aliphatic C12-C16	0.14	U	0.14	0.67	mg/kg
Aliphatic C16-C21	Aliphatic C16-C21	0.21	U	0.21	1.00	mg/kg
Aliphatic C21-C28	Aliphatic C21-C28	0.46	U	0.46	1.33	mg/kg
Aliphatic C28-C40	Aliphatic C28-C40	1.02	U	1.02	2.00	mg/kg
SURROGATES						
3383-33-2	1-chlorooctadecane (SURR)	45.1		40 - 140	90%	SPK: 50
84-15-1	ortho-Terphenyl (SURR)	0.00		40 - 140	0%	SPK: 50



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Quantitation Report For Aliphatic EPH Range.

Lab Sample ID:	PB156949BL	Acq On:	07 Nov 2023 20:40
Client Sample ID:	PB156949BL	Operator:	YP/AJ
Data file:	FC065038.D	Misc:	
Instrument:	FID_C	ALS Vial:	19
Dilution Factor:	1	Sample Multiplier:	1.00

Compound	R.T.		Response	Conc	highest_standard	Units
Aliphatic C9-C12	3.211	6.483	0	0	300	ug/ml
Aliphatic C12-C16	6.484	9.865	0	0	200	ug/ml
Aliphatic C16-C21	9.866	13.214	0	0	300	ug/ml
Aliphatic C21-C28	13.215	16.858	0	0	400	ug/ml
Aliphatic C28-C40	16.859	21.689	0	0	600	ug/ml
Aliphatic EPH	3.211	21.689	0	0		ug/ml
ortho-Terphenyl (SURR)	0.000	0.000	0	0		ug/ml
1-chlorooctadecane (SURR)	12.948	12.948	7136989	45.15		ug/ml
Aliphatic C9-C28	3.211	16.858	0	0	1200	ug/ml

Data Path : Z:\pestpcbsrv\HPCHEM1\FID_C\Data\FC110723AL\
Data File : FC065038.D
Signal(s) : FID1A.ch
Acq On : 07 Nov 2023 20:40
Operator : YP/AJ
Sample : PB156949BL
Misc :
ALS Vial : 19 Sample Multiplier: 1

Instrument :
FID_C
ClientSampleId :
PB156949BL

Integration File: autoint1.e
Quant Time: Nov 07 22:03:12 2023
Quant Method : Z:\pestpcbsrv\HPCHEM1\FID_C\Method\Aliphatic EPH 102823.M
Quant Title : GC Extractables
QLast Update : Sat Oct 28 02:12:00 2023
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. : 1 ul
Signal Phase : Rxi-1ms
Signal Info : 20M x 0.18mm x 0.18um

Compound	R.T.	Response	Conc Units

System Monitoring Compounds			
12) S 1-chlorooctadecane (S...	12.948	7136989	45.147 ug/ml
Spiked Amount	50.000	Recovery	= 90.29%

Target Compounds

(f)=RT Delta > 1/2 Window

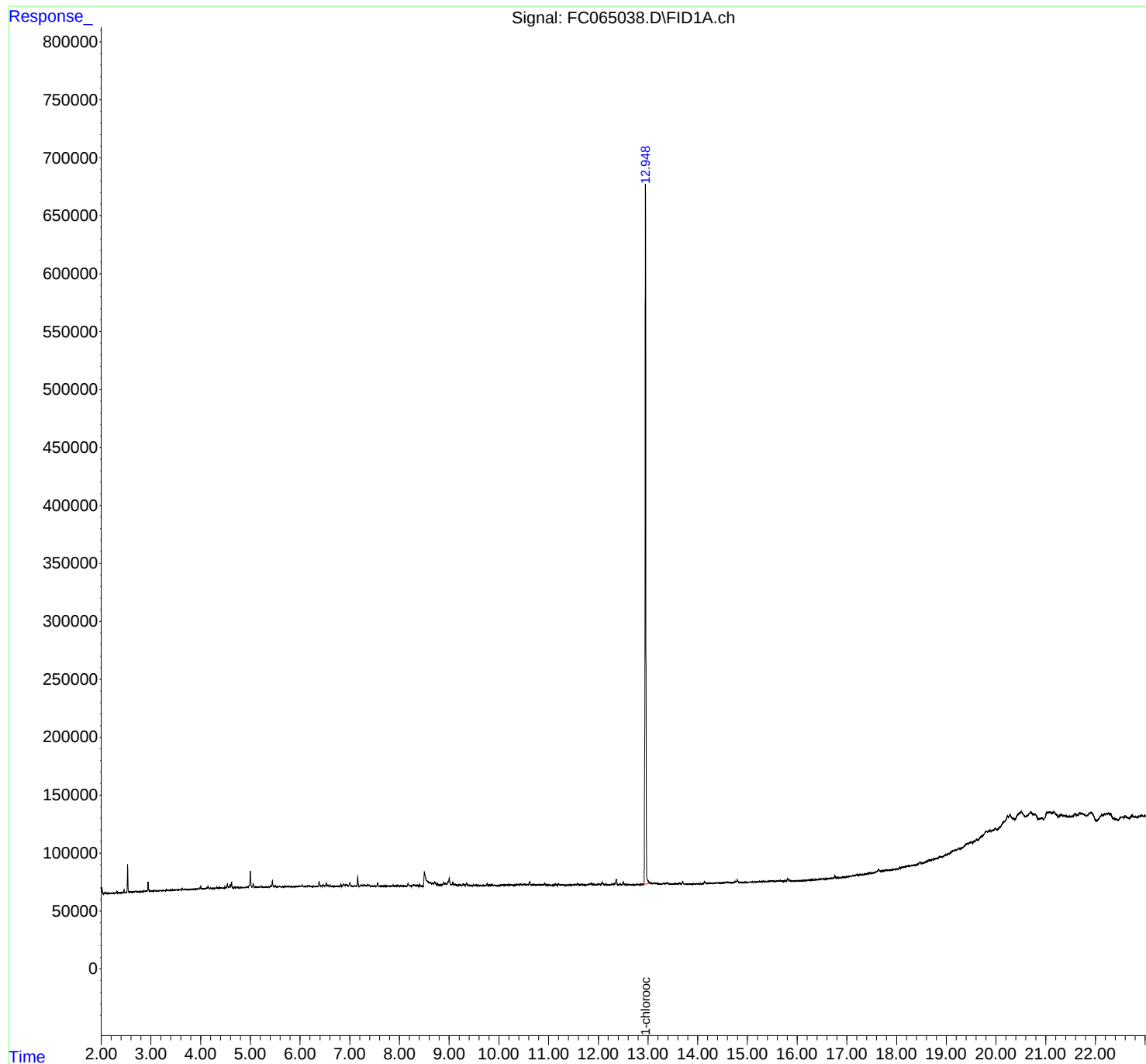
(m)=manual int.

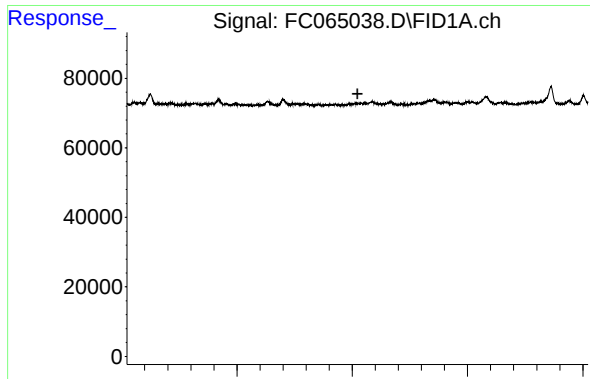
Data Path : Z:\pestpcbsrv\HPCHEM1\FID_C\Data\FC110723AL\
Data File : FC065038.D
Signal(s) : FID1A.ch
Acq On : 07 Nov 2023 20:40
Operator : YP/AJ
Sample : PB156949BL
Misc :
ALS Vial : 19 Sample Multiplier: 1

Instrument :
FID_C
ClientSampleId :
PB156949BL

Integration File: autoint1.e
Quant Time: Nov 07 22:03:12 2023
Quant Method : Z:\pestpcbsrv\HPCHEM1\FID_C\Method\Aliphatic EPH 102823.M
Quant Title : GC Extractables
QLast Update : Sat Oct 28 02:12:00 2023
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. : 1 ul
Signal Phase : Rxi-1ms
Signal Info : 20M x 0.18mm x 0.18um

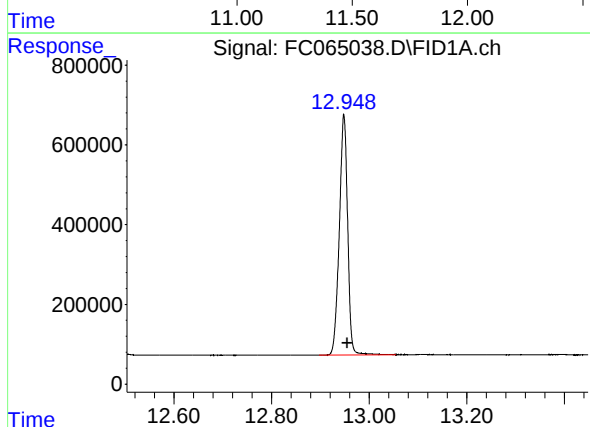




#9 ortho-Terphenyl (SURR)

R.T.: 0.000 min
Exp R.T.: 11.523 min
Response: 0
Conc: N.D.

Instrument :
FID_C
ClientSampleId :
PB156949BL



#12 1-chlorooctadecane (SURR)

R.T.: 12.948 min
Delta R.T.: -0.007 min
Response: 7136989
Conc: 45.15 ug/ml

rteres

Area Percent Report

Data Path : Z:\pestpcbsrv\HPCHEM1\FID_C\Data\FC110723AL\
Data File : FC065038.D
Signal(s) : FID1A.ch
Acq On : 07 Nov 2023 20:40
Sample : PB156949BL
Misc :
ALS Vial : 19 Sample Multiplier: 1

Integration File: autoint1.e

Method : Z:\pestpcbsrv\HPCHEM1\FID_C\Method\Aliphatic EPH 102823.M
Title : GC Extractables

Signal : FID1A.ch

peak #	R.T. min	Start min	End min	PK TY	peak height	peak area	peak % max.	% of total
1	12.948	12.897	13.055	BB	603303	7136989	100.00%	100.000%
Sum of corrected areas:							7136989	

Aliphatic EPH 102823.M Tue Nov 07 23:46:03 2023



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Report of Analysis

Client:	RMJ Environomics, Inc.	Date Collected:	
Project:	245 Greenwood Ave	Date Received:	
Client Sample ID:	PB156949BL	SDG No.:	O5252
Lab Sample ID:	PB156949BL	Matrix:	Solid
Analytical Method:	NJEPH	% Solid:	100
Sample Wt/Vol:	30.01	Units:	g
Soil Aliquot Vol:		Final Vol:	2000 uL
Prep Method :		Test:	EPH

File ID :	Dilution:	Prep Date :	Date Analyzed :	Prep Batch ID
FD046839.D	1	11/07/23	11/07/23	PB156949

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units
TARGETS						
Aromatic C10-C12	Aromatic C10-C12	0.15	U	0.15	0.67	mg/kg
Aromatic C12-C16	Aromatic C12-C16	0.15	U	0.15	1.00	mg/kg
Aromatic C16-C21	Aromatic C16-C21	0.30	U	0.30	1.67	mg/kg
Aromatic C21-C36	Aromatic C21-C36	0.39	U	0.39	2.67	mg/kg
SURROGATES						
580-13-2	2-Bromonaphthalene (SURR)	37.2		40 - 140	74%	SPK: 50
321-60-8	2-Fluorobiphenyl (SURR)	33.4		40 - 140	67%	SPK: 50
84-15-1	ortho-Terphenyl (SURR)	40.5		40 - 140	81%	SPK: 50



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Quantitation Report For Aromatic EPH Range.

Lab Sample ID:	PB156949BL	Acq On:	07 Nov 2023 17:30
Client Sample ID:	PB156949BL	Operator:	YP/AJ
Data file:	FD046839.D	Misc:	
Instrument:	FID_D	ALS Vial:	61
Dilution Factor:	1	Sample Multiplier:	1.00

Compound	R.T.		Response	Conc	highest_standard	Units
Aromatic C10-C12	4.196	5.923	0	0	200	ug/ml
Aromatic C12-C16	5.924	8.535	0	0	300	ug/ml
Aromatic C16-C21	8.536	12.798	0	0	500	ug/ml
Aromatic C21-C36	12.799	18.185	0	0	800	ug/ml
Aromatic EPH	4.196	18.185	0	0		ug/ml
2-Bromonaphthalene (SURR)	7.484	7.484	6788267	37.22		ug/ml
2-Fluorobiphenyl (SURR)	8.337	8.337	3925413	33.36		ug/ml
ortho-Terphenyl (SURR)	11.377	11.377	8576851	40.5		ug/ml

Data Path : Z:\pestpcbsrv\HPCHEM1\FID_D\Data\FD110723AR\
 Data File : FD046839.D
 Signal(s) : FID2B.ch
 Acq On : 07 Nov 2023 17:30
 Operator : YP/AJ
 Sample : PB156949BL
 Misc :
 ALS Vial : 61 Sample Multiplier: 1

Instrument :
 FID_D
 ClientSampleId :
 PB156949BL

Integration File: autoint1.e
 Quant Time: Nov 07 22:02:44 2023
 Quant Method : Z:\pestpcbsrv\HPCHEM1\FID_D\methods\Aromatic EPH 102723.M
 Quant Title : GC Extractables
 QLast Update : Sat Oct 28 02:49:53 2023
 Response via : Initial Calibration
 Integrator: ChemStation

Volume Inj. : 1 µl
 Signal Phase : Rxi-1ms
 Signal Info : 20M x 0.18mm x 0.18µm

Compound	R.T.	Response	Conc Units

System Monitoring Compounds			
4) S 2-Bromonaphthalene (S...	7.484	6788267	37.222 ug/ml
Spiked Amount 50.000		Recovery =	74.44%
6) S 2-Fluorobiphenyl (SURR)	8.337	3925413	33.356 ug/ml
Spiked Amount 50.000 Range 0 - 131		Recovery =	66.71%
11) S ortho-Terphenyl (SURR)	11.377	8576851	40.503 ug/ml
Spiked Amount 50.000		Recovery =	81.01%

Target Compounds

(f)=RT Delta > 1/2 Window

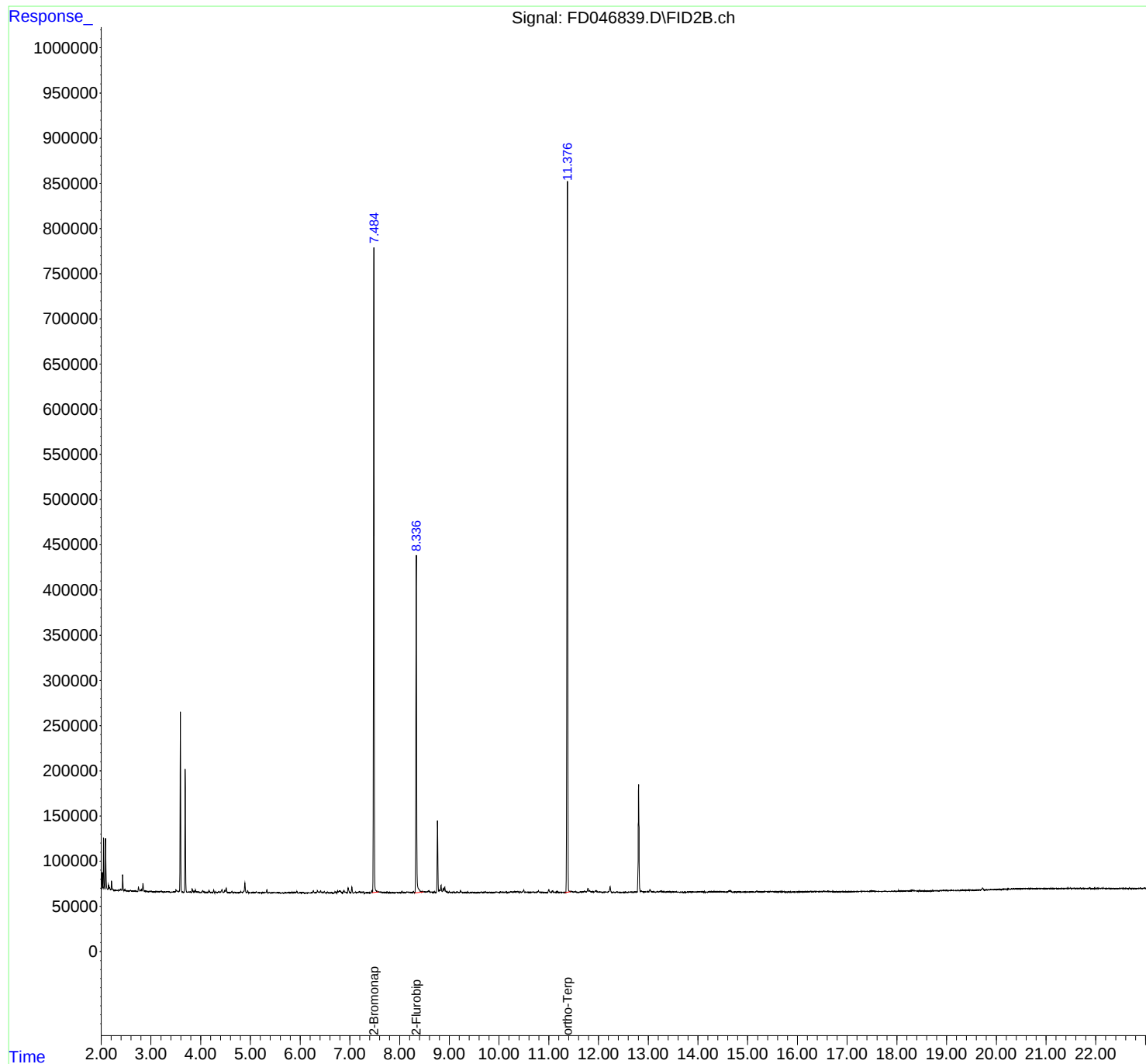
(m)=manual int.

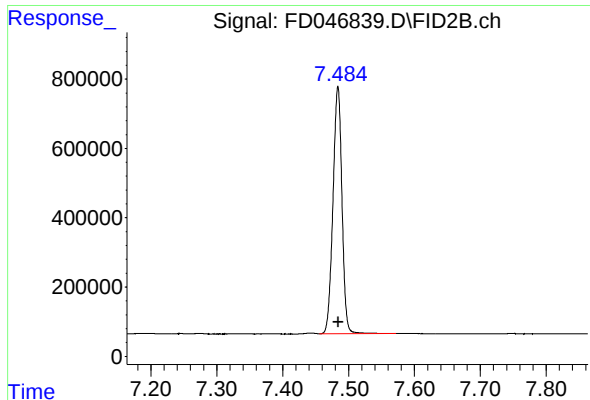
Data Path : Z:\pestpcbsrv\HPCHEM1\FID_D\Data\FD110723AR\
Data File : FD046839.D
Signal(s) : FID2B.ch
Acq On : 07 Nov 2023 17:30
Operator : YP/AJ
Sample : PB156949BL
Misc :
ALS Vial : 61 Sample Multiplier: 1

Instrument :
FID_D
ClientSampleId :
PB156949BL

Integration File: autoint1.e
Quant Time: Nov 07 22:02:44 2023
Quant Method : Z:\pestpcbsrv\HPCHEM1\FID_D\methods\Aromatic EPH 102723.M
Quant Title : GC Extractables
QLast Update : Sat Oct 28 02:49:53 2023
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. : 1 µl
Signal Phase : Rxi-1ms
Signal Info : 20M x 0.18mm x 0.18µm

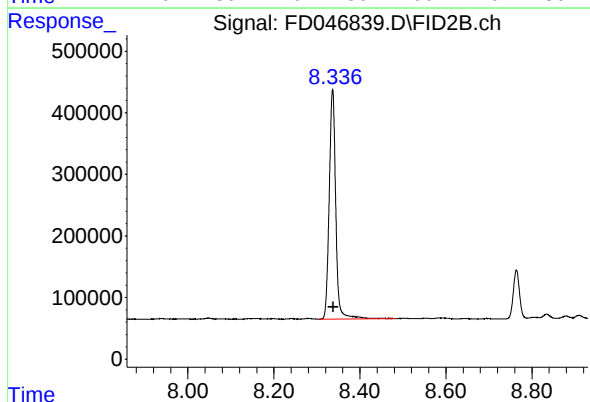




#4 2-Bromonaphthalene (SURR)

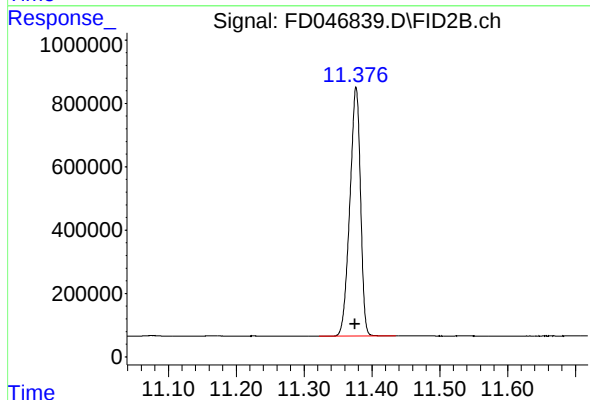
R.T.: 7.484 min
Delta R.T.: 0.000 min
Response: 6788267
Conc: 37.22 ug/ml

Instrument :
FID_D
ClientSampleId :
PB156949BL



#6 2-Fluorobiphenyl (SURR)

R.T.: 8.337 min
Delta R.T.: -0.002 min
Response: 3925413
Conc: 33.36 ug/ml



#11 ortho-Terphenyl (SURR)

R.T.: 11.377 min
Delta R.T.: 0.001 min
Response: 8576851
Conc: 40.50 ug/ml

rteres

Area Percent Report

Data Path : Z:\pestpcbsrv\HPCHEM1\FID_D\Data\FD110723AR\
Data File : FD046839.D
Signal(s) : FID2B.ch
Acq On : 07 Nov 2023 17:30
Sample : PB156949BL
Misc :
ALS Vial : 61 Sample Multiplier: 1

Integration File: autoint1.e

Method : Z:\pestpcbsrv\HPCHEM1\FID_D\methods\Aromatic EPH 102723.M
Title : GC Extractables

Signal : FID2B.ch

peak #	R.T. min	Start min	End min	PK TY	peak height	peak area	peak % max.	% of total
1	7.484	7.455	7.572	VB	713777	6788267	79.15%	35.190%
2	8.337	8.305	8.484	PB	374352	3925413	45.77%	20.349%
3	11.377	11.322	11.435	BV	787447	8576851	100.00%	44.461%
Sum of corrected areas:						19290531		

Aromatic EPH 102723.M Tue Nov 07 23:33:12 2023

Report of Analysis

Client:	RMJ Environomics, Inc.	Date Collected:	
Project:	245 Greenwood Ave	Date Received:	
Client Sample ID:	PB156949BS	SDG No.:	O5252
Lab Sample ID:	PB156949BS	Matrix:	Solid
Analytical Method:	NJEPH	% Solid:	100
Sample Wt/Vol:	30 Units: g	Final Vol:	2000 uL
Soil Aliquot Vol:	uL	Test:	EPH
Prep Method :			

Prep Date :	Date Analyzed :	Prep Batch ID
11/07/23 08:55	11/07/23 21:17	PB156949

Datafile

CAS Number	Parameter	Conc.	Qualifier	Dilution	MDL	LOQ / CRQL	Units(Dry Weight)	
TARGETS								
Aliphatic C9-C12	Aliphatic C9-C12	5.48		1	0.24	1.00	mg/kg	FC065039.D
Aliphatic C12-C16	Aliphatic C12-C16	4.93		1	0.14	0.67	mg/kg	FC065039.D
Aliphatic C16-C21	Aliphatic C16-C21	8.55		1	0.21	1.00	mg/kg	FC065039.D
Aliphatic C21-C28	Aliphatic C21-C28	11.8		1	0.46	1.33	mg/kg	FC065039.D
Aliphatic C28-C40	Aliphatic C28-C40	17.2		1	1.02	2.00	mg/kg	FC065039.D
Aromatic C10-C12	Aromatic C10-C12	3.97		1	0.15	0.67	mg/kg	FD046840.D
Aromatic C12-C16	Aromatic C12-C16	7.36		1	0.15	1.00	mg/kg	FD046840.D
Aromatic C16-C21	Aromatic C16-C21	14.6		1	0.30	1.67	mg/kg	FD046840.D
Aromatic C21-C36	Aromatic C21-C36	23.5		1	0.39	2.67	mg/kg	FD046840.D
Total AliphaticEPH	Total AliphaticEPH	48.0			2.07	6.00	mg/kg	
Total AromaticEPH	Total AromaticEPH	49.4			0.99	6.01	mg/kg	
Total EPH	Total EPH	97.4			3.06	12.0	mg/kg	

U = Not Detected

LOQ = Limit of Quantitation

MDL = Method Detection Limit

LOD = Limit of Detection

E = Value Exceeds Calibration Range

Q = indicates LCS control criteria did not meet requirements

J = Estimated Value

B = Analyte Found in Associated Method Blank

N = Presumptive Evidence of a Compound

* = Values outside of QC limits

D = Dilution



284 Sheffield Street, Mountainside NJ 07092 Phone: 908 789 8900 Fax : 908 789 8922

Report of Analysis

Client:	RMJ Environomics, Inc.	Date Collected:	
Project:	245 Greenwood Ave	Date Received:	
Client Sample ID:	PB156949BS	SDG No.:	O5252
Lab Sample ID:	PB156949BS	Matrix:	Solid
Analytical Method:	NJEPH	% Solid:	100
Sample Wt/Vol:	30	Units:	g
Soil Aliquot Vol:		Final Vol:	2000 uL
Prep Method :		Test:	EPH

File ID :	Dilution:	Prep Date :	Date Analyzed :	Prep Batch ID
FC065039.D	1	11/07/23	11/07/23	PB156949

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units
TARGETS						
Aliphatic C9-C12	Aliphatic C9-C12	5.48		0.24	1.00	mg/kg
Aliphatic C12-C16	Aliphatic C12-C16	4.93		0.14	0.67	mg/kg
Aliphatic C16-C21	Aliphatic C16-C21	8.55		0.21	1.00	mg/kg
Aliphatic C21-C28	Aliphatic C21-C28	11.8		0.46	1.33	mg/kg
Aliphatic C28-C40	Aliphatic C28-C40	17.2		1.02	2.00	mg/kg
SURROGATES						
3383-33-2	1-chlorooctadecane (SURR)	39.3		40 - 140	79%	SPK: 50
84-15-1	ortho-Terphenyl (SURR)	0.00		40 - 140	0%	SPK: 50



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Quantitation Report For Aliphatic EPH Range.

Lab Sample ID:	PB156949BS	Acq On:	07 Nov 2023 21:17
Client Sample ID:	PB156949BS	Operator:	YP/AJ
Data file:	FC065039.D	Misc:	
Instrument:	FID_C	ALS Vial:	20
Dilution Factor:	1	Sample Multiplier:	1.00

Compound	R.T.		Response	Conc	highest_standard	Units
Aliphatic C9-C12	3.211	6.483	15676310	82.163	300	ug/ml
Aliphatic C12-C16	6.484	9.865	13974222	73.994	200	ug/ml
Aliphatic C16-C21	9.866	13.214	23249879	128.198	300	ug/ml
Aliphatic C21-C28	13.215	16.858	29117163	177.723	400	ug/ml
Aliphatic C28-C40	16.859	21.689	39298478	257.497	600	ug/ml
Aliphatic EPH	3.211	21.689	121316052	719.575		ug/ml
ortho-Terphenyl (SURR)	0.000	0.000	0	0		ug/ml
1-chlorooctadecane (SURR)	12.949	12.949	6207373	39.27		ug/ml
Aliphatic C9-C28	3.211	16.858	82017574	462.078	1200	ug/ml

Data Path : Z:\pestpcbsrv\HPCHEM1\FID_C\Data\F110723AL\
 Data File : FC065039.D
 Signal(s) : FID1A.ch
 Acq On : 07 Nov 2023 21:17
 Operator : YP/AJ
 Sample : PB156949BS
 Misc :
 ALS Vial : 20 Sample Multiplier: 1

Instrument :
 FID_C
 ClientSampleId :
 PB156949BS

Manual Integrations
 APPROVED

Reviewed By :Yogesh Patel 11/08/2023
 Supervised By :Ankita Jodhani 11/08/2023

Integration File: autoint1.e
 Quant Time: Nov 07 23:36:56 2023
 Quant Method : Z:\pestpcbsrv\HPCHEM1\FID_C\Method\Aliphatic EPH 102823.M
 Quant Title : GC Extractables
 QLast Update : Sat Oct 28 02:12:00 2023
 Response via : Initial Calibration
 Integrator: ChemStation

Volume Inj. : 1 ul
 Signal Phase : Rxi-1ms
 Signal Info : 20M x 0.18mm x 0.18um

Compound	R.T.	Response	Conc Units

System Monitoring Compounds			
12) S 1-chlorooctadecane (S...	12.949	6207373	39.266 ug/ml
Spiked Amount 50.000		Recovery =	78.53%
Target Compounds			
1) T n-Nonane (C9)	3.311	4265573	22.561 ug/ml
2) T n-Decane (C10)	4.372	5265857	27.694 ug/ml
4) T n-Dodecane (C12)	6.383	6144880	31.810 ug/ml
6) T n-Tetradecane (C14)	8.172	6741461	35.728 ug/ml
7) T n-Hexadecane (C16)	9.767	7232761	38.264 ug/ml
8) T n-Octadecane (C18)	11.203	7597085	40.254 ug/ml
10) T n-Eicosane (C20)	12.507	7982317	44.400 ug/ml
11) T n-Heneicosane (C21)	13.115	7670477	43.689 ug/ml
13) T n-Docosane (C22)	13.699	7609602	44.301 ug/ml
14) T n-Tetracosane (C24)	14.797	7380619	44.313 ug/ml
15) T n-Hexacosane (C26)	15.813	7158617	44.600 ug/ml
16) T n-Octacosane (C28)	16.758	6968325	44.526 ug/ml
17) T n-Tricontane (C30)	17.643	6899927	43.562 ug/ml
18) T n-Dotriacontane (C32)	18.472	6816528	43.172 ug/ml
19) T n-Tetratriacontane (C34)	19.253	6667083	43.679 ug/mlm
20) T n-Hexatriacontane (C36)	19.988	6369160	42.213 ug/ml
21) T n-Octatriacontane (C38)	20.711	6323077	42.489 ug/mlm
22) T n-Tetracontane (C40)	21.593	6064269	41.231 ug/ml

(f)=RT Delta > 1/2 Window

(m)=manual int.

Data Path : Z:\pestpcbsrv\HPCHEM1\FID_C\Data\FC110723AL\
Data File : FC065039.D
Signal(s) : FID1A.ch
Acq On : 07 Nov 2023 21:17
Operator : YP/AJ
Sample : PB156949BS
Misc :
ALS Vial : 20 Sample Multiplier: 1

Instrument :

FID_C

Client Sample Id :

PB156949BS

Manual Integrations

APPROVED

Reviewed By : Yogesh Patel 11/08/2023

Supervised By : Ankita Jodhani 11/08/2023

Integration File: autoint1.e

Quant Time: Nov 07 23:36:56 2023

Quant Method : Z:\pestpcbsrv\HPCHEM1\FID_C\Method\Aliphatic EPH 102823.M

Quant Title : GC Extractables

QLast Update : Sat Oct 28 02:12:00 2023

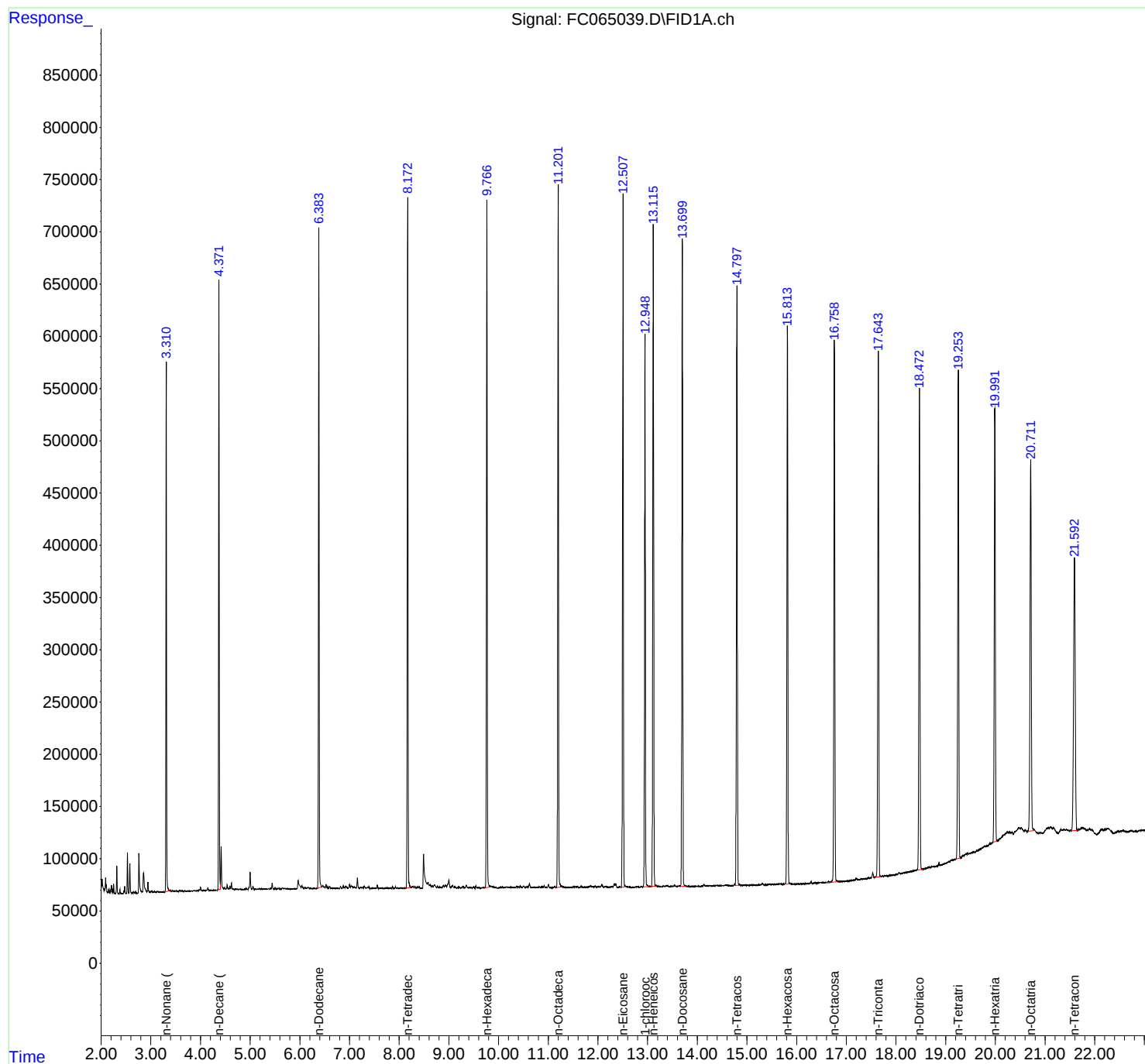
Response via : Initial Calibration

Integrator: ChemStation

Volume Inj. : 1 ul

Signal Phase : Rxi-1ms

Signal Info : 20M x 0.18mm x 0.18um



Instrument :

FID_C

ClientSampleId :

PB156949BS

rteres

Area Percent Report

Manual IntegrationsAPPROVED

Data Path : Z:\pestpcbsrv\HPCHEM1\FID_C\Data\F0

Data File : FC065039.D

Signal(s) : FID1A.ch

Acq On : 07 Nov 2023 21:17

Sample : PB156949BS

Misc :

ALS Vial : 20 Sample Multiplier: 1

Reviewed By :Yogesh Patel 11/08/2023

Supervised By :Ankita Jodhani 11/08/2023

Integration File: autoint1.e

Method : Z:\pestpcbsrv\HPCHEM1\FID_C\Method\Aliphatic EPH 102823.M

Title : GC Extractables

Signal : FID1A.ch

peak #	R.T. min	Start min	End min	PK TY	peak height	peak area	peak % max.	% of total
1	3.311	3.269	3.390	BB	505203	4265573	53.44%	3.345%
2	4.372	4.323	4.400	BV	583420	5265857	65.97%	4.129%
3	6.383	6.340	6.445	BV	631453	6144880	76.98%	4.819%
4	8.172	8.126	8.242	BV	660888	6741461	84.45%	5.286%
5	9.767	9.721	9.848	BB	658344	7232761	90.61%	5.672%
6	11.203	11.153	11.286	BB	671617	7597085	95.17%	5.957%
7	12.507	12.471	12.558	BB	663607	7982317	100.00%	6.259%
8	12.949	12.897	13.030	BB	527906	6207373	77.76%	4.868%
9	13.115	13.065	13.182	BB	633561	7670477	96.09%	6.015%
10	13.699	13.664	13.773	BB	618341	7609602	95.33%	5.967%
11	14.797	14.729	14.866	BB	574579	7380619	92.46%	5.788%
12	15.813	15.736	15.884	BB	533839	7158617	89.68%	5.614%
13	16.758	16.603	16.827	BB	519322	6968325	87.30%	5.464%
14	17.643	17.569	17.702	BB	502939	6899927	86.44%	5.411%
15	18.472	18.408	18.538	BB	461052	6816528	85.40%	5.345%
16	19.253	19.009	19.295	BV	467703	6718370	84.17%	5.268%
17	19.988	19.950	20.035	BV	410031	6369160	79.79%	4.995%
18	20.710	20.651	20.871	BV	356256	6430224	80.56%	5.042%
19	21.593	21.531	21.648	BV	260517	6064269	75.97%	4.755%

Sum of corrected areas: 127523423

Aliphatic EPH 102823.M Tue Nov 07 23:46:39 2023



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Report of Analysis

Client:	RMJ Environomics, Inc.	Date Collected:	
Project:	245 Greenwood Ave	Date Received:	
Client Sample ID:	PB156949BS	SDG No.:	O5252
Lab Sample ID:	PB156949BS	Matrix:	Solid
Analytical Method:	NJEPH	% Solid:	100
Sample Wt/Vol:	30	Units:	g
Soil Aliquot Vol:		Final Vol:	2000 uL
Prep Method :		Test:	EPH

File ID :	Dilution:	Prep Date :	Date Analyzed :	Prep Batch ID
FD046840.D	1	11/07/23	11/07/23	PB156949

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units
TARGETS						
Aromatic C10-C12	Aromatic C10-C12	3.97		0.15	0.67	mg/kg
Aromatic C12-C16	Aromatic C12-C16	7.36		0.15	1.00	mg/kg
Aromatic C16-C21	Aromatic C16-C21	14.6		0.30	1.67	mg/kg
Aromatic C21-C36	Aromatic C21-C36	23.5		0.39	2.67	mg/kg
SURROGATES						
580-13-2	2-Bromonaphthalene (SURR)	46.0		40 - 140	92%	SPK: 50
321-60-8	2-Fluorobiphenyl (SURR)	40.6		40 - 140	81%	SPK: 50
84-15-1	ortho-Terphenyl (SURR)	40.8		40 - 140	82%	SPK: 50



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Quantitation Report For Aromatic EPH Range.

Lab Sample ID:	PB156949BS	Acq On:	07 Nov 2023 18:08
Client Sample ID:	PB156949BS	Operator:	YP/AJ
Data file:	FD046840.D	Misc:	
Instrument:	FID_D	ALS Vial:	62
Dilution Factor:	1	Sample Multiplier:	1.00

Compound	R.T.		Response	Conc	highest_standard	Units
Aromatic C10-C12	4.196	5.923	11726564	59.621	200	ug/ml
Aromatic C12-C16	5.924	8.535	21360596	110.334	300	ug/ml
Aromatic C16-C21	8.536	12.798	38432296	219.749	500	ug/ml
Aromatic C21-C36	12.799	18.185	51147559	352.82	800	ug/ml
Aromatic EPH	4.196	18.185	122667015	742.524		ug/ml
2-Bromonaphthalene (SURRE)	7.485	7.485	8396396	46.04		ug/ml
2-Fluorobiphenyl (SURRE)	8.338	8.338	4774343	40.57		ug/ml
ortho-Terphenyl (SURRE)	11.377	11.377	8637285	40.79		ug/ml

Data Path : Z:\pestpcbsrv\HPCHEM1\FID_D\Data\FD110723AR\
 Data File : FD046840.D
 Signal(s) : FID2B.ch
 Acq On : 07 Nov 2023 18:08
 Operator : YP/AJ
 Sample : PB156949BS
 Misc :
 ALS Vial : 62 Sample Multiplier: 1

Instrument :

FID_D

ClientSampleId :

PB156949BS

Manual Integrations**APPROVED**

Reviewed By :Yogesh Patel 11/08/2023

Supervised By :Ankita Jodhani 11/08/2023

Integration File: autoint1.e

Quant Time: Nov 07 22:02:52 2023

Quant Method : Z:\pestpcbsrv\HPCHEM1\FID_D\methods\Aromatic EPH 102723.M

Quant Title : GC Extractables

QLast Update : Sat Oct 28 02:49:53 2023

Response via : Initial Calibration

Integrator: ChemStation

Volume Inj. : 1 µl

Signal Phase : Rxi-1ms

Signal Info : 20M x 0.18mm x 0.18µm

Compound	R.T.	Response	Conc Units

System Monitoring Compounds			
4) S 2-Bromonaphthalene (S...	7.485	8396396	46.039 ug/ml
Spiked Amount 50.000		Recovery =	92.08%
6) S 2-Fluorobiphenyl (SURR)	8.338	4774343	40.570 ug/ml
Spiked Amount 50.000 Range 0 - 131		Recovery =	81.14%
11) S ortho-Terphenyl (SURR)	11.377	8637285	40.789 ug/ml
Spiked Amount 50.000		Recovery =	81.58%
Target Compounds			
1) T 1,2,3-Trimethylbenzen...	4.296	5429465	28.114 ug/mlm
2) T Naphthalene (C11.7)	5.823	6399022	31.956 ug/ml
3) T 2-Methylnaphthalene (...)	6.872	6741729	33.544 ug/ml
5) T Acenaphthylene (C15.06)	8.142	7324793	39.824 ug/ml
7) T Acenaphthene (C15.5)	8.438	7294074	37.236 ug/ml
8) T Fluorene (C16.55)	9.216	7531206	40.716 ug/ml
9) T Phenanthrene (C19.36)	10.606	7606087	42.754 ug/ml
10) T Anthracene (C19.43)	10.681	7450612	43.720 ug/ml
12) T Fluoranthene (C21.85)	12.409	7913254	45.818 ug/ml
13) T Pyrene (C20.8)	12.704	7931137	47.698 ug/ml
14) T Benzo[a]anthracene (C...	14.568	6964781	49.504 ug/ml
15) T Chrysene (C27.41)	14.611	7007737	44.934 ug/ml
16) T benzo[b]fluoranthene ...	16.111	6836754	47.768 ug/ml
17) T Bnezo[k]fluoranthene ...	16.146	6608664	45.140 ug/ml
18) T Benzo[a]pyrene (C31.34)	16.487	6262447	44.678 ug/ml
19) T Indeno[1,2,3-cd]pyren...	17.845	6118321	48.432 ug/ml
20) T Dibenz[a,h]anthracene...	17.884	5467974	39.140 ug/ml
21) T Benzo[g,h,i]perylene ...	18.098	5880881	42.119 ug/ml

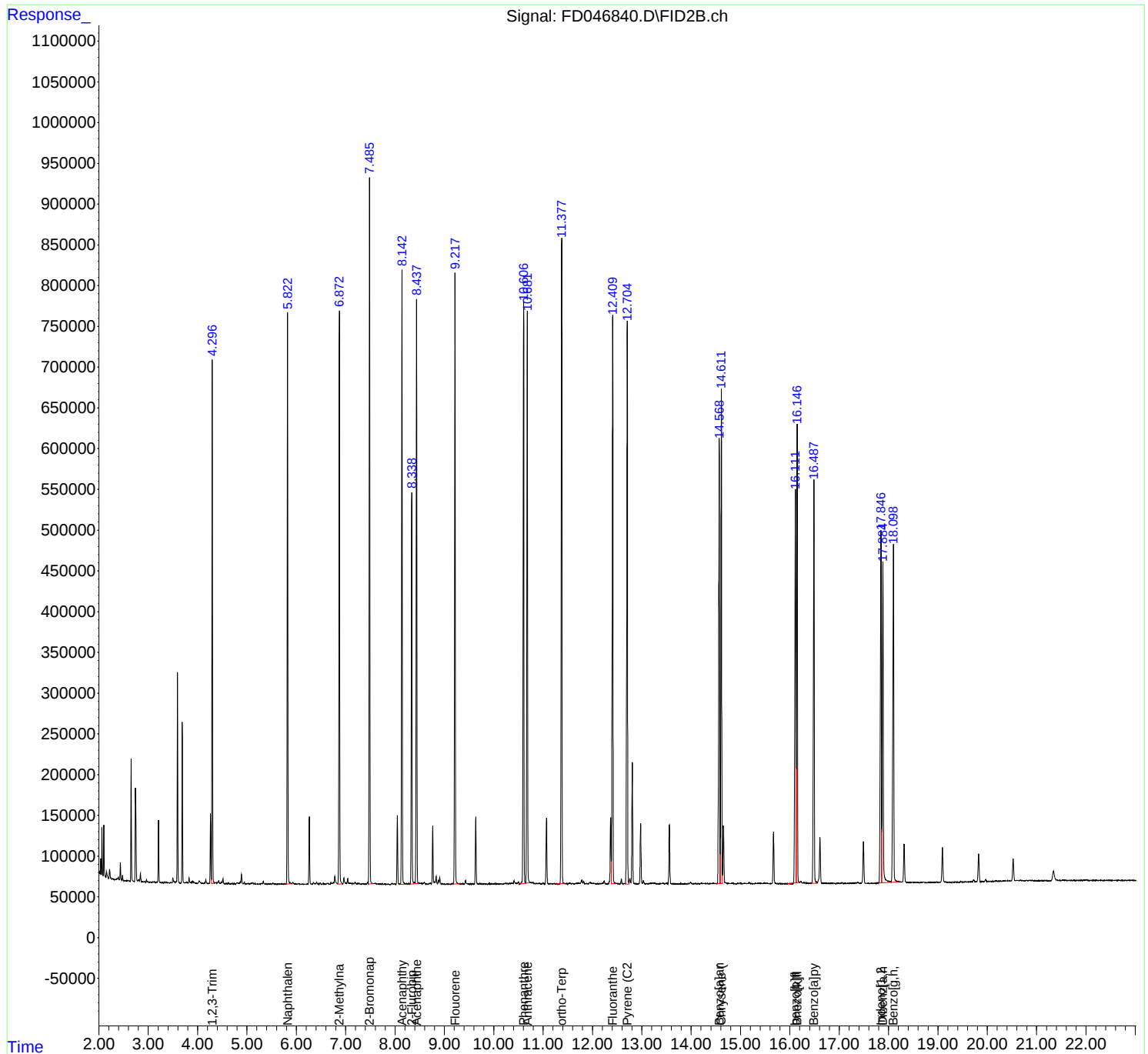
(f)=RT Delta > 1/2 Window

(m)=manual int.

Instrument :
FID_D
ClientSampleId :
PB156949BS

Reviewed By :Yogesh Patel 11/08/2023
Supervised By :Ankita Jodhani 11/08/2023

Volume Inj. : 1 µl
Signal Phase : Rxi-1ms
Signal Info : 20M x 0.18mm x 0.18µm



Instrument :

FID_D

ClientSampleId :

PB156949BS

rteres

Area Percent Report

Manual IntegrationsAPPROVED

Data Path : Z:\pestpcbsrv\HPCHEM1\FID_D\Data\FD
Data File : FD046840.D
Signal(s) : FID2B.ch
Acq On : 07 Nov 2023 18:08
Sample : PB156949BS
Misc :
ALS Vial : 62 Sample Multiplier: 1

Reviewed By :Yogesh Patel 11/08/2023
Supervised By :Ankita Jodhani 11/08/2023

Integration File: autoint1.e

Method : Z:\pestpcbsrv\HPCHEM1\FID_D\methods\Aromatic EPH 102723.M
Title : GC Extractables

Signal : FID2B.ch

peak #	R.T. min	Start min	End min	PK TY	peak height	peak area	peak % max.	% of total
1	4.296	4.278	4.347	PV	638282	5327542	61.68%	3.688%
2	5.823	5.762	5.912	BV	700621	6399022	74.09%	4.429%
3	6.872	6.835	6.942	PV	703921	6741729	78.05%	4.666%
4	7.485	7.457	7.558	VV	868068	8396396	97.21%	5.812%
5	8.142	8.092	8.215	VV	754971	7324793	84.80%	5.070%
6	8.338	8.302	8.385	PV	480379	4774343	55.28%	3.305%
7	8.438	8.408	8.483	VV	715110	7294074	84.45%	5.049%
8	9.216	9.187	9.320	VB	752362	7531206	87.19%	5.213%
9	10.606	10.527	10.647	PV	706924	7606087	88.06%	5.265%
10	10.681	10.647	10.747	VV	695543	7450612	86.26%	5.157%
11	11.377	11.252	11.433	BV	792648	8637285	100.00%	5.978%
12	12.409	12.382	12.483	VB	694665	7913254	91.62%	5.477%
13	12.704	12.667	12.742	VV	684294	7931137	91.82%	5.490%
14	14.568	14.518	14.587	BV	548126	6964781	80.64%	4.821%
15	14.611	14.587	14.633	VV	605084	7007737	81.13%	4.850%
16	16.111	15.945	16.126	BV	481518	6836754	79.15%	4.732%
17	16.146	16.126	16.197	VV	560886	6608664	76.51%	4.574%
18	16.487	16.408	16.548	BV	496724	6262447	72.50%	4.335%
19	17.845	17.800	17.861	BV	432519	6118321	70.84%	4.235%
20	17.884	17.861	18.050	VV	393580	5467974	63.31%	3.785%
21	18.098	18.050	18.220	VBA	416036	5880881	68.09%	4.071%
Sum of corrected areas:						144475039		

Aromatic EPH 102723.M Tue Nov 07 23:34:02 2023

Report of Analysis

Client:	RMJ Environomics, Inc.	Date Collected:	
Project:	245 Greenwood Ave	Date Received:	
Client Sample ID:	PB156949BSD	SDG No.:	O5252
Lab Sample ID:	PB156949BSD	Matrix:	Solid
Analytical Method:	NJEPH	% Solid:	100
Sample Wt/Vol:	30.03 Units: g	Final Vol:	2000 uL
Soil Aliquot Vol:	uL	Test:	EPH
Prep Method :			

Prep Date :	Date Analyzed :	Prep Batch ID
11/07/23 08:55	11/07/23 21:55	PB156949

Datafile

CAS Number	Parameter	Conc.	Qualifier	Dilution	MDL	LOQ / CRQL	Units(Dry Weight)	
TARGETS								
Aliphatic C9-C12	Aliphatic C9-C12	5.62		1	0.24	1.00	mg/kg	FC065040.D
Aliphatic C12-C16	Aliphatic C12-C16	5.08		1	0.14	0.67	mg/kg	FC065040.D
Aliphatic C16-C21	Aliphatic C16-C21	8.85		1	0.21	1.00	mg/kg	FC065040.D
Aliphatic C21-C28	Aliphatic C21-C28	12.2		1	0.46	1.33	mg/kg	FC065040.D
Aliphatic C28-C40	Aliphatic C28-C40	17.5		1	1.02	2.00	mg/kg	FC065040.D
Aromatic C10-C12	Aromatic C10-C12	4.04		1	0.15	0.67	mg/kg	FD046841.D
Aromatic C12-C16	Aromatic C12-C16	7.45		1	0.15	1.00	mg/kg	FD046841.D
Aromatic C16-C21	Aromatic C16-C21	14.8		1	0.30	1.67	mg/kg	FD046841.D
Aromatic C21-C36	Aromatic C21-C36	24.2		1	0.39	2.66	mg/kg	FD046841.D
Total AliphaticEPH	Total AliphaticEPH	49.3			2.07	5.99	mg/kg	
Total AromaticEPH	Total AromaticEPH	50.5			0.99	6.00	mg/kg	
Total EPH	Total EPH	99.7			3.06	12.0	mg/kg	

U = Not Detected

LOQ = Limit of Quantitation

MDL = Method Detection Limit

LOD = Limit of Detection

E = Value Exceeds Calibration Range

Q = indicates LCS control criteria did not meet requirements

J = Estimated Value

B = Analyte Found in Associated Method Blank

N = Presumptive Evidence of a Compound

* = Values outside of QC limits

D = Dilution



284 Sheffield Street, Mountainside NJ 07092 Phone: 908 789 8900 Fax : 908 789 8922

Report of Analysis

Client:	RMJ Environomics, Inc.	Date Collected:	
Project:	245 Greenwood Ave	Date Received:	
Client Sample ID:	PB156949BSD	SDG No.:	O5252
Lab Sample ID:	PB156949BSD	Matrix:	Solid
Analytical Method:	NJEPH	% Solid:	100
Sample Wt/Vol:	30.03	Units:	g
Soil Aliquot Vol:		Final Vol:	2000 uL
Prep Method :		Test:	EPH

File ID :	Dilution:	Prep Date :	Date Analyzed :	Prep Batch ID
FC065040.D	1	11/07/23	11/07/23	PB156949

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units
TARGETS						
Aliphatic C9-C12	Aliphatic C9-C12	5.62		0.24	1.00	mg/kg
Aliphatic C12-C16	Aliphatic C12-C16	5.08		0.14	0.67	mg/kg
Aliphatic C16-C21	Aliphatic C16-C21	8.85		0.21	1.00	mg/kg
Aliphatic C21-C28	Aliphatic C21-C28	12.2		0.46	1.33	mg/kg
Aliphatic C28-C40	Aliphatic C28-C40	17.5		1.02	2.00	mg/kg
SURROGATES						
3383-33-2	1-chlorooctadecane (SURR)	39.4		40 - 140	79%	SPK: 50
84-15-1	ortho-Terphenyl (SURR)	0.00		40 - 140	0%	SPK: 50



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Quantitation Report For Aliphatic EPH Range.

Lab Sample ID:	PB156949BSD	Acq On:	07 Nov 2023 21:55
Client Sample ID:	PB156949BSD	Operator:	YP/AJ
Data file:	FC065040.D	Misc:	
Instrument:	FID_C	ALS Vial:	21
Dilution Factor:	1	Sample Multiplier:	1.00

Compound	R.T.		Response	Conc	highest_standard	Units
Aliphatic C9-C12	3.211	6.483	16112223	84.448	300	ug/ml
Aliphatic C12-C16	6.484	9.865	14405292	76.276	200	ug/ml
Aliphatic C16-C21	9.866	13.214	24088853	132.824	300	ug/ml
Aliphatic C21-C28	13.215	16.858	29925452	182.657	400	ug/ml
Aliphatic C28-C40	16.859	21.689	40105322	262.784	600	ug/ml
Aliphatic EPH	3.211	21.689	124637142	738.989		ug/ml
ortho-Terphenyl (SURR)	0.000	0.000	0	0		ug/ml
1-chlorooctadecane (SURR)	12.947	12.947	6227333	39.39		ug/ml
Aliphatic C9-C28	3.211	16.858	84531820	476.205	1200	ug/ml

Data Path : Z:\pestpcbsrv\HPCHEM1\FID_C\Data\FC110723AL\
 Data File : FC065040.D
 Signal(s) : FID1A.ch
 Acq On : 07 Nov 2023 21:55
 Operator : YP/AJ
 Sample : PB156949BSD
 Misc :
 ALS Vial : 21 Sample Multiplier: 1

Instrument :
 FID_C
 ClientSampleId :
 PB156949BSD

Integration File: autoint1.e
 Quant Time: Nov 07 23:37:06 2023
 Quant Method : Z:\pestpcbsrv\HPCHEM1\FID_C\Method\Aliphatic EPH 102823.M
 Quant Title : GC Extractables
 QLast Update : Sat Oct 28 02:12:00 2023
 Response via : Initial Calibration
 Integrator: ChemStation

Volume Inj. : 1 ul
 Signal Phase : Rxi-1ms
 Signal Info : 20M x 0.18mm x 0.18um

Compound	R.T.	Response	Conc Units

System Monitoring Compounds			
12) S 1-chlorooctadecane (S...	12.947	6227333	39.392 ug/ml
Spiked Amount 50.000		Recovery =	78.78%
Target Compounds			
1) T n-Nonane (C9)	3.311	4372604	23.127 ug/ml
2) T n-Decane (C10)	4.372	5388264	28.338 ug/ml
4) T n-Dodecane (C12)	6.382	6351355	32.879 ug/ml
6) T n-Tetradecane (C14)	8.171	6941111	36.786 ug/ml
7) T n-Hexadecane (C16)	9.765	7464181	39.488 ug/ml
8) T n-Octadecane (C18)	11.201	7880213	41.754 ug/ml
10) T n-Eicosane (C20)	12.507	8287401	46.097 ug/ml
11) T n-Heneicosane (C21)	13.116	7921239	45.117 ug/ml
13) T n-Docosane (C22)	13.698	7859482	45.755 ug/ml
14) T n-Tetracosane (C24)	14.797	7593496	45.591 ug/ml
15) T n-Hexacosane (C26)	15.813	7351614	45.802 ug/ml
16) T n-Octacosane (C28)	16.758	7120860	45.500 ug/ml
17) T n-Tricontane (C30)	17.643	7053428	44.531 ug/ml
18) T n-Dotriacontane (C32)	18.473	6964624	44.109 ug/ml
19) T n-Tetratriacontane (C34)	19.251	6821317	44.689 ug/ml
20) T n-Hexatriacontane (C36)	19.989	6501478	43.090 ug/ml
21) T n-Octatriacontane (C38)	20.710	6483028	43.564 ug/ml
22) T n-Tetracontane (C40)	21.594	6281447	42.708 ug/ml

(f)=RT Delta > 1/2 Window

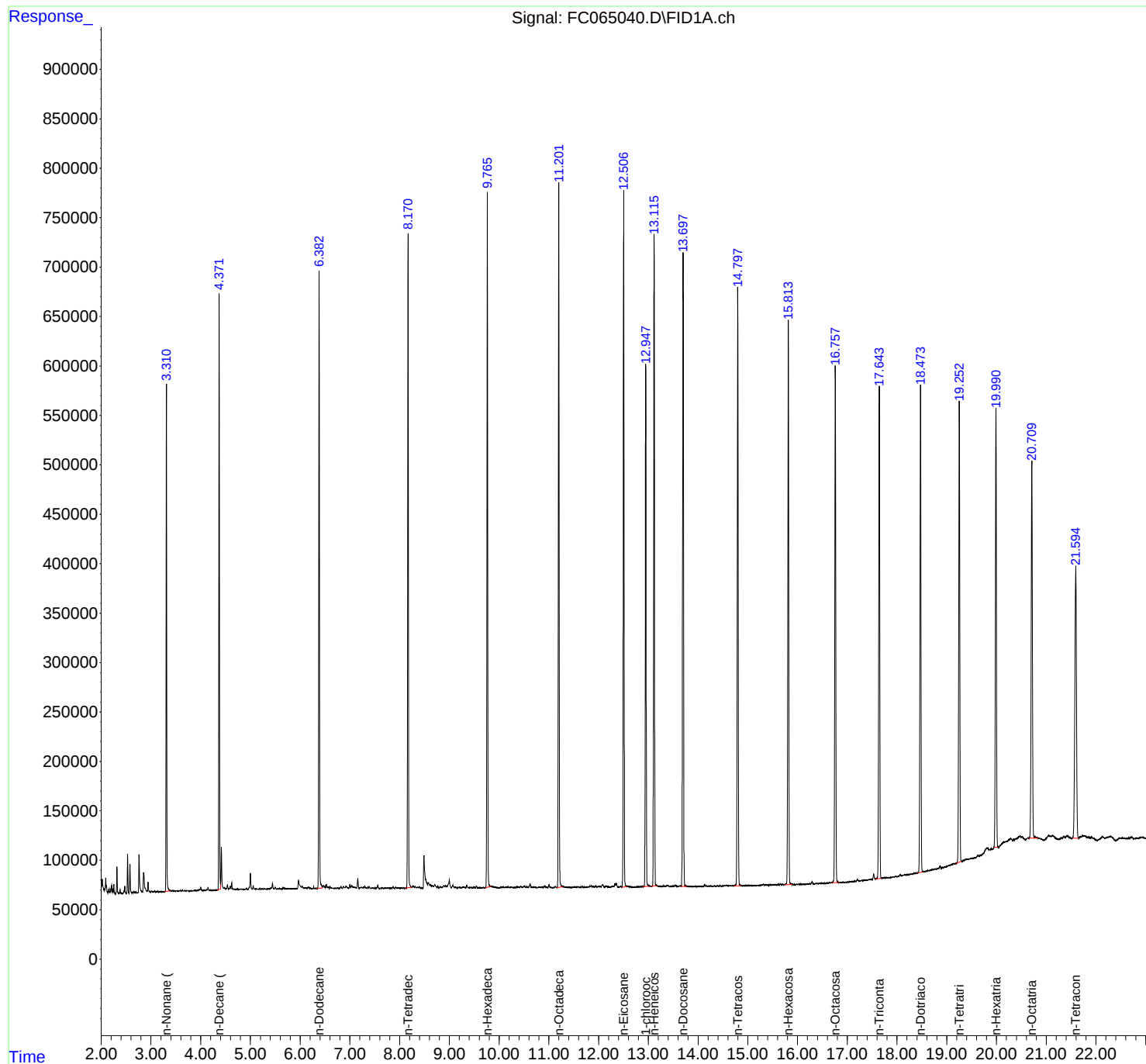
(m)=manual int.

Data Path : Z:\pestpcbsrv\HPCHEM1\FID_C\Data\FC110723AL\
Data File : FC065040.D
Signal(s) : FID1A.ch
Acq On : 07 Nov 2023 21:55
Operator : YP/AJ
Sample : PB156949BSD
Misc :
ALS Vial : 21 Sample Multiplier: 1

Instrument :
FID_C
ClientSampleId :
PB156949BSD

Integration File: autoint1.e
Quant Time: Nov 07 23:37:06 2023
Quant Method : Z:\pestpcbsrv\HPCHEM1\FID_C\Method\Aliphatic EPH 102823.M
Quant Title : GC Extractables
QLast Update : Sat Oct 28 02:12:00 2023
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. : 1 ul
Signal Phase : Rxi-1ms
Signal Info : 20M x 0.18mm x 0.18um



rteres

Area Percent Report

Data Path : Z:\pestpcbsrv\HPCHEM1\FID_C\Data\FC110723AL\
Data File : FC065040.D
Signal(s) : FID1A.ch
Acq On : 07 Nov 2023 21:55
Sample : PB156949BSD
Misc :
ALS Vial : 21 Sample Multiplier: 1

Integration File: autoint1.e

Method : Z:\pestpcbsrv\HPCHEM1\FID_C\Method\Aliphatic EPH 102823.M
Title : GC Extractables

Signal : FID1A.ch

peak #	R.T. min	Start min	End min	PK TY	peak height	peak area	peak % max.	% of total
1	3.311	3.267	3.397	BB	512259	4372604	52.76%	3.341%
2	4.372	4.323	4.400	BV	602850	5388264	65.02%	4.117%
3	6.382	6.337	6.447	BV	624112	6351355	76.64%	4.853%
4	8.171	8.120	8.243	BV	661553	6941111	83.75%	5.304%
5	9.765	9.718	9.844	BB	702472	7464181	90.07%	5.704%
6	11.201	11.159	11.288	BB	712978	7880213	95.09%	6.022%
7	12.507	12.467	12.581	BB	703795	8287401	100.00%	6.333%
8	12.947	12.892	13.022	BB	527953	6227333	75.14%	4.759%
9	13.116	13.062	13.174	BB	658702	7921239	95.58%	6.053%
10	13.698	13.659	13.777	PB	638808	7859482	94.84%	6.006%
11	14.797	14.717	14.873	BB	605731	7593496	91.63%	5.803%
12	15.813	15.732	15.892	BB	570586	7351614	88.71%	5.618%
13	16.758	16.687	16.839	BB	520107	7120860	85.92%	5.441%
14	17.643	17.569	17.691	BB	498480	7053428	85.11%	5.390%
15	18.473	18.408	18.527	BB	491678	6964624	84.04%	5.322%
16	19.251	19.183	19.294	BB	466412	6821317	82.31%	5.213%
17	19.989	19.951	20.037	BB	442260	6501478	78.45%	4.968%
18	20.710	20.650	20.844	BB	381322	6483028	78.23%	4.954%
19	21.594	21.530	21.650	BV	274867	6281447	75.80%	4.800%

Sum of corrected areas: 130864478

Aliphatic EPH 102823.M Tue Nov 07 23:47:15 2023



284 Sheffield Street, Mountainside NJ 07092 Phone: 908 789 8900 Fax : 908 789 8922

Report of Analysis

Client:	RMJ Environomics, Inc.	Date Collected:	
Project:	245 Greenwood Ave	Date Received:	
Client Sample ID:	PB156949BSD	SDG No.:	O5252
Lab Sample ID:	PB156949BSD	Matrix:	Solid
Analytical Method:	NJEPH	% Solid:	100
Sample Wt/Vol:	30.03	Units:	g
Soil Aliquot Vol:		Final Vol:	2000 uL
Prep Method :		Test:	EPH

File ID :	Dilution:	Prep Date :	Date Analyzed :	Prep Batch ID
FD046841.D	1	11/07/23	11/07/23	PB156949

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units
TARGETS						
Aromatic C10-C12	Aromatic C10-C12	4.04		0.15	0.67	mg/kg
Aromatic C12-C16	Aromatic C12-C16	7.45		0.15	1.00	mg/kg
Aromatic C16-C21	Aromatic C16-C21	14.8		0.30	1.67	mg/kg
Aromatic C21-C36	Aromatic C21-C36	24.2		0.39	2.66	mg/kg
SURROGATES						
580-13-2	2-Bromonaphthalene (SURR)	46.7		40 - 140	93%	SPK: 50
321-60-8	2-Fluorobiphenyl (SURR)	41.2		40 - 140	82%	SPK: 50
84-15-1	ortho-Terphenyl (SURR)	41.2		40 - 140	82%	SPK: 50



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Quantitation Report For Aromatic EPH Range.

Lab Sample ID:	PB156949BSD	Acq On:	07 Nov 2023 18:46
Client Sample ID:	PB156949BSD	Operator:	YP/AJ
Data file:	FD046841.D	Misc:	
Instrument:	FID_D	ALS Vial:	63
Dilution Factor:	1	Sample Multiplier:	1.00

Compound	R.T.		Response	Conc	highest_standard	Units
Aromatic C10-C12	4.196	5.923	11923237	60.621	200	ug/ml
Aromatic C12-C16	5.924	8.535	21653892	111.849	300	ug/ml
Aromatic C16-C21	8.536	12.798	38894689	222.393	500	ug/ml
Aromatic C21-C36	12.799	18.185	52768465	364.001	800	ug/ml
Aromatic EPH	4.196	18.185	125240283	758.864		ug/ml
2-Bromonaphthalene (SURR)	7.485	7.485	8515169	46.69		ug/ml
2-Fluorobiphenyl (SURR)	8.338	8.338	4845314	41.17		ug/ml
ortho-Terphenyl (SURR)	11.376	11.376	8723372	41.2		ug/ml

Data Path : Z:\pestpcbsrv\HPCHEM1\FID_D\Data\FD110723AR\
 Data File : FD046841.D
 Signal(s) : FID2B.ch
 Acq On : 07 Nov 2023 18:46
 Operator : YP/AJ
 Sample : PB156949BSD
 Misc :
 ALS Vial : 63 Sample Multiplier: 1

Instrument :

FID_D

ClientSampleId :

PB156949BSD

Manual Integrations**APPROVED**

Reviewed By :Yogesh Patel 11/08/2023

Supervised By :Ankita Jodhani 11/08/2023

Integration File: autoint1.e

Quant Time: Nov 07 22:03:02 2023

Quant Method : Z:\pestpcbsrv\HPCHEM1\FID_D\methods\Aromatic EPH 102723.M

Quant Title : GC Extractables

QLast Update : Sat Oct 28 02:49:53 2023

Response via : Initial Calibration

Integrator: ChemStation

Volume Inj. : 1 µl

Signal Phase : Rxi-1ms

Signal Info : 20M x 0.18mm x 0.18µm

Compound	R.T.	Response	Conc Units

System Monitoring Compounds			
4) S 2-Bromonaphthalene (S...	7.485	8515169	46.691 ug/ml
Spiked Amount 50.000		Recovery =	93.38%
6) S 2-Fluorobiphenyl (SURR)	8.338	4845314	41.173 ug/ml
Spiked Amount 50.000 Range 0 - 131		Recovery =	82.35%
11) S ortho-Terphenyl (SURR)	11.376	8723372	41.195 ug/ml
Spiked Amount 50.000		Recovery =	82.39%
Target Compounds			
1) T 1,2,3-Trimethylbenzen...	4.297	5473610	28.342 ug/mlm
2) T Naphthalene (C11.7)	5.823	6503211	32.476 ug/ml
3) T 2-Methylnaphthalene (...)	6.872	6848125	34.073 ug/ml
5) T Acenaphthylene (C15.06)	8.142	7412102	40.299 ug/ml
7) T Acenaphthene (C15.5)	8.438	7393665	37.745 ug/ml
8) T Fluorene (C16.55)	9.216	7632007	41.261 ug/ml
9) T Phenanthrene (C19.36)	10.606	7706945	43.320 ug/ml
10) T Anthracene (C19.43)	10.681	7596099	44.573 ug/ml
12) T Fluoranthene (C21.85)	12.410	7983131	46.223 ug/ml
13) T Pyrene (C20.8)	12.705	7976507	47.971 ug/ml
14) T Benzo[a]anthracene (C...	14.567	7098538	50.454 ug/ml
15) T Chrysene (C27.41)	14.611	7116653	45.632 ug/ml
16) T benzo[b]fluoranthene ...	16.110	6900948	48.216 ug/ml
17) T Bnezo[k]fluoranthene ...	16.145	6794924	46.412 ug/ml
18) T Benzo[a]pyrene (C31.34)	16.486	6401238	45.668 ug/ml
19) T Indeno[1,2,3-cd]pyren...	17.845	6403174	50.687 ug/ml
20) T Dibenz[a,h]anthracene...	17.884	5948036	42.577 ug/ml
21) T Benzo[g,h,i]perylene ...	18.098	6104954	43.724 ug/ml

(f)=RT Delta > 1/2 Window

(m)=manual int.

Data Path : Z:\pestpcbsrv\HPCHEM1\FID_D\Data\FD110723AR\
Data File : FD046841.D
Signal(s) : FID2B.ch
Acq On : 07 Nov 2023 18:46
Operator : YP/AJ
Sample : PB156949BSD
Misc :
ALS Vial : 63 Sample Multiplier: 1

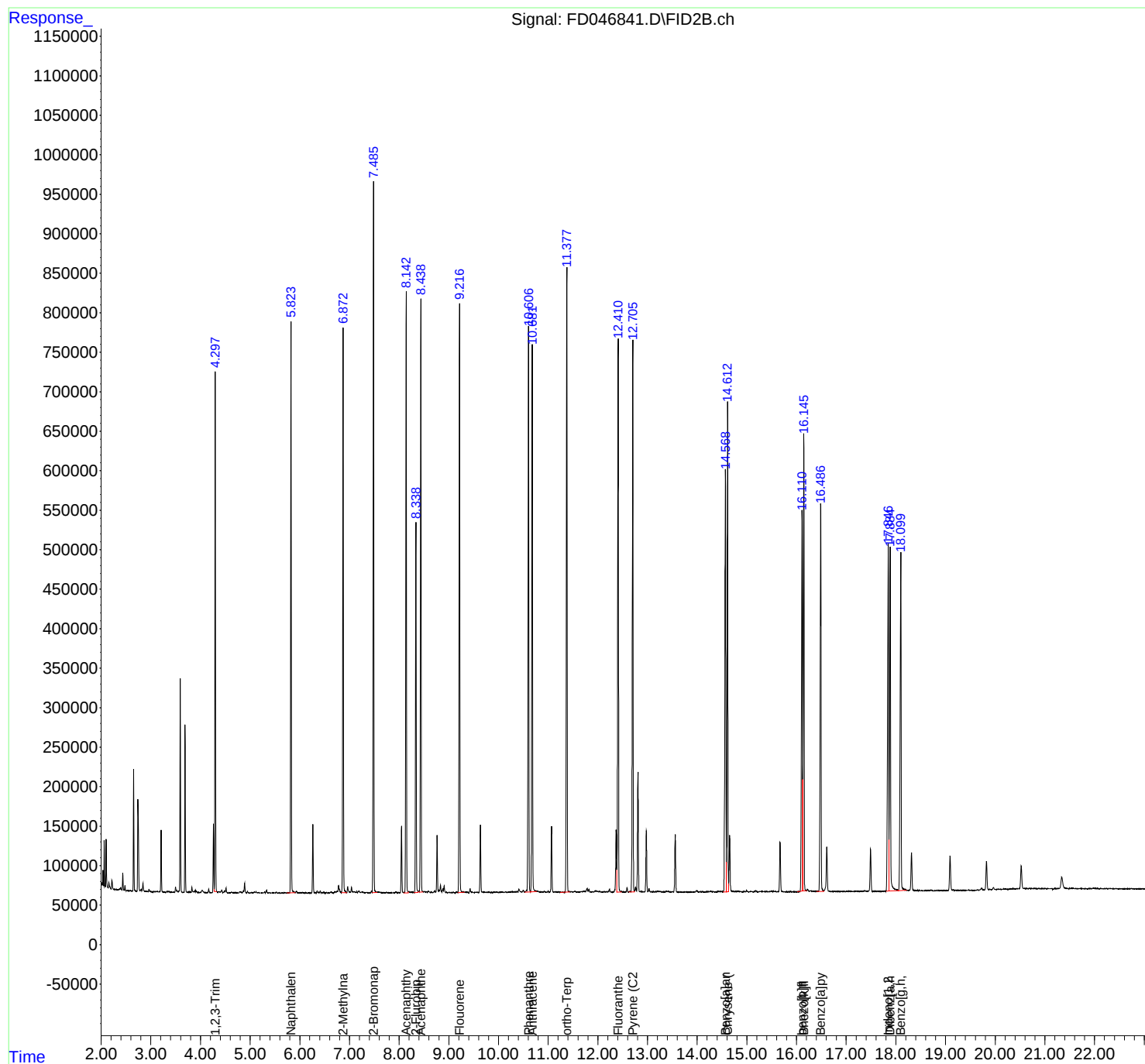
Instrument :
FID_D
ClientSampleId :
PB156949BSD

Manual Integrations
APPROVED

Reviewed By :Yogesh Patel 11/08/2023
Supervised By :Ankita Jodhani 11/08/2023

Integration File: autoint1.e
Quant Time: Nov 07 22:03:02 2023
Quant Method : Z:\pestpcbsrv\HPCHEM1\FID_D\methods\Aromatic EPH 102723.M
Quant Title : GC Extractables
QLast Update : Sat Oct 28 02:49:53 2023
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. : 1 µl
Signal Phase : Rxi-1ms
Signal Info : 20M x 0.18mm x 0.18µm



Instrument :

FID_D

ClientSampleId :

PB156949BSD

rteres

Area Percent Report

Manual IntegrationsAPPROVED

Data Path : Z:\pestpcbsrv\HPCHEM1\FID_D\Data\FD

Data File : FD046841.D

Signal(s) : FID2B.ch

Acq On : 07 Nov 2023 18:46

Sample : PB156949BSD

Misc :

ALS Vial : 63 Sample Multiplier: 1

Reviewed By :Yogesh Patel 11/08/2023

Supervised By :Ankita Jodhani 11/08/2023

Integration File: autoint1.e

Method : Z:\pestpcbsrv\HPCHEM1\FID_D\methods\Aromatic EPH 102723.M

Title : GC Extractables

Signal : FID2B.ch

peak #	R.T. min	Start min	End min	PK TY	peak height	peak area	peak % max.	% of total
1	4.297	4.279	4.344	PV	655883	5420026	62.13%	3.679%
2	5.823	5.737	5.912	BV	722060	6503211	74.55%	4.414%
3	6.872	6.837	6.949	VV	716112	6848125	78.50%	4.648%
4	7.485	7.457	7.560	VV	901228	8515169	97.61%	5.780%
5	8.142	8.094	8.183	VV	761252	7412102	84.97%	5.031%
6	8.338	8.304	8.385	PV	470219	4845314	55.54%	3.289%
7	8.438	8.409	8.482	VV	756296	7393665	84.76%	5.019%
8	9.216	9.185	9.315	PB	748091	7632007	87.49%	5.180%
9	10.606	10.524	10.647	PV	715186	7706945	88.35%	5.231%
10	10.681	10.647	10.775	VV	691682	7596099	87.08%	5.156%
11	11.376	11.239	11.437	PV	791852	8723372	100.00%	5.921%
12	12.410	12.383	12.480	VB	704163	7983131	91.51%	5.419%
13	12.705	12.622	12.738	PV	701828	7976507	91.44%	5.414%
14	14.567	14.519	14.587	PV	532899	7098538	81.37%	4.818%
15	14.611	14.587	14.632	VV	621555	7116653	81.58%	4.831%
16	16.110	16.014	16.125	BV	481867	6900948	79.11%	4.684%
17	16.145	16.125	16.202	VV	580982	6794924	77.89%	4.612%
18	16.486	16.400	16.550	BV	488009	6401238	73.38%	4.345%
19	17.845	17.800	17.860	BV	439649	6403174	73.40%	4.346%
20	17.884	17.860	18.049	VV	435861	5948036	68.19%	4.037%
21	18.098	18.049	18.220	VBA	429464	6104954	69.98%	4.144%
Sum of corrected areas:						147324137		

Aromatic EPH 102723.M Tue Nov 07 23:34:53 2023

Report of Analysis

Client:	RMJ Environomics, Inc.	Date Collected:	
Project:	245 Greenwood Ave	Date Received:	
Client Sample ID:	T-1MS	SDG No.:	O5252
Lab Sample ID:	O5251-01MS	Matrix:	Solid
Analytical Method:	NJEPH	% Solid:	81.6
Sample Wt/Vol:	30.02 Units: g	Final Vol:	2000 uL
Soil Aliquot Vol:	uL	Test:	EPH
Prep Method :			

Prep Date :	Date Analyzed :	Prep Batch ID
11/07/23 08:55	11/07/23 23:47	PB156949

Datafile

CAS Number	Parameter	Conc.	Qualifier	Dilution	MDL	LOQ / CRQL	Units(Dry Weight)	
TARGETS								
Aliphatic C9-C12	Aliphatic C9-C12	6.13		1	0.29	1.22	mg/kg	FC065043.D
Aliphatic C12-C16	Aliphatic C12-C16	5.72		1	0.17	0.82	mg/kg	FC065043.D
Aliphatic C16-C21	Aliphatic C16-C21	8.93		1	0.26	1.22	mg/kg	FC065043.D
Aliphatic C21-C28	Aliphatic C21-C28	12.0		1	0.56	1.63	mg/kg	FC065043.D
Aliphatic C28-C40	Aliphatic C28-C40	17.2		1	1.25	2.45	mg/kg	FC065043.D
Aromatic C10-C12	Aromatic C10-C12	4.78		1	0.18	0.82	mg/kg	FD046844.D
Aromatic C12-C16	Aromatic C12-C16	8.94		1	0.18	1.22	mg/kg	FD046844.D
Aromatic C16-C21	Aromatic C16-C21	18.9		1	0.37	2.04	mg/kg	FD046844.D
Aromatic C21-C36	Aromatic C21-C36	31.8		1	0.48	3.27	mg/kg	FD046844.D
Total AliphaticEPH	Total AliphaticEPH	50.0			2.54	7.34	mg/kg	
Total AromaticEPH	Total AromaticEPH	64.4			1.21	7.35	mg/kg	
Total EPH	Total EPH	114			3.75	14.7	mg/kg	

U = Not Detected

LOQ = Limit of Quantitation

MDL = Method Detection Limit

LOD = Limit of Detection

E = Value Exceeds Calibration Range

Q = indicates LCS control criteria did not meet requirements

J = Estimated Value

B = Analyte Found in Associated Method Blank

N = Presumptive Evidence of a Compound

* = Values outside of QC limits

D = Dilution



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Report of Analysis

Client:	RMJ Environomics, Inc.	Date Collected:	
Project:	245 Greenwood Ave	Date Received:	
Client Sample ID:	T-1MS	SDG No.:	O5252
Lab Sample ID:	O5251-01MS	Matrix:	Solid
Analytical Method:	NJEPH	% Solid:	81.6
Sample Wt/Vol:	30.02	Units:	g
Soil Aliquot Vol:		Final Vol:	2000 uL
Prep Method :		Test:	EPH

File ID :	Dilution:	Prep Date :	Date Analyzed :	Prep Batch ID
FC065043.D	1	11/07/23	11/07/23	PB156949

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units
TARGETS						
Aliphatic C9-C12	Aliphatic C9-C12	6.13		0.29	1.22	mg/kg
Aliphatic C12-C16	Aliphatic C12-C16	5.72		0.17	0.82	mg/kg
Aliphatic C16-C21	Aliphatic C16-C21	8.93		0.26	1.22	mg/kg
Aliphatic C21-C28	Aliphatic C21-C28	12.0		0.56	1.63	mg/kg
Aliphatic C28-C40	Aliphatic C28-C40	17.2		1.25	2.45	mg/kg
SURROGATES						
3383-33-2	1-chlorooctadecane (SURR)	34.1		40 - 140	68%	SPK: 50
84-15-1	ortho-Terphenyl (SURR)	0.00		40 - 140	0%	SPK: 50



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Quantitation Report For Aliphatic EPH Range.

Lab Sample ID:	O5251-01MS	Acq On:	07 Nov 2023 23:47
Client Sample ID:	O5251-01MS	Operator:	YP/AJ
Data file:	FC065043.D	Misc:	
Instrument:	FID_C	ALS Vial:	24
Dilution Factor:	1	Sample Multiplier:	1.00

Compound	R.T.		Response	Conc	highest_standard	Units
Aliphatic C9-C12	3.211	6.483	14324573	75.079	300	ug/ml
Aliphatic C12-C16	6.484	9.865	13240551	70.109	200	ug/ml
Aliphatic C16-C21	9.866	13.214	19842884	109.412	300	ug/ml
Aliphatic C21-C28	13.215	16.858	24157839	147.453	400	ug/ml
Aliphatic C28-C40	16.859	21.689	32238422	211.238	600	ug/ml
Aliphatic EPH	3.211	21.689	103804269	613.29		ug/ml
ortho-Terphenyl (SURR)	0.000	0.000	0	0		ug/ml
1-chlorooctadecane (SURR)	12.946	12.946	5398709	34.15		ug/ml
Aliphatic C9-C28	3.211	16.858	71565847	402.053	1200	ug/ml

Data Path : Z:\pestpcbsrv\HPCHEM1\FID_C\Data\F110723AL\
 Data File : FC065043.D
 Signal(s) : FID1A.ch
 Acq On : 07 Nov 2023 23:47
 Operator : YP/AJ
 Sample : 05251-01MS
 Misc :
 ALS Vial : 24 Sample Multiplier: 1

Instrument :
 FID_C
 ClientSampleId :
 T-1MS

Integration File: autoint1.e
 Quant Time: Nov 08 04:01:52 2023
 Quant Method : Z:\pestpcbsrv\HPCHEM1\FID_C\Method\Aliphatic EPH 102823.M
 Quant Title : GC Extractables
 QLast Update : Sat Oct 28 02:12:00 2023
 Response via : Initial Calibration
 Integrator: ChemStation

Volume Inj. : 1 ul
 Signal Phase : Rxi-1ms
 Signal Info : 20M x 0.18mm x 0.18um

Compound	R.T.	Response	Conc Units

System Monitoring Compounds			
12) S 1-chlorooctadecane (S...	12.946	5398709	34.151 ug/ml
Spiked Amount 50.000		Recovery =	68.30%
Target Compounds			
1) T n-Nonane (C9)	3.310	3511727	18.574 ug/ml
2) T n-Decane (C10)	4.371	4491543	23.622 ug/ml
4) T n-Dodecane (C12)	6.382	5493693	28.439 ug/ml
6) T n-Tetradecane (C14)	8.170	5923177	31.391 ug/ml
7) T n-Hexadecane (C16)	9.765	6327432	33.474 ug/ml
8) T n-Octadecane (C18)	11.201	6688196	35.438 ug/ml
10) T n-Eicosane (C20)	12.504	6733121	37.452 ug/ml
11) T n-Heneicosane (C21)	13.114	6421567	36.576 ug/ml
13) T n-Docosane (C22)	13.699	6343686	36.931 ug/ml
14) T n-Tetracosane (C24)	14.795	6117030	36.726 ug/ml
15) T n-Hexacosane (C26)	15.813	5923901	36.907 ug/ml
16) T n-Octacosane (C28)	16.758	5723051	36.569 ug/ml
17) T n-Tricontane (C30)	17.641	5657021	35.715 ug/ml
18) T n-Dotriacontane (C32)	18.471	5558038	35.201 ug/ml
19) T n-Tetratriacontane (C34)	19.251	5438487	35.630 ug/ml
20) T n-Hexatriacontane (C36)	19.988	5164081	34.226 ug/ml
21) T n-Octatriacontane (C38)	20.708	5088041	34.190 ug/ml
22) T n-Tetracontane (C40)	21.588	4981260	33.868 ug/ml

(f)=RT Delta > 1/2 Window

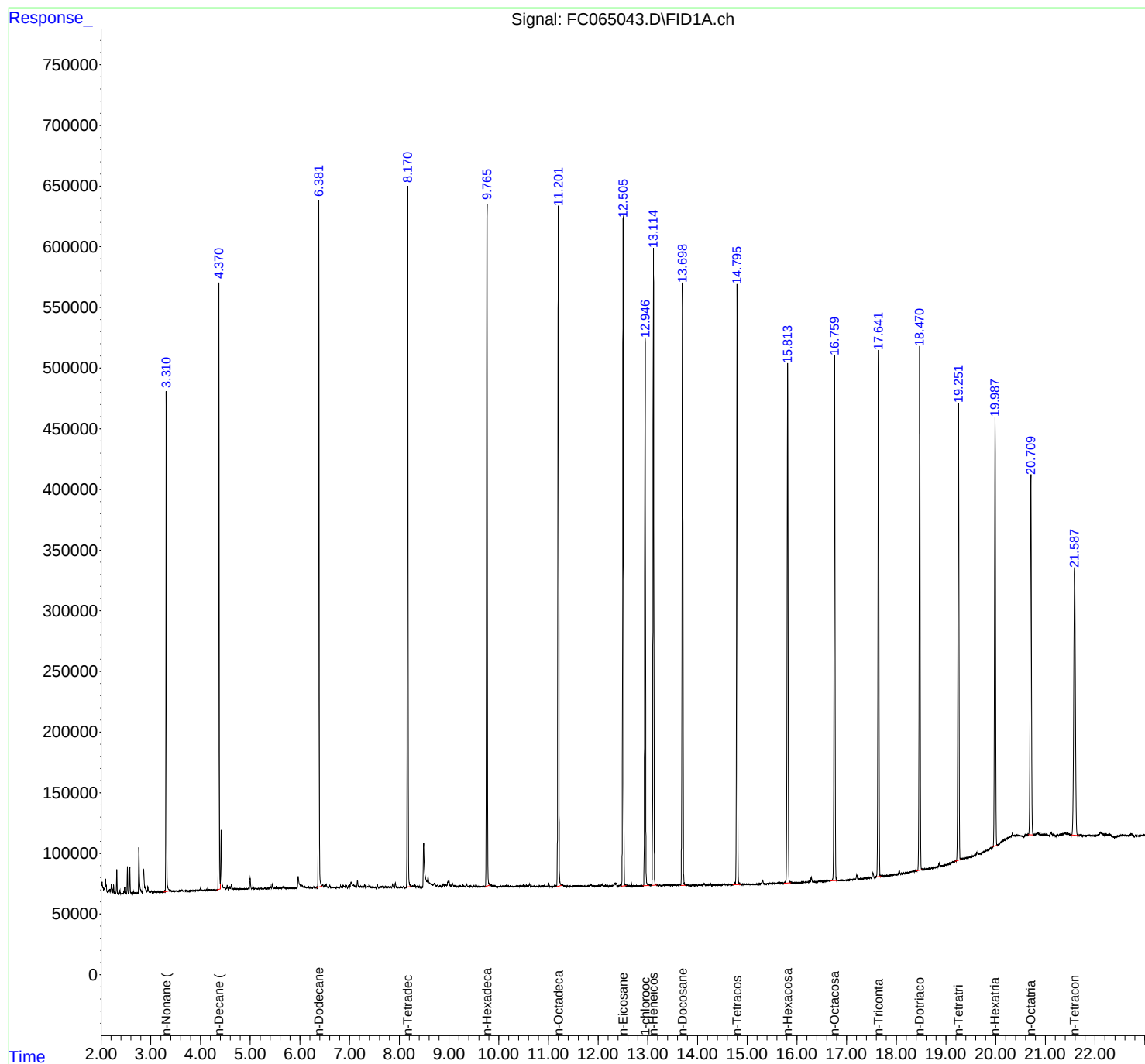
(m)=manual int.

Data Path : Z:\pestpcbsrv\HPCHEM1\FID_C\Data\FC110723AL\
Data File : FC065043.D
Signal(s) : FID1A.ch
Acq On : 07 Nov 2023 23:47
Operator : YP/AJ
Sample : 05251-01MS
Misc :
ALS Vial : 24 Sample Multiplier: 1

Instrument :
FID_C
ClientSampleId :
T-1MS

Integration File: autoint1.e
Quant Time: Nov 08 04:01:52 2023
Quant Method : Z:\pestpcbsrv\HPCHEM1\FID_C\Method\Aliphatic EPH 102823.M
Quant Title : GC Extractables
QLast Update : Sat Oct 28 02:12:00 2023
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. : 1 ul
Signal Phase : Rxi-1ms
Signal Info : 20M x 0.18mm x 0.18um



rteres

Area Percent Report

Data Path : Z:\pestpcbsrv\HPCHEM1\FID_C\Data\FC110723AL\
Data File : FC065043.D
Signal(s) : FID1A.ch
Acq On : 07 Nov 2023 23:47
Sample : 05251-01MS
Misc :
ALS Vial : 24 Sample Multiplier: 1

Integration File: autoint1.e

Method : Z:\pestpcbsrv\HPCHEM1\FID_C\Method\Aliphatic EPH 102823.M
Title : GC Extractables

Signal : FID1A.ch

peak #	R.T. min	Start min	End min	PK TY	peak height	peak area	peak % max.	% of total
1	3.310	3.250	3.391	BB	412026	3511727	52.16%	3.216%
2	4.371	4.327	4.398	BV	500284	4491543	66.71%	4.113%
3	4.416	4.398	4.472	VB	48278	504636	7.49%	0.462%
4	4.623	4.607	4.643	VB	3483	31388	0.47%	0.029%
5	5.000	4.898	5.030	BB	8686	110647	1.64%	0.101%
6	5.443	5.426	5.464	BB	3460	31325	0.47%	0.029%
7	5.966	5.930	6.023	BV	8954	149614	2.22%	0.137%
8	6.382	6.337	6.449	BV	564354	5493693	81.59%	5.031%
9	7.031	7.011	7.068	VB	3199	57839	0.86%	0.053%
10	7.159	7.122	7.194	BB	5863	62934	0.93%	0.058%
11	7.921	7.896	7.947	BB	3803	41976	0.62%	0.038%
12	8.170	8.118	8.239	BV	577342	5923177	87.97%	5.424%
13	8.491	8.455	8.564	BV	35309	637479	9.47%	0.584%
14	8.579	8.564	8.612	VB	6047	83517	1.24%	0.076%
15	8.999	8.957	9.037	BV	4777	106197	1.58%	0.097%
16	9.765	9.725	9.827	BB	561783	6327432	93.97%	5.794%
17	11.201	11.162	11.273	BB	560331	6688196	99.33%	6.125%
18	12.504	12.469	12.569	BB	550734	6733121	100.00%	6.166%
19	12.946	12.892	13.026	BB	451880	5398709	80.18%	4.944%
20	13.114	13.077	13.180	BB	524803	6421567	95.37%	5.880%
21	13.699	13.662	13.767	PB	496842	6343686	94.22%	5.809%
22	14.795	14.717	14.876	BB	493252	6117030	90.85%	5.602%
23	15.813	15.737	15.882	BB	427787	5923901	87.98%	5.425%
24	16.290	16.249	16.324	BB	3945	50171	0.75%	0.046%
25	16.758	16.677	16.820	BB	431623	5723051	85.00%	5.241%
26	17.204	17.161	17.236	BB	3611	48370	0.72%	0.044%
27	17.530	17.448	17.562	BB	4116	64802	0.96%	0.059%
28	17.641	17.574	17.691	BV	434668	5657021	84.02%	5.180%
29	18.059	18.018	18.086	BB	3526	45137	0.67%	0.041%
30	18.471	18.408	18.520	BB	431103	5558038	82.55%	5.090%
31	19.251	19.182	19.301	BB	375876	5438487	80.77%	4.980%

					rteres				
32	19.988	19.951	20.025	BB	349767	5164081	76.70%	4.729%	
33	20.339	20.047	20.368	BB	2550	193185	2.87%	0.177%	
34	20.708	20.651	20.755	BB	296144	5088041	75.57%	4.659%	
35	21.588	21.531	21.683	BB	220631	4981260	73.98%	4.561%	

Sum of corrected areas: 109202977

Aliphatic EPH 102823.M Wed Nov 08 04:13:23 2023

Report of Analysis

Client:	RMJ Environomics, Inc.	Date Collected:	
Project:	245 Greenwood Ave	Date Received:	
Client Sample ID:	T-1MS	SDG No.:	O5252
Lab Sample ID:	O5251-01MS	Matrix:	Solid
Analytical Method:	NJEPH	% Solid:	81.6
Sample Wt/Vol:	30.02 Units: g	Final Vol:	2000 uL
Soil Aliquot Vol:	uL	Test:	EPH
Prep Method :			

File ID :	Dilution:	Prep Date :	Date Analyzed :	Prep Batch ID
FD046844.D	1	11/07/23	11/07/23	PB156949

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units
TARGETS						
Aromatic C10-C12	Aromatic C10-C12	4.78		0.18	0.82	mg/kg
Aromatic C12-C16	Aromatic C12-C16	8.94		0.18	1.22	mg/kg
Aromatic C16-C21	Aromatic C16-C21	18.9		0.37	2.04	mg/kg
Aromatic C21-C36	Aromatic C21-C36	31.8		0.48	3.27	mg/kg
SURROGATES						
580-13-2	2-Bromonaphthalene (SURR)	43.4		40 - 140	87%	SPK: 50
321-60-8	2-Fluorobiphenyl (SURR)	37.2		40 - 140	74%	SPK: 50
84-15-1	ortho-Terphenyl (SURR)	30.7		40 - 140	61%	SPK: 50



284 Sheffield Street, Mountainside NJ 07092 (908)-789-8900 Fax : 908 789 8922

Quantitation Report For Aromatic EPH Range.

Lab Sample ID:	O5251-01MS	Acq On:	07 Nov 2023 20:40
Client Sample ID:	T-1MS	Operator:	YP/AJ
Data file:	FD046844.D	Misc:	
Instrument:	FID_D	ALS Vial:	66
Dilution Factor:	1	Sample Multiplier:	1.00

Compound	R.T.		Response	Conc	highest_standard	Units
Aromatic C10-C12	4.196	5.923	11506189	58.501	200	ug/ml
Aromatic C12-C16	5.924	8.535	21197353	109.491	300	ug/ml
Aromatic C16-C21	8.536	12.798	40437398	231.214	500	ug/ml
Aromatic C21-C36	12.799	18.185	56383008	388.935	800	ug/ml
Aromatic EPH	4.196	18.185	129523948	788.14		ug/ml
2-Bromonaphthalene (SURR)	7.485	7.485	7914024	43.39		ug/ml
2-Fluorobiphenyl (SURR)	8.337	8.337	4379981	37.22		ug/ml
ortho-Terphenyl (SURR)	11.375	11.375	6494033	30.67		ug/ml

Data Path : Z:\pestpcbsrv\HPCHEM1\FID_D\Data\FD110723AR\
 Data File : FD046844.D
 Signal(s) : FID2B.ch
 Acq On : 07 Nov 2023 20:40
 Operator : YP/AJ
 Sample : 05251-01MS
 Misc :
 ALS Vial : 66 Sample Multiplier: 1

Instrument :
 FID_D
 ClientSampleId :
 T-1MS

Integration File: autoint1.e
 Quant Time: Nov 07 22:03:29 2023
 Quant Method : Z:\pestpcbsrv\HPCHEM1\FID_D\methods\Aromatic EPH 102723.M
 Quant Title : GC Extractables
 QLast Update : Sat Oct 28 02:49:53 2023
 Response via : Initial Calibration
 Integrator: ChemStation

Volume Inj. : 1 µl
 Signal Phase : Rxi-1ms
 Signal Info : 20M x 0.18mm x 0.18µm

Compound	R.T.	Response	Conc Units

System Monitoring Compounds			
4) S 2-Bromonaphthalene (S...	7.485	7914024	43.394 ug/ml
Spiked Amount 50.000		Recovery =	86.79%
6) S 2-Fluorobiphenyl (SURR)	8.337	4379981	37.219 ug/ml
Spiked Amount 50.000 Range 0 - 131		Recovery =	74.44%
11) S ortho-Terphenyl (SURR)	11.375	6494033	30.668 ug/ml
Spiked Amount 50.000		Recovery =	61.34%
Target Compounds			
1) T 1,2,3-Trimethylbenzen...	4.296	4574927	23.689 ug/ml
2) T Naphthalene (C11.7)	5.823	5563232	27.782 ug/ml
3) T 2-Methylnaphthalene (...)	6.872	5918259	29.446 ug/ml
5) T Acenaphthylene (C15.06)	8.141	6373798	34.654 ug/ml
7) T Acenaphthene (C15.5)	8.437	6462645	32.992 ug/ml
8) T Fluorene (C16.55)	9.216	6758478	36.539 ug/ml
9) T Phenanthrene (C19.36)	10.605	7158199	40.236 ug/ml
10) T Anthracene (C19.43)	10.679	6725924	39.467 ug/ml
12) T Fluoranthene (C21.85)	12.408	7521586	43.551 ug/ml
13) T Pyrene (C20.8)	12.703	7441170	44.752 ug/ml
14) T Benzo[a]anthracene (C...	14.567	6536745	46.461 ug/ml
15) T Chrysene (C27.41)	14.610	6618225	42.437 ug/ml
16) T benzo[b]fluoranthene ...	16.110	6414514	44.817 ug/ml
17) T Bnezo[k]fluoranthene ...	16.144	6178560	42.202 ug/ml
18) T Benzo[a]pyrene (C31.34)	16.485	5898477	42.082 ug/ml
19) T Indeno[1,2,3-cd]pyren...	17.844	6063278	47.996 ug/ml
20) T Dibenz[a,h]anthracene...	17.884	5453673	39.038 ug/ml
21) T Benzo[g,h,i]perylene ...	18.097	5582082	39.979 ug/ml

(f)=RT Delta > 1/2 Window

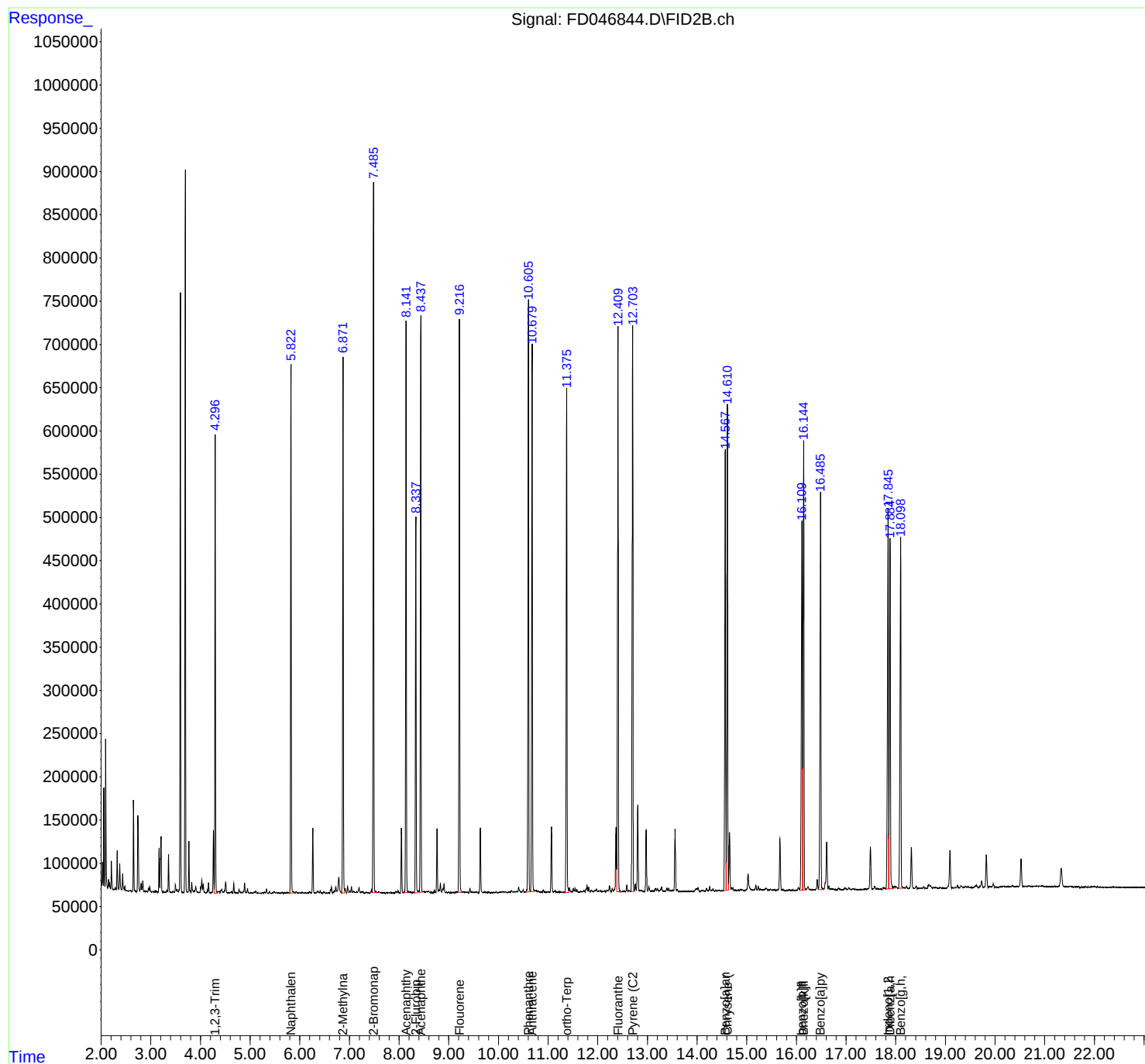
(m)=manual int.

Data Path : Z:\pestpcbsrv\HPCHEM1\FID_D\Data\FD110723AR\
Data File : FD046844.D
Signal(s) : FID2B.ch
Acq On : 07 Nov 2023 20:40
Operator : YP/AJ
Sample : 05251-01MS
Misc :
ALS Vial : 66 Sample Multiplier: 1

Instrument :
FID_D
ClientSampleId :
T-1MS

Integration File: autoint1.e
Quant Time: Nov 07 22:03:29 2023
Quant Method : Z:\pestpcbsrv\HPCHEM1\FID_D\methods\Aromatic EPH 102723.M
Quant Title : GC Extractables
QLast Update : Sat Oct 28 02:49:53 2023
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. : 1 µl
Signal Phase : Rxi-1ms
Signal Info : 20M x 0.18mm x 0.18µm



rteres

Area Percent Report

Data Path : Z:\pestpcbsrv\HPCHEM1\FID_D\Data\FD110723AR\
Data File : FD046844.D
Signal(s) : FID2B.ch
Acq On : 07 Nov 2023 20:40
Sample : 05251-01MS
Misc :
ALS Vial : 66 Sample Multiplier: 1

Integration File: autoint1.e

Method : Z:\pestpcbsrv\HPCHEM1\FID_D\methods\Aromatic EPH 102723.M
Title : GC Extractables

Signal : FID2B.ch

peak #	R.T. min	Start min	End min	PK TY	peak height	peak area	peak % max.	% of total
1	4.262	4.252	4.278	PH	72425	621742	7.86%	0.419%
2	4.296	4.278	4.340	VV	529535	4574927	57.81%	3.085%
3	4.429	4.393	4.446	VV	3963	79302	1.00%	0.053%
4	4.508	4.470	4.558	VV	12501	198471	2.51%	0.134%
5	4.671	4.650	4.693	PV	10891	97897	1.24%	0.066%
6	4.776	4.747	4.838	BV	4465	71225	0.90%	0.048%
7	4.889	4.871	4.925	VV	11558	128921	1.63%	0.087%
8	4.948	4.925	4.987	VB	5121	59138	0.75%	0.040%
9	5.113	5.098	5.155	VV	2714	33404	0.42%	0.023%
10	5.331	5.308	5.358	VV	4805	51405	0.65%	0.035%
11	5.388	5.358	5.430	PV	2481	26525	0.34%	0.018%
12	5.823	5.768	5.910	BV	609034	5563232	70.30%	3.751%
13	6.263	6.235	6.293	BV	75368	736847	9.31%	0.497%
14	6.363	6.327	6.397	BV	2224	44710	0.56%	0.030%
15	6.412	6.397	6.432	VV	2513	24606	0.31%	0.017%
16	6.639	6.538	6.665	BV	6619	109464	1.38%	0.074%
17	6.699	6.665	6.712	VV	2913	46812	0.59%	0.032%
18	6.726	6.712	6.745	VV	7123	84644	1.07%	0.057%
19	6.786	6.745	6.835	VV	17744	326977	4.13%	0.220%
20	6.872	6.835	6.903	VV	621214	5918259	74.78%	3.990%
21	6.915	6.903	6.945	VV	4743	58421	0.74%	0.039%
22	6.964	6.945	6.995	PV	7127	84561	1.07%	0.057%
23	7.042	7.023	7.060	PV	6185	57996	0.73%	0.039%
24	7.194	7.161	7.223	PV	5992	79877	1.01%	0.054%
25	7.441	7.383	7.457	BV	3073	24564	0.31%	0.017%
26	7.485	7.457	7.558	VB	823428	7914024	100.00%	5.336%
27	8.048	8.010	8.075	PV	74998	763172	9.64%	0.515%
28	8.141	8.075	8.182	PV	659941	6373798	80.54%	4.298%
29	8.337	8.308	8.378	PV	435788	4379981	55.34%	2.953%
30	8.437	8.408	8.482	VV	666269	6462645	81.66%	4.357%
31	8.765	8.738	8.790	VV	74123	736824	9.31%	0.497%

					rteres			
32	8.805	8.790	8.815	VV	3470	38368	0.48%	0.026%
33	8.833	8.815	8.858	VV	10375	123375	1.56%	0.083%
34	8.881	8.858	8.891	VV	4856	58784	0.74%	0.040%
35	8.906	8.891	8.935	VV	9772	105946	1.34%	0.071%
36	9.216	9.183	9.272	VV	662137	6758478	85.40%	4.557%
37	9.428	9.392	9.451	PV	4815	53784	0.68%	0.036%
38	9.636	9.587	9.691	BV	75020	826854	10.45%	0.558%
39	10.264	10.167	10.292	PV	2367	59364	0.75%	0.040%
40	10.409	10.340	10.444	VV	5956	117545	1.49%	0.079%
41	10.499	10.470	10.523	VV	2534	38632	0.49%	0.026%
42	10.605	10.523	10.647	PV	687176	7158199	90.45%	4.826%
43	10.679	10.647	10.740	VV	636221	6725924	84.99%	4.535%
44	10.902	10.845	10.941	BV	2662	48866	0.62%	0.033%
45	11.069	11.027	11.103	BV	75518	849876	10.74%	0.573%
46	11.375	11.325	11.416	BV	584861	6494033	82.06%	4.379%
47	11.431	11.416	11.477	VV	5585	89204	1.13%	0.060%
48	11.511	11.477	11.528	VV	4766	71170	0.90%	0.048%
49	11.545	11.528	11.563	VV	4190	51144	0.65%	0.034%
50	11.579	11.563	11.623	VB	3405	42713	0.54%	0.029%
51	11.785	11.744	11.803	VV	7548	124611	1.57%	0.084%
52	11.819	11.803	11.842	VV	5428	64181	0.81%	0.043%
53	11.873	11.842	11.910	PV	2235	34222	0.43%	0.023%
54	11.975	11.960	12.027	VB	3149	40459	0.51%	0.027%
55	12.236	12.161	12.272	PV	6968	126130	1.59%	0.085%
56	12.293	12.272	12.314	VV	3767	48355	0.61%	0.033%
57	12.368	12.314	12.382	VV	74142	893571	11.29%	0.602%
58	12.408	12.382	12.475	VV	653743	7521586	95.04%	5.071%
59	12.586	12.558	12.611	PV	7691	89072	1.13%	0.060%
60	12.703	12.663	12.737	PV	658190	7441170	94.03%	5.017%
61	12.756	12.737	12.777	VV	8367	98991	1.25%	0.067%
62	12.806	12.777	12.837	VV	99698	1159985	14.66%	0.782%
63	12.975	12.940	13.009	BV	71824	862249	10.90%	0.581%
64	13.030	13.009	13.075	VV	5764	89283	1.13%	0.060%
65	13.161	13.138	13.183	BV	3182	49663	0.63%	0.033%
66	13.200	13.183	13.228	VV	3165	44509	0.56%	0.030%
67	13.286	13.228	13.325	VV	5411	108910	1.38%	0.073%
68	13.392	13.325	13.414	PV	3920	60629	0.77%	0.041%
69	13.431	13.414	13.455	VV	3287	36385	0.46%	0.025%
70	13.558	13.527	13.585	PV	71530	841253	10.63%	0.567%
71	13.988	13.837	14.003	BV	3234	88234	1.11%	0.059%
72	14.017	14.003	14.058	VV	4102	58256	0.74%	0.039%
73	14.190	14.150	14.228	BV	3243	55119	0.70%	0.037%
74	14.252	14.228	14.273	VV	5263	66672	0.84%	0.045%
75	14.320	14.273	14.348	VV	2988	56595	0.72%	0.038%
76	14.567	14.525	14.586	BV	509908	6536745	82.60%	4.407%
77	14.610	14.586	14.632	VV	563179	6618225	83.63%	4.462%
78	14.652	14.632	14.680	VV	65517	796515	10.06%	0.537%
79	15.026	14.935	15.120	BB	18742	332592	4.20%	0.224%

80	15.181	15.142	15.207	BV	rteres 6012	83629	1.06%	0.056%
81	15.230	15.207	15.252	PV	4694	54481	0.69%	0.037%
82	15.667	15.587	15.698	PV	59338	777064	9.82%	0.524%
83	16.039	15.882	16.061	PV	2957	68928	0.87%	0.046%
84	16.110	16.061	16.125	VV	427508	6414514	81.05%	4.325%
85	16.144	16.125	16.198	VV	514974	6178560	78.07%	4.166%
86	16.230	16.198	16.257	VV	3511	62800	0.79%	0.042%
87	16.418	16.373	16.441	PV	11764	152346	1.93%	0.103%
88	16.485	16.441	16.550	VV	461010	5898477	74.53%	3.977%
89	16.607	16.550	16.635	VV	54694	814601	10.29%	0.549%
90	16.652	16.635	16.675	VV	3343	40481	0.51%	0.027%
91	16.977	16.932	17.032	BV	2240	54381	0.69%	0.037%
92	17.056	17.032	17.083	VV	2022	31737	0.40%	0.021%
93	17.488	17.402	17.525	BV	48674	715746	9.04%	0.483%
94	17.575	17.525	17.602	PV	3425	51670	0.65%	0.035%
95	17.746	17.719	17.764	PV	1939	22741	0.29%	0.015%
96	17.844	17.800	17.860	BV	435446	6063278	76.61%	4.088%
97	17.884	17.860	17.949	VV	404084	5453673	68.91%	3.677%
98	18.097	18.048	18.155	PV	404421	5582082	70.53%	3.764%
Sum of corrected areas:						148311981		

Aromatic EPH 102723.M Tue Nov 07 23:31:45 2023

Report of Analysis

Client:	RMJ Environomics, Inc.	Date Collected:	
Project:	245 Greenwood Ave	Date Received:	
Client Sample ID:	T-1MSD	SDG No.:	O5252
Lab Sample ID:	O5251-01MSD	Matrix:	Solid
Analytical Method:	NJEPH	% Solid:	81.6
Sample Wt/Vol:	30.04 Units: g	Final Vol:	2000 uL
Soil Aliquot Vol:	uL	Test:	EPH
Prep Method :			

Prep Date :	Date Analyzed :	Prep Batch ID
11/07/23 08:55	11/08/23 0:24	PB156949

Datafile

CAS Number	Parameter	Conc.	Qualifier	Dilution	MDL	LOQ / CRQL	Units(Dry Weight)	
TARGETS								
Aliphatic C9-C12	Aliphatic C9-C12	6.34		1	0.29	1.22	mg/kg	FC065044.D
Aliphatic C12-C16	Aliphatic C12-C16	5.91		1	0.17	0.82	mg/kg	FC065044.D
Aliphatic C16-C21	Aliphatic C16-C21	9.17		1	0.26	1.22	mg/kg	FC065044.D
Aliphatic C21-C28	Aliphatic C21-C28	12.3		1	0.56	1.63	mg/kg	FC065044.D
Aliphatic C28-C40	Aliphatic C28-C40	17.8		1	1.25	2.45	mg/kg	FC065044.D
Aromatic C10-C12	Aromatic C10-C12	4.79		1	0.18	0.82	mg/kg	FD046845.D
Aromatic C12-C16	Aromatic C12-C16	9.07		1	0.18	1.22	mg/kg	FD046845.D
Aromatic C16-C21	Aromatic C16-C21	19.1		1	0.37	2.04	mg/kg	FD046845.D
Aromatic C21-C36	Aromatic C21-C36	32.3		1	0.48	3.26	mg/kg	FD046845.D
Total AliphaticEPH	Total AliphaticEPH	51.5			2.54	7.34	mg/kg	
Total AromaticEPH	Total AromaticEPH	65.3			1.21	7.34	mg/kg	
Total EPH	Total EPH	117			3.75	14.7	mg/kg	

U = Not Detected

LOQ = Limit of Quantitation

MDL = Method Detection Limit

LOD = Limit of Detection

E = Value Exceeds Calibration Range

Q = indicates LCS control criteria did not meet requirements

J = Estimated Value

B = Analyte Found in Associated Method Blank

N = Presumptive Evidence of a Compound

* = Values outside of QC limits

D = Dilution



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Report of Analysis

Client:	RMJ Environomics, Inc.	Date Collected:	
Project:	245 Greenwood Ave	Date Received:	
Client Sample ID:	T-1MSD	SDG No.:	O5252
Lab Sample ID:	O5251-01MSD	Matrix:	Solid
Analytical Method:	NJEPH	% Solid:	81.6
Sample Wt/Vol:	30.04	Units:	g
Soil Aliquot Vol:		Final Vol:	2000 uL
Prep Method :		Test:	EPH

File ID :	Dilution:	Prep Date :	Date Analyzed :	Prep Batch ID
FC065044.D	1	11/07/23	11/08/23	PB156949

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units
TARGETS						
Aliphatic C9-C12	Aliphatic C9-C12	6.34		0.29	1.22	mg/kg
Aliphatic C12-C16	Aliphatic C12-C16	5.91		0.17	0.82	mg/kg
Aliphatic C16-C21	Aliphatic C16-C21	9.17		0.26	1.22	mg/kg
Aliphatic C21-C28	Aliphatic C21-C28	12.3		0.56	1.63	mg/kg
Aliphatic C28-C40	Aliphatic C28-C40	17.8		1.25	2.45	mg/kg
SURROGATES						
3383-33-2	1-chlorooctadecane (SURR)	35.0		40 - 140	70%	SPK: 50
84-15-1	ortho-Terphenyl (SURR)	0.00		40 - 140	0%	SPK: 50



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Quantitation Report For Aliphatic EPH Range.

Lab Sample ID:	O5251-01MSD	Acq On:	08 Nov 2023 00:24
Client Sample ID:	O5251-01MSD	Operator:	YP/AJ
Data file:	FC065044.D	Misc:	
Instrument:	FID_C	ALS Vial:	25
Dilution Factor:	1	Sample Multiplier:	1.00

Compound	R.T.		Response	Conc	highest_standard	Units
Aliphatic C9-C12	3.211	6.483	14824529	77.699	300	ug/ml
Aliphatic C12-C16	6.484	9.865	13683755	72.456	200	ug/ml
Aliphatic C16-C21	9.866	13.214	20377496	112.36	300	ug/ml
Aliphatic C21-C28	13.215	16.858	24783706	151.273	400	ug/ml
Aliphatic C28-C40	16.859	21.689	33215414	217.639	600	ug/ml
Aliphatic EPH	3.211	21.689	106884900	631.426		ug/ml
ortho-Terphenyl (SURR)	0.000	0.000	0	0		ug/ml
1-chlorooctadecane (SURR)	12.946	12.946	5530563	34.98		ug/ml
Aliphatic C9-C28	3.211	16.858	73669486	413.788	1200	ug/ml

Data Path : Z:\pestpcbsrv\HPCHEM1\FID_C\Data\F110723AL\
 Data File : FC065044.D
 Signal(s) : FID1A.ch
 Acq On : 08 Nov 2023 00:24
 Operator : YP/AJ
 Sample : 05251-01MSD
 Misc :
 ALS Vial : 25 Sample Multiplier: 1

Instrument :
 FID_C
 ClientSampleId :
 T-1MSD

Integration File: autoint1.e
 Quant Time: Nov 08 04:02:03 2023
 Quant Method : Z:\pestpcbsrv\HPCHEM1\FID_C\Method\Aliphatic EPH 102823.M
 Quant Title : GC Extractables
 QLast Update : Sat Oct 28 02:12:00 2023
 Response via : Initial Calibration
 Integrator: ChemStation

Volume Inj. : 1 ul
 Signal Phase : Rxi-1ms
 Signal Info : 20M x 0.18mm x 0.18um

Compound	R.T.	Response	Conc Units

System Monitoring Compounds			
12) S 1-chlorooctadecane (S...	12.946	5530563	34.985 ug/ml
Spiked Amount 50.000		Recovery =	69.97%
Target Compounds			
1) T n-Nonane (C9)	3.309	3644313	19.275 ug/ml
2) T n-Decane (C10)	4.370	4664068	24.529 ug/ml
4) T n-Dodecane (C12)	6.381	5696683	29.490 ug/ml
6) T n-Tetradecane (C14)	8.170	6136053	32.519 ug/ml
7) T n-Hexadecane (C16)	9.765	6526034	34.525 ug/ml
8) T n-Octadecane (C18)	11.201	6873800	36.422 ug/ml
10) T n-Eicosane (C20)	12.505	6915183	38.465 ug/ml
11) T n-Heneicosane (C21)	13.114	6588513	37.527 ug/ml
13) T n-Docosane (C22)	13.696	6501328	37.849 ug/ml
14) T n-Tetracosane (C24)	14.795	6278417	37.695 ug/ml
15) T n-Hexacosane (C26)	15.812	6076214	37.856 ug/ml
16) T n-Octacosane (C28)	16.758	5879516	37.568 ug/ml
17) T n-Tricontane (C30)	17.641	5828235	36.796 ug/ml
18) T n-Dotriacontane (C32)	18.469	5721466	36.236 ug/ml
19) T n-Tetratriacontane (C34)	19.250	5608543	36.744 ug/ml
20) T n-Hexatriacontane (C36)	19.988	5324110	35.287 ug/ml
21) T n-Octatriacontane (C38)	20.710	5230081	35.145 ug/ml
22) T n-Tetracontane (C40)	21.590	5136311	34.922 ug/ml

(f)=RT Delta > 1/2 Window

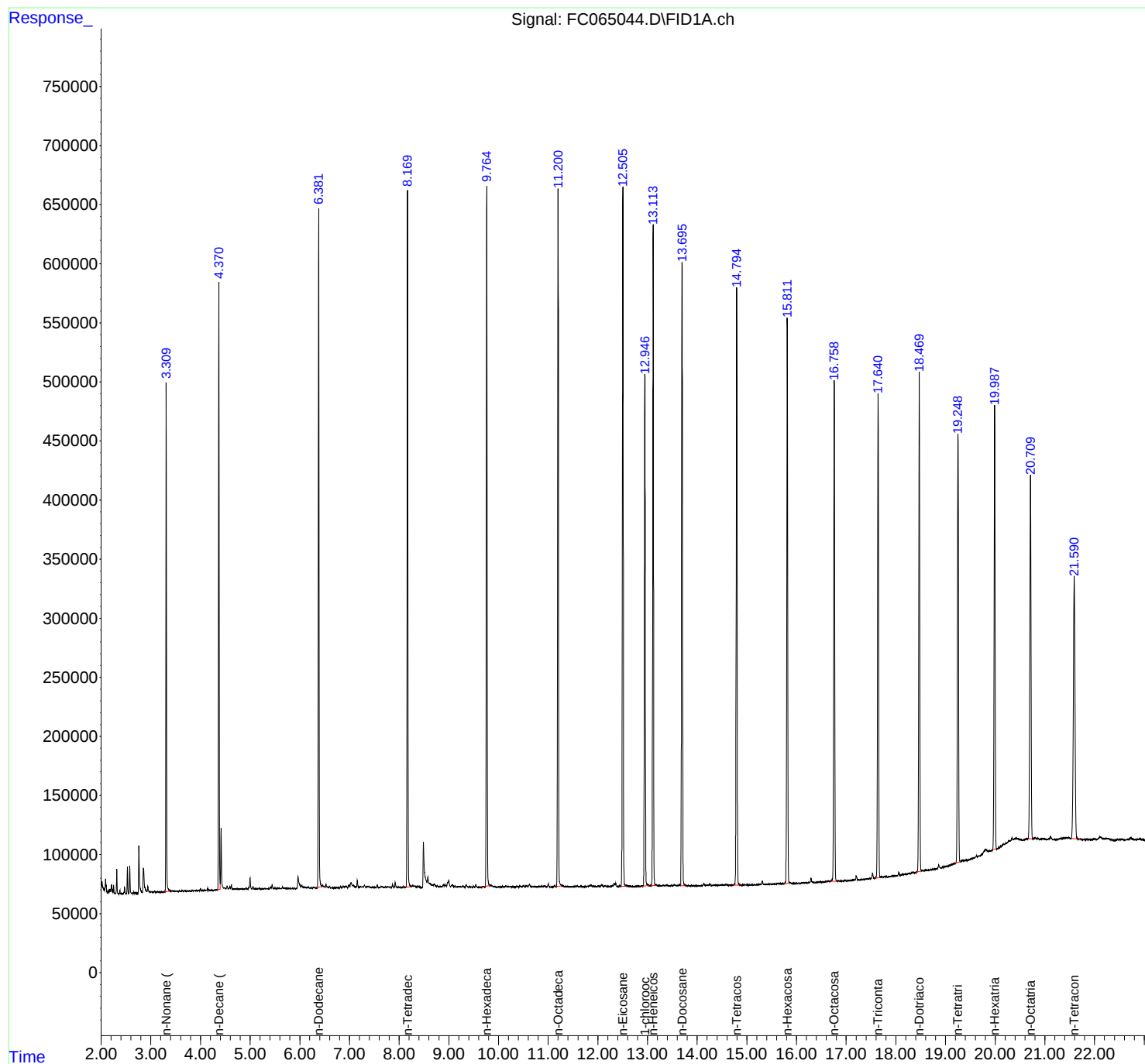
(m)=manual int.

Data Path : Z:\pestpcbsrv\HPCHEM1\FID_C\Data\FC110723AL\
Data File : FC065044.D
Signal(s) : FID1A.ch
Acq On : 08 Nov 2023 00:24
Operator : YP/AJ
Sample : 05251-01MSD
Misc :
ALS Vial : 25 Sample Multiplier: 1

Instrument :
FID_C
ClientSampleId :
T-1MSD

Integration File: autoint1.e
Quant Time: Nov 08 04:02:03 2023
Quant Method : Z:\pestpcbsrv\HPCHEM1\FID_C\Method\Aliphatic EPH 102823.M
Quant Title : GC Extractables
QLast Update : Sat Oct 28 02:12:00 2023
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. : 1 ul
Signal Phase : Rxi-1ms
Signal Info : 20M x 0.18mm x 0.18um



rteres

Area Percent Report

Data Path : Z:\pestpcbsrv\HPCHEM1\FID_C\Data\FC110723AL\
 Data File : FC065044.D
 Signal(s) : FID1A.ch
 Acq On : 08 Nov 2023 00:24
 Sample : 05251-01MSD
 Misc :
 ALS Vial : 25 Sample Multiplier: 1

Integration File: autoint1.e

Method : Z:\pestpcbsrv\HPCHEM1\FID_C\Method\Aliphatic EPH 102823.M
 Title : GC Extractables

Signal : FID1A.ch

peak #	R.T. min	Start min	End min	PK TY	peak height	peak area	peak % max.	% of total
1	3.309	3.251	3.393	BB	430157	3644313	52.70%	3.242%
2	4.370	4.329	4.398	BV	513813	4664068	67.45%	4.149%
3	4.415	4.398	4.473	VB	51465	525129	7.59%	0.467%
4	4.622	4.606	4.641	VB	3587	33216	0.48%	0.030%
5	4.998	4.951	5.028	BB	9165	108349	1.57%	0.096%
6	5.965	5.923	6.022	BV	9440	152771	2.21%	0.136%
7	6.381	6.336	6.448	BV	575392	5696683	82.38%	5.068%
8	7.030	7.010	7.063	VV	3156	56629	0.82%	0.050%
9	7.158	7.123	7.191	BB	5849	63795	0.92%	0.057%
10	7.921	7.896	7.946	BB	4047	45242	0.65%	0.040%
11	8.170	8.122	8.241	BV	590078	6136053	88.73%	5.458%
12	8.489	8.452	8.563	BV	37617	658959	9.53%	0.586%
13	8.579	8.563	8.616	VB	6313	88002	1.27%	0.078%
14	8.999	8.938	9.037	BV	5107	109041	1.58%	0.097%
15	9.765	9.657	9.823	BB	592744	6526034	94.37%	5.805%
16	11.201	11.156	11.272	BB	590066	6873800	99.40%	6.115%
17	12.505	12.465	12.576	BB	591790	6915183	100.00%	6.151%
18	12.946	12.897	13.026	BB	432842	5530563	79.98%	4.920%
19	13.114	13.075	13.186	BB	558490	6588513	95.28%	5.861%
20	13.696	13.657	13.770	PB	525467	6501328	94.02%	5.783%
21	14.795	14.724	14.876	BB	504606	6278417	90.79%	5.585%
22	15.812	15.740	15.876	BB	477363	6076214	87.87%	5.405%
23	16.291	16.250	16.318	BB	3706	48231	0.70%	0.043%
24	16.758	16.682	16.823	BB	423782	5879516	85.02%	5.230%
25	17.204	17.165	17.234	BB	3430	46023	0.67%	0.041%
26	17.530	17.481	17.561	BB	4340	58319	0.84%	0.052%
27	17.641	17.568	17.688	BV	408747	5828235	84.28%	5.185%
28	18.469	18.408	18.511	BB	421526	5721466	82.74%	5.090%
29	19.250	19.185	19.303	BB	360802	5608543	81.10%	4.989%
30	19.621	19.485	19.646	BB	1528	20507	0.30%	0.018%
31	19.815	19.693	19.868	BB	2815	141753	2.05%	0.126%

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32	19.988	19.950	20.026	BV	374444	5324110	76.99%	4.736%
33	20.337	20.026	20.365	PV	1960	100066	1.45%	0.089%
34	20.710	20.650	20.764	BV	306207	5230081	75.63%	4.652%
35	21.590	21.530	21.690	BV	222035	5136311	74.28%	4.569%

Sum of corrected areas: 112415465

Aliphatic EPH 102823.M Wed Nov 08 04:13:34 2023



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Report of Analysis

Client:	RMJ Environomics, Inc.	Date Collected:	
Project:	245 Greenwood Ave	Date Received:	
Client Sample ID:	T-1MSD	SDG No.:	O5252
Lab Sample ID:	O5251-01MSD	Matrix:	Solid
Analytical Method:	NJEPH	% Solid:	81.6
Sample Wt/Vol:	30.04	Units:	g
Soil Aliquot Vol:		Final Vol:	2000 uL
Prep Method :		Test:	EPH

File ID :	Dilution:	Prep Date :	Date Analyzed :	Prep Batch ID
FD046845.D	1	11/07/23	11/07/23	PB156949

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units
TARGETS						
Aromatic C10-C12	Aromatic C10-C12	4.79		0.18	0.82	mg/kg
Aromatic C12-C16	Aromatic C12-C16	9.07		0.18	1.22	mg/kg
Aromatic C16-C21	Aromatic C16-C21	19.1		0.37	2.04	mg/kg
Aromatic C21-C36	Aromatic C21-C36	32.3		0.48	3.26	mg/kg
SURROGATES						
580-13-2	2-Bromonaphthalene (SURR)	44.0		40 - 140	88%	SPK: 50
321-60-8	2-Fluorobiphenyl (SURR)	37.7		40 - 140	75%	SPK: 50
84-15-1	ortho-Terphenyl (SURR)	30.9		40 - 140	62%	SPK: 50



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Quantitation Report For Aromatic EPH Range.

Lab Sample ID:	O5251-01MSD	Acq On:	07 Nov 2023 21:17
Client Sample ID:	T-1MSD	Operator:	YP/AJ
Data file:	FD046845.D	Misc:	
Instrument:	FID_D	ALS Vial:	67
Dilution Factor:	1	Sample Multiplier:	1.00

Compound	R.T.		Response	Conc	highest_standard	Units
Aromatic C10-C12	4.196	5.923	11555316	58.751	200	ug/ml
Aromatic C12-C16	5.924	8.535	21526362	111.19	300	ug/ml
Aromatic C16-C21	8.536	12.798	40904459	233.884	500	ug/ml
Aromatic C21-C36	12.799	18.185	57303454	395.284	800	ug/ml
Aromatic EPH	4.196	18.185	131289591	799.109		ug/ml
2-Bromonaphthalene (SURR)	7.485	7.485	8016129	43.95		ug/ml
2-Fluorobiphenyl (SURR)	8.338	8.338	4434265	37.68		ug/ml
ortho-Terphenyl (SURR)	11.375	11.375	6549637	30.93		ug/ml

Data Path : Z:\pestpcbsrv\HPCHEM1\FID_D\Data\FD110723AR\
 Data File : FD046845.D
 Signal(s) : FID2B.ch
 Acq On : 07 Nov 2023 21:17
 Operator : YP/AJ
 Sample : 05251-01MSD
 Misc :
 ALS Vial : 67 Sample Multiplier: 1

Instrument :
 FID_D
 ClientSampleId :
 T-1MSD

Integration File: autoint1.e
 Quant Time: Nov 07 23:29:01 2023
 Quant Method : Z:\pestpcbsrv\HPCHEM1\FID_D\methods\Aromatic EPH 102723.M
 Quant Title : GC Extractables
 QLast Update : Sat Oct 28 02:49:53 2023
 Response via : Initial Calibration
 Integrator: ChemStation

Volume Inj. : 1 µl
 Signal Phase : Rxi-1ms
 Signal Info : 20M x 0.18mm x 0.18µm

Compound	R.T.	Response	Conc Units

System Monitoring Compounds			
4) S 2-Bromonaphthalene (S...	7.485	8016129	43.954 ug/ml
Spiked Amount 50.000		Recovery =	87.91%
6) S 2-Fluorobiphenyl (SURR)	8.338	4434265	37.680 ug/ml
Spiked Amount 50.000 Range 0 - 131		Recovery =	75.36%
11) S ortho-Terphenyl (SURR)	11.375	6549637	30.930 ug/ml
Spiked Amount 50.000		Recovery =	61.86%
Target Compounds			
1) T 1,2,3-Trimethylbenzen...	4.297	4626239	23.955 ug/ml
2) T Naphthalene (C11.7)	5.823	5579266	27.862 ug/ml
3) T 2-Methylnaphthalene (...)	6.871	6002188	29.864 ug/ml
5) T Acenaphthylene (C15.06)	8.142	6442771	35.029 ug/ml
7) T Acenaphthene (C15.5)	8.438	6552469	33.450 ug/ml
8) T Fluorene (C16.55)	9.216	6844471	37.004 ug/ml
9) T Phenanthrene (C19.36)	10.605	7234910	40.667 ug/ml
10) T Anthracene (C19.43)	10.680	6799881	39.901 ug/ml
12) T Fluoranthene (C21.85)	12.409	7583555	43.909 ug/ml
13) T Pyrene (C20.8)	12.703	7505473	45.138 ug/ml
14) T Benzo[a]anthracene (C...	14.567	6637990	47.181 ug/ml
15) T Chrysene (C27.41)	14.611	6702793	42.979 ug/ml
16) T benzo[b]fluoranthene ...	16.109	6504419	45.446 ug/ml
17) T Bnezo[k]fluoranthene ...	16.144	6220002	42.485 ug/ml
18) T Benzo[a]pyrene (C31.34)	16.484	5969234	42.586 ug/ml
19) T Indeno[1,2,3-cd]pyren...	17.844	6192588	49.020 ug/ml
20) T Dibenz[a,h]anthracene...	17.884	5663160	40.537 ug/ml
21) T Benzo[g,h,i]perylene ...	18.097	5644819	40.428 ug/ml

(f)=RT Delta > 1/2 Window

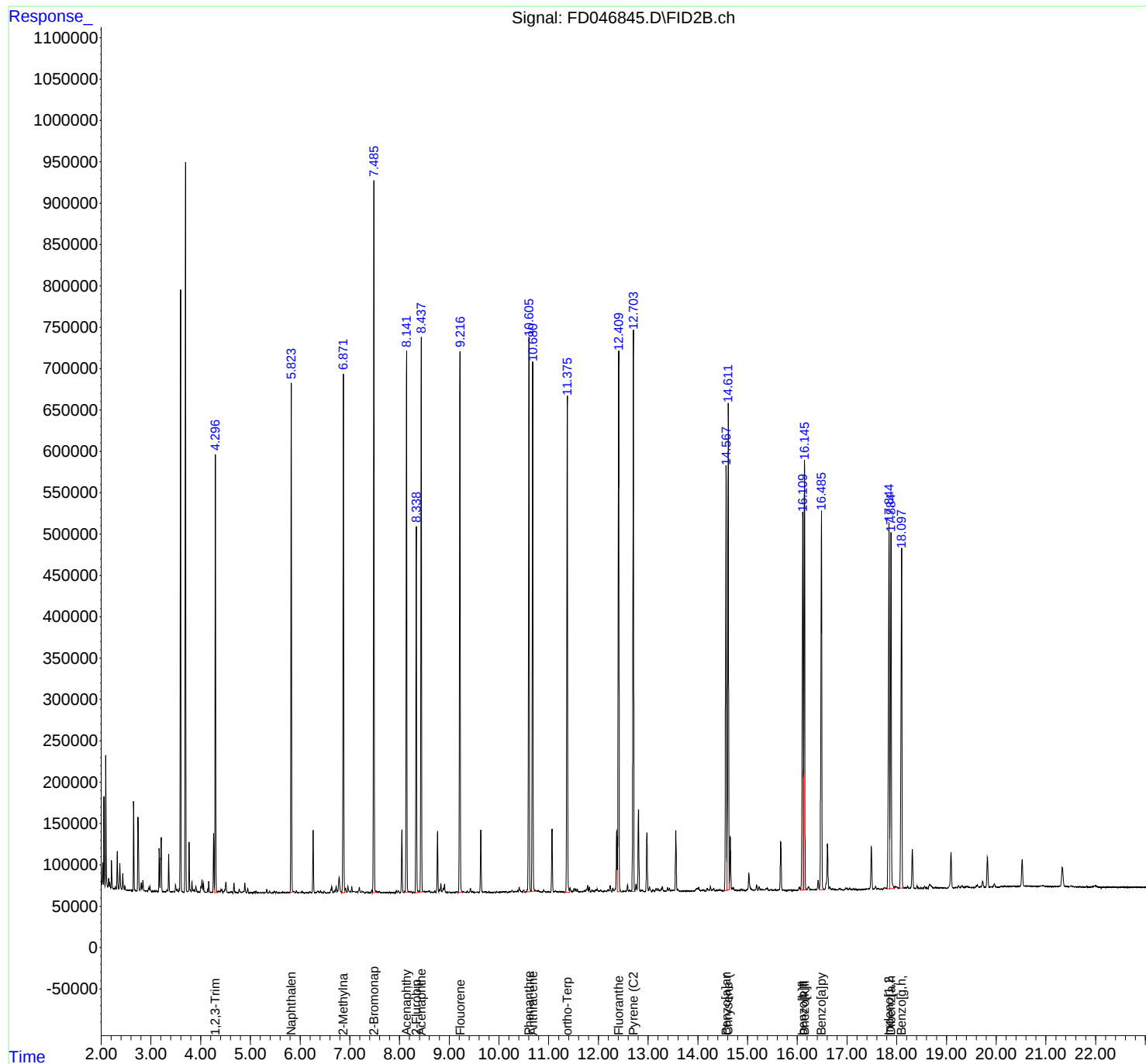
(m)=manual int.

Data Path : Z:\pestpcbsrv\HPCHEM1\FID_D\Data\FD110723AR\
Data File : FD046845.D
Signal(s) : FID2B.ch
Acq On : 07 Nov 2023 21:17
Operator : YP/AJ
Sample : 05251-01MSD
Misc :
ALS Vial : 67 Sample Multiplier: 1

Instrument :
FID_D
ClientSampleId :
T-1MSD

Integration File: autoint1.e
Quant Time: Nov 07 23:29:01 2023
Quant Method : Z:\pestpcbsrv\HPCHEM1\FID_D\methods\Aromatic EPH 102723.M
Quant Title : GC Extractables
QLast Update : Sat Oct 28 02:49:53 2023
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. : 1 µl
Signal Phase : Rxi-1ms
Signal Info : 20M x 0.18mm x 0.18µm



rteres

Area Percent Report

Data Path : Z:\pestpcbsrv\HPCHEM1\FID_D\Data\FD110723AR\
 Data File : FD046845.D
 Signal(s) : FID2B.ch
 Acq On : 07 Nov 2023 21:17
 Sample : 05251-01MSD
 Misc :
 ALS Vial : 67 Sample Multiplier: 1

Integration File: autoint1.e

Method : Z:\pestpcbsrv\HPCHEM1\FID_D\methods\Aromatic EPH 102723.M
 Title : GC Extractables

Signal : FID2B.ch

peak #	R.T. min	Start min	End min	PK TY	peak height	peak area	peak % max.	% of total
1	4.262	4.252	4.279	PH	71646	624240	7.79%	0.415%
2	4.297	4.279	4.342	VV	529125	4626239	57.71%	3.078%
3	4.412	4.394	4.446	VV	3797	76408	0.95%	0.051%
4	4.508	4.468	4.560	VB	12526	198666	2.48%	0.132%
5	4.671	4.652	4.692	PV	11513	102665	1.28%	0.068%
6	4.775	4.745	4.824	BB	4650	56979	0.71%	0.038%
7	4.889	4.829	4.924	BV	11660	146514	1.83%	0.097%
8	4.947	4.924	4.979	PB	5223	57524	0.72%	0.038%
9	5.113	5.097	5.135	PV	2496	24521	0.31%	0.016%
10	5.331	5.314	5.351	BV	4232	37651	0.47%	0.025%
11	5.388	5.351	5.408	PB	2352	24643	0.31%	0.016%
12	5.823	5.782	5.863	BV	613651	5579266	69.60%	3.712%
13	6.263	6.235	6.292	PV	75907	749507	9.35%	0.499%
14	6.412	6.399	6.431	VV	2625	24384	0.30%	0.016%
15	6.639	6.535	6.663	BV	7471	130322	1.63%	0.087%
16	6.700	6.663	6.710	VV	3209	49165	0.61%	0.033%
17	6.726	6.710	6.745	VV	8114	95588	1.19%	0.064%
18	6.786	6.745	6.835	VV	18759	346902	4.33%	0.231%
19	6.871	6.835	6.903	VV	629823	6002188	74.88%	3.994%
20	6.915	6.903	6.943	VV	5145	64841	0.81%	0.043%
21	6.963	6.943	6.995	VV	7454	95845	1.20%	0.064%
22	7.041	7.022	7.060	VV	6951	74926	0.93%	0.050%
23	7.193	7.161	7.229	PV	6005	80877	1.01%	0.054%
24	7.442	7.399	7.457	BV	3222	34369	0.43%	0.023%
25	7.485	7.457	7.567	VB	862985	8016129	100.00%	5.334%
26	8.048	8.010	8.089	PV	76122	782208	9.76%	0.520%
27	8.142	8.089	8.182	PV	656368	6442771	80.37%	4.287%
28	8.338	8.302	8.382	PV	441864	4434265	55.32%	2.950%
29	8.438	8.382	8.477	VB	671230	6552469	81.74%	4.360%
30	8.765	8.737	8.790	PV	73981	738628	9.21%	0.491%
31	8.805	8.790	8.815	VV	3455	36264	0.45%	0.024%

					rteres			
32	8.833	8.815	8.856	VV	10712	119252	1.49%	0.079%
33	8.881	8.856	8.891	VV	5096	61429	0.77%	0.041%
34	8.906	8.891	8.937	VV	9877	109857	1.37%	0.073%
35	9.216	9.184	9.274	PV	651692	6844471	85.38%	4.554%
36	9.427	9.388	9.452	PV	4869	57038	0.71%	0.038%
37	9.636	9.569	9.689	BV	75393	828836	10.34%	0.551%
38	10.264	10.172	10.289	BV	2335	50609	0.63%	0.034%
39	10.409	10.345	10.445	BV	5772	97026	1.21%	0.065%
40	10.500	10.474	10.522	VV	2658	36408	0.45%	0.024%
41	10.605	10.522	10.647	PV	673472	7234910	90.25%	4.814%
42	10.680	10.647	10.740	VV	643738	6799881	84.83%	4.525%
43	10.902	10.845	10.970	BB	2824	45161	0.56%	0.030%
44	11.069	11.024	11.100	PV	76512	860129	10.73%	0.572%
45	11.375	11.322	11.415	BV	603085	6549637	81.71%	4.358%
46	11.431	11.415	11.477	VV	5343	86834	1.08%	0.058%
47	11.511	11.477	11.529	VV	4551	72468	0.90%	0.048%
48	11.546	11.529	11.562	VV	4265	52387	0.65%	0.035%
49	11.579	11.562	11.615	VV	3622	48245	0.60%	0.032%
50	11.785	11.744	11.803	VV	7861	140824	1.76%	0.094%
51	11.819	11.803	11.845	VV	5695	70486	0.88%	0.047%
52	11.872	11.845	11.910	VV	2546	48322	0.60%	0.032%
53	11.976	11.962	12.029	VV	3569	66946	0.84%	0.045%
54	12.237	12.167	12.270	VV	7192	148287	1.85%	0.099%
55	12.293	12.270	12.314	VV	3892	55273	0.69%	0.037%
56	12.369	12.314	12.382	VV	73823	908969	11.34%	0.605%
57	12.409	12.382	12.472	VV	652826	7583555	94.60%	5.046%
58	12.586	12.557	12.610	PV	7459	89316	1.11%	0.059%
59	12.703	12.664	12.734	VV	681675	7505473	93.63%	4.994%
60	12.756	12.734	12.776	VV	8450	107175	1.34%	0.071%
61	12.807	12.776	12.837	VV	98277	1182238	14.75%	0.787%
62	12.976	12.942	13.010	BV	70590	870718	10.86%	0.579%
63	13.030	13.010	13.074	VV	5922	89435	1.12%	0.060%
64	13.161	13.124	13.183	BV	2890	43858	0.55%	0.029%
65	13.199	13.183	13.227	VV	2686	37832	0.47%	0.025%
66	13.286	13.227	13.337	VV	5349	104973	1.31%	0.070%
67	13.393	13.369	13.414	PV	4020	49480	0.62%	0.033%
68	13.430	13.414	13.455	VV	3301	36411	0.45%	0.024%
69	13.557	13.529	13.585	PV	72373	850194	10.61%	0.566%
70	13.989	13.812	14.002	BV	3483	83522	1.04%	0.056%
71	14.017	14.002	14.062	VV	4622	69763	0.87%	0.046%
72	14.190	14.154	14.229	PV	3647	69133	0.86%	0.046%
73	14.252	14.229	14.277	VV	5578	77915	0.97%	0.052%
74	14.320	14.277	14.353	VV	3096	63138	0.79%	0.042%
75	14.567	14.525	14.586	PV	515018	6637990	82.81%	4.417%
76	14.611	14.586	14.632	VV	585700	6702793	83.62%	4.460%
77	14.652	14.632	14.680	VV	63446	804109	10.03%	0.535%
78	15.025	14.942	15.125	BB	20486	360811	4.50%	0.240%
79	15.182	15.140	15.206	BV	6377	85909	1.07%	0.057%

80	15.230	15.206	15.253	PV	rteres 4333	54254	0.68%	0.036%
81	15.667	15.582	15.710	PV	58141	790521	9.86%	0.526%
82	16.038	15.997	16.059	BV	3469	57216	0.71%	0.038%
83	16.109	16.059	16.125	VV	457563	6504419	81.14%	4.328%
84	16.144	16.125	16.194	VV	517972	6220002	77.59%	4.139%
85	16.229	16.194	16.255	VV	3494	62966	0.79%	0.042%
86	16.418	16.377	16.441	PV	11482	156503	1.95%	0.104%
87	16.484	16.441	16.549	VV	455964	5969234	74.47%	3.972%
88	16.606	16.549	16.635	VV	54914	825078	10.29%	0.549%
89	16.652	16.635	16.704	VB	3326	48900	0.61%	0.033%
90	16.977	16.920	17.022	BV	2259	50698	0.63%	0.034%
91	17.488	17.269	17.524	VV	51883	769698	9.60%	0.512%
92	17.574	17.524	17.602	VV	3265	53121	0.66%	0.035%
93	17.746	17.717	17.765	PV	1734	20055	0.25%	0.013%
94	17.844	17.800	17.860	BV	443710	6192588	77.25%	4.120%
95	17.884	17.860	17.950	VV	429700	5663160	70.65%	3.768%
96	18.097	18.047	18.142	PV	411566	5644819	70.42%	3.756%
Sum of corrected areas:						150289623		

Aromatic EPH 102723.M Tue Nov 07 23:31:57 2023



Manual Integration Report

Sequence:

FC102823AL

Instrument

FID_c

Sample ID

File ID

Parameter

Review By

Review On

Supervised
By

Supervised On

Reason



284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Manual Integration Report

Sequence:

FC110723AL

Instrument

FID_c

Sample ID	File ID	Parameter	Review By	Review On	Supervised By	Supervised On	Reason
O5270-01MSD	FC065034.D	n-Tetracontane (C40)	yogesh	11/8/2023 8:29:05 AM	Ankita	11/8/2023 9:03:10	Peak Integrated by Software
O5270-02	FC065035.D	ortho-Terphenyl (SURRE)	yogesh	11/8/2023 8:29:07 AM	Ankita	11/8/2023 9:03:12	Peak Integrated by Software
20 PPM ALIPHATIC HC	FC065037.D	n-Tetratriacontane (C34)	yogesh	11/8/2023 8:29:09 AM	Ankita	11/8/2023 9:03:14	Peak Integrated by Software
PB156949BS	FC065039.D	n-Octatriacontane (C38)	yogesh	11/8/2023 8:29:10 AM	Ankita	11/8/2023 9:03:15	Peak Integrated by Software
PB156949BS	FC065039.D	n-Tetratriacontane (C34)	yogesh	11/8/2023 8:29:10 AM	Ankita	11/8/2023 9:03:15	Peak Integrated by Software
O5252-01	FC065055.D	1-chlorooctadecane (SURRE)	yogesh	11/8/2023 8:29:12 AM	Ankita	11/8/2023 9:03:18	Peak Integrated by Software



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Manual Integration Report

Sequence:

FC110823AL

Instrument

FID_c

Sample ID	File ID	Parameter	Review By	Review On	Supervised By	Supervised On	Reason
20 PPM ALIPHATIC HC	FC065060.D	n-Hexatriacontane (C36)	yogesh	11/9/2023 8:13:43 AM	Ankita	11/9/2023 9:15:08	Peak Integrated by Software
20 PPM ALIPHATIC HC	FC065064.D	n-Hexatriacontane (C36)	yogesh	11/9/2023 8:13:44 AM	Ankita	11/9/2023 9:15:10	Peak Integrated by Software
20 PPM ALIPHATIC HC	FC065071.D	n-Hexatriacontane (C36)	yogesh	11/9/2023 8:13:46 AM	Ankita	11/9/2023 9:15:13	Peak Integrated by Software



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Manual Integration Report

Sequence:

FD102723AR

Instrument

FID_d

Sample ID	File ID	Parameter	Review By	Review On	Supervised By	Supervised On	Reason
100 PPM AROMATIC HC	FD046794.D	Bnezo[k]fluoranthene (C30.14)	yogesh	10/30/2023 8:26:56 AM	mohammad	10/30/2023 3:43:19	Peak Integrated by Software
100 PPM AROMATIC HC	FD046794.D	Dibenz[a,h]anthracene (C30.36)	yogesh	10/30/2023 8:26:56 AM	mohammad	10/30/2023 3:43:19	Peak Integrated by Software



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Manual Integration Report

Sequence:

FD110723AR

Instrument

FID_d

Sample ID	File ID	Parameter	Review By	Review On	Supervised By	Supervised On	Reason
PB156949BS	FD046840.D	1,2,3-Trimethylbenzene (C10.1)	yogesh	11/8/2023 7:49:33 AM	Ankita	11/8/2023 9:06:06	Peak Integrated by Software
PB156949BSD	FD046841.D	1,2,3-Trimethylbenzene (C10.1)	yogesh	11/8/2023 7:49:35 AM	Ankita	11/8/2023 9:06:17	Peak Integrated by Software



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Instrument ID: FID_C

Daily Analysis Runlog For Sequence/QC Batch ID # FC102823AL

Review By	yogesh	Review On	10/27/2023 3:54:54 PM
Supervise By	mohammad	Supervise On	10/30/2023 3:42:55 PM
SubDirectory	FC102823AL	HP Acquire Method	HP Processing Method FC102823AL
STD. NAME	STD REF.#		
Tune/Reschk Initial Calibration Stds	PP22595,PP22597,PP22598,PP22599,PP22600		
CCC	PP22598		
Internal Standard/PEM			
ICV/I.BLK	PP22596,PP22601		
Surrogate Standard			
MS/MSD Standard			
LCS Standard			

Sr#	Sampled	Data File Name	Date-Time	Operator	Status
1	MECL2	FC064935.D	27 Oct 2023 15:45	YP/AJ	Ok
2	I.BLK	FC064936.D	27 Oct 2023 16:25	YP/AJ	Ok
3	100 PPM ALIPHATIC HC STD1	FC064937.D	27 Oct 2023 17:07	YP/AJ	Ok
4	50 PPM ALIPHATIC HC STD2	FC064938.D	27 Oct 2023 17:49	YP/AJ	Ok
5	20 PPM ALIPHATIC HC STD3	FC064939.D	27 Oct 2023 18:30	YP/AJ	Ok
6	10 PPM ALIPHATIC HC STD4	FC064940.D	27 Oct 2023 19:12	YP/AJ	Ok
7	5 PPM ALIPHATIC HC STD5	FC064941.D	27 Oct 2023 19:53	YP/AJ	Ok
8	20 PPM ALIPHATIC HC STD ICV	FC064942.D	27 Oct 2023 20:35	YP/AJ	Ok
9	I.BLK	FC064943.D	27 Oct 2023 21:56	YP/AJ	Ok
10	20 PPM ALIPHATIC HC STD	FC064944.D	27 Oct 2023 22:37	YP/AJ	Ok

M : Manual Integration

Daily Analysis Runlog For Sequence/QC Batch ID # FC110723AL

Review By	yogesh	Review On	11/7/2023 1:15:57 PM
Supervise By	Ankita	Supervise On	11/8/2023 9:03:27 AM
SubDirectory	FC110723AL	HP Acquire Method	HP Processing Method FC102823AL
STD. NAME	STD REF.#		
Tune/Reschk Initial Calibration Stds	PP22595,PP22597,PP22598,PP22599,PP22600		
CCC Internal Standard/PEM ICV/I.BLK Surrogate Standard MS/MSD Standard LCS Standard	PP22598 PP22596,PP22601		

Sr#	SampleID	Data File Name	Date-Time	Operator	Status
1	MECL2	FC065025.D	07 Nov 2023 10:23	YP/AJ	Ok
2	I.BLK	FC065026.D	07 Nov 2023 10:59	YP/AJ	Ok
3	20 PPM ALIPHATIC HC STD	FC065027.D	07 Nov 2023 12:18	YP/AJ	Ok
4	PB156950BL	FC065028.D	07 Nov 2023 12:57	YP/AJ	Ok
5	PB156950BS	FC065029.D	07 Nov 2023 13:36	YP/AJ	Ok
6	PB156950BSD	FC065030.D	07 Nov 2023 14:15	YP/AJ	Ok
7	O5270-01	FC065031.D	07 Nov 2023 14:53	YP/AJ	Ok
8	O5270-01D	FC065032.D	07 Nov 2023 15:33	YP/AJ	Ok
9	O5270-01MS	FC065033.D	07 Nov 2023 16:12	YP/AJ	Ok
10	O5270-01MSD	FC065034.D	07 Nov 2023 16:51	YP/AJ	Ok,M
11	O5270-02	FC065035.D	07 Nov 2023 17:30	YP/AJ	Dilution
12	I.BLK	FC065036.D	07 Nov 2023 18:46	YP/AJ	Ok
13	20 PPM ALIPHATIC HC STD	FC065037.D	07 Nov 2023 19:24	YP/AJ	Ok,M
14	PB156949BL	FC065038.D	07 Nov 2023 20:40	YP/AJ	Ok
15	PB156949BS	FC065039.D	07 Nov 2023 21:17	YP/AJ	Ok,M
16	PB156949BSD	FC065040.D	07 Nov 2023 21:55	YP/AJ	Ok
17	O5251-01	FC065041.D	07 Nov 2023 22:32	YP/AJ	Ok
18	O5251-01D	FC065042.D	07 Nov 2023 23:09	YP/AJ	Ok
19	O5251-01MS	FC065043.D	07 Nov 2023 23:47	YP/AJ	Ok
20	O5251-01MSD	FC065044.D	08 Nov 2023 00:24	YP/AJ	Ok
21	O5251-02	FC065045.D	08 Nov 2023 01:01	YP/AJ	Ok
22	O5251-03	FC065046.D	08 Nov 2023 01:38	YP/AJ	Ok
23	O5251-04	FC065047.D	08 Nov 2023 02:15	YP/AJ	Ok

Daily Analysis Runlog For Sequence/QC Batch ID # FC110723AL

Review By	yogesh	Review On	11/7/2023 1:15:57 PM
Supervise By	Ankita	Supervise On	11/8/2023 9:03:27 AM
SubDirectory	FC110723AL	HP Acquire Method	HP Processing Method FC102823AL

STD. NAME	STD REF.#
Tune/Reschk Initial Calibration Stds	PP22595,PP22597,PP22598,PP22599,PP22600
CCC Internal Standard/PEM ICV/I.BLK Surrogate Standard MS/MSD Standard LCS Standard	PP22598 PP22596,PP22601

24	O5251-05	FC065048.D	08 Nov 2023 02:53	YP/AJ	Ok
25	O5251-06	FC065049.D	08 Nov 2023 03:31	YP/AJ	Ok
26	O5251-07	FC065050.D	08 Nov 2023 04:09	YP/AJ	Ok
27	O5251-08	FC065051.D	08 Nov 2023 04:46	YP/AJ	Ok
28	O5251-09	FC065052.D	08 Nov 2023 05:23	YP/AJ	Ok
29	O5251-10	FC065053.D	08 Nov 2023 05:59	YP/AJ	Ok
30	O5251-11	FC065054.D	08 Nov 2023 06:37	YP/AJ	Ok
31	O5252-01	FC065055.D	08 Nov 2023 07:14	YP/AJ	Dilution
32	I.BLK	FC065056.D	08 Nov 2023 07:51	YP/AJ	Ok
33	20 PPM ALIPHATIC HC STD	FC065057.D	08 Nov 2023 08:29	YP/AJ	Ok

M : Manual Integration



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Instrument ID: FID_C

Daily Analysis Runlog For Sequence/QC Batch ID # FC110823AL

Review By	yogesh	Review On	11/8/2023 11:04:44 AM
Supervise By	Ankita	Supervise On	11/9/2023 9:15:19 AM
SubDirectory	FC110823AL	HP Acquire Method	HP Processing Method FC102823AL
STD. NAME	STD REF.#		
Tune/Reschk Initial Calibration Stds	PP22595,PP22597,PP22598,PP22599,PP22600		
CCC	PP22598		
Internal Standard/PEM	PP22596,PP22601		
ICV/I.BLK			
Surrogate Standard			
MS/MSD Standard			
LCS Standard			

Sr#	Sampled	Data File Name	Date-Time	Operator	Status
1	MECL2	FC065058.D	08 Nov 2023 09:07	YP/AJ	Ok
2	I.BLK	FC065059.D	08 Nov 2023 09:44	YP/AJ	Ok
3	20 PPM ALIPHATIC HC STD	FC065060.D	08 Nov 2023 10:21	YP/AJ	Ok,M
4	O5270-02DL	FC065061.D	08 Nov 2023 10:58	YP/AJ	Ok
5	O5252-01DL	FC065062.D	08 Nov 2023 11:35	YP/AJ	Ok
6	I.BLK	FC065063.D	08 Nov 2023 12:49	YP/AJ	Ok
7	20 PPM ALIPHATIC HC STD	FC065064.D	08 Nov 2023 13:26	YP/AJ	Ok,M
8	PB156991BL	FC065065.D	08 Nov 2023 16:04	YP/AJ	Ok
9	PB156991BS	FC065066.D	08 Nov 2023 16:40	YP/AJ	Ok
10	PB156991BSD	FC065067.D	08 Nov 2023 17:17	YP/AJ	Ok
11	O5095-01	FC065068.D	08 Nov 2023 17:55	YP/AJ	Ok
12	O5280-02	FC065069.D	08 Nov 2023 18:32	YP/AJ	Ok
13	I.BLK	FC065070.D	08 Nov 2023 19:09	YP/AJ	Ok
14	20 PPM ALIPHATIC HC STD	FC065071.D	08 Nov 2023 19:46	YP/AJ	Ok,M

M : Manual Integration



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Instrument ID: FID_D

Daily Analysis Runlog For Sequence/QC Batch ID # FD102723AR

Review By	yogesh	Review On	10/27/2023 3:52:36 PM
Supervise By	mohammad	Supervise On	10/30/2023 3:43:23 PM
SubDirectory	FD102723AR	HP Acquire Method	HP Processing Method FD102723AR
STD. NAME	STD REF.#		
Tune/Reschk Initial Calibration Stds	PP22493,PP22494,PP22495,PP22496,PP22497		
CCC	PP22495		
Internal Standard/PEM			
ICV/I.BLK	PP22499		
Surrogate Standard			
MS/MSD Standard			
LCS Standard			

Sr#	SampleId	Data File Name	Date-Time	Operator	Status
1	MECL2	FD046792.D	27 Oct 2023 15:45	YP/AJ	Ok
2	I.BLK	FD046793.D	27 Oct 2023 16:25	YP/AJ	Ok
3	100 PPM AROMATIC HC STD1	FD046794.D	27 Oct 2023 17:07	YP/AJ	Ok,M
4	50 PPM AROMATIC HC STD2	FD046795.D	27 Oct 2023 17:49	YP/AJ	Ok
5	20 PPM AROMATIC HC STD3	FD046796.D	27 Oct 2023 18:30	YP/AJ	Ok
6	10 PPM AROMATIC HC STD4	FD046797.D	27 Oct 2023 19:12	YP/AJ	Ok
7	5 PPM AROMATIC HC STD5	FD046798.D	27 Oct 2023 19:53	YP/AJ	Ok
8	20 PPM AROMATIC HC STD ICV	FD046799.D	27 Oct 2023 21:16	YP/AJ	Ok
9	I.BLK	FD046800.D	27 Oct 2023 21:56	YP/AJ	Ok
10	20 PPM AROMATIC HC STD	FD046801.D	27 Oct 2023 22:37	YP/AJ	Ok

M : Manual Integration



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Instrument ID: FID_D

Daily Analysis Runlog For Sequence/QC Batch ID # FD110723AR

Review By	yogesh	Review On	11/7/2023 3:25:49 PM
Supervise By	Ankita	Supervise On	11/8/2023 9:06:24 AM
SubDirectory	FD110723AR	HP Acquire Method	HP Processing Method FD102723AR
STD. NAME	STD REF.#		
Tune/Reschk Initial Calibration Stds	PP22493,PP22494,PP22495,PP22496,PP22497		
CCC Internal Standard/PEM ICV/I.BLK Surrogate Standard MS/MSD Standard LCS Standard	PP22495 PP22499		

Sr#	SampleId	Data File Name	Date-Time	Operator	Status
1	MECL2	FD046836.D	07 Nov 2023 10:23	YP/AJ	Ok
2	I.BLK	FD046837.D	07 Nov 2023 10:59	YP/AJ	Ok
3	20 PPM AROMATIC HC STD	FD046838.D	07 Nov 2023 14:15	YP/AJ	Ok
4	PB156949BL	FD046839.D	07 Nov 2023 17:30	YP/AJ	Ok
5	PB156949BS	FD046840.D	07 Nov 2023 18:08	YP/AJ	Ok,M
6	PB156949BSD	FD046841.D	07 Nov 2023 18:46	YP/AJ	Ok,M
7	O5251-01	FD046842.D	07 Nov 2023 19:24	YP/AJ	Ok
8	O5251-01D	FD046843.D	07 Nov 2023 20:02	YP/AJ	Ok
9	O5251-01MS	FD046844.D	07 Nov 2023 20:40	YP/AJ	Ok
10	O5251-01MSD	FD046845.D	07 Nov 2023 21:17	YP/AJ	Ok
11	O5251-02	FD046846.D	07 Nov 2023 21:55	YP/AJ	Ok
12	O5251-03	FD046847.D	07 Nov 2023 22:32	YP/AJ	Ok
13	O5251-04	FD046848.D	07 Nov 2023 23:09	YP/AJ	Ok
14	O5251-05	FD046849.D	07 Nov 2023 23:47	YP/AJ	Ok
15	O5251-06	FD046850.D	08 Nov 2023 00:24	YP/AJ	Ok
16	O5251-07	FD046851.D	08 Nov 2023 01:01	YP/AJ	Ok
17	O5251-08	FD046852.D	08 Nov 2023 01:38	YP/AJ	Ok
18	O5251-09	FD046853.D	08 Nov 2023 02:15	YP/AJ	Ok
19	O5251-10	FD046854.D	08 Nov 2023 02:53	YP/AJ	Ok
20	O5251-11	FD046855.D	08 Nov 2023 03:31	YP/AJ	Ok
21	O5252-01	FD046856.D	08 Nov 2023 04:09	YP/AJ	Ok
22	I.BLK	FD046857.D	08 Nov 2023 05:23	YP/AJ	Ok
23	20 PPM AROMATIC HC STD	FD046858.D	08 Nov 2023 05:59	YP/AJ	Ok



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Instrument ID: FID_D

Daily Analysis Runlog For Sequence/QC Batch ID # FD110723AR

Review By	yogesh	Review On	11/7/2023 3:25:49 PM
Supervise By	Ankita	Supervise On	11/8/2023 9:06:24 AM
SubDirectory	FD110723AR	HP Acquire Method	HP Processing Method FD102723AR
STD. NAME	STD REF.#		
Tune/Reschk Initial Calibration Stds	PP22493,PP22494,PP22495,PP22496,PP22497		
CCC Internal Standard/PEM	PP22495		
ICV/I.BLK Surrogate Standard MS/MSD Standard LCS Standard	PP22499		

M : Manual Integration



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Instrument ID: FID_C

Daily Analysis Runlog For Sequence/QC Batch ID # FC102823AL

Review By	yogesh	Review On	10/27/2023 3:54:54 PM				
Supervise By	mohammad	Supervise On	10/30/2023 3:42:55 PM				
SubDirectory	FC102823AL	HP Acquire Method	HP Processing Method			FC102823AL	
STD. NAME		STD REF.#					
Tune/Reschk Initial Calibration Stds		PP22595,PP22597,PP22598,PP22599,PP22600					
CCC		PP22598					
Internal Standard/PEM		PP22596,PP22601					
ICV/I.BLK							
Surrogate Standard							
MS/MSD Standard							
LCS Standard							

Sr#	SampleId	ClientID	Data File Name	Date-Time	Comment	Operator	Status
1	MECL2	MECL2	FC064935.D	27 Oct 2023 15:45		YP/AJ	Ok
2	I.BLK	I.BLK	FC064936.D	27 Oct 2023 16:25		YP/AJ	Ok
3	100 PPM ALIPHATIC HC	100 PPM ALIPHATIC HC	FC064937.D	27 Oct 2023 17:07		YP/AJ	Ok
4	50 PPM ALIPHATIC HC	50 PPM ALIPHATIC HC	FC064938.D	27 Oct 2023 17:49		YP/AJ	Ok
5	20 PPM ALIPHATIC HC	20 PPM ALIPHATIC HC	FC064939.D	27 Oct 2023 18:30		YP/AJ	Ok
6	10 PPM ALIPHATIC HC	10 PPM ALIPHATIC HC	FC064940.D	27 Oct 2023 19:12		YP/AJ	Ok
7	5 PPM ALIPHATIC HC	5 PPM ALIPHATIC HC	FC064941.D	27 Oct 2023 19:53		YP/AJ	Ok
8	20 PPM ALIPHATIC HC	20 PPM ALIPHATIC HC	FC064942.D	27 Oct 2023 20:35		YP/AJ	Ok
9	I.BLK	I.BLK	FC064943.D	27 Oct 2023 21:56		YP/AJ	Ok
10	20 PPM ALIPHATIC HC	20 PPM ALIPHATIC HC	FC064944.D	27 Oct 2023 22:37		YP/AJ	Ok

M : Manual Integration

Instrument ID: FID_C

Daily Analysis Runlog For Sequence/QC Batch ID # FC110723AL

Review By	yogesh	Review On	11/7/2023 1:15:57 PM				
Supervise By	Ankita	Supervise On	11/8/2023 9:03:27 AM				
SubDirectory	FC110723AL	HP Acquire Method	HP Processing Method		FC102823AL		
STD. NAME		STD REF.#					
Tune/Reschk Initial Calibration Stds		PP22595,PP22597,PP22598,PP22599,PP22600					
CCC Internal Standard/PEM		PP22598					
ICV/I.BLK Surrogate Standard MS/MSD Standard LCS Standard		PP22596,PP22601					

Sr#	SampleId	ClientID	Data File Name	Date-Time	Comment	Operator	Status
1	MECL2	MECL2	FC065025.D	07 Nov 2023 10:23		YP/AJ	Ok
2	I.BLK	I.BLK	FC065026.D	07 Nov 2023 10:59		YP/AJ	Ok
3	20 PPM ALIPHATIC HC	20 PPM ALIPHATIC HC	FC065027.D	07 Nov 2023 12:18		YP/AJ	Ok
4	PB156950BL	PB156950BL	FC065028.D	07 Nov 2023 12:57		YP/AJ	Ok
5	PB156950BS	PB156950BS	FC065029.D	07 Nov 2023 13:36		YP/AJ	Ok
6	PB156950BSD	PB156950BSD	FC065030.D	07 Nov 2023 14:15		YP/AJ	Ok
7	O5270-01	OR-3-110623	FC065031.D	07 Nov 2023 14:53		YP/AJ	Ok
8	O5270-01D	O5270-01D	FC065032.D	07 Nov 2023 15:33		YP/AJ	Ok
9	O5270-01MS	OR-3-110623MS	FC065033.D	07 Nov 2023 16:12	FC065031.D	YP/AJ	Ok
10	O5270-01MSD	OR-3-110623MSD	FC065034.D	07 Nov 2023 16:51	FC065031.D!FC065033.D	YP/AJ	Ok,M
11	O5270-02	OR-3-110623-E2	FC065035.D	07 Nov 2023 17:30	need 2x dilution	YP/AJ	Dilution
12	I.BLK	I.BLK	FC065036.D	07 Nov 2023 18:46		YP/AJ	Ok
13	20 PPM ALIPHATIC HC	20 PPM ALIPHATIC HC	FC065037.D	07 Nov 2023 19:24		YP/AJ	Ok,M
14	PB156949BL	PB156949BL	FC065038.D	07 Nov 2023 20:40		YP/AJ	Ok
15	PB156949BS	PB156949BS	FC065039.D	07 Nov 2023 21:17		YP/AJ	Ok,M
16	PB156949BSD	PB156949BSD	FC065040.D	07 Nov 2023 21:55		YP/AJ	Ok
17	O5251-01	T-1	FC065041.D	07 Nov 2023 22:32		YP/AJ	Ok
18	O5251-01D	O5251-01D	FC065042.D	07 Nov 2023 23:09		YP/AJ	Ok
19	O5251-01MS	T-1MS	FC065043.D	07 Nov 2023 23:47	FC065041.D	YP/AJ	Ok

Instrument ID: FID_C

Daily Analysis Runlog For Sequence/QC Batch ID # FC110723AL

Review By	yogesh	Review On	11/7/2023 1:15:57 PM					
Supervise By	Ankita	Supervise On	11/8/2023 9:03:27 AM					
SubDirectory	FC110723AL	HP Acquire Method	HP Processing Method		FC102823AL			
STD. NAME		STD REF.#						
Tune/Reschk Initial Calibration Stds		PP22595,PP22597,PP22598,PP22599,PP22600						
CCC		PP22598						
Internal Standard/PEM		PP22596,PP22601						
ICV/I.BLK								
Surrogate Standard								
MS/MSD Standard								
LCS Standard								
20	O5251-01MSD	T-1MSD	FC065044.D	08 Nov 2023 00:24	FC065041.D!FC065043.D	YP/AJ	Ok	
21	O5251-02	T-2	FC065045.D	08 Nov 2023 01:01		YP/AJ	Ok	
22	O5251-03	T-3	FC065046.D	08 Nov 2023 01:38		YP/AJ	Ok	
23	O5251-04	T-4	FC065047.D	08 Nov 2023 02:15		YP/AJ	Ok	
24	O5251-05	T-5	FC065048.D	08 Nov 2023 02:53		YP/AJ	Ok	
25	O5251-06	T-6	FC065049.D	08 Nov 2023 03:31		YP/AJ	Ok	
26	O5251-07	T-7	FC065050.D	08 Nov 2023 04:09		YP/AJ	Ok	
27	O5251-08	T-8	FC065051.D	08 Nov 2023 04:46		YP/AJ	Ok	
28	O5251-09	T-9	FC065052.D	08 Nov 2023 05:23		YP/AJ	Ok	
29	O5251-10	T-10	FC065053.D	08 Nov 2023 05:59		YP/AJ	Ok	
30	O5251-11	T-11	FC065054.D	08 Nov 2023 06:37		YP/AJ	Ok	
31	O5252-01	WASTE	FC065055.D	08 Nov 2023 07:14	need 2x dilution	YP/AJ	Dilution	
32	I.BLK	I.BLK	FC065056.D	08 Nov 2023 07:51		YP/AJ	Ok	
33	20 PPM ALIPHATIC HC	20 PPM ALIPHATIC HC	FC065057.D	08 Nov 2023 08:29		YP/AJ	Ok	

M : Manual Integration

Instrument ID: FID_C

Daily Analysis Runlog For Sequence/QC Batch ID # FC110823AL

Review By	yogesh	Review On	11/8/2023 11:04:44 AM				
Supervise By	Ankita	Supervise On	11/9/2023 9:15:19 AM				
SubDirectory	FC110823AL	HP Acquire Method	HP Processing Method		FC102823AL		
STD. NAME		STD REF.#					
Tune/Reschk Initial Calibration Stds CCC Internal Standard/PEM ICV/I.BLK Surrogate Standard MS/MSD Standard LCS Standard		PP22595,PP22597,PP22598,PP22599,PP22600					
		PP22598					
		PP22596,PP22601					
Sr#	SampleId	ClientID	Data File Name	Date-Time	Comment	Operator	Status
1	MECL2	MECL2	FC065058.D	08 Nov 2023 09:07		YP/AJ	Ok
2	I.BLK	I.BLK	FC065059.D	08 Nov 2023 09:44		YP/AJ	Ok
3	20 PPM ALIPHATIC HC	20 PPM ALIPHATIC HC	FC065060.D	08 Nov 2023 10:21		YP/AJ	Ok,M
4	O5270-02DL	OR-3-110623-E2DL	FC065061.D	08 Nov 2023 10:58		YP/AJ	Ok
5	O5252-01DL	WASTEDL	FC065062.D	08 Nov 2023 11:35		YP/AJ	Ok
6	I.BLK	I.BLK	FC065063.D	08 Nov 2023 12:49		YP/AJ	Ok
7	20 PPM ALIPHATIC HC	20 PPM ALIPHATIC HC	FC065064.D	08 Nov 2023 13:26		YP/AJ	Ok,M
8	PB156991BL	PB156991BL	FC065065.D	08 Nov 2023 16:04		YP/AJ	Ok
9	PB156991BS	PB156991BS	FC065066.D	08 Nov 2023 16:40		YP/AJ	Ok
10	PB156991BSD	PB156991BSD	FC065067.D	08 Nov 2023 17:17		YP/AJ	Ok
11	O5095-01	F07367	FC065068.D	08 Nov 2023 17:55		YP/AJ	Ok
12	O5280-02	MH-1-GW	FC065069.D	08 Nov 2023 18:32		YP/AJ	Ok
13	I.BLK	I.BLK	FC065070.D	08 Nov 2023 19:09		YP/AJ	Ok
14	20 PPM ALIPHATIC HC	20 PPM ALIPHATIC HC	FC065071.D	08 Nov 2023 19:46		YP/AJ	Ok,M

M : Manual Integration



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Instrument ID: FID_D

Daily Analysis Runlog For Sequence/QC Batch ID # FD102723AR

Review By	yogesh	Review On	10/27/2023 3:52:36 PM				
Supervise By	mohammad	Supervise On	10/30/2023 3:43:23 PM				
SubDirectory	FD102723AR	HP Acquire Method	HP Processing Method		FD102723AR		
STD. NAME		STD REF.#					
Tune/Reschk Initial Calibration Stds		PP22493,PP22494,PP22495,PP22496,PP22497					
CCC		PP22495					
Internal Standard/PEM		PP22499					
ICV/I.BLK							
Surrogate Standard							
MS/MSD Standard							
LCS Standard							

Sr#	SampleId	ClientID	Data File Name	Date-Time	Comment	Operator	Status
1	MECL2	MECL2	FD046792.D	27 Oct 2023 15:45		YP/AJ	Ok
2	I.BLK	I.BLK	FD046793.D	27 Oct 2023 16:25		YP/AJ	Ok
3	100 PPM AROMATIC HC	100 PPM AROMATIC HC	FD046794.D	27 Oct 2023 17:07		YP/AJ	Ok,M
4	50 PPM AROMATIC HC	50 PPM AROMATIC HC	FD046795.D	27 Oct 2023 17:49		YP/AJ	Ok
5	20 PPM AROMATIC HC	20 PPM AROMATIC HC	FD046796.D	27 Oct 2023 18:30		YP/AJ	Ok
6	10 PPM AROMATIC HC	10 PPM AROMATIC HC	FD046797.D	27 Oct 2023 19:12		YP/AJ	Ok
7	5 PPM AROMATIC HC	5 PPM AROMATIC HC	FD046798.D	27 Oct 2023 19:53		YP/AJ	Ok
8	20 PPM AROMATIC HC	20 PPM AROMATIC HC	FD046799.D	27 Oct 2023 21:16		YP/AJ	Ok
9	I.BLK	I.BLK	FD046800.D	27 Oct 2023 21:56		YP/AJ	Ok
10	20 PPM AROMATIC HC	20 PPM AROMATIC HC	FD046801.D	27 Oct 2023 22:37		YP/AJ	Ok

M : Manual Integration

Instrument ID: FID_D

Daily Analysis Runlog For Sequence/QC Batch ID # FD110723AR

Review By	yogesh	Review On	11/7/2023 3:25:49 PM				
Supervise By	Ankita	Supervise On	11/8/2023 9:06:24 AM				
SubDirectory	FD110723AR	HP Acquire Method	HP Processing Method		FD102723AR		
STD. NAME		STD REF.#					
Tune/Reschk Initial Calibration Stds CCC Internal Standard/PEM ICV/I.BLK Surrogate Standard MS/MSD Standard LCS Standard		PP22493,PP22494,PP22495,PP22496,PP22497					
		PP22495					
		PP22499					

Sr#	SampleId	ClientID	Data File Name	Date-Time	Comment	Operator	Status
1	MECL2	MECL2	FD046836.D	07 Nov 2023 10:23		YP/AJ	Ok
2	I.BLK	I.BLK	FD046837.D	07 Nov 2023 10:59		YP/AJ	Ok
3	20 PPM AROMATIC HC	20 PPM AROMATIC HC	FD046838.D	07 Nov 2023 14:15		YP/AJ	Ok
4	PB156949BL	PB156949BL	FD046839.D	07 Nov 2023 17:30		YP/AJ	Ok
5	PB156949BS	PB156949BS	FD046840.D	07 Nov 2023 18:08		YP/AJ	Ok,M
6	PB156949BSD	PB156949BSD	FD046841.D	07 Nov 2023 18:46		YP/AJ	Ok,M
7	O5251-01	T-1	FD046842.D	07 Nov 2023 19:24		YP/AJ	Ok
8	O5251-01D	O5251-01D	FD046843.D	07 Nov 2023 20:02		YP/AJ	Ok
9	O5251-01MS	T-1MS	FD046844.D	07 Nov 2023 20:40	FD046842.D	YP/AJ	Ok
10	O5251-01MSD	T-1MSD	FD046845.D	07 Nov 2023 21:17	FD046842.D!FD046844.D	YP/AJ	Ok
11	O5251-02	T-2	FD046846.D	07 Nov 2023 21:55		YP/AJ	Ok
12	O5251-03	T-3	FD046847.D	07 Nov 2023 22:32		YP/AJ	Ok
13	O5251-04	T-4	FD046848.D	07 Nov 2023 23:09		YP/AJ	Ok
14	O5251-05	T-5	FD046849.D	07 Nov 2023 23:47		YP/AJ	Ok
15	O5251-06	T-6	FD046850.D	08 Nov 2023 00:24		YP/AJ	Ok
16	O5251-07	T-7	FD046851.D	08 Nov 2023 01:01		YP/AJ	Ok
17	O5251-08	T-8	FD046852.D	08 Nov 2023 01:38		YP/AJ	Ok
18	O5251-09	T-9	FD046853.D	08 Nov 2023 02:15		YP/AJ	Ok
19	O5251-10	T-10	FD046854.D	08 Nov 2023 02:53		YP/AJ	Ok



284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Instrument ID: FID_D

Daily Analysis Runlog For Sequence/QC Batch ID # FD110723AR

Review By	yogesh	Review On	11/7/2023 3:25:49 PM				
Supervise By	Ankita	Supervise On	11/8/2023 9:06:24 AM				
SubDirectory	FD110723AR	HP Acquire Method	HP Processing Method		FD102723AR		
STD. NAME		STD REF.#					
Tune/Reschk Initial Calibration Stds		PP22493,PP22494,PP22495,PP22496,PP22497					
CCC Internal Standard/PEM		PP22495					
ICV/I.BLK Surrogate Standard MS/MSD Standard LCS Standard		PP22499					

20	O5251-11	T-11	FD046855.D	08 Nov 2023 03:31		YP/AJ	Ok
21	O5252-01	WASTE	FD046856.D	08 Nov 2023 04:09		YP/AJ	Ok
22	I.BLK	I.BLK	FD046857.D	08 Nov 2023 05:23		YP/AJ	Ok
23	20 PPM AROMATIC HC	20 PPM AROMATIC HC	FD046858.D	08 Nov 2023 05:59		YP/AJ	Ok

M : Manual Integration



PERCENT SOLID

Supervisor: Iwona

Analyst: JIGNESH

Date: 11/7/2023

OVENTEMP IN Celsius(°C): 107

Time IN: 17:25

In Date: 11/06/2023

Weight Check 1.0g: 1.00

Weight Check 10g: 10.00

OvenID: M OVEN-1

OVENTEMP OUT Celsius(°C): 103

Time OUT: 08:15

Out Date: 11/07/2023

Weight Check 1.0g: 1.00

Weight Check 10g: 10.00

BalanceID: M SC-4

Thermometer ID: %SOLIDS-OVEN

QC:LB128195

Lab ID	Client SampleID	Dish #	Dish Wt(g) (A)	Sample Wt(g)	Dish + Sample Wt(g) (B)	Dish+Dry Sample Wt(g) (C)	% Solid	Comments
O5102-02	67S-SB02-0815	89	1.15	8.58	9.73	7.6	75.2	
O5102-03	67S-SB02-2628	90	1.14	8.64	9.78	6.04	56.7	
O5102-04	67S-SB04-1419	91	1.16	8.74	9.9	7.15	68.5	
O5102-05	67S-SB07-1418	92	1.15	8.81	9.96	7.55	72.6	
O5102-06	67S-SB08-1619	93	1.15	8.81	9.96	9.00	89.1	
O5102-07	67S-SB09-1314.5	94	1.19	8.79	9.98	5.8	52.4	
O5102-08	67S-SB11-1218	95	1.12	8.46	9.58	8.11	82.6	
O5102-09	67S-SB11-1218-D	96	1.19	8.47	9.66	8.02	80.6	
O5102-10	67S-SB14-1216	97	1.11	8.76	9.87	8.07	79.5	
O5102-11	67S-SB16-1617	98	1.17	8.55	9.72	7.46	73.6	
O5102-13	67-IDW-01	99	1.13	8.52	9.65	8.02	80.9	
O5244-01	1A	1	1.14	8.63	9.77	7.54	74.2	
O5244-04	2A	2	1.18	8.48	9.66	8.15	82.2	
O5244-07	3A	3	1.16	8.50	9.66	8.22	83.1	
O5244-10	4A	4	1.19	8.78	9.97	8.58	84.2	
O5244-13	5A	5	1.11	8.47	9.58	8.47	86.9	
O5244-16	6A	6	1.19	8.71	9.9	6.99	66.6	
O5244-19	7A	7	1.19	8.79	9.98	7.01	66.2	
O5245-02	8A	8	1.16	8.48	9.64	6.25	60.0	
O5245-05	9A	9	1.19	8.55	9.74	7.21	70.4	
O5245-08	10A	10	1.13	8.67	9.8	7.04	68.2	
O5245-11	11A	11	1.16	8.68	9.84	7.72	75.6	
O5245-14	12A	12	1.15	8.83	9.98	8.19	79.7	
O5245-17	13A	13	1.14	8.68	9.82	8.6	85.9	
O5245-20	14A	14	1.19	8.79	9.98	8.86	87.3	
O5246-03	15A	15	1.18	8.64	9.82	8.47	84.4	
O5246-06	16A	16	1.13	8.84	9.97	9.00	89.0	
O5246-09	17A	17	1.16	8.80	9.96	8.81	86.9	



PERCENT SOLID

Supervisor: Iwona

Analyst: JIGNESH

Date: 11/7/2023

OVENTEMP IN Celsius(°C): 107

Time IN: 17:25

In Date: 11/06/2023

Weight Check 1.0g: 1.00

Weight Check 10g: 10.00

OvenID: M OVEN-1

OVENTEMP OUT Celsius(°C): 103

Time OUT: 08:15

Out Date: 11/07/2023

Weight Check 1.0g: 1.00

Weight Check 10g: 10.00

BalanceID: M SC-4

Thermometer ID: %SOLIDS-OVEN

QC:LB128195

Lab ID	Client SampleID	Dish #	Dish Wt(g) (A)	Sample Wt(g)	Dish + Sample Wt(g) (B)	Dish+Dry Sample Wt(g) (C)	% Solid	Comments
O5246-12	18A	18	1.13	8.75	9.88	8.64	85.8	
O5246-15	19A	19	1.18	8.50	9.68	8.56	86.8	
O5246-18	20B	20	1.18	8.78	9.96	7.48	71.8	
O5247-01	21B	21	1.18	8.46	9.64	8.2	83.0	
O5247-04	22B	22	1.18	8.79	9.97	8.7	85.6	
O5247-07	23B	23	1.15	8.80	9.95	8.51	83.6	
O5247-10	24B	24	1.18	8.41	9.59	8.37	85.5	
O5247-13	25B	25	1.14	8.65	9.79	8.84	89.0	
O5247-16	26A	26	1.17	8.57	9.74	8.42	84.6	
O5247-19	27A	27	1.19	8.59	9.78	7.36	71.8	
O5248-02	28A	28	1.19	8.80	9.99	7.44	71.0	
O5248-03	29A	29	1.12	8.71	9.83	8.21	81.4	
O5248-04	30A	30	1.19	8.58	9.77	7.99	79.3	
O5248-05	31A	31	1.15	8.53	9.68	7.61	75.7	
O5248-06	32A	32	1.19	8.73	9.92	7.88	76.6	
O5248-07	33A	33	1.18	8.80	9.98	7.29	69.4	
O5248-08	34A	34	1.19	8.60	9.79	8.26	82.2	
O5248-09	35A	35	1.16	8.58	9.74	7.74	76.7	
O5248-10	DUP-1	36	1.15	8.51	9.66	7.49	74.5	
O5248-13	DUP-4	37	1.16	8.81	9.97	7.83	75.7	
O5248-14	DUP-5	38	1.19	8.55	9.74	8.32	83.4	
O5248-16	DUP-7	39	1.19	8.51	9.7	7.1	69.4	
O5251-01	T-1	40	1.12	8.76	9.88	8.27	81.6	
O5251-02	T-2	41	1.19	8.50	9.69	8.42	85.1	
O5251-03	T-3	42	1.15	8.52	9.67	8.14	82.0	
O5251-04	T-4	43	1.19	8.43	9.62	8.39	85.4	
O5251-05	T-5	44	1.16	8.39	9.55	8.39	86.2	
O5251-06	T-6	45	1.18	8.63	9.81	8.22	81.6	



PERCENT SOLID

Supervisor: Iwona
Analyst: JIGNESH
Date: 11/7/2023

OVENTEMP IN Celsius(°C): 107
Time IN: 17:25
In Date: 11/06/2023
Weight Check 1.0g: 1.00
Weight Check 10g: 10.00
OvenID: M OVEN-1

OVENTEMP OUT Celsius(°C): 103
Time OUT: 08:15
Out Date: 11/07/2023
Weight Check 1.0g: 1.00
Weight Check 10g: 10.00
BalanceID: M SC-4
Thermometer ID: %SOLIDS-OVEN

QC:LB128195

Lab ID	Client SampleID	Dish #	Dish Wt(g) (A)	Sample Wt(g)	Dish + Sample Wt(g) (B)	Dish+Dry Sample Wt(g) (C)	% Solid	Comments
O5251-07	T-7	46	1.17	8.50	9.67	8.55	86.8	
O5251-08	T-8	47	1.19	8.69	9.88	8.73	86.8	
O5251-09	T-9	48	1.12	8.70	9.82	8.76	87.8	
O5251-10	T-10	49	1.19	8.73	9.92	8.85	87.7	
O5251-11	T-11	50	1.19	8.65	9.84	8.68	86.6	
O5252-01	WASTE	51	1.17	8.60	9.77	8.96	90.6	
O5253-01	L-1 (65FT) (5-10)	52	1.18	8.53	9.71	8.35	84.1	
O5253-02	L-6 (0-5)	53	1.13	8.53	9.66	8.76	89.4	
O5253-03	L-3 (120FT) (0-5)	54	1.15	8.57	9.72	9.00	91.6	
O5253-04	L-3 (195FT) (0-5)	55	1.19	8.58	9.77	9.02	91.3	
O5258-01	01-A-01-B-01-C	56	1.00	1.00	2.00	2.00	100.0	CAULKING SAMPLE
O5258-02	02-A-02-B-02-C	57	1.00	1.00	2.00	2.00	100.0	CAULKING SAMPLE
O5258-03	03-A-03-B-03-C	58	1.00	1.00	2.00	2.00	100.0	CAULKING SAMPLE
O5258-04	04-A-04-B-04-C	59	1.00	1.00	2.00	2.00	100.0	CAULKING SAMPLE
O5258-05	05-A-05-B-05-C	60	1.00	1.00	2.00	2.00	100.0	CAULKING SAMPLE
O5258-06	06-A-06-B-06-C	61	1.00	1.00	2.00	2.00	100.0	CAULKING SAMPLE
O5258-07	07-A-07-B-07-C	62	1.00	1.00	2.00	2.00	100.0	CAULKING SAMPLE
O5258-08	08-A-08-B-08-C	63	1.00	1.00	2.00	2.00	100.0	CAULKING SAMPLE
O5258-09	09-A-09-B-09-C	64	1.00	1.00	2.00	2.00	100.0	CAULKING SAMPLE
O5258-10	10-A-10-B-10-C	65	1.00	1.00	2.00	2.00	100.0	CAULKING SAMPLE
O5258-11	11-A-11-B-11-C	66	1.00	1.00	2.00	2.00	100.0	CAULKING SAMPLE
O5258-12	12-A-12-B-12-C	67	1.00	1.00	2.00	2.00	100.0	CAULKING SAMPLE
O5258-13	13-A-14-B-14-C	68	1.00	1.00	2.00	2.00	100.0	CAULKING SAMPLE
O5258-14	14-A-14-B-14-C	69	1.00	1.00	2.00	2.00	100.0	CAULKING SAMPLE
O5258-15	15-A-15-B-15-C	70	1.00	1.00	2.00	2.00	100.0	CAULKING SAMPLE
O5258-16	16-A-16-B-16-C	71	1.00	1.00	2.00	2.00	100.0	CAULKING SAMPLE
O5258-17	17-A-17-B-17-C	72	1.00	1.00	2.00	2.00	100.0	CAULKING SAMPLE
O5258-18	18-A-18-B-18-C	73	1.00	1.00	2.00	2.00	100.0	CAULKING SAMPLE



PERCENT SOLID

Supervisor: Iwona
Analyst: JIGNESH
Date: 11/7/2023

OVENTEMP IN Celsius(°C): 107
Time IN: 17:25
In Date: 11/06/2023
Weight Check 1.0g: 1.00
Weight Check 10g: 10.00
OvenID: M OVEN-1

OVENTEMP OUT Celsius(°C): 103
Time OUT: 08:15
Out Date: 11/07/2023
Weight Check 1.0g: 1.00
Weight Check 10g: 10.00
BalanceID: M SC-4
Thermometer ID: %SOLIDS-OVEN

QC:LB128195

Lab ID	Client SampleID	Dish #	Dish Wt(g) (A)	Sample Wt(g)	Dish + Sample Wt(g) (B)	Dish+Dry Sample Wt(g) (C)	% Solid	Comments
O5258-19	19-A-19-B-19-C	74	1.00	1.00	2.00	2.00	100.0	CAULKING SAMPLE
O5258-20	20-A-20-B-20-C	75	1.00	1.00	2.00	2.00	100.0	CAULKING SAMPLE
O5258-21	21-A-21-B-21-C	76	1.00	1.00	2.00	2.00	100.0	CAULKING SAMPLE
O5258-22	22-A-22-B-22-C	77	1.00	1.00	2.00	2.00	100.0	CAULKING SAMPLE
O5258-23	23-A-23-B-23-C	78	1.00	1.00	2.00	2.00	100.0	CAULKING SAMPLE
O5258-24	24-A-24-B-24-C	79	1.00	1.00	2.00	2.00	100.0	CAULKING SAMPLE
O5258-25	25-A-25-B-25-C	80	1.00	1.00	2.00	2.00	100.0	CAULKING SAMPLE
O5258-26	26-A-26-B-26-C	81	1.00	1.00	2.00	2.00	100.0	CAULKING SAMPLE
O5258-27	27-A-27-B-27-C	82	1.00	1.00	2.00	2.00	100.0	CAULKING SAMPLE
O5266-01	1203	83	1.15	8.42	9.57	9.24	96.1	
O5267-01	ETGI-320	86	1.00	1.00	2.00	2.00	100.0	CONCRETE SAMPLE
O5270-01	OR-3-110623	84	1.18	8.80	9.98	9.34	92.7	
O5270-02	OR-3-110623-E2	85	1.13	8.80	9.93	9.01	89.5	
O5272-01	001	87	1.15	8.39	9.54	7.94	80.9	
O5272-02	002	88	1.15	8.39	9.54	7.94	80.9	

$$\% \text{ Solid} = \frac{(C-A) * 100}{(B-A)}$$

W 128195

WORKLIST(Hardcopy Internal Chain)

WorkList Name : %1-110623

WorkList ID : 175305

Department : Wet-Chemistry

Date : 11-06-2023 08:43:56

Sample	Customer Sample	Matrix	Test	Preservative	Customer	Raw Sample Storage Location	Collect Date	Method
O5102-02	67S-SB02-0815	Solid	Percent Solids	Cool 4 deg C	TETR16	I41	10/23/2023	Chemtech -SO
O5102-03	67S-SB02-2628	Solid	Percent Solids	Cool 4 deg C	TETR16	I41	10/23/2023	Chemtech -SO
O5102-04	67S-SB04-1419	Solid	Percent Solids	Cool 4 deg C	TETR16	I41	10/23/2023	Chemtech -SO
O5102-05	67S-SB07-1418	Solid	Percent Solids	Cool 4 deg C	TETR16	I41	10/23/2023	Chemtech -SO
O5102-06	67S-SB08-1619	Solid	Percent Solids	Cool 4 deg C	TETR16	I41	10/23/2023	Chemtech -SO
O5102-07	67S-SB09-1314.5	Solid	Percent Solids	Cool 4 deg C	TETR16	I41	10/23/2023	Chemtech -SO
O5102-08	67S-SB11-1218	Solid	Percent Solids	Cool 4 deg C	TETR16	I41	10/23/2023	Chemtech -SO
O5102-09	67S-SB11-1218-D	Solid	Percent Solids	Cool 4 deg C	TETR16	I41	10/24/2023	Chemtech -SO
O5102-10	67S-SB14-1216	Solid	Percent Solids	Cool 4 deg C	TETR16	I41	10/24/2023	Chemtech -SO
O5102-11	67S-SB16-1617	Solid	Percent Solids	Cool 4 deg C	TETR16	I41	10/24/2023	Chemtech -SO
O5244-01	1A	Solid	Percent Solids	Cool 4 deg C	ATCE02	I41	11/02/2023	Chemtech -SO
O5244-04	2A	Solid	Percent Solids	Cool 4 deg C	ATCE02	I41	11/02/2023	Chemtech -SO
O5244-07	3A	Solid	Percent Solids	Cool 4 deg C	ATCE02	I41	11/02/2023	Chemtech -SO
O5244-10	4A	Solid	Percent Solids	Cool 4 deg C	ATCE02	I41	11/02/2023	Chemtech -SO
O5244-13	5A	Solid	Percent Solids	Cool 4 deg C	ATCE02	I41	11/02/2023	Chemtech -SO
O5244-16	6A	Solid	Percent Solids	Cool 4 deg C	ATCE02	I41	11/02/2023	Chemtech -SO
O5244-19	7A	Solid	Percent Solids	Cool 4 deg C	ATCE02	I41	11/02/2023	Chemtech -SO
O5245-02	8A	Solid	Percent Solids	Cool 4 deg C	ATCE02	I41	11/02/2023	Chemtech -SO
O5245-05	9A	Solid	Percent Solids	Cool 4 deg C	ATCE02	I41	11/02/2023	Chemtech -SO
O5245-08	10A	Solid	Percent Solids	Cool 4 deg C	ATCE02	I41	11/02/2023	Chemtech -SO
O5245-11	11A	Solid	Percent Solids	Cool 4 deg C	ATCE02	I41	11/02/2023	Chemtech -SO

Date/Time 11-06-23 15:30

Raw Sample Received by: [Signature]

Raw Sample Relinquished by: [Signature]

Date/Time 11-06-23

Raw Sample Received by: [Signature]

Raw Sample Relinquished by: [Signature]

WORKLIST(Hardcopy Internal Chain)

11-06-23

WorkList Name : %1-110623

WorkList ID : 175305

Department : Wet-Chemistry

Date : 11-06-2023 08:43:56

Sample	Customer Sample	Matrix	Test	Preservative	Customer	Raw Sample Storage Location	Collect Date	Method
O5245-14	12A	Solid	Percent Solids	Cool 4 deg C	ATCE02	I41	11/02/2023	Chemtech -SO
O5245-17	13A	Solid	Percent Solids	Cool 4 deg C	ATCE02	I41	11/02/2023	Chemtech -SO
O5245-20	14A	Solid	Percent Solids	Cool 4 deg C	ATCE02	I41	11/02/2023	Chemtech -SO
O5246-03	15A	Solid	Percent Solids	Cool 4 deg C	ATCE02	I41	11/02/2023	Chemtech -SO
O5246-06	16A	Solid	Percent Solids	Cool 4 deg C	ATCE02	I41	11/02/2023	Chemtech -SO
O5246-09	17A	Solid	Percent Solids	Cool 4 deg C	ATCE02	I41	11/02/2023	Chemtech -SO
O5246-12	18A	Solid	Percent Solids	Cool 4 deg C	ATCE02	I41	11/02/2023	Chemtech -SO
O5246-15	19A	Solid	Percent Solids	Cool 4 deg C	ATCE02	I41	11/02/2023	Chemtech -SO
O5246-18	20B	Solid	Percent Solids	Cool 4 deg C	ATCE02	I41	11/02/2023	Chemtech -SO
O5247-01	21B	Solid	Percent Solids	Cool 4 deg C	ATCE02	I41	11/02/2023	Chemtech -SO
O5247-04	22B	Solid	Percent Solids	Cool 4 deg C	ATCE02	I41	11/03/2023	Chemtech -SO
O5247-07	23B	Solid	Percent Solids	Cool 4 deg C	ATCE02	I41	11/03/2023	Chemtech -SO
O5247-10	24B	Solid	Percent Solids	Cool 4 deg C	ATCE02	I41	11/03/2023	Chemtech -SO
O5247-13	25B	Solid	Percent Solids	Cool 4 deg C	ATCE02	I41	11/03/2023	Chemtech -SO
O5247-16	26A	Solid	Percent Solids	Cool 4 deg C	ATCE02	I41	11/03/2023	Chemtech -SO
O5247-19	27A	Solid	Percent Solids	Cool 4 deg C	ATCE02	I41	11/03/2023	Chemtech -SO
O5248-02	28A	Solid	Percent Solids	Cool 4 deg C	ATCE02	I41	11/03/2023	Chemtech -SO
O5248-03	29A	Solid	Percent Solids	Cool 4 deg C	ATCE02	I41	11/02/2023	Chemtech -SO
O5248-04	30A	Solid	Percent Solids	Cool 4 deg C	ATCE02	I41	11/02/2023	Chemtech -SO
O5248-05	31A	Solid	Percent Solids	Cool 4 deg C	ATCE02	I41	11/02/2023	Chemtech -SO
O5248-06	32A	Solid	Percent Solids	Cool 4 deg C	ATCE02	I41	11/02/2023	Chemtech -SO

Date/Time 11-06-23 15:30

Raw Sample Received by: 201691

Raw Sample Relinquished by: 381627

Date/Time 11-06-23

Raw Sample Received by: 201691

Raw Sample Relinquished by: 381627

128195

WORKLIST(Hardcopy Internal Chain)

WorkList Name : %1-110623

WorkList ID : 175305

Department : Wet-Chemistry

Date : 11-06-2023 08:43:56

Sample	Customer Sample	Matrix	Test	Preservative	Customer	Raw Sample Storage Location	Collect Date	Method
O5248-07	33A	Solid	Percent Solids	Cool 4 deg C	ATCE02	I41	11/02/2023	Chemtech -SO
O5248-08	34A	Solid	Percent Solids	Cool 4 deg C	ATCE02	I41	11/02/2023	Chemtech -SO
O5248-09	35A	Solid	Percent Solids	Cool 4 deg C	ATCE02	I41	11/02/2023	Chemtech -SO
O5248-10	DUP-1	Solid	Percent Solids	Cool 4 deg C	ATCE02	I41	11/02/2023	Chemtech -SO
O5248-13	DUP-4	Solid	Percent Solids	Cool 4 deg C	ATCE02	I41	11/02/2023	Chemtech -SO
O5248-14	DUP-5	Solid	Percent Solids	Cool 4 deg C	ATCE02	I41	11/02/2023	Chemtech -SO
O5248-16	DUP-7	Solid	Percent Solids	Cool 4 deg C	ATCE02	I41	11/02/2023	Chemtech -SO
O5251-01	T-1	Solid	Percent Solids	Cool 4 deg C	ATCE02	I41	11/02/2023	Chemtech -SO
O5251-02	T-2	Solid	Percent Solids	Cool 4 deg C	RMJE02	L21	11/02/2023	Chemtech -SO
O5251-03	T-3	Solid	Percent Solids	Cool 4 deg C	RMJE02	L21	11/02/2023	Chemtech -SO
O5251-04	T-4	Solid	Percent Solids	Cool 4 deg C	RMJE02	L21	11/02/2023	Chemtech -SO
O5251-05	T-5	Solid	Percent Solids	Cool 4 deg C	RMJE02	L21	11/02/2023	Chemtech -SO
O5251-06	T-6	Solid	Percent Solids	Cool 4 deg C	RMJE02	L21	11/02/2023	Chemtech -SO
O5251-07	T-7	Solid	Percent Solids	Cool 4 deg C	RMJE02	L21	11/02/2023	Chemtech -SO
O5251-08	T-8	Solid	Percent Solids	Cool 4 deg C	RMJE02	L21	11/02/2023	Chemtech -SO
O5251-09	T-9	Solid	Percent Solids	Cool 4 deg C	RMJE02	L21	11/02/2023	Chemtech -SO
O5251-10	T-10	Solid	Percent Solids	Cool 4 deg C	RMJE02	L21	11/02/2023	Chemtech -SO
O5251-11	T-11	Solid	Percent Solids	Cool 4 deg C	RMJE02	L21	11/02/2023	Chemtech -SO
O5252-01	WASTE	Solid	Percent Solids	Cool 4 deg C	RMJE02	L21	11/02/2023	Chemtech -SO
O5253-01	L-1(65FT)(5-10)	Solid	Percent Solids	Cool 4 deg C	GEIC06	L21	11/03/2023	Chemtech -SO
O5253-02	L-6(0-5)	Solid	Percent Solids	Cool 4 deg C	GEIC06	L21	11/03/2023	Chemtech -SO

Date/Time 11-06-23 15:30
 Raw Sample Received by: JPC/WCJ
 Raw Sample Relinquished by: JPC/WCJ

Date/Time 11-06-23 17:30
 Raw Sample Received by: JPC/WCJ
 Raw Sample Relinquished by: JPC/WCJ

128195

WORKLIST(Hardcopy Internal Chain)

WorkList Name : %1-110623

WorkList ID : 175305

Department : Wet-Chemistry

Date : 11-06-2023 08:43:56

Sample	Customer Sample	Matrix	Test	Preservative	Customer	Raw Sample Storage Location	Collect Date	Method
O5253-03	L-3(120FT)(0-5)	Solid	Percent Solids	Cool 4 deg C	GEIC06	L21	11/03/2023	Chemtech -SO
O5253-04	L-3(195FT)(0-5)	Solid	Percent Solids	Cool 4 deg C	GEIC06	L21	11/03/2023	Chemtech -SO
O5258-01	01-A-01-B-01-C	Solid	Percent Solids	Cool 4 deg C	BSIG01	L21	11/03/2023	Chemtech -SO
O5258-02	02-A-02-B-02-C	Solid	Percent Solids	Cool 4 deg C	BSIG01	L21	11/03/2023	Chemtech -SO
O5258-03	03-A-03-B-03-C	Solid	Percent Solids	Cool 4 deg C	BSIG01	L21	11/03/2023	Chemtech -SO
O5258-04	04-A-04-B-04-C	Solid	Percent Solids	Cool 4 deg C	BSIG01	L21	11/03/2023	Chemtech -SO
O5258-05	05-A-05-B-05-C	Solid	Percent Solids	Cool 4 deg C	BSIG01	L21	11/03/2023	Chemtech -SO
O5258-06	06-A-06-B-06-C	Solid	Percent Solids	Cool 4 deg C	BSIG01	L21	11/03/2023	Chemtech -SO
O5258-07	07-A-07-B-07-C	Solid	Percent Solids	Cool 4 deg C	BSIG01	L21	11/03/2023	Chemtech -SO
O5258-08	08-A-08-B-08-C	Solid	Percent Solids	Cool 4 deg C	BSIG01	L21	11/03/2023	Chemtech -SO
O5258-09	09-A-09-B-09-C	Solid	Percent Solids	Cool 4 deg C	BSIG01	L21	11/03/2023	Chemtech -SO
O5258-10	10-A-10-B-10-C	Solid	Percent Solids	Cool 4 deg C	BSIG01	L21	11/03/2023	Chemtech -SO
O5258-11	11-A-11-B-11-C	Solid	Percent Solids	Cool 4 deg C	BSIG01	L21	11/03/2023	Chemtech -SO
O5258-12	12-A-12-B-12-C	Solid	Percent Solids	Cool 4 deg C	BSIG01	L21	11/03/2023	Chemtech -SO
O5258-13	13-A-14-B-14-C	Solid	Percent Solids	Cool 4 deg C	BSIG01	L21	11/03/2023	Chemtech -SO
O5258-14	14-A-14-B-14-C	Solid	Percent Solids	Cool 4 deg C	BSIG01	L21	11/03/2023	Chemtech -SO
O5258-15	15-A-15-B-15-C	Solid	Percent Solids	Cool 4 deg C	BSIG01	L21	11/03/2023	Chemtech -SO
O5258-16	16-A-16-B-16-C	Solid	Percent Solids	Cool 4 deg C	BSIG01	L21	11/03/2023	Chemtech -SO
O5258-17	17-A-17-B-17-C	Solid	Percent Solids	Cool 4 deg C	BSIG01	L21	11/03/2023	Chemtech -SO
O5258-18	18-A-18-B-18-C	Solid	Percent Solids	Cool 4 deg C	BSIG01	L21	11/03/2023	Chemtech -SO
O5258-19	19-A-19-B-19-C	Solid	Percent Solids	Cool 4 deg C	BSIG01	L21	11/03/2023	Chemtech -SO

Date/Time 11-06-23 15:30

Raw Sample Received by: JGWC

Raw Sample Relinquished by: JGWC

Date/Time 11-06-23

Raw Sample Received by: JGWC

Raw Sample Relinquished by: JGWC

128193

WORKLIST(Hardcopy Internal Chain)

WorkList Name : %1-110623

WorkList ID : 175305

Department : Wet-Chemistry

Date : 11-06-2023 08:43:56

Sample	Customer Sample	Matrix	Test	Preservative	Customer	Raw Sample Storage Location	Collect Date	Method
O5258-20	20-A-20-B-20-C	Solid	Percent Solids	Cool 4 deg C	BSIG01	L21	11/03/2023	Chemtech -SO
O5258-21	21-A-21-B-21-C	Solid	Percent Solids	Cool 4 deg C	BSIG01	L21	11/03/2023	Chemtech -SO
O5258-22	22-A-22-B-22-C	Solid	Percent Solids	Cool 4 deg C	BSIG01	L21	11/03/2023	Chemtech -SO
O5258-23	23-A-23-B-23-C	Solid	Percent Solids	Cool 4 deg C	BSIG01	L21	11/03/2023	Chemtech -SO
O5258-24	24-A-24-B-24-C	Solid	Percent Solids	Cool 4 deg C	BSIG01	L21	11/03/2023	Chemtech -SO
O5258-25	25-A-25-B-25-C	Solid	Percent Solids	Cool 4 deg C	BSIG01	L21	11/03/2023	Chemtech -SO
O5258-26	26-A-26-B-26-C	Solid	Percent Solids	Cool 4 deg C	BSIG01	L21	11/03/2023	Chemtech -SO
O5258-27	27-A-27-B-27-C	Solid	Percent Solids	Cool 4 deg C	BSIG01	L21	11/03/2023	Chemtech -SO
O5266-01	1203	Solid	Percent Solids	Cool 4 deg C	BSIG01	L21	11/03/2023	Chemtech -SO
O5267-01	ETGI-320	Solid	Percent Solids	Cool 4 deg C	PSEG03	I41	11/06/2023	Chemtech -SO
O5270-01	OR-3-110623	Solid	Percent Solids	Cool 4 deg C	PSEG03	L31	11/06/2023	Chemtech -SO
O5270-02	OR-3-110623-E2	Solid	Percent Solids	Cool 4 deg C	PSEG05	I31	11/06/2023	Chemtech -SO
O5272-01	001	Solid	Percent Solids	Cool 4 deg C	PSEG05	I31	11/06/2023	Chemtech -SO
O5272-02	002	Solid	Percent Solids	Cool 4 deg C	CONS03	I41	11/02/2023	Chemtech -SO
					CONS03	I41	11/02/2023	Chemtech -SO

11-06-23 15:30

Date/Time

Raw Sample Received by:

20 (gpc)

Raw Sample Relinquished by:

11-06-23

Date/Time

Raw Sample Received by:

OP SM

Raw Sample Relinquished by:

10 (gpc)

SOP ID: MNJDEP-EPH-7

Clean Up SOP #: N/A

Matrix: Solid

Weigh By: RJ

Balance check: RJ

Balance ID: EX-SC-2

pH Strip Lot#: N/A

Extraction By: RJ

Filter By: RJ

pH Meter ID: N/A

Hood ID: 3,7

Extraction Start Date: 11/07/2023

Extraction Start Time: 08:55

Extraction End Date: 11/07/2023

Extraction End Time: 16:45

Concentration By: RS

Supervisor By: rajesh

Extraction Method: ☐ Separatory Funnel ☐ Continuous Liquid/Liquid ☐ Sonication ☐ Waste Dilution ☒ Soxhlet

Standard Name	MLS USED	Concentration ug/mL	STD REF. # FROM LOG
Spike Sol 1	1.0ML	100 PPM	PP22659
Surrogate	1.0ML	100 PPM	PP22640
Fractionation Surrogate	1.0ML	100 PPM	PP22637
N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A

Chemical Used	ML/SAMPLE USED	Lot Number
MeCl2/Acetone/1:1	N/A	EP2392
Baked Na2SO4	N/A	EP2408
Sand	N/A	E2865
Hexane	N/A	E3591
EPH Cartridge	N/A	E3480
N/A	N/A	N/A
N/A	N/A	N/A
N/A	N/A	N/A
N/A	N/A	N/A
N/A	N/A	N/A
N/A	N/A	N/A
N/A	N/A	N/A
N/A	N/A	N/A
N/A	N/A	N/A
N/A	N/A	N/A

Extraction Conformance/Non-Conformance Comments:

1.5 ML Vial lot#2210678

KD Bath ID: N/A

Envap ID: NE VAP-02

KD Bath Temperature: N/A

Envap Temperature: 40 °C

Date / Time	Prepped Sample Relinquished By/Location	Received By/Location
11/7/23	RP (Est. Lab)	AS INT RPA Lab
16:50	Preparation Group	Analysis Group



EXTRACTION LOGPAGE

PrepBatch ID : PB156949

Analytical Method: MNJDEP-EPH-7

Concentration Date: 11/07/2023

Sample ID	Client Sample ID	Test	g / mL	PH	Surr/ Spike By:		Final Vol. (mL)	JarID	Comments	Prep Pos
					AddedBy	VerifiedBy				
PB156949BL	PB156949BL	EPH	30.01	N/A	ritesh	RUPESH	2			U3-1
PB156949BS	PB156949BS	EPH	30.00	N/A	ritesh	RUPESH	2			2
PB156949BSD	PB156949BSD	EPH	30.03	N/A	ritesh	RUPESH	2			3
O5251-01	T-1	EPH	30.07	N/A	ritesh	RUPESH	2			4
O5251-01DUP	T-1DUP	EPH	30.09	N/A	ritesh	RUPESH	2			5
O5251-01MS	T-1MS	EPH	30.02	N/A	ritesh	RUPESH	2			6
O5251-01MSD	T-1MSD	EPH	30.04	N/A	ritesh	RUPESH	2			U5-1
O5251-02	T-2	EPH	30.01	N/A	ritesh	RUPESH	2			2
O5251-03	T-3	EPH	30.06	N/A	ritesh	RUPESH	2			3
O5251-04	T-4	EPH	30.10	N/A	ritesh	RUPESH	2			4
O5251-05	T-5	EPH	30.03	N/A	ritesh	RUPESH	2			5
O5251-06	T-6	EPH	30.07	N/A	ritesh	RUPESH	2			6
O5251-07	T-7	EPH	30.10	N/A	ritesh	RUPESH	2			U6-1
O5251-08	T-8	EPH	30.01	N/A	ritesh	RUPESH	2			2
O5251-09	T-9	EPH	30.06	N/A	ritesh	RUPESH	2			3
O5251-10	T-10	EPH	30.09	N/A	ritesh	RUPESH	2			4
O5251-11	T-11	EPH	30.03	N/A	ritesh	RUPESH	2			5
O5252-01	WASTE	EPH	30.05	N/A	ritesh	RUPESH	2	B		6

* Extracts relinquished on the same date as received.

P
11/12/22

WORKLIST(Hardcopy Internal Chain)

156949
8-55 EBN

Worklist Name : O5251

Worklist ID : 175337

Department : Extraction

Date : 11-07-2023 08:08:41

Sample	Customer Sample	Matrix	Test	Preservative	Customer	Raw Sample Storage Location	Collect Date	Method
O5251-01	T-1	Solid	EPH	Cool 4 deg C	RMJEO2	L21	11/02/2023	NJEPH
O5251-02	T-2	Solid	EPH	Cool 4 deg C	RMJEO2	L21	11/02/2023	NJEPH
O5251-03	T-3	Solid	EPH	Cool 4 deg C	RMJEO2	L21	11/02/2023	NJEPH
O5251-04	T-4	Solid	EPH	Cool 4 deg C	RMJEO2	L21	11/02/2023	NJEPH
O5251-05	T-5	Solid	EPH	Cool 4 deg C	RMJEO2	L21	11/02/2023	NJEPH
O5251-06	T-6	Solid	EPH	Cool 4 deg C	RMJEO2	L21	11/02/2023	NJEPH
O5251-07	T-7	Solid	EPH	Cool 4 deg C	RMJEO2	L21	11/02/2023	NJEPH
O5251-08	T-8	Solid	EPH	Cool 4 deg C	RMJEO2	L21	11/02/2023	NJEPH
O5251-09	T-9	Solid	EPH	Cool 4 deg C	RMJEO2	L21	11/02/2023	NJEPH
O5251-10	T-10	Solid	EPH	Cool 4 deg C	RMJEO2	L21	11/02/2023	NJEPH
O5251-11	T-11	Solid	EPH	Cool 4 deg C	RMJEO2	L21	11/02/2023	NJEPH
O5252-01	WASTE	Solid	EPH	Cool 4 deg C	RMJEO2	I31	11/03/2023	NJEPH
O5270-01	OR-3-110623	Solid	EPH_NF	Cool 4 deg C	PSEG05	I31	11/06/2023	NJEPH
O5270-02	OR-3-110623-E2	Solid	EPH_NF	Cool 4 deg C	PSEG05	I31	11/06/2023	NJEPH

Date/Time

11/7/23 8:50

Raw Sample Received by:

RJ (St 104)

Raw Sample Relinquished by:

QJ (St 104)

Date/Time

11/7/23 9:20

Raw Sample Received by:

QJ (St 104)

Raw Sample Relinquished by:

RJ (St 104)

Prep Standard - Chemical Standard Summary**Order ID :** O5252**Test :** EPH**Prepbatch ID :** PB156949,**Sequence ID/Qc Batch ID:** FC110723AL,FC110823AL,FD110723AR,**Standard ID :**

EP2392,EP2408,PP22493,PP22494,PP22495,PP22496,PP22497,PP22498,PP22499,PP22595,PP22596,PP22597,PP22598,PP22599,PP22600,PP22601,PP22637,PP22640,PP22659,

Chemical ID :

E2865,E3412,E3480,E3557,E3572,E3575,E3584,E3585,E3591,P10257,P11134,P11135,P11831,P12381,P12382,P12383,P12384,P12385,P12556,P12578,P12583,P12584,P12585,P12586,P12587,P12588,P12670,P12683,P12684,P12721,P12722,P12723,P12724,P12725,P12726,P12727,P12728,P12729,P12730,P12755,P12786,P12787,P12826,P12827,P12828,P12829,P12830,P12831,P12832,P12833,P12834,P9291,

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Extractions STANDARD PREPARATION LOG

<u>Recipe ID</u>	<u>NAME</u>	<u>NO.</u>	<u>Prep Date</u>	<u>Expiration Date</u>	<u>Prepared By</u>	<u>ScaleID</u>	<u>PipetteID</u>	<u>Supervised By</u>
2017	1:1 ACETONE/METHYLENE CHLORIDE	EP2392	09/28/2023	03/25/2024	Rajesh Parikh	None	None	RUPESHKUMAR SHAH 09/28/2023

FROM 8000.00000ml of E3572 + 8000.00000ml of E3575 = Final Quantity: 16000.000 ml

<u>Recipe ID</u>	<u>NAME</u>	<u>NO.</u>	<u>Prep Date</u>	<u>Expiration Date</u>	<u>Prepared By</u>	<u>ScaleID</u>	<u>PipetteID</u>	<u>Supervised By</u>
3923	Baked Sodium Sulfate	EP2408	11/06/2023	04/10/2024	Rajesh Parikh	Extraction_SC ALE_2 (EX-SC-2)	None	RUPESHKUMAR SHAH 11/06/2023

FROM 4000.00000gram of E3412 = Final Quantity: 4000.000 gram

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Pest/Pcb STANDARD PREPARATION LOG

<u>Recipe ID</u>	<u>NAME</u>	<u>NO.</u>	<u>Prep Date</u>	<u>Expiration Date</u>	<u>Prepared By</u>	<u>ScaleID</u>	<u>PipetteID</u>	<u>Supervised By</u>
782	100 PPM Aromatic HC Working STD	PP22493	08/18/2023	02/10/2024	Ankita Jodhani	None	None	Yogesh Patel
08/18/2023								

FROM 0.25000ml of P12578 + 0.62500ml of P12670 + 1.25000ml of P10257 + 22.87500ml of E3557 = Final Quantity: 25.000 ml

<u>Recipe ID</u>	<u>NAME</u>	<u>NO.</u>	<u>Prep Date</u>	<u>Expiration Date</u>	<u>Prepared By</u>	<u>ScaleID</u>	<u>PipetteID</u>	<u>Supervised By</u>
787	50 PPM Aromatic HC STD	PP22494	08/18/2023	02/10/2024	Ankita Jodhani	None	None	Yogesh Patel
08/18/2023								

FROM 0.50000ml of E3557 + 0.50000ml of PP22493 = Final Quantity: 1.000 ml

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<u>Recipe ID</u>	<u>NAME</u>	<u>NO.</u>	<u>Prep Date</u>	<u>Expiration Date</u>	<u>Prepared By</u>	<u>ScaleID</u>	<u>PipetteID</u>	<u>Supervised By</u>
788	20 PPM Aromatic HC STD	PP22495	08/18/2023	02/10/2024	Ankita Jodhani	None	None	Yogesh Patel 08/18/2023
<u>FROM</u> 0.80000ml of E3557 + 0.20000ml of PP22493 = Final Quantity: 1.000 ml								

<u>Recipe ID</u>	<u>NAME</u>	<u>NO.</u>	<u>Prep Date</u>	<u>Expiration Date</u>	<u>Prepared By</u>	<u>ScaleID</u>	<u>PipetteID</u>	<u>Supervised By</u>
789	10 PPM Aromatic HC STD	PP22496	08/18/2023	02/10/2024	Ankita Jodhani	None	None	Yogesh Patel 08/18/2023
<u>FROM</u>	0.90000ml of E3557 + 0.10000ml of PP22493 = Final Quantity: 1.000 ml							

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<u>Recipe ID</u>	<u>NAME</u>	<u>NO.</u>	<u>Prep Date</u>	<u>Expiration Date</u>	<u>Prepared By</u>	<u>ScaleID</u>	<u>PipetteID</u>	<u>Supervised By</u>
790	5 PPM Aromatic HC STD	PP22497	08/18/2023	02/10/2024	Ankita Jodhani	None	None	Yogesh Patel 08/18/2023
<u>FROM</u> 0.90000ml of E3557 + 0.10000ml of PP22494 = Final Quantity: 1.000 ml								

<u>Recipe ID</u>	<u>NAME</u>	<u>NO.</u>	<u>Prep Date</u>	<u>Expiration Date</u>	<u>Prepared By</u>	<u>ScaleID</u>	<u>PipetteID</u>	<u>Supervised By</u>
2945	100 PPM Aromatic HC Working STD (Absolute)	PP22498	08/18/2023	02/10/2024	Ankita Jodhani	None	None	Yogesh Patel 08/18/2023
<u>FROM</u> 0.25000ml of P12578 + 0.62500ml of P12670 + 1.25000ml of P9291 + 22.87500ml of E3557 = Final Quantity: 25.000 ml								

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<u>Recipe ID</u>	<u>NAME</u>	<u>NO.</u>	<u>Prep Date</u>	<u>Expiration Date</u>	<u>Prepared By</u>	<u>ScaleID</u>	<u>PipetteID</u>	<u>Supervised By</u>
2946	20 PPM Aromatic HC STD ICV (Absolute)	PP22499	08/18/2023	02/10/2024	Ankita Jodhani	None	None	Yogesh Patel 08/18/2023
<u>FROM</u>	0.80000ml of E3557 + 0.20000ml of PP22498 = Final Quantity: 1.000 ml							

<u>Recipe ID</u>	<u>NAME</u>	<u>NO.</u>	<u>Prep Date</u>	<u>Expiration Date</u>	<u>Prepared By</u>	<u>ScaleID</u>	<u>PipetteID</u>	<u>Supervised By</u>
781	100 PPM Aliphatic HC Working STD (Restek)	PP22595	10/06/2023	04/09/2024	Yogesh Patel	None	None	Ankita Jodhani 10/11/2023
<u>FROM</u> 0.25000ml of P12382 + 0.25000ml of P12584 + 1.25000ml of P11831 + 23.25000ml of E3585 = Final Quantity: 25.000 ml								

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<u>Recipe ID</u>	<u>NAME</u>	<u>NO.</u>	<u>Prep Date</u>	<u>Expiration Date</u>	<u>Prepared By</u>	<u>ScaleID</u>	<u>PipetteID</u>	<u>Supervised By</u>
2900	100 PPM Aliphatic HC STD (Absolute)	PP22596	10/06/2023	04/09/2024	Yogesh Patel	None	None	Ankita Jodhani 10/11/2023
<u>FROM</u> 0.25000ml of P12381 + 0.25000ml of P12583 + 1.25000ml of P11134 + 1.25000ml of P11135 + 22.00000ml of E3585 = Final Quantity: 25.000 ml								

<u>Recipe ID</u>	<u>NAME</u>	<u>NO.</u>	<u>Prep Date</u>	<u>Expiration Date</u>	<u>Prepared By</u>	<u>ScaleID</u>	<u>PipetteID</u>	<u>Supervised By</u>
783	50 PPM Aliphatic HC STD	PP22597	10/06/2023	04/09/2024	Yogesh Patel	None	None	Ankita Jodhani 10/11/2023
<u>FROM</u>	0.50000ml of E3585 + 0.50000ml of PP22595 = Final Quantity: 1.000 ml							

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<u>Recipe ID</u>	<u>NAME</u>	<u>NO.</u>	<u>Prep Date</u>	<u>Expiration Date</u>	<u>Prepared By</u>	<u>ScaleID</u>	<u>PipetteID</u>	<u>Supervised By</u>
784	20 PPM Aliphatic HC STD	PP22598	10/06/2023	04/09/2024	Yogesh Patel	None	None	Ankita Jodhani 10/11/2023
<u>FROM</u> 0.80000ml of E3585 + 0.20000ml of PP22595 = Final Quantity: 1.000 ml								

<u>Recipe ID</u>	<u>NAME</u>	<u>NO.</u>	<u>Prep Date</u>	<u>Expiration Date</u>	<u>Prepared By</u>	<u>ScaleID</u>	<u>PipetteID</u>	<u>Supervised By</u>
785	10 PPM Aliphatic HC STD	PP22599	10/06/2023	04/09/2024	Yogesh Patel	None	None	Ankita Jodhani 10/11/2023
<u>FROM</u>	0.90000ml of E3585 + 0.10000ml of PP22595 = Final Quantity: 1.000 ml							

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Pest/Pcb STANDARD PREPARATION LOG

<u>Recipe ID</u>	<u>NAME</u>	<u>NO.</u>	<u>Prep Date</u>	<u>Expiration Date</u>	<u>Prepared By</u>	<u>ScaleID</u>	<u>PipetteID</u>	<u>Supervised By</u>
786	5 PPM Aliphatic HC STD	PP22600	10/06/2023	04/09/2024	Yogesh Patel	None	None	Ankita Jodhani
10/11/2023								

FROM 0.90000ml of E3585 + 0.10000ml of PP22597 = Final Quantity: 1.000 ml

<u>Recipe ID</u>	<u>NAME</u>	<u>NO.</u>	<u>Prep Date</u>	<u>Expiration Date</u>	<u>Prepared By</u>	<u>ScaleID</u>	<u>PipetteID</u>	<u>Supervised By</u>
2901	20 PPM Aliphatic HC STD ICV (Absolute)	PP22601	10/06/2023	04/09/2024	Yogesh Patel	None	None	Ankita Jodhani
10/11/2023								

FROM 0.80000ml of E3585 + 0.20000ml of PP22596 = Final Quantity: 1.000 ml

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<u>Recipe ID</u>	<u>NAME</u>	<u>NO.</u>	<u>Prep Date</u>	<u>Expiration Date</u>	<u>Prepared By</u>	<u>ScaleID</u>	<u>PipetteID</u>	<u>Supervised By</u>
1331	100 PPM NJEPH Fractionating Surrogate	PP22637	10/13/2023	04/09/2024	Yogesh Patel	None	None	Ankita Jodhani 10/17/2023
<u>FROM</u> 1.25000ml of P12683 + 1.25000ml of P12684 + 1.25000ml of P12786 + 1.25000ml of P12787 + 195.00000ml of E3585 = Final Quantity: 200.000 ml								

<u>Recipe ID</u>	<u>NAME</u>	<u>NO.</u>	<u>Prep Date</u>	<u>Expiration Date</u>	<u>Prepared By</u>	<u>ScaleID</u>	<u>PipetteID</u>	<u>Supervised By</u>
1339	100 PPM NJEPH Surrogate Spike	PP22640	10/16/2023	04/11/2024	Yogesh Patel	None	None	Ankita Jodhani 10/17/2023
<u>FROM</u> 1.25000ml of P12383 + 1.25000ml of P12384 + 1.25000ml of P12385 + 1.25000ml of P12556 + 1.25000ml of P12585 + 1.25000ml of P12586 + 1.25000ml of P12587 + 1.25000ml of P12588 + 490.00000ml of E3584 = Final Quantity: 500.000 ml								

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<u>Recipe ID</u>	<u>NAME</u>	<u>NO.</u>	<u>Prep Date</u>	<u>Expiration Date</u>	<u>Prepared By</u>	<u>ScaleID</u>	<u>PipetteID</u>	<u>Supervised By</u>
1330	100 PPM NJEPH Spike Solution	PP22659	10/31/2023	04/30/2024	Yogesh Patel	None	None	Ankita Jodhani 11/06/2023
<u>FROM</u>	5.00000ml of P12721 + 5.00000ml of P12722 + 5.00000ml of P12723 + 5.00000ml of P12724 + 5.00000ml of P12725 + 5.00000ml of P12726 + 5.00000ml of P12727 + 5.00000ml of P12728 + 5.00000ml of P12729 + 5.00000ml of P12730 + 5.00000ml of P12755 + 5.00000ml of P12826 + 5.00000ml of P12827 + 5.00000ml of P12828 + 5.00000ml of P12829 + 5.00000ml of P12830 + 5.00000ml of P12831 + 5.00000ml of P12832 + 5.00000ml of P12833 + 5.00000ml of P12834 = Final Quantity: 100.000 ml							

CHEMICAL RECEIPT LOG BOOK

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Seidler Chemical	BA-3382-05 / Sand, Purified (cs/4x2.5kg)	0000243821	12/31/2024	04/30/2020 / RAJESH	04/28/2020 / RAJESH	E2865

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
PCI Scientific Supply, Inc.	PC19631-100 / SODIUM SULFATE, ANHYDROUS, PEST GRADE, 1	139404	04/10/2024	10/18/2022 / Rajesh	10/13/2022 / Rajesh	E3412

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
phenomenex	SI500025-30 / Cleanert SPE Silica, 5000 mg/25 ml	YO119-QJ	12/10/2023	05/11/2023 / Rajesh	02/24/2023 / Rajesh	E3480

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Seidler Chemical	BA-9644-A4 / Methylene Chloride,U-Resi, Cycle-Tainer (215L)	23F0862004	02/10/2024	08/10/2023 / Rajesh	07/14/2023 / Rajesh	E3557

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Seidler Chemical	BA-9644-A4 / Methylene Chloride,U-Resi, Cycle-Tainer (215L)	23H2962015	03/25/2024	09/25/2023 / Rajesh	09/25/2023 / Rajesh	E3572

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Seidler Chemical	BA-9254-03 / Acetone, Ultra Resi (cs/4x4L)	23H1462005	03/28/2024	09/28/2023 / Rajesh	09/28/2023 / Rajesh	E3575

CHEMICAL RECEIPT LOG BOOK

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Seidler Chemical	BA-9254-03 / Acetone, Ultra Resi (cs/4x4L)	23H1462005	05/08/2024	10/11/2023 / Rajesh	10/05/2023 / Rajesh	E3584

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Seidler Chemical	BA-9262-03 / Hexane, Ultra-Resi (cs/4x4L)	23C2462011	04/09/2024	10/09/2023 / Rajesh	10/05/2023 / Rajesh	E3585

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Seidler Chemical	BA-9262-03 / Hexane, Ultra-Resi (cs/4x4L)	23C2462011	04/27/2024	10/27/2023 / Rajesh	10/25/2023 / Rajesh	E3591

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Restek	30541 / Custom NJEPH Aromatics Calibration Standard	A0165529	02/18/2024	08/18/2023 / Ankita	01/26/2021 / dhaval	P10257

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Absolute Standards, Inc.	95899 / NJ EPH Aliphatic n-Hydrocarbons-Revised, 1000 PPM	09282109	10/20/2023	04/20/2023 / yogesh	10/29/2021 / Abdul	P11134

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Absolute Standards, Inc.	95899 / NJ EPH Aliphatic n-Hydrocarbons-Revised, 1000 PPM	09282109	04/10/2024	10/10/2023 / yogesh	10/29/2021 / Abdul	P11135

CHEMICAL RECEIPT LOG BOOK

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Restek	30540 / Custom NJEPH Aliphatics Calibration Standard	A0184811	04/10/2024	10/10/2023 / yogesh	06/17/2022 / Ankita	P11831

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Restek	31098 / 1-Chlorooctadecane Standard	A0190428	04/10/2024	10/10/2023 / yogesh	03/16/2023 / Yogesh	P12381

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Restek	31098 / 1-Chlorooctadecane Standard	A0190428	04/10/2024	10/10/2023 / yogesh	03/16/2023 / Yogesh	P12382

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Restek	31098 / 1-Chlorooctadecane Standard	A0190428	04/16/2024	10/16/2023 / yogesh	03/16/2023 / Yogesh	P12383

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Restek	31098 / 1-Chlorooctadecane Standard	A0190428	04/16/2024	10/16/2023 / yogesh	03/16/2023 / Yogesh	P12384

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Restek	31098 / 1-Chlorooctadecane Standard	A0190428	04/16/2024	10/16/2023 / yogesh	03/16/2023 / Yogesh	P12385

CHEMICAL RECEIPT LOG BOOK

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Restek	31098 / 1-Chlorooctadecane Standard	A0196745	04/16/2024	10/16/2023 / yogesh	06/30/2023 / Yogesh	P12556

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Restek	31097 / o-Terphenyl Standard	A0197729	02/18/2024	08/18/2023 / Ankita	06/30/2023 / Yogesh	P12578

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Restek	31097 / o-Terphenyl Standard	A0197729	04/10/2024	10/10/2023 / yogesh	06/30/2023 / Yogesh	P12583

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Restek	31097 / o-Terphenyl Standard	A0197729	04/10/2024	10/10/2023 / yogesh	06/30/2023 / Yogesh	P12584

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Restek	31097 / o-Terphenyl Standard	A0197729	04/16/2024	10/16/2023 / yogesh	06/30/2023 / Yogesh	P12585

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Restek	31097 / o-Terphenyl Standard	A0197729	04/16/2024	10/16/2023 / yogesh	06/30/2023 / Yogesh	P12586

CHEMICAL RECEIPT LOG BOOK

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Restek	31097 / o-Terphenyl Standard	A0197729	04/16/2024	10/16/2023 / yogesh	06/30/2023 / Yogesh	P12587

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Restek	31097 / o-Terphenyl Standard	A0197729	04/16/2024	10/16/2023 / yogesh	06/30/2023 / Yogesh	P12588

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Restek	31480 / MA Fractionation Surrogate Spike Mix	A0196246	02/18/2024	08/18/2023 / Ankita	07/19/2023 / yogesh	P12670

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Restek	31480 / MA Fractionation Surrogate Spike Mix	A0196246	04/13/2024	10/13/2023 / yogesh	07/19/2023 / yogesh	P12683

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Restek	31480 / MA Fractionation Surrogate Spike Mix	A0196246	04/13/2024	10/13/2023 / yogesh	07/19/2023 / yogesh	P12684

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Restek	30542 / Custom NJEPH Aliphatics Matrix Spike Mix	A0195645	04/30/2024	10/31/2023 / yogesh	08/28/2023 / Yogesh	P12721

CHEMICAL RECEIPT LOG BOOK

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Restek	30542 / Custom NJEPH Aliphatics Matrix Spike Mix	A0195645	04/30/2024	10/31/2023 / yogesh	08/28/2023 / Yogesh	P12722

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Restek	30542 / Custom NJEPH Aliphatics Matrix Spike Mix	A0195645	04/30/2024	10/31/2023 / yogesh	08/28/2023 / Yogesh	P12723

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Restek	30542 / Custom NJEPH Aliphatics Matrix Spike Mix	A0195645	04/30/2024	10/31/2023 / yogesh	08/28/2023 / Yogesh	P12724

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Restek	30542 / Custom NJEPH Aliphatics Matrix Spike Mix	A0195645	04/30/2024	10/31/2023 / yogesh	08/28/2023 / Yogesh	P12725

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Restek	30542 / Custom NJEPH Aliphatics Matrix Spike Mix	A0195645	04/30/2024	10/31/2023 / yogesh	08/28/2023 / Yogesh	P12726

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Restek	30542 / Custom NJEPH Aliphatics Matrix Spike Mix	A0195645	04/30/2024	10/31/2023 / yogesh	08/28/2023 / Yogesh	P12727

CHEMICAL RECEIPT LOG BOOK

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Restek	30542 / Custom NJEPH Aliphatics Matrix Spike Mix	A0195645	04/30/2024	10/31/2023 / yogesh	08/28/2023 / Yogesh	P12728

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Restek	30542 / Custom NJEPH Aliphatics Matrix Spike Mix	A0195645	04/30/2024	10/31/2023 / yogesh	08/28/2023 / Yogesh	P12729

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Restek	30542 / Custom NJEPH Aliphatics Matrix Spike Mix	A0195645	04/30/2024	10/31/2023 / yogesh	08/28/2023 / Yogesh	P12730

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Restek	30543 / Custom NJEPH Aromatics Matrix Spike Mix	A0182204	04/30/2024	10/31/2023 / yogesh	08/28/2023 / Yogesh	P12755

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Restek	31480 / MA Fractionation Surrogate Spike Mix	A0201395	04/13/2024	10/13/2023 / yogesh	09/25/2023 / Yogesh	P12786

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Restek	31480 / MA Fractionation Surrogate Spike Mix	A0201395	04/13/2024	10/13/2023 / yogesh	09/25/2023 / Yogesh	P12787

CHEMICAL RECEIPT LOG BOOK

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Restek	30543 / Custom NJEPH Aromatics Matrix Spike Mix	A0188761	04/30/2024	10/31/2023 / yogesh	10/17/2023 / Yogesh	P12826

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Restek	30543 / Custom NJEPH Aromatics Matrix Spike Mix	A0188761	04/30/2024	10/31/2023 / yogesh	10/17/2023 / Yogesh	P12827

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Restek	30543 / Custom NJEPH Aromatics Matrix Spike Mix	A0200091	04/30/2024	10/31/2023 / yogesh	10/17/2023 / Yogesh	P12828

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Restek	30543 / Custom NJEPH Aromatics Matrix Spike Mix	A0200091	04/30/2024	10/31/2023 / yogesh	10/17/2023 / Yogesh	P12829

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Restek	30543 / Custom NJEPH Aromatics Matrix Spike Mix	A0200091	04/30/2024	10/31/2023 / yogesh	10/17/2023 / Yogesh	P12830

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Restek	30543 / Custom NJEPH Aromatics Matrix Spike Mix	A0200091	04/30/2024	10/31/2023 / yogesh	10/17/2023 / Yogesh	P12831

CHEMICAL RECEIPT LOG BOOK

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Restek	30543 / Custom NJEPH Aromatics Matrix Spike Mix	A0200091	04/30/2024	10/31/2023 / yogesh	10/17/2023 / Yogesh	P12832

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Restek	30543 / Custom NJEPH Aromatics Matrix Spike Mix	A0200091	04/30/2024	10/31/2023 / yogesh	10/17/2023 / Yogesh	P12833

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Restek	30543 / Custom NJEPH Aromatics Matrix Spike Mix	A0200091	04/30/2024	10/31/2023 / yogesh	10/17/2023 / Yogesh	P12834

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Absolute Standards, Inc.	95709 / NJ EPH Aromatic Hydrocarbons, 2000 PPM	051519	02/18/2024	08/18/2023 / Ankita	01/10/2020 / DHAVAL	P9291



110 Benner Circle
Bellefonte, PA 16823-8812
Tel: (800)356-1688
Fax: (814)353-1309

www.restek.com

CERTIFIED REFERENCE MATERIAL

Certificate of Analysis



FOR LABORATORY USE ONLY-READ SDS PRIOR TO USE.

This Reference Material is intended for Laboratory Use Only as a standard for the qualitative and/or quantitative determination of the analyte(s) listed.

DD
06/17/2021

Catalog No. : 30541 **Lot No.:** A0172403

Description : NJEPH Aromatics Calibration Standard

NJEPH Aromatics Calibration Standard 2,000µg/mL, Methylene Chloride, 1mL/ampul

Container Size : 2 mL **Pkg Amt:** > 1 mL

Expiration Date : April 30, 2027 **Storage:** 10°C or colder

Handling: Sonication required. Mix is photosensitive. **Ship:** Ambient

P10758
TO
P10762
- (S)

CERTIFIED VALUES

Elution Order	Compound	Grav. Conc. (weight/volume)	Expanded Uncertainty (95% C.L.; K=2)
1	1,2,3-Trimethylbenzene CAS # 526-73-8 (Lot 8776.10-36) Purity 98%	2,010.0 µg/mL	+/- 11.7957 µg/mL Gravimetric +/- 90.5449 µg/mL Unstressed +/- 100.4678 µg/mL Stressed
2	Naphthalene CAS # 91-20-3 (Lot MKBZ8680V) Purity 99%	2,006.0 µg/mL	+/- 11.7723 µg/mL Gravimetric +/- 90.3656 µg/mL Unstressed +/- 100.2689 µg/mL Stressed
3	2-Methylnaphthalene CAS # 91-57-6 (Lot STBG8884) Purity 99%	2,008.0 µg/mL	+/- 11.7841 µg/mL Gravimetric +/- 90.4557 µg/mL Unstressed +/- 100.3688 µg/mL Stressed
4	Acenaphthylene CAS # 208-96-8 (Lot N19U) Purity 95%	2,002.6 µg/mL	+/- 11.7524 µg/mL Gravimetric +/- 90.2125 µg/mL Unstressed +/- 100.0989 µg/mL Stressed
5	Acenaphthene CAS # 83-32-9 (Lot MKCN0610) Purity 99%	2,000.0 µg/mL	+/- 11.7371 µg/mL Gravimetric +/- 90.0953 µg/mL Unstressed +/- 99.9689 µg/mL Stressed
6	Fluorene CAS # 86-73-7 (Lot 10217947) Purity 99%	2,016.0 µg/mL	+/- 11.8310 µg/mL Gravimetric +/- 90.8161 µg/mL Unstressed +/- 100.7687 µg/mL Stressed
7	Phenanthrene CAS # 85-01-8 (Lot MKCL7390) Purity 99%	2,012.0 µg/mL	+/- 11.8075 µg/mL Gravimetric +/- 90.6359 µg/mL Unstressed +/- 100.5688 µg/mL Stressed

8	Anthracene			2,002.0	µg/mL	+/-	11.7489	µg/mL	Gravimetric
	CAS #	120-12-7	(Lot MKCM0015)			+/-	90.1854	µg/mL	Unstressed
	Purity	99%				+/-	100.0689	µg/mL	Stressed
9	Fluoranthene			2,003.0	µg/mL	+/-	11.7547	µg/mL	Gravimetric
	CAS #	206-44-0	(Lot MKCF7378)			+/-	90.2305	µg/mL	Unstressed
	Purity	99%				+/-	100.1189	µg/mL	Stressed
10	Pyrene			2,011.0	µg/mL	+/-	11.8017	µg/mL	Gravimetric
	CAS #	129-00-0	(Lot BCCB9880)			+/-	90.5909	µg/mL	Unstressed
	Purity	99%				+/-	100.5188	µg/mL	Stressed
11	Benz(a)anthracene			2,011.0	µg/mL	+/-	11.8014	µg/mL	Gravimetric
	CAS #	56-55-3	(Lot P0022018-0505)			+/-	90.5890	µg/mL	Unstressed
	Purity	98%				+/-	100.5168	µg/mL	Stressed
12	Chrysene			2,000.0	µg/mL	+/-	11.7371	µg/mL	Gravimetric
	CAS #	218-01-9	(Lot STBJ8094)			+/-	90.0953	µg/mL	Unstressed
	Purity	99%				+/-	99.9689	µg/mL	Stressed
13	Benzo(b)fluoranthene			2,006.0	µg/mL	+/-	11.7721	µg/mL	Gravimetric
	CAS #	205-99-2	(Lot 012012B)			+/-	90.3638	µg/mL	Unstressed
	Purity	97%				+/-	100.2669	µg/mL	Stressed
14	Benzo(k)fluoranthene			2,010.0	µg/mL	+/-	11.7958	µg/mL	Gravimetric
	CAS #	207-08-9	(Lot 012019K)			+/-	90.5458	µg/mL	Unstressed
	Purity	99%				+/-	100.4688	µg/mL	Stressed
15	Benzo(a)pyrene			2,004.0	µg/mL	+/-	11.7606	µg/mL	Gravimetric
	CAS #	50-32-8	(Lot RP210113)			+/-	90.2755	µg/mL	Unstressed
	Purity	99%				+/-	100.1689	µg/mL	Stressed
16	Indeno(1,2,3-cd)pyrene			2,010.0	µg/mL	+/-	11.7958	µg/mL	Gravimetric
	CAS #	193-39-5	(Lot 1-RAK-33-4)			+/-	90.5458	µg/mL	Unstressed
	Purity	99%				+/-	100.4688	µg/mL	Stressed
17	Dibenz(a,h)anthracene			2,017.0	µg/mL	+/-	11.8369	µg/mL	Gravimetric
	CAS #	53-70-3	(Lot ER032211-01)			+/-	90.8611	µg/mL	Unstressed
	Purity	99%				+/-	100.8187	µg/mL	Stressed
18	Benzo(g,h,i)perylene			2,003.0	µg/mL	+/-	11.7547	µg/mL	Gravimetric
	CAS #	191-24-2	(Lot 8GFYJ)			+/-	90.2305	µg/mL	Unstressed
	Purity	99%				+/-	100.1189	µg/mL	Stressed
Solvent:	Methylene chloride								
	CAS #	75-09-2							
	Purity	99%							

Column:
30m x 0.25mm x 0.25µm
Rtx-5 (cat.#10223)

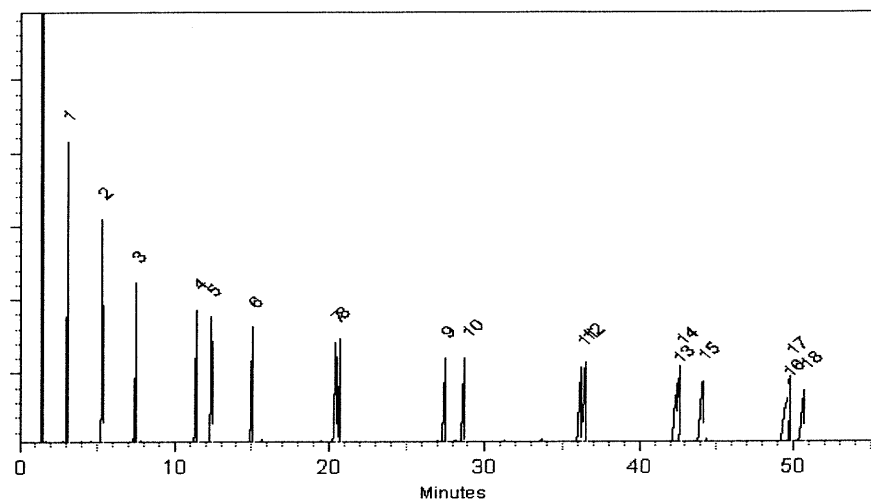
Carrier Gas:
hydrogen-constant pressure 10 psi.

Temp. Program:
100°C (hold 1 min.) to 330°C
@ 4°C/min. (hold 5 min.)

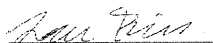
Inj. Temp:
250°C

Det. Temp:
330°C

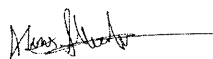
Det. Type:
FID



This chromatogram represents a general set of testing conditions chosen for product acceptance. For optimal results in your lab, conditions should be adjusted for your specific instrument, method, and application.


Lane Kibe - Mix Technician

Date Mixed: 14-May-2021 Balance: B345965662


Alexis Shelow - Operations Tech I

Date Passed: 18-May-2021

Manufactured under Restek's ISO 9001:2015
Registered Quality System
Certificate #FM 80397

General Certified Reference Material Notes

Expiration Notes:

- Expiration date valid for unopened ampul stored in compliance with the recommended conditions.
- Uncertainty, concentration, and expiration of the CRM are based on the unopened product being stored according to the recommended condition found in the storage field.

Purity Notes:

- Purity and/or chemical identity are determined by one or more of the following techniques: GC/FID, HPLC, GC/μECD, GC/MS, LC/MS, RI, and/or melting point.
- Compounds with a listed purity of less than 99% have been weight corrected to compensate for impurities and/or salts. A correction factor is used to calculate the amount of compound necessary to achieve the desired concentration of the parent compound in solution.
- Purity of isomeric compounds is reported as the sum of the isomers.
- Purity values are rounded to the nearest whole number.

Certified Uncertainty Value Notes:

- The uncertainties are determined in accordance with ISO 17034 and Guide 35. The certified combined stressed uncertainty value (includes gravimetric uncertainty, homogeneity between-ampul uncertainty, storage stability uncertainty and shipping stability uncertainty and were combined using the following formula:

$$U_{combined\ stressed} = k \sqrt{U_{gravimetric}^2 + U_{homogeneity}^2 + U_{storage\ stability}^2 + U_{shipping\ stability}^2}$$

k is a coverage factor of 2, which gives a level of confidence of approximately 95%.

- It is important to note that the shipping stability uncertainty was obtained under temperature extremes for specific time intervals; therefore, the certified combined stressed uncertainty value should only be applied to the product if it was stored at non-standard temperature conditions up to and including 7 days. Contact Restek Technical Service at www.restek.com/Contact-Us for use recommendations if your shipment was in-transit for more than 7 days at non-standard temperature conditions.
- Apply the certified combined unstressed uncertainty value if the product was received under standard shipping conditions. Apply the certified combined stressed uncertainty value if the product was received under non-standard conditions as specified below.

Label Conditions	Standard Conditions	Non-Standard Conditions
25°C Nominal (Room Temperature)	< 60°C	≥ 60°C up to 7 days
10°C or colder (Refrigerate)	< 40°C	≥ 40°C up to 7 days
0°C or colder (Freezer) -20°C or colder (Deep Freezer)	< 25°C	≥ 25°C up to 7 days

- Separate (not combined) uncertainty values for gravimetric uncertainty are also displayed on the certificate, if needed, separate homogeneity between-ampul uncertainty, storage stability uncertainty and shipping stability uncertainty values are available by contacting Restek Technical Service at www.restek.com/Contact-Us.
- The packaged amount is the minimum sample size for which uncertainty is valid. The ampules are over-filled to ensure that the minimum packaged amount can be sufficiently transferred.

Manufacturing Notes:

- Concentration is based upon gravimetric preparation using either a balance whose calibration has been verified daily using NIST traceable weights, and/or dilutions with Class A glassware.

Handling Notes:

- Stability of the unopened product, when stored in compliance with the recommended conditions, is guaranteed through the expiration displayed on the product label and certificate. Contact Restek for additional opened product stability information, with the knowledge/understanding that open product stability is subject to the specific handling and environmental conditions to which the product is exposed. For your convenience Restek supplies deactivated vials with most standards packed in 2mL ampules. Larger volume deactivated vials are available through Restek as a custom ordered item. Additionally, Restek sells DMDCS for the purpose of glassware deactivation as catalog number 31861, which includes complete instructions.

Sand
Purified
Washed and Ignited



Material No.: 3382-05
Batch No.: 0000243821
Manufactured Date: 2018/04/09
Retest Date: 2025/04/07
Revision No: 1

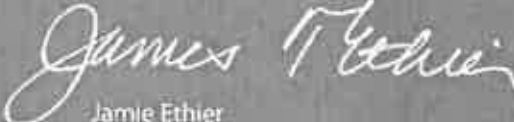
Certificate of Analysis

Test	Specification	Result
Substances Soluble in HCl	$\leq 0.16\%$	0.01

For Laboratory, Research or Manufacturing Use
Meets Reagent Specifications for testing USP/NF monographs

Country of Origin: US
Packaging Site: Paris Mfg Ctr & DC

E 2865


Jamie Ethier
Vice President Global Quality

For questions on this Certificate of Analysis please contact Technical Services at 855.282.6867 or +1.610.386.1700

Avantor Performance Materials, LLC
100 Matsonford Rd, Suite 200, Radnor, PA 19087. U.S.A. Phone: 610.386.1700



**PRODUCTOS
QUÍMICOS
MONTERREY, S.A. DE C.V.**



MIRADOR 201, COL. MIRADOR
MONTERREY, N.L. MÉXICO
CP 64070
TEL +52 81 13 52 57 57
www.pqm.com.mx

CERTIFICATE OF ANALYSIS

PRODUCT : SODIUM SULFATE CRYSTALS ANHYDROUS
QUALITY : ACS (CODE RMB3375) **FORMULA :** Na₂SO₄
SPECIFICATION NUMBER : 6399 **RELEASE DATE:** OCT/28/2021
LOT NUMBER : 139404

TEST	SPECIFICATIONS	LOT VALUES
Assay (Na ₂ SO ₄)	Min. 99.0%	99.8 %
pH of a 5% solution at 25°C	5.2 - 9.2	6.0
Insoluble matter	Max. 0.01%	0.005 %
Loss on ignition	Max. 0.5%	0.1 %
Chloride (Cl)	Max. 0.001%	<0.001 %
Nitrogen compounds (as N)	Max. 5 ppm	<5 ppm
Phosphate (PO ₄)	Max. 0.001%	<0.001 %
Heavy metals (as Pb)	Max. 5 ppm	<5 ppm
Iron (Fe)	Max. 0.001%	<0.001 %
Calcium (Ca)	Max. 0.01%	0.002 %
Magnesium (Mg)	Max. 0.005%	0.001 %
Potassium (K)	Max. 0.008%	0.002 %
Extraction-concentration suitability	Passes test	Passes test
Appearance	Passes test	Passes test
Identification	Passes test	Passes test
Solubility and foreign matter	Passes test	Passes test
Retained on US Standard No. 10 sieve	Max. 1%	0.2 %
Retained on US Standard No. 60 sieve	Min. 94%	97.6 %
Through US Standard No. 60 sieve	Max. 5%	2.1 %
Through US Standard No. 100 sieve	Max. 10%	0.2 %
COMMENTS		
 QC: PhC Irma Belmares		

If you need further details, please call our factory or contact our local distributor.

E 3412

Recd. by RP on 10/13/22

RE-02-01, Ed. 3

Cleanert EPH

5g/25ml 15/pkg

固相萃取产品

LOT#:Y0119-QJ

MFG#:F00137

Made in China



CAT# SI500025-30

Agela Technologies

E 3480



Methylene Chloride
ULTRA RESI-ANALYZED
For Organic Residue Analysis
(dichloromethane)



Material No.: 9266-A4
Batch No.: 23F0862004
Manufactured Date: 2023-05-16
Expiration Date: 2024-08-14
Revision No.: 0

Certificate of Analysis

Test	Specification	Result
FID-Sensitive Impurities (as 2-Octanol) Single Impurity Peak (ng/mL)	≤ 5	< 1
ECD Sensitive Impurities (as Heptachlor Epoxide) Single Peak (pg/mL)	≤ 10	4
Assay (CH_2Cl_2) (by GC, exclusive of preservative, corrected for water)	$\geq 99.8 \%$	100.0 %
Color (APHA)	≤ 10	10
Residue after Evaporation	$\leq 1.0 \text{ ppm}$	0.4 ppm
Titration Acid ($\mu\text{eq/g}$)	≤ 0.3	< 0.1
Chloride (Cl)	$\leq 10 \text{ ppm}$	< 5 ppm
Water (by KF, coulometric)	$\leq 0.02 \%$	< 0.01 %

For Laboratory, Research, or Manufacturing Use
MEETS SPECIFICATIONS WITHIN THE EXPIRATION PERIOD

Country of Origin: USA
Packaging Site: Phillipsburg Mfg Ctr & DC
Manufacturer source batch: MG23E16942

E 3557

Ken Koehnlein
Sr. Manager, Quality Assurance

For questions on this Certificate of Analysis please contact Technical Services at 855.282.6867 or +1.610.386.1700

Avantor Performance Materials, LLC

100 Matsonford Rd, Suite 200, Radnor, PA 19087. U.S.A. Phone 610.386.1700

Methylene Chloride
ULTRA RESI-ANALYZED
For Organic Residue Analysis
(dichloromethane)



Material No.: 9266-A4
Batch No.: 23H2962015
Manufactured Date: 2023-08-08
Expiration Date: 2024-11-06
Revision No.: 0

Certificate of Analysis

Test	Specification	Result
FID-Sensitive Impurities (as 2-Octanol) Single Impurity Peak (ng/mL)	≤ 5	3
ECD Sensitive Impurities (as Heptachlor Epoxide) Single Peak (pg/mL)	≤ 10	7
Assay (CH ₂ Cl ₂) (by GC, exclusive of preservative, corrected for water)	$\geq 99.8 \%$	100.0 %
Color (APHA)	≤ 10	5
Residue after Evaporation	≤ 1.0 ppm	0.1 ppm
Titration Acid (μ eq/g)	≤ 0.3	< 0.1
Chloride (Cl)	≤ 10 ppm	< 5 ppm
Water (by KF, coulometric)	$\leq 0.02 \%$	< 0.01 %

For Laboratory, Research, or Manufacturing Use
MEETS SPECIFICATIONS WITHIN THE EXPIRATION PERIOD

Country of Origin: USA
Packaging Site: Phillipsburg Mfg Ctr & DC
Manufacturer source batch: MG23H08469

E 3572

Ken Koehnlein
Sr. Manager, Quality Assurance

For questions on this Certificate of Analysis please contact Technical Services at 855.282.6867 or +1.610.386.1700

Avantor Performance Materials, LLC

100 Matsonford Rd, Suite 200, Radnor, PA 19087. U.S.A. Phone 610.386.1700

Page 1 of 1

Acetone
BAKER RESI-ANALYZED® Reagent
For Organic Residue Analysis



Material No.: 9254-03
Batch No.: 23H1462005
Manufactured Date: 2023-07-26
Expiration Date: 2026-07-25
Revision No.: 0

Certificate of Analysis

Test	Specification	Result
Assay ((CH ₃) ₂ CO) (by GC, corrected for water)	≥ 99.4 %	99.7 %
Color (APHA)	≤ 10	5
Residue after Evaporation	≤ 1.0 ppm	0.3 ppm
Substances Reducing Permanganate	Passes Test	Passes Test
Titration Acid (µeq/g)	≤ 0.3	0.1
Titration Base (µeq/g)	≤ 0.6	< 0.1
Water (H ₂ O)	≤ 0.5 %	0.3 %
FID-Sensitive Impurities (as 2-Octanol) Single Impurity Peak (ng/mL)	≤ 5	< 1
ECD Sensitive Impurities (as Heptachlor Epoxide) Single Peak (pg/mL)	≤ 10	1

For Laboratory, Research, or Manufacturing Use
MEETS SPECIFICATIONS WITHIN THE EXPIRATION PERIOD

Country of Origin: USA
Packaging Site: Phillipsburg Mfg Ctr & DC

Recd. by RP On 9/28/23

E 3575

Ken Koehnlein
Sr. Manager, Quality Assurance

For questions on this Certificate of Analysis please contact Technical Services at 855.282.6867 or +1.610.386.1700

Avantor Performance Materials, LLC

100 Matsonford Rd, Suite 200, Radnor, PA 19087. U.S.A. Phone 610.386.1700

Material No.: 9254-03
Batch No.: 23H1462005
Manufactured Date: 2023-07-26
Expiration Date: 2026-07-25
Revision No.: 0

Certificate of Analysis

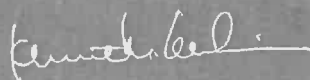
Test	Specification	Result
Assay ((CH ₃) ₂ CO) (by GC, corrected for water)	≥ 99.4 %	99.7 %
Color (APHA)	≤ 10	5
Residue after Evaporation	≤ 1.0 ppm	0.3 ppm
Substances Reducing Permanganate	Passes Test	Passes Test
Titration Acid (μeq/g)	≤ 0.3	0.1
Titration Base (μeq/g)	≤ 0.6	< 0.1
Water (H ₂ O)	≤ 0.5 %	0.3 %
FID-Sensitive Impurities (as 2-Octanol) Single Impurity Peak (ng/mL)	≤ 5	< 1
ECD Sensitive Impurities (as Heptachlor Epoxide) Single Peak (pg/mL)	≤ 10	1

For Laboratory, Research, or Manufacturing Use
MEETS SPECIFICATIONS WITHIN THE EXPIRATION PERIOD

Country of Origin: USA
Packaging Site: Phillipsburg Mfg Ctr & DC

Recd by RP on 10/5/23

E 3584



Ken Koehnlein
Sr. Manager, Quality Assurance

For questions on this Certificate of Analysis please contact Technical Services at 855.282.6867 or +1.610.386.1700

Avantor Performance Materials, LLC

100 Matsonford Rd, Suite 200, Radnor, PA 19087, U.S.A. Phone 610.386.1700

Material No.: 9262-03
Batch No.: 23C2462011
Manufactured Date: 2023-03-10
Expiration Date: 2024-06-08
Revision No.: 0

Certificate of Analysis

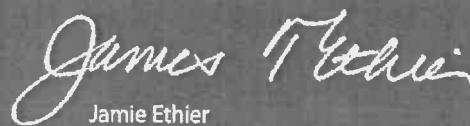
Test	Specification	Result
FID-Sensitive Impurities (as 2-Octanol) Single Impurity Peak (ng/mL)	≤ 5	< 1
ECD Sensitive Impurities (as Heptachlor Epoxide) Single Peak (pg/mL)	≤ 10	1
ECD-Sensitive Impurities (as Ethylene Dibromide) - Single Impurity Peak (ng/mL)	≤ 5	< 1
Assay (Total Saturated C ₆ Isomers) (by GC, corrected for water)	≥ 99.5 %	99.7 %
Assay (as n-Hexane) (by GC, corrected for water)	≥ 95 %	97 %
Color (APHA)	≤ 10	5
Residue after Evaporation	≤ 1.0 ppm	0.3 ppm
Substances Darkened by H ₂ SO ₄	Passes Test	Passes Test
Water (by KF, coulometric)	≤ 0.05 %	< 0.01 %

For Laboratory, Research, or Manufacturing Use
MEETS SPECIFICATIONS WITHIN THE EXPIRATION PERIOD

Country of Origin: USA
Packaging Site: Phillipsburg Mfg Ctr & DC

Recd. by RP on 10/5/23

E 3585


Jamie Ethier
Vice President Global Quality

For questions on this Certificate of Analysis please contact Technical Services at 855.282.6867 or +1.610.386.1700

Avantor Performance Materials, LLC

100 Matsonford Rd, Suite 200, Radnor, PA 19087. U.S.A. Phone 610.386.1700

Page 1 of 1

Hexanes (95% n-hexane)
BAKER RESI-ANALYZED® Reagent



Material No.: 9262-03
Batch No.: 23C2462011
Manufactured Date: 2023-03-10
Expiration Date: 2024-06-08
Revision No.: 0

Certificate of Analysis

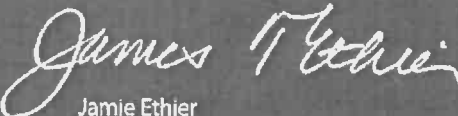
Test	Specification	Result
FID-Sensitive Impurities (as 2-Octanol) Single Impurity Peak (ng/mL)	≤ 5	< 1
ECD Sensitive Impurities (as Heptachlor Epoxide) Single Peak (pg/mL)	≤ 10	1
ECD-Sensitive Impurities (as Ethylene Dibromide) - Single Impurity Peak (ng/mL)	≤ 5	< 1
Assay (Total Saturated C ₆ Isomers) (by GC, corrected for water)	≥ 99.5 %	99.7 %
Assay (as n-Hexane) (by GC, corrected for water)	≥ 95 %	97 %
Color (APHA)	≤ 10	5
Residue after Evaporation	≤ 1.0 ppm	0.3 ppm
Substances Darkened by H ₂ SO ₄	Passes Test	Passes Test
Water (by KF, coulometric)	≤ 0.05 %	< 0.01 %

For Laboratory, Research, or Manufacturing Use
MEETS SPECIFICATIONS WITHIN THE EXPIRATION PERIOD

Country of Origin: USA
Packaging Site: Phillipsburg Mfg Ctr & DC

Recd. by RL on 10/25/23

E 3591


Jamie Ethier
Vice President Global Quality

For questions on this Certificate of Analysis please contact Technical Services at 855.282.6867 or +1.610.386.1700

Avantor Performance Materials, LLC

100 Matsonford Rd, Suite 200, Radnor, PA 19087. U.S.A. Phone 610.386.1700

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Certified Reference Material CRM



CERTIFIED WEIGHT REPORT

Part Number: **95899**

Lot Number: **092821**

Description: **NJ EPH Aliphatic n-Hydrocarbons - Revised**

20 components

Expiration Date: **092831**

Recommended Storage: **Ambient (20 °C)**

Nominal Concentration (µg/mL): **1000**

NIST Test ID#: **8LUTB**

SE-05 Balance Uncertainty
0.005 Peak Uncertainty

Weight(s) shown below were combined and diluted to (mL): **25.0**
CAUTION: Sonicate Before Use

Solvent(s): **Cyclohexane**
Lot# **28930**

Formulated By: <i>[Signature]</i>	Benson Chan	092821
Reviewed By: <i>[Signature]</i>	Pedro L. Renterias	092821
		DATE

Compound	(R#)	Lot Number	DIL Factor	Initial Vol (mL)	Initial Conc (µg/mL)	Nominal Conc (µg/mL)	Purity (%)	Purity Uncertainty	Uncertainty Pipette	Target Weight (g)	Actual Weight (g)	Actual Conc (µg/mL)	Expanded Uncertainty (+/-) (µg/mL)	CAS#	SDS Information		LD50
															(Solvent Safety Info. On Attached pg.)		
1. 2-Methylnaphthalene	(0214)	MKB3783V	NA	NA	NA	1000	97	0.2	NA	0.02577	0.02581	1001.6	5.7	91-57-6	N/A	or:at 1650mg/kg	
2. Naphthalene	(0222)	MKB28680V	NA	NA	NA	1000	100	0.2	NA	0.02500	0.02506	1002.6	5.7	91-20-3	10 ppm (50mg/mL)	or:at 490mg/kg	
3. n-Nonane	95708	081621	1.00	25.00	1000.8	1000	NA	0.013	NA	NA	NA	1000.9	4.2	111-84-2	200 ppm (1050mg/mL)	or:at 216mg/kg	
4. n-Decane	95708	081621	1.00	25.00	1000.9	1000	NA	0.013	NA	NA	NA	1001.1	4.2	124-18-5	N/A	N/A	
5. n-Dodecane	95708	081621	1.00	25.00	1001.2	1000	NA	0.013	NA	NA	NA	1001.3	4.2	112-40-3	N/A	N/A	
6. n-Tetradecane	95708	081621	1.00	25.00	1002.0	1000	NA	0.013	NA	NA	NA	1002.2	4.2	629-59-4	N/A	N/A	
7. n-Hexadecane	95708	081621	1.00	25.00	1001.9	1000	NA	0.013	NA	NA	NA	1002.0	4.2	544-76-3	N/A	N/A	
8. n-Octadecane	95708	081621	1.00	25.00	1011.8	1000	NA	0.013	NA	NA	NA	1012.0	4.2	583-45-3	N/A	N/A	
9. n-Eicosane	95708	081621	1.00	25.00	1000.5	1000	NA	0.013	NA	NA	NA	1000.7	4.2	112-95-8	N/A	N/A	
10. n-Heneicosane	95708	081621	1.00	25.00	1001.2	1000	NA	0.013	NA	NA	NA	1001.4	4.2	629-94-7	N/A	N/A	
11. n-Docosane	95708	081621	1.00	25.00	1001.6	1000	NA	0.013	NA	NA	NA	1001.7	4.2	629-97-0	N/A	N/A	
12. n-Tetracosane	95708	081621	1.00	25.00	1001.3	1000	NA	0.013	NA	NA	NA	1001.4	4.2	646-31-1	N/A	N/A	
13. n-Hexacosane	95708	081621	1.00	25.00	1000.4	1000	NA	0.013	NA	NA	NA	1000.5	4.2	630-01-3	N/A	N/A	
14. n-Octacosane	95708	081621	1.00	25.00	1001.7	1000	NA	0.013	NA	NA	NA	1001.2	4.2	638-68-6	N/A	N/A	
15. n-Triacontane	95708	081621	1.00	25.00	1001.0	1000	NA	0.013	NA	NA	NA	1000.9	4.2	544-85-4	N/A	N/A	
16. n-Dotriacontane	95708	081621	1.00	25.00	1000.7	1000	NA	0.013	NA	NA	NA	1000.9	4.2	14167-59-0	N/A	N/A	
17. n-Tetracontane	95708	081621	1.00	25.00	1000.8	1000	NA	0.013	NA	NA	NA	1000.9	4.2	630-06-8	N/A	N/A	
18. n-Hexatriacontane	95708	081621	1.00	25.00	1000.9	1000	NA	0.013	NA	NA	NA	1001.1	4.2	7194-95-6	N/A	N/A	
19. n-Octatriacontane	95708	081621	1.00	25.00	1000.8	1000	NA	0.013	NA	NA	NA	1000.6	4.3	4181-95-7	N/A	N/A	
20. n-Tetracontane	95708	081621	1.00	25.00	1000.5	1000	NA	0.013	NA	NA	NA	1000.6	4.3			N/A	

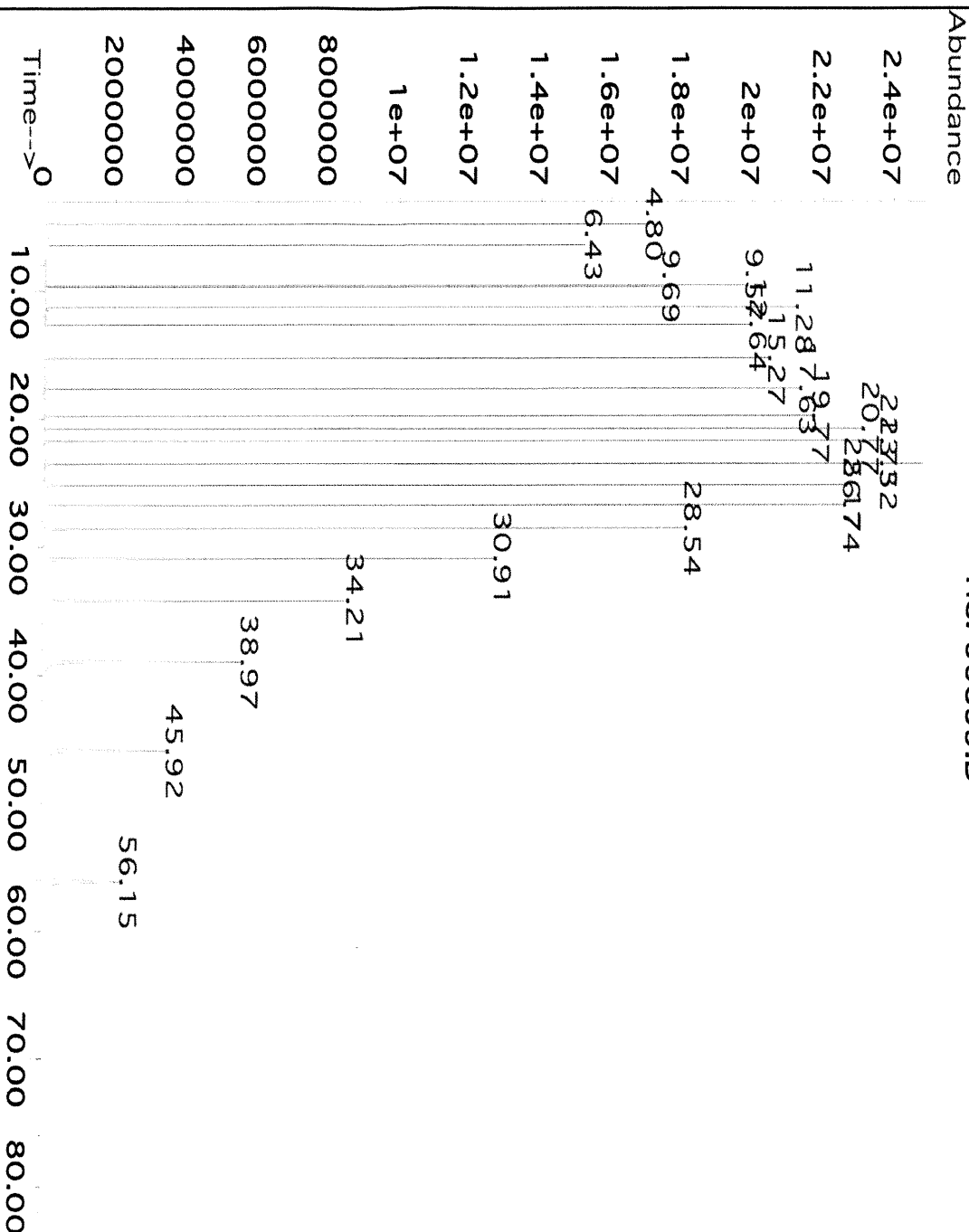
* The certified value is the concentration calculated from gravimetric and volumetric measurements unless otherwise stated.
* Standards are prepared gravimetrically using balances that are calibrated with weights traceable to NIST (see above).
* Standards are certified (+/-) 0.5% of the stated value, unless otherwise stated.
* All Standards, after opening ampule, should be stored with caps tight and under appropriate laboratory conditions.
* Uncertainty Reference: Taylor, B.N. and Kuyat, C.E., "Guidelines for Evaluating and Expressing the Uncertainty of NIST Measurement Result," NIST Technical Note 1297, U.S. Government Printing Office, Washington, D.C. (1994).

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11/11/21



Method GC8HOT.M: Column: SPB-5 (30m X 0.25mm ID X 0.25µm film thickness) Temp 1 = 50°C (1min.), Temp 2 = 320°C (20 min.), Rate = 30°C/min., Injector B = 250°C, Detector B = 300°C, Split Ratio = 100:1, Scan Rate = 2. Analysis performed by Melissa Stonier.

TIC: 95899.D





Certified Reference Material CRM



CERTIFIED WEIGHT REPORT

Part Number: **95899**

Lot Number: **092821**

Description: **NJ EPH Aliphatic n-Hydrocarbons - Revised**

20 components

Expiration Date: **092831**

Recommended Storage: **Ambient (20 °C)**

Nominal Concentration (µg/mL): **1000**

NIST Test ID#: **8LUTB**

SE-05 Balance Uncertainty
0.005 Peak Uncertainty

Formulated By:	<i>Benson Chan</i>	092821
Reviewed By:	<i>Pedro L. Renteria</i>	092821
DATE		

Weight(s) shown below were combined and diluted to (mL): **25.0**
CAUTION: Sonicate Before Use

Compound	(R#)	Lot	DIL	Initial	Initial	Nominal	Purity	Purity	Uncertainty	Pipette	Target	Actual	Actual	Expanded	SDS Information		
															(Solvent Safety Info. On Attached pg.)		
															CAS#	OSHA PEL (TWA)	LD50
1. 2-Methylnaphthalene	(0214)	MKEB3783V	NA	NA	NA	1000	97	0.2	NA	0.02577	0.02581	1001.6	5.7	91-57-6	N/A	or: rat 1630mg/kg	
2. Naphthalene	(0222)	MKEB28680V	NA	NA	NA	1000	100	0.2	NA	0.02500	0.02506	1002.6	5.7	91-20-3	10 ppm (50mg/mL)	or: rat 490mg/kg	
3. n-Nonane	95708	081621	1.00	25.00	1000.8	1000	NA	0.013	NA	0.02500	NA	1000.9	4.2	111-84-2	200 ppm (1050mg/mL)	or: rat 216mg/kg	
4. n-Decane	95708	081621	1.00	25.00	1000.9	1000	NA	0.013	NA	0.013	NA	1001.1	4.2	124-18-5	N/A	N/A	
5. n-Dodecane	95708	081621	1.00	25.00	1001.2	1000	NA	0.013	NA	0.013	NA	1001.3	4.2	112-40-3	N/A	N/A	
6. n-Tetradecane	95708	081621	1.00	25.00	1002.0	1000	NA	0.013	NA	0.013	NA	1002.2	4.2	629-59-4	N/A	br: mus 346mg/kg	
7. n-Hexadecane	95708	081621	1.00	25.00	1011.8	1000	NA	0.013	NA	0.013	NA	1012.0	4.2	544-78-3	N/A	N/A	
8. n-Octadecane	95708	081621	1.00	25.00	1000.5	1000	NA	0.013	NA	0.013	NA	1000.7	4.2	112-95-8	N/A	N/A	
9. n-Eicosane	95708	081621	1.00	25.00	1001.2	1000	NA	0.013	NA	0.013	NA	1001.4	4.2	629-94-7	N/A	N/A	
10. n-Heneicosane	95708	081621	1.00	25.00	1001.6	1000	NA	0.013	NA	0.013	NA	1001.7	4.2	629-97-0	N/A	N/A	
11. n-Docosane	95708	081621	1.00	25.00	1000.3	1000	NA	0.013	NA	0.013	NA	1000.5	4.2	646-31-1	N/A	N/A	
12. n-Tetracosane	95708	081621	1.00	25.00	1001.7	1000	NA	0.013	NA	0.013	NA	1001.9	4.2	630-01-3	N/A	N/A	
13. n-Hexacosane	95708	081621	1.00	25.00	1001.0	1000	NA	0.013	NA	0.013	NA	1001.2	4.2	638-68-6	N/A	N/A	
14. n-Octacosane	95708	081621	1.00	25.00	1000.7	1000	NA	0.013	NA	0.013	NA	1000.9	4.2	544-85-4	N/A	br: mus 100mg/kg	
15. n-Triacontane	95708	081621	1.00	25.00	1000.8	1000	NA	0.013	NA	0.013	NA	1001.1	4.2	630-06-8	N/A	N/A	
16. n-Dotriacontane	95708	081621	1.00	25.00	1000.9	1000	NA	0.013	NA	0.013	NA	1000.9	4.3	7194-95-6	N/A	N/A	
17. n-Tetracontane	95708	081621	1.00	25.00	1000.8	1000	NA	0.013	NA	0.013	NA	1000.6	4.3	4181-95-7	N/A	N/A	
18. n-Hexatriacontane	95708	081621	1.00	25.00	1000.9	1000	NA	0.013	NA	0.013	NA	1000.9	4.3		N/A	N/A	
19. n-Octatriacontane	95708	081621	1.00	25.00	1000.8	1000	NA	0.013	NA	0.013	NA	1000.6	4.3		N/A	N/A	
20. n-Tetracontane	95708	081621	1.00	25.00	1000.5	1000	NA	0.013	NA	0.013	NA	1000.6	4.3		N/A	N/A	

• The certified value is the concentration calculated from gravimetric and volumetric measurements unless otherwise stated.
• Standards are prepared gravimetrically using balances that are calibrated with weights traceable to NIST (see above).
• Standards are certified (+/-) 0.5% of the stated value, unless otherwise stated.
• All Standards, after opening ampule, should be stored with caps tight and under appropriate laboratory conditions.
• Uncertainty Reference: Taylor, B.N. and Kuyat, C.E., "Guidelines for Evaluating and Expressing the Uncertainty of NIST Measurement Result," NIST Technical Note 1297, U.S. Government Printing Office, Washington, D.C. (1994).

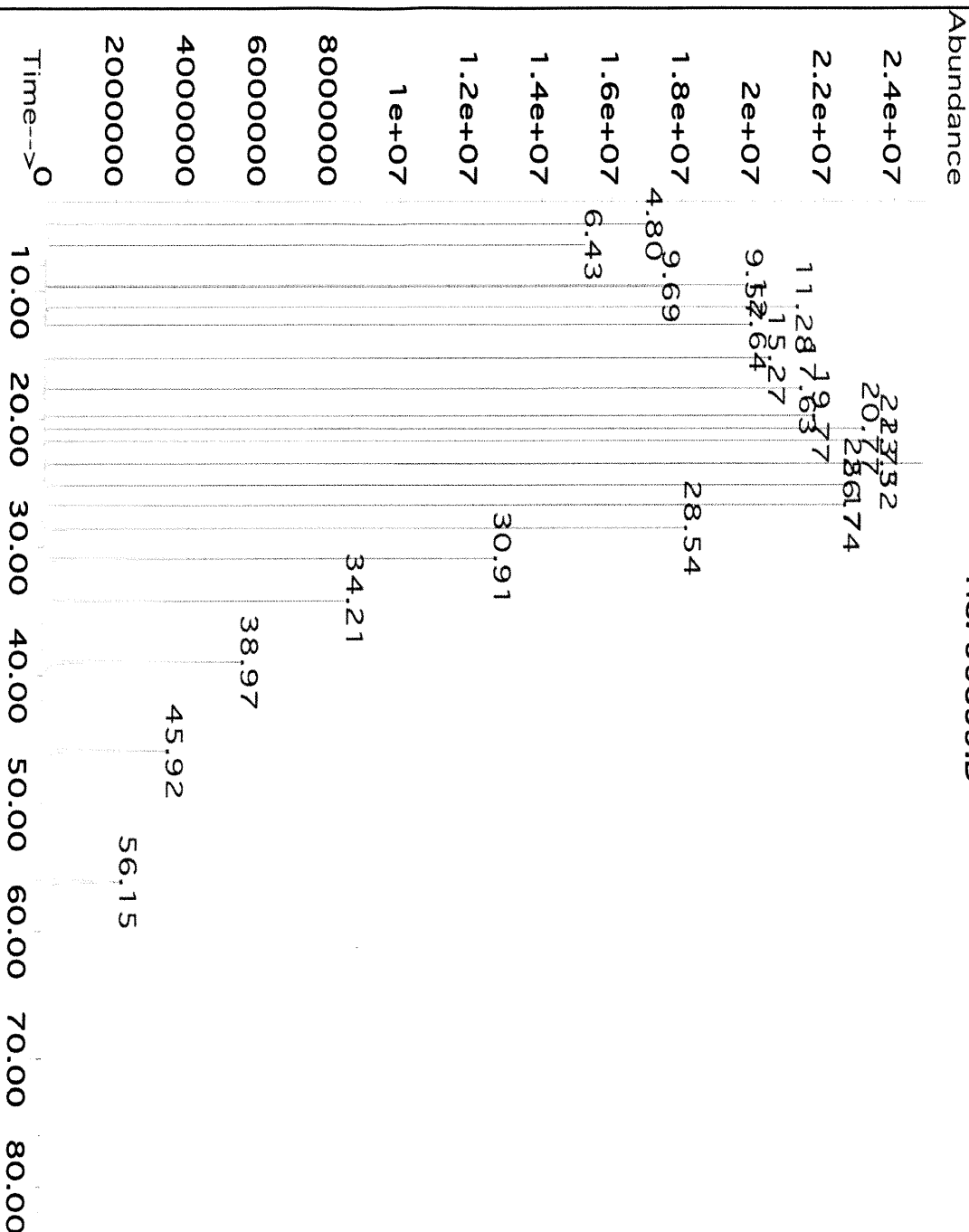
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11/11/21



Method GC8HOT.M: Column: SPB-5 (30m X 0.25mm ID X 0.25µm film thickness) Temp 1 = 50°C (1min.), Temp 2 = 320°C (20 min.), Rate = 30°C/min., Injector B = 250°C, Detector B = 300°C, Split Ratio = 100:1, Scan Rate = 2. Analysis performed by Melissa Stonier.

TIC: 95899.D





1110 Benner Circle
Bellefonte, PA 16823-8812
Tel: (800)356-1688
Fax: (814)353-1309

www.restek.com

CERTIFIED REFERENCE MATERIAL

Certificate of Analysis



FOR LABORATORY USE ONLY-READ SDS PRIOR TO USE.

This Reference Material is intended for Laboratory Use Only as a standard for the qualitative and/or quantitative determination of the analyte(s) listed.

Catalog No.: 30540 **Lot No.:** A0184811

Description: NJEPH Aliphatics Calibration Standard

Aliphatics Calibration Standard 2000µg/mL, Hexane/Carbon Disulfide (80:20), 1mL/ampul

Container Size: 2 mL **Pkg Amt:** > 1 mL

Expiration Date: June 30, 2029 **Storage:** 25°C nominal

Handling: Sonicate prior to use. **Ship:** Ambient

p11827
AJ
06/14/22
p11831

CERTIFIED VALUES

Elution Order	Compound	Grav. Conc. (weight/volume)	Expanded Uncertainty (95% C.L.; K=2)
1	n-Nonane (C9) CAS # 111-84-2 Purity 99%	2,015.3 µg/mL (Lot SHBN5361)	+/- 11.8271 µg/mL Gravimetric +/- 50.0358 µg/mL Unstressed +/- 59.9888 µg/mL Stressed
2	n-Decane (C10) CAS # 124-18-5 Purity 99%	2,010.7 µg/mL (Lot SHBN8619)	+/- 11.7997 µg/mL Gravimetric +/- 49.9200 µg/mL Unstressed +/- 59.8498 µg/mL Stressed
3	Naphthalene CAS # 91-20-3 Purity 99%	2,013.3 µg/mL (Lot MKCH0219)	+/- 11.8154 µg/mL Gravimetric +/- 49.9862 µg/mL Unstressed +/- 59.9292 µg/mL Stressed
4	n-Dodecane (C12) CAS # 112-40-3 Purity 99%	2,007.3 µg/mL (Lot SHBK0925)	+/- 11.7802 µg/mL Gravimetric +/- 49.8372 µg/mL Unstressed +/- 59.7506 µg/mL Stressed
5	2-Methylnaphthalene CAS # 91-57-6 Purity 96%	2,010.2 µg/mL (Lot STBK0259)	+/- 11.7972 µg/mL Gravimetric +/- 49.9094 µg/mL Unstressed +/- 59.8371 µg/mL Stressed
6	n-Tetradecane (C14) CAS # 629-59-4 Purity 99%	2,010.0 µg/mL (Lot STBK2282)	+/- 11.7958 µg/mL Gravimetric +/- 49.9034 µg/mL Unstressed +/- 59.8300 µg/mL Stressed
7	n-Hexadecane (C16) CAS # 544-76-3 Purity 98%	2,012.9 µg/mL (Lot SHBM4146)	+/- 11.8129 µg/mL Gravimetric +/- 49.9759 µg/mL Unstressed +/- 59.9169 µg/mL Stressed

8	n-Octadecane (C18) CAS # 593-45-3 Purity 98%	(Lot UE5NG)	2,019.5 µg/mL	+/- 11.8513 +/- 50.1381 +/- 60.1114	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
9	n-Eicosane (C20) CAS # 112-95-8 Purity 99%	(Lot MKCF7888)	2,008.7 µg/mL	+/- 11.7880 +/- 49.8703 +/- 59.7903	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
10	n-Heneicosane (C21) CAS # 629-94-7 Purity 99%	(Lot MKCL3226)	2,015.3 µg/mL	+/- 11.8271 +/- 50.0358 +/- 59.9888	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
11	n-Docosane (C22) CAS # 629-97-0 Purity 99%	(Lot MKCL8918)	2,012.7 µg/mL	+/- 11.8115 +/- 49.9696 +/- 59.9094	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
12	n-Tetracosane (C24) CAS # 646-31-1 Purity 99%	(Lot MKCN2863)	2,018.0 µg/mL	+/- 11.8428 +/- 50.1020 +/- 60.0681	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
13	n-Hexacosane (C26) CAS # 630-01-3 Purity 99%	(Lot MKCD4540)	2,009.3 µg/mL	+/- 11.7919 +/- 49.8869 +/- 59.8102	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
14	n-Octacosane (C28) CAS # 630-02-4 Purity 99%	(Lot BCCG0084)	2,020.0 µg/mL	+/- 11.8545 +/- 50.1517 +/- 60.1277	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
15	n-Triacontane (C30) CAS # 638-68-6 Purity 99%	(Lot MKCN9321)	2,018.7 µg/mL	+/- 11.8467 +/- 50.1186 +/- 60.0880	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
16	n-Dotriacontane (C32) CAS # 544-85-4 Purity 99%	(Lot BCBW0661)	2,017.3 µg/mL	+/- 11.8388 +/- 50.0855 +/- 60.0483	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
17	n-Tetatriacontane (C34) CAS # 14167-59-0 Purity 99%	(Lot OML4N)	2,014.0 µg/mL	+/- 11.8193 +/- 50.0027 +/- 59.9491	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
18	n-Hexatriacontane (C36) CAS # 630-06-8 Purity 99%	(Lot U25B014)	2,019.3 µg/mL	+/- 11.8506 +/- 50.1351 +/- 60.1078	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
19	n-Octatriacontane (C38) CAS # 7194-85-6 Purity 97%	(Lot 0000127235)	2,017.0 µg/mL	+/- 11.8366 +/- 50.0761 +/- 60.0370	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
20	n-Tetracontane (C40) CAS # 4181-95-7 Purity 98%	(Lot PADGI)	2,014.2 µg/mL	+/- 11.8206 +/- 50.0084 +/- 59.9558	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed

Solvent: Hexane/Carbon disulfide (80:20)

CAS # 110-54-3/75-15-0
Purity 99%

Column:

30m x 0.25mm x 0.25µm
Rx-5 (cat.#10223)

Carrier Gas:

hydrogen-constant pressure 10 psi.

Temp. Program:

40°C (hold 2 min.) to 330°C
@ 10°C/min. (hold 10 min.)

Inj. Temp:

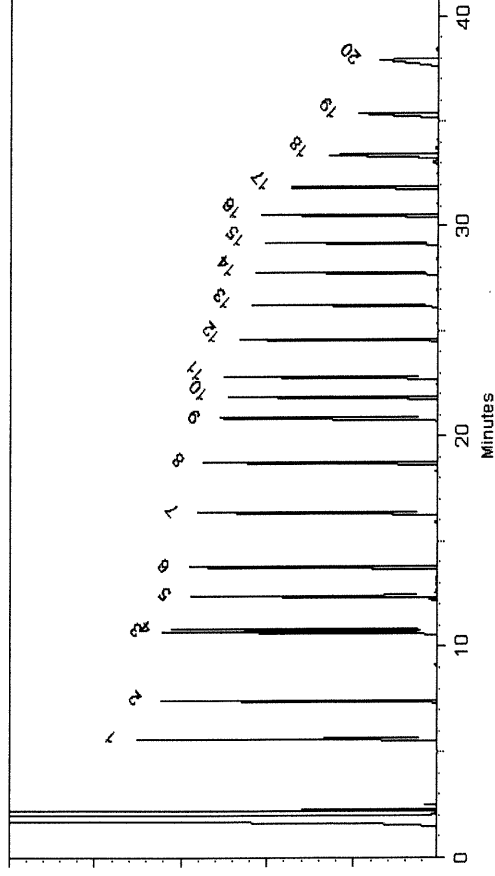
250°C

Det. Temp:

330°C

Det. Type:

FID



This chromatogram represents a general set of testing conditions chosen for product acceptance. For optimal results in your lab, conditions should be adjusted for your specific instrument, method, and application.

Brittany Federinko - Operations Tech I

Date Mixed: 03-May-2022 **Balance:** 1128360905

Christie Mills - Operations Technician II

Date Passed: 06-May-2022

Manufactured under Restek's ISO 9001:2015
Registered Quality System
Certificate #FM 80397

General Certified Reference Material Notes

Expiration Notes:

- Expiration date valid for unopened ampul stored in compliance with the recommended conditions.
- Uncertainty, concentration, and expiration of the CRM are based on the unopened product being stored according to the recommended condition found in the storage field.

Purity Notes:

- Purity and/or chemical identity are determined by one or more of the following techniques: GC/FID, HPLC, GC/μECD, GC/MS, LC/MS, RI, and/or melting point.
- Compounds with a listed purity of less than 99% have been weight corrected to compensate for impurities and/or salts. A correction factor is used to calculate the amount of compound necessary to achieve the desired concentration of the parent compound in solution.
- Purity of isomeric compounds is reported as the sum of the isomers.
- Purity values are rounded to the nearest whole number.

Certified Uncertainty Value Notes:

- The uncertainties are determined in accordance with ISO 17034 and Guide 35. The certified combined stressed uncertainty value (includes gravimetric uncertainty, homogeneity between-ampul uncertainty, storage stability uncertainty and shipping stability uncertainty and were combined using the following formula:

$$U_{combined\ stressed} = k \sqrt{U_{gravimetric}^2 + U_{homogeneity}^2 + U_{storage\ stability}^2 + U_{shipping\ stability}^2}$$

k is a coverage factor of 2, which gives a level of confidence of approximately 95%.

- It is important to note that the shipping stability uncertainty was obtained under temperature extremes for specific time intervals; therefore, the certified combined stressed uncertainty value should only be applied to the product if it was stored at non-standard temperature conditions up to and including 7 days. Contact Restek Technical Service at www.restek.com/Contact-Us for use recommendations if your shipment was in-transit for more than 7 days at non-standard temperature conditions.
- Apply the certified combined unstressed uncertainty value if the product was received under standard shipping conditions. Apply the certified combined stressed uncertainty value if the product was received under non-standard conditions as specified below.

Label Conditions	Standard Conditions	Non-Standard Conditions
25°C Nominal (Room Temperature)	< 60°C	≥ 60°C up to 7 days
10°C or colder (Refrigerate)	< 40°C	≥ 40°C up to 7 days
0°C or colder (Freezer) -20°C or colder (Deep Freezer)	< 25°C	≥ 25°C up to 7 days

- Separate (not combined) uncertainty values for gravimetric uncertainty are also displayed on the certificate, if needed, separate homogeneity between-ampul uncertainty, storage stability uncertainty and shipping stability uncertainty values are available by contacting Restek Technical Service at www.restek.com/Contact-Us.
- The packaged amount is the minimum sample size for which uncertainty is valid. The ampules are over-filled to ensure that the minimum packaged amount can be sufficiently transferred.

Manufacturing Notes:

- Concentration is based upon gravimetric preparation using either a balance whose calibration has been verified daily using NIST traceable weights, and/or dilutions with Class A glassware.

Handling Notes:

- Stability of the unopened product, when stored in compliance with the recommended conditions, is guaranteed through the expiration displayed on the product label and certificate. Contact Restek for additional opened product stability information, with the knowledge/understanding that open product stability is subject to the specific handling and environmental conditions to which the product is exposed. For your convenience Restek supplies deactivated vials with most standards packed in 2mL ampules. Larger volume deactivated vials are available through Restek as a custom ordered item. Additionally, Restek sells DMDCS for the purpose of glassware deactivation as catalog number 31861, which includes complete instructions.

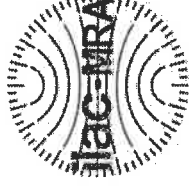


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Fax: (814)353-1309

www.restek.com

CERTIFIED REFERENCE MATERIAL

Certificate of Analysis



FOR LABORATORY USE ONLY-READ SDS PRIOR TO USE.

This Reference Material is intended for Laboratory Use Only as a standard for the qualitative and/or quantitative determination of the analyte(s) listed.

Catalog No.: 31098

Lot No.: A0190428

Description:

1-Chlorooctadecane Standard

1-Chlorooctadecane Standard 10,000 µg/mL, Methylene Chloride,
1mL/ampul

Container Size:

2 mL

Pkg Amt: > 1 mL

Expiration Date:

November 30, 2029

Storage: 10°C or colder

Ship:

Ambient

P12371 } 7.0
 } 03/16/23
P12385 }

CERTIFIED VALUES

Elution Order	Compound	Grav. Conc. (weight/volume)	Expanded Uncertainty (95% C.L., $k=2$)
1	1-Chlorooctadecane CAS # 3386-33-2 Purity 99%	10,066.3 µg/mL (Lot 13661500)	+/- 58.5260 µg/mL +/- 564.4046 µg/mL +/- 577.6110 µg/mL

Solvent:

Methylene chloride

CAS #

75-09-2

Purity

99%

Gravimetric
Unstressed
Stressed

Column:

30m x 0.25mm x 0.25µm
Rtx-5 (cat.#10223)

Carrier Gas:

hydrogen-constant pressure 10 psi.

Temp. Program:

75°C (hold 1 min.) to 330°C
@ 20°C/min. (hold 10 min.)

Inj. Temp:

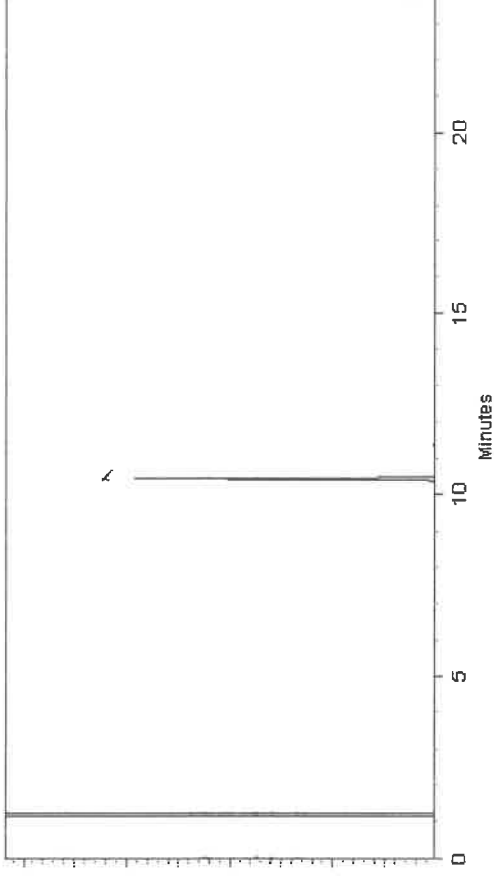
250°C

Det. Temp:

330°C

Det. Type:

FID



This chromatogram represents a general set of testing conditions chosen for product acceptance. For optimal results in your lab, conditions should be adjusted for your specific instrument, method, and application.

Malina Homan - Operations Technician I

Date Mixed: 10-Oct-2022 Balance: B442140311

Christie Mills - Operations Tech II - ARM QC

Date Passed: 13-Oct-2022

Manufactured under Restek's ISO 9001:2015
Registered Quality System
Certificate #FM 80397

General Certified Reference Material Notes

Expiration Notes:

- Expiration date valid for unopened ampul stored in compliance with the recommended conditions.
- Uncertainty, concentration, and expiration of the CRM are based on the unopened product being stored according to the recommended condition found in the storage field.

Purity Notes:

- Purity and/or chemical identity are determined by one or more of the following techniques: GC/FID, HPLC, GC/μECD, GC/MS, LC/MS, RI, and/or melting point.
- Compounds with a listed purity of less than 99% have been weight corrected to compensate for impurities and/or salts. A correction factor is used to calculate the amount of compound necessary to achieve the desired concentration of the parent compound in solution.
- Purity of isomeric compounds is reported as the sum of the isomers.
- Purity values are rounded to the nearest whole number.

Certified Uncertainty Value Notes:

- The uncertainties are determined in accordance with ISO 17034 and Guide 35. The certified combined stressed uncertainty value (includes gravimetric uncertainty, homogeneity between-ampul uncertainty, storage stability uncertainty and shipping stability uncertainty and were combined using the following formula:

$$U_{combined\ stressed} = k \sqrt{U_{gravimetric}^2 + U_{homogeneity}^2 + U_{storage\ stability}^2 + U_{shipping\ stability}^2}$$

k is a coverage factor of 2, which gives a level of confidence of approximately 95%.

- It is important to note that the shipping stability uncertainty was obtained under temperature extremes for specific time intervals; therefore, the certified combined stressed uncertainty value should only be applied to the product if it was stored at non-standard temperature conditions up to and including 7 days. Contact Restek Technical Service at www.restek.com/Contact-Us for use recommendations if your shipment was in-transit for more than 7 days at non-standard temperature conditions.
- Apply the certified combined unstressed uncertainty value if the product was received under standard shipping conditions. Apply the certified combined stressed uncertainty value if the product was received under non-standard conditions as specified below.

Label Conditions	Standard Conditions	Non-Standard Conditions
25°C Nominal (Room Temperature)	< 60°C	≥ 60°C up to 7 days
10°C or colder (Refrigerate)	< 40°C	≥ 40°C up to 7 days
0°C or colder (Freezer) -20°C or colder (Deep Freezer)	< 25°C	≥ 25°C up to 7 days

- Separate (not combined) uncertainty values for gravimetric uncertainty are also displayed on the certificate, if needed, separate homogeneity between-ampul uncertainty, storage stability uncertainty and shipping stability uncertainty values are available by contacting Restek Technical Service at www.restek.com/Contact-Us.
- The packaged amount is the minimum sample size for which uncertainty is valid. The ampules are over-filled to ensure that the minimum packaged amount can be sufficiently transferred.

Manufacturing Notes:

- Concentration is based upon gravimetric preparation using either a balance whose calibration has been verified daily using NIST traceable weights, and/or dilutions with Class A glassware.

Handling Notes:

- Stability of the unopened product, when stored in compliance with the recommended conditions, is guaranteed through the expiration displayed on the product label and certificate. Contact Restek for additional opened product stability information, with the knowledge/understanding that open product stability is subject to the specific handling and environmental conditions to which the product is exposed. For your convenience Restek supplies deactivated vials with most standards packed in 2mL ampules. Larger volume deactivated vials are available through Restek as a custom ordered item. Additionally, Restek sells DMDCS for the purpose of glassware deactivation as catalog number 31861, which includes complete instructions.

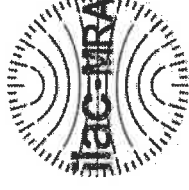


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CERTIFIED REFERENCE MATERIAL

Certificate of Analysis



FOR LABORATORY USE ONLY-READ SDS PRIOR TO USE.

This Reference Material is intended for Laboratory Use Only as a standard for the qualitative and/or quantitative determination of the analyte(s) listed.

Catalog No.: 31098

Lot No.: A0190428

Description:

1-Chlorooctadecane Standard

1-Chlorooctadecane Standard 10,000 µg/mL, Methylene Chloride,
1mL/ampul

Container Size:

2 mL

Pkg Amt: > 1 mL

Expiration Date:

November 30, 2029

Storage: 10°C or colder

Ship:

Ambient

P12371 } 7.0
 } 03/16/23
P12385 }

CERTIFIED VALUES

Elution Order	Compound	Grav. Conc. (weight/volume)	Expanded Uncertainty (95% C.L., $k=2$)
1	1-Chlorooctadecane CAS # 3386-33-2 Purity 99%	10,066.3 µg/mL (Lot 13661500)	+/- 58.5260 µg/mL +/- 564.4046 µg/mL +/- 577.6110 µg/mL

Solvent:

Methylene chloride

CAS #

75-09-2

Purity

99%

Gravimetric
Unstressed
Stressed

Column:

30m x 0.25mm x 0.25µm
Rtx-5 (cat.#10223)

Carrier Gas:

hydrogen-constant pressure 10 psi.

Temp. Program:

75°C (hold 1 min.) to 330°C
@ 20°C/min. (hold 10 min.)

Inj. Temp:

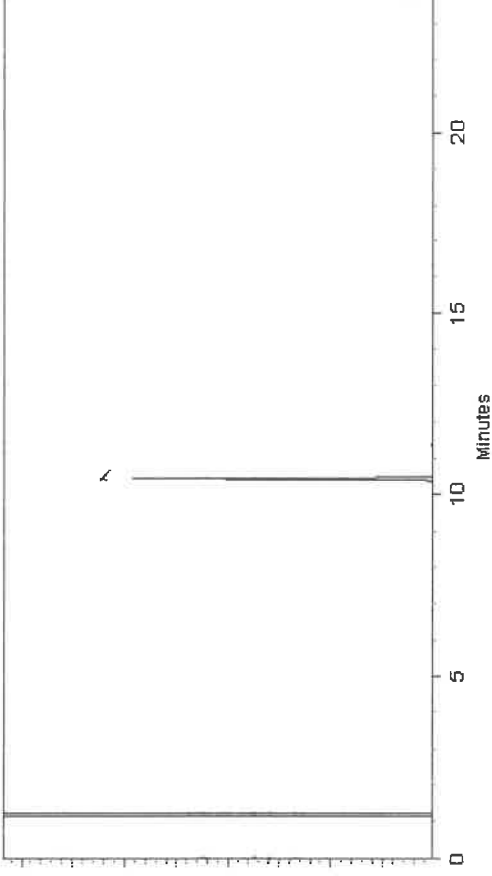
250°C

Det. Temp:

330°C

Det. Type:

FID



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Malina Homan - Operations Technician I

Date Mixed: 10-Oct-2022 Balance: B442140311

Christie Mills - Operations Tech II - ARM QC

Date Passed: 13-Oct-2022

Manufactured under Restek's ISO 9001:2015
Registered Quality System
Certificate #FM 80397

General Certified Reference Material Notes

Expiration Notes:

- Expiration date valid for unopened ampul stored in compliance with the recommended conditions.
- Uncertainty, concentration, and expiration of the CRM are based on the unopened product being stored according to the recommended condition found in the storage field.

Purity Notes:

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- Purity values are rounded to the nearest whole number.

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Manufacturing Notes:

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Handling Notes:

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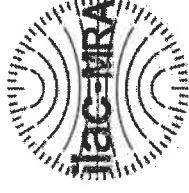


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CERTIFIED REFERENCE MATERIAL

Certificate of Analysis



FOR LABORATORY USE ONLY-READ SDS PRIOR TO USE.

This Reference Material is intended for Laboratory Use Only as a standard for the qualitative and/or quantitative determination of the analyte(s) listed.

Catalog No.: 31098

Lot No.: A0190428

Description:

1-Chlorooctadecane Standard

1-Chlorooctadecane Standard 10,000µg/mL, Methylene Chloride,
1mL/ampul

Container Size:

2 mL

Pkg Amt: > 1 mL

Expiration Date:

November 30, 2029

Storage: 10°C or colder

Ship:

Ambient

P12371 } 7.0
 } 03/16/23
P12385 }

CERTIFIED VALUES

Elution Order	Compound	Grav. Conc. (weight/volume)	Expanded Uncertainty (95% C.L., $k=2$)
1	1-Chlorooctadecane CAS # 3386-33-2 Purity 99%	10,066.3 µg/mL (Lot 13661500)	+/- 58.5260 µg/mL +/- 564.4046 µg/mL +/- 577.6110 µg/mL

Solvent:

Methylene chloride

CAS #

75-09-2

Purity

99%

Gravimetric
Unstressed
Stressed

Column:

30m x 0.25mm x 0.25µm
Rtx-5 (cat.#10223)

Carrier Gas:

hydrogen-constant pressure 10 psi.

Temp. Program:

75°C (hold 1 min.) to 330°C
@ 20°C/min. (hold 10 min.)

Inj. Temp:

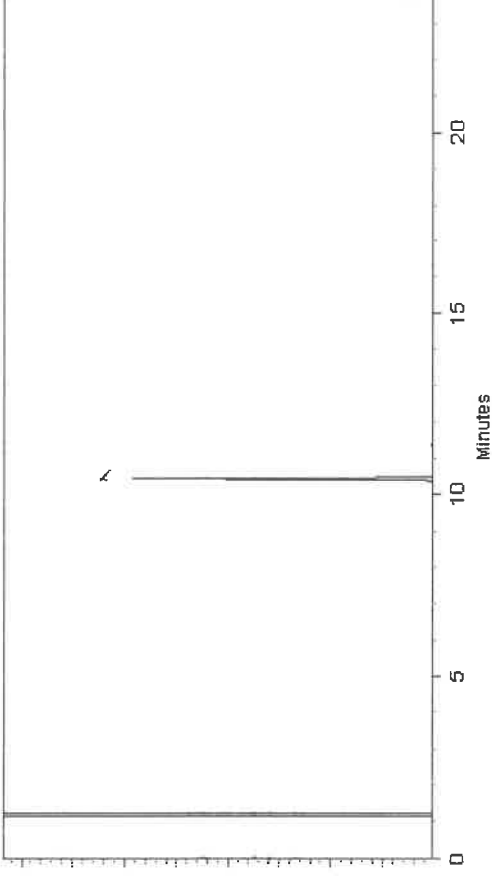
250°C

Det. Temp:

330°C

Det. Type:

FID



This chromatogram represents a general set of testing conditions chosen for product acceptance. For optimal results in your lab, conditions should be adjusted for your specific instrument, method, and application.

Malina Homan - Operations Technician I

Date Mixed: 10-Oct-2022 Balance: B442140311

Christie Mills - Operations Tech II - ARM QC

Date Passed: 13-Oct-2022

Manufactured under Restek's ISO 9001:2015
Registered Quality System
Certificate #FM 80397

General Certified Reference Material Notes

Expiration Notes:

- Expiration date valid for unopened ampul stored in compliance with the recommended conditions.
- Uncertainty, concentration, and expiration of the CRM are based on the unopened product being stored according to the recommended condition found in the storage field.

Purity Notes:

- Purity and/or chemical identity are determined by one or more of the following techniques: GC/FID, HPLC, GC/μECD, GC/MS, LC/MS, RI, and/or melting point.
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- Apply the certified combined unstressed uncertainty value if the product was received under standard shipping conditions. Apply the certified combined stressed uncertainty value if the product was received under non-standard conditions as specified below.

Label Conditions	Standard Conditions	Non-Standard Conditions
25°C Nominal (Room Temperature)	< 60°C	≥ 60°C up to 7 days
10°C or colder (Refrigerate)	< 40°C	≥ 40°C up to 7 days
0°C or colder (Freezer) -20°C or colder (Deep Freezer)	< 25°C	≥ 25°C up to 7 days

- Separate (not combined) uncertainty values for gravimetric uncertainty are also displayed on the certificate, if needed, separate homogeneity between-ampul uncertainty, storage stability uncertainty and shipping stability uncertainty values are available by contacting Restek Technical Service at www.restek.com/Contact-Us.
- The packaged amount is the minimum sample size for which uncertainty is valid. The ampules are over-filled to ensure that the minimum packaged amount can be sufficiently transferred.

Manufacturing Notes:

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Handling Notes:

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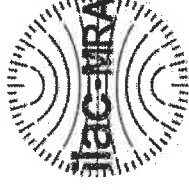


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CERTIFIED REFERENCE MATERIAL

Certificate of Analysis



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This Reference Material is intended for Laboratory Use Only as a standard for the qualitative and/or quantitative determination of the analyte(s) listed.

Catalog No.: 31098

Lot No.: A0190428

Description:

1-Chlorooctadecane Standard

1-Chlorooctadecane Standard 10,000µg/mL, Methylene Chloride,
1mL/ampul

Container Size:

2 mL

Pkg Amt: > 1 mL

Expiration Date:

November 30, 2029

Storage: 10°C or colder

Ship:

Ambient

P12371 } 7.0
 } 03/16/23
P12385 }

CERTIFIED VALUES

Elution Order	Compound	Grav. Conc. (weight/volume)	Expanded Uncertainty (95% C.L., $k=2$)
1	1-Chlorooctadecane CAS # 3386-33-2 Purity 99%	10,066.3 µg/mL (Lot 13661500)	+/- 58.5260 µg/mL +/- 564.4046 µg/mL +/- 577.6110 µg/mL

Solvent:

Methylene chloride

CAS #

75-09-2

Purity

99%

Gravimetric
Unstressed
Stressed

Column:

30m x 0.25mm x 0.25µm
Rtx-5 (cat.#10223)

Carrier Gas:

hydrogen-constant pressure 10 psi.

Temp. Program:

75°C (hold 1 min.) to 330°C
@ 20°C/min. (hold 10 min.)

Inj. Temp:

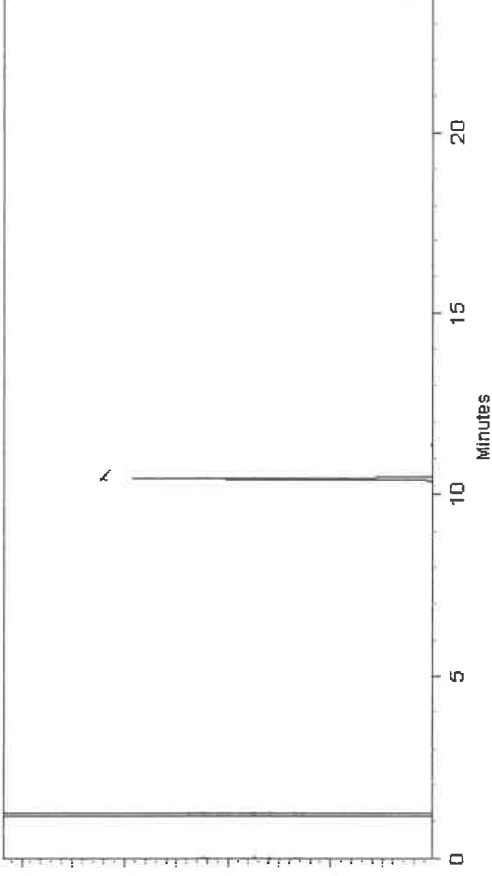
250°C

Det. Temp:

330°C

Det. Type:

FID



This chromatogram represents a general set of testing conditions chosen for product acceptance. For optimal results in your lab, conditions should be adjusted for your specific instrument, method, and application.

Malina Homan - Operations Technician I

Date Mixed: 10-Oct-2022 Balance: B442140311

Christie Mills - Operations Tech II - ARM QC

Date Passed: 13-Oct-2022

Manufactured under Restek's ISO 9001:2015
Registered Quality System
Certificate #FM 80397

General Certified Reference Material Notes

Expiration Notes:

- Expiration date valid for unopened ampul stored in compliance with the recommended conditions.
- Uncertainty, concentration, and expiration of the CRM are based on the unopened product being stored according to the recommended condition found in the storage field.

Purity Notes:

- Purity and/or chemical identity are determined by one or more of the following techniques: GC/FID, HPLC, GC/μECD, GC/MS, LC/MS, RI, and/or melting point.
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Label Conditions	Standard Conditions	Non-Standard Conditions
25°C Nominal (Room Temperature)	< 60°C	≥ 60°C up to 7 days
10°C or colder (Refrigerate)	< 40°C	≥ 40°C up to 7 days
0°C or colder (Freezer) -20°C or colder (Deep Freezer)	< 25°C	≥ 25°C up to 7 days

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Manufacturing Notes:

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Handling Notes:

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CERTIFIED REFERENCE MATERIAL

Certificate of Analysis



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This Reference Material is intended for Laboratory Use Only as a standard for the qualitative and/or quantitative determination of the analyte(s) listed.

Catalog No.: 31098 Lot No.: A0190428

Description: 1-Chlorooctadecane Standard

1-Chlorooctadecane Standard 10,000 µg/mL, Methylene Chloride,
1mL/ampul

Container Size: 2 mL Pkg Amt: > 1 mL

Expiration Date: November 30, 2029 Storage: 10°C or colder

Ship: Ambient

P12371 } 7.0
 } 03/16/23
P12385 }

CERTIFIED VALUES

Elution Order	Compound	Grav. Conc. (weight/volume)	Expanded Uncertainty (95% C.L., $k=2$)
1	1-Chlorooctadecane CAS # 3386-33-2 Purity 99%	10,066.3 µg/mL (Lot 13661500)	+/- 58.5260 µg/mL +/- 564.4046 µg/mL +/- 577.6110 µg/mL

Solvent: Methylene chloride
CAS # 75-09-2
Purity 99%

Gravimetric
Unstressed
Stressed

Column:

30m x 0.25mm x 0.25µm
Rtx-5 (cat.#10223)

Carrier Gas:

hydrogen-constant pressure 10 psi.

Temp. Program:

75°C (hold 1 min.) to 330°C
@ 20°C/min. (hold 10 min.)

Inj. Temp:

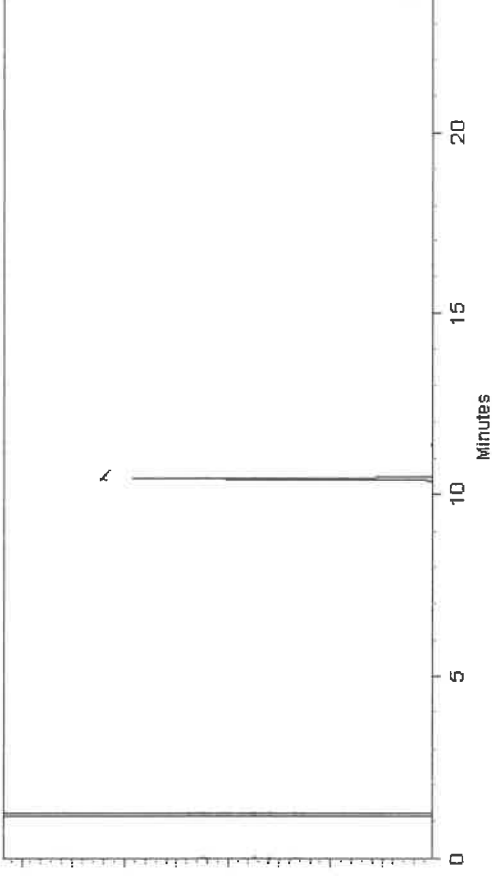
250°C

Det. Temp:

330°C

Det. Type:

FID



This chromatogram represents a general set of testing conditions chosen for product acceptance. For optimal results in your lab, conditions should be adjusted for your specific instrument, method, and application.

Malina Homan - Operations Technician I

Date Mixed: 10-Oct-2022 Balance: B442140311

Christie Mills - Operations Tech II - ARM QC

Date Passed: 13-Oct-2022

Manufactured under Restek's ISO 9001:2015
Registered Quality System
Certificate #FM 80397

General Certified Reference Material Notes

Expiration Notes:

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0°C or colder (Freezer) -20°C or colder (Deep Freezer)	< 25°C	≥ 25°C up to 7 days

- Separate (not combined) uncertainty values for gravimetric uncertainty are also displayed on the certificate, if needed, separate homogeneity between-ampul uncertainty, storage stability uncertainty and shipping stability uncertainty values are available by contacting Restek Technical Service at www.restek.com/Contact-Us.
- The packaged amount is the minimum sample size for which uncertainty is valid. The ampules are over-filled to ensure that the minimum packaged amount can be sufficiently transferred.

Manufacturing Notes:

- Concentration is based upon gravimetric preparation using either a balance whose calibration has been verified daily using NIST traceable weights, and/or dilutions with Class A glassware.

Handling Notes:

- Stability of the unopened product, when stored in compliance with the recommended conditions, is guaranteed through the expiration displayed on the product label and certificate. Contact Restek for additional opened product stability information, with the knowledge/understanding that open product stability is subject to the specific handling and environmental conditions to which the product is exposed. For your convenience Restek supplies deactivated vials with most standards packed in 2mL ampules. Larger volume deactivated vials are available through Restek as a custom ordered item. Additionally, Restek sells DMDCS for the purpose of glassware deactivation as catalog number 31861, which includes complete instructions.



CERTIFIED REFERENCE MATERIAL



110 Benner Circle
Bellefonte, PA 16823-8812
Tel: 1-814-353-1300
Fax: 1-814-353-1309

Certificate of Analysis

chromatographic plus

www.restek.com



FOR LABORATORY USE ONLY-READ SDS PRIOR TO USE.

This Reference Material is intended for Laboratory Use Only as a standard for the qualitative and/or quantitative determination of the analyte(s) listed.

Catalog No. : 31098

Lot No.: A0196745

Description : 1-Chlorooctadecane Standard

1-Chlorooctadecane Standard 10,000µg/mL, Methylene Chloride,
1mL/ampul

Container Size : 2 mL

Pkg Amt: > 1 mL

Expiration Date : May 31, 2030

Storage: 10°C or colder

Ship: Ambient

Pr2556
↓
Pr2575 } Y.P.
06/30/23

CERTIFIED VALUES

Elution Order	Compound	CAS #	Lot #	Purity	Grav. Conc. (weight/volume)	Expanded Uncertainty * (95% C.L.; K=2)
1	1-Chlorooctadecane	3386-33-2	13199700	99%	10,058.6 µg/mL	+/- 565.0485

* Expanded Uncertainty displayed in same units as Grav. Conc.

Solvent: Methylene chloride

CAS # 75-09-2

Purity 99%

Quality Confirmation Test

Column:
30m x 0.25mm x 0.25µm
Rtx-5 (cat.#10223)

Carrier Gas:
hydrogen-constant pressure 10 psi.

Temp. Program:
75°C (hold 1 min.) to 330°C
@ 20°C/min. (hold 10 min.)

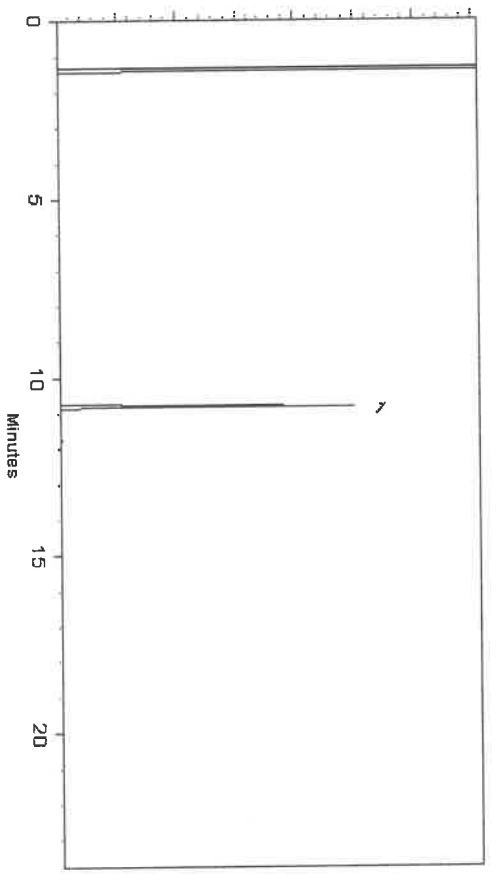
Inj. Temp:
250°C

Det. Temp:
330°C

Det. Type:
FID

Split Vent:
10 ml/min.

Inj. Vol
1µl



This chromatogram represents a general set of testing conditions chosen for product acceptance. For optimal results in your lab, conditions should be adjusted for your specific instrument, method, and application.

 <u>Jess Hoy - Operations Tech I</u>	Date Mixed: 06-Apr-2023	Balance Serial # 1128353505
 <u>Christine Mills - Operations Tech II - ARM QC</u>	Date Passed: 12-Apr-2023	

Manufactured under Restek's ISO 9001:2015
Registered Quality System
Certificate #FQM 80397

General Certified Reference Material Notes

Expiration Notes:

- Expiration date valid for unopened ampul stored in compliance with the recommended conditions.
- Uncertainty, concentration, and expiration of the CRM are based on the unopened product being stored according to the recommended condition found in the storage field.

Purity Notes:

- Purity and/or chemical identity are determined by one or more of the following techniques: GC/FID, HPLC, GC/μECD, GC/MS, LC/MS, RI, and/or melting point.
- Compounds with a listed purity of less than 99% have been weight corrected to compensate for impurities and/or salts. A correction factor is used to calculate the amount of compound necessary to achieve the desired concentration of the parent compound in solution.
- Purity of isomeric compounds is reported as the sum of the isomers.
- Purity values are rounded to the nearest whole number.

Certified Uncertainty Value Notes:

- The uncertainties are determined in accordance with ISO 17034 and Guide 35. The certified expanded uncertainty value includes gravimetric uncertainty, homogeneity between-ampul uncertainty, storage stability uncertainty and shipping stability uncertainty and were combined using the following formula:

$$U_{combined\ uncertainty} = k \sqrt{u_{gravimetric}^2 + u_{homogeneity}^2 + u_{storage\ stability}^2 + u_{shipping\ stability}^2}$$

k is a coverage factor of 2, which gives a level of confidence of approximately 95%.

- The packaged amount is the minimum sample size for which uncertainty is valid. The ampuls are over-filled to ensure that the minimum packaged amount can be sufficiently transferred.

Manufacturing Notes:

- Concentration is based upon gravimetric preparation using either a balance whose calibration has been verified daily using NIST traceable weights, and/or dilutions with Class A glassware.

Handling Notes:

- Stability of the unopened product, when stored in compliance with the recommended conditions, is guaranteed through the expiration displayed on the product label and certificate. Contact Restek for additional opened product stability information, with the knowledge/understanding that open product stability is subject to the specific handling and environmental conditions to which the product is exposed. For your convenience Restek supplies deactivated vials with most standards packed in 2mL ampuls. Larger volume deactivated vials are available through Restek as a custom ordered item. Additionally, Restek sells DMDCS for the purpose of glassware deactivation as catalog number 31861, which includes complete instructions.
- If any undissolved material is visible inside the ampul, sonicate the unopened ampul until the material is completely dissolved.



Safety Data Sheet

Revision Date: 05/01/23

www.restek.com

2 Letter ISO country code/language code: US/EN

1. IDENTIFICATION

Catalog Number / Product Name:	31098 / 1-Chlorooctadecane Standard
Company:	Restek Corporation
Address:	110 Banner Circle Bellefonte, Pa. 16823
Phone#:	814-353-1300
Fax#:	814-353-1309
Emergency#:	800-424-9300 (CHEMTREC) 703-527-3887 (Outside the US)
Email:	www.restek.com
Revision Number:	15
Intended use:	For Laboratory use only. This chemical/product is not and cannot be distributed in commerce (as defined in TSCA section 3(5)) or processed (as defined in TSCA section 3(13)) for consumer paint or coating removal.

2. HAZARD(S) IDENTIFICATION

Emergency Overview:

GHS Hazard
Symbols:



GHS Classification: Carcinogenicity Category 2

GHS Signal
Word: Warning

GHS Hazard:
GHS Suspected of causing cancer.

Precautions:

Safety
Precautions: Obtain special instructions before use.
Do not handle until all safety precautions have been read and understood.
Wear protective gloves/protective clothing/eye protection/face protection.

First Aid
Measures: IF exposed or concerned: Get medical advice/attention.

Storage: Store locked up.

Disposal: Dispose of contents/container according to section 13 of the SDS.

Single
Exposure
Target Organs: No data available

Repeated
Exposure
Target Organs: No data available

3. COMPOSITION / INFORMATION ON INGREDIENT

31098 / 1-Chlorooctadecane Standard

Chemical Name	CAS #	EINEC #	% Composition
Methylene chloride (dichloromethane)	75-09-2	200-838-9	99
1-chlorooctadecane	3386-33-2	222-207-7	1

4. FIRST-AID MEASURES

Inhalation:

Remove to fresh air. If breathing is difficult, have a trained individual administer oxygen. If not breathing, give artificial respiration and have a trained individual administer oxygen. Get medical attention immediately.

Eyes:

Immediately flush eyes with plenty of water for at least 20 minutes retracting eyelids often. Tilt the head to prevent chemical from transferring to the uncontaminated eye. Get immediate medical attention and monitor the eye daily as advised by your physician. Serious harm (damage) may result if treatment is delayed. Continue to flush eyes while awaiting medical attention

Skin Contact:

Wash with soap and water. Remove contaminated clothing, launder immediately, and discard contaminated leather goods. Get medical attention immediately.

Ingestion:

Do not induce vomiting and seek medical attention immediately. Drink two glasses of water or milk to dilute. Provide medical care provider with this SDS. Never give anything by mouth to an unconscious person

5. FIRE-FIGHTING MEASURES

Extinguishing Media:

Use alcohol resistant foam, carbon dioxide, or dry chemical when fighting fires. Water or foam may cause frothing if liquid is burning but it still may be a useful extinguishing agent if carefully applied to the surface of the fire. Do Not direct a stream of water into the hot burning liquid. Use methods suitable to fight surrounding fire.

Fire and/or Explosion Hazards:

Material may be ignited only if preheated to temperatures above the high flash point, for example in a fire.

Fire Fighting Methods and Protection:

Do not enter fire area without proper protection including self-contained breathing apparatus and full protective equipment.

Hazardous Combustion Products:

Carbon dioxide, Carbon monoxide

6. ACCIDENTAL RELEASE MEASURES

Personal Precautions and Equipment:

Exposure to the spilled material may be severely irritating or toxic. Follow personal protective equipment recommendations found in Section 8 of this SDS. Personal protective equipment needs must be evaluated based on information provided on this sheet and the special circumstances created by the spill including; the material spilled, the quantity of the spill, the area in which the spill occurred, and the expertise of employees in the area responding to the spill. Never exceed any occupational exposure limits.

Methods for Clean-up:

Prevent the spread of any spill to minimize harm to human health and the environment if safe to do so. Wear complete and proper personal protective equipment following the recommendation of Section 8 at a minimum. Dike with suitable absorbent material like granulated clay. Gather and store in a sealed container pending a waste disposal evaluation.

7. HANDLING AND STORAGE

Handling Technical Measures and Precautions:

Toxic or severely irritating material. Avoid contacting and avoid breathing the material. Use only in a well ventilated area. As with all chemicals, good industrial hygiene practices should be followed when handling this material.

Storage Technical Measures and Conditions:

Store in a cool dry place. Isolate from incompatible materials. Keep container closed when not in use

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

United States:

Chemical Name	CAS No.	IDLH	ACGIH STEL	ACGIH TLV-TWA	OSHA Exposure Limit
Methylene chloride (dichloromethane)	75-09-2	2300 ppm IDLH	None Known	50 ppm TWA	25 ppm TWA; 125 ppm STEL (15 min. TWA)

1-chlorooctadecane	3386-33-2	Not established	None Known	Not established	No data available
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Personal Protection:

Local exhaust ventilation or other engineering controls are normally required when handling or using this product to avoid overexposure.

Engineering Measures: Respiratory protection may be required to avoid overexposure when handling this product. General or local exhaust ventilation is the preferred means of protection. Use a respirator if general room ventilation is not available or sufficient to eliminate symptoms.

Respiratory Protection:

Wear chemically resistant safety glasses with side shields when handling this product. Wear additional eye protection such as chemical splash goggles and/or face shield when the possibility exists for eye contact with splashing or spraying liquid, or airborne material. Do not wear contact lenses. Have an eye wash station available.

Eye Protection: Avoid skin contact by wearing chemically resistant gloves, an apron and other protective equipment depending upon conditions of use. Inspect gloves for chemical break-through and replace at regular intervals. Clean protective equipment regularly. Wash hands and other exposed areas with mild soap and water before eating, drinking, and when leaving work.

Skin Protection: Eye disease Skin disease including eczema and sensitization Respiratory disease including asthma and bronchitis

Medical Conditions Aggravated By Exposure:

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance, color:	Colorless
Odor:	Strong
Physical State:	No data available
pH:	Not applicable
Vapor Pressure:	No data available
Vapor Density:	2.93 (air = 1)
Boiling Point (°C):	40 °C at 1013 hPa (ECHA_API)
Melting Point (°C):	-96.7 °C
Flash Point (°F):	228
Flammability:	Combustible at elevated temperatures
Upper Flammable/Explosive Limit, % in air:	No data available
Lower Flammable/Explosive Limit, % in air:	No data available
Autoignition Temperature (°C):	556 deg C
Decomposition Temperature (°C):	No data available
Specific Gravity:	1.3254 - 1.3258 g/cm3 at 20 °C
Evaporation Rate:	No data available
Odor Threshold:	ND
Solubility:	Moderate; 50-99%
Partition Coefficient: n-octanol in water:	No data available
VOC % by weight:	99
Molecular Weight:	No data available

10. STABILITY AND REACTIVITY

Stability:	Stable under normal conditions.
Conditions to Avoid:	None known Contamination High temperatures
Materials to Avoid / Chemical Incompatibility:	Strong oxidizing agents Caustics (bases)
Hazardous Decomposition Products:	Carbon dioxide Carbon monoxide

11. TOXICOLOGICAL INFORMATION

Routes of Entry:	Inhalation Absorption Ingestion Skin contact Eye contact
Target Organs Potentially Affected By Exposure:	Skin, Cardiovascular System, Eyes, Liver
Chemical Interactions That Change Toxicity:	None Known

Immediate (Acute) Health Effects by Route of Exposure:

Inhalation Irritation: Can cause moderate respiratory irritation, dizziness, weakness, fatigue, nausea and headache.

Inhalation Toxicity: Harmful! Can cause systemic damage (see "Target Organs)Inhalation may cause severe central nervous system depression (including unconsciousness).

Skin Contact: Contact causes severe skin irritation and possible burns.

Skin Absorption: Harmful if absorbed through the skin. May cause severe irritation and systemic damage.

Eye Contact: Contact with the eyes may cause moderate to severe eye injury. Eye contact may result in tearing and reddening, but not likely to permanently injure eye tissue. Temporary vision impairment (cloudy or blurred vision) is possible.

Ingestion Irritation: Irritating to mouth, throat, and stomach. Can cause abdominal discomfort, nausea, vomiting and diarrhea.

Ingestion Toxicity: Harmful if swallowed. May cause systemic poisoning.

Long-Term (Chronic) Health Effects:

Carcinogenicity: Reproductive and Developmental Toxicity:

Inhalation: Contains a probable or known human carcinogen. No data available to indicate product or any components present at greater than 0.1% may cause birth defects. Upon prolonged and/or repeated exposure, can cause moderate respiratory irritation, dizziness, weakness, fatigue, nausea and headache. Harmful! Can cause systemic damage upon prolonged and/or repeated exposure (see "Target Organs")

Skin Absorption: Upon prolonged or repeated exposure, harmful if absorbed through the skin. May cause severe irritation and systemic damage

Component Toxicological Data:

NIOSH:	CAS No.
Chemical Name	
Dichloromethane	75-09-2
	LD50/LC50
	Dermal LD50 Rat >2000 mg/kg; Inhalation LC50 Rat 53 mg/L 6 h; Oral LD50 Rat 1600 mg/kg

Component Carcinogenic Data:

OSHA:	CAS No.
Chemical Name	
Methylene chloride	75-09-2
	25 ppm TWA (8 hr.); 125 ppm STEL (15 min.); 12.5 ppm Action Level (see 29 CFR 1910.1051); effective date for respiratory protection for certain employers to achieve the 8-hour TWA PEL is August 31, 1998; the start up date to install engineering controls is December 10, 1998.; {OSHA - 29 CFR 1910 Specifically Regulate

ACGIH:	CAS No.
Chemical Name	
Dichloromethane	75-09-2
	A3 - Confirmed Animal Carcinogen with Unknown Relevance to Humans

NIOSH:	CAS No.
Chemical Name	
Methylene chloride	75-09-2
	potential occupational carcinogen

NTP:	CAS No.
Chemical Name	
No data available	

IARC:	CAS No.	Group No.
Chemical Name		
Monograph 110 [2017]; Monograph 71 [1999]	75-09-2	Group 2A

12. ECOLOGICAL INFORMATION

Overview: Moderate ecological hazard. This product may be dangerous to plants and/or wildlife. Keep out of waterways.

Mobility: No data

Persistence: No data

Bioaccumulation: No data

Degradability:
Ecological Toxicity Data:

No data
No data available

13. DISPOSAL CONSIDERATIONS

Waste Description of Spent Product:

Spent or discarded material is a hazardous waste. Mixing spent or discarded material with other materials may render the mixture hazardous. Perform a hazardous waste determination on mixtures.

Disposal Methods:

Incinerate spent or discarded material a permitted hazardous waste facility.

Waste Disposal of Packaging:

Comply with all Local, State, Federal, and Provincial Environmental Regulations.

14. TRANSPORTATION INFORMATION

United States:

DOT Proper Shipping Name:

Dichloromethane

UN Number:

UN1593

Hazard Class:

6.1

Packing Group:

III

International:

IATA Proper Shipping Name:

Dichloromethane

UN Number:

UN1593

Hazard Class:

6.1

Packing Group:

III

Marine Pollutant: No

Chemical Name	CAS#	Marine Pollutant	Severe Marine Pollutant
No data available			

15. REGULATORY INFORMATION

United States:

This chemical/product is not and cannot be distributed in commerce (as defined in TSCA section 3(5)) or processed (as defined in TSCA section 3(13)) for consumer paint or coating removal.

Chemical Name	CAS#	CERCLA	SARA 313	SARA EHS 313	TSCA
Methylene chloride (dichloromethane)	75-09-2	X	X	-	X
1-chlorooctadecane	3386-33-2	-	-	-	X

The following chemicals are listed on CA Prop 65:

Chemical Name	CAS #	Regulation
Dichloromethane	75-09-2	Prop 65 Cancer
Dichloromethane (Methylene chloride)		

State Right To Know Listing:

Chemical Name	CAS#	New Jersey	Massachusetts	Pennsylvania	California
Methylene chloride (dichloromethane)	75-09-2	X	X	X	X
1-chlorooctadecane	3386-33-2	-	-	-	-

16. OTHER INFORMATION

Prior Version Date: 04/27/23

Other Information:

Any changes to the SDS compared to previous versions are marked by a vertical line in front of the concerned paragraph.

References:

No data available

Disclaimer:

Restek Corporation provides the descriptions, data and information contained

herein in good faith but makes no representation as to its comprehensiveness or accuracy. It is provided for your guidance only. Because many factors may affect processing or application/use, Restek Corporation recommends you perform an assessment to determine the suitability of a product for your particular purpose prior to use. No warranties of any kind, either expressed or implied, including fitness for a particular purpose, are made regarding products described, data or information set forth. In no case shall the descriptions, information, or data provided be considered a part of our terms and conditions of sale. Further, the descriptions, data and information furnished hereunder are given gratis. No obligation or liability for the description, data and information given are assumed. All such being given and accepted at your risk.



CERTIFIED REFERENCE MATERIAL



ISO 17025 Accredited
Reference Material Producer
Certificate # 222202



ISO/IEC 17025 Accredited
Testing Laboratory
Certificate # 222202

110 Benner Circle

Belleville, PA 16823-8812

Tel: 1-814-353-1300

Fax: 1-814-353-1309

www.restek.com

Certificate of Analysis

chromatographic plus

FOR LABORATORY USE ONLY-READ SDS PRIOR TO USE.

This Reference Material is intended for Laboratory Use Only as a standard for the qualitative and/or quantitative determination of the analyte(s) listed.

Catalog No. : 31097

Lot No.: A0197729

Description : o-Terphenyl Standard

o-Terphenyl Standard 10,000 µg/mL, Methylene Chloride, 1mL/ampul

Container Size : 2 mL

Pkg Amt: > 1 mL

Expiration Date : December 31, 2026

Storage: 10°C or colder

Handling: Sonicate prior to use.

Ship: Ambient

CERTIFIED VALUES

Elution Order	Compound	CAS #	Lot #	Purity	Grav. Conc. (weight/volume)	Expanded Uncertainty* (95% C.L.; K=2)
1	o-Terphenyl	84-15-1	MKCH4487	99%	10,007.5 µg/mL	+/- 450.7438

* Expanded Uncertainty displayed in same units as Grav. Conc.

Solvent: Methylene chloride

CAS # 75-09-2

Purity 99%

11574
2
912595
4.1.P.
06130

Quality Confirmation Test

Column:
30m x 0.25mm x 0.25µm
Rtx-5 (cat.#10223)

Carrier Gas:
hydrogen-constant pressure 10 psi.

Temp. Program:
75°C (hold 1 min.) to 330°C
@ 20°C/min. (hold 10 min.)

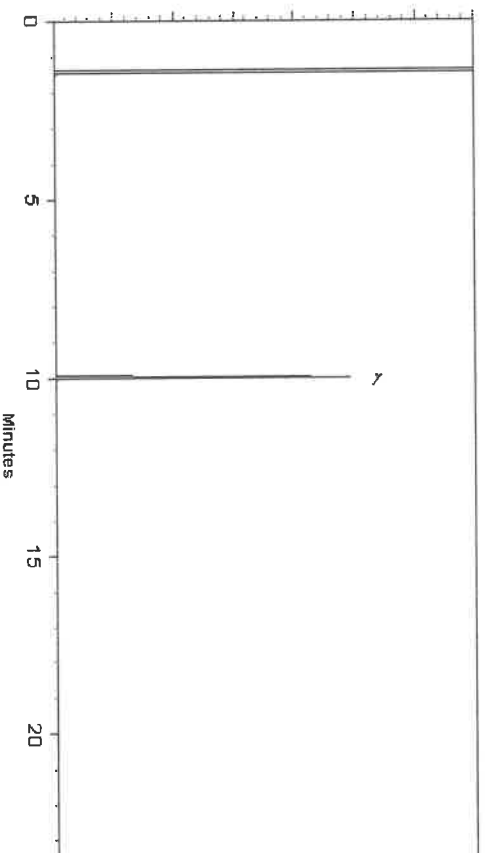
Inj. Temp:
250°C

Det. Temp:
330°C

Det. Type:
FID

Split Vent:
10 ml/min.

Inj. Vol
1µl



This chromatogram represents a general set of testing conditions chosen for product acceptance. For optimal results in your lab, conditions should be adjusted for your specific instrument, method, and application.

Alicia Leathers
Alicia Leathers - Operation Technician I
Jennifer Polino
Jennifer Polino - Operations Tech III - RRM GC

Date Mixed: 03-May-2023
Balance Serial # 1128360905
Date Passed: 08-May-2023

Manufactured under Restek's ISO 9001:2015
Registered Quality System
Certificate #FIM 80397

General Certified Reference Material Notes

Expiration Notes:

- Expiration date valid for unopened ampul stored in compliance with the recommended conditions.
- Uncertainty, concentration, and expiration of the CRM are based on the unopened product being stored according to the recommended condition found in the storage field.

Purity Notes:

- Purity and/or chemical identity are determined by one or more of the following techniques: GC/FID, HPLC, GC/μECD, GC/MS, LC/MS, RI, and/or melting point.
- Compounds with a listed purity of less than 99% have been weight corrected to compensate for impurities and/or salts. A correction factor is used to calculate the amount of compound necessary to achieve the desired concentration of the parent compound in solution.
- Purity of isomeric compounds is reported as the sum of the isomers.
- Purity values are rounded to the nearest whole number.

Certified Uncertainty Value Notes:

- The uncertainties are determined in accordance with ISO 17034 and Guide 35. The certified expanded uncertainty value includes gravimetric uncertainty, homogeneity between-ampul uncertainty, storage stability uncertainty and shipping stability uncertainty and were combined using the following formula:

$$U_{combined\ uncertainty} = k \sqrt{u_{gravimetric}^2 + u_{homogeneity}^2 + u_{storage\ stability}^2 + u_{shipping\ stability}^2}$$

k is a coverage factor of 2, which gives a level of confidence of approximately 95%.

- The packaged amount is the minimum sample size for which uncertainty is valid. The ampuls are over-filled to ensure that the minimum packaged amount can be sufficiently transferred.

Manufacturing Notes:

- Concentration is based upon gravimetric preparation using either a balance whose calibration has been verified daily using NIST traceable weights, and/or dilutions with Class A glassware.

Handling Notes:

- Stability of the unopened product, when stored in compliance with the recommended conditions, is guaranteed through the expiration displayed on the product label and certificate. Contact Restek for additional opened product stability information, with the knowledge/understanding that open product stability is subject to the specific handling and environmental conditions to which the product is exposed. For your convenience Restek supplies deactivated vials with most standards packed in 2mL ampuls. Larger volume deactivated vials are available through Restek as a custom ordered item. Additionally, Restek sells DMDCS for the purpose of glassware deactivation as catalog number 31861, which includes complete instructions.

- If any undissolved material is visible inside the ampul, sonicate the unopened ampul until the material is completely dissolved.



Safety Data Sheet

Revision Date: 05/04/23

www.restek.com

2 Letter ISO country code/language code: US/EN

1. IDENTIFICATION

Catalog Number / Product Name:
Company:
Address:
Phone#:
Fax#:
Emergency#:
Email:
Revision Number:
Intended use:

31097 / o-Terphenyl Standard
Restek Corporation
110 Benner Circle
Bellefonte, Pa. 16823
814-353-1300
814-353-1309
800-424-9300 (CHEMTREC)
703-527-3887 (Outside the US)
www.restek.com
15

For Laboratory use only. This chemical/product is not and cannot be distributed in commerce (as defined in TSCA section 3(5)) or processed (as defined in TSCA section 3(13)) for consumer paint or coating removal.

2. HAZARD(S) IDENTIFICATION

Emergency Overview:

GHS Hazard
Symbols:



GHS
Classification: Carcinogenicity Category 2

GHS Signal
Word: Warning

GHS Hazard:
GHS
Precautions: Suspected of causing cancer.

Safety
Precautions: Obtain special instructions before use.
Do not handle until all safety precautions have been read and understood.
Wear protective gloves/protective clothing/eye protection/face protection.

First Aid
Measures: If exposed or concerned: Get medical advice/attention.

Storage: Store locked up.

Disposal: Dispose of contents/container according to section 13 of the SDS.

Single
Exposure
Target Organs: No data available

Repeated
Exposure
Target Organs: No data available

3. COMPOSITION / INFORMATION ON INGREDIENT

Chemical Name	CAS #	INEC #	% Composition
Methylene chloride (dichloromethane)	75-09-2	200-838-9	99
o-terphenyl	84-15-1	201-517-6	1

4. FIRST-AID MEASURES

Inhalation:	Remove to fresh air. If breathing is difficult, have a trained individual administer oxygen. If not breathing, give artificial respiration and have a trained individual administer oxygen. Get medical attention immediately.
Eyes:	Immediately flush eyes with plenty of water for at least 20 minutes retracting eyelids often. Tilt the head to prevent chemical from transferring to the uncontaminated eye. Get immediate medical attention and monitor the eye daily as advised by your physician. Serious harm (damage) may result if treatment is delayed. Continue to flush eyes while awaiting medical attention
Skin Contact:	Wash with soap and water. Remove contaminated clothing, launder immediately, and discard contaminated leather goods. Get medical attention immediately.
Ingestion:	Do not induce vomiting and seek medical attention immediately. Drink two glasses of water or milk to dilute. Provide medical care provider with this SDS. Never give anything by mouth to an unconscious person

5. FIRE-FIGHTING MEASURES

Extinguishing Media:	Use alcohol resistant foam, carbon dioxide, or dry chemical when fighting fires. Water or foam may cause frothing if liquid is burning but it still may be a useful extinguishing agent if carefully applied to the surface of the fire. Do Not direct a stream of water into the hot burning liquid. Use methods suitable to fight surrounding fire.
Fire and/or Explosion Hazards:	Material may be ignited only if preheated to temperatures above the high flash point, for example in a fire.
Fire Fighting Methods and Protection:	Do not enter fire area without proper protection including self- contained breathing apparatus and full protective equipment.
Hazardous Combustion Products:	Carbon dioxide, Carbon monoxide

6. ACCIDENTAL RELEASE MEASURES

Personal Precautions and Equipment:	Exposure to the spilled material may be severely irritating or toxic. Follow personal protective equipment recommendations found in Section 8 of this SDS. Personal protective equipment needs must be evaluated based on information provided on this sheet and the special circumstances created by the spill including: the material spilled, the quantity of the spill, the area in which the spill occurred, and the expertise of employees in the area responding to the spill. Never exceed any occupational exposure limits.
Methods for Clean-up:	Prevent the spread of any spill to minimize harm to human health and the environment if safe to do so. Wear complete and proper personal protective equipment following the recommendation of Section 8 at a minimum. Dike with suitable absorbent material like granulated clay. Gather and store in a sealed container pending a waste disposal evaluation.

7. HANDLING AND STORAGE

Handling Technical Measures and Precautions:	Toxic or severely irritating material. Avoid contacting and avoid breathing the material. Use only in a well ventilated area. As with all chemicals, good industrial hygiene practices should be followed when handling this material.
Storage Technical Measures and Conditions:	Store in a cool dry place. Isolate from incompatible materials. Keep container closed when not in use

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

United States:					
Chemical Name	CAS No.	IDLH	ACGIH STEL	ACGIH TLV-TWA	OSHA Exposure Limit
Methylene chloride (dichloromethane)	75-09-2	2300 ppm IDLH	None Known	50 ppm TWA	25 ppm TWA; 125 ppm STEL (15 min. TWA)

o-terphenyl	84-15-1	500 mg/m3 IDLH	None Known	Not established	No data available
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Personal Protection:

Local exhaust ventilation or other engineering controls are normally required when handling or using this product to avoid overexposure.

Engineering Measures: Respiratory protection may be required to avoid overexposure when handling this product. General or local exhaust ventilation is the preferred means of protection.

Respiratory Protection: Use a respirator if general room ventilation is not available or sufficient to eliminate symptoms.

Eye Protection: Wear chemically resistant safety glasses with side shields when handling this product. Wear additional eye protection such as chemical splash goggles and/or face shield when the possibility exists for eye contact with splashing or spraying liquid, or airborne material. Do not wear contact lenses. Have an eye wash station available.

Skin Protection: Avoid skin contact by wearing chemically resistant gloves, an apron and other protective equipment depending upon conditions of use. Inspect gloves for chemical break-through and replace at regular intervals. Clean protective equipment regularly. Wash hands and other exposed areas with mild soap and water before eating, drinking, and when leaving work.

Medical Conditions Aggravated By Exposure: Eye disease Skin disease including eczema and sensitization Respiratory disease including asthma and bronchitis

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance, color:	Colorless
Odor:	Strong
Physical State:	No data available
pH:	Not applicable
Vapor Pressure:	No data available
Boiling Point (°C):	2.93 (air = 1)
Melting Point (°C):	40 °C at 1013 hPa (ECHA_API)
Flash Point (°F):	-96.7 °C.
Flammability:	230
Upper Flammable/Explosive Limit, % in air:	Combustible at elevated temperatures
Lower Flammable/Explosive Limit, % in air:	No data available
Autoignition Temperature (°C):	No data available
Decomposition Temperature (°C):	556 deg C
Specific Gravity:	No data available
Evaporation Rate:	1.3254 - 1.3258 g/cm3 at 20 °C
Odor Threshold:	No data available
Solubility:	ND
Partition Coefficient: n-octanol in water:	Moderate; 50-99%
VOC % by weight:	No data available
Molecular Weight:	99
	No data available

10. STABILITY AND REACTIVITY

Stability: Stable under normal conditions.

Conditions to Avoid: Temperatures above the high flash point of this combustible material in combination with sparks, open flames, or other sources of ignition. Contamination High temperatures

Materials to Avoid / Chemical Incompatibility: Strong oxidizing agents Cautics (bases)

Hazardous Decomposition Products: Carbon dioxide Carbon monoxide

11. TOXICOLOGICAL INFORMATION

Routes of Entry: Inhalation Absorption Ingestion Skin contact Eye contact

Target Organs Potentially Affected By Exposure: Skin, Cardiovascular System, Eyes, Liver, Respiratory Tract

Chemical Interactions That Change Toxicity: None Known

Immediate (Acute) Health Effects by Route of Exposure:

Inhalation Irritation: Can cause moderate respiratory irritation, dizziness, weakness, fatigue, nausea and headache.

Inhalation Toxicity: Harmful! Can cause systemic damage (see "Target Organs")Inhalation may cause severe central nervous system depression (including unconsciousness).

Skin Contact: Contact causes severe skin irritation and possible burns.

Skin Absorption: Harmful if absorbed through the skin. May cause severe irritation and systemic damage.

Eye Contact: Contact with the eyes may cause moderate to severe eye injury. Eye contact may result in tearing and reddening, but not likely to permanently injure eye tissue. Temporary vision impairment (cloudy or blurred vision) is possible.

Ingestion Irritation: Irritating to mouth, throat, and stomach. Can cause abdominal discomfort, nausea, vomiting and diarrhea.

Ingestion Toxicity: Harmful if swallowed. May cause systemic poisoning.

Long-Term (Chronic) Health Effects:

Carcinogenicity: Contains a probable or known human carcinogen.

Reproductive and Developmental Toxicity: No data available to indicate product or any components present at greater than 0.1% may cause birth defects.

Inhalation: Upon prolonged and/or repeated exposure, can cause moderate respiratory irritation, dizziness, weakness, fatigue, nausea and headache.Harmful! Can cause systemic damage upon prolonged and/or repeated exposure (see "Target Organs")

Skin Absorption: Upon prolonged or repeated exposure, harmful if absorbed through the skin. May cause severe irritation and systemic damage

Component Toxicological Data:

NIOSH: **CAS No.**
Chemical Name 84-15-1
o-Terphenyl
75-09-2
Dichloromethane

LD50/LC50
Oral LD50 Rat 1900 mg/kg
Dermal LD50 Rat >2000 mg/kg; Inhalation LC50 Rat 53 mg/L 6 h; Oral LD50 Rat 1600 mg/kg

Component Carcinogenic Data:

OSHA: **CAS No.**
Chemical Name 75-09-2
Methylene chloride

25 ppm TWA (8 hr.); 125 ppm STEL (15 min.);
12.5 ppm Action Level (see 29 CFR 1910.1051); effective date for respiratory protection for certain employers to achieve the 8-hour TWA PEL is August 31, 1998; the start up date to install engineering controls is December 10, 1998.; {OSHA - 29 CFR 1910 Specifically Regulate

ACGIH: **CAS No.**
Chemical Name 75-09-2
Dichloromethane

A3 - Confirmed Animal Carcinogen with Unknown Relevance to Humans

NIOSH: **CAS No.**
Chemical Name 75-09-2
Methylene chloride

potential occupational carcinogen

NTP: **CAS No.**
Chemical Name
No data available

IARC: **CAS No.**
Chemical Name 75-09-2
Monograph 110 [2017];
Monograph 71 [1999]

Group No.
Group 2A

12. ECOLOGICAL INFORMATION

Overview: Moderate ecological hazard. This product may be dangerous

Mobility:
Persistence:
Bioaccumulation:
Degradability:
Ecological Toxicity Data:

to plants and/or wildlife. Keep out of waterways.
No data
No data
No data
No data
No data available

13. DISPOSAL CONSIDERATIONS

Waste Description of Spent Product:

Disposal Methods:

Waste Disposal of Packaging:

Spent or discarded material is a hazardous waste. Mixing spent or discarded material with other materials may render the mixture hazardous. Perform a hazardous waste determination on mixtures.
Incinerate spent or discarded material a permitted hazardous waste facility.
Comply with all Local, State, Federal, and Provincial Environmental Regulations.

14. TRANSPORTATION INFORMATION

United States:

DOT Proper Shipping Name:

Toxic, liquids, organic, n.o.s. (Dichloromethane, o-Terphenyl)

UN Number:

UN2810

Hazard Class:

6.1

Packing Group:

III

International:

IATA Proper Shipping Name:

Toxic, liquids, organic, n.o.s. (Dichloromethane, o-Terphenyl)

UN2810

6.1

III

Hazard Class:

6.1

Packing Group:

III

Marine Pollutant: No

Chemical Name	CAS#	Marine Pollutant	Severe Marine Pollutant
No data available			

15. REGULATORY INFORMATION

United States:

This chemical/product is not and cannot be distributed in commerce (as defined in TSCA section 3(5)) or processed (as defined in TSCA section 3(13)) for consumer paint or coating removal.

Chemical Name	CAS#	CERCLA	SARA 313	SARA EHS 313	TSCA
Methylene chloride (dichloromethane)	75-09-2	X	X	-	X
o-terphenyl	84-15-1	-	-	-	X

The following chemicals are listed on CA Prop 65:

Chemical Name	CAS #	Regulation
Dichloromethane	75-09-2	Prop 65 Cancer
Dichloromethane (Methylene chloride)		

State Right To Know Listing:

Chemical Name	CAS#	New Jersey	Massachusetts	Pennsylvania	California
Methylene chloride (dichloromethane)	75-09-2	X	X	X	X
o-terphenyl	84-15-1	-	X	-	-

16. OTHER INFORMATION

Prior Version Date: 04/27/23

Other Information: Any changes to the SDS compared to previous versions are marked by a vertical line in front of the concerned paragraph.

References:

No data available

Disclaimer:

Restek Corporation provides the descriptions, data and information contained herein in good faith but makes no representation as to its comprehensiveness or accuracy. It is provided for your guidance only. Because many factors may affect processing or application/use, Restek Corporation recommends you perform an assessment to determine the suitability of a product for your particular purpose prior to use. No warranties of any kind, either expressed or implied, including fitness for a particular purpose, are made regarding products described, data or information set forth. In no case shall the descriptions, information, or data provided be considered a part of our terms and conditions of sale. Further, the descriptions, data and information furnished hereunder are given gratis. No obligation or liability for the description, data and information given are assumed. All such being given and accepted at your risk.



CERTIFIED REFERENCE MATERIAL



ISO 17025 Accredited
Reference Material Producer
Certificate # 2322301

110 Benner Circle
Bellefonte, PA 16823-8812
Tel: 1-814-353-1300
Fax: 1-814-353-1309

www.restek.com

Certificate of Analysis

chromatographic plus



ISO/IEC 17025 Accredited
Testing Laboratory
Certificate # 1322202

FOR LABORATORY USE ONLY-READ SDS PRIOR TO USE.

This Reference Material is intended for Laboratory Use Only as a standard for the qualitative and/or quantitative determination of the analyte(s) listed.

Catalog No. : 31097

Lot No.: A0197729

Description : o-Terphenyl Standard

o-Terphenyl Standard 10,000 µg/mL, Methylene Chloride, 1mL/ampul

Container Size : 2 mL

Pkg Amt: > 1 mL

Expiration Date : December 31, 2026

Storage: 10°C or colder

Handling: Sonicate prior to use.

Ship: Ambient

CERTIFIED VALUES

Elution Order	Compound	CAS #	Lot #	Purity	Grav. Conc. (weight/volume)	Expanded Uncertainty* (95% C.I., K=2)
1	o-Terphenyl	84-15-1	MKCH4487	99%	10,007.5 µg/mL	+/- 450.7438

* Expanded Uncertainty displayed in same units as Grav. Conc.

Solvent: Methylene chloride

CAS # 75-09-2

Purity 99%

11574
2
9.18
012595
06130

Quality Confirmation Test

Column:
30m x 0.25mm x 0.25µm
Rtx-5 (cat.#10223)

Carrier Gas:
hydrogen-constant pressure 10 psi.

Temp. Program:
75°C (hold 1 min.) to 330°C
@ 20°C/min. (hold 10 min.)

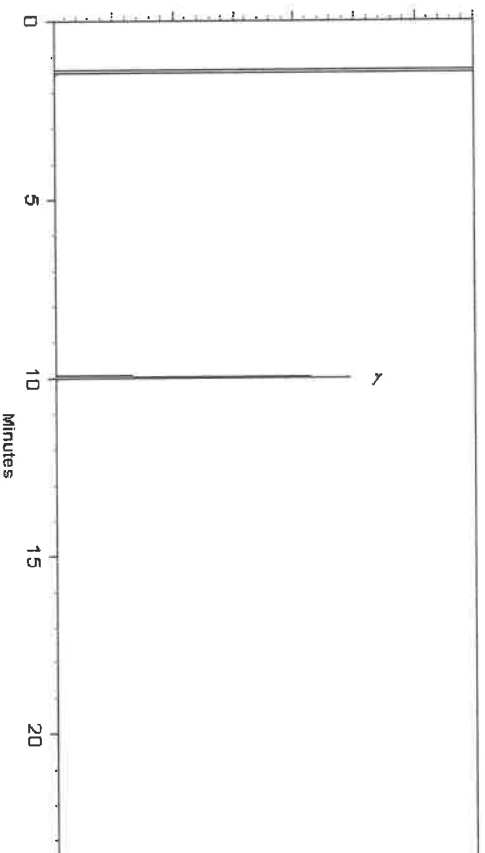
Inj. Temp:
250°C

Det. Temp:
330°C

Det. Type:
FID

Split Vent:
10 ml/min.

Inj. Vol
1µl



This chromatogram represents a general set of testing conditions chosen for product acceptance. For optimal results in your lab, conditions should be adjusted for your specific instrument, method, and application.

Alicia Leathers
Alicia Leathers - Operation Technician I
Jennifer Polino
Jennifer Polino - Operations Tech III - RRM GC

Date Mixed: 03-May-2023
Balance Serial # 1128360905
Date Passed: 08-May-2023

Manufactured under Restek's ISO 9001:2015
Registered Quality System
Certificate #FIM 80397

General Certified Reference Material Notes

Expiration Notes:

- Expiration date valid for unopened ampul stored in compliance with the recommended conditions.
- Uncertainty, concentration, and expiration of the CRM are based on the unopened product being stored according to the recommended condition found in the storage field.

Purity Notes:

- Purity and/or chemical identity are determined by one or more of the following techniques: GC/FID, HPLC, GC/μECD, GC/MS, LC/MS, RI, and/or melting point.
- Compounds with a listed purity of less than 99% have been weight corrected to compensate for impurities and/or salts. A correction factor is used to calculate the amount of compound necessary to achieve the desired concentration of the parent compound in solution.
- Purity of isomeric compounds is reported as the sum of the isomers.
- Purity values are rounded to the nearest whole number.

Certified Uncertainty Value Notes:

- The uncertainties are determined in accordance with ISO 17034 and Guide 35. The certified expanded uncertainty value includes gravimetric uncertainty, homogeneity between-ampul uncertainty, storage stability uncertainty and shipping stability uncertainty and were combined using the following formula:

$$U_{combined\ uncertainty} = k \sqrt{u_{gravimetric}^2 + u_{homogeneity}^2 + u_{storage\ stability}^2 + u_{shipping\ stability}^2}$$

k is a coverage factor of 2, which gives a level of confidence of approximately 95%.

- The packaged amount is the minimum sample size for which uncertainty is valid. The ampuls are over-filled to ensure that the minimum packaged amount can be sufficiently transferred.

Manufacturing Notes:

- Concentration is based upon gravimetric preparation using either a balance whose calibration has been verified daily using NIST traceable weights, and/or dilutions with Class A glassware.

Handling Notes:

- Stability of the unopened product, when stored in compliance with the recommended conditions, is guaranteed through the expiration displayed on the product label and certificate. Contact Restek for additional opened product stability information, with the knowledge/understanding that open product stability is subject to the specific handling and environmental conditions to which the product is exposed. For your convenience Restek supplies deactivated vials with most standards packed in 2mL ampuls. Larger volume deactivated vials are available through Restek as a custom ordered item. Additionally, Restek sells DMDCS for the purpose of glassware deactivation as catalog number 31861, which includes complete instructions.

- If any undissolved material is visible inside the ampul, sonicate the unopened ampul until the material is completely dissolved.



Safety Data Sheet

Revision Date: 05/04/23

www.restek.com

2 Letter ISO country code/language code: US/EN

1. IDENTIFICATION

Catalog Number / Product Name:
Company:
Address:
Phone#:
Fax#:
Emergency#:
Email:
Revision Number:
Intended use:

31097 / o-Terphenyl Standard
Restek Corporation
110 Benner Circle
Bellefonte, Pa. 16823
814-353-1300
814-353-1309
800-424-9300 (CHEMTREC)
703-527-3887 (Outside the US)
www.restek.com
15

For Laboratory use only. This chemical/product is not and cannot be distributed in commerce (as defined in TSCA section 3(5)) or processed (as defined in TSCA section 3(13)) for consumer paint or coating removal.

2. HAZARD(S) IDENTIFICATION

Emergency Overview:

GHS Hazard
Symbols:



GHS
Classification: Carcinogenicity Category 2

GHS Signal
Word: Warning

GHS Hazard:
Suspected of causing cancer.

GHS
Precautions:

Safety
Precautions: Obtain special instructions before use.
Do not handle until all safety precautions have been read and understood.
Wear protective gloves/protective clothing/eye protection/face protection.

First Aid
Measures: If exposed or concerned: Get medical advice/attention.

Storage: Store locked up.

Disposal: Dispose of contents/container according to section 13 of the SDS.

Single
Exposure
Target Organs: No data available

Repeated
Exposure
Target Organs: No data available

3. COMPOSITION / INFORMATION ON INGREDIENT

Chemical Name	CAS #	INEC #	% Composition
Methylene chloride (dichloromethane)	75-09-2	200-838-9	99
o-terphenyl	84-15-1	201-517-6	1

4. FIRST-AID MEASURES

Inhalation:	Remove to fresh air. If breathing is difficult, have a trained individual administer oxygen. If not breathing, give artificial respiration and have a trained individual administer oxygen. Get medical attention immediately.
Eyes:	Immediately flush eyes with plenty of water for at least 20 minutes retracting eyelids often. Tilt the head to prevent chemical from transferring to the uncontaminated eye. Get immediate medical attention and monitor the eye daily as advised by your physician. Serious harm (damage) may result if treatment is delayed. Continue to flush eyes while awaiting medical attention
Skin Contact:	Wash with soap and water. Remove contaminated clothing, launder immediately, and discard contaminated leather goods. Get medical attention immediately.
Ingestion:	Do not induce vomiting and seek medical attention immediately. Drink two glasses of water or milk to dilute. Provide medical care provider with this SDS. Never give anything by mouth to an unconscious person

5. FIRE-FIGHTING MEASURES

Extinguishing Media:	Use alcohol resistant foam, carbon dioxide, or dry chemical when fighting fires. Water or foam may cause frothing if liquid is burning but it still may be a useful extinguishing agent if carefully applied to the surface of the fire. Do Not direct a stream of water into the hot burning liquid. Use methods suitable to fight surrounding fire.
Fire and/or Explosion Hazards:	Material may be ignited only if preheated to temperatures above the high flash point, for example in a fire.
Fire Fighting Methods and Protection:	Do not enter fire area without proper protection including self- contained breathing apparatus and full protective equipment.
Hazardous Combustion Products:	Carbon dioxide, Carbon monoxide

6. ACCIDENTAL RELEASE MEASURES

Personal Precautions and Equipment:	Exposure to the spilled material may be severely irritating or toxic. Follow personal protective equipment recommendations found in Section 8 of this SDS. Personal protective equipment needs must be evaluated based on information provided on this sheet and the special circumstances created by the spill including: the material spilled, the quantity of the spill, the area in which the spill occurred, and the expertise of employees in the area responding to the spill. Never exceed any occupational exposure limits.
Methods for Clean-up:	Prevent the spread of any spill to minimize harm to human health and the environment if safe to do so. Wear complete and proper personal protective equipment following the recommendation of Section 8 at a minimum. Dike with suitable absorbent material like granulated clay. Gather and store in a sealed container pending a waste disposal evaluation.

7. HANDLING AND STORAGE

Handling Technical Measures and Precautions:	Toxic or severely irritating material. Avoid contacting and avoid breathing the material. Use only in a well ventilated area. As with all chemicals, good industrial hygiene practices should be followed when handling this material.
Storage Technical Measures and Conditions:	Store in a cool dry place. Isolate from incompatible materials. Keep container closed when not in use

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

United States:					
Chemical Name	CAS No.	IDLH	ACGIH STEL	ACGIH TLV-TWA	OSHA Exposure Limit
Methylene chloride (dichloromethane)	75-09-2	2300 ppm IDLH	None Known	50 ppm TWA	25 ppm TWA; 125 ppm STEL (15 min. TWA)

o-terphenyl	84-15-1	500 mg/m3 IDLH	None Known	Not established	No data available
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Personal Protection:

Local exhaust ventilation or other engineering controls are normally required when handling or using this product to avoid overexposure.

Engineering Measures:

Respiratory Protection:

Respiratory protection may be required to avoid overexposure when handling this product. General or local exhaust ventilation is the preferred means of protection. Use a respirator if general room ventilation is not available or sufficient to eliminate symptoms.

Eye Protection:

Wear chemically resistant safety glasses with side shields when handling this product. Wear additional eye protection such as chemical splash goggles and/or face shield when the possibility exists for eye contact with splashing or spraying liquid, or airborne material. Do not wear contact lenses. Have an eye wash station available.

Skin Protection:

Avoid skin contact by wearing chemically resistant gloves, an apron and other protective equipment depending upon conditions of use. Inspect gloves for chemical break-through and replace at regular intervals. Clean protective equipment regularly. Wash hands and other exposed areas with mild soap and water before eating, drinking, and when leaving work.

Medical Conditions Aggravated By Exposure:

Eye disease Skin disease including eczema and sensitization Respiratory disease including asthma and bronchitis

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance, color:	Colorless
Odor:	Strong
Physical State:	No data available
pH:	Not applicable
Vapor Pressure:	No data available
Boiling Point (°C):	2.93 (air = 1)
Melting Point (°C):	40 °C at 1013 hPa (ECHA_API)
Flash Point (°F):	-96.7 °C.
Flammability:	230
Upper Flammable/Explosive Limit, % in air:	Combustible at elevated temperatures
Lower Flammable/Explosive Limit, % in air:	No data available
Autoignition Temperature (°C):	No data available
Decomposition Temperature (°C):	556 deg C
Specific Gravity:	No data available
Evaporation Rate:	1.3254 - 1.3258 g/cm3 at 20 °C
Odor Threshold:	No data available
Solubility:	ND
Partition Coefficient: n-octanol in water:	Moderate; 50-99%
VOC % by weight:	No data available
Molecular Weight:	99
	No data available

10. STABILITY AND REACTIVITY

Stability:	Stable under normal conditions.
Conditions to Avoid:	Temperatures above the high flash point of this combustible material in combination with sparks, open flames, or other sources of ignition. Contamination High temperatures

Materials to Avoid / Chemical Incompatibility:

Strong oxidizing agents Cautics (bases)

Hazardous Decomposition Products:

Carbon dioxide Carbon monoxide

11. TOXICOLOGICAL INFORMATION

Routes of Entry:	Inhalation Absorption Ingestion Skin contact Eye contact
Target Organs Potentially Affected By Exposure:	Skin, Cardiovascular System, Eyes, Liver, Respiratory Tract
Chemical Interactions That Change Toxicity:	None Known

Immediate (Acute) Health Effects by Route of Exposure:

Inhalation Irritation: Can cause moderate respiratory irritation, dizziness, weakness, fatigue, nausea and headache.

Inhalation Toxicity: Harmful! Can cause systemic damage (see "Target Organs")Inhalation may cause severe central nervous system depression (including unconsciousness).

Skin Contact: Contact causes severe skin irritation and possible burns.

Skin Absorption: Harmful if absorbed through the skin. May cause severe irritation and systemic damage.

Eye Contact: Contact with the eyes may cause moderate to severe eye injury. Eye contact may result in tearing and reddening, but not likely to permanently injure eye tissue. Temporary vision impairment (cloudy or blurred vision) is possible.

Ingestion Irritation: Irritating to mouth, throat, and stomach. Can cause abdominal discomfort, nausea, vomiting and diarrhea.

Ingestion Toxicity: Harmful if swallowed. May cause systemic poisoning.

Long-Term (Chronic) Health Effects:

Carcinogenicity: Contains a probable or known human carcinogen.

Reproductive and Developmental Toxicity: No data available to indicate product or any components present at greater than 0.1% may cause birth defects.

Inhalation: Upon prolonged and/or repeated exposure, can cause moderate respiratory irritation, dizziness, weakness, fatigue, nausea and headache.Harmful! Can cause systemic damage upon prolonged and/or repeated exposure (see "Target Organs")

Skin Absorption: Upon prolonged or repeated exposure, harmful if absorbed through the skin. May cause severe irritation and systemic damage

Component Toxicological Data:

NIOSH: **CAS No.** **LD50/LC50**

Chemical Name Oral LD50 Rat 1900 mg/kg

o-Terphenyl Dermal LD50 Rat >2000 mg/kg; Inhalation LC50

Dichloromethane Rat 53 mg/L 6 h; Oral LD50 Rat 1600 mg/kg

Component Carcinogenic Data:

OSHA: **CAS No.**

Chemical Name

Methylene chloride 75-09-2

25 ppm TWA (8 hr.); 125 ppm STEL (15 min.); 12.5 ppm Action Level (see 29 CFR 1910.1051); effective date for respiratory protection for certain employers to achieve the 8-hour TWA PEL is August 31, 1998; the start up date to install engineering controls is December 10, 1998.; {OSHA - 29 CFR 1910 Specifically Regulate

ACGIH: **CAS No.**

Chemical Name A3 - Confirmed Animal Carcinogen with

Dichloromethane 75-09-2 Unknown Relevance to Humans

NIOSH: **CAS No.**

Chemical Name potential occupational carcinogen

Methylene chloride 75-09-2

NTP: **CAS No.**

Chemical Name

No data available

IARC: **CAS No.** **Group No.**

Chemical Name 75-09-2 Group 2A

Monograph 110 [2017];

Monograph 71 [1999]

12. ECOLOGICAL INFORMATION

Overview: Moderate ecological hazard. This product may be dangerous

Mobility:
Persistence:
Bioaccumulation:
Degradability:
Ecological Toxicity Data:

to plants and/or wildlife. Keep out of waterways.

No data

No data

No data

No data

No data available

13. DISPOSAL CONSIDERATIONS

Waste Description of Spent Product:

Disposal Methods:

Waste Disposal of Packaging:

Spent or discarded material is a hazardous waste. Mixing spent or discarded material with other materials may render the mixture hazardous. Perform a hazardous waste determination on mixtures. Incinerate spent or discarded material a permitted hazardous waste facility. Comply with all Local, State, Federal, and Provincial Environmental Regulations.

14. TRANSPORTATION INFORMATION

United States:

DOT Proper Shipping Name:

Toxic, liquids, organic, n.o.s. (Dichloromethane, o-Terphenyl)

UN Number:

UN2810

Hazard Class:

6.1

Packing Group:

III

International:

IATA Proper Shipping Name:

Toxic, liquids, organic, n.o.s. (Dichloromethane, o-Terphenyl)

UN Number:

UN2810

Hazard Class:

6.1

Packing Group:

III

Marine Pollutant: No

Chemical Name	CAS#	Marine Pollutant	Severe Marine Pollutant
No data available			

15. REGULATORY INFORMATION

United States:

This chemical/product is not and cannot be distributed in commerce (as defined in TSCA section 3(5)) or processed (as defined in TSCA section 3(13)) for consumer paint or coating removal.

Chemical Name	CAS#	CERCLA	SARA 313	SARA EHS 313	TSCA
Methylene chloride (dichloromethane)	75-09-2	X	X	-	X
o-terphenyl	84-15-1	-	-	-	X

The following chemicals are listed on CA Prop 65:

Chemical Name	CAS #	Regulation
Dichloromethane	75-09-2	Prop 65 Cancer
Dichloromethane (Methylene chloride)		

State Right To Know Listing:

Chemical Name	CAS#	New Jersey	Massachusetts	Pennsylvania	California
Methylene chloride (dichloromethane)	75-09-2	X	X	X	X
o-terphenyl	84-15-1	-	X	-	-

16. OTHER INFORMATION

Prior Version Date: 04/27/23

Other Information: Any changes to the SDS compared to previous versions are marked by a vertical line in front of the concerned paragraph.

References:

No data available

Disclaimer:

Restek Corporation provides the descriptions, data and information contained herein in good faith but makes no representation as to its comprehensiveness or accuracy. It is provided for your guidance only. Because many factors may affect processing or application/use, Restek Corporation recommends you perform an assessment to determine the suitability of a product for your particular purpose prior to use. No warranties of any kind, either expressed or implied, including fitness for a particular purpose, are made regarding products described, data or information set forth. In no case shall the descriptions, information, or data provided be considered a part of our terms and conditions of sale. Further, the descriptions, data and information furnished hereunder are given gratis. No obligation or liability for the description, data and information given are assumed. All such being given and accepted at your risk.



CERTIFIED REFERENCE MATERIAL



ISO 17025 Accredited
Reference Material Producer
Certificate # 2322301



ISO/IEC 17025 Accredited
Testing Laboratory
Certificate # 1322202

110 Benner Circle

Belleville, PA 16823-8812

Tel: 1-814-353-1300

Fax: 1-814-353-1309

www.restek.com

Certificate of Analysis

chromatographic plus

FOR LABORATORY USE ONLY-READ SDS PRIOR TO USE.

This Reference Material is intended for Laboratory Use Only as a standard for the qualitative and/or quantitative determination of the analyte(s) listed.

Catalog No. : 31097

Lot No.: A0197729

Description : o-Terphenyl Standard

o-Terphenyl Standard 10,000 µg/mL, Methylene Chloride, 1mL/ampul

Container Size : 2 mL

Pkg Amt: > 1 mL

Expiration Date : December 31, 2026

Storage: 10°C or colder

Handling: Sonicate prior to use.

Ship: Ambient

CERTIFIED VALUES

Elution Order	Compound	CAS #	Lot #	Purity	Grav. Conc. (weight/volume)	Expanded Uncertainty* (95% C.L.; K=2)
1	o-Terphenyl	84-15-1	MKCH4487	99%	10,007.5 µg/mL	+/- 450.7438

* Expanded Uncertainty displayed in same units as Grav. Conc.

Solvent: Methylene chloride

CAS # 75-09-2

Purity 99%

11574
2
9.18
012595
06130

Quality Confirmation Test

Column:
30m x 0.25mm x 0.25µm
Rtx-5 (cat.#10223)

Carrier Gas:
hydrogen-constant pressure 10 psi.

Temp. Program:
75°C (hold 1 min.) to 330°C
@ 20°C/min. (hold 10 min.)

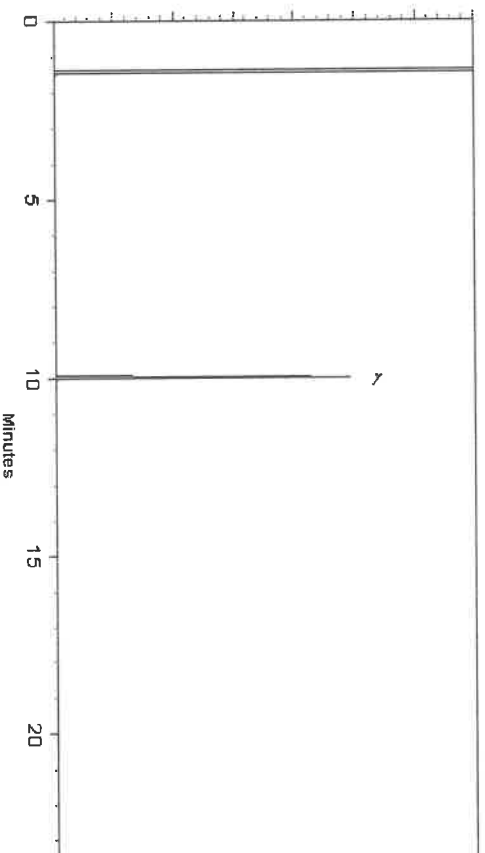
Inj. Temp:
250°C

Det. Temp:
330°C

Det. Type:
FID

Split Vent:
10 ml/min.

Inj. Vol
1µl



This chromatogram represents a general set of testing conditions chosen for product acceptance. For optimal results in your lab, conditions should be adjusted for your specific instrument, method, and application.

Alicia Leathers
Alicia Leathers - Operation Technician I
Jennifer Polino
Jennifer Polino - Operations Tech III - RRM GC

Date Mixed: 03-May-2023
Balance Serial # 1128360905
Date Passed: 08-May-2023

Manufactured under Restek's ISO 9001:2015
Registered Quality System
Certificate #FIM 80397

General Certified Reference Material Notes

Expiration Notes:

- Expiration date valid for unopened ampul stored in compliance with the recommended conditions.
- Uncertainty, concentration, and expiration of the CRM are based on the unopened product being stored according to the recommended condition found in the storage field.

Purity Notes:

- Purity and/or chemical identity are determined by one or more of the following techniques: GC/FID, HPLC, GC/μECD, GC/MS, LC/MS, RI, and/or melting point.
- Compounds with a listed purity of less than 99% have been weight corrected to compensate for impurities and/or salts. A correction factor is used to calculate the amount of compound necessary to achieve the desired concentration of the parent compound in solution.
- Purity of isomeric compounds is reported as the sum of the isomers.
- Purity values are rounded to the nearest whole number.

Certified Uncertainty Value Notes:

- The uncertainties are determined in accordance with ISO 17034 and Guide 35. The certified expanded uncertainty value includes gravimetric uncertainty, homogeneity between-ampul uncertainty, storage stability uncertainty and shipping stability uncertainty and were combined using the following formula:

$$U_{combined\ uncertainty} = k \sqrt{u_{gravimetric}^2 + u_{homogeneity}^2 + u_{storage\ stability}^2 + u_{shipping\ stability}^2}$$

k is a coverage factor of 2, which gives a level of confidence of approximately 95%.

- The packaged amount is the minimum sample size for which uncertainty is valid. The ampuls are over-filled to ensure that the minimum packaged amount can be sufficiently transferred.

Manufacturing Notes:

- Concentration is based upon gravimetric preparation using either a balance whose calibration has been verified daily using NIST traceable weights, and/or dilutions with Class A glassware.

Handling Notes:

- Stability of the unopened product, when stored in compliance with the recommended conditions, is guaranteed through the expiration displayed on the product label and certificate. Contact Restek for additional opened product stability information, with the knowledge/understanding that open product stability is subject to the specific handling and environmental conditions to which the product is exposed. For your convenience Restek supplies deactivated vials with most standards packed in 2mL ampuls. Larger volume deactivated vials are available through Restek as a custom ordered item. Additionally, Restek sells DMDCS for the purpose of glassware deactivation as catalog number 31861, which includes complete instructions.

- If any undissolved material is visible inside the ampul, sonicate the unopened ampul until the material is completely dissolved.



Safety Data Sheet

Revision Date: 05/04/23

www.restek.com

2 Letter ISO country code/language code: US/EN

1. IDENTIFICATION

Catalog Number / Product Name:
Company:
Address:
Phone#:
Fax#:
Emergency#:
Email:
Revision Number:
Intended use:

31097 / o-Terphenyl Standard
Restek Corporation
110 Benner Circle
Bellefonte, Pa. 16823
814-353-1300
814-353-1309
800-424-9300 (CHEMTREC)
703-527-3887 (Outside the US)
www.restek.com
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For Laboratory use only. This chemical/product is not and cannot be distributed in commerce (as defined in TSCA section 3(5)) or processed (as defined in TSCA section 3(13)) for consumer paint or coating removal.

2. HAZARD(S) IDENTIFICATION

Emergency Overview:

GHS Hazard
Symbols:



GHS
Classification: Carcinogenicity Category 2

GHS Signal
Word: Warning

GHS Hazard:
GHS
Precautions: Suspected of causing cancer.

Safety
Precautions: Obtain special instructions before use.
Do not handle until all safety precautions have been read and understood.
Wear protective gloves/protective clothing/eye protection/face protection.

First Aid
Measures: If exposed or concerned: Get medical advice/attention.

Storage: Store locked up.

Disposal: Dispose of contents/container according to section 13 of the SDS.

Single
Exposure
Target Organs: No data available

Repeated
Exposure
Target Organs: No data available

3. COMPOSITION / INFORMATION ON INGREDIENT

Chemical Name	CAS #	INEC #	% Composition
Methylene chloride (dichloromethane)	75-09-2	200-838-9	99
o-terphenyl	84-15-1	201-517-6	1

4. FIRST-AID MEASURES

Inhalation:	Remove to fresh air. If breathing is difficult, have a trained individual administer oxygen. If not breathing, give artificial respiration and have a trained individual administer oxygen. Get medical attention immediately.
Eyes:	Immediately flush eyes with plenty of water for at least 20 minutes retracting eyelids often. Tilt the head to prevent chemical from transferring to the uncontaminated eye. Get immediate medical attention and monitor the eye daily as advised by your physician. Serious harm (damage) may result if treatment is delayed. Continue to flush eyes while awaiting medical attention
Skin Contact:	Wash with soap and water. Remove contaminated clothing, launder immediately, and discard contaminated leather goods. Get medical attention immediately.
Ingestion:	Do not induce vomiting and seek medical attention immediately. Drink two glasses of water or milk to dilute. Provide medical care provider with this SDS. Never give anything by mouth to an unconscious person

5. FIRE-FIGHTING MEASURES

Extinguishing Media:	Use alcohol resistant foam, carbon dioxide, or dry chemical when fighting fires. Water or foam may cause frothing if liquid is burning but it still may be a useful extinguishing agent if carefully applied to the surface of the fire. Do Not direct a stream of water into the hot burning liquid. Use methods suitable to fight surrounding fire.
Fire and/or Explosion Hazards:	Material may be ignited only if preheated to temperatures above the high flash point, for example in a fire.
Fire Fighting Methods and Protection:	Do not enter fire area without proper protection including self- contained breathing apparatus and full protective equipment.
Hazardous Combustion Products:	Carbon dioxide, Carbon monoxide

6. ACCIDENTAL RELEASE MEASURES

Personal Precautions and Equipment:	Exposure to the spilled material may be severely irritating or toxic. Follow personal protective equipment recommendations found in Section 8 of this SDS. Personal protective equipment needs must be evaluated based on information provided on this sheet and the special circumstances created by the spill including: the material spilled, the quantity of the spill, the area in which the spill occurred, and the expertise of employees in the area responding to the spill. Never exceed any occupational exposure limits.
Methods for Clean-up:	Prevent the spread of any spill to minimize harm to human health and the environment if safe to do so. Wear complete and proper personal protective equipment following the recommendation of Section 8 at a minimum. Dike with suitable absorbent material like granulated clay. Gather and store in a sealed container pending a waste disposal evaluation.

7. HANDLING AND STORAGE

Handling Technical Measures and Precautions:	Toxic or severely irritating material. Avoid contacting and avoid breathing the material. Use only in a well ventilated area. As with all chemicals, good industrial hygiene practices should be followed when handling this material.
Storage Technical Measures and Conditions:	Store in a cool dry place. Isolate from incompatible materials. Keep container closed when not in use

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

United States:					
Chemical Name	CAS No.	IDLH	ACGIH STEL	ACGIH TLV-TWA	OSHA Exposure Limit
Methylene chloride (dichloromethane)	75-09-2	2300 ppm IDLH	None Known	50 ppm TWA	25 ppm TWA; 125 ppm STEL (15 min. TWA)

o-terphenyl	84-15-1	500 mg/m3 IDLH	None Known	Not established	No data available
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Personal Protection:

Local exhaust ventilation or other engineering controls are normally required when handling or using this product to avoid overexposure.

Engineering Measures:

Respiratory Protection:

Respiratory protection may be required to avoid overexposure when handling this product. General or local exhaust ventilation is the preferred means of protection. Use a respirator if general room ventilation is not available or sufficient to eliminate symptoms.

Eye Protection:

Wear chemically resistant safety glasses with side shields when handling this product. Wear additional eye protection such as chemical splash goggles and/or face shield when the possibility exists for eye contact with splashing or spraying liquid, or airborne material. Do not wear contact lenses. Have an eye wash station available.

Skin Protection:

Avoid skin contact by wearing chemically resistant gloves, an apron and other protective equipment depending upon conditions of use. Inspect gloves for chemical break-through and replace at regular intervals. Clean protective equipment regularly. Wash hands and other exposed areas with mild soap and water before eating, drinking, and when leaving work.

Medical Conditions Aggravated By Exposure:

Eye disease Skin disease including eczema and sensitization Respiratory disease including asthma and bronchitis

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance, color:	Colorless
Odor:	Strong
Physical State:	No data available
pH:	Not applicable
Vapor Pressure:	No data available
Boiling Point (°C):	2.93 (air = 1)
Melting Point (°C):	40 °C at 1013 hPa (ECHA_API)
Flash Point (°F):	-96.7 °C.
Flammability:	230
Upper Flammable/Explosive Limit, % in air:	Combustible at elevated temperatures
Lower Flammable/Explosive Limit, % in air:	No data available
Autoignition Temperature (°C):	No data available
Decomposition Temperature (°C):	556 deg C
Specific Gravity:	No data available
Evaporation Rate:	1.3254 - 1.3258 g/cm3 at 20 °C
Odor Threshold:	No data available
Solubility:	ND
Partition Coefficient: n-octanol in water:	Moderate; 50-99%
VOC % by weight:	No data available
Molecular Weight:	99
	No data available

10. STABILITY AND REACTIVITY

Stability:	Stable under normal conditions.
Conditions to Avoid:	Temperatures above the high flash point of this combustible material in combination with sparks, open flames, or other sources of ignition. Contamination High temperatures

Materials to Avoid / Chemical Incompatibility:	Strong oxidizing agents Cautics (bases)
Hazardous Decomposition Products:	Carbon dioxide Carbon monoxide

11. TOXICOLOGICAL INFORMATION

Routes of Entry:	Inhalation Absorption Ingestion Skin contact Eye contact
Target Organs Potentially Affected By Exposure:	Skin, Cardiovascular System, Eyes, Liver, Respiratory Tract
Chemical Interactions That Change Toxicity:	None Known

Immediate (Acute) Health Effects by Route of Exposure:

Inhalation Irritation:	Can cause moderate respiratory irritation, dizziness, weakness, fatigue, nausea and headache.
-------------------------------	---

Inhalation Toxicity: Harmful! Can cause systemic damage (see "Target Organs")Inhalation may cause severe central nervous system depression (including unconsciousness).

Skin Contact: Contact causes severe skin irritation and possible burns.

Skin Absorption: Harmful if absorbed through the skin. May cause severe irritation and systemic damage.

Eye Contact: Contact with the eyes may cause moderate to severe eye injury. Eye contact may result in tearing and reddening, but not likely to permanently injure eye tissue. Temporary vision impairment (cloudy or blurred vision) is possible.

Ingestion Irritation: Irritating to mouth, throat, and stomach. Can cause abdominal discomfort, nausea, vomiting and diarrhea.

Ingestion Toxicity: Harmful if swallowed. May cause systemic poisoning.

Long-Term (Chronic) Health Effects:

Carcinogenicity: Contains a probable or known human carcinogen.

Reproductive and Developmental Toxicity: No data available to indicate product or any components present at greater than 0.1% may cause birth defects.

Inhalation: Upon prolonged and/or repeated exposure, can cause moderate respiratory irritation, dizziness, weakness, fatigue, nausea and headache.Harmful! Can cause systemic damage upon prolonged and/or repeated exposure (See "Target Organs")

Skin Absorption: Upon prolonged or repeated exposure, harmful if absorbed through the skin. May cause severe irritation and systemic damage

Component Toxicological Data:

NIOSH: **CAS No.** **LD50/LC50**

Chemical Name Oral LD50 Rat 1900 mg/kg

o-Terphenyl Dermal LD50 Rat >2000 mg/kg; Inhalation LC50

Dichloromethane Rat 53 mg/L 6 h; Oral LD50 Rat 1600 mg/kg

Component Carcinogenic Data:

OSHA: **CAS No.**

Chemical Name

Methylene chloride 75-09-2

25 ppm TWA (8 hr.); 125 ppm STEL (15 min.); 12.5 ppm Action Level (see 29 CFR 1910.1051); effective date for respiratory protection for certain employers to achieve the 8-hour TWA PEL is August 31, 1998; the start up date to install engineering controls is December 10, 1998.; {OSHA - 29 CFR 1910 Specifically Regulate

ACGIH: **CAS No.**

Chemical Name A3 - Confirmed Animal Carcinogen with

Dichloromethane 75-09-2 Unknown Relevance to Humans

NIOSH: **CAS No.**

Chemical Name potential occupational carcinogen

Methylene chloride 75-09-2

NTP: **CAS No.**

Chemical Name

No data available

IARC: **CAS No.** **Group No.**

Chemical Name 75-09-2 Group 2A

Monograph 110 [2017];

Monograph 71 [1999]

12. ECOLOGICAL INFORMATION

Overview: Moderate ecological hazard. This product may be dangerous

Mobility:
Persistence:
Bioaccumulation:
Degradability:
Ecological Toxicity Data:

to plants and/or wildlife. Keep out of waterways.
No data
No data
No data
No data
No data available

13. DISPOSAL CONSIDERATIONS

Waste Description of Spent Product:

Disposal Methods:

Waste Disposal of Packaging:

Spent or discarded material is a hazardous waste. Mixing spent or discarded material with other materials may render the mixture hazardous. Perform a hazardous waste determination on mixtures.
Incinerate spent or discarded material a permitted hazardous waste facility.
Comply with all Local, State, Federal, and Provincial Environmental Regulations.

14. TRANSPORTATION INFORMATION

United States:

DOT Proper Shipping Name:

Toxic, liquids, organic, n.o.s. (Dichloromethane, o-Terphenyl)

UN Number:

UN2810

Hazard Class:

6.1

Packing Group:

III

International:

IATA Proper Shipping Name:

Toxic, liquids, organic, n.o.s. (Dichloromethane, o-Terphenyl)

UN2810

6.1

III

Hazard Class:

6.1

Packing Group:

III

Marine Pollutant: No

Chemical Name	CAS#	Marine Pollutant	Severe Marine Pollutant
No data available			

15. REGULATORY INFORMATION

United States:

This chemical/product is not and cannot be distributed in commerce (as defined in TSCA section 3(5)) or processed (as defined in TSCA section 3(13)) for consumer paint or coating removal.

Chemical Name	CAS#	CERCLA	SARA 313	SARA EHS 313	TSCA
Methylene chloride (dichloromethane)	75-09-2	X	X	-	X
o-terphenyl	84-15-1	-	-	-	X

The following chemicals are listed on CA Prop 65:

Chemical Name	CAS #	Regulation
Dichloromethane	75-09-2	
Dichloromethane (Methylene chloride)	75-09-2	Prop 65 Cancer

State Right To Know Listing:

Chemical Name	CAS#	New Jersey	Massachusetts	Pennsylvania	California
Methylene chloride (dichloromethane)	75-09-2	X	X	X	X
o-terphenyl	84-15-1	-	X	-	-

16. OTHER INFORMATION

Prior Version Date: 04/27/23

Other Information: Any changes to the SDS compared to previous versions are marked by a vertical line in front of the concerned paragraph.

References:

No data available

Disclaimer:

Restek Corporation provides the descriptions, data and information contained herein in good faith but makes no representation as to its comprehensiveness or accuracy. It is provided for your guidance only. Because many factors may affect processing or application/use, Restek Corporation recommends you perform an assessment to determine the suitability of a product for your particular purpose prior to use. No warranties of any kind, either expressed or implied, including fitness for a particular purpose, are made regarding products described, data or information set forth. In no case shall the descriptions, information, or data provided be considered a part of our terms and conditions of sale. Further, the descriptions, data and information furnished hereunder are given gratis. No obligation or liability for the description, data and information given are assumed. All such being given and accepted at your risk.



CERTIFIED REFERENCE MATERIAL



ISO 17025 Accredited
Reference Material Producer
Certificate # 2322301



ISO/IEC 17025 Accredited
Testing Laboratory
Certificate # 1322202

110 Benner Circle

Belleville, PA 16823-8812

Tel: 1-814-353-1300

Fax: 1-814-353-1309

www.restek.com

Certificate of Analysis

chromatographic plus

FOR LABORATORY USE ONLY-READ SDS PRIOR TO USE.

This Reference Material is intended for Laboratory Use Only as a standard for the qualitative and/or quantitative determination of the analyte(s) listed.

Catalog No. : 31097

Lot No.: A0197729

Description : o-Terphenyl Standard

o-Terphenyl Standard 10,000 µg/mL, Methylene Chloride, 1mL/ampul

Container Size : 2 mL

Pkg Amt: > 1 mL

Expiration Date : December 31, 2026

Storage: 10°C or colder

Handling: Sonicate prior to use.

Ship: Ambient

CERTIFIED VALUES

Elution Order	Compound	CAS #	Lot #	Purity	Grav. Conc. (weight/volume)	Expanded Uncertainty* (95% C.I., K=2)
1	o-Terphenyl	84-15-1	MKCH4487	99%	10,007.5 µg/mL	+/- 450.7438

* Expanded Uncertainty displayed in same units as Grav. Conc.

Solvent: Methylene chloride

CAS # 75-09-2

Purity 99%

11574
2
9.18
012595
06130

Quality Confirmation Test

Column:
30m x 0.25mm x 0.25µm
Rtx-5 (cat.#10223)

Carrier Gas:
hydrogen-constant pressure 10 psi.

Temp. Program:
75°C (hold 1 min.) to 330°C
@ 20°C/min. (hold 10 min.)

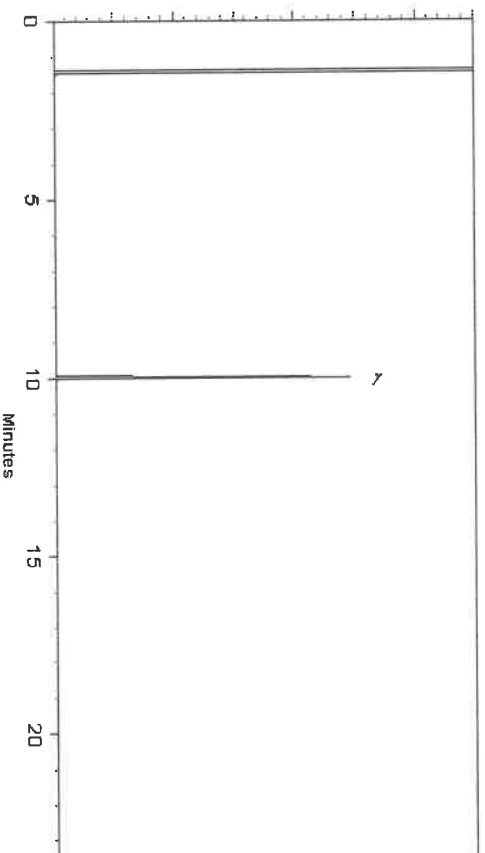
Inj. Temp:
250°C

Det. Temp:
330°C

Det. Type:
FID

Split Vent:
10 ml/min.

Inj. Vol
1µl



This chromatogram represents a general set of testing conditions chosen for product acceptance. For optimal results in your lab, conditions should be adjusted for your specific instrument, method, and application.

[Signature]
Alicia Leathers - Operation Technician I
[Signature]
Jennifer Pollino - Operations Tech III - RRM GC

Date Mixed: 03-May-2023
Balance Serial # 1128360905
Date Passed: 08-May-2023

Manufactured under Restek's ISO 9001:2015
Registered Quality System
Certificate #FIM 80397

General Certified Reference Material Notes

Expiration Notes:

- Expiration date valid for unopened ampul stored in compliance with the recommended conditions.
- Uncertainty, concentration, and expiration of the CRM are based on the unopened product being stored according to the recommended condition found in the storage field.

Purity Notes:

- Purity and/or chemical identity are determined by one or more of the following techniques: GC/FID, HPLC, GC/μECD, GC/MS, LC/MS, RI, and/or melting point.
- Compounds with a listed purity of less than 99% have been weight corrected to compensate for impurities and/or salts. A correction factor is used to calculate the amount of compound necessary to achieve the desired concentration of the parent compound in solution.
- Purity of isomeric compounds is reported as the sum of the isomers.
- Purity values are rounded to the nearest whole number.

Certified Uncertainty Value Notes:

- The uncertainties are determined in accordance with ISO 17034 and Guide 35. The certified expanded uncertainty value includes gravimetric uncertainty, homogeneity between-ampul uncertainty, storage stability uncertainty and shipping stability uncertainty and were combined using the following formula:

$$U_{combined\ uncertainty} = k \sqrt{u_{gravimetric}^2 + u_{homogeneity}^2 + u_{storage\ stability}^2 + u_{shipping\ stability}^2}$$

k is a coverage factor of 2, which gives a level of confidence of approximately 95%.

- The packaged amount is the minimum sample size for which uncertainty is valid. The ampuls are over-filled to ensure that the minimum packaged amount can be sufficiently transferred.

Manufacturing Notes:

- Concentration is based upon gravimetric preparation using either a balance whose calibration has been verified daily using NIST traceable weights, and/or dilutions with Class A glassware.

Handling Notes:

- Stability of the unopened product, when stored in compliance with the recommended conditions, is guaranteed through the expiration displayed on the product label and certificate. Contact Restek for additional opened product stability information, with the knowledge/understanding that open product stability is subject to the specific handling and environmental conditions to which the product is exposed. For your convenience Restek supplies deactivated vials with most standards packed in 2mL ampuls. Larger volume deactivated vials are available through Restek as a custom ordered item. Additionally, Restek sells DMDCS for the purpose of glassware deactivation as catalog number 31861, which includes complete instructions.

- If any undissolved material is visible inside the ampul, sonicate the unopened ampul until the material is completely dissolved.



Safety Data Sheet

Revision Date: 05/04/23

www.restek.com

2 Letter ISO country code/language code: US/EN

1. IDENTIFICATION

Catalog Number / Product Name:
Company:
Address:
Phone#:
Fax#:
Emergency#:
Email:
Revision Number:
Intended use:

31097 / o-Terphenyl Standard
Restek Corporation
110 Benner Circle
Bellefonte, Pa. 16823
814-353-1300
814-353-1309
800-424-9300 (CHEMTREC)
703-527-3887 (Outside the US)
www.restek.com
15

For Laboratory use only. This chemical/product is not and cannot be distributed in commerce (as defined in TSCA section 3(5)) or processed (as defined in TSCA section 3(13)) for consumer paint or coating removal.

2. HAZARD(S) IDENTIFICATION

Emergency Overview:

GHS Hazard
Symbols:



GHS
Classification: Carcinogenicity Category 2

GHS Signal
Word: Warning

GHS Hazard:
Suspected of causing cancer.

GHS
Precautions:

Safety
Precautions: Obtain special instructions before use.
Do not handle until all safety precautions have been read and understood.
Wear protective gloves/protective clothing/eye protection/face protection.

First Aid
Measures: If exposed or concerned: Get medical advice/attention.

Storage: Store locked up.

Disposal: Dispose of contents/container according to section 13 of the SDS.

Single
Exposure
Target Organs: No data available

Repeated
Exposure
Target Organs: No data available

3. COMPOSITION / INFORMATION ON INGREDIENT

31097 / o-Terphenyl Standard

Chemical Name	CAS #	INEC #	% Composition
Methylene chloride (dichloromethane)	75-09-2	200-838-9	99
o-terphenyl	84-15-1	201-517-6	1

4. FIRST-AID MEASURES

Inhalation:	Remove to fresh air. If breathing is difficult, have a trained individual administer oxygen. If not breathing, give artificial respiration and have a trained individual administer oxygen. Get medical attention immediately.
Eyes:	Immediately flush eyes with plenty of water for at least 20 minutes retracting eyelids often. Tilt the head to prevent chemical from transferring to the uncontaminated eye. Get immediate medical attention and monitor the eye daily as advised by your physician. Serious harm (damage) may result if treatment is delayed. Continue to flush eyes while awaiting medical attention
Skin Contact:	Wash with soap and water. Remove contaminated clothing, launder immediately, and discard contaminated leather goods. Get medical attention immediately.
Ingestion:	Do not induce vomiting and seek medical attention immediately. Drink two glasses of water or milk to dilute. Provide medical care provider with this SDS. Never give anything by mouth to an unconscious person

5. FIRE-FIGHTING MEASURES

Extinguishing Media:	Use alcohol resistant foam, carbon dioxide, or dry chemical when fighting fires. Water or foam may cause frothing if liquid is burning but it still may be a useful extinguishing agent if carefully applied to the surface of the fire. Do Not direct a stream of water into the hot burning liquid. Use methods suitable to fight surrounding fire.
Fire and/or Explosion Hazards:	Material may be ignited only if preheated to temperatures above the high flash point, for example in a fire.
Fire Fighting Methods and Protection:	Do not enter fire area without proper protection including self- contained breathing apparatus and full protective equipment.
Hazardous Combustion Products:	Carbon dioxide, Carbon monoxide

6. ACCIDENTAL RELEASE MEASURES

Personal Precautions and Equipment:	Exposure to the spilled material may be severely irritating or toxic. Follow personal protective equipment recommendations found in Section 8 of this SDS. Personal protective equipment needs must be evaluated based on information provided on this sheet and the special circumstances created by the spill including: the material spilled, the quantity of the spill, the area in which the spill occurred, and the expertise of employees in the area responding to the spill. Never exceed any occupational exposure limits.
Methods for Clean-up:	Prevent the spread of any spill to minimize harm to human health and the environment if safe to do so. Wear complete and proper personal protective equipment following the recommendation of Section 8 at a minimum. Dike with suitable absorbent material like granulated clay. Gather and store in a sealed container pending a waste disposal evaluation.

7. HANDLING AND STORAGE

Handling Technical Measures and Precautions:	Toxic or severely irritating material. Avoid contacting and avoid breathing the material. Use only in a well ventilated area. As with all chemicals, good industrial hygiene practices should be followed when handling this material.
Storage Technical Measures and Conditions:	Store in a cool dry place. Isolate from incompatible materials. Keep container closed when not in use

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

United States:					
Chemical Name	CAS No.	IDLH	ACGIH STEL	ACGIH TLV-TWA	OSHA Exposure Limit
Methylene chloride (dichloromethane)	75-09-2	2300 ppm IDLH	None Known	50 ppm TWA	25 ppm TWA; 125 ppm STEL (15 min. TWA)

o-terphenyl	84-15-1	500 mg/m3 IDLH	None Known	Not established	No data available
-------------	---------	-------------------	------------	-----------------	-------------------

Personal Protection:

Local exhaust ventilation or other engineering controls are normally required when handling or using this product to avoid overexposure.

Engineering Measures:

Respiratory Protection:

Respiratory protection may be required to avoid overexposure when handling this product. General or local exhaust ventilation is the preferred means of protection. Use a respirator if general room ventilation is not available or sufficient to eliminate symptoms.

Eye Protection:

Wear chemically resistant safety glasses with side shields when handling this product. Wear additional eye protection such as chemical splash goggles and/or face shield when the possibility exists for eye contact with splashing or spraying liquid, or airborne material. Do not wear contact lenses. Have an eye wash station available.

Skin Protection:

Avoid skin contact by wearing chemically resistant gloves, an apron and other protective equipment depending upon conditions of use. Inspect gloves for chemical break-through and replace at regular intervals. Clean protective equipment regularly. Wash hands and other exposed areas with mild soap and water before eating, drinking, and when leaving work.

Medical Conditions Aggravated By Exposure:

Eye disease Skin disease including eczema and sensitization Respiratory disease including asthma and bronchitis

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance, color:	Colorless
Odor:	Strong
Physical State:	No data available
pH:	Not applicable
Vapor Pressure:	No data available
Boiling Point (°C):	2.93 (air = 1)
Melting Point (°C):	40 °C at 1013 hPa (ECHA_API)
Flash Point (°F):	-96.7 °C.
Flammability:	230
Upper Flammable/Explosive Limit, % in air:	Combustible at elevated temperatures
Lower Flammable/Explosive Limit, % in air:	No data available
Autoignition Temperature (°C):	No data available
Decomposition Temperature (°C):	556 deg C
Specific Gravity:	No data available
Evaporation Rate:	1.3254 - 1.3258 g/cm3 at 20 °C
Odor Threshold:	No data available
Solubility:	ND
Partition Coefficient: n-octanol in water:	Moderate; 50-99%
VOC % by weight:	No data available
Molecular Weight:	99
	No data available

10. STABILITY AND REACTIVITY

Stability:	Stable under normal conditions.
Conditions to Avoid:	Temperatures above the high flash point of this combustible material in combination with sparks, open flames, or other sources of ignition. Contamination High temperatures

Materials to Avoid / Chemical Incompatibility:

Strong oxidizing agents Cautics (bases)

Hazardous Decomposition Products:

Carbon dioxide Carbon monoxide

11. TOXICOLOGICAL INFORMATION

Routes of Entry:	Inhalation Absorption Ingestion Skin contact Eye contact
Target Organs Potentially Affected By Exposure:	Skin, Cardiovascular System, Eyes, Liver, Respiratory Tract
Chemical Interactions That Change Toxicity:	None Known

Immediate (Acute) Health Effects by Route of Exposure:

Inhalation Irritation: Can cause moderate respiratory irritation, dizziness, weakness, fatigue, nausea and headache.

Inhalation Toxicity: Harmful! Can cause systemic damage (see "Target Organs")Inhalation may cause severe central nervous system depression (including unconsciousness).

Skin Contact: Contact causes severe skin irritation and possible burns.

Skin Absorption: Harmful if absorbed through the skin. May cause severe irritation and systemic damage.

Eye Contact: Contact with the eyes may cause moderate to severe eye injury. Eye contact may result in tearing and reddening, but not likely to permanently injure eye tissue. Temporary vision impairment (cloudy or blurred vision) is possible.

Ingestion Irritation: Irritating to mouth, throat, and stomach. Can cause abdominal discomfort, nausea, vomiting and diarrhea.

Ingestion Toxicity: Harmful if swallowed. May cause systemic poisoning.

Long-Term (Chronic) Health Effects:

Carcinogenicity: Contains a probable or known human carcinogen.

Reproductive and Developmental Toxicity: No data available to indicate product or any components present at greater than 0.1% may cause birth defects.

Inhalation: Upon prolonged and/or repeated exposure, can cause moderate respiratory irritation, dizziness, weakness, fatigue, nausea and headache.Harmful! Can cause systemic damage upon prolonged and/or repeated exposure (see "Target Organs")

Skin Absorption: Upon prolonged or repeated exposure, harmful if absorbed through the skin. May cause severe irritation and systemic damage

Component Toxicological Data:

NIOSH: **CAS No.** **LD50/LC50**

Chemical Name Oral LD50 Rat 1900 mg/kg

o-Terphenyl Dermal LD50 Rat >2000 mg/kg; Inhalation LC50

Dichloromethane Rat 53 mg/L 6 h; Oral LD50 Rat 1600 mg/kg

Component Carcinogenic Data:

OSHA: **CAS No.**

Chemical Name

Methylene chloride 75-09-2

25 ppm TWA (8 hr.); 125 ppm STEL (15 min.); 12.5 ppm Action Level (see 29 CFR 1910.1051); effective date for respiratory protection for certain employers to achieve the 8-hour TWA PEL is August 31, 1998; the start up date to install engineering controls is December 10, 1998.; {OSHA - 29 CFR 1910 Specifically Regulate

ACGIH: **CAS No.**

Chemical Name A3 - Confirmed Animal Carcinogen with

Dichloromethane 75-09-2 Unknown Relevance to Humans

NIOSH: **CAS No.**

Chemical Name potential occupational carcinogen

Methylene chloride 75-09-2

NTP: **CAS No.**

Chemical Name

No data available

IARC: **CAS No.** **Group No.**

Chemical Name 75-09-2 Group 2A

Monograph 110 [2017];

Monograph 71 [1999]

12. ECOLOGICAL INFORMATION

Overview: Moderate ecological hazard. This product may be dangerous

Mobility:
Persistence:
Bioaccumulation:
Degradability:
Ecological Toxicity Data:

to plants and/or wildlife. Keep out of waterways.

No data

No data

No data

No data

No data available

13. DISPOSAL CONSIDERATIONS

Waste Description of Spent Product:

Spent or discarded material is a hazardous waste. Mixing spent or discarded material with other materials may render the mixture hazardous. Perform a hazardous waste determination on mixtures.

Disposal Methods:

Incinerate spent or discarded material a permitted hazardous waste facility.

Waste Disposal of Packaging:

Comply with all Local, State, Federal, and Provincial Environmental Regulations.

14. TRANSPORTATION INFORMATION

United States:

DOT Proper Shipping Name:

Toxic, liquids, organic, n.o.s. (Dichloromethane, o-Terphenyl)

UN Number:

UN2810

Hazard Class:

6.1

Packing Group:

III

International:

IATA Proper Shipping Name:

Toxic, liquids, organic, n.o.s. (Dichloromethane, o-Terphenyl)

UN2810

6.1

Packing Group:

III

Marine Pollutant: No

Chemical Name	CAS#	Marine Pollutant	Severe Marine Pollutant
No data available			

15. REGULATORY INFORMATION

United States:

This chemical/product is not and cannot be distributed in commerce (as defined in TSCA section 3(5)) or processed (as defined in TSCA section 3(13)) for consumer paint or coating removal.

Chemical Name	CAS#	CERCLA	SARA 313	SARA EHS 313	TSCA
Methylene chloride (dichloromethane)	75-09-2	X	X	-	X
o-terphenyl	84-15-1	-	-	-	X

The following chemicals are listed on CA Prop 65:

Chemical Name	CAS #	Regulation
Dichloromethane	75-09-2	
Dichloromethane (Methylene chloride)	75-09-2	Prop 65 Cancer

State Right To Know Listing:

Chemical Name	CAS#	New Jersey	Massachusetts	Pennsylvania	California
Methylene chloride (dichloromethane)	75-09-2	X	X	X	X
o-terphenyl	84-15-1	-	X	-	-

16. OTHER INFORMATION

Prior Version Date: 04/27/23

Other Information: Any changes to the SDS compared to previous versions are marked by a vertical line in front of the concerned paragraph.

References:

No data available

Disclaimer:

Restek Corporation provides the descriptions, data and information contained herein in good faith but makes no representation as to its comprehensiveness or accuracy. It is provided for your guidance only. Because many factors may affect processing or application/use, Restek Corporation recommends you perform an assessment to determine the suitability of a product for your particular purpose prior to use. No warranties of any kind, either expressed or implied, including fitness for a particular purpose, are made regarding products described, data or information set forth. In no case shall the descriptions, information, or data provided be considered a part of our terms and conditions of sale. Further, the descriptions, data and information furnished hereunder are given gratis. No obligation or liability for the description, data and information given are assumed. All such being given and accepted at your risk.



CERTIFIED REFERENCE MATERIAL



ISO 17025 Accredited
Reference Material Producer
Certificate # 222201



ISO/IEC 17025 Accredited
Testing Laboratory
Certificate # 222202

110 Benner Circle

Belleville, PA 16823-8812

Tel: 1-814-353-1300

Fax: 1-814-353-1309

www.restek.com

Certificate of Analysis

chromatographic plus

FOR LABORATORY USE ONLY-READ SDS PRIOR TO USE.

This Reference Material is intended for Laboratory Use Only as a standard for the qualitative and/or quantitative determination of the analyte(s) listed.

Catalog No. : 31097

Lot No.: A0197729

Description : o-Terphenyl Standard

o-Terphenyl Standard 10,000 µg/mL, Methylene Chloride, 1mL/ampul

Container Size : 2 mL

Pkg Amt: > 1 mL

Expiration Date : December 31, 2026

Storage: 10°C or colder

Handling:

Sonicate prior to use.

Ship: Ambient

CERTIFIED VALUES

Elution Order	Compound	CAS #	Lot #	Purity	Grav. Conc. (weight/volume)	Expanded Uncertainty* (95% C.I., K=2)
1	o-Terphenyl	84-15-1	MKCH4487	99%	10,007.5 µg/mL	+/- 450.7438

* Expanded Uncertainty displayed in same units as Grav. Conc.

Solvent: Methylene chloride

CAS # 75-09-2

Purity 99%

11574
2
9.18
812595 / 06130

Quality Confirmation Test

Column:
30m x 0.25mm x 0.25µm
Rtx-5 (cat.#10223)

Carrier Gas:
hydrogen-constant pressure 10 psi.

Temp. Program:
75°C (hold 1 min.) to 330°C
@ 20°C/min. (hold 10 min.)

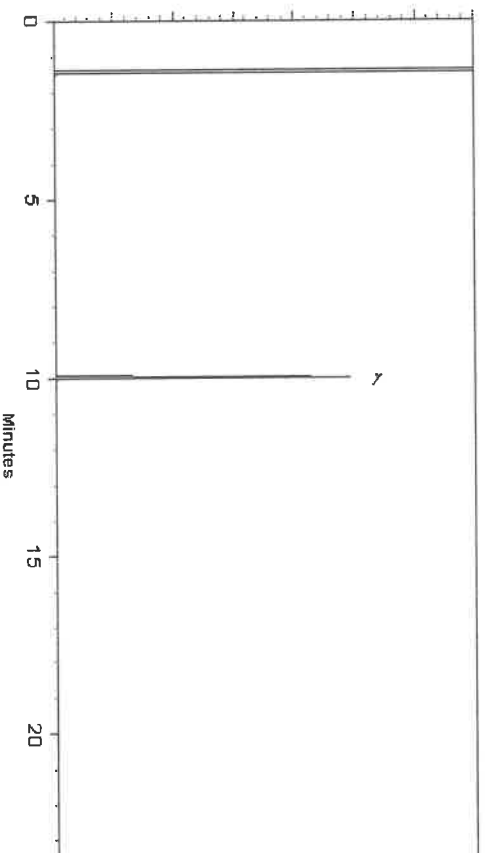
Inj. Temp:
250°C

Det. Temp:
330°C

Det. Type:
FID

Split Vent:
10 ml/min.

Inj. Vol
1µl



This chromatogram represents a general set of testing conditions chosen for product acceptance. For optimal results in your lab, conditions should be adjusted for your specific instrument, method, and application.

Alicia Leathers
Alicia Leathers - Operation Technician I
Jennifer Polino
Jennifer Polino - Operations Tech III - ARM GC

Date Mixed: 03-May-2023
Balance Serial # 1128360905
Date Passed: 08-May-2023

Manufactured under Restek's ISO 9001:2015
Registered Quality System
Certificate #FIM 80397

General Certified Reference Material Notes

Expiration Notes:

- Expiration date valid for unopened ampul stored in compliance with the recommended conditions.
- Uncertainty, concentration, and expiration of the CRM are based on the unopened product being stored according to the recommended condition found in the storage field.

Purity Notes:

- Purity and/or chemical identity are determined by one or more of the following techniques: GC/FID, HPLC, GC/μECD, GC/MS, LC/MS, RI, and/or melting point.
- Compounds with a listed purity of less than 99% have been weight corrected to compensate for impurities and/or salts. A correction factor is used to calculate the amount of compound necessary to achieve the desired concentration of the parent compound in solution.
- Purity of isomeric compounds is reported as the sum of the isomers.
- Purity values are rounded to the nearest whole number.

Certified Uncertainty Value Notes:

- The uncertainties are determined in accordance with ISO 17034 and Guide 35. The certified expanded uncertainty value includes gravimetric uncertainty, homogeneity between-ampul uncertainty, storage stability uncertainty and shipping stability uncertainty and were combined using the following formula:

$$U_{combined\ uncertainty} = k \sqrt{u_{gravimetric}^2 + u_{homogeneity}^2 + u_{storage\ stability}^2 + u_{shipping\ stability}^2}$$

k is a coverage factor of 2, which gives a level of confidence of approximately 95%.

- The packaged amount is the minimum sample size for which uncertainty is valid. The ampuls are over-filled to ensure that the minimum packaged amount can be sufficiently transferred.

Manufacturing Notes:

- Concentration is based upon gravimetric preparation using either a balance whose calibration has been verified daily using NIST traceable weights, and/or dilutions with Class A glassware.

Handling Notes:

- Stability of the unopened product, when stored in compliance with the recommended conditions, is guaranteed through the expiration displayed on the product label and certificate. Contact Restek for additional opened product stability information, with the knowledge/understanding that open product stability is subject to the specific handling and environmental conditions to which the product is exposed. For your convenience Restek supplies deactivated vials with most standards packed in 2mL ampuls. Larger volume deactivated vials are available through Restek as a custom ordered item. Additionally, Restek sells DMDCS for the purpose of glassware deactivation as catalog number 31861, which includes complete instructions.

- If any undissolved material is visible inside the ampul, sonicate the unopened ampul until the material is completely dissolved.



Safety Data Sheet

Revision Date: 05/04/23

www.restek.com

2 Letter ISO country code/language code: US/EN

1. IDENTIFICATION

Catalog Number / Product Name:
Company:
Address:
Phone#:
Fax#:
Emergency#:
Email:
Revision Number:
Intended use:

31097 / o-Terphenyl Standard
Restek Corporation
110 Benner Circle
Bellefonte, Pa. 16823
814-353-1300
814-353-1309
800-424-9300 (CHEMTREC)
703-527-3887 (Outside the US)
www.restek.com
15

For Laboratory use only. This chemical/product is not and cannot be distributed in commerce (as defined in TSCA section 3(5)) or processed (as defined in TSCA section 3(13)) for consumer paint or coating removal.

2. HAZARD(S) IDENTIFICATION

Emergency Overview:

GHS Hazard
Symbols:



GHS
Classification: Carcinogenicity Category 2

GHS Signal
Word: Warning

GHS Hazard:
GHS
Precautions: Suspected of causing cancer.

Safety
Precautions: Obtain special instructions before use.
Do not handle until all safety precautions have been read and understood.
Wear protective gloves/protective clothing/eye protection/face protection.

First Aid
Measures: If exposed or concerned: Get medical advice/attention.

Storage: Store locked up.

Disposal: Dispose of contents/container according to section 13 of the SDS.

Single
Exposure
Target Organs: No data available

Repeated
Exposure
Target Organs: No data available

3. COMPOSITION / INFORMATION ON INGREDIENT

Chemical Name	CAS #	INEC #	% Composition
Methylene chloride (dichloromethane)	75-09-2	200-838-9	99
o-terphenyl	84-15-1	201-517-6	1

4. FIRST-AID MEASURES

Inhalation:	Remove to fresh air. If breathing is difficult, have a trained individual administer oxygen. If not breathing, give artificial respiration and have a trained individual administer oxygen. Get medical attention immediately.
Eyes:	Immediately flush eyes with plenty of water for at least 20 minutes retracting eyelids often. Tilt the head to prevent chemical from transferring to the uncontaminated eye. Get immediate medical attention and monitor the eye daily as advised by your physician. Serious harm (damage) may result if treatment is delayed. Continue to flush eyes while awaiting medical attention
Skin Contact:	Wash with soap and water. Remove contaminated clothing, launder immediately, and discard contaminated leather goods. Get medical attention immediately.
Ingestion:	Do not induce vomiting and seek medical attention immediately. Drink two glasses of water or milk to dilute. Provide medical care provider with this SDS. Never give anything by mouth to an unconscious person

5. FIRE-FIGHTING MEASURES

Extinguishing Media:	Use alcohol resistant foam, carbon dioxide, or dry chemical when fighting fires. Water or foam may cause frothing if liquid is burning but it still may be a useful extinguishing agent if carefully applied to the surface of the fire. Do Not direct a stream of water into the hot burning liquid. Use methods suitable to fight surrounding fire.
Fire and/or Explosion Hazards:	Material may be ignited only if preheated to temperatures above the high flash point, for example in a fire.
Fire Fighting Methods and Protection:	Do not enter fire area without proper protection including self- contained breathing apparatus and full protective equipment.
Hazardous Combustion Products:	Carbon dioxide, Carbon monoxide

6. ACCIDENTAL RELEASE MEASURES

Personal Precautions and Equipment:	Exposure to the spilled material may be severely irritating or toxic. Follow personal protective equipment recommendations found in Section 8 of this SDS. Personal protective equipment needs must be evaluated based on information provided on this sheet and the special circumstances created by the spill including: the material spilled, the quantity of the spill, the area in which the spill occurred, and the expertise of employees in the area responding to the spill. Never exceed any occupational exposure limits.
Methods for Clean-up:	Prevent the spread of any spill to minimize harm to human health and the environment if safe to do so. Wear complete and proper personal protective equipment following the recommendation of Section 8 at a minimum. Dike with suitable absorbent material like granulated clay. Gather and store in a sealed container pending a waste disposal evaluation.

7. HANDLING AND STORAGE

Handling Technical Measures and Precautions:	Toxic or severely irritating material. Avoid contacting and avoid breathing the material. Use only in a well ventilated area. As with all chemicals, good industrial hygiene practices should be followed when handling this material.
Storage Technical Measures and Conditions:	Store in a cool dry place. Isolate from incompatible materials. Keep container closed when not in use

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

United States:					
Chemical Name	CAS No.	IDLH	ACGIH STEL	ACGIH TLV-TWA	OSHA Exposure Limit
Methylene chloride (dichloromethane)	75-09-2	2300 ppm IDLH	None Known	50 ppm TWA	25 ppm TWA; 125 ppm STEL (15 min. TWA)

o-terphenyl	84-15-1	500 mg/m3 IDLH	None Known	Not established	No data available
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Personal Protection:

Local exhaust ventilation or other engineering controls are normally required when handling or using this product to avoid overexposure.

Engineering Measures:

Respiratory Protection:

Respiratory protection may be required to avoid overexposure when handling this product. General or local exhaust ventilation is the preferred means of protection. Use a respirator if general room ventilation is not available or sufficient to eliminate symptoms.

Eye Protection:

Wear chemically resistant safety glasses with side shields when handling this product. Wear additional eye protection such as chemical splash goggles and/or face shield when the possibility exists for eye contact with splashing or spraying liquid, or airborne material. Do not wear contact lenses. Have an eye wash station available.

Skin Protection:

Avoid skin contact by wearing chemically resistant gloves, an apron and other protective equipment depending upon conditions of use. Inspect gloves for chemical break-through and replace at regular intervals. Clean protective equipment regularly. Wash hands and other exposed areas with mild soap and water before eating, drinking, and when leaving work.

Medical Conditions Aggravated By Exposure:

Eye disease Skin disease including eczema and sensitization Respiratory disease including asthma and bronchitis

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance, color:	Colorless
Odor:	Strong
Physical State:	No data available
pH:	Not applicable
Vapor Pressure:	No data available
Boiling Point (°C):	2.93 (air = 1)
Melting Point (°C):	40 °C at 1013 hPa (ECHA_API)
Flash Point (°F):	-96.7 °C.
Flammability:	230
Upper Flammable/Explosive Limit, % in air:	Combustible at elevated temperatures
Lower Flammable/Explosive Limit, % in air:	No data available
Autoignition Temperature (°C):	No data available
Decomposition Temperature (°C):	556 deg C
Specific Gravity:	No data available
Evaporation Rate:	1.3254 - 1.3258 g/cm3 at 20 °C
Odor Threshold:	No data available
Solubility:	ND
Partition Coefficient: n-octanol in water:	Moderate; 50-99%
VOC % by weight:	No data available
Molecular Weight:	99
	No data available

10. STABILITY AND REACTIVITY

Stability:	Stable under normal conditions.
Conditions to Avoid:	Temperatures above the high flash point of this combustible material in combination with sparks, open flames, or other sources of ignition. Contamination High temperatures

Materials to Avoid / Chemical Incompatibility:	Strong oxidizing agents Cautics (bases)
Hazardous Decomposition Products:	Carbon dioxide Carbon monoxide

11. TOXICOLOGICAL INFORMATION

Routes of Entry:	Inhalation Absorption Ingestion Skin contact Eye contact
Target Organs Potentially Affected By Exposure:	Skin, Cardiovascular System, Eyes, Liver, Respiratory Tract
Chemical Interactions That Change Toxicity:	None Known

Immediate (Acute) Health Effects by Route of Exposure:

Inhalation Irritation:	Can cause moderate respiratory irritation, dizziness, weakness, fatigue, nausea and headache.
-------------------------------	---

Inhalation Toxicity: Harmful! Can cause systemic damage (see "Target Organs")Inhalation may cause severe central nervous system depression (including unconsciousness).

Skin Contact: Contact causes severe skin irritation and possible burns.

Skin Absorption: Harmful if absorbed through the skin. May cause severe irritation and systemic damage.

Eye Contact: Contact with the eyes may cause moderate to severe eye injury. Eye contact may result in tearing and reddening, but not likely to permanently injure eye tissue. Temporary vision impairment (cloudy or blurred vision) is possible.

Ingestion Irritation: Irritating to mouth, throat, and stomach. Can cause abdominal discomfort, nausea, vomiting and diarrhea.

Ingestion Toxicity: Harmful if swallowed. May cause systemic poisoning.

Long-Term (Chronic) Health Effects:

Carcinogenicity: Contains a probable or known human carcinogen.

Reproductive and Developmental Toxicity: No data available to indicate product or any components present at greater than 0.1% may cause birth defects.

Inhalation: Upon prolonged and/or repeated exposure, can cause moderate respiratory irritation, dizziness, weakness, fatigue, nausea and headache.Harmful! Can cause systemic damage upon prolonged and/or repeated exposure (see "Target Organs")

Skin Absorption: Upon prolonged or repeated exposure, harmful if absorbed through the skin. May cause severe irritation and systemic damage

Component Toxicological Data:

NIOSH: **CAS No.** **LD50/LC50**

Chemical Name Oral LD50 Rat 1900 mg/kg

o-Terphenyl Dermal LD50 Rat >2000 mg/kg; Inhalation LC50

Dichloromethane Rat 53 mg/L 6 h; Oral LD50 Rat 1600 mg/kg

Component Carcinogenic Data:

OSHA: **CAS No.**

Chemical Name

Methylene chloride 75-09-2

25 ppm TWA (8 hr.); 125 ppm STEL (15 min.); 12.5 ppm Action Level (see 29 CFR 1910.1051); effective date for respiratory protection for certain employers to achieve the 8-hour TWA PEL is August 31, 1998; the start up date to install engineering controls is December 10, 1998.; {OSHA - 29 CFR 1910 Specifically Regulate

ACGIH: **CAS No.**

Chemical Name A3 - Confirmed Animal Carcinogen with

Dichloromethane 75-09-2 Unknown Relevance to Humans

NIOSH: **CAS No.**

Chemical Name potential occupational carcinogen

Methylene chloride 75-09-2

NTP: **CAS No.**

Chemical Name

No data available

IARC: **CAS No.** **Group No.**

Chemical Name 75-09-2 Group 2A

Monograph 110 [2017];

Monograph 71 [1999]

12. ECOLOGICAL INFORMATION

Overview: Moderate ecological hazard. This product may be dangerous

Mobility:
Persistence:
Bioaccumulation:
Degradability:
Ecological Toxicity Data:

to plants and/or wildlife. Keep out of waterways.
No data
No data
No data
No data
No data available

13. DISPOSAL CONSIDERATIONS

Waste Description of Spent Product:

Disposal Methods:

Waste Disposal of Packaging:

Spent or discarded material is a hazardous waste. Mixing spent or discarded material with other materials may render the mixture hazardous. Perform a hazardous waste determination on mixtures.
Incinerate spent or discarded material a permitted hazardous waste facility.
Comply with all Local, State, Federal, and Provincial Environmental Regulations.

14. TRANSPORTATION INFORMATION

United States:

DOT Proper Shipping Name:

Toxic, liquids, organic, n.o.s. (Dichloromethane, o-Terphenyl)

UN Number:

UN2810

Hazard Class:

6.1

Packing Group:

III

International:

IATA Proper Shipping Name:

Toxic, liquids, organic, n.o.s. (Dichloromethane, o-Terphenyl)

UN2810

6.1

III

Hazard Class:

6.1

Packing Group:

III

Marine Pollutant: No

Chemical Name	CAS#	Marine Pollutant	Severe Marine Pollutant
No data available			

15. REGULATORY INFORMATION

United States:

This chemical/product is not and cannot be distributed in commerce (as defined in TSCA section 3(5)) or processed (as defined in TSCA section 3(13)) for consumer paint or coating removal.

Chemical Name	CAS#	CERCLA	SARA 313	SARA EHS 313	TSCA
Methylene chloride (dichloromethane)	75-09-2	X	X	-	X
o-terphenyl	84-15-1	-	-	-	X

The following chemicals are listed on CA Prop 65:

Chemical Name	CAS #	Regulation
Dichloromethane	75-09-2	Prop 65 Cancer
Dichloromethane (Methylene chloride)		

State Right To Know Listing:

Chemical Name	CAS#	New Jersey	Massachusetts	Pennsylvania	California
Methylene chloride (dichloromethane)	75-09-2	X	X	X	X
o-terphenyl	84-15-1	-	X	-	-

16. OTHER INFORMATION

Prior Version Date: 04/27/23

Other Information: Any changes to the SDS compared to previous versions are marked by a vertical line in front of the concerned paragraph.

References:

No data available

Disclaimer:

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CERTIFIED REFERENCE MATERIAL



ISO 17025 Accredited
Reference Material Producer
Certificate # 2322301



ISO/IEC 17025 Accredited
Testing Laboratory
Certificate # 1322202

110 Benner Circle

Belleville, PA 16823-8812

Tel: 1-814-353-1300

Fax: 1-814-353-1309

www.restek.com

Certificate of Analysis

chromatographic plus

FOR LABORATORY USE ONLY-READ SDS PRIOR TO USE.

This Reference Material is intended for Laboratory Use Only as a standard for the qualitative and/or quantitative determination of the analyte(s) listed.

Catalog No. : 31097

Lot No.: A0197729

Description : o-Terphenyl Standard

o-Terphenyl Standard 10,000 µg/mL, Methylene Chloride, 1mL/ampul

Container Size : 2 mL

Pkg Amt: > 1 mL

Expiration Date : December 31, 2026

Storage: 10°C or colder

Handling: Sonicate prior to use.

Ship: Ambient

CERTIFIED VALUES

Elution Order	Compound	CAS #	Lot #	Purity	Grav. Conc. (weight/volume)	Expanded Uncertainty* (95% C.I., K=2)
1	o-Terphenyl	84-15-1	MKCH4487	99%	10,007.5 µg/mL	+/- 450.7438

* Expanded Uncertainty displayed in same units as Grav. Conc.

Solvent: Methylene chloride

CAS # 75-09-2

Purity 99%

11574
2
912595
4.1.P.
06130

Quality Confirmation Test

Column:
30m x 0.25mm x 0.25µm
Rtx-5 (cat.#10223)

Carrier Gas:
hydrogen-constant pressure 10 psi.

Temp. Program:
75°C (hold 1 min.) to 330°C
@ 20°C/min. (hold 10 min.)

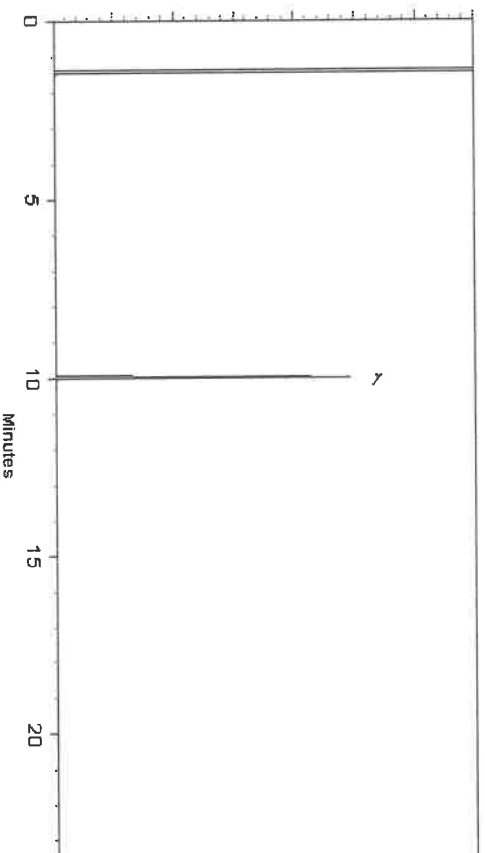
Inj. Temp:
250°C

Det. Temp:
330°C

Det. Type:
FID

Split Vent:
10 ml/min.

Inj. Vol
1µl



This chromatogram represents a general set of testing conditions chosen for product acceptance. For optimal results in your lab, conditions should be adjusted for your specific instrument, method, and application.

Alicia Leathers
Alicia Leathers - Operation Technician I
Jennifer Polino
Jennifer Polino - Operations Tech III - RRM GC

Date Mixed: 03-May-2023
Balance Serial # 1128360905
Date Passed: 08-May-2023

Manufactured under Restek's ISO 9001:2015
Registered Quality System
Certificate #FIM 80397

General Certified Reference Material Notes

Expiration Notes:

- Expiration date valid for unopened ampul stored in compliance with the recommended conditions.
- Uncertainty, concentration, and expiration of the CRM are based on the unopened product being stored according to the recommended condition found in the storage field.

Purity Notes:

- Purity and/or chemical identity are determined by one or more of the following techniques: GC/FID, HPLC, GC/μECD, GC/MS, LC/MS, RI, and/or melting point.
- Compounds with a listed purity of less than 99% have been weight corrected to compensate for impurities and/or salts. A correction factor is used to calculate the amount of compound necessary to achieve the desired concentration of the parent compound in solution.
- Purity of isomeric compounds is reported as the sum of the isomers.
- Purity values are rounded to the nearest whole number.

Certified Uncertainty Value Notes:

- The uncertainties are determined in accordance with ISO 17034 and Guide 35. The certified expanded uncertainty value includes gravimetric uncertainty, homogeneity between-ampul uncertainty, storage stability uncertainty and shipping stability uncertainty and were combined using the following formula:

$$U_{combined\ uncertainty} = k \sqrt{u_{gravimetric}^2 + u_{homogeneity}^2 + u_{storage\ stability}^2 + u_{shipping\ stability}^2}$$

k is a coverage factor of 2, which gives a level of confidence of approximately 95%.

- The packaged amount is the minimum sample size for which uncertainty is valid. The ampuls are over-filled to ensure that the minimum packaged amount can be sufficiently transferred.

Manufacturing Notes:

- Concentration is based upon gravimetric preparation using either a balance whose calibration has been verified daily using NIST traceable weights, and/or dilutions with Class A glassware.

Handling Notes:

- Stability of the unopened product, when stored in compliance with the recommended conditions, is guaranteed through the expiration displayed on the product label and certificate. Contact Restek for additional opened product stability information, with the knowledge/understanding that open product stability is subject to the specific handling and environmental conditions to which the product is exposed. For your convenience Restek supplies deactivated vials with most standards packed in 2mL ampuls. Larger volume deactivated vials are available through Restek as a custom ordered item. Additionally, Restek sells DMDCS for the purpose of glassware deactivation as catalog number 31861, which includes complete instructions.

- If any undissolved material is visible inside the ampul, sonicate the unopened ampul until the material is completely dissolved.



Safety Data Sheet

Revision Date: 05/04/23

www.restek.com

2 Letter ISO country code/language code: US/EN

1. IDENTIFICATION

Catalog Number / Product Name:	31097 / o-Terphenyl Standard
Company:	Restek Corporation
Address:	110 Benner Circle Bellefonte, Pa. 16823
Phone#:	814-353-1300
Fax#:	814-353-1309
Emergency#:	800-424-9300 (CHEMTREC) 703-527-3887 (Outside the US)
Email:	www.restek.com
Revision Number:	15
Intended use:	For Laboratory use only. This chemical/product is not and cannot be distributed in commerce (as defined in TSCA section 3(5)) or processed (as defined in TSCA section 3(13)) for consumer paint or coating removal.

2. HAZARD(S) IDENTIFICATION

Emergency Overview:

GHS Hazard
Symbols:



GHS
Classification: Carcinogenicity Category 2

GHS Signal
Word: Warning

GHS Hazard:
Suspected of causing cancer.

GHS
Precautions:

Safety
Precautions: Obtain special instructions before use.
Do not handle until all safety precautions have been read and understood.
Wear protective gloves/protective clothing/eye protection/face protection.

First Aid
Measures: If exposed or concerned: Get medical advice/attention.

Storage: Store locked up.

Disposal: Dispose of contents/container according to section 13 of the SDS.

Single
Exposure
Target Organs: No data available

Repeated
Exposure
Target Organs: No data available

3. COMPOSITION / INFORMATION ON INGREDIENT

Chemical Name	CAS #	INEC #	% Composition
Methylene chloride (dichloromethane)	75-09-2	200-838-9	99
o-terphenyl	84-15-1	201-517-6	1

4. FIRST-AID MEASURES

Inhalation:	Remove to fresh air. If breathing is difficult, have a trained individual administer oxygen. If not breathing, give artificial respiration and have a trained individual administer oxygen. Get medical attention immediately.
Eyes:	Immediately flush eyes with plenty of water for at least 20 minutes retracting eyelids often. Tilt the head to prevent chemical from transferring to the uncontaminated eye. Get immediate medical attention and monitor the eye daily as advised by your physician. Serious harm (damage) may result if treatment is delayed. Continue to flush eyes while awaiting medical attention
Skin Contact:	Wash with soap and water. Remove contaminated clothing, launder immediately, and discard contaminated leather goods. Get medical attention immediately.
Ingestion:	Do not induce vomiting and seek medical attention immediately. Drink two glasses of water or milk to dilute. Provide medical care provider with this SDS. Never give anything by mouth to an unconscious person

5. FIRE-FIGHTING MEASURES

Extinguishing Media:	Use alcohol resistant foam, carbon dioxide, or dry chemical when fighting fires. Water or foam may cause frothing if liquid is burning but it still may be a useful extinguishing agent if carefully applied to the surface of the fire. Do Not direct a stream of water into the hot burning liquid. Use methods suitable to fight surrounding fire.
Fire and/or Explosion Hazards:	Material may be ignited only if preheated to temperatures above the high flash point, for example in a fire.
Fire Fighting Methods and Protection:	Do not enter fire area without proper protection including self- contained breathing apparatus and full protective equipment.
Hazardous Combustion Products:	Carbon dioxide, Carbon monoxide

6. ACCIDENTAL RELEASE MEASURES

Personal Precautions and Equipment:	Exposure to the spilled material may be severely irritating or toxic. Follow personal protective equipment recommendations found in Section 8 of this SDS. Personal protective equipment needs must be evaluated based on information provided on this sheet and the special circumstances created by the spill including: the material spilled, the quantity of the spill, the area in which the spill occurred, and the expertise of employees in the area responding to the spill. Never exceed any occupational exposure limits.
Methods for Clean-up:	Prevent the spread of any spill to minimize harm to human health and the environment if safe to do so. Wear complete and proper personal protective equipment following the recommendation of Section 8 at a minimum. Dike with suitable absorbent material like granulated clay. Gather and store in a sealed container pending a waste disposal evaluation.

7. HANDLING AND STORAGE

Handling Technical Measures and Precautions:	Toxic or severely irritating material. Avoid contacting and avoid breathing the material. Use only in a well ventilated area. As with all chemicals, good industrial hygiene practices should be followed when handling this material.
Storage Technical Measures and Conditions:	Store in a cool dry place. Isolate from incompatible materials. Keep container closed when not in use

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

United States:					
Chemical Name	CAS No.	IDLH	ACGIH STEL	ACGIH TLV-TWA	OSHA Exposure Limit
Methylene chloride (dichloromethane)	75-09-2	2300 ppm IDLH	None Known	50 ppm TWA	25 ppm TWA; 125 ppm STEL (15 min. TWA)

o-terphenyl	84-15-1	500 mg/m3 IDLH	None Known	Not established	No data available
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Personal Protection:

Local exhaust ventilation or other engineering controls are normally required when handling or using this product to avoid overexposure.

Engineering Measures:

Respiratory protection may be required to avoid overexposure when handling this product. General or local exhaust ventilation is the preferred means of protection.

Respiratory Protection:

Use a respirator if general room ventilation is not available or sufficient to eliminate symptoms.

Eye Protection:

Wear chemically resistant safety glasses with side shields when handling this product. Wear additional eye protection such as chemical splash goggles and/or face shield when the possibility exists for eye contact with splashing or spraying liquid, or airborne material. Do not wear contact lenses. Have an eye wash station available.

Skin Protection:

Avoid skin contact by wearing chemically resistant gloves, an apron and other protective equipment depending upon conditions of use. Inspect gloves for chemical break-through and replace at regular intervals. Clean protective equipment regularly. Wash hands and other exposed areas with mild soap and water before eating, drinking, and when leaving work.

Medical Conditions Aggravated By Exposure:

Eye disease Skin disease including eczema and sensitization Respiratory disease including asthma and bronchitis

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance, color:	Colorless
Odor:	Strong
Physical State:	No data available
pH:	Not applicable
Vapor Pressure:	No data available
Boiling Point (°C):	2.93 (air = 1)
Melting Point (°C):	40 °C at 1013 hPa (ECHA_API)
Flash Point (°F):	-96.7 °C.
Flammability:	230
Upper Flammable/Explosive Limit, % in air:	Combustible at elevated temperatures
Lower Flammable/Explosive Limit, % in air:	No data available
Autoignition Temperature (°C):	No data available
Decomposition Temperature (°C):	556 deg C
Specific Gravity:	No data available
Evaporation Rate:	1.3254 - 1.3258 g/cm3 at 20 °C
Odor Threshold:	No data available
Solubility:	ND
Partition Coefficient: n-octanol in water:	Moderate; 50-99%
VOC % by weight:	No data available
Molecular Weight:	99
	No data available

10. STABILITY AND REACTIVITY

Stability:	Stable under normal conditions.
Conditions to Avoid:	Temperatures above the high flash point of this combustible material in combination with sparks, open flames, or other sources of ignition. Contamination High temperatures

Materials to Avoid / Chemical Incompatibility:	Strong oxidizing agents Cautics (bases)
Hazardous Decomposition Products:	Carbon dioxide Carbon monoxide

11. TOXICOLOGICAL INFORMATION

Routes of Entry:	Inhalation Absorption Ingestion Skin contact Eye contact
Target Organs Potentially Affected By Exposure:	Skin, Cardiovascular System, Eyes, Liver, Respiratory Tract
Chemical Interactions That Change Toxicity:	None Known

Immediate (Acute) Health Effects by Route of Exposure:

Inhalation Irritation:	Can cause moderate respiratory irritation, dizziness, weakness, fatigue, nausea and headache.
-------------------------------	---

Inhalation Toxicity: Harmful! Can cause systemic damage (see "Target Organs")Inhalation may cause severe central nervous system depression (including unconsciousness).

Skin Contact: Contact causes severe skin irritation and possible burns.

Skin Absorption: Harmful if absorbed through the skin. May cause severe irritation and systemic damage.

Eye Contact: Contact with the eyes may cause moderate to severe eye injury. Eye contact may result in tearing and reddening, but not likely to permanently injure eye tissue. Temporary vision impairment (cloudy or blurred vision) is possible.

Ingestion Irritation: Irritating to mouth, throat, and stomach. Can cause abdominal discomfort, nausea, vomiting and diarrhea.

Ingestion Toxicity: Harmful if swallowed. May cause systemic poisoning.

Long-Term (Chronic) Health Effects:

Carcinogenicity: Contains a probable or known human carcinogen.

Reproductive and Developmental Toxicity: No data available to indicate product or any components present at greater than 0.1% may cause birth defects.

Inhalation: Upon prolonged and/or repeated exposure, can cause moderate respiratory irritation, dizziness, weakness, fatigue, nausea and headache.Harmful! Can cause systemic damage upon prolonged and/or repeated exposure (See "Target Organs")

Skin Absorption: Upon prolonged or repeated exposure, harmful if absorbed through the skin. May cause severe irritation and systemic damage

Component Toxicological Data:

NIOSH: **CAS No.**
Chemical Name 84-15-1
o-Terphenyl
75-09-2
Dichloromethane

LD50/LC50
Oral LD50 Rat 1900 mg/kg
Dermal LD50 Rat >2000 mg/kg; Inhalation LC50 Rat 53 mg/L 6 h; Oral LD50 Rat 1600 mg/kg

Component Carcinogenic Data:

OSHA: **CAS No.**
Chemical Name 75-09-2
Methylene chloride

25 ppm TWA (8 hr.); 125 ppm STEL (15 min.);
12.5 ppm Action Level (see 29 CFR 1910.1051); effective date for respiratory protection for certain employers to achieve the 8-hour TWA PEL is August 31, 1998; the start up date to install engineering controls is December 10, 1998.; {OSHA - 29 CFR 1910 Specifically Regulate

ACGIH: **CAS No.**
Chemical Name 75-09-2
Dichloromethane

A3 - Confirmed Animal Carcinogen with Unknown Relevance to Humans

NIOSH: **CAS No.**
Chemical Name 75-09-2
Methylene chloride

potential occupational carcinogen

NTP: **CAS No.**
Chemical Name
No data available

IARC: **CAS No.**
Chemical Name 75-09-2
Monograph 110 [2017];
Monograph 71 [1999]

Group No.
Group 2A

12. ECOLOGICAL INFORMATION

Overview: Moderate ecological hazard. This product may be dangerous

Mobility:
Persistence:
Bioaccumulation:
Degradability:
Ecological Toxicity Data:

to plants and/or wildlife. Keep out of waterways.

No data

No data

No data

No data

No data available

13. DISPOSAL CONSIDERATIONS

Waste Description of Spent Product:

Disposal Methods:

Waste Disposal of Packaging:

Spent or discarded material is a hazardous waste. Mixing spent or discarded material with other materials may render the mixture hazardous. Perform a hazardous waste determination on mixtures. Incinerate spent or discarded material a permitted hazardous waste facility. Comply with all Local, State, Federal, and Provincial Environmental Regulations.

14. TRANSPORTATION INFORMATION

United States:

DOT Proper Shipping Name:

Toxic, liquids, organic, n.o.s. (Dichloromethane, o-Terphenyl)

UN Number:

UN2810

Hazard Class:

6.1

Packing Group:

III

International:

IATA Proper Shipping Name:

Toxic, liquids, organic, n.o.s. (Dichloromethane, o-Terphenyl)

UN2810

6.1

III

UN Number:
Hazard Class:
Packing Group:

Marine Pollutant: No

Chemical Name	CAS#	Marine Pollutant	Severe Marine Pollutant
No data available			

15. REGULATORY INFORMATION

United States:

This chemical/product is not and cannot be distributed in commerce (as defined in TSCA section 3(5)) or processed (as defined in TSCA section 3(13)) for consumer paint or coating removal.

Chemical Name	CAS#	CERCLA	SARA 313	SARA EHS 313	TSCA
Methylene chloride (dichloromethane)	75-09-2	X	X	-	X
o-terphenyl	84-15-1	-	-	-	X

The following chemicals are listed on CA Prop 65:

Chemical Name	CAS #	Regulation
Dichloromethane	75-09-2	Prop 65 Cancer
Dichloromethane (Methylene chloride)		

State Right To Know Listing:

Chemical Name	CAS#	New Jersey	Massachusetts	Pennsylvania	California
Methylene chloride (dichloromethane)	75-09-2	X	X	X	X
o-terphenyl	84-15-1	-	X	-	-

16. OTHER INFORMATION

Prior Version Date: 04/27/23

Other Information: Any changes to the SDS compared to previous versions are marked by a vertical line in front of the concerned paragraph.

References:

No data available

Disclaimer:

Restek Corporation provides the descriptions, data and information contained herein in good faith but makes no representation as to its comprehensiveness or accuracy. It is provided for your guidance only. Because many factors may affect processing or application/use, Restek Corporation recommends you perform an assessment to determine the suitability of a product for your particular purpose prior to use. No warranties of any kind, either expressed or implied, including fitness for a particular purpose, are made regarding products described, data or information set forth. In no case shall the descriptions, information, or data provided be considered a part of our terms and conditions of sale. Further, the descriptions, data and information furnished hereunder are given gratis. No obligation or liability for the description, data and information given are assumed. All such being given and accepted at your risk.



CERTIFIED REFERENCE MATERIAL



ISO 17025 Accredited
Reference Material Producer
Certificate # 222201



ISO/IEC 17025 Accredited
Testing Laboratory
Certificate # 222202

110 Benner Circle

Belleville, PA 16823-8812

Tel: 1-814-353-1300

Fax: 1-814-353-1309

www.restek.com

Certificate of Analysis

chromatographic plus

FOR LABORATORY USE ONLY-READ SDS PRIOR TO USE.

This Reference Material is intended for Laboratory Use Only as a standard for the qualitative and/or quantitative determination of the analyte(s) listed.

Catalog No. : 31097

Lot No.: A0197729

Description : o-Terphenyl Standard

o-Terphenyl Standard 10,000 µg/mL, Methylene Chloride, 1mL/ampul

Container Size : 2 mL

Pkg Amt: > 1 mL

Expiration Date : December 31, 2026

Storage: 10°C or colder

Handling: Sonicate prior to use.

Ship: Ambient

CERTIFIED VALUES

Elution Order	Compound	CAS #	Lot #	Purity	Grav. Conc. (weight/volume)	Expanded Uncertainty* (95% C.I., K=2)
1	o-Terphenyl	84-15-1	MKCH4487	99%	10,007.5 µg/mL	+/- 450.7438

* Expanded Uncertainty displayed in same units as Grav. Conc.

Solvent: Methylene chloride

CAS # 75-09-2

Purity 99%

11574
2
9.18
012595
06130

Quality Confirmation Test

Column:
30m x 0.25mm x 0.25µm
Rtx-5 (cat.#10223)

Carrier Gas:
hydrogen-constant pressure 10 psi.

Temp. Program:
75°C (hold 1 min.) to 330°C
@ 20°C/min. (hold 10 min.)

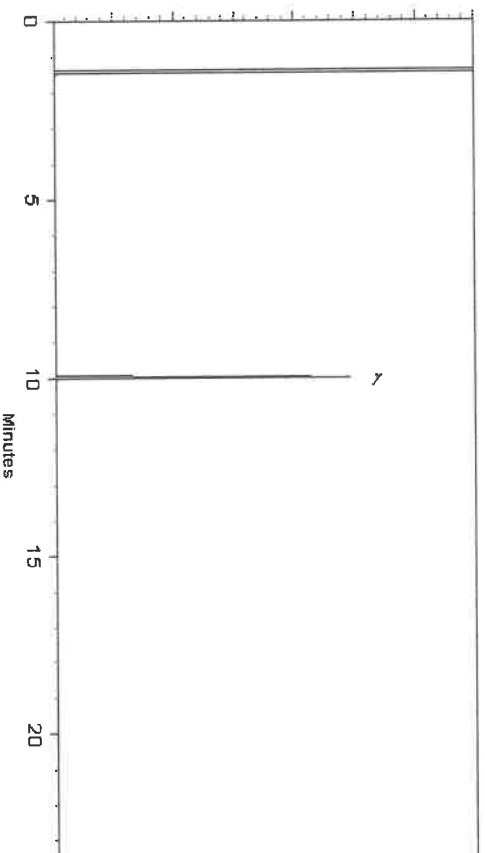
Inj. Temp:
250°C

Det. Temp:
330°C

Det. Type:
FID

Split Vent:
10 ml/min.

Inj. Vol
1µl



This chromatogram represents a general set of testing conditions chosen for product acceptance. For optimal results in your lab, conditions should be adjusted for your specific instrument, method, and application.

Alicia Leathers
Alicia Leathers - Operation Technician I
Jennifer Polino
Jennifer Polino - Operations Tech III - RRM GC

Date Mixed: 03-May-2023
Balance Serial # 1128360905
Date Passed: 08-May-2023

Manufactured under Restek's ISO 9001:2015
Registered Quality System
Certificate #FIM 80397

General Certified Reference Material Notes

Expiration Notes:

- Expiration date valid for unopened ampul stored in compliance with the recommended conditions.
- Uncertainty, concentration, and expiration of the CRM are based on the unopened product being stored according to the recommended condition found in the storage field.

Purity Notes:

- Purity and/or chemical identity are determined by one or more of the following techniques: GC/FID, HPLC, GC/μECD, GC/MS, LC/MS, RI, and/or melting point.
- Compounds with a listed purity of less than 99% have been weight corrected to compensate for impurities and/or salts. A correction factor is used to calculate the amount of compound necessary to achieve the desired concentration of the parent compound in solution.
- Purity of isomeric compounds is reported as the sum of the isomers.
- Purity values are rounded to the nearest whole number.

Certified Uncertainty Value Notes:

- The uncertainties are determined in accordance with ISO 17034 and Guide 35. The certified expanded uncertainty value includes gravimetric uncertainty, homogeneity between-ampul uncertainty, storage stability uncertainty and shipping stability uncertainty and were combined using the following formula:

$$U_{combined\ uncertainty} = k \sqrt{u_{gravimetric}^2 + u_{homogeneity}^2 + u_{storage\ stability}^2 + u_{shipping\ stability}^2}$$

k is a coverage factor of 2, which gives a level of confidence of approximately 95%.

- The packaged amount is the minimum sample size for which uncertainty is valid. The ampuls are over-filled to ensure that the minimum packaged amount can be sufficiently transferred.

Manufacturing Notes:

- Concentration is based upon gravimetric preparation using either a balance whose calibration has been verified daily using NIST traceable weights, and/or dilutions with Class A glassware.

Handling Notes:

- Stability of the unopened product, when stored in compliance with the recommended conditions, is guaranteed through the expiration displayed on the product label and certificate. Contact Restek for additional opened product stability information, with the knowledge/understanding that open product stability is subject to the specific handling and environmental conditions to which the product is exposed. For your convenience Restek supplies deactivated vials with most standards packed in 2mL ampuls. Larger volume deactivated vials are available through Restek as a custom ordered item. Additionally, Restek sells DMDCS for the purpose of glassware deactivation as catalog number 31861, which includes complete instructions.

- If any undissolved material is visible inside the ampul, sonicate the unopened ampul until the material is completely dissolved.



Safety Data Sheet

Revision Date: 05/04/23

www.restek.com

2 Letter ISO country code/language code: US/EN

1. IDENTIFICATION

Catalog Number / Product Name:
Company:
Address:
Phone#:
Fax#:
Emergency#:
Email:
Revision Number:
Intended use:

31097 / o-Terphenyl Standard
Restek Corporation
110 Benner Circle
Bellefonte, Pa. 16823
814-353-1300
814-353-1309
800-424-9300 (CHEMTREC)
703-527-3887 (Outside the US)
www.restek.com
15

For Laboratory use only. This chemical/product is not and cannot be distributed in commerce (as defined in TSCA section 3(5)) or processed (as defined in TSCA section 3(13)) for consumer paint or coating removal.

2. HAZARD(S) IDENTIFICATION

Emergency Overview:

GHS Hazard
Symbols:



GHS
Classification: Carcinogenicity Category 2

GHS Signal
Word: Warning

GHS Hazard:
Suspected of causing cancer.

GHS
Precautions:

Safety
Precautions: Obtain special instructions before use.
Do not handle until all safety precautions have been read and understood.
Wear protective gloves/protective clothing/eye protection/face protection.

First Aid
Measures: If exposed or concerned: Get medical advice/attention.

Storage: Store locked up.

Disposal: Dispose of contents/container according to section 13 of the SDS.

Single
Exposure
Target Organs: No data available

Repeated
Exposure
Target Organs: No data available

3. COMPOSITION / INFORMATION ON INGREDIENT

Chemical Name	CAS #	INEC #	% Composition
Methylene chloride (dichloromethane)	75-09-2	200-838-9	99
o-terphenyl	84-15-1	201-517-6	1

4. FIRST-AID MEASURES

Inhalation:	Remove to fresh air. If breathing is difficult, have a trained individual administer oxygen. If not breathing, give artificial respiration and have a trained individual administer oxygen. Get medical attention immediately.
Eyes:	Immediately flush eyes with plenty of water for at least 20 minutes retracting eyelids often. Tilt the head to prevent chemical from transferring to the uncontaminated eye. Get immediate medical attention and monitor the eye daily as advised by your physician. Serious harm (damage) may result if treatment is delayed. Continue to flush eyes while awaiting medical attention
Skin Contact:	Wash with soap and water. Remove contaminated clothing, launder immediately, and discard contaminated leather goods. Get medical attention immediately.
Ingestion:	Do not induce vomiting and seek medical attention immediately. Drink two glasses of water or milk to dilute. Provide medical care provider with this SDS. Never give anything by mouth to an unconscious person

5. FIRE-FIGHTING MEASURES

Extinguishing Media:	Use alcohol resistant foam, carbon dioxide, or dry chemical when fighting fires. Water or foam may cause frothing if liquid is burning but it still may be a useful extinguishing agent if carefully applied to the surface of the fire. Do Not direct a stream of water into the hot burning liquid. Use methods suitable to fight surrounding fire.
Fire and/or Explosion Hazards:	Material may be ignited only if preheated to temperatures above the high flash point, for example in a fire.
Fire Fighting Methods and Protection:	Do not enter fire area without proper protection including self- contained breathing apparatus and full protective equipment.
Hazardous Combustion Products:	Carbon dioxide, Carbon monoxide

6. ACCIDENTAL RELEASE MEASURES

Personal Precautions and Equipment:	Exposure to the spilled material may be severely irritating or toxic. Follow personal protective equipment recommendations found in Section 8 of this SDS. Personal protective equipment needs must be evaluated based on information provided on this sheet and the special circumstances created by the spill including: the material spilled, the quantity of the spill, the area in which the spill occurred, and the expertise of employees in the area responding to the spill. Never exceed any occupational exposure limits.
Methods for Clean-up:	Prevent the spread of any spill to minimize harm to human health and the environment if safe to do so. Wear complete and proper personal protective equipment following the recommendation of Section 8 at a minimum. Dike with suitable absorbent material like granulated clay. Gather and store in a sealed container pending a waste disposal evaluation.

7. HANDLING AND STORAGE

Handling Technical Measures and Precautions:	Toxic or severely irritating material. Avoid contacting and avoid breathing the material. Use only in a well ventilated area. As with all chemicals, good industrial hygiene practices should be followed when handling this material.
Storage Technical Measures and Conditions:	Store in a cool dry place. Isolate from incompatible materials. Keep container closed when not in use

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

United States:					
Chemical Name	CAS No.	IDLH	ACGIH STEL	ACGIH TLV-TWA	OSHA Exposure Limit
Methylene chloride (dichloromethane)	75-09-2	2300 ppm IDLH	None Known	50 ppm TWA	25 ppm TWA; 125 ppm STEL (15 min. TWA)

o-terphenyl	84-15-1	500 mg/m3 IDLH	None Known	Not established	No data available
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Personal Protection:

Local exhaust ventilation or other engineering controls are normally required when handling or using this product to avoid overexposure.

Engineering Measures:

Respiratory Protection:

Respiratory protection may be required to avoid overexposure when handling this product. General or local exhaust ventilation is the preferred means of protection. Use a respirator if general room ventilation is not available or sufficient to eliminate symptoms.

Eye Protection:

Wear chemically resistant safety glasses with side shields when handling this product. Wear additional eye protection such as chemical splash goggles and/or face shield when the possibility exists for eye contact with splashing or spraying liquid, or airborne material. Do not wear contact lenses. Have an eye wash station available.

Skin Protection:

Avoid skin contact by wearing chemically resistant gloves, an apron and other protective equipment depending upon conditions of use. Inspect gloves for chemical break-through and replace at regular intervals. Clean protective equipment regularly. Wash hands and other exposed areas with mild soap and water before eating, drinking, and when leaving work.

Medical Conditions Aggravated By Exposure:

Eye disease Skin disease including eczema and sensitization Respiratory disease including asthma and bronchitis

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance, color:	Colorless
Odor:	Strong
Physical State:	No data available
pH:	Not applicable
Vapor Pressure:	No data available
Boiling Point (°C):	2.93 (air = 1)
Melting Point (°C):	40 °C at 1013 hPa (ECHA_API)
Flash Point (°F):	-96.7 °C.
Flammability:	230
Upper Flammable/Explosive Limit, % in air:	Combustible at elevated temperatures
Lower Flammable/Explosive Limit, % in air:	No data available
Autoignition Temperature (°C):	No data available
Decomposition Temperature (°C):	556 deg C
Specific Gravity:	No data available
Evaporation Rate:	1.3254 - 1.3258 g/cm3 at 20 °C
Odor Threshold:	No data available
Solubility:	ND
Partition Coefficient: n-octanol in water:	Moderate; 50-99%
VOC % by weight:	No data available
Molecular Weight:	99
	No data available

10. STABILITY AND REACTIVITY

Stability:	Stable under normal conditions.
Conditions to Avoid:	Temperatures above the high flash point of this combustible material in combination with sparks, open flames, or other sources of ignition. Contamination High temperatures

Materials to Avoid / Chemical Incompatibility:

Strong oxidizing agents Cautics (bases)

Hazardous Decomposition Products:

Carbon dioxide Carbon monoxide

11. TOXICOLOGICAL INFORMATION

Routes of Entry:	Inhalation Absorption Ingestion Skin contact Eye contact
Target Organs Potentially Affected By Exposure:	Skin, Cardiovascular System, Eyes, Liver, Respiratory Tract
Chemical Interactions That Change Toxicity:	None Known

Immediate (Acute) Health Effects by Route of Exposure:

Inhalation Irritation: Can cause moderate respiratory irritation, dizziness, weakness, fatigue, nausea and headache.

Inhalation Toxicity: Harmful! Can cause systemic damage (see "Target Organs")Inhalation may cause severe central nervous system depression (including unconsciousness).

Skin Contact: Contact causes severe skin irritation and possible burns.

Skin Absorption: Harmful if absorbed through the skin. May cause severe irritation and systemic damage.

Eye Contact: Contact with the eyes may cause moderate to severe eye injury. Eye contact may result in tearing and reddening, but not likely to permanently injure eye tissue. Temporary vision impairment (cloudy or blurred vision) is possible.

Ingestion Irritation: Irritating to mouth, throat, and stomach. Can cause abdominal discomfort, nausea, vomiting and diarrhea.

Ingestion Toxicity: Harmful if swallowed. May cause systemic poisoning.

Long-Term (Chronic) Health Effects:

Carcinogenicity: Contains a probable or known human carcinogen.

Reproductive and Developmental Toxicity: No data available to indicate product or any components present at greater than 0.1% may cause birth defects.

Inhalation: Upon prolonged and/or repeated exposure, can cause moderate respiratory irritation, dizziness, weakness, fatigue, nausea and headache.Harmful! Can cause systemic damage upon prolonged and/or repeated exposure (see "Target Organs")

Skin Absorption: Upon prolonged or repeated exposure, harmful if absorbed through the skin. May cause severe irritation and systemic damage

Component Toxicological Data:

NIOSH: **CAS No.** **LD50/LC50**

Chemical Name Oral LD50 Rat 1900 mg/kg

o-Terphenyl Dermal LD50 Rat >2000 mg/kg; Inhalation LC50

Dichloromethane Rat 53 mg/L 6 h; Oral LD50 Rat 1600 mg/kg

Component Carcinogenic Data:

OSHA: **CAS No.**

Chemical Name

Methylene chloride 75-09-2

25 ppm TWA (8 hr.); 125 ppm STEL (15 min.); 12.5 ppm Action Level (see 29 CFR 1910.1051); effective date for respiratory protection for certain employers to achieve the 8-hour TWA PEL is August 31, 1998; the start up date to install engineering controls is December 10, 1998.; {OSHA - 29 CFR 1910 Specifically Regulate

ACGIH: **CAS No.**

Chemical Name A3 - Confirmed Animal Carcinogen with

Dichloromethane 75-09-2 Unknown Relevance to Humans

NIOSH: **CAS No.**

Chemical Name potential occupational carcinogen

Methylene chloride 75-09-2

NTP: **CAS No.**

Chemical Name

No data available

IARC: **CAS No.** **Group No.**

Chemical Name 75-09-2 Group 2A

Monograph 110 [2017];

Monograph 71 [1999]

12. ECOLOGICAL INFORMATION

Overview: Moderate ecological hazard. This product may be dangerous

Mobility:
Persistence:
Bioaccumulation:
Degradability:
Ecological Toxicity Data:

to plants and/or wildlife. Keep out of waterways.

No data

No data

No data

No data

No data available

13. DISPOSAL CONSIDERATIONS

Waste Description of Spent Product:

Spent or discarded material is a hazardous waste. Mixing spent or discarded material with other materials may render the mixture hazardous. Perform a hazardous waste determination on mixtures.

Disposal Methods:

Incinerate spent or discarded material a permitted hazardous waste facility.

Waste Disposal of Packaging:

Comply with all Local, State, Federal, and Provincial Environmental Regulations.

14. TRANSPORTATION INFORMATION

United States:

DOT Proper Shipping Name:

Toxic, liquids, organic, n.o.s. (Dichloromethane, o-Terphenyl)

UN Number:

UN2810

Hazard Class:

6.1

Packing Group:

III

International:

IATA Proper Shipping Name:

Toxic, liquids, organic, n.o.s. (Dichloromethane, o-Terphenyl)

UN2810

6.1

Packing Group:

III

Marine Pollutant: No

Chemical Name	CAS#	Marine Pollutant	Severe Marine Pollutant
No data available			

15. REGULATORY INFORMATION

United States:

This chemical/product is not and cannot be distributed in commerce (as defined in TSCA section 3(5)) or processed (as defined in TSCA section 3(13)) for consumer paint or coating removal.

Chemical Name	CAS#	CERCLA	SARA 313	SARA EHS 313	TSCA
Methylene chloride (dichloromethane)	75-09-2	X	X	-	X
o-terphenyl	84-15-1	-	-	-	X

The following chemicals are listed on CA Prop 65:

Chemical Name	CAS #	Regulation
Dichloromethane	75-09-2	Prop 65 Cancer
Dichloromethane (Methylene chloride)		

State Right To Know Listing:

Chemical Name	CAS#	New Jersey	Massachusetts	Pennsylvania	California
Methylene chloride (dichloromethane)	75-09-2	X	X	X	X
o-terphenyl	84-15-1	-	X	-	-

16. OTHER INFORMATION

Prior Version Date: 04/27/23

Other Information: Any changes to the SDS compared to previous versions are marked by a vertical line in front of the concerned paragraph.

References:

No data available

Disclaimer:

Restek Corporation provides the descriptions, data and information contained herein in good faith but makes no representation as to its comprehensiveness or accuracy. It is provided for your guidance only. Because many factors may affect processing or application/use, Restek Corporation recommends you perform an assessment to determine the suitability of a product for your particular purpose prior to use. No warranties of any kind, either expressed or implied, including fitness for a particular purpose, are made regarding products described, data or information set forth. In no case shall the descriptions, information, or data provided be considered a part of our terms and conditions of sale. Further, the descriptions, data and information furnished hereunder are given gratis. No obligation or liability for the description, data and information given are assumed. All such being given and accepted at your risk.



CERTIFIED REFERENCE MATERIAL

110 Benner Circle
Bellevonte, PA 16823-8812
Tel: 1-814-353-1300
Fax: 1-814-353-1309

www.restek.com

Certificate of Analysis

chromatographic plus



FOR LABORATORY USE ONLY-READ SDS PRIOR TO USE.

This Reference Material is intended for Laboratory Use Only as a standard for the qualitative and/or quantitative determination of the analyte(s) listed.

Catalog No. : 31480

Lot No.: A0196246

Description : MA Fractionation Surrogate Spike Mix

MA Fractionation Surrogate Spike Mix 4000µg/mL, Hexane, 1mL/ampul

Container Size : 2 mL

Pkg Amt: > 1 mL

Expiration Date : February 28, 2029

Storage: 10°C or colder

Handling: Sonication required. Mix is

photosensitive.

CERTIFIED VALUES

Elution Order	Compound	CAS #	Lot #	Purity	Grav. Conc. (weight/volume)	Expanded Uncertainty * (95% C.L., K=2)
1	2-Fluorobiphenyl	321-60-8	00021384	99%	4,025.1 µg/mL	+/- 181.3135
2	2-Bromonaphthalene	580-13-2	STBC5362V	99%	4,021.1 µg/mL	+/- 181.1342

* Expanded Uncertainty displayed in same units as Grav. Conc.

Solvent: Hexane

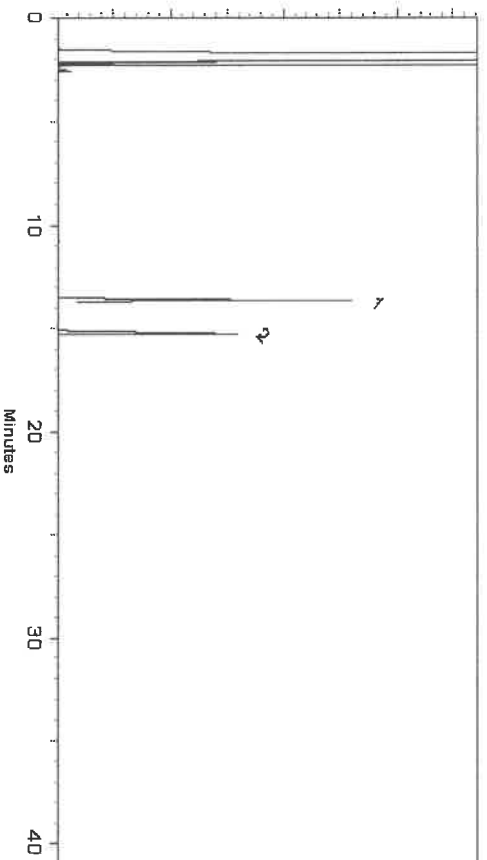
CAS # 110-54-3

Purity 99%

P12665
↓
P12684 } 7-P
07/19/23

Quality Confirmation Test

Column:
30m x 0.25mm x 0.25µm
Rtx-5 (cat.#10223)
Carrier Gas:
hydrogen-constant pressure 10 psi.
Temp. Program:
40°C (hold 2 min.) to 330°C
@ 10°C/min. (hold 10 min.)
Inj. Temp:
250°C
Det. Temp:
330°C
Det. Type:
FID
Split Vent:
2 ml/min.
Inj. Vol
1µl



This chromatogram represents a general set of testing conditions chosen for product acceptance. For optimal results in your lab, conditions should be adjusted for your specific instrument, method, and application.


Stacy Wanner - Operations Technician I

Date Mixed: 24-Mar-2023

Balance Serial # 1128360905


Jennifer Polino - Operations Tech III - ARM QC

Date Passed: 28-Mar-2023

Manufactured under Restek's ISO 9001:2015
Registered Quality System
Certificate #FM 80397

General Certified Reference Material Notes

Expiration Notes:

- Expiration date valid for unopened ampul stored in compliance with the recommended conditions.
- Uncertainty, concentration, and expiration of the CRM are based on the unopened product being stored according to the recommended condition found in the storage field.

Purity Notes:

- Purity and/or chemical identity are determined by one or more of the following techniques: GC/FID, HPLC, GC/μECD, GC/MS, LC/MS, RI, and/or melting point.
- Compounds with a listed purity of less than 99% have been weight corrected to compensate for impurities and/or salts. A correction factor is used to calculate the amount of compound necessary to achieve the desired concentration of the parent compound in solution.
- Purity of isomeric compounds is reported as the sum of the isomers.
- Purity values are rounded to the nearest whole number.

Certified Uncertainty Value Notes:

- The uncertainties are determined in accordance with ISO 17034 and Guide 35. The certified expanded uncertainty value includes gravimetric uncertainty, homogeneity between-ampul uncertainty, storage stability uncertainty and shipping stability uncertainty and were combined using the following formula:

$$U_{combined\ uncertainty} = k \sqrt{u_{gravimetric}^2 + u_{homogeneity}^2 + u_{storage\ stability}^2 + u_{shipping\ stability}^2}$$

k is a coverage factor of 2, which gives a level of confidence of approximately 95%.

- The packaged amount is the minimum sample size for which uncertainty is valid. The ampuls are over-filled to ensure that the minimum packaged amount can be sufficiently transferred.

Manufacturing Notes:

- Concentration is based upon gravimetric preparation using either a balance whose calibration has been verified daily using NIST traceable weights, and/or dilutions with Class A glassware.

Handling Notes:

- Stability of the unopened product, when stored in compliance with the recommended conditions, is guaranteed through the expiration displayed on the product label and certificate. Contact Restek for additional opened product stability information, with the knowledge/understanding that open product stability is subject to the specific handling and environmental conditions to which the product is exposed. For your convenience Restek supplies deactivated vials with most standards packed in 2mL ampuls. Larger volume deactivated vials are available through Restek as a custom ordered item. Additionally, Restek sells DMDCS for the purpose of glassware deactivation as catalog number 31861, which includes complete instructions.
- If any undissolved material is visible inside the ampul, sonicate the unopened ampul until the material is completely dissolved.



CERTIFIED REFERENCE MATERIAL

110 Benner Circle
Belleville, PA 16823-8812
Tel: 1-814-353-1300
Fax: 1-814-353-1309

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Certificate of Analysis

chromatographic plus



FOR LABORATORY USE ONLY-READ SDS PRIOR TO USE.

This Reference Material is intended for Laboratory Use Only as a standard for the qualitative and/or quantitative determination of the analyte(s) listed.

Catalog No. : 31480

Lot No.: A0196246

Description : MA Fractionation Surrogate Spike Mix

MA Fractionation Surrogate Spike Mix 4000µg/mL, Hexane, 1mL/ampul

Container Size : 2 mL

Pkg Amt: > 1 mL

Expiration Date : February 28, 2029

Storage: 10°C or colder

Handling: Sonication required. Mix is

photosensitive.

CERTIFIED VALUES

Elution Order	Compound	CAS #	Lot #	Purity	Grav. Conc. (weight/volume)	Expanded Uncertainty * (95% C.L.; K=2)
1	2-Fluorobiphenyl	321-60-8	00021384	99%	4,025.1 µg/mL	+/- 181.3135
2	2-Bromonaphthalene	580-13-2	STBC5362V	99%	4,021.1 µg/mL	+/- 181.1342

* Expanded Uncertainty displayed in same units as Grav. Conc.

Solvent: Hexane

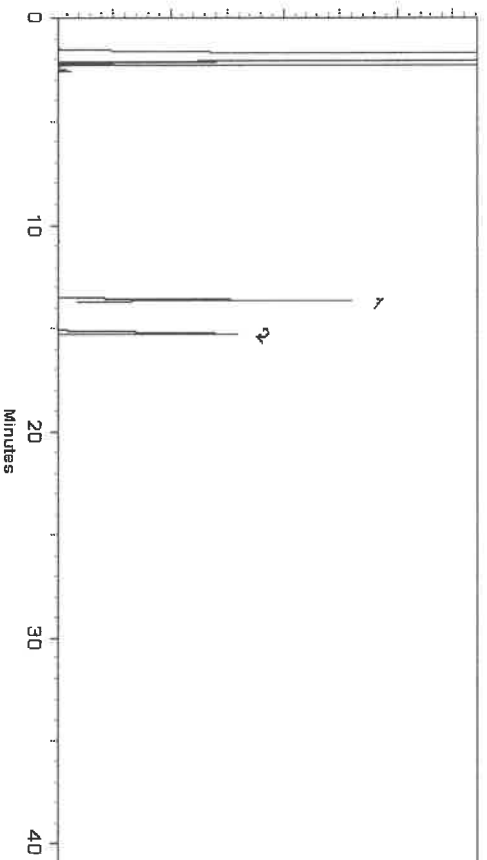
CAS # 110-54-3

Purity 99%

P12665
P12684 } Y-P
07/19/23

Quality Confirmation Test

Column:
30m x 0.25mm x 0.25µm
Rtx-5 (cat.#10223)
Carrier Gas:
hydrogen-constant pressure 10 psi.
Temp. Program:
40°C (hold 2 min.) to 330°C
@ 10°C/min. (hold 10 min.)
Inj. Temp:
250°C
Det. Temp:
330°C
Det. Type:
FID
Split Vent:
2 ml/min.
Inj. Vol
1µl



This chromatogram represents a general set of testing conditions chosen for product acceptance. For optimal results in your lab, conditions should be adjusted for your specific instrument, method, and application.

Stacey Wanner - Operations Technician I



Date Mixed: 24-Mar-2023
Balance Serial # 1128360905
Date Passed: 28-Mar-2023

Jennifer Polino - Operations Tech III - ARM QC

Manufactured under Restek's ISO 9001:2015
Registered Quality System
Certificate #FM 80397

General Certified Reference Material Notes

Expiration Notes:

- Expiration date valid for unopened ampul stored in compliance with the recommended conditions.
- Uncertainty, concentration, and expiration of the CRM are based on the unopened product being stored according to the recommended condition found in the storage field.

Purity Notes:

- Purity and/or chemical identity are determined by one or more of the following techniques: GC/FID, HPLC, GC/μECD, GC/MS, LC/MS, RI, and/or melting point.
- Compounds with a listed purity of less than 99% have been weight corrected to compensate for impurities and/or salts. A correction factor is used to calculate the amount of compound necessary to achieve the desired concentration of the parent compound in solution.
- Purity of isomeric compounds is reported as the sum of the isomers.
- Purity values are rounded to the nearest whole number.

Certified Uncertainty Value Notes:

- The uncertainties are determined in accordance with ISO 17034 and Guide 35. The certified expanded uncertainty value includes gravimetric uncertainty, homogeneity between-ampul uncertainty, storage stability uncertainty and shipping stability uncertainty and were combined using the following formula:

$$U_{combined\ uncertainty} = k \sqrt{u_{gravimetric}^2 + u_{homogeneity}^2 + u_{storage\ stability}^2 + u_{shipping\ stability}^2}$$

k is a coverage factor of 2, which gives a level of confidence of approximately 95%.

- The packaged amount is the minimum sample size for which uncertainty is valid. The ampuls are over-filled to ensure that the minimum packaged amount can be sufficiently transferred.

Manufacturing Notes:

- Concentration is based upon gravimetric preparation using either a balance whose calibration has been verified daily using NIST traceable weights, and/or dilutions with Class A glassware.

Handling Notes:

- Stability of the unopened product, when stored in compliance with the recommended conditions, is guaranteed through the expiration displayed on the product label and certificate. Contact Restek for additional opened product stability information, with the knowledge/understanding that open product stability is subject to the specific handling and environmental conditions to which the product is exposed. For your convenience Restek supplies deactivated vials with most standards packed in 2mL ampuls. Larger volume deactivated vials are available through Restek as a custom ordered item. Additionally, Restek sells DMDCS for the purpose of glassware deactivation as catalog number 31861, which includes complete instructions.
- If any undissolved material is visible inside the ampul, sonicate the unopened ampul until the material is completely dissolved.



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FOR LABORATORY USE ONLY-READ SDS PRIOR TO USE.

This Reference Material is intended for Laboratory Use Only as a standard for the qualitative and/or quantitative determination of the analyte(s) listed.

Catalog No. : 31480

Lot No.: A0196246

Description : MA Fractionation Surrogate Spike Mix

MA Fractionation Surrogate Spike Mix 4000µg/mL, Hexane, 1mL/ampul

Container Size : 2 mL

Pkg Amt: > 1 mL

Expiration Date : February 28, 2029

Storage: 10°C or colder

Handling: Sonication required. Mix is

photosensitive.

P12665
↓
P12684 } 7-P
07/19/23

CERTIFIED VALUES

Elution Order	Compound	CAS #	Lot #	Purity	Grav. Conc. (weight/volume)	Expanded Uncertainty * (95% C.L., K=2)
1	2-Fluorobiphenyl	321-60-8	00021384	99%	4,025.1 µg/mL	+/- 181.3135
2	2-Bromonaphthalene	580-13-2	STBC5362V	99%	4,021.1 µg/mL	+/- 181.1342

* Expanded Uncertainty displayed in same units as Grav. Conc.

Solvent: Hexane

CAS # 110-54-3

Purity 99%

Quality Confirmation Test

Column:
30m x 0.25mm x 0.25µm
Rtx-5 (cat.#10223)

Carrier Gas:
hydrogen-constant pressure 10 psi.

Temp. Program:
40°C (hold 2 min.) to 330°C
@ 10°C/min. (hold 10 min.)

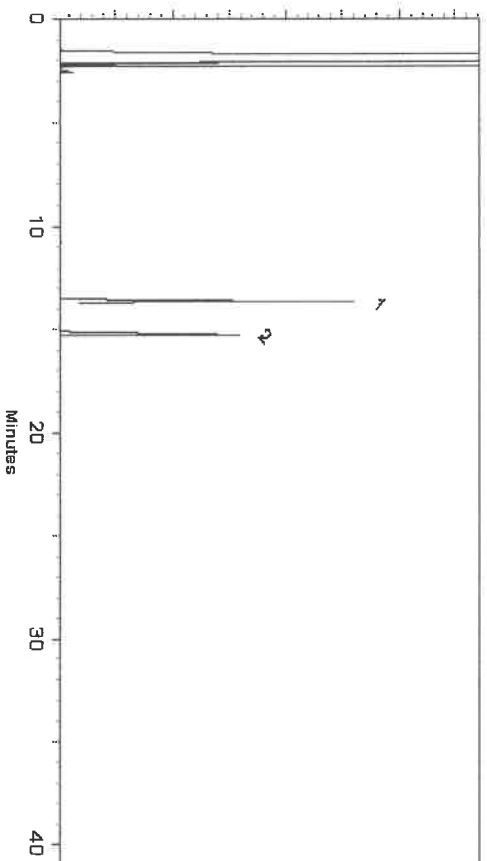
Inj. Temp:
250°C

Det. Temp:
330°C

Det. Type:
FID

Split Vent:
2 ml/min.

Inj. Vol
1µl



This chromatogram represents a general set of testing conditions chosen for product acceptance. For optimal results in your lab, conditions should be adjusted for your specific instrument, method, and application.

Stacey Wanner - Operations Technician I



Date Mixed: 24-Mar-2023

Balance Serial # 1128360905

Jennifer Polino - Operations Tech III - ARM QC

Date Passed: 28-Mar-2023

Manufactured under Restek's ISO 9001:2015
Registered Quality System
Certificate #FM 80397

General Certified Reference Material Notes

Expiration Notes:

- Expiration date valid for unopened ampul stored in compliance with the recommended conditions.
- Uncertainty, concentration, and expiration of the CRM are based on the unopened product being stored according to the recommended condition found in the storage field.

Purity Notes:

- Purity and/or chemical identity are determined by one or more of the following techniques: GC/FID, HPLC, GC/μECD, GC/MS, LC/MS, RI, and/or melting point.
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- Purity values are rounded to the nearest whole number.

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- The uncertainties are determined in accordance with ISO 17034 and Guide 35. The certified expanded uncertainty value includes gravimetric uncertainty, homogeneity between-ampul uncertainty, storage stability uncertainty and shipping stability uncertainty and were combined using the following formula:

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k is a coverage factor of 2, which gives a level of confidence of approximately 95%.

- The packaged amount is the minimum sample size for which uncertainty is valid. The ampuls are over-filled to ensure that the minimum packaged amount can be sufficiently transferred.

Manufacturing Notes:

- Concentration is based upon gravimetric preparation using either a balance whose calibration has been verified daily using NIST traceable weights, and/or dilutions with Class A glassware.

Handling Notes:

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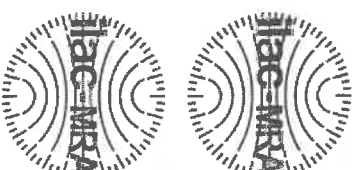
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ISO/IEC 17025 Accredited
Testing Laboratory
Certificate 93222102

FOR LABORATORY USE ONLY-READ SDS PRIOR TO USE.

This Reference Material is intended for Laboratory Use Only as a standard for the qualitative and/or quantitative determination of the analyte(s) listed.

Catalog No.: 30542

Lot No.: A0195645

Description: NJEPH Aliphatics Matrix Spike Mix

NJEPH Aliphatics Matrix Spike Mix 200 µg/mL, n-Pentane, 5mLampul

Container Size: 5 mL

Pkg Amt: > 5 mL

Expiration Date: April 30, 2030

Storage: 10°C or colder

Handling: Sonicate prior to use.

Ship: Ambient

CERTIFIED VALUES

Elution Order	Compound	CAS #	Lot #	Purity	Grav. Conc. (weight/volume)	Expanded Uncertainty * (95% C.L.; K=2)
1	n-Nonane (C9)	111-84-2	SHBN5361	99%	202.0 µg/mL	+/- 5.2184
2	n-Decane (C10)	124-18-5	SHBN8619	99%	201.3 µg/mL	+/- 5.2012
3	n-Dodecane (C12)	112-40-3	SHBP7054	99%	202.0 µg/mL	+/- 5.2184
4	n-Tetradecane (C14)	629-59-4	STBK5437	99%	201.7 µg/mL	+/- 5.2098
5	n-Hexadecane (C16)	544-76-3	SHBQ0897	99%	201.3 µg/mL	+/- 5.2012
6	n-Octadecane (C18)	593-45-3	UESNG	98%	201.6 µg/mL	+/- 5.2068
7	n-Eicosane (C20)	112-95-8	MKCN8767	97%	200.8 µg/mL	+/- 5.1871
8	n-Heneicosane (C21)	629-94-7	MKCL3226	99%	201.0 µg/mL	+/- 5.1926
9	n-Docosane (C22)	629-97-0	MKCL8918	99%	200.7 µg/mL	+/- 5.1839
10	n-Tetracosane (C24)	646-31-1	MKCQ8345	99%	201.3 µg/mL	+/- 5.2012
11	n-Hexacosane (C26)	630-01-3	MKCD4540	99%	201.0 µg/mL	+/- 5.1926
12	n-Octacosane (C28)	630-02-4	BCBS1577V	99%	201.7 µg/mL	+/- 5.2098
13	n-Triacontane (C30)	638-68-6	MKCQ9436	97%	200.8 µg/mL	+/- 5.1871
14	n-Dotriacontane (C32)	544-85-4	BCBW0661	99%	200.3 µg/mL	+/- 5.1753
15	n-Tetracontane (C34)	14167-59-0	D3MZN	99%	200.3 µg/mL	+/- 5.1753
16	n-Hexatriacontane (C36)	630-06-8	Z27H018	99%	200.3 µg/mL	+/- 5.1753
17	n-Octatriacontane (C38)	7194-85-6	0000145137	96%	201.6 µg/mL	+/- 5.2081

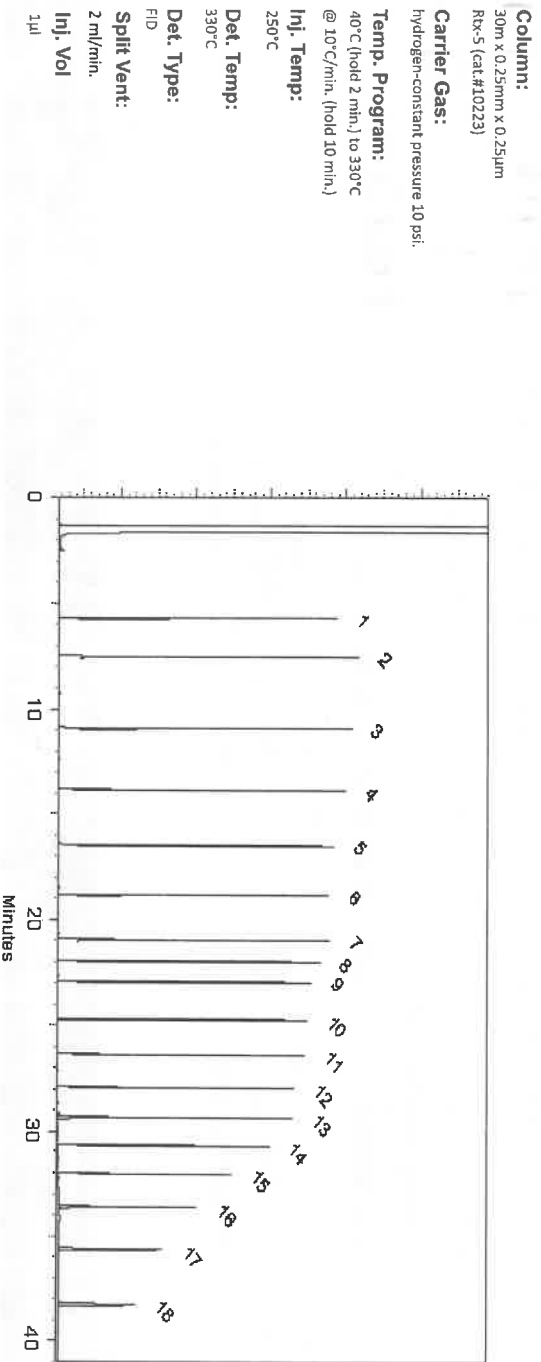
P12716
P12730
Y.P.
08/08/23

18	n-Tetracontane (C40)	4181-95-7	BSBME	99%	201.3	µg/mL	+/- 5.2012
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* Expanded Uncertainty displayed in same units as Grav. Conc.

Solvent: n-Pentane
CAS # 109-66-0
Purity 99%

Quality Confirmation Test



This chromatogram represents a general set of testing conditions chosen for product acceptance. For optimal results in your lab, conditions should be adjusted for your specific instrument, method, and application.

[Signature]
 Morgan Craighhead - Mix Technician

Date Mixed: 08-Mar-2023

Balance Serial # B442140311

Fang-Yun Wenner - Operations Lead Tech - ARM QC

Date Passed: 10-Mar-2023

Manufactured under Restek's ISO 9001:2015
 Registered Quality System
 Certificate #FM 80397

General Certified Reference Material Notes

Expiration Notes:

- Expiration date valid for unopened ampul stored in compliance with the recommended conditions.
- Uncertainty, concentration, and expiration of the CRM are based on the unopened product being stored according to the recommended condition found in the storage field.

Purity Notes:

- Purity and/or chemical identity are determined by one or more of the following techniques: GC/FID, HPLC, GC/μECD, GC/MS, LC/MS, RI, and/or melting point.
- Compounds with a listed purity of less than 99% have been weight corrected to compensate for impurities and/or salts. A correction factor is used to calculate the amount of compound necessary to achieve the desired concentration of the parent compound in solution.
- Purity of isomeric compounds is reported as the sum of the isomers.
- Purity values are rounded to the nearest whole number.

Certified Uncertainty Value Notes:

- The uncertainties are determined in accordance with ISO 17034 and Guide 35. The certified expanded uncertainty value includes gravimetric uncertainty, homogeneity between-ampul uncertainty, storage stability uncertainty and shipping stability uncertainty and were combined using the following formula:

$$U_{combined\ uncertainty} = k \sqrt{u_{gravimetric}^2 + u_{homogeneity}^2 + u_{storage\ stability}^2 + u_{shipping\ stability}^2}$$

k is a coverage factor of 2, which gives a level of confidence of approximately 95%.

- The packaged amount is the minimum sample size for which uncertainty is valid. The ampuls are over-filled to ensure that the minimum packaged amount can be sufficiently transferred.

Manufacturing Notes:

- Concentration is based upon gravimetric preparation using either a balance whose calibration has been verified daily using NIST traceable weights, and/or dilutions with Class A glassware.

Handling Notes:

- Stability of the unopened product, when stored in compliance with the recommended conditions, is guaranteed through the expiration displayed on the product label and certificate. Contact Restek for additional opened product stability information, with the knowledge/understanding that open product stability is subject to the specific handling and environmental conditions to which the product is exposed. For your convenience Restek supplies deactivated vials with most standards packed in 2 mL ampuls. Larger volume deactivated vials are available through Restek as a custom ordered item. Additionally, Restek sells DMDCS for the purpose of glassware deactivation as catalog number 31861, which includes complete instructions.
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CERTIFIED REFERENCE MATERIAL

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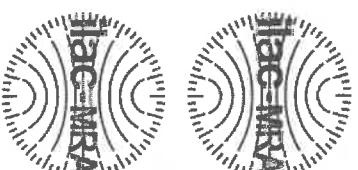
Tel: 1-814-353-1300

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Certificate of Analysis

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Certificate 93222102



ISO/IEC 17025 Accredited
Testing Laboratory
Certificate 93222102

FOR LABORATORY USE ONLY-READ SDS PRIOR TO USE.

This Reference Material is intended for Laboratory Use Only as a standard for the qualitative and/or quantitative determination of the analyte(s) listed.

Catalog No.: 30542

Lot No.: A0195645

Description: NJEPH Aliphatics Matrix Spike Mix

NJEPH Aliphatics Matrix Spike Mix 200 µg/mL, n-Pentane, 5mLampul

Container Size: 5 mL

Pkg Amt: > 5 mL

Expiration Date: April 30, 2030

Storage: 10°C or colder

Handling: Sonicate prior to use.

Ship: Ambient

CERTIFIED VALUES

Elution Order	Compound	CAS #	Lot #	Purity	Grav. Conc. (weight/volume)	Expanded Uncertainty * (95% C.L.; K=2)
1	n-Nonane (C9)	111-84-2	SHBN5361	99%	202.0 µg/mL	+/- 5.2184
2	n-Decane (C10)	124-18-5	SHBN8619	99%	201.3 µg/mL	+/- 5.2012
3	n-Dodecane (C12)	112-40-3	SHBP7054	99%	202.0 µg/mL	+/- 5.2184
4	n-Tetradecane (C14)	629-59-4	STBK5437	99%	201.7 µg/mL	+/- 5.2098
5	n-Hexadecane (C16)	544-76-3	SHBQ0897	99%	201.3 µg/mL	+/- 5.2012
6	n-Octadecane (C18)	593-45-3	UESNG	98%	201.6 µg/mL	+/- 5.2068
7	n-Eicosane (C20)	112-95-8	MKCN8767	97%	200.8 µg/mL	+/- 5.1871
8	n-Heneicosane (C21)	629-94-7	MKCL3226	99%	201.0 µg/mL	+/- 5.1926
9	n-Docosane (C22)	629-97-0	MKCL8918	99%	200.7 µg/mL	+/- 5.1839
10	n-Tetracosane (C24)	646-31-1	MKCQ8345	99%	201.3 µg/mL	+/- 5.2012
11	n-Hexacosane (C26)	630-01-3	MKCD4540	99%	201.0 µg/mL	+/- 5.1926
12	n-Octacosane (C28)	630-02-4	BCBS1577V	99%	201.7 µg/mL	+/- 5.2098
13	n-Triacontane (C30)	638-68-6	MKCQ9436	97%	200.8 µg/mL	+/- 5.1871
14	n-Dotriacontane (C32)	544-85-4	BCBW0661	99%	200.3 µg/mL	+/- 5.1753
15	n-Tetracontane (C34)	14167-59-0	D3MZN	99%	200.3 µg/mL	+/- 5.1753
16	n-Hexatriacontane (C36)	630-06-8	Z27H018	99%	200.3 µg/mL	+/- 5.1753
17	n-Octatriacontane (C38)	7194-85-6	0000145137	96%	201.6 µg/mL	+/- 5.2081

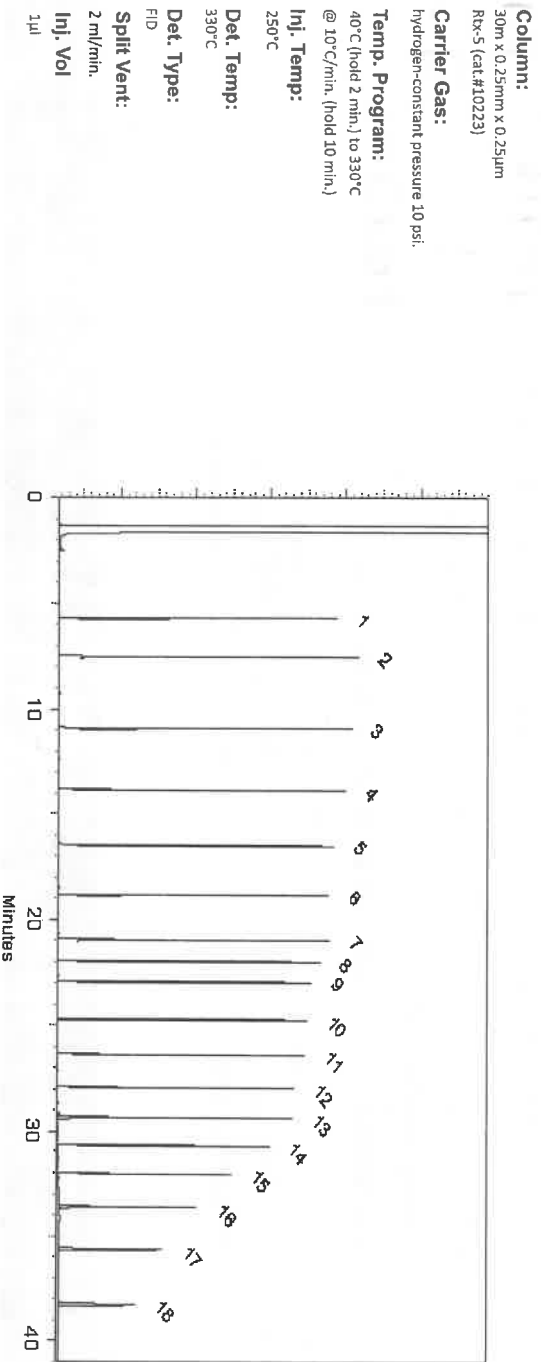
P12716
P12730
Y.P.
08/08/23

18	n-Tetracontane (C40)	4181-95-7	BSBME	99%	201.3	µg/mL	+/- 5.2012
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* Expanded Uncertainty displayed in same units as Grav. Conc.

Solvent: n-Pentane
CAS # 109-66-0
Purity 99%

Quality Confirmation Test



This chromatogram represents a general set of testing conditions chosen for product acceptance. For optimal results in your lab, conditions should be adjusted for your specific instrument, method, and application.

[Signature]
Morgan Craighood - Mix Technician

Date Mixed: 08-Mar-2023

Balance Serial # B442140311

Fang-Yun Wenner - Operations Lead Tech - ARM QC

Date Passed: 10-Mar-2023

Manufactured under Restek's ISO 9001:2015
Registered Quality System
Certificate #FM 80397

General Certified Reference Material Notes

Expiration Notes:

- Expiration date valid for unopened ampul stored in compliance with the recommended conditions.
- Uncertainty, concentration, and expiration of the CRM are based on the unopened product being stored according to the recommended condition found in the storage field.

Purity Notes:

- Purity and/or chemical identity are determined by one or more of the following techniques: GC/FID, HPLC, GC/μECD, GC/MS, LC/MS, RI, and/or melting point.
- Compounds with a listed purity of less than 99% have been weight corrected to compensate for impurities and/or salts. A correction factor is used to calculate the amount of compound necessary to achieve the desired concentration of the parent compound in solution.
- Purity of isomeric compounds is reported as the sum of the isomers.
- Purity values are rounded to the nearest whole number.

Certified Uncertainty Value Notes:

- The uncertainties are determined in accordance with ISO 17034 and Guide 35. The certified expanded uncertainty value includes gravimetric uncertainty, homogeneity between-ampul uncertainty, storage stability uncertainty and shipping stability uncertainty and were combined using the following formula:

$$U_{combined\ uncertainty} = k \sqrt{u_{gravimetric}^2 + u_{homogeneity}^2 + u_{storage\ stability}^2 + u_{shipping\ stability}^2}$$

k is a coverage factor of 2, which gives a level of confidence of approximately 95%.

- The packaged amount is the minimum sample size for which uncertainty is valid. The ampuls are over-filled to ensure that the minimum packaged amount can be sufficiently transferred.

Manufacturing Notes:

- Concentration is based upon gravimetric preparation using either a balance whose calibration has been verified daily using NIST traceable weights, and/or dilutions with Class A glassware.

Handling Notes:

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CERTIFIED REFERENCE MATERIAL

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Fax: 1-814-353-1309

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Catalog No.: 30542

Lot No.: A0195645

Description: NJEPH Aliphatics Matrix Spike Mix

NJEPH Aliphatics Matrix Spike Mix 200 µg/mL, n-Pentane, 5mLampul

Container Size: 5 mL

Pkg Amt: > 5 mL

Expiration Date: April 30, 2030

Storage: 10°C or colder

Handling: Sonicate prior to use.

Ship: Ambient

CERTIFIED VALUES

Elution Order	Compound	CAS #	Lot #	Purity	Grav. Conc. (weight/volume)	Expanded Uncertainty * (95% C.L.; K=2)
1	n-Nonane (C9)	111-84-2	SHBN5361	99%	202.0 µg/mL	+/- 5.2184
2	n-Decane (C10)	124-18-5	SHBN8619	99%	201.3 µg/mL	+/- 5.2012
3	n-Dodecane (C12)	112-40-3	SHBP7054	99%	202.0 µg/mL	+/- 5.2184
4	n-Tetradecane (C14)	629-59-4	STBK5437	99%	201.7 µg/mL	+/- 5.2098
5	n-Hexadecane (C16)	544-76-3	SHBQ0897	99%	201.3 µg/mL	+/- 5.2012
6	n-Octadecane (C18)	593-45-3	UESNG	98%	201.6 µg/mL	+/- 5.2068
7	n-Eicosane (C20)	112-95-8	MKCN8767	97%	200.8 µg/mL	+/- 5.1871
8	n-Heneicosane (C21)	629-94-7	MKCL3226	99%	201.0 µg/mL	+/- 5.1926
9	n-Docosane (C22)	629-97-0	MKCL8918	99%	200.7 µg/mL	+/- 5.1839
10	n-Tetracosane (C24)	646-31-1	MKCQ8345	99%	201.3 µg/mL	+/- 5.2012
11	n-Hexacosane (C26)	630-01-3	MKCD4540	99%	201.0 µg/mL	+/- 5.1926
12	n-Octacosane (C28)	630-02-4	BCBS1577V	99%	201.7 µg/mL	+/- 5.2098
13	n-Triacontane (C30)	638-68-6	MKCQ9436	97%	200.8 µg/mL	+/- 5.1871
14	n-Dotriacontane (C32)	544-85-4	BCBW0661	99%	200.3 µg/mL	+/- 5.1753
15	n-Tetracontane (C34)	14167-59-0	D3MZN	99%	200.3 µg/mL	+/- 5.1753
16	n-Hexatriacontane (C36)	630-06-8	Z27H018	99%	200.3 µg/mL	+/- 5.1753
17	n-Octatriacontane (C38)	7194-85-6	0000145137	96%	201.6 µg/mL	+/- 5.2081

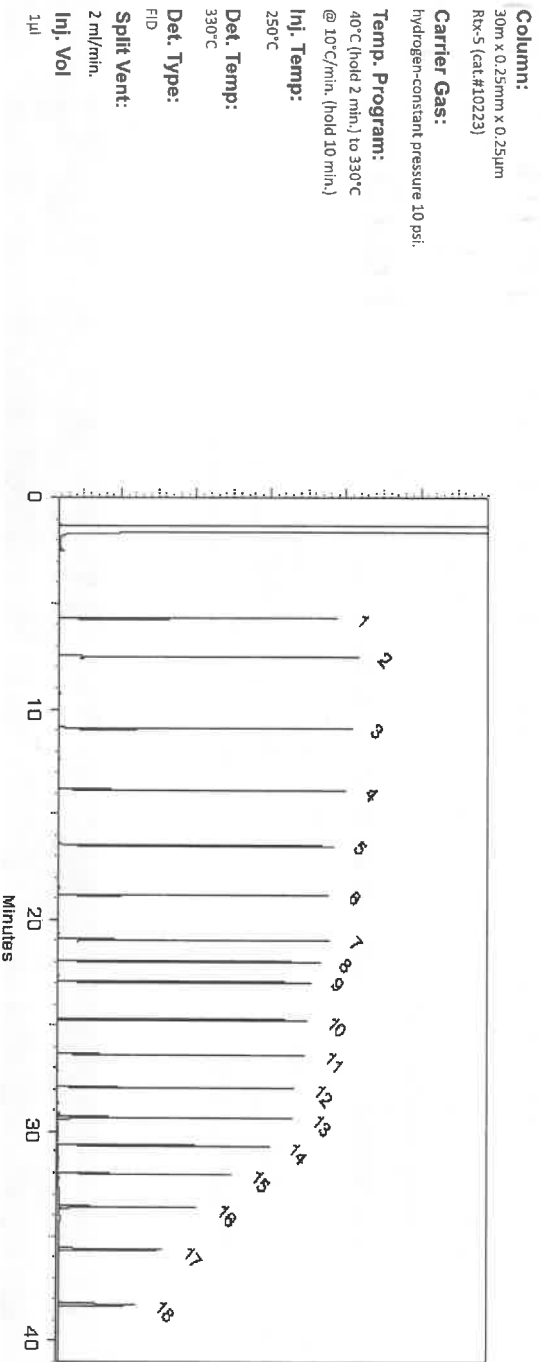
P12716
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08/08/23

18	n-Tetracontane (C40)	4181-95-7	BSBME	99%	201.3	µg/mL	+/- 5.2012
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* Expanded Uncertainty displayed in same units as Grav. Conc.

Solvent: n-Pentane
CAS # 109-66-0
Purity 99%

Quality Confirmation Test



This chromatogram represents a general set of testing conditions chosen for product acceptance. For optimal results in your lab, conditions should be adjusted for your specific instrument, method, and application.

[Signature]
 Morgan Craighood - Mix Technician

Date Mixed: 08-Mar-2023

Balance Serial # B442140311

Fang-Yun Wenner - Operations Lead Tech - ARM QC

Date Passed: 10-Mar-2023

Manufactured under Restek's ISO 9001:2015
 Registered Quality System
 Certificate #FM 80397

General Certified Reference Material Notes

Expiration Notes:

- Expiration date valid for unopened ampul stored in compliance with the recommended conditions.
- Uncertainty, concentration, and expiration of the CRM are based on the unopened product being stored according to the recommended condition found in the storage field.

Purity Notes:

- Purity and/or chemical identity are determined by one or more of the following techniques: GC/FID, HPLC, GC/μECD, GC/MS, LC/MS, RI, and/or melting point.
- Compounds with a listed purity of less than 99% have been weight corrected to compensate for impurities and/or salts. A correction factor is used to calculate the amount of compound necessary to achieve the desired concentration of the parent compound in solution.
- Purity of isomeric compounds is reported as the sum of the isomers.
- Purity values are rounded to the nearest whole number.

Certified Uncertainty Value Notes:

- The uncertainties are determined in accordance with ISO 17034 and Guide 35. The certified expanded uncertainty value includes gravimetric uncertainty, homogeneity between-ampul uncertainty, storage stability uncertainty and shipping stability uncertainty and were combined using the following formula:

$$U_{combined\ uncertainty} = k \sqrt{u_{gravimetric}^2 + u_{homogeneity}^2 + u_{storage\ stability}^2 + u_{shipping\ stability}^2}$$

k is a coverage factor of 2, which gives a level of confidence of approximately 95%.

- The packaged amount is the minimum sample size for which uncertainty is valid. The ampuls are over-filled to ensure that the minimum packaged amount can be sufficiently transferred.

Manufacturing Notes:

- Concentration is based upon gravimetric preparation using either a balance whose calibration has been verified daily using NIST traceable weights, and/or dilutions with Class A glassware.

Handling Notes:

- Stability of the unopened product, when stored in compliance with the recommended conditions, is guaranteed through the expiration displayed on the product label and certificate. Contact Restek for additional opened product stability information, with the knowledge/understanding that open product stability is subject to the specific handling and environmental conditions to which the product is exposed. For your convenience Restek supplies deactivated vials with most standards packed in 2 mL ampuls. Larger volume deactivated vials are available through Restek as a custom ordered item. Additionally, Restek sells DMDCS for the purpose of glassware deactivation as catalog number 31861, which includes complete instructions.
- If any undissolved material is visible inside the ampul, sonicate the unopened ampul until the material is completely dissolved.



CERTIFIED REFERENCE MATERIAL

110 Benner Circle

Belleville, PA 16823-8812

Tel: 1-814-353-1300

Fax: 1-814-353-1309

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chromatographic plus



FOR LABORATORY USE ONLY-READ SDS PRIOR TO USE.

This Reference Material is intended for Laboratory Use Only as a standard for the qualitative and/or quantitative determination of the analyte(s) listed.

Catalog No.: 30542

Lot No.: A0195645

Description: NJEPH Aliphatics Matrix Spike Mix

NJEPH Aliphatics Matrix Spike Mix 200 µg/mL, n-Pentane, 5mLampul

Container Size: 5 mL

Pkg Amt: > 5 mL

Expiration Date: April 30, 2030

Storage: 10°C or colder

Handling: Sonicate prior to use.

Ship: Ambient

CERTIFIED VALUES

Elution Order	Compound	CAS #	Lot #	Purity	Grav. Conc. (weight/volume)	Expanded Uncertainty * (95% C.L.; K=2)
1	n-Nonane (C9)	111-84-2	SHBN5361	99%	202.0 µg/mL	+/- 5.2184
2	n-Decane (C10)	124-18-5	SHBN8619	99%	201.3 µg/mL	+/- 5.2012
3	n-Dodecane (C12)	112-40-3	SHBP7054	99%	202.0 µg/mL	+/- 5.2184
4	n-Tetradecane (C14)	629-59-4	STBK5437	99%	201.7 µg/mL	+/- 5.2098
5	n-Hexadecane (C16)	544-76-3	SHBQ0897	99%	201.3 µg/mL	+/- 5.2012
6	n-Octadecane (C18)	593-45-3	UESNG	98%	201.6 µg/mL	+/- 5.2068
7	n-Eicosane (C20)	112-95-8	MKCN8767	97%	200.8 µg/mL	+/- 5.1871
8	n-Heneicosane (C21)	629-94-7	MKCL3226	99%	201.0 µg/mL	+/- 5.1926
9	n-Docosane (C22)	629-97-0	MKCL8918	99%	200.7 µg/mL	+/- 5.1839
10	n-Tetracosane (C24)	646-31-1	MKCQ8345	99%	201.3 µg/mL	+/- 5.2012
11	n-Hexacosane (C26)	630-01-3	MKCD4540	99%	201.0 µg/mL	+/- 5.1926
12	n-Octacosane (C28)	630-02-4	BCBS1577V	99%	201.7 µg/mL	+/- 5.2098
13	n-Triacontane (C30)	638-68-6	MKCQ9436	97%	200.8 µg/mL	+/- 5.1871
14	n-Dotriacontane (C32)	544-85-4	BCBW0661	99%	200.3 µg/mL	+/- 5.1753
15	n-Tetracontane (C34)	14167-59-0	D3MZN	99%	200.3 µg/mL	+/- 5.1753
16	n-Hexatriacontane (C36)	630-06-8	Z27H018	99%	200.3 µg/mL	+/- 5.1753
17	n-Octatriacontane (C38)	7194-85-6	0000145137	96%	201.6 µg/mL	+/- 5.2081

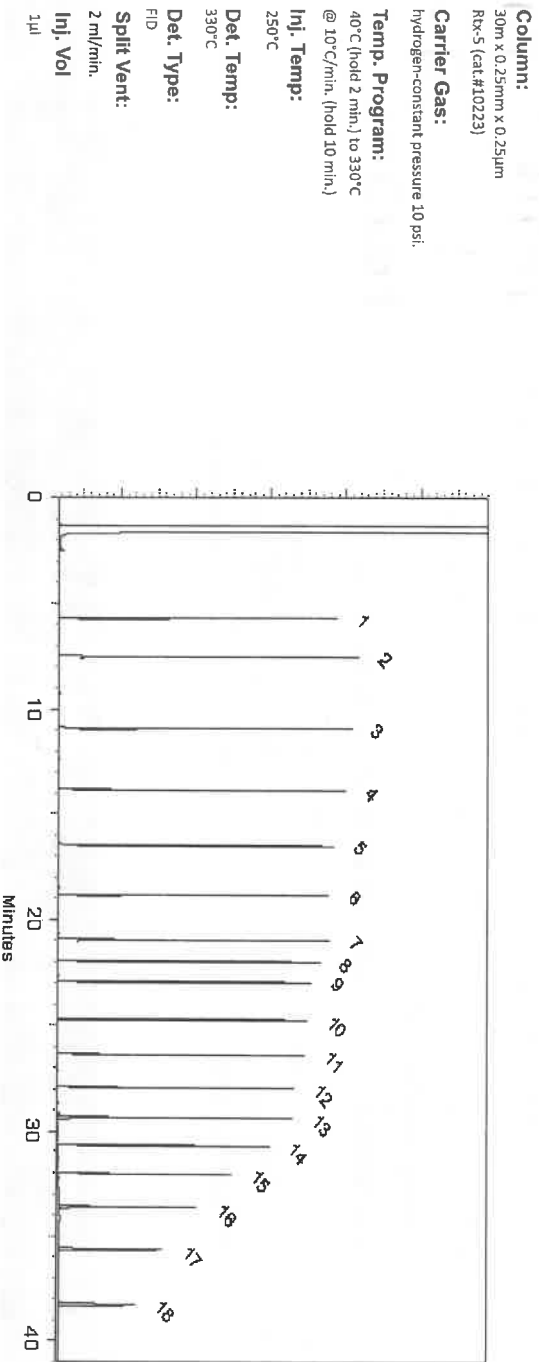
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08/08/23

18	n-Tetracontane (C40)	4181-95-7	BSBME	99%	201.3	µg/mL	+/- 5.2012
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* Expanded Uncertainty displayed in same units as Grav. Conc.

Solvent: n-Pentane
CAS # 109-66-0
Purity 99%

Quality Confirmation Test



This chromatogram represents a general set of testing conditions chosen for product acceptance. For optimal results in your lab, conditions should be adjusted for your specific instrument, method, and application.

[Signature]
Morgan Craighhead - Mix Technician

Date Mixed: 08-Mar-2023

Balance Serial # B442140311

Fang-Yun Wenner - Operations Lead Tech - ARM QC

Date Passed: 10-Mar-2023

Manufactured under Restek's ISO 9001:2015
Registered Quality System
Certificate #FM 80397

General Certified Reference Material Notes

Expiration Notes:

- Expiration date valid for unopened ampul stored in compliance with the recommended conditions.
- Uncertainty, concentration, and expiration of the CRM are based on the unopened product being stored according to the recommended condition found in the storage field.

Purity Notes:

- Purity and/or chemical identity are determined by one or more of the following techniques: GC/FID, HPLC, GC/μECD, GC/MS, LC/MS, RI, and/or melting point.
- Compounds with a listed purity of less than 99% have been weight corrected to compensate for impurities and/or salts. A correction factor is used to calculate the amount of compound necessary to achieve the desired concentration of the parent compound in solution.
- Purity of isomeric compounds is reported as the sum of the isomers.
- Purity values are rounded to the nearest whole number.

Certified Uncertainty Value Notes:

- The uncertainties are determined in accordance with ISO 17034 and Guide 35. The certified expanded uncertainty value includes gravimetric uncertainty, homogeneity between-ampul uncertainty, storage stability uncertainty and shipping stability uncertainty and were combined using the following formula:

$$U_{combined\ uncertainty} = k \sqrt{u_{gravimetric}^2 + u_{homogeneity}^2 + u_{storage\ stability}^2 + u_{shipping\ stability}^2}$$

k is a coverage factor of 2, which gives a level of confidence of approximately 95%.

- The packaged amount is the minimum sample size for which uncertainty is valid. The ampuls are over-filled to ensure that the minimum packaged amount can be sufficiently transferred.

Manufacturing Notes:

- Concentration is based upon gravimetric preparation using either a balance whose calibration has been verified daily using NIST traceable weights, and/or dilutions with Class A glassware.

Handling Notes:

- Stability of the unopened product, when stored in compliance with the recommended conditions, is guaranteed through the expiration displayed on the product label and certificate. Contact Restek for additional opened product stability information, with the knowledge/understanding that open product stability is subject to the specific handling and environmental conditions to which the product is exposed. For your convenience Restek supplies deactivated vials with most standards packed in 2 mL ampuls. Larger volume deactivated vials are available through Restek as a custom ordered item. Additionally, Restek sells DMDCS for the purpose of glassware deactivation as catalog number 31861, which includes complete instructions.
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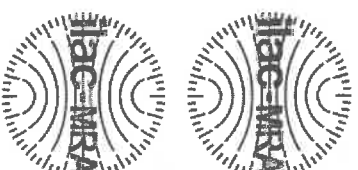
Tel: 1-814-353-1300

Fax: 1-814-353-1309

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Certificate of Analysis

chromatographic plus



FOR LABORATORY USE ONLY-READ SDS PRIOR TO USE.

This Reference Material is intended for Laboratory Use Only as a standard for the qualitative and/or quantitative determination of the analyte(s) listed.

Catalog No.: 30542

Lot No.: A0195645

Description: NIEPH Aliphatics Matrix Spike Mix

NIEPH Aliphatics Matrix Spike Mix 200 µg/mL, n-Pentane, 5mLampul

Container Size: 5 mL

Pkg Amt: > 5 mL

Expiration Date: April 30, 2030

Storage: 10°C or colder

Handling: Sonicate prior to use.

Ship: Ambient

CERTIFIED VALUES

Elution Order	Compound	CAS #	Lot #	Purity	Grav. Conc. (weight/volume)	Expanded Uncertainty * (95% C.L.; K=2)
1	n-Nonane (C9)	111-84-2	SHBN5361	99%	202.0 µg/mL	+/- 5.2184
2	n-Decane (C10)	124-18-5	SHBN8619	99%	201.3 µg/mL	+/- 5.2012
3	n-Dodecane (C12)	112-40-3	SHBP7054	99%	202.0 µg/mL	+/- 5.2184
4	n-Tetradecane (C14)	629-59-4	STBK5437	99%	201.7 µg/mL	+/- 5.2098
5	n-Hexadecane (C16)	544-76-3	SHBQ0897	99%	201.3 µg/mL	+/- 5.2012
6	n-Octadecane (C18)	593-45-3	UESNG	98%	201.6 µg/mL	+/- 5.2068
7	n-Eicosane (C20)	112-95-8	MKCN8767	97%	200.8 µg/mL	+/- 5.1871
8	n-Heneicosane (C21)	629-94-7	MKCL3226	99%	201.0 µg/mL	+/- 5.1926
9	n-Docosane (C22)	629-97-0	MKCL8918	99%	200.7 µg/mL	+/- 5.1839
10	n-Tetracosane (C24)	646-31-1	MKCQ8345	99%	201.3 µg/mL	+/- 5.2012
11	n-Hexacosane (C26)	630-01-3	MKCD4540	99%	201.0 µg/mL	+/- 5.1926
12	n-Octacosane (C28)	630-02-4	BCBS1577V	99%	201.7 µg/mL	+/- 5.2098
13	n-Triacontane (C30)	638-68-6	MKCQ9436	97%	200.8 µg/mL	+/- 5.1871
14	n-Dotriacontane (C32)	544-85-4	BCBW0661	99%	200.3 µg/mL	+/- 5.1753
15	n-Tetracontane (C34)	14167-59-0	D3MZN	99%	200.3 µg/mL	+/- 5.1753
16	n-Hexatriacontane (C36)	630-06-8	Z27H018	99%	200.3 µg/mL	+/- 5.1753
17	n-Octatriacontane (C38)	7194-85-6	0000145137	96%	201.6 µg/mL	+/- 5.2081

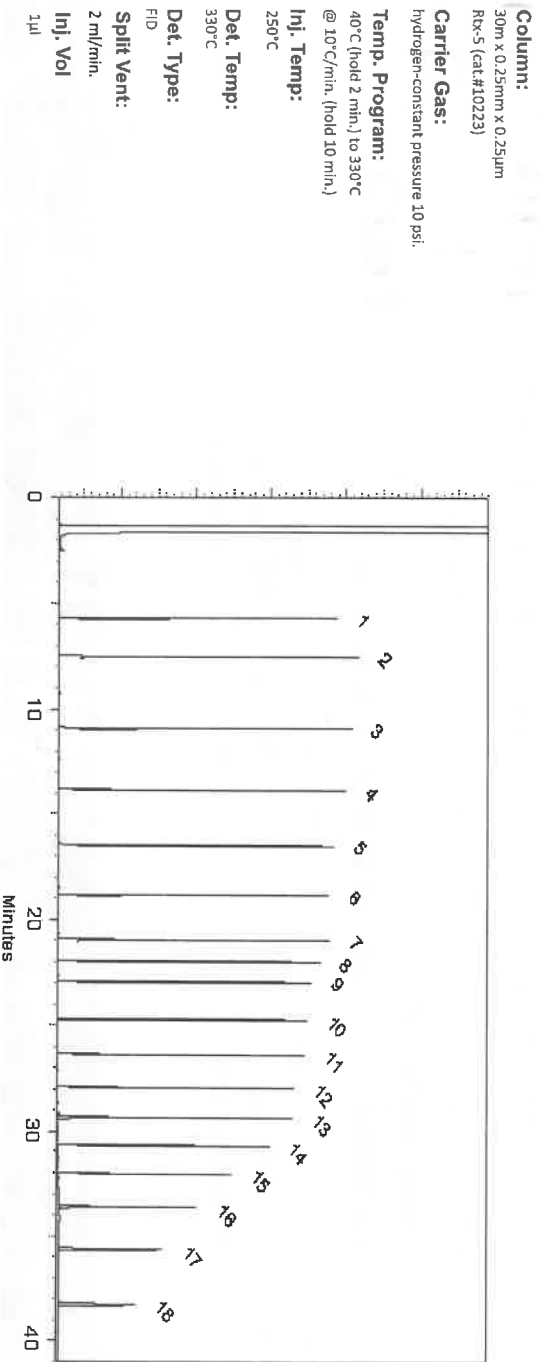
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08/08/23

18	n-Tetracontane (C40)	4181-95-7	BSBME	99%	201.3	µg/mL	+/- 5.2012
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* Expanded Uncertainty displayed in same units as Grav. Conc.

Solvent: n-Pentane
CAS # 109-66-0
Purity 99%

Quality Confirmation Test



This chromatogram represents a general set of testing conditions chosen for product acceptance. For optimal results in your lab, conditions should be adjusted for your specific instrument, method, and application.

[Signature]
 Morgan Craighhead - Mix Technician

Date Mixed: 08-Mar-2023

Balance Serial # B442140311

Fang-Yun Wenner - Operations Lead Tech - ARM QC

Date Passed: 10-Mar-2023

Manufactured under Restek's ISO 9001:2015
 Registered Quality System
 Certificate #FM 80397

General Certified Reference Material Notes

Expiration Notes:

- Expiration date valid for unopened ampul stored in compliance with the recommended conditions.
- Uncertainty, concentration, and expiration of the CRM are based on the unopened product being stored according to the recommended condition found in the storage field.

Purity Notes:

- Purity and/or chemical identity are determined by one or more of the following techniques: GC/FID, HPLC, GC/μECD, GC/MS, LC/MS, RI, and/or melting point.
- Compounds with a listed purity of less than 99% have been weight corrected to compensate for impurities and/or salts. A correction factor is used to calculate the amount of compound necessary to achieve the desired concentration of the parent compound in solution.
- Purity of isomeric compounds is reported as the sum of the isomers.
- Purity values are rounded to the nearest whole number.

Certified Uncertainty Value Notes:

- The uncertainties are determined in accordance with ISO 17034 and Guide 35. The certified expanded uncertainty value includes gravimetric uncertainty, homogeneity between-ampul uncertainty, storage stability uncertainty and shipping stability uncertainty and were combined using the following formula:

$$U_{combined\ uncertainty} = k \sqrt{u_{gravimetric}^2 + u_{homogeneity}^2 + u_{storage\ stability}^2 + u_{shipping\ stability}^2}$$

k is a coverage factor of 2, which gives a level of confidence of approximately 95%.

- The packaged amount is the minimum sample size for which uncertainty is valid. The ampuls are over-filled to ensure that the minimum packaged amount can be sufficiently transferred.

Manufacturing Notes:

- Concentration is based upon gravimetric preparation using either a balance whose calibration has been verified daily using NIST traceable weights, and/or dilutions with Class A glassware.

Handling Notes:

- Stability of the unopened product, when stored in compliance with the recommended conditions, is guaranteed through the expiration displayed on the product label and certificate. Contact Restek for additional opened product stability information, with the knowledge/understanding that open product stability is subject to the specific handling and environmental conditions to which the product is exposed. For your convenience Restek supplies deactivated vials with most standards packed in 2 mL ampuls. Larger volume deactivated vials are available through Restek as a custom ordered item. Additionally, Restek sells DMDCS for the purpose of glassware deactivation as catalog number 31861, which includes complete instructions.
- If any undissolved material is visible inside the ampul, sonicate the unopened ampul until the material is completely dissolved.



CERTIFIED REFERENCE MATERIAL

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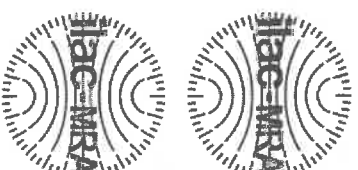
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Fax: 1-814-353-1309

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Certificate of Analysis

chromatographic plus



FOR LABORATORY USE ONLY-READ SDS PRIOR TO USE.

This Reference Material is intended for Laboratory Use Only as a standard for the qualitative and/or quantitative determination of the analyte(s) listed.

Catalog No.: 30542

Lot No.: A0195645

Description: NJEPH Aliphatics Matrix Spike Mix

NJEPH Aliphatics Matrix Spike Mix 200 µg/mL, n-Pentane, 5mLampul

Container Size: 5 mL

Pkg Amt: > 5 mL

Expiration Date: April 30, 2030

Storage: 10°C or colder

Handling: Sonicate prior to use.

Ship: Ambient

CERTIFIED VALUES

Elution Order	Compound	CAS #	Lot #	Purity	Grav. Conc. (weight/volume)	Expanded Uncertainty * (95% C.L.; K=2)
1	n-Nonane (C9)	111-84-2	SHBN5361	99%	202.0 µg/mL	+/- 5.2184
2	n-Decane (C10)	124-18-5	SHBN8619	99%	201.3 µg/mL	+/- 5.2012
3	n-Dodecane (C12)	112-40-3	SHBP7054	99%	202.0 µg/mL	+/- 5.2184
4	n-Tetradecane (C14)	629-59-4	STBK5437	99%	201.7 µg/mL	+/- 5.2098
5	n-Hexadecane (C16)	544-76-3	SHBQ0897	99%	201.3 µg/mL	+/- 5.2012
6	n-Octadecane (C18)	593-45-3	UESNG	98%	201.6 µg/mL	+/- 5.2068
7	n-Eicosane (C20)	112-95-8	MKCN8767	97%	200.8 µg/mL	+/- 5.1871
8	n-Heneicosane (C21)	629-94-7	MKCL3226	99%	201.0 µg/mL	+/- 5.1926
9	n-Docosane (C22)	629-97-0	MKCL8918	99%	200.7 µg/mL	+/- 5.1839
10	n-Tetracosane (C24)	646-31-1	MKCQ8345	99%	201.3 µg/mL	+/- 5.2012
11	n-Hexacosane (C26)	630-01-3	MKCD4540	99%	201.0 µg/mL	+/- 5.1926
12	n-Octacosane (C28)	630-02-4	BCBS1577V	99%	201.7 µg/mL	+/- 5.2098
13	n-Triacontane (C30)	638-68-6	MKCQ9436	97%	200.8 µg/mL	+/- 5.1871
14	n-Dotriacontane (C32)	544-85-4	BCBW0661	99%	200.3 µg/mL	+/- 5.1753
15	n-Tetracontane (C34)	14167-59-0	D3MZN	99%	200.3 µg/mL	+/- 5.1753
16	n-Hexatriacontane (C36)	630-06-8	Z27H018	99%	200.3 µg/mL	+/- 5.1753
17	n-Octatriacontane (C38)	7194-85-6	0000145137	96%	201.6 µg/mL	+/- 5.2081

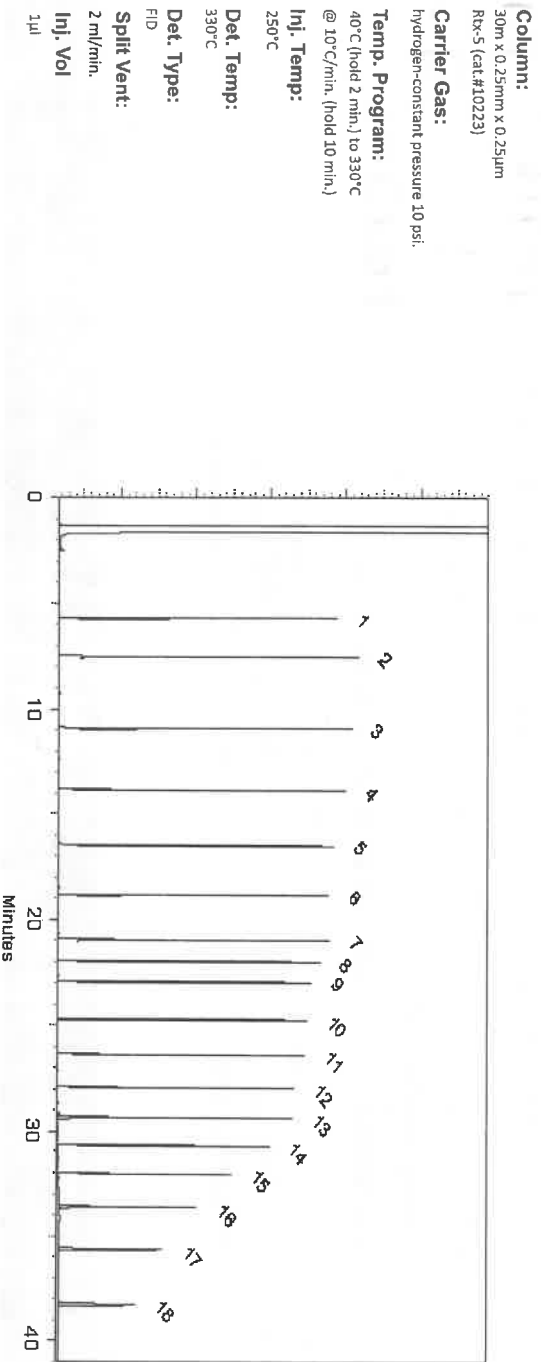
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08/08/23

18	n-Tetracontane (C40)	4181-95-7	BSBME	99%	201.3	µg/mL	+/- 5.2012
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* Expanded Uncertainty displayed in same units as Grav. Conc.

Solvent: n-Pentane
CAS # 109-66-0
Purity 99%

Quality Confirmation Test



This chromatogram represents a general set of testing conditions chosen for product acceptance. For optimal results in your lab, conditions should be adjusted for your specific instrument, method, and application.

[Signature]
 Morgan Craighhead - Mix Technician

Date Mixed: 08-Mar-2023

Balance Serial # B442140311

Fang-Yun Wenner - Operations Lead Tech - ARM QC

Date Passed: 10-Mar-2023

Manufactured under Restek's ISO 9001:2015
 Registered Quality System
 Certificate #FM 80397

General Certified Reference Material Notes

Expiration Notes:

- Expiration date valid for unopened ampul stored in compliance with the recommended conditions.
- Uncertainty, concentration, and expiration of the CRM are based on the unopened product being stored according to the recommended condition found in the storage field.

Purity Notes:

- Purity and/or chemical identity are determined by one or more of the following techniques: GC/FID, HPLC, GC/μECD, GC/MS, LC/MS, RI, and/or melting point.
- Compounds with a listed purity of less than 99% have been weight corrected to compensate for impurities and/or salts. A correction factor is used to calculate the amount of compound necessary to achieve the desired concentration of the parent compound in solution.
- Purity of isomeric compounds is reported as the sum of the isomers.
- Purity values are rounded to the nearest whole number.

Certified Uncertainty Value Notes:

- The uncertainties are determined in accordance with ISO 17034 and Guide 35. The certified expanded uncertainty value includes gravimetric uncertainty, homogeneity between-ampul uncertainty, storage stability uncertainty and shipping stability uncertainty and were combined using the following formula:

$$U_{combined\ uncertainty} = k \sqrt{u_{gravimetric}^2 + u_{homogeneity}^2 + u_{storage\ stability}^2 + u_{shipping\ stability}^2}$$

k is a coverage factor of 2, which gives a level of confidence of approximately 95%.

- The packaged amount is the minimum sample size for which uncertainty is valid. The ampuls are over-filled to ensure that the minimum packaged amount can be sufficiently transferred.

Manufacturing Notes:

- Concentration is based upon gravimetric preparation using either a balance whose calibration has been verified daily using NIST traceable weights, and/or dilutions with Class A glassware.

Handling Notes:

- Stability of the unopened product, when stored in compliance with the recommended conditions, is guaranteed through the expiration displayed on the product label and certificate. Contact Restek for additional opened product stability information, with the knowledge/understanding that open product stability is subject to the specific handling and environmental conditions to which the product is exposed. For your convenience Restek supplies deactivated vials with most standards packed in 2 mL ampuls. Larger volume deactivated vials are available through Restek as a custom ordered item. Additionally, Restek sells DMDCS for the purpose of glassware deactivation as catalog number 31861, which includes complete instructions.
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CERTIFIED REFERENCE MATERIAL

110 Benner Circle

Belleville, PA 16823-8812

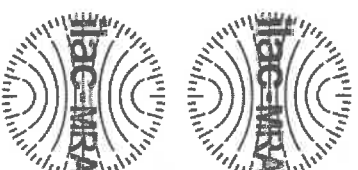
Tel: 1-814-353-1300

Fax: 1-814-353-1309

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chromatographic plus



ISO 17034 Accredited
Reference Material Producer
Certificate 93222102



ISO/IEC 17025 Accredited
Testing Laboratory
Certificate 93222102

FOR LABORATORY USE ONLY-READ SDS PRIOR TO USE.

This Reference Material is intended for Laboratory Use Only as a standard for the qualitative and/or quantitative determination of the analyte(s) listed.

Catalog No.: 30542

Lot No.: A0195645

Description: NJEPH Aliphatics Matrix Spike Mix

NJEPH Aliphatics Matrix Spike Mix 200 µg/mL, n-Pentane, 5mLampul

Container Size: 5 mL

Pkg Amt: > 5 mL

Expiration Date: April 30, 2030

Storage: 10°C or colder

Handling: Sonicate prior to use.

Ship: Ambient

CERTIFIED VALUES

Elution Order	Compound	CAS #	Lot #	Purity	Grav. Conc. (weight/volume)	Expanded Uncertainty * (95% C.L.; K=2)
1	n-Nonane (C9)	111-84-2	SHBN5361	99%	202.0 µg/mL	+/- 5.2184
2	n-Decane (C10)	124-18-5	SHBN8619	99%	201.3 µg/mL	+/- 5.2012
3	n-Dodecane (C12)	112-40-3	SHBP7054	99%	202.0 µg/mL	+/- 5.2184
4	n-Tetradecane (C14)	629-59-4	STBK5437	99%	201.7 µg/mL	+/- 5.2098
5	n-Hexadecane (C16)	544-76-3	SHBQ0897	99%	201.3 µg/mL	+/- 5.2012
6	n-Octadecane (C18)	593-45-3	UESNG	98%	201.6 µg/mL	+/- 5.2068
7	n-Eicosane (C20)	112-95-8	MKCN8767	97%	200.8 µg/mL	+/- 5.1871
8	n-Heneicosane (C21)	629-94-7	MKCL3226	99%	201.0 µg/mL	+/- 5.1926
9	n-Docosane (C22)	629-97-0	MKCL8918	99%	200.7 µg/mL	+/- 5.1839
10	n-Tetracosane (C24)	646-31-1	MKCQ8345	99%	201.3 µg/mL	+/- 5.2012
11	n-Hexacosane (C26)	630-01-3	MKCD4540	99%	201.0 µg/mL	+/- 5.1926
12	n-Octacosane (C28)	630-02-4	BCBS1577V	99%	201.7 µg/mL	+/- 5.2098
13	n-Triacontane (C30)	638-68-6	MKCQ9436	97%	200.8 µg/mL	+/- 5.1871
14	n-Dotriacontane (C32)	544-85-4	BCBW0661	99%	200.3 µg/mL	+/- 5.1753
15	n-Tetracontane (C34)	14167-59-0	D3MZN	99%	200.3 µg/mL	+/- 5.1753
16	n-Hexatriacontane (C36)	630-06-8	Z27H018	99%	200.3 µg/mL	+/- 5.1753
17	n-Octatriacontane (C38)	7194-85-6	0000145137	96%	201.6 µg/mL	+/- 5.2081

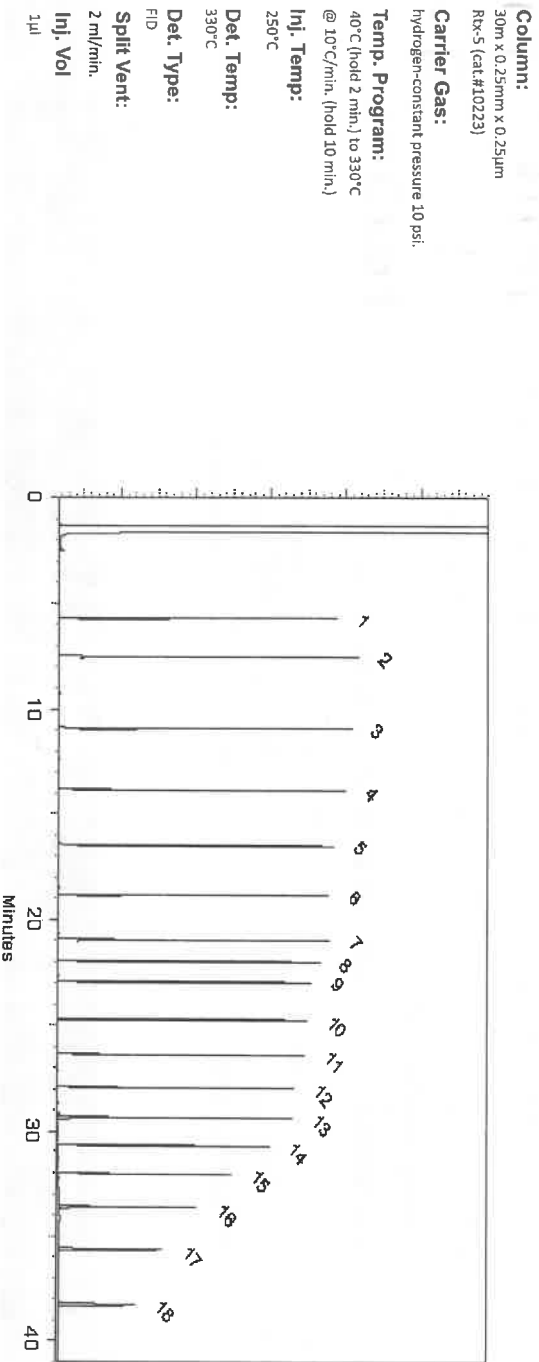
P12716
P12730
Y.P.
08/08/23

18	n-Tetracontane (C40)	4181-95-7	BSBME	99%	201.3	µg/mL	+/- 5.2012
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* Expanded Uncertainty displayed in same units as Grav. Conc.

Solvent: n-Pentane
CAS # 109-66-0
Purity 99%

Quality Confirmation Test



This chromatogram represents a general set of testing conditions chosen for product acceptance. For optimal results in your lab, conditions should be adjusted for your specific instrument, method, and application.

[Signature]
 Morgan Craighood - Mix Technician

Date Mixed: 08-Mar-2023

Balance Serial # B442140311

[Signature]
 Fanyun Wenner - Operations Lead Tech - ARM QC

Date Passed: 10-Mar-2023

Manufactured under Restek's ISO 9001:2015
 Registered Quality System
 Certificate #FM 80397

General Certified Reference Material Notes

Expiration Notes:

- Expiration date valid for unopened ampul stored in compliance with the recommended conditions.
- Uncertainty, concentration, and expiration of the CRM are based on the unopened product being stored according to the recommended condition found in the storage field.

Purity Notes:

- Purity and/or chemical identity are determined by one or more of the following techniques: GC/FID, HPLC, GC/μECD, GC/MS, LC/MS, RI, and/or melting point.
- Compounds with a listed purity of less than 99% have been weight corrected to compensate for impurities and/or salts. A correction factor is used to calculate the amount of compound necessary to achieve the desired concentration of the parent compound in solution.
- Purity of isomeric compounds is reported as the sum of the isomers.
- Purity values are rounded to the nearest whole number.

Certified Uncertainty Value Notes:

- The uncertainties are determined in accordance with ISO 17034 and Guide 35. The certified expanded uncertainty value includes gravimetric uncertainty, homogeneity between-ampul uncertainty, storage stability uncertainty and shipping stability uncertainty and were combined using the following formula:

$$U_{combined\ uncertainty} = k \sqrt{u_{gravimetric}^2 + u_{homogeneity}^2 + u_{storage\ stability}^2 + u_{shipping\ stability}^2}$$

k is a coverage factor of 2, which gives a level of confidence of approximately 95%.

- The packaged amount is the minimum sample size for which uncertainty is valid. The ampuls are over-filled to ensure that the minimum packaged amount can be sufficiently transferred.

Manufacturing Notes:

- Concentration is based upon gravimetric preparation using either a balance whose calibration has been verified daily using NIST traceable weights, and/or dilutions with Class A glassware.

Handling Notes:

- Stability of the unopened product, when stored in compliance with the recommended conditions, is guaranteed through the expiration displayed on the product label and certificate. Contact Restek for additional opened product stability information, with the knowledge/understanding that open product stability is subject to the specific handling and environmental conditions to which the product is exposed. For your convenience Restek supplies deactivated vials with most standards packed in 2 mL ampuls. Larger volume deactivated vials are available through Restek as a custom ordered item. Additionally, Restek sells DMDCS for the purpose of glassware deactivation as catalog number 31861, which includes complete instructions.
- If any undissolved material is visible inside the ampul, sonicate the unopened ampul until the material is completely dissolved.



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110 Benner Circle

Belleville, PA 16823-8812

Tel: 1-814-353-1300

Fax: 1-814-353-1309

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Certificate of Analysis

chromatographic plus



FOR LABORATORY USE ONLY-READ SDS PRIOR TO USE.

This Reference Material is intended for Laboratory Use Only as a standard for the qualitative and/or quantitative determination of the analyte(s) listed.

Catalog No.: 30542

Lot No.: A0195645

Description: NJEPH Aliphatics Matrix Spike Mix

NJEPH Aliphatics Matrix Spike Mix 200 µg/mL, n-Pentane, 5mLampul

Container Size: 5 mL

Pkg Amt: > 5 mL

Expiration Date: April 30, 2030

Storage: 10°C or colder

Handling: Sonicate prior to use.

Ship: Ambient

CERTIFIED VALUES

Elution Order	Compound	CAS #	Lot #	Purity	Grav. Conc. (weight/volume)	Expanded Uncertainty * (95% C.L.; K=2)
1	n-Nonane (C9)	111-84-2	SHBN5361	99%	202.0 µg/mL	+/- 5.2184
2	n-Decane (C10)	124-18-5	SHBN8619	99%	201.3 µg/mL	+/- 5.2012
3	n-Dodecane (C12)	112-40-3	SHBP7054	99%	202.0 µg/mL	+/- 5.2184
4	n-Tetradecane (C14)	629-59-4	STBK5437	99%	201.7 µg/mL	+/- 5.2098
5	n-Hexadecane (C16)	544-76-3	SHBQ0897	99%	201.3 µg/mL	+/- 5.2012
6	n-Octadecane (C18)	593-45-3	UESNG	98%	201.6 µg/mL	+/- 5.2068
7	n-Eicosane (C20)	112-95-8	MKCN8767	97%	200.8 µg/mL	+/- 5.1871
8	n-Heneicosane (C21)	629-94-7	MKCL3226	99%	201.0 µg/mL	+/- 5.1926
9	n-Docosane (C22)	629-97-0	MKCL8918	99%	200.7 µg/mL	+/- 5.1839
10	n-Tetracosane (C24)	646-31-1	MKCQ8345	99%	201.3 µg/mL	+/- 5.2012
11	n-Hexacosane (C26)	630-01-3	MKCD4540	99%	201.0 µg/mL	+/- 5.1926
12	n-Octacosane (C28)	630-02-4	BCBS1577V	99%	201.7 µg/mL	+/- 5.2098
13	n-Triacontane (C30)	638-68-6	MKCQ9436	97%	200.8 µg/mL	+/- 5.1871
14	n-Dotriacontane (C32)	544-85-4	BCBW0661	99%	200.3 µg/mL	+/- 5.1753
15	n-Tetracontane (C34)	14167-59-0	D3MZN	99%	200.3 µg/mL	+/- 5.1753
16	n-Hexatriacontane (C36)	630-06-8	Z27H018	99%	200.3 µg/mL	+/- 5.1753
17	n-Octatriacontane (C38)	7194-85-6	0000145137	96%	201.6 µg/mL	+/- 5.2081

P12716
P12730
Y.P.
08/08/23

18	n-Tetracontane (C40)	4181-95-7	BSBME	99%	201.3	µg/mL	+/- 5.2012
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* Expanded Uncertainty displayed in same units as Grav. Conc.

Solvent: n-Pentane
CAS # 109-66-0
Purity 99%

Quality Confirmation Test

Column:
30m x 0.25mm x 0.25µm
Rx-5 (cat.#10223)

Carrier Gas:
hydrogen-constant pressure 10 psi.

Temp. Program:
40°C (hold 2 min.) to 330°C
@ 10°C/min. (hold 10 min.)

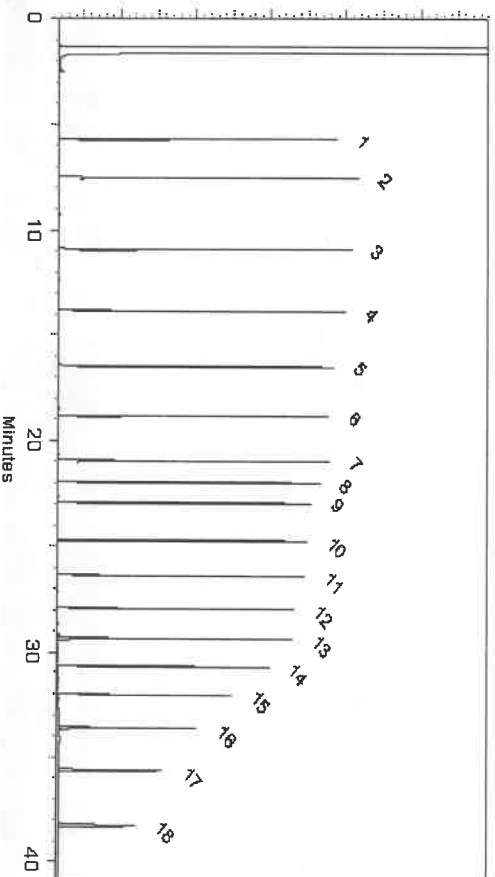
Inj. Temp:
250°C

Det. Temp:
330°C

Det. Type:
FID

Split Vent:
2 ml/min.

Inj. Vol
1µl



This chromatogram represents a general set of testing conditions chosen for product acceptance. For optimal results in your lab, conditions should be adjusted for your specific instrument, method, and application.

[Signature]
Morgan Craighood - Mix Technician

Date Mixed: 08-Mar-2023

Balance Serial # B442140311

Fang-Yun Wenner - Operations Lead Tech - ARM QC

Date Passed: 10-Mar-2023

Manufactured under Restek's ISO 9001:2015
Registered Quality System
Certificate #FM 80397

General Certified Reference Material Notes

Expiration Notes:

- Expiration date valid for unopened ampul stored in compliance with the recommended conditions.
- Uncertainty, concentration, and expiration of the CRM are based on the unopened product being stored according to the recommended condition found in the storage field.

Purity Notes:

- Purity and/or chemical identity are determined by one or more of the following techniques: GC/FID, HPLC, GC/μECD, GC/MS, LC/MS, RI, and/or melting point.
- Compounds with a listed purity of less than 99% have been weight corrected to compensate for impurities and/or salts. A correction factor is used to calculate the amount of compound necessary to achieve the desired concentration of the parent compound in solution.
- Purity of isomeric compounds is reported as the sum of the isomers.
- Purity values are rounded to the nearest whole number.

Certified Uncertainty Value Notes:

- The uncertainties are determined in accordance with ISO 17034 and Guide 35. The certified expanded uncertainty value includes gravimetric uncertainty, homogeneity between-ampul uncertainty, storage stability uncertainty and shipping stability uncertainty and were combined using the following formula:

$$U_{combined\ uncertainty} = k \sqrt{u_{gravimetric}^2 + u_{homogeneity}^2 + u_{storage\ stability}^2 + u_{shipping\ stability}^2}$$

k is a coverage factor of 2, which gives a level of confidence of approximately 95%.

- The packaged amount is the minimum sample size for which uncertainty is valid. The ampuls are over-filled to ensure that the minimum packaged amount can be sufficiently transferred.

Manufacturing Notes:

- Concentration is based upon gravimetric preparation using either a balance whose calibration has been verified daily using NIST traceable weights, and/or dilutions with Class A glassware.

Handling Notes:

- Stability of the unopened product, when stored in compliance with the recommended conditions, is guaranteed through the expiration displayed on the product label and certificate. Contact Restek for additional opened product stability information, with the knowledge/understanding that open product stability is subject to the specific handling and environmental conditions to which the product is exposed. For your convenience Restek supplies deactivated vials with most standards packed in 2 mL ampuls. Larger volume deactivated vials are available through Restek as a custom ordered item. Additionally, Restek sells DMDCS for the purpose of glassware deactivation as catalog number 31861, which includes complete instructions.
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Fax: 1-814-353-1309

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Certificate of Analysis

chromatographic plus



FOR LABORATORY USE ONLY-READ SDS PRIOR TO USE.

This Reference Material is intended for Laboratory Use Only as a standard for the qualitative and/or quantitative determination of the analyte(s) listed.

Catalog No.: 30542

Lot No.: A0195645

Description: NJEPH Aliphatics Matrix Spike Mix

NJEPH Aliphatics Matrix Spike Mix 200 µg/mL, n-Pentane, 5mLampul

Container Size: 5 mL

Pkg Amt: > 5 mL

Expiration Date: April 30, 2030

Storage: 10°C or colder

Handling: Sonicate prior to use.

Ship: Ambient

CERTIFIED VALUES

Elution Order	Compound	CAS #	Lot #	Purity	Grav. Conc. (weight/volume)	Expanded Uncertainty * (95% C.L.; K=2)
1	n-Nonane (C9)	111-84-2	SHBN5361	99%	202.0 µg/mL	+/- 5.2184
2	n-Decane (C10)	124-18-5	SHBN8619	99%	201.3 µg/mL	+/- 5.2012
3	n-Dodecane (C12)	112-40-3	SHBP7054	99%	202.0 µg/mL	+/- 5.2184
4	n-Tetradecane (C14)	629-59-4	STBK5437	99%	201.7 µg/mL	+/- 5.2098
5	n-Hexadecane (C16)	544-76-3	SHBQ0897	99%	201.3 µg/mL	+/- 5.2012
6	n-Octadecane (C18)	593-45-3	UESNG	98%	201.6 µg/mL	+/- 5.2068
7	n-Eicosane (C20)	112-95-8	MKCN8767	97%	200.8 µg/mL	+/- 5.1871
8	n-Heneicosane (C21)	629-94-7	MKCL3226	99%	201.0 µg/mL	+/- 5.1926
9	n-Docosane (C22)	629-97-0	MKCL8918	99%	200.7 µg/mL	+/- 5.1839
10	n-Tetracosane (C24)	646-31-1	MKCQ8345	99%	201.3 µg/mL	+/- 5.2012
11	n-Hexacosane (C26)	630-01-3	MKCD4540	99%	201.0 µg/mL	+/- 5.1926
12	n-Octacosane (C28)	630-02-4	BCBS1577V	99%	201.7 µg/mL	+/- 5.2098
13	n-Triacontane (C30)	638-68-6	MKCQ9436	97%	200.8 µg/mL	+/- 5.1871
14	n-Dotriacontane (C32)	544-85-4	BCBW0661	99%	200.3 µg/mL	+/- 5.1753
15	n-Tetracontane (C34)	14167-59-0	D3MZN	99%	200.3 µg/mL	+/- 5.1753
16	n-Hexatriacontane (C36)	630-06-8	Z27H018	99%	200.3 µg/mL	+/- 5.1753
17	n-Octatriacontane (C38)	7194-85-6	0000145137	96%	201.6 µg/mL	+/- 5.2081

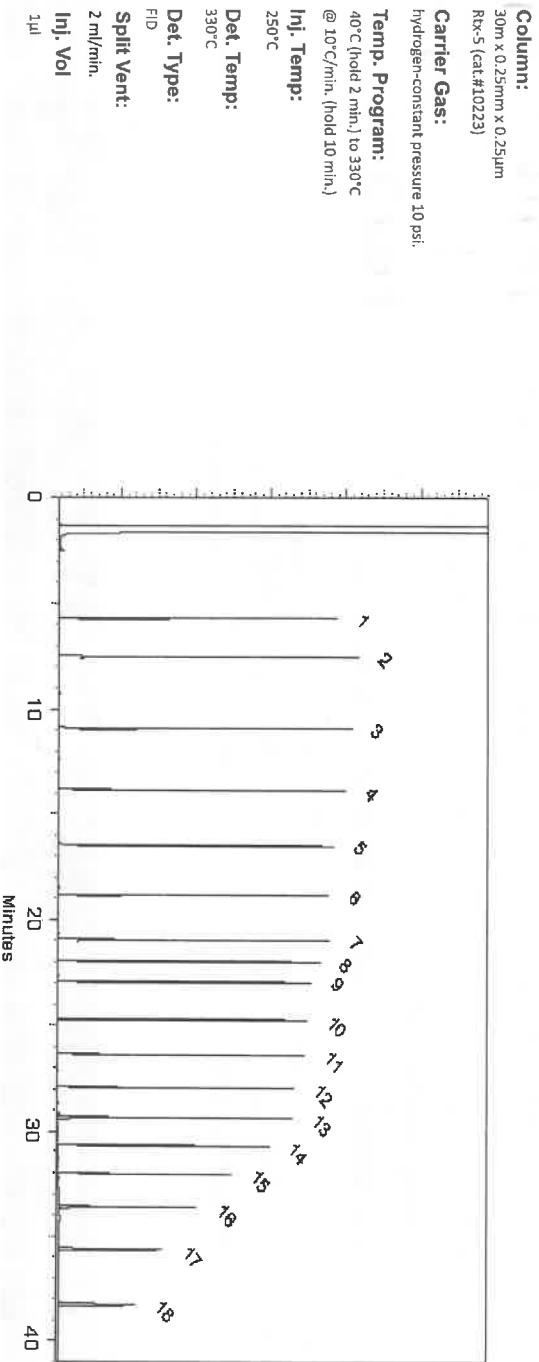
P12716
P12730
Y.P.
08/08/23

18	n-Tetracontane (C40)	4181-95-7	BSBME	99%	201.3	µg/mL	+/- 5.2012
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* Expanded Uncertainty displayed in same units as Grav. Conc.

Solvent: n-Pentane
CAS # 109-66-0
Purity 99%

Quality Confirmation Test



This chromatogram represents a general set of testing conditions chosen for product acceptance. For optimal results in your lab, conditions should be adjusted for your specific instrument, method, and application.

[Signature]
 Morgan Craighood - Mix Technician

Date Mixed: 08-Mar-2023

Balance Serial # B442140311

Fang-Yun Wenner - Operations Lead Tech - ARM QC

Date Passed: 10-Mar-2023

Manufactured under Restek's ISO 9001:2015
 Registered Quality System
 Certificate #FM 80397

General Certified Reference Material Notes

Expiration Notes:

- Expiration date valid for unopened ampul stored in compliance with the recommended conditions.
- Uncertainty, concentration, and expiration of the CRM are based on the unopened product being stored according to the recommended condition found in the storage field.

Purity Notes:

- Purity and/or chemical identity are determined by one or more of the following techniques: GC/FID, HPLC, GC/μECD, GC/MS, LC/MS, RI, and/or melting point.
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- Purity of isomeric compounds is reported as the sum of the isomers.
- Purity values are rounded to the nearest whole number.

Certified Uncertainty Value Notes:

- The uncertainties are determined in accordance with ISO 17034 and Guide 35. The certified expanded uncertainty value includes gravimetric uncertainty, homogeneity between-ampul uncertainty, storage stability uncertainty and shipping stability uncertainty and were combined using the following formula:

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k is a coverage factor of 2, which gives a level of confidence of approximately 95%.

- The packaged amount is the minimum sample size for which uncertainty is valid. The ampuls are over-filled to ensure that the minimum packaged amount can be sufficiently transferred.

Manufacturing Notes:

- Concentration is based upon gravimetric preparation using either a balance whose calibration has been verified daily using NIST traceable weights, and/or dilutions with Class A glassware.

Handling Notes:

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- If any undissolved material is visible inside the ampul, sonicate the unopened ampul until the material is completely dissolved.



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chromatographic plus



FOR LABORATORY USE ONLY-READ SDS PRIOR TO USE.

This Reference Material is intended for Laboratory Use Only as a standard for the qualitative and/or quantitative determination of the analyte(s) listed.

Catalog No.: 30542

Lot No.: A0195645

Description: NJEPH Aliphatics Matrix Spike Mix

NJEPH Aliphatics Matrix Spike Mix 200 µg/mL, n-Pentane, 5mLampul

Container Size: 5 mL

Pkg Amt: > 5 mL

Expiration Date: April 30, 2030

Storage: 10°C or colder

Handling: Sonicate prior to use.

Ship: Ambient

CERTIFIED VALUES

Elution Order	Compound	CAS #	Lot #	Purity	Grav. Conc. (weight/volume)	Expanded Uncertainty * (95% C.L.; K=2)
1	n-Nonane (C9)	111-84-2	SHBN5361	99%	202.0 µg/mL	+/- 5.2184
2	n-Decane (C10)	124-18-5	SHBN8619	99%	201.3 µg/mL	+/- 5.2012
3	n-Dodecane (C12)	112-40-3	SHBP7054	99%	202.0 µg/mL	+/- 5.2184
4	n-Tetradecane (C14)	629-59-4	STBK5437	99%	201.7 µg/mL	+/- 5.2098
5	n-Hexadecane (C16)	544-76-3	SHBQ0897	99%	201.3 µg/mL	+/- 5.2012
6	n-Octadecane (C18)	593-45-3	UESNG	98%	201.6 µg/mL	+/- 5.2068
7	n-Eicosane (C20)	112-95-8	MKCN8767	97%	200.8 µg/mL	+/- 5.1871
8	n-Heneicosane (C21)	629-94-7	MKCL3226	99%	201.0 µg/mL	+/- 5.1926
9	n-Docosane (C22)	629-97-0	MKCL8918	99%	200.7 µg/mL	+/- 5.1839
10	n-Tetracosane (C24)	646-31-1	MKCQ8345	99%	201.3 µg/mL	+/- 5.2012
11	n-Hexacosane (C26)	630-01-3	MKCD4540	99%	201.0 µg/mL	+/- 5.1926
12	n-Octacosane (C28)	630-02-4	BCBS1577V	99%	201.7 µg/mL	+/- 5.2098
13	n-Triacontane (C30)	638-68-6	MKCQ9436	97%	200.8 µg/mL	+/- 5.1871
14	n-Dotriacontane (C32)	544-85-4	BCBW0661	99%	200.3 µg/mL	+/- 5.1753
15	n-Tetracontane (C34)	14167-59-0	D3MZN	99%	200.3 µg/mL	+/- 5.1753
16	n-Hexatriacontane (C36)	630-06-8	Z27H018	99%	200.3 µg/mL	+/- 5.1753
17	n-Octatriacontane (C38)	7194-85-6	0000145137	96%	201.6 µg/mL	+/- 5.2081

P12716
P12730
Y.P.
08/08/23

18	n-Tetracontane (C40)	4181-95-7	BSBME	99%	201.3	µg/mL	+/- 5.2012
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* Expanded Uncertainty displayed in same units as Grav. Conc.

Solvent: n-Pentane
CAS # 109-66-0
Purity 99%

Quality Confirmation Test

Column:
30m x 0.25mm x 0.25µm
Rx-5 (cat.#10223)

Carrier Gas:
hydrogen-constant pressure 10 psi.

Temp. Program:
40°C (hold 2 min.) to 330°C
@ 10°C/min. (hold 10 min.)

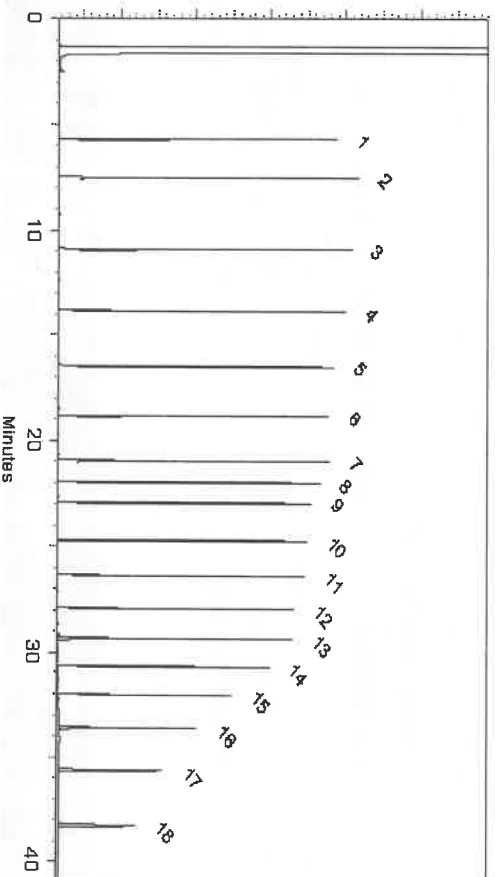
Inj. Temp:
250°C

Det. Temp:
330°C

Det. Type:
FID

Split Vent:
2 ml/min.

Inj. Vol
1µl



This chromatogram represents a general set of testing conditions chosen for product acceptance. For optimal results in your lab, conditions should be adjusted for your specific instrument, method, and application.

[Signature]
Morgan Craighood - Mix Technician

Date Mixed: 08-Mar-2023

Balance Serial # B442140311

Fang-Yun Wenner - Operations Lead Tech - ARM QC

Date Passed: 10-Mar-2023

Manufactured under Restek's ISO 9001:2015
Registered Quality System
Certificate #FM 80397

General Certified Reference Material Notes

Expiration Notes:

- Expiration date valid for unopened ampul stored in compliance with the recommended conditions.
- Uncertainty, concentration, and expiration of the CRM are based on the unopened product being stored according to the recommended condition found in the storage field.

Purity Notes:

- Purity and/or chemical identity are determined by one or more of the following techniques: GC/FID, HPLC, GC/μECD, GC/MS, LC/MS, RI, and/or melting point.
- Compounds with a listed purity of less than 99% have been weight corrected to compensate for impurities and/or salts. A correction factor is used to calculate the amount of compound necessary to achieve the desired concentration of the parent compound in solution.
- Purity of isomeric compounds is reported as the sum of the isomers.
- Purity values are rounded to the nearest whole number.

Certified Uncertainty Value Notes:

- The uncertainties are determined in accordance with ISO 17034 and Guide 35. The certified expanded uncertainty value includes gravimetric uncertainty, homogeneity between-ampul uncertainty, storage stability uncertainty and shipping stability uncertainty and were combined using the following formula:

$$U_{combined\ uncertainty} = k \sqrt{u_{gravimetric}^2 + u_{homogeneity}^2 + u_{storage\ stability}^2 + u_{shipping\ stability}^2}$$

k is a coverage factor of 2, which gives a level of confidence of approximately 95%.

- The packaged amount is the minimum sample size for which uncertainty is valid. The ampuls are over-filled to ensure that the minimum packaged amount can be sufficiently transferred.

Manufacturing Notes:

- Concentration is based upon gravimetric preparation using either a balance whose calibration has been verified daily using NIST traceable weights, and/or dilutions with Class A glassware.

Handling Notes:

- Stability of the unopened product, when stored in compliance with the recommended conditions, is guaranteed through the expiration displayed on the product label and certificate. Contact Restek for additional opened product stability information, with the knowledge/understanding that open product stability is subject to the specific handling and environmental conditions to which the product is exposed. For your convenience Restek supplies deactivated vials with most standards packed in 2 mL ampuls. Larger volume deactivated vials are available through Restek as a custom ordered item. Additionally, Restek sells DMDCS for the purpose of glassware deactivation as catalog number 31861, which includes complete instructions.
- If any undissolved material is visible inside the ampul, sonicate the unopened ampul until the material is completely dissolved.



CERTIFIED REFERENCE MATERIAL

110 Benner Circle

Bellefonte, PA 16823-8812

Tel: (800)356-1688

Fax: (814)353-1309

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Certificate of Analysis



FOR LABORATORY USE ONLY-READ SDS PRIOR TO USE.

This Reference Material is intended for Laboratory Use Only as a standard for the qualitative and/or quantitative determination of the analyte(s) listed.

Catalog No.: 30543

Lot No.: A0182204

Description:

NIEPH Aromatics Matrix Spike Mix

NIEPH Aromatics Matrix Spike Mix 200µg/mL Acetone/Toluene (50:50), 5mL/ampul

Container Size:

5 mL

Pkg Amt: > 5 mL

Expiration Date:

January 31, 2028

Storage: 10°C or colder

Handling:

Sonication required. Mix is photosensitive.

P12750
P12755
7.8
08128123

CERTIFIED VALUES

Elution Order	Compound	Grav. Conc. (weight/volume)	Expanded Uncertainty (95% C.L., K=2)	
1	1,2,3-Trimethylbenzene CAS # 526-73-8 Purity 98%	200.1 µg/mL	+/- 1.1804 +/- 9.0145 +/- 10.0022	Gravimetric Unstressed Stressed
2	Naphthalene CAS # 91-20-3 Purity 99%	200.3 µg/mL	+/- 1.1813 +/- 9.0216 +/- 10.0101	Gravimetric Unstressed Stressed
3	2-Methylnaphthalene CAS # 91-57-6 Purity 96%	200.5 µg/mL	+/- 1.1828 +/- 9.0327 +/- 10.0224	Gravimetric Unstressed Stressed
4	Acenaphthylene CAS # 208-96-8 Purity 98%	200.4 µg/mL	+/- 1.1820 +/- 9.0266 +/- 10.0157	Gravimetric Unstressed Stressed
5	Acenaphthene CAS # 83-32-9 Purity 99%	200.1 µg/mL	+/- 1.1806 +/- 9.0160 +/- 10.0039	Gravimetric Unstressed Stressed
6	Fluorene CAS # 86-73-7 Purity 99%	200.2 µg/mL	+/- 1.1807 +/- 9.0171 +/- 10.0051	Gravimetric Unstressed Stressed
7	Phenanthrene CAS # 85-01-8 Purity 99%	200.3 µg/mL	+/- 1.1813 +/- 9.0216 +/- 10.0101	Gravimetric Unstressed Stressed

8	Anthracene CAS # 120-12-7 Purity 99%	(Lot MKCN0922)	200.2 µg/mL	+/- 1.1810 +/- 9.0193 +/- 10.0076	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
9	Fluoranthene CAS # 206-44-0 Purity 99%	(Lot MKCQ4728)	200.2 µg/mL	+/- 1.1807 +/- 9.0171 +/- 10.0051	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
10	Pyrene CAS # 129-00-0 Purity 99%	(Lot BCCG2258)	200.2 µg/mL	+/- 1.1807 +/- 9.0171 +/- 10.0051	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
11	Benz(a)anthracene CAS # 56-55-3 Purity 96%	(Lot RP210928)	200.1 µg/mL	+/- 1.1806 +/- 9.0165 +/- 10.0044	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
12	Chrysene CAS # 218-01-9 Purity 99%	(Lot STBK5205)	200.2 µg/mL	+/- 1.1810 +/- 9.0193 +/- 10.0076	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
13	Benzo(b)fluoranthene CAS # 205-99-2 Purity 99%	(Lot 012021)	200.2 µg/mL	+/- 1.1807 +/- 9.0171 +/- 10.0051	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
14	Benzo(k)fluoranthene CAS # 207-08-9 Purity 99%	(Lot 012019K)	200.1 µg/mL	+/- 1.1806 +/- 9.0160 +/- 10.0039	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
15	Benzo(a)pyrene CAS # 50-32-8 Purity 99%	(Lot Z8BKF)	200.2 µg/mL	+/- 1.1812 +/- 9.0205 +/- 10.0089	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
16	Indeno(1,2,3-cd)pyrene CAS # 193-39-5 Purity 99%	(Lot RP220125)	200.1 µg/mL	+/- 1.1804 +/- 9.0148 +/- 10.0026	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
17	Dibenz(a,h)anthracene CAS # 53-70-3 Purity 99%	(Lot ER032211-01)	200.1 µg/mL	+/- 1.1806 +/- 9.0160 +/- 10.0039	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
18	Benzo(g,h,i)perylene CAS # 191-24-2 Purity 98%	(Lot AVUAD)	200.3 µg/mL	+/- 1.1814 +/- 9.0222 +/- 10.0108	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed

Solvent: Acetone/Toluene (50:50)
CAS # 67-64-1/108-88-3
Purity 99%

Column:

30m x 0.25mm x 0.25µm
Rtx-5 (cat.#10223)

Carrier Gas:

hydrogen-constant pressure 10 psi.

Temp. Program:

100°C (hold 1 min.) to 330°C
@ 4°C/min. (hold 5 min.)

Inj. Temp:

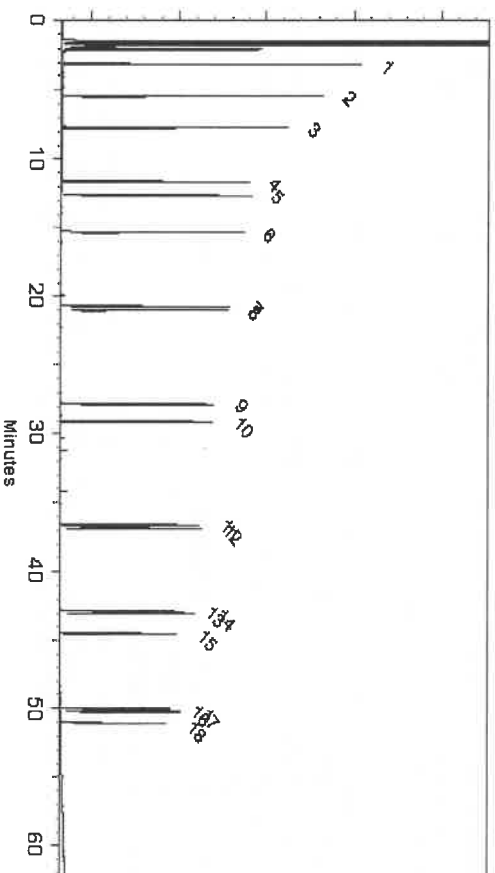
250°C

Det. Temp:

330°C

Det. Type:

FID



This chromatogram represents a general set of testing conditions chosen for product acceptance. For optimal results in your lab, conditions should be adjusted for your specific instrument, method, and application.

Penelope A. Riglin

Penelope Riglin - Operations Tech I

Date Mixed: 24-Feb-2022

Balance: 1128360905

Claire Windle

Claire Windle - Operations Technician I

Date Passed: 01-Mar-2022

Manufactured under Restek's ISO 9001:2015
Registered Quality System
Certificate #FM 80397

General Certified Reference Material Notes

Expiration Notes:

- Expiration date valid for unopened ampul stored in compliance with the recommended conditions.
- Uncertainty, concentration, and expiration of the CRM are based on the unopened product being stored according to the recommended condition found in the storage field.

Purity Notes:

- Purity and/or chemical identity are determined by one or more of the following techniques: GC/FID, HPLC, GC/μECD, GC/MS, LC/MS, RI, and/or melting point.
- Compounds with a listed purity of less than 99% have been weight corrected to compensate for impurities and/or salts. A correction factor is used to calculate the amount of compound necessary to achieve the desired concentration of the parent compound in solution.
- Purity of isomeric compounds is reported as the sum of the isomers.
- Purity values are rounded to the nearest whole number.

Certified Uncertainty Value Notes:

- The uncertainties are determined in accordance with ISO 17034 and Guide 35. The certified combined stressed uncertainty value (includes gravimetric uncertainty, homogeneity between-ampul uncertainty, storage stability uncertainty and shipping stability uncertainty and were combined using the following formula:

$$U_{combined\ stressed} = k \sqrt{U_{gravimetric}^2 + U_{homogeneity}^2 + U_{storage\ stability}^2 + U_{shipping\ stability}^2}$$

k is a coverage factor of 2, which gives a level of confidence of approximately 95%.

- It is important to note that the shipping stability uncertainty was obtained under temperature extremes for specific time intervals; therefore, the certified combined stressed uncertainty value should only be applied to the product if it was stored at non-standard temperature conditions up to and including 7 days. Contact Restek Technical Service at www.restek.com/Contact-US for use recommendations if your shipment was in-transit for more than 7 days at non-standard temperature conditions.
- Apply the certified combined unstressed uncertainty value if the product was received under standard shipping conditions. Apply the certified combined stressed uncertainty value if the product was received under non-standard conditions as specified below.

Label Conditions	Standard Conditions	Non-Standard Conditions
25°C Nominal (Room Temperature)	< 60°C	≥ 60°C up to 7 days
10°C or colder (Refrigerate)	< 40°C	≥ 40°C up to 7 days
0°C or colder (Freezer) -20°C or colder (Deep Freezer)	< 25°C	≥ 25°C up to 7 days

- Separate (not combined) uncertainty values for gravimetric uncertainty are also displayed on the certificate, if needed, separate homogeneity between-ampul uncertainty, storage stability uncertainty and shipping stability uncertainty values are available by contacting Restek Technical Service at www.restek.com/Contact-US.
- The packaged amount is the minimum sample size for which uncertainty is valid. The ampules are over-filled to ensure that the minimum packaged amount can be sufficiently transferred.

Manufacturing Notes:

- Concentration is based upon gravimetric preparation using either a balance whose calibration has been verified daily using NIST traceable weights, and/or dilutions with Class A glassware.

Handling Notes:

- Stability of the unopened product, when stored in compliance with the recommended conditions, is guaranteed through the expiration displayed on the product label and certificate. Contact Restek for additional opened product stability information, with the knowledge/understanding that open product stability is subject to the specific handling and environmental conditions to which the product is exposed. For your convenience Restek supplies deactivated vials with most standards packed in 2mL ampules. Larger volume deactivated vials are available through Restek as a custom ordered item. Additionally, Restek sells DMDCS for the purpose of glassware deactivation as catalog number 31861, which includes complete instructions.



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CERTIFIED REFERENCE MATERIAL

Certificate of Analysis

chromatographic plus



FOR LABORATORY USE ONLY-READ SDS PRIOR TO USE.

This Reference Material is intended for Laboratory Use Only as a standard for the qualitative and/or quantitative determination of the analyte(s) listed.

Catalog No. : 31480 **Lot No.:** A0201395
Description : MA Fractionation Surrogate Spike Mix
MA Fractionation Surrogate Spike Mix 4000µg/mL, Hexane, 1mL/ampul
Container Size : 2 mL **Pkg Amt:** > 1 mL
Expiration Date : July 31, 2029 **Storage:** 10°C or colder
Handling: Sonication required. Mix is photosensitive. **Ship:** Ambient

P12786
↓
P12805 } Y.P.
09/25/23

CERTIFIED VALUES

Elution Order	Compound	CAS #	Lot #	Purity	Grav. Conc. (weight/volume)	Expanded Uncertainty * (95% C.L.; K=2)
1	2-Fluorobiphenyl	321-60-8	00021384	99%	4,039.5 µg/mL	+/- 181.9700
2	2-Bromonaphthalene	580-13-2	STBC5362V	99%	4,039.0 µg/mL	+/- 181.9475

* Expanded Uncertainty displayed in same units as Grav. Conc.

Solvent: Hexane
CAS # 110-54-3
Purity 99%

Quality Confirmation Test

Column:

30m x 0.25mm x 0.25µm
Rtx-5 (cat.#10223)

Carrier Gas:

hydrogen-constant pressure 10 psi.

Temp. Program:

40°C (hold 2 min.) to 330°C
@ 10°C/min. (hold 10 min.)

Inj. Temp:

250°C

Det. Temp:

330°C

Det. Type:

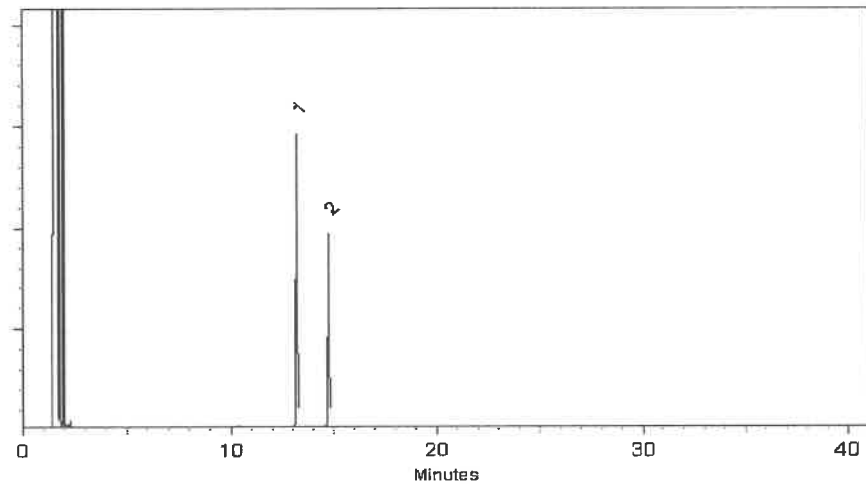
FID

Split Vent:

2 ml/min.

Inj. Vol

1µl



This chromatogram represents a general set of testing conditions chosen for product acceptance. For optimal results in your lab, conditions should be adjusted for your specific instrument, method, and application.


Dakota Parson - Operations Technician I

Date Mixed: 25-Aug-2023

Balance Serial # 1128353505


Jennifer Pollino - Operations Tech III - ARM QC

Date Passed: 29-Aug-2023

Manufactured under Restek's ISO 9001:2015
Registered Quality System
Certificate #FM 80397

General Certified Reference Material Notes

Expiration Notes:

- Expiration date valid for unopened ampul stored in compliance with the recommended conditions.
- Uncertainty, concentration, and expiration of the CRM are based on the unopened product being stored according to the recommended condition found in the storage field.

Purity Notes:

- Purity and/or chemical identity are determined by one or more of the following techniques: GC/FID, HPLC, GC/ μ ECD, GC/MS, LC/MS, RI, and/or melting point.
- Compounds with a listed purity of less than 99% have been weight corrected to compensate for impurities and/or salts. A correction factor is used to calculate the amount of compound necessary to achieve the desired concentration of the parent compound in solution.
- Purity of isomeric compounds is reported as the sum of the isomers.
- Purity values are rounded to the nearest whole number.

Certified Uncertainty Value Notes:

- The uncertainties are determined in accordance with ISO 17034 and Guide 35. The certified expanded uncertainty value includes gravimetric uncertainty, homogeneity between-ampul uncertainty, storage stability uncertainty and shipping stability uncertainty and were combined using the following formula:

$$U_{combined\ uncertainty} = k \sqrt{u_{gravimetric}^2 + u_{homogeneity}^2 + u_{storage\ stability}^2 + u_{shipping\ stability}^2}$$

k is a coverage factor of 2, which gives a level of confidence of approximately 95%.

- The packaged amount is the minimum sample size for which uncertainty is valid. The ampuls are over-filled to ensure that the minimum packaged amount can be sufficiently transferred.

Manufacturing Notes:

- Concentration is based upon gravimetric preparation using either a balance whose calibration has been verified daily using NIST traceable weights, and/or dilutions with Class A glassware.

Handling Notes:

- Stability of the unopened product, when stored in compliance with the recommended conditions, is guaranteed through the expiration displayed on the product label and certificate. Contact Restek for additional opened product stability information, with the knowledge/understanding that open product stability is subject to the specific handling and environmental conditions to which the product is exposed. For your convenience Restek supplies deactivated vials with most standards packed in 2mL ampuls. Larger volume deactivated vials are available through Restek as a custom ordered item. Additionally, Restek sells DMDCS for the purpose of glassware deactivation as catalog number 31861, which includes complete instructions.
- If any undissolved material is visible inside the ampul, sonicate the unopened ampul until the material is completely dissolved.



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CERTIFIED REFERENCE MATERIAL

Certificate of Analysis

chromatographic plus



FOR LABORATORY USE ONLY-READ SDS PRIOR TO USE.

This Reference Material is intended for Laboratory Use Only as a standard for the qualitative and/or quantitative determination of the analyte(s) listed.

Catalog No. : 31480 **Lot No.:** A0201395
Description : MA Fractionation Surrogate Spike Mix
MA Fractionation Surrogate Spike Mix 4000µg/mL, Hexane, 1mL/ampul
Container Size : 2 mL **Pkg Amt:** > 1 mL
Expiration Date : July 31, 2029 **Storage:** 10°C or colder
Handling: Sonication required. Mix is photosensitive. **Ship:** Ambient

P12786
↓
P12805 } Y.P.
09/25/23

CERTIFIED VALUES

Elution Order	Compound	CAS #	Lot #	Purity	Grav. Conc. (weight/volume)	Expanded Uncertainty * (95% C.L.; K=2)
1	2-Fluorobiphenyl	321-60-8	00021384	99%	4,039.5 µg/mL	+/- 181.9700
2	2-Bromonaphthalene	580-13-2	STBC5362V	99%	4,039.0 µg/mL	+/- 181.9475

* Expanded Uncertainty displayed in same units as Grav. Conc.

Solvent: Hexane
CAS # 110-54-3
Purity 99%

Quality Confirmation Test

Column:

30m x 0.25mm x 0.25µm
Rtx-5 (cat.#10223)

Carrier Gas:

hydrogen-constant pressure 10 psi.

Temp. Program:

40°C (hold 2 min.) to 330°C
@ 10°C/min. (hold 10 min.)

Inj. Temp:

250°C

Det. Temp:

330°C

Det. Type:

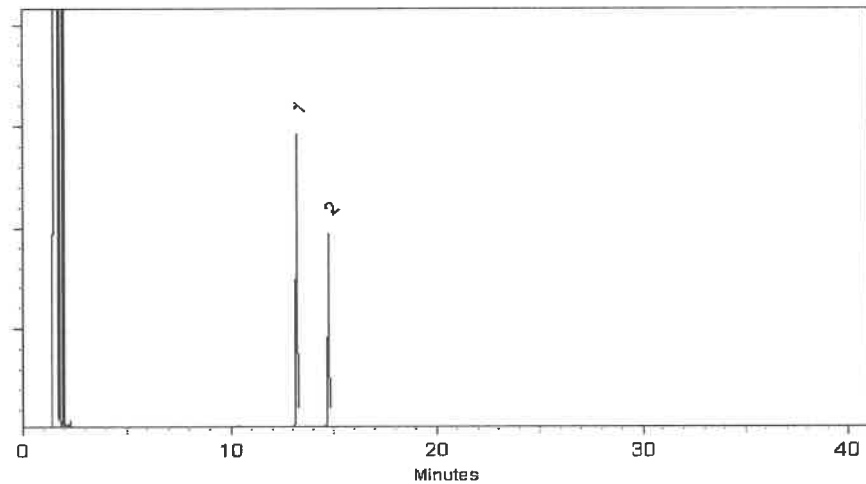
FID

Split Vent:

2 ml/min.

Inj. Vol

1µl



This chromatogram represents a general set of testing conditions chosen for product acceptance. For optimal results in your lab, conditions should be adjusted for your specific instrument, method, and application.


Dakota Parson - Operations Technician I

Date Mixed: 25-Aug-2023

Balance Serial # 1128353505


Jennifer Pollino - Operations Tech III - ARM QC

Date Passed: 29-Aug-2023

Manufactured under Restek's ISO 9001:2015
Registered Quality System
Certificate #FM 80397

General Certified Reference Material Notes

Expiration Notes:

- Expiration date valid for unopened ampul stored in compliance with the recommended conditions.
- Uncertainty, concentration, and expiration of the CRM are based on the unopened product being stored according to the recommended condition found in the storage field.

Purity Notes:

- Purity and/or chemical identity are determined by one or more of the following techniques: GC/FID, HPLC, GC/ μ ECD, GC/MS, LC/MS, RI, and/or melting point.
- Compounds with a listed purity of less than 99% have been weight corrected to compensate for impurities and/or salts. A correction factor is used to calculate the amount of compound necessary to achieve the desired concentration of the parent compound in solution.
- Purity of isomeric compounds is reported as the sum of the isomers.
- Purity values are rounded to the nearest whole number.

Certified Uncertainty Value Notes:

- The uncertainties are determined in accordance with ISO 17034 and Guide 35. The certified expanded uncertainty value includes gravimetric uncertainty, homogeneity between-ampul uncertainty, storage stability uncertainty and shipping stability uncertainty and were combined using the following formula:

$$U_{combined\ uncertainty} = k \sqrt{u_{gravimetric}^2 + u_{homogeneity}^2 + u_{storage\ stability}^2 + u_{shipping\ stability}^2}$$

k is a coverage factor of 2, which gives a level of confidence of approximately 95%.

- The packaged amount is the minimum sample size for which uncertainty is valid. The ampuls are over-filled to ensure that the minimum packaged amount can be sufficiently transferred.

Manufacturing Notes:

- Concentration is based upon gravimetric preparation using either a balance whose calibration has been verified daily using NIST traceable weights, and/or dilutions with Class A glassware.

Handling Notes:

- Stability of the unopened product, when stored in compliance with the recommended conditions, is guaranteed through the expiration displayed on the product label and certificate. Contact Restek for additional opened product stability information, with the knowledge/understanding that open product stability is subject to the specific handling and environmental conditions to which the product is exposed. For your convenience Restek supplies deactivated vials with most standards packed in 2mL ampuls. Larger volume deactivated vials are available through Restek as a custom ordered item. Additionally, Restek sells DMDCS for the purpose of glassware deactivation as catalog number 31861, which includes complete instructions.
- If any undissolved material is visible inside the ampul, sonicate the unopened ampul until the material is completely dissolved.



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CERTIFIED REFERENCE MATERIAL

Certificate of Analysis



FOR LABORATORY USE ONLY-READ SDS PRIOR TO USE.

This Reference Material is intended for Laboratory Use Only as a standard for the qualitative and/or quantitative determination of the analyte(s) listed.

Catalog No.: 30543 Lot No.: A0188761

Description: NJEPH Aromatics Matrix Spike Mix

NJEPH Aromatics Matrix Spike Mix 200µg/mL, Acetone/Toluene (50:50), 5mL/ampul

Container Size: 5 mL Pkg Amt: > 5 mL

Expiration Date: July 31, 2028 Storage: 10°C or colder

Handling: Sonication required. Mix is photosensitive. Ship: Ambient

PR2826
↓
P12827 } Y.P.
10/17/23

CERTIFIED VALUES

Elution Order	Compound	Grav. Conc. (weight/volume)	Expanded Uncertainty (95% C.L.; K=2)
1	1,2,3-Trimethylbenzene CAS # 526-73-8 Purity 98% (Lot 8776.10-36)	201.1 µg/mL	+/- 1.1944 µg/mL +/- 9.0608 µg/mL +/- 10.0534 µg/mL Gravimetric Unstressed Stressed
2	Naphthalene CAS # 91-20-3 Purity 99% (Lot MKCH0219)	200.8 µg/mL	+/- 1.1927 µg/mL +/- 9.0474 µg/mL +/- 10.0386 µg/mL Gravimetric Unstressed Stressed
3	2-Methylnaphthalene CAS # 91-57-6 Purity 96% (Lot STBK0259)	200.1 µg/mL	+/- 1.1883 µg/mL +/- 9.0143 µg/mL +/- 10.0018 µg/mL Gravimetric Unstressed Stressed
4	Acenaphthylene CAS # 208-96-8 Purity 96% (Lot Q24W)	200.4 µg/mL	+/- 1.1906 µg/mL +/- 9.0316 µg/mL +/- 10.0210 µg/mL Gravimetric Unstressed Stressed
5	Acenaphthene CAS # 83-32-9 Purity 99% (Lot MKCQ4733)	200.0 µg/mL	+/- 1.1879 µg/mL +/- 9.0114 µg/mL +/- 9.9986 µg/mL Gravimetric Unstressed Stressed
6	Fluorene CAS # 86-73-7 Purity 99% (Lot 10236068)	202.0 µg/mL	+/- 1.1998 µg/mL +/- 9.1015 µg/mL +/- 10.0986 µg/mL Gravimetric Unstressed Stressed
7	Phenanthrene CAS # 85-01-8 Purity 99% (Lot MKCQ2033)	201.6 µg/mL	+/- 1.1974 µg/mL +/- 9.0835 µg/mL +/- 10.0786 µg/mL Gravimetric Unstressed Stressed

8	Anthracene CAS # 120-12-7 Purity 99%	(Lot MKCP3968)	200.0 µg/mL	+/- 1.1879 +/- 9.0114 +/- 9.9986	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
9	Fluoranthene CAS # 206-44-0 Purity 99%	(Lot MKCQ4728)	202.0 µg/mL	+/- 1.1998 +/- 9.1015 +/- 10.0986	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
10	Pyrene CAS # 129-00-0 Purity 99%	(Lot BCCG7845)	200.4 µg/mL	+/- 1.1903 +/- 9.0294 +/- 10.0186	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
11	Benz(a)anthracene CAS # 56-55-3 Purity 98%	(Lot RP220616)	201.5 µg/mL	+/- 1.1968 +/- 9.0784 +/- 10.0730	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
12	Chrysene CAS # 218-01-9 Purity 99%	(Lot STBK5205)	201.6 µg/mL	+/- 1.1974 +/- 9.0835 +/- 10.0786	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
13	Benzo(b)fluoranthene CAS # 205-99-2 Purity 99%	(Lot 012012B)	201.2 µg/mL	+/- 1.1951 +/- 9.0655 +/- 10.0586	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
14	Benzo(k)fluoranthene CAS # 207-08-9 Purity 99%	(Lot 012012K)	200.4 µg/mL	+/- 1.1903 +/- 9.0294 +/- 10.0186	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
15	Benzo(a)pyrene CAS # 50-32-8 Purity 99%	(Lot Z8BKF)	201.6 µg/mL	+/- 1.1974 +/- 9.0835 +/- 10.0786	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
16	Indeno(1,2,3-cd)pyrene CAS # 193-39-5 Purity 99%	(Lot 12-JKL-118-9)	200.8 µg/mL	+/- 1.1927 +/- 9.0474 +/- 10.0386	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
17	Dibenz(a,h)anthracene CAS # 53-70-3 Purity 99%	(Lot ER032211-01)	200.4 µg/mL	+/- 1.1903 +/- 9.0294 +/- 10.0186	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
18	Benzo(g,h,i)perylene CAS # 191-24-2 Purity 99%	(Lot 8GFYJ)	200.0 µg/mL	+/- 1.1879 +/- 9.0114 +/- 9.9986	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
Solvent: Acetone/Toluene (50:50) CAS # 67-64-1/108-88-3 Purity 99%						

Column:
30m x 0.25mm x 0.25µm
Rtx-5 (cat.#10223)

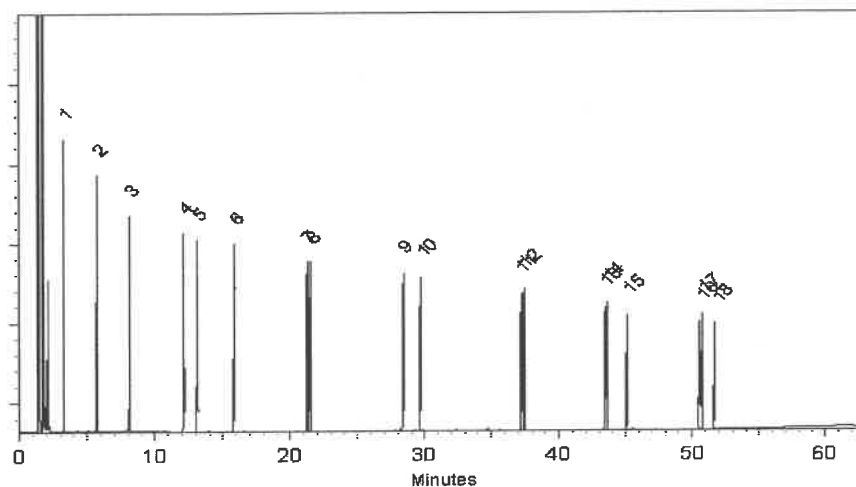
Carrier Gas:
hydrogen-constant pressure 10 psi.

Temp. Program:
100°C (hold 1 min.) to 330°C
@ 4°C/min. (hold 5 min.)

Inj. Temp:
250°C

Det. Temp:
330°C

Det. Type:
FID



This chromatogram represents a general set of testing conditions chosen for product acceptance. For optimal results in your lab, conditions should be adjusted for your specific instrument, method, and application.

Morgan Craighead - Mix Technician

Date Mixed: 19-Aug-2022

Balance: B442140311

Jennifer Pollino - Operations Tech III - ARM QC

Date Passed: 23-Aug-2022

Manufactured under Restek's ISO 9001:2015
Registered Quality System
Certificate #FM 80397

General Certified Reference Material Notes

Expiration Notes:

- Expiration date valid for unopened ampul stored in compliance with the recommended conditions.
- Uncertainty, concentration, and expiration of the CRM are based on the unopened product being stored according to the recommended condition found in the storage field.

Purity Notes:

- Purity and/or chemical identity are determined by one or more of the following techniques: GC/FID, HPLC, GC/μECD, GC/MS, LC/MS, RI, and/or melting point.
- Compounds with a listed purity of less than 99% have been weight corrected to compensate for impurities and/or salts. A correction factor is used to calculate the amount of compound necessary to achieve the desired concentration of the parent compound in solution.
- Purity of isomeric compounds is reported as the sum of the isomers.
- Purity values are rounded to the nearest whole number.

Certified Uncertainty Value Notes:

- The uncertainties are determined in accordance with ISO 17034 and Guide 35. The certified combined stressed uncertainty value (includes gravimetric uncertainty, homogeneity between-ampul uncertainty, storage stability uncertainty and shipping stability uncertainty and were combined using the following formula:

$$U_{combined\ stressed} = k \sqrt{U_{gravimetric}^2 + U_{homogeneity}^2 + U_{storage\ stability}^2 + U_{shipping\ stability}^2}$$

k is a coverage factor of 2, which gives a level of confidence of approximately 95%.

- It is important to note that the shipping stability uncertainty was obtained under temperature extremes for specific time intervals; therefore, the certified combined stressed uncertainty value should only be applied to the product if it was stored at non-standard temperature conditions up to and including 7 days. Contact Restek Technical Service at www.restek.com/Contact-Us for use recommendations if your shipment was in-transit for more than 7 days at non-standard temperature conditions.
- Apply the certified combined unstressed uncertainty value if the product was received under standard shipping conditions. Apply the certified combined stressed uncertainty value if the product was received under non-standard conditions as specified below.

Label Conditions	Standard Conditions	Non-Standard Conditions
25°C Nominal (Room Temperature)	< 60°C	≥ 60°C up to 7 days
10°C or colder (Refrigerate)	< 40°C	≥ 40°C up to 7 days
0°C or colder (Freezer) -20°C or colder (Deep Freezer)	< 25°C	≥ 25°C up to 7 days

- Separate (not combined) uncertainty values for gravimetric uncertainty are also displayed on the certificate, if needed, separate homogeneity between-ampul uncertainty, storage stability uncertainty and shipping stability uncertainty values are available by contacting Restek Technical Service at www.restek.com/Contact-Us.
- The packaged amount is the minimum sample size for which uncertainty is valid. The ampules are over-filled to ensure that the minimum packaged amount can be sufficiently transferred.

Manufacturing Notes:

- Concentration is based upon gravimetric preparation using either a balance whose calibration has been verified daily using NIST traceable weights, and/or dilutions with Class A glassware.

Handling Notes:

- Stability of the unopened product, when stored in compliance with the recommended conditions, is guaranteed through the expiration displayed on the product label and certificate. Contact Restek for additional opened product stability information, with the knowledge/understanding that open product stability is subject to the specific handling and environmental conditions to which the product is exposed. For your convenience Restek supplies deactivated vials with most standards packed in 2mL ampules. Larger volume deactivated vials are available through Restek as a custom ordered item. Additionally, Restek sells DMDCS for the purpose of glassware deactivation as catalog number 31861, which includes complete instructions.



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CERTIFIED REFERENCE MATERIAL

Certificate of Analysis



FOR LABORATORY USE ONLY-READ SDS PRIOR TO USE.

This Reference Material is intended for Laboratory Use Only as a standard for the qualitative and/or quantitative determination of the analyte(s) listed.

Catalog No. : 30543 **Lot No.:** A0188761

Description : NJEPH Aromatics Matrix Spike Mix

NJEPH Aromatics Matrix Spike Mix 200µg/mL, Acetone/Toluene (50:50), 5mL/ampul

Container Size : 5 mL **Pkg Amt:** > 5 mL

Expiration Date : July 31, 2028 **Storage:** 10°C or colder

Handling: Sonication required. Mix is photosensitive. **Ship:** Ambient

P12826
↓
P12827 } Y.P.
10/17/23

CERTIFIED VALUES

Elution Order	Compound	Grav. Conc. (weight/volume)	Expanded Uncertainty (95% C.L.; K=2)
1	1,2,3-Trimethylbenzene CAS # 526-73-8 Purity 98% (Lot 8776.10-36)	201.1 µg/mL	+/- 1.1944 µg/mL +/- 9.0608 µg/mL +/- 10.0534 µg/mL Gravimetric Unstressed Stressed
2	Naphthalene CAS # 91-20-3 Purity 99% (Lot MKCH0219)	200.8 µg/mL	+/- 1.1927 µg/mL +/- 9.0474 µg/mL +/- 10.0386 µg/mL Gravimetric Unstressed Stressed
3	2-Methylnaphthalene CAS # 91-57-6 Purity 96% (Lot STBK0259)	200.1 µg/mL	+/- 1.1883 µg/mL +/- 9.0143 µg/mL +/- 10.0018 µg/mL Gravimetric Unstressed Stressed
4	Acenaphthylene CAS # 208-96-8 Purity 96% (Lot Q24W)	200.4 µg/mL	+/- 1.1906 µg/mL +/- 9.0316 µg/mL +/- 10.0210 µg/mL Gravimetric Unstressed Stressed
5	Acenaphthene CAS # 83-32-9 Purity 99% (Lot MKCQ4733)	200.0 µg/mL	+/- 1.1879 µg/mL +/- 9.0114 µg/mL +/- 9.9986 µg/mL Gravimetric Unstressed Stressed
6	Fluorene CAS # 86-73-7 Purity 99% (Lot 10236068)	202.0 µg/mL	+/- 1.1998 µg/mL +/- 9.1015 µg/mL +/- 10.0986 µg/mL Gravimetric Unstressed Stressed
7	Phenanthrene CAS # 85-01-8 Purity 99% (Lot MKCQ2033)	201.6 µg/mL	+/- 1.1974 µg/mL +/- 9.0835 µg/mL +/- 10.0786 µg/mL Gravimetric Unstressed Stressed

8	Anthracene CAS # 120-12-7 Purity 99%	(Lot MKCP3968)	200.0 µg/mL	+/- 1.1879 +/- 9.0114 +/- 9.9986	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
9	Fluoranthene CAS # 206-44-0 Purity 99%	(Lot MKCQ4728)	202.0 µg/mL	+/- 1.1998 +/- 9.1015 +/- 10.0986	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
10	Pyrene CAS # 129-00-0 Purity 99%	(Lot BCCG7845)	200.4 µg/mL	+/- 1.1903 +/- 9.0294 +/- 10.0186	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
11	Benz(a)anthracene CAS # 56-55-3 Purity 98%	(Lot RP220616)	201.5 µg/mL	+/- 1.1968 +/- 9.0784 +/- 10.0730	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
12	Chrysene CAS # 218-01-9 Purity 99%	(Lot STBK5205)	201.6 µg/mL	+/- 1.1974 +/- 9.0835 +/- 10.0786	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
13	Benzo(b)fluoranthene CAS # 205-99-2 Purity 99%	(Lot 012012B)	201.2 µg/mL	+/- 1.1951 +/- 9.0655 +/- 10.0586	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
14	Benzo(k)fluoranthene CAS # 207-08-9 Purity 99%	(Lot 012012K)	200.4 µg/mL	+/- 1.1903 +/- 9.0294 +/- 10.0186	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
15	Benzo(a)pyrene CAS # 50-32-8 Purity 99%	(Lot Z8BKF)	201.6 µg/mL	+/- 1.1974 +/- 9.0835 +/- 10.0786	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
16	Indeno(1,2,3-cd)pyrene CAS # 193-39-5 Purity 99%	(Lot 12-JKL-118-9)	200.8 µg/mL	+/- 1.1927 +/- 9.0474 +/- 10.0386	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
17	Dibenz(a,h)anthracene CAS # 53-70-3 Purity 99%	(Lot ER032211-01)	200.4 µg/mL	+/- 1.1903 +/- 9.0294 +/- 10.0186	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
18	Benzo(g,h,i)perylene CAS # 191-24-2 Purity 99%	(Lot 8GFYJ)	200.0 µg/mL	+/- 1.1879 +/- 9.0114 +/- 9.9986	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
Solvent: Acetone/Toluene (50:50) CAS # 67-64-1/108-88-3 Purity 99%						

Column:
30m x 0.25mm x 0.25µm
Rtx-5 (cat.#10223)

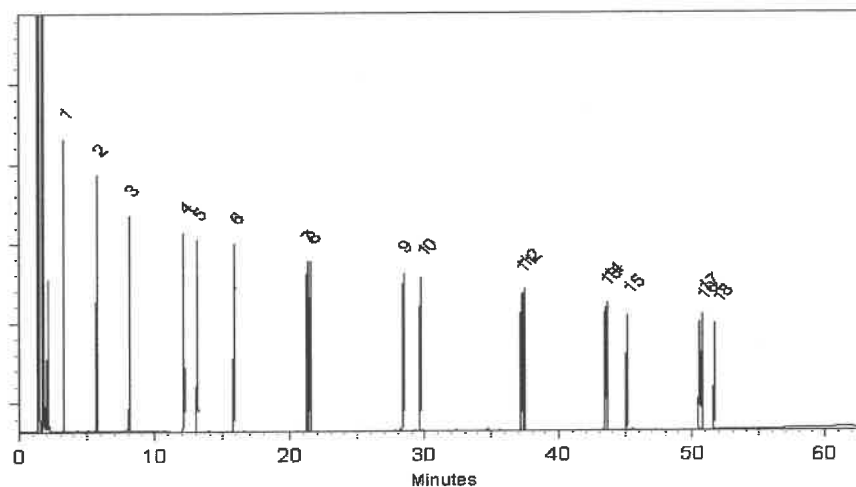
Carrier Gas:
hydrogen-constant pressure 10 psi.

Temp. Program:
100°C (hold 1 min.) to 330°C
@ 4°C/min. (hold 5 min.)

Inj. Temp:
250°C

Det. Temp:
330°C

Det. Type:
FID



This chromatogram represents a general set of testing conditions chosen for product acceptance. For optimal results in your lab, conditions should be adjusted for your specific instrument, method, and application.

Morgan Craighead - Mix Technician

Date Mixed: 19-Aug-2022

Balance: B442140311

Jennifer Pollino - Operations Tech III - ARM QC

Date Passed: 23-Aug-2022

Manufactured under Restek's ISO 9001:2015
Registered Quality System
Certificate #FM 80397

General Certified Reference Material Notes

Expiration Notes:

- Expiration date valid for unopened ampul stored in compliance with the recommended conditions.
- Uncertainty, concentration, and expiration of the CRM are based on the unopened product being stored according to the recommended condition found in the storage field.

Purity Notes:

- Purity and/or chemical identity are determined by one or more of the following techniques: GC/FID, HPLC, GC/μECD, GC/MS, LC/MS, RI, and/or melting point.
- Compounds with a listed purity of less than 99% have been weight corrected to compensate for impurities and/or salts. A correction factor is used to calculate the amount of compound necessary to achieve the desired concentration of the parent compound in solution.
- Purity of isomeric compounds is reported as the sum of the isomers.
- Purity values are rounded to the nearest whole number.

Certified Uncertainty Value Notes:

- The uncertainties are determined in accordance with ISO 17034 and Guide 35. The certified combined stressed uncertainty value (includes gravimetric uncertainty, homogeneity between-ampul uncertainty, storage stability uncertainty and shipping stability uncertainty and were combined using the following formula:

$$U_{combined\ stressed} = k \sqrt{U_{gravimetric}^2 + U_{homogeneity}^2 + U_{storage\ stability}^2 + U_{shipping\ stability}^2}$$

k is a coverage factor of 2, which gives a level of confidence of approximately 95%.

- It is important to note that the shipping stability uncertainty was obtained under temperature extremes for specific time intervals; therefore, the certified combined stressed uncertainty value should only be applied to the product if it was stored at non-standard temperature conditions up to and including 7 days. Contact Restek Technical Service at www.restek.com/Contact-Us for use recommendations if your shipment was in-transit for more than 7 days at non-standard temperature conditions.
- Apply the certified combined unstressed uncertainty value if the product was received under standard shipping conditions. Apply the certified combined stressed uncertainty value if the product was received under non-standard conditions as specified below.

Label Conditions	Standard Conditions	Non-Standard Conditions
25°C Nominal (Room Temperature)	< 60°C	≥ 60°C up to 7 days
10°C or colder (Refrigerate)	< 40°C	≥ 40°C up to 7 days
0°C or colder (Freezer) -20°C or colder (Deep Freezer)	< 25°C	≥ 25°C up to 7 days

- Separate (not combined) uncertainty values for gravimetric uncertainty are also displayed on the certificate, if needed, separate homogeneity between-ampul uncertainty, storage stability uncertainty and shipping stability uncertainty values are available by contacting Restek Technical Service at www.restek.com/Contact-Us.
- The packaged amount is the minimum sample size for which uncertainty is valid. The ampules are over-filled to ensure that the minimum packaged amount can be sufficiently transferred.

Manufacturing Notes:

- Concentration is based upon gravimetric preparation using either a balance whose calibration has been verified daily using NIST traceable weights, and/or dilutions with Class A glassware.

Handling Notes:

- Stability of the unopened product, when stored in compliance with the recommended conditions, is guaranteed through the expiration displayed on the product label and certificate. Contact Restek for additional opened product stability information, with the knowledge/understanding that open product stability is subject to the specific handling and environmental conditions to which the product is exposed. For your convenience Restek supplies deactivated vials with most standards packed in 2mL ampules. Larger volume deactivated vials are available through Restek as a custom ordered item. Additionally, Restek sells DMDCS for the purpose of glassware deactivation as catalog number 31861, which includes complete instructions.



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CERTIFIED REFERENCE MATERIAL

Certificate of Analysis chromatographic plus



FOR LABORATORY USE ONLY-READ SDS PRIOR TO USE.

This Reference Material is intended for Laboratory Use Only as a standard for the qualitative and/or quantitative determination of the analyte(s) listed.

Catalog No. : 30543 **Lot No.:** A0200091

Description : NJEPH Aromatics Matrix Spike Mix
NJEPH Aromatics Matrix Spike Mix 200µg/mL, Acetone/Toluene (50:50), 5mL/ampul

Container Size : 5 mL **Pkg Amt:** > 5 mL

Expiration Date : June 30, 2029 **Storage:** 10°C or colder

Handling: Sonication required. Mix is photosensitive. **Ship:** Ambient

P12828
↓
P12855 } Y.P.
10/17/23

CERTIFIED VALUES

Elution Order	Compound	CAS #	Lot #	Purity	Grav. Conc. (weight/volume)	Expanded Uncertainty * (95% C.L.; K=2)
1	1,2,3-Trimethylbenzene	526-73-8	8776.10-36	98%	200.7 µg/mL	+/- 9.0431
2	Naphthalene	91-20-3	MKCH0219	99%	200.8 µg/mL	+/- 9.0474
3	2-Methylnaphthalene	91-57-6	STBK0259	96%	200.8 µg/mL	+/- 9.0489
4	Acenaphthylene	208-96-8	L10L	95%	201.0 µg/mL	+/- 9.0574
5	Acenaphthene	83-32-9	MKCR7169	99%	201.0 µg/mL	+/- 9.0565
6	Fluorene	86-73-7	10236068	99%	201.0 µg/mL	+/- 9.0547
7	Phenanthrene	85-01-8	MKQC2033	99%	200.8 µg/mL	+/- 9.0492
8	Anthracene	120-12-7	MKCR0570	99%	201.1 µg/mL	+/- 9.0601
9	Fluoranthene	206-44-0	MKCF7378	99%	201.0 µg/mL	+/- 9.0583
10	Pyrene	129-00-0	BCCG8479	98%	201.0 µg/mL	+/- 9.0572
11	Benz(a)anthracene	56-55-3	0012022BAA	99%	201.0 µg/mL	+/- 9.0583
12	Chrysene	218-01-9	RP230512B	99%	200.8 µg/mL	+/- 9.0474
13	Benzo(b)fluoranthene	205-99-2	022013B	99%	200.8 µg/mL	+/- 9.0492
14	Benzo(k)fluoranthene	207-08-9	022022K	99%	200.9 µg/mL	+/- 9.0510
15	Benzo(a)pyrene	50-32-8	RP230525	99%	200.8 µg/mL	+/- 9.0474
16	Indeno(1,2,3-cd)pyrene	193-39-5	12-JKL-118-9	97%	200.9 µg/mL	+/- 9.0522

17	Dibenz(a,h)anthracene	53-70-3	ER032211-01	99%	200.8 µg/mL	+/- 9.0474
18	Benzo(g,h,i)perylene	191-24-2	RP230511B	98%	200.9 µg/mL	+/- 9.0519

* Expanded Uncertainty displayed in same units as Grav. Conc.

Solvent: Acetone/Toluene (50:50)
CAS # 67-64-1/108-88-3
Purity 99%

Quality Confirmation Test

Column:
30m x 0.25mm x 0.25µm
Rtx-5 (cat.#10223)

Carrier Gas:
hydrogen-constant pressure 10 psi.

Temp. Program:
100°C (hold 1 min.) to 330°C
@ 4°C/min. (hold 5 min.)

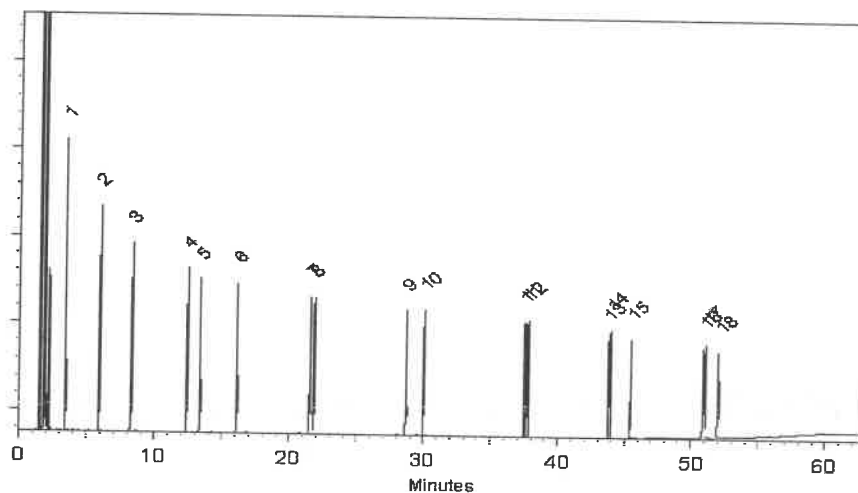
Inj. Temp:
250°C

Det. Temp:
330°C

Det. Type:
FID

Split Vent:
20 ml/min.

Inj. Vol
1µl



This chromatogram represents a general set of testing conditions chosen for product acceptance. For optimal results in your lab, conditions should be adjusted for your specific instrument, method, and application.

Nick Yaw
Nick Yaw - Operations Tech I

Date Mixed: 19-Jul-2023

Balance Serial # 1128353505

Christie Mills
Christie Mills - Operations Lead Tech - ARM QC

Date Passed: 25-Jul-2023

Manufactured under Restek's ISO 9001:2015
Registered Quality System
Certificate #FM 80397

General Certified Reference Material Notes

Expiration Notes:

- Expiration date valid for unopened ampul stored in compliance with the recommended conditions.
- Uncertainty, concentration, and expiration of the CRM are based on the unopened product being stored according to the recommended condition found in the storage field.

Purity Notes:

- Purity and/or chemical identity are determined by one or more of the following techniques: GC/FID, HPLC, GC/ μ ECD, GC/MS, LC/MS, RI, and/or melting point.
- Compounds with a listed purity of less than 99% have been weight corrected to compensate for impurities and/or salts. A correction factor is used to calculate the amount of compound necessary to achieve the desired concentration of the parent compound in solution.
- Purity of isomeric compounds is reported as the sum of the isomers.
- Purity values are rounded to the nearest whole number.

Certified Uncertainty Value Notes:

- The uncertainties are determined in accordance with ISO 17034 and Guide 35. The certified expanded uncertainty value includes gravimetric uncertainty, homogeneity between-ampul uncertainty, storage stability uncertainty and shipping stability uncertainty and were combined using the following formula:

$$U_{combined\ uncertainty} = k \sqrt{u_{gravimetric}^2 + u_{homogeneity}^2 + u_{storage\ stability}^2 + u_{shipping\ stability}^2}$$

k is a coverage factor of 2, which gives a level of confidence of approximately 95%.

- The packaged amount is the minimum sample size for which uncertainty is valid. The ampuls are over-filled to ensure that the minimum packaged amount can be sufficiently transferred.

Manufacturing Notes:

- Concentration is based upon gravimetric preparation using either a balance whose calibration has been verified daily using NIST traceable weights, and/or dilutions with Class A glassware.

Handling Notes:

- Stability of the unopened product, when stored in compliance with the recommended conditions, is guaranteed through the expiration displayed on the product label and certificate. Contact Restek for additional opened product stability information, with the knowledge/understanding that open product stability is subject to the specific handling and environmental conditions to which the product is exposed. For your convenience Restek supplies deactivated vials with most standards packed in 2mL ampuls. Larger volume deactivated vials are available through Restek as a custom ordered item. Additionally, Restek sells DMDCS for the purpose of glassware deactivation as catalog number 31861, which includes complete instructions.
- If any undissolved material is visible inside the ampul, sonicate the unopened ampul until the material is completely dissolved.



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Fax: 1-814-353-1309

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CERTIFIED REFERENCE MATERIAL

Certificate of Analysis

chromatographic plus



FOR LABORATORY USE ONLY-READ SDS PRIOR TO USE.

This Reference Material is intended for Laboratory Use Only as a standard for the qualitative and/or quantitative determination of the analyte(s) listed.

Catalog No. : 30543 **Lot No.:** A0200091

Description : NJEPH Aromatics Matrix Spike Mix
NJEPH Aromatics Matrix Spike Mix 200µg/mL, Acetone/Toluene (50:50), 5mL/ampul

Container Size : 5 mL **Pkg Amt:** > 5 mL

Expiration Date : June 30, 2029 **Storage:** 10°C or colder

Handling: Sonication required. Mix is photosensitive. **Ship:** Ambient

P12828
↓
P12855 } Y.P.
10/17/23

CERTIFIED VALUES

Elution Order	Compound	CAS #	Lot #	Purity	Grav. Conc. (weight/volume)	Expanded Uncertainty * (95% C.L.; K=2)
1	1,2,3-Trimethylbenzene	526-73-8	8776.10-36	98%	200.7 µg/mL	+/- 9.0431
2	Naphthalene	91-20-3	MKCH0219	99%	200.8 µg/mL	+/- 9.0474
3	2-Methylnaphthalene	91-57-6	STBK0259	96%	200.8 µg/mL	+/- 9.0489
4	Acenaphthylene	208-96-8	L10L	95%	201.0 µg/mL	+/- 9.0574
5	Acenaphthene	83-32-9	MKCR7169	99%	201.0 µg/mL	+/- 9.0565
6	Fluorene	86-73-7	10236068	99%	201.0 µg/mL	+/- 9.0547
7	Phenanthrene	85-01-8	MKQC2033	99%	200.8 µg/mL	+/- 9.0492
8	Anthracene	120-12-7	MKCR0570	99%	201.1 µg/mL	+/- 9.0601
9	Fluoranthene	206-44-0	MKCF7378	99%	201.0 µg/mL	+/- 9.0583
10	Pyrene	129-00-0	BCCG8479	98%	201.0 µg/mL	+/- 9.0572
11	Benz(a)anthracene	56-55-3	0012022BAA	99%	201.0 µg/mL	+/- 9.0583
12	Chrysene	218-01-9	RP230512B	99%	200.8 µg/mL	+/- 9.0474
13	Benzo(b)fluoranthene	205-99-2	022013B	99%	200.8 µg/mL	+/- 9.0492
14	Benzo(k)fluoranthene	207-08-9	022022K	99%	200.9 µg/mL	+/- 9.0510
15	Benzo(a)pyrene	50-32-8	RP230525	99%	200.8 µg/mL	+/- 9.0474
16	Indeno(1,2,3-cd)pyrene	193-39-5	12-JKL-118-9	97%	200.9 µg/mL	+/- 9.0522

17	Dibenz(a,h)anthracene	53-70-3	ER032211-01	99%	200.8 µg/mL	+/- 9.0474
18	Benzo(g,h,i)perylene	191-24-2	RP230511B	98%	200.9 µg/mL	+/- 9.0519

* Expanded Uncertainty displayed in same units as Grav. Conc.

Solvent: Acetone/Toluene (50:50)
CAS # 67-64-1/108-88-3
Purity 99%

Quality Confirmation Test

Column:
30m x 0.25mm x 0.25µm
Rtx-5 (cat.#10223)

Carrier Gas:
hydrogen-constant pressure 10 psi.

Temp. Program:
100°C (hold 1 min.) to 330°C
@ 4°C/min. (hold 5 min.)

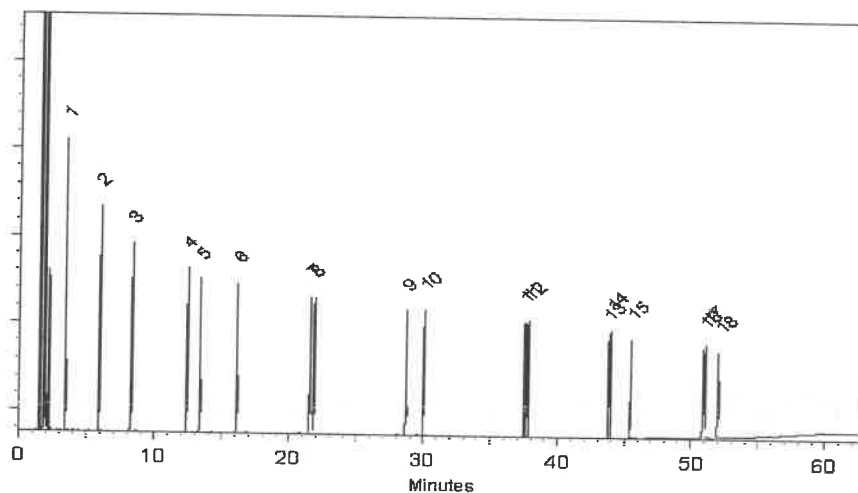
Inj. Temp:
250°C

Det. Temp:
330°C

Det. Type:
FID

Split Vent:
20 ml/min.

Inj. Vol
1µl



This chromatogram represents a general set of testing conditions chosen for product acceptance. For optimal results in your lab, conditions should be adjusted for your specific instrument, method, and application.

Nick Yaw
Nick Yaw - Operations Tech I

Date Mixed: 19-Jul-2023

Balance Serial # 1128353505

Christie Mills
Christie Mills - Operations Lead Tech - ARM QC

Date Passed: 25-Jul-2023

Manufactured under Restek's ISO 9001:2015
Registered Quality System
Certificate #FM 80397

General Certified Reference Material Notes

Expiration Notes:

- Expiration date valid for unopened ampul stored in compliance with the recommended conditions.
- Uncertainty, concentration, and expiration of the CRM are based on the unopened product being stored according to the recommended condition found in the storage field.

Purity Notes:

- Purity and/or chemical identity are determined by one or more of the following techniques: GC/FID, HPLC, GC/ μ ECD, GC/MS, LC/MS, RI, and/or melting point.
- Compounds with a listed purity of less than 99% have been weight corrected to compensate for impurities and/or salts. A correction factor is used to calculate the amount of compound necessary to achieve the desired concentration of the parent compound in solution.
- Purity of isomeric compounds is reported as the sum of the isomers.
- Purity values are rounded to the nearest whole number.

Certified Uncertainty Value Notes:

- The uncertainties are determined in accordance with ISO 17034 and Guide 35. The certified expanded uncertainty value includes gravimetric uncertainty, homogeneity between-ampul uncertainty, storage stability uncertainty and shipping stability uncertainty and were combined using the following formula:

$$U_{combined\ uncertainty} = k \sqrt{u_{gravimetric}^2 + u_{homogeneity}^2 + u_{storage\ stability}^2 + u_{shipping\ stability}^2}$$

k is a coverage factor of 2, which gives a level of confidence of approximately 95%.

- The packaged amount is the minimum sample size for which uncertainty is valid. The ampuls are over-filled to ensure that the minimum packaged amount can be sufficiently transferred.

Manufacturing Notes:

- Concentration is based upon gravimetric preparation using either a balance whose calibration has been verified daily using NIST traceable weights, and/or dilutions with Class A glassware.

Handling Notes:

- Stability of the unopened product, when stored in compliance with the recommended conditions, is guaranteed through the expiration displayed on the product label and certificate. Contact Restek for additional opened product stability information, with the knowledge/understanding that open product stability is subject to the specific handling and environmental conditions to which the product is exposed. For your convenience Restek supplies deactivated vials with most standards packed in 2mL ampuls. Larger volume deactivated vials are available through Restek as a custom ordered item. Additionally, Restek sells DMDCS for the purpose of glassware deactivation as catalog number 31861, which includes complete instructions.
- If any undissolved material is visible inside the ampul, sonicate the unopened ampul until the material is completely dissolved.



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CERTIFIED REFERENCE MATERIAL

Certificate of Analysis

chromatographic plus



FOR LABORATORY USE ONLY-READ SDS PRIOR TO USE.

This Reference Material is intended for Laboratory Use Only as a standard for the qualitative and/or quantitative determination of the analyte(s) listed.

Catalog No. : 30543 **Lot No.:** A0200091

Description : NJEPH Aromatics Matrix Spike Mix
NJEPH Aromatics Matrix Spike Mix 200µg/mL, Acetone/Toluene (50:50), 5mL/ampul

Container Size : 5 mL **Pkg Amt:** > 5 mL

Expiration Date : June 30, 2029 **Storage:** 10°C or colder

Handling: Sonication required. Mix is photosensitive. **Ship:** Ambient

P12828
↓
P12855 } Y.P.
10/17/23

CERTIFIED VALUES

Elution Order	Compound	CAS #	Lot #	Purity	Grav. Conc. (weight/volume)	Expanded Uncertainty * (95% C.L.; K=2)
1	1,2,3-Trimethylbenzene	526-73-8	8776.10-36	98%	200.7 µg/mL	+/- 9.0431
2	Naphthalene	91-20-3	MKCH0219	99%	200.8 µg/mL	+/- 9.0474
3	2-Methylnaphthalene	91-57-6	STBK0259	96%	200.8 µg/mL	+/- 9.0489
4	Acenaphthylene	208-96-8	L10L	95%	201.0 µg/mL	+/- 9.0574
5	Acenaphthene	83-32-9	MKCR7169	99%	201.0 µg/mL	+/- 9.0565
6	Fluorene	86-73-7	10236068	99%	201.0 µg/mL	+/- 9.0547
7	Phenanthrene	85-01-8	MKQC2033	99%	200.8 µg/mL	+/- 9.0492
8	Anthracene	120-12-7	MKCR0570	99%	201.1 µg/mL	+/- 9.0601
9	Fluoranthene	206-44-0	MKCF7378	99%	201.0 µg/mL	+/- 9.0583
10	Pyrene	129-00-0	BCCG8479	98%	201.0 µg/mL	+/- 9.0572
11	Benz(a)anthracene	56-55-3	0012022BAA	99%	201.0 µg/mL	+/- 9.0583
12	Chrysene	218-01-9	RP230512B	99%	200.8 µg/mL	+/- 9.0474
13	Benzo(b)fluoranthene	205-99-2	022013B	99%	200.8 µg/mL	+/- 9.0492
14	Benzo(k)fluoranthene	207-08-9	022022K	99%	200.9 µg/mL	+/- 9.0510
15	Benzo(a)pyrene	50-32-8	RP230525	99%	200.8 µg/mL	+/- 9.0474
16	Indeno(1,2,3-cd)pyrene	193-39-5	12-JKL-118-9	97%	200.9 µg/mL	+/- 9.0522

17	Dibenz(a,h)anthracene	53-70-3	ER032211-01	99%	200.8 µg/mL	+/- 9.0474
18	Benzo(g,h,i)perylene	191-24-2	RP230511B	98%	200.9 µg/mL	+/- 9.0519

* Expanded Uncertainty displayed in same units as Grav. Conc.

Solvent: Acetone/Toluene (50:50)
CAS # 67-64-1/108-88-3
Purity 99%

Quality Confirmation Test

Column:
30m x 0.25mm x 0.25µm
Rtx-5 (cat.#10223)

Carrier Gas:
hydrogen-constant pressure 10 psi.

Temp. Program:
100°C (hold 1 min.) to 330°C
@ 4°C/min. (hold 5 min.)

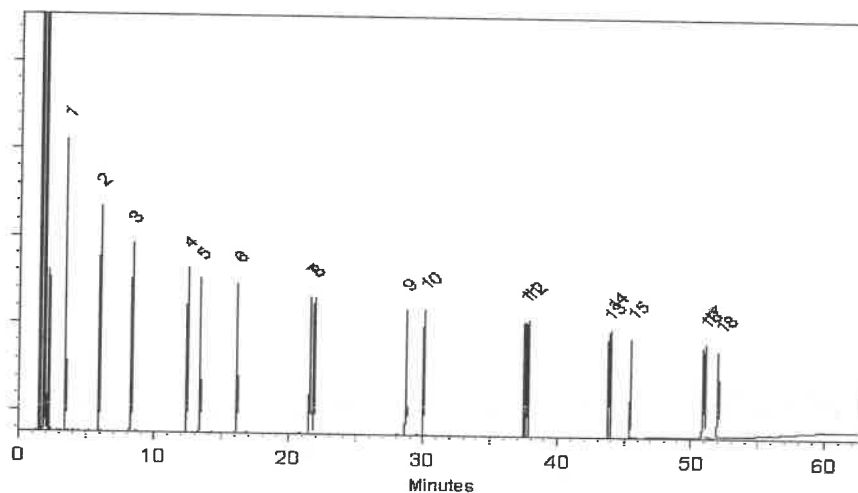
Inj. Temp:
250°C

Det. Temp:
330°C

Det. Type:
FID

Split Vent:
20 ml/min.

Inj. Vol
1µl



This chromatogram represents a general set of testing conditions chosen for product acceptance. For optimal results in your lab, conditions should be adjusted for your specific instrument, method, and application.

Nick Yaw
Nick Yaw - Operations Tech I

Date Mixed: 19-Jul-2023

Balance Serial # 1128353505

Christie Mills
Christie Mills - Operations Lead Tech - ARM QC

Date Passed: 25-Jul-2023

Manufactured under Restek's ISO 9001:2015
Registered Quality System
Certificate #FM 80397

General Certified Reference Material Notes

Expiration Notes:

- Expiration date valid for unopened ampul stored in compliance with the recommended conditions.
- Uncertainty, concentration, and expiration of the CRM are based on the unopened product being stored according to the recommended condition found in the storage field.

Purity Notes:

- Purity and/or chemical identity are determined by one or more of the following techniques: GC/FID, HPLC, GC/ μ ECD, GC/MS, LC/MS, RI, and/or melting point.
- Compounds with a listed purity of less than 99% have been weight corrected to compensate for impurities and/or salts. A correction factor is used to calculate the amount of compound necessary to achieve the desired concentration of the parent compound in solution.
- Purity of isomeric compounds is reported as the sum of the isomers.
- Purity values are rounded to the nearest whole number.

Certified Uncertainty Value Notes:

- The uncertainties are determined in accordance with ISO 17034 and Guide 35. The certified expanded uncertainty value includes gravimetric uncertainty, homogeneity between-ampul uncertainty, storage stability uncertainty and shipping stability uncertainty and were combined using the following formula:

$$U_{combined\ uncertainty} = k \sqrt{u_{gravimetric}^2 + u_{homogeneity}^2 + u_{storage\ stability}^2 + u_{shipping\ stability}^2}$$

k is a coverage factor of 2, which gives a level of confidence of approximately 95%.

- The packaged amount is the minimum sample size for which uncertainty is valid. The ampuls are over-filled to ensure that the minimum packaged amount can be sufficiently transferred.

Manufacturing Notes:

- Concentration is based upon gravimetric preparation using either a balance whose calibration has been verified daily using NIST traceable weights, and/or dilutions with Class A glassware.

Handling Notes:

- Stability of the unopened product, when stored in compliance with the recommended conditions, is guaranteed through the expiration displayed on the product label and certificate. Contact Restek for additional opened product stability information, with the knowledge/understanding that open product stability is subject to the specific handling and environmental conditions to which the product is exposed. For your convenience Restek supplies deactivated vials with most standards packed in 2mL ampuls. Larger volume deactivated vials are available through Restek as a custom ordered item. Additionally, Restek sells DMDCS for the purpose of glassware deactivation as catalog number 31861, which includes complete instructions.
- If any undissolved material is visible inside the ampul, sonicate the unopened ampul until the material is completely dissolved.



110 Benner Circle
Bellefonte, PA 16823-8812
Tel: 1-814-353-1300
Fax: 1-814-353-1309

www.restek.com

CERTIFIED REFERENCE MATERIAL

Certificate of Analysis chromatographic plus



FOR LABORATORY USE ONLY-READ SDS PRIOR TO USE.

This Reference Material is intended for Laboratory Use Only as a standard for the qualitative and/or quantitative determination of the analyte(s) listed.

Catalog No. : 30543 **Lot No.:** A0200091

Description : NJEPH Aromatics Matrix Spike Mix
NJEPH Aromatics Matrix Spike Mix 200µg/mL, Acetone/Toluene (50:50), 5mL/ampul

Container Size : 5 mL **Pkg Amt:** > 5 mL

Expiration Date : June 30, 2029 **Storage:** 10°C or colder

Handling: Sonication required. Mix is photosensitive. **Ship:** Ambient

P12828
↓
P12855 } Y.P.
10/17/23

CERTIFIED VALUES

Elution Order	Compound	CAS #	Lot #	Purity	Grav. Conc. (weight/volume)	Expanded Uncertainty * (95% C.L.; K=2)
1	1,2,3-Trimethylbenzene	526-73-8	8776.10-36	98%	200.7 µg/mL	+/- 9.0431
2	Naphthalene	91-20-3	MKCH0219	99%	200.8 µg/mL	+/- 9.0474
3	2-Methylnaphthalene	91-57-6	STBK0259	96%	200.8 µg/mL	+/- 9.0489
4	Acenaphthylene	208-96-8	L10L	95%	201.0 µg/mL	+/- 9.0574
5	Acenaphthene	83-32-9	MKCR7169	99%	201.0 µg/mL	+/- 9.0565
6	Fluorene	86-73-7	10236068	99%	201.0 µg/mL	+/- 9.0547
7	Phenanthrene	85-01-8	MKQC2033	99%	200.8 µg/mL	+/- 9.0492
8	Anthracene	120-12-7	MKCR0570	99%	201.1 µg/mL	+/- 9.0601
9	Fluoranthene	206-44-0	MKCF7378	99%	201.0 µg/mL	+/- 9.0583
10	Pyrene	129-00-0	BCCG8479	98%	201.0 µg/mL	+/- 9.0572
11	Benz(a)anthracene	56-55-3	0012022BAA	99%	201.0 µg/mL	+/- 9.0583
12	Chrysene	218-01-9	RP230512B	99%	200.8 µg/mL	+/- 9.0474
13	Benzo(b)fluoranthene	205-99-2	022013B	99%	200.8 µg/mL	+/- 9.0492
14	Benzo(k)fluoranthene	207-08-9	022022K	99%	200.9 µg/mL	+/- 9.0510
15	Benzo(a)pyrene	50-32-8	RP230525	99%	200.8 µg/mL	+/- 9.0474
16	Indeno(1,2,3-cd)pyrene	193-39-5	12-JKL-118-9	97%	200.9 µg/mL	+/- 9.0522

17	Dibenz(a,h)anthracene	53-70-3	ER032211-01	99%	200.8 µg/mL	+/- 9.0474
18	Benzo(g,h,i)perylene	191-24-2	RP230511B	98%	200.9 µg/mL	+/- 9.0519

* Expanded Uncertainty displayed in same units as Grav. Conc.

Solvent: Acetone/Toluene (50:50)
CAS # 67-64-1/108-88-3
Purity 99%

Quality Confirmation Test

Column:
30m x 0.25mm x 0.25µm
Rtx-5 (cat.#10223)

Carrier Gas:
hydrogen-constant pressure 10 psi.

Temp. Program:
100°C (hold 1 min.) to 330°C
@ 4°C/min. (hold 5 min.)

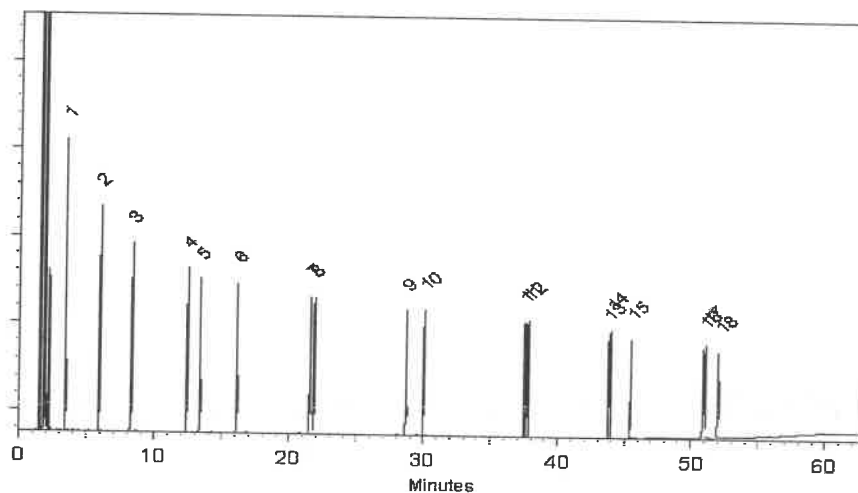
Inj. Temp:
250°C

Det. Temp:
330°C

Det. Type:
FID

Split Vent:
20 ml/min.

Inj. Vol
1µl



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Nick Yaw
Nick Yaw - Operations Tech I

Date Mixed: 19-Jul-2023

Balance Serial # 1128353505

Christie Mills
Christie Mills - Operations Lead Tech - ARM QC

Date Passed: 25-Jul-2023

Manufactured under Restek's ISO 9001:2015
Registered Quality System
Certificate #FM 80397

General Certified Reference Material Notes

Expiration Notes:

- Expiration date valid for unopened ampul stored in compliance with the recommended conditions.
- Uncertainty, concentration, and expiration of the CRM are based on the unopened product being stored according to the recommended condition found in the storage field.

Purity Notes:

- Purity and/or chemical identity are determined by one or more of the following techniques: GC/FID, HPLC, GC/ μ ECD, GC/MS, LC/MS, RI, and/or melting point.
- Compounds with a listed purity of less than 99% have been weight corrected to compensate for impurities and/or salts. A correction factor is used to calculate the amount of compound necessary to achieve the desired concentration of the parent compound in solution.
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chromatographic plus



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Catalog No. : 30543 **Lot No.:** A0200091

Description : NJEPH Aromatics Matrix Spike Mix
NJEPH Aromatics Matrix Spike Mix 200µg/mL, Acetone/Toluene (50:50), 5mL/ampul

Container Size : 5 mL **Pkg Amt:** > 5 mL

Expiration Date : June 30, 2029 **Storage:** 10°C or colder

Handling: Sonication required. Mix is photosensitive. **Ship:** Ambient

P12828
↓
P12855 } Y.P.
10/17/23

CERTIFIED VALUES

Elution Order	Compound	CAS #	Lot #	Purity	Grav. Conc. (weight/volume)	Expanded Uncertainty * (95% C.L.; K=2)
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11	Benz(a)anthracene	56-55-3	0012022BAA	99%	201.0 µg/mL	+/- 9.0583
12	Chrysene	218-01-9	RP230512B	99%	200.8 µg/mL	+/- 9.0474
13	Benzo(b)fluoranthene	205-99-2	022013B	99%	200.8 µg/mL	+/- 9.0492
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* Expanded Uncertainty displayed in same units as Grav. Conc.

Solvent: Acetone/Toluene (50:50)
CAS # 67-64-1/108-88-3
Purity 99%

Quality Confirmation Test

Column:
30m x 0.25mm x 0.25µm
Rtx-5 (cat.#10223)

Carrier Gas:
hydrogen-constant pressure 10 psi.

Temp. Program:
100°C (hold 1 min.) to 330°C
@ 4°C/min. (hold 5 min.)

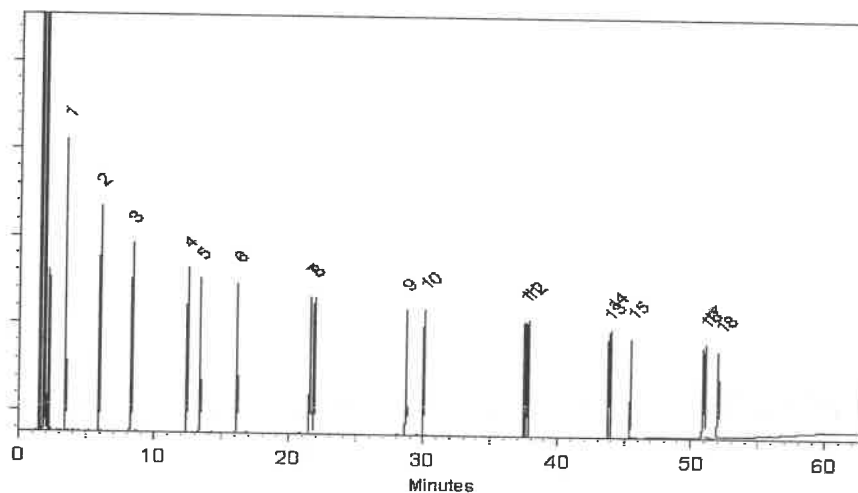
Inj. Temp:
250°C

Det. Temp:
330°C

Det. Type:
FID

Split Vent:
20 ml/min.

Inj. Vol
1µl



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Nick Yaw
Nick Yaw - Operations Tech I

Date Mixed: 19-Jul-2023

Balance Serial # 1128353505

Christie Mills
Christie Mills - Operations Lead Tech - ARM QC

Date Passed: 25-Jul-2023

Manufactured under Restek's ISO 9001:2015
Registered Quality System
Certificate #FM 80397

General Certified Reference Material Notes

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Catalog No. : 30543 **Lot No.:** A0200091

Description : NJEPH Aromatics Matrix Spike Mix
NJEPH Aromatics Matrix Spike Mix 200µg/mL, Acetone/Toluene (50:50), 5mL/ampul

Container Size : 5 mL **Pkg Amt:** > 5 mL

Expiration Date : June 30, 2029 **Storage:** 10°C or colder

Handling: Sonication required. Mix is photosensitive. **Ship:** Ambient

P12828
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P12855 } Y.P.
10/17/23

CERTIFIED VALUES

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* Expanded Uncertainty displayed in same units as Grav. Conc.

Solvent: Acetone/Toluene (50:50)
CAS # 67-64-1/108-88-3
Purity 99%

Quality Confirmation Test

Column:
30m x 0.25mm x 0.25µm
Rtx-5 (cat.#10223)

Carrier Gas:
hydrogen-constant pressure 10 psi.

Temp. Program:
100°C (hold 1 min.) to 330°C
@ 4°C/min. (hold 5 min.)

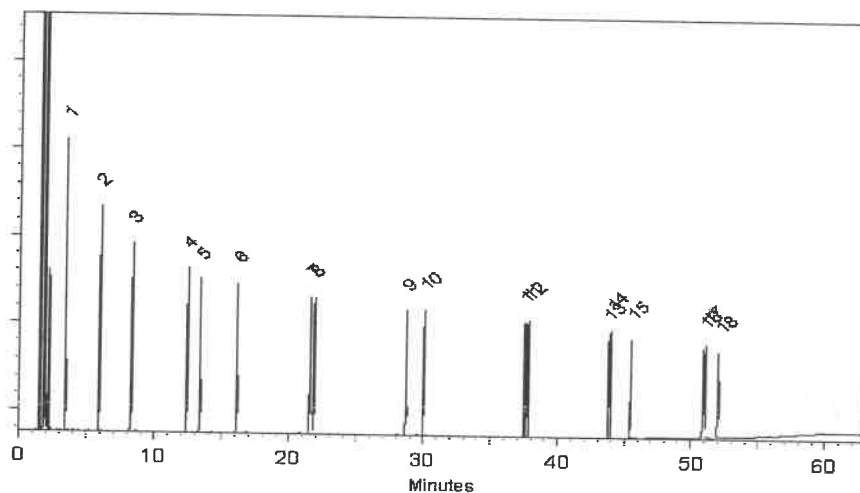
Inj. Temp:
250°C

Det. Temp:
330°C

Det. Type:
FID

Split Vent:
20 ml/min.

Inj. Vol
1µl



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Nick Yaw
Nick Yaw - Operations Tech I

Date Mixed: 19-Jul-2023

Balance Serial # 1128353505

Christie Mills
Christie Mills - Operations Lead Tech - ARM QC

Date Passed: 25-Jul-2023

Manufactured under Restek's ISO 9001:2015
Registered Quality System
Certificate #FM 80397

General Certified Reference Material Notes

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P12828
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CERTIFIED VALUES

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Quality Confirmation Test

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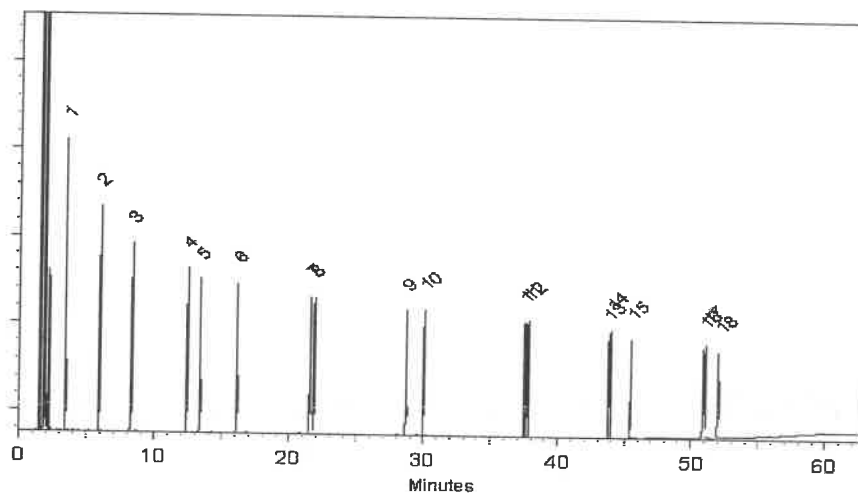
Inj. Temp:
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Det. Type:
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Inj. Vol
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Nick Yaw
Nick Yaw - Operations Tech I

Date Mixed: 19-Jul-2023

Balance Serial # 1128353505

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Christie Mills - Operations Lead Tech - ARM QC

Date Passed: 25-Jul-2023

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- The packaged amount is the minimum sample size for which uncertainty is valid. The ampuls are over-filled to ensure that the minimum packaged amount can be sufficiently transferred.

Manufacturing Notes:

- Concentration is based upon gravimetric preparation using either a balance whose calibration has been verified daily using NIST traceable weights, and/or dilutions with Class A glassware.

Handling Notes:

- Stability of the unopened product, when stored in compliance with the recommended conditions, is guaranteed through the expiration displayed on the product label and certificate. Contact Restek for additional opened product stability information, with the knowledge/understanding that open product stability is subject to the specific handling and environmental conditions to which the product is exposed. For your convenience Restek supplies deactivated vials with most standards packed in 2mL ampuls. Larger volume deactivated vials are available through Restek as a custom ordered item. Additionally, Restek sells DMDCS for the purpose of glassware deactivation as catalog number 31861, which includes complete instructions.
- If any undissolved material is visible inside the ampul, sonicate the unopened ampul until the material is completely dissolved.



CERTIFIED WEIGHT REPORT

Part Number:

95709

Lot Number:

051519

Description:

NJ EPH Aromatic Hydrocarbons

18 components

Expiration Date:

051524

Refrigerate (4 °C)

Recommended Storage:

2000

NIST Test ID#:

6UTB

5E-05 Balance Uncertainty

0.058 Flask Uncertainty

Weight(s) shown below were combined and diluted to (mL):

500.0

Solvent(s):

Methylene chloride

Lot# 102968

Received by DD

on 01/10/2020

10 bottles

P9283

To

P9287

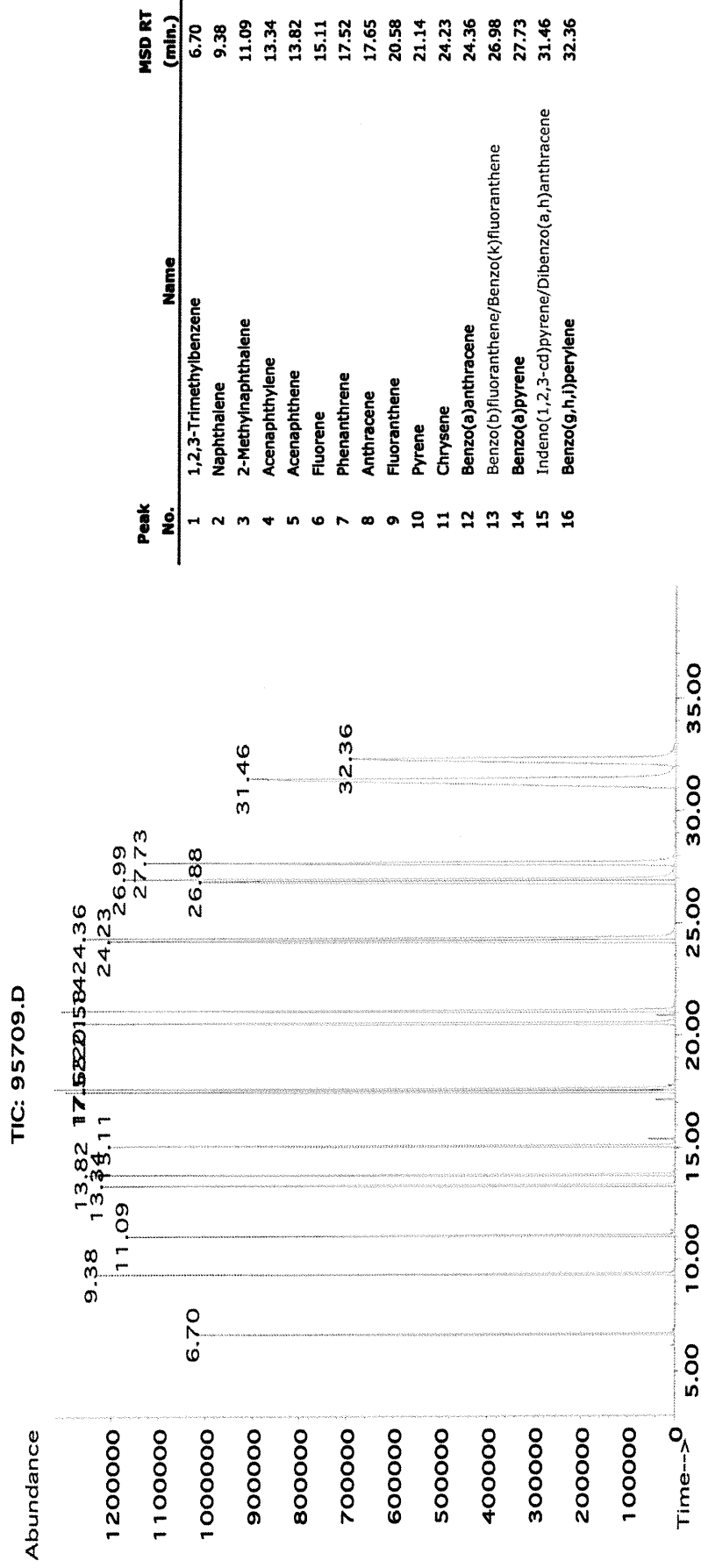
Formulated By:	Prashant Chauhan	051519	DATE
Reviewed By:	Pedro L. Rentas	051519	DATE

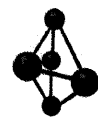
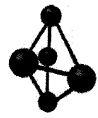
Compound		RM#	Lot Number	Nominal Conc (µg/mL)	Purity (%)	Uncertainty	Target Weight(g)	Actual Weight(g)	Actual Conc (µg/mL)	Expanded Uncertainty (+/-) (µg/mL)	CAS#	OSHA PEL (TWA)	LD50
1. Acenaphthene		1	MKB14871V	2000	99	0.2	1.01003	1.01033	2000.6	8.1	83-32-9	N/A	ipr-rat 600mg/kg
2. Acenaphthylene		3	012014	2000	98	0.2	1.02033	1.02053	2000.4	8.2	208-96-8	N/A	N/A
3. Anthracene		13	A0210580	2000	99	0.2	1.01003	1.01035	2000.6	8.1	120-12-7	0.2mg/m3 (8H)	ipr-mus 430mg/kg
4. Benzo(a)anthracene		28	012018	2000	99	0.2	1.01003	1.01035	2000.6	8.1	56-55-3	N/A	N/A
5. Benzo(a)pyrene		30	012012	2000	99.5	0.2	1.00495	1.00525	2000.6	8.1	50-32-8	0.2mg/m3 (8H)	scu-rat 50mg/kg
6. Benzo(b)fluoranthene		31	012012b	2000	99	0.2	1.01003	1.01035	2000.6	8.1	205-99-2	N/A	N/A
7. Benzo(k)fluoranthene		33	012012k	2000	99	0.2	1.01003	1.01035	2000.6	8.1	207-08-9	N/A	N/A
8. Benzo(g,h,i)perylene		32	012018	2000	99	0.2	1.01003	1.01035	2000.6	8.1	191-24-2	N/A	N/A
9. Chrysene		91	012015	2000	98	0.2	1.02033	1.02055	2000.4	8.2	218-01-9	0.2mg/m3	N/A
10. Dibenzo(a,h)anthracene		112	012014	2000	98	0.2	1.02033	1.02055	2000.4	8.2	53-70-3	0.2mg/m3	N/A
11. Fluoranthene		183	04221PV	2000	98	0.2	1.02033	1.02055	2000.4	8.2	206-44-0	N/A	orl-rat 2000mg/kg
12. Fluorene		184	07211MV	2000	98	0.2	1.02033	1.02055	2000.4	8.2	86-73-7	N/A	ipr-mus 2 g/kg
13. Indeno(1,2,3-cd)pyrene		202	022015	2000	98	0.2	1.02033	1.02055	2000.4	8.2	193-39-5	N/A	N/A
14. 2-Methylnaphthalene		214	MKB3783V	2000	97	0.2	1.03085	1.03120	2000.7	8.3	91-57-6	N/A	orl-rat 1630mg/kg
15. Naphthalene		222	08424LC	2000	99	0.2	1.01003	1.01033	2000.6	8.1	91-20-3	10 ppm (50mg/m3/8H)	orl-rat 490mg/kg
16. Phenanthrene		248	03410PV	2000	99	0.2	1.01003	1.01033	2000.6	8.1	85-01-8	0.2mg/m3/8H	orl-mus 700mg/kg
17. Pyrene		259	010197	2000	98	0.2	1.02033	1.02055	2000.4	8.2	129-00-0	0.2mg/m3/8H	orl-rat 2700mg/kg
18. 1,2,3-Trimethylbenzene		944	031097	2000	99	0.2	1.01003	1.01035	2000.6	8.1	526-73-8	N/A	N/A

• The certified value is the concentration calculated from gravimetric and volumetric measurements unless otherwise stated.
• Standards are prepared gravimetrically using balances that are calibrated with weights traceable to NIST (see above).
• All Standards are certified (+/-) 0.5% of the stated value, unless otherwise stated.
• All Standards, after opening ampule, should be stored with caps tight and under appropriate laboratory conditions.
• Uncertainty Reference: Taylor, B.N. and Kuyat, C.E., "Guidelines for Evaluating and Expressing the Uncertainty of NIST Measurement Result," NIST Technical Note 1297, U.S. Government Printing Office, Washington, DC, (1994).



Method GCMSD-2.M: Column:SPB-5 (30m X 0.25mm ID X 0.25µm film thickness) Temp 1 = 50°C (1min.), Temp 2 = 300°C (14min.), Rate = 10°C/min., Injector B= 250°C, Detector B = 275°C, Split Ratio = 100:1, Scan Rate = 2. Analysis performed by: Melissa Stonier.



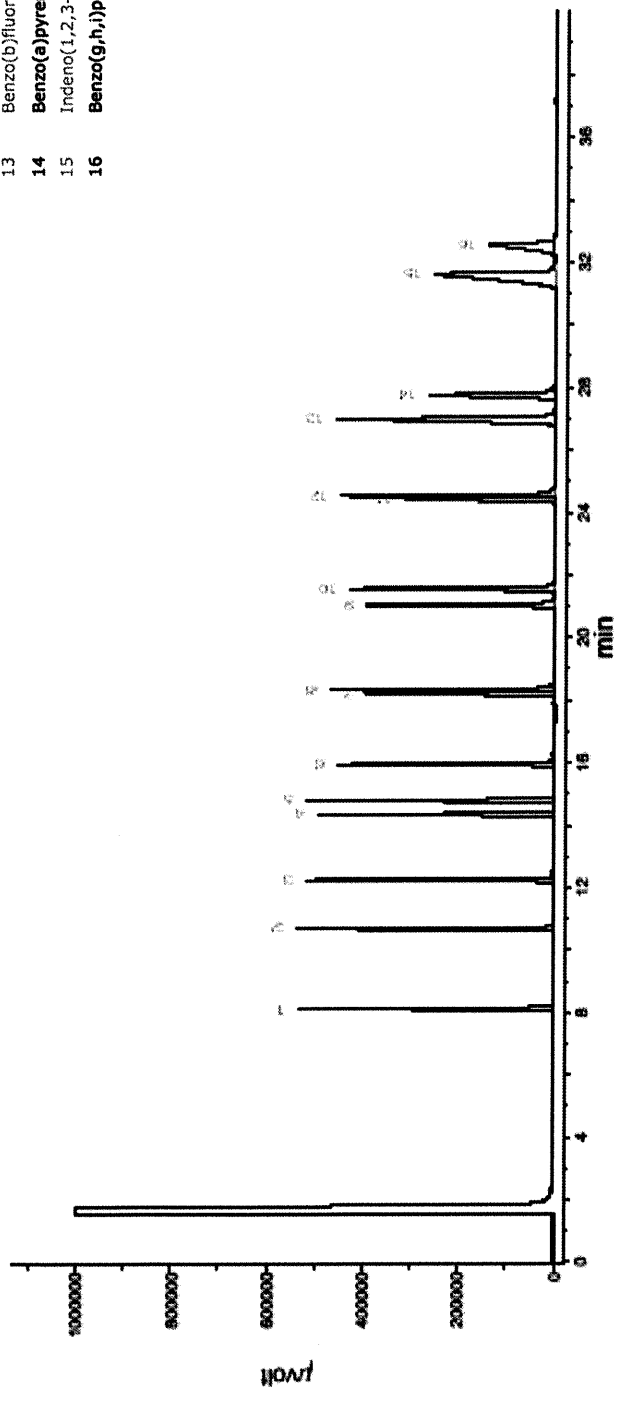


Run 27, "P95709 L051519 [2000µg/mL in MeCl2]"

Run Length: 40.00 min, 23999 points at 10 points/second.
Created: Tue, May 21, 2019 at 10:50:43 AM.
Sampled: Sequence "052019-GC9M2", Method "GC9-M2".
Analyzed using Method "GC9-M2".

Comments
GC9-M2 Analysis by Melissa Stonier
Column ID SPB-5 30 meter x 0.53mm x 1.5µm Film Thickness.
Flow rates: Total Flow = 300 mL/min, Helium (carrier) = 6.5 mL, Helium (make-up) = 25 mL.
Hydrogen (detector) = 30 mL, Air (detector) = 360 mL, Oven Temp 1 = 50°C (1 min).
Rate = 10°C/min, Oven Temp 2 = 300°C (14 min), Total Run Time = 40 Minutes. Injector Temp = 250°C.
FID Temp = 300°C, FID Signal = eDAQ Channel 1.
Gas Chromatograph = HP 5890, Auto Sampler = HP 7673, Standard Injection = 0.5 µL, Range = 3

Peak No.	Name	FID RT (min.)
1	1,2,3-Trimethylbenzene	8.12
2	Naphthalene	10.68
3	2-Methylnaphthalene	12.25
4	Acenaphthylene	14.35
5	Acenaphthene	14.78
6	Fluorene	15.96
7	Phenanthrene	18.21
8	Anthracene	18.32
9	Fluoranthene	21.04
10	Pyrene	21.56
11	Chrysene	24.43
12	Benzo(a)anthracene	24.53
13	Benzo(b)fluoranthene/Benzo(k)fluoranthene	26.99
14	Benzo(a)pyrene	27.74
15	Indeno(1,2,3-cd)pyrene/Dibenzo(a,h)anthracene	31.59
16	Benzo(g,h,i)perylene	32.54



SHIPPING DOCUMENTS

CHEMTECH

CHAIN OF CUSTODY RECORD

284 Sheffield Street, Mountainside, NJ 07092
(908) 789-8900 • Fax (908) 789-8922
www.chemtech.net

CHEMTECH PROJECT NO. 05252
QUOTE NO.
COC Number 2042541

CLIENT INFORMATION

REPORT TO BE SENT TO:
COMPANY: Rm5
ADDRESS: PO Box 719
CITY: Totowa STATE: NJ ZIP: 07511
ATTENTION: Jonathan Pereira
PHONE: 551 271 9485 FAX:

CLIENT PROJECT INFORMATION

PROJECT NAME: 245 Greenwood
PROJECT NO.: LOCATION: Midland Park
PROJECT MANAGER: Jonathan Pereira
e-mail:
PHONE: 973 633 0020 FAX: 973 633 0019

CLIENT BILLING INFORMATION

BILL TO: Rm5 PO#:
ADDRESS: PO Box 719
CITY: Totowa STATE: NJ ZIP: 07511
ATTENTION: Rita Della Fave PHONE:

DATA TURNAROUND INFORMATION

FAX (RUSH) _____ DAYS*
HARDCOPY (DATA PACKAGE): _____ DAYS*
EDD: _____ DAYS*
*TO BE APPROVED BY CHEMTECH
STANDARD HARDCOPY TURNAROUND TIME IS 10 BUSINESS DAYS

DATA DELIVERABLE INFORMATION

☐ Level 1 (Results Only) ☐ Level 4 (QC + Full Raw Data)
☐ Level 2 (Results + QC) ☒ NJ Reduced ☐ US EPA CLP
☐ Level 3 (Results + QC) ☐ NYS ASP A ☐ NYS ASP B
+ Raw Data ☐ Other
☒ EDD FORMAT: NJ EDD

EPH
TAL
TCLP
VOC
Paint Filter
Metals

ANALYSIS

CHEMTECH SAMPLE ID	PROJECT SAMPLE IDENTIFICATION	SAMPLE MATRIX	SAMPLE TYPE		SAMPLE COLLECTION		# OF BOTTLES	PRESERVATIVES									COMMENTS	
			COMP	GRAB	DATE	TIME		1	2	3	4	5	6	7	8	9		
1.	Waste	Soil	X		11/3/23	1120	2	X	X	X	H						H = Hold	
2.	Waste - VOC	↓		X	11/3/23	1126	3					X						
3.																		
4.																		
5.																		
6.																		
7.																		
8.																		
9.																		
10.																		

SAMPLE CUSTODY MUST BE DOCUMENTED BELOW EACH TIME SAMPLES CHANGE POSSESSION INCLUDING COURIER DELIVERY

RELINQUISHED BY SAMPLER: 1. Jherain	DATE/TIME: 11/3/23 1402	RECEIVED BY: JT	Conditions of bottles or coolers at receipt: ☒ COMPLIANT ☐ NON COMPLIANT ☐ COOLER TEMP: 3.8 °C
RELINQUISHED BY SAMPLER: 2.	DATE/TIME:	RECEIVED BY:	Comments: Hold TCLP Metal Analysis
RELINQUISHED BY SAMPLER: 3.	DATE/TIME:	RECEIVED BY:	

Page ____ of ____

CLIENT: ☐ Hand Delivered ☐ Other _____
CHEMTECH: ☐ Picked Up ☐ Field Sampling

Shipment Complete
☐ YES ☐ NO



284 Sheffield Street, Mountainside NJ 07092 (908)-789-8900 Fax : 908 789 8922

Laboratory Certification

Certified By	License No.
CAS EPA CLP Contract	68HERH20D0011
Connecticut	PH-0649
DOD ELAP (L-A-B)	L2219
Maine	2022022
Maryland	296
New Hampshire	255423
New Jersey	20012
New York	11376
Pennsylvania	68-00548
Soil Permit	P330-21-00137
Texas	T104704488-23-16

LOGIN REPORT/SAMPLE TRANSFER

Order ID : 05252 RMJE02

Order Date : 11/3/2023 2:14:16 PM

Project Mgr : Yazmeen

Client Name : RMJ Environomics, Inc.

Project Name : 245 Greenwood Ave

Report Type : NJ Reduced

Client Contact : Jonathan Pereira

Receive DateTime : 11/3/2023 2:02:00 PM

EDD Type : HAZ/EXCEL

Invoice Name : RMJ Environomics, Inc.

Purchase Order :

Hard Copy Date :

Invoice Contact : Jonathan Pereira

Date Signoff : 11/6/2023 9:49:22 AM

LAB ID	CLIENT ID	MATRIX	SAMPLE DATE	SAMPLE TIME	TEST	TEST GROUP	METHOD	FAX DATE	DUE DATES
O5252-03	WASTE-VOC	Solid	11/03/2023	11:26	VOC-TCLVOA-10		8260D		10 Bus. Days

Relinquished By :



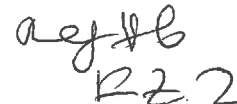
Date / Time :

11/6/23 10:30

Received By :



Date / Time :

11/6/23 10:30 
R22

Storage Area : VOA Refridgerator Room