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

Cover Page

Order ID : Q2008

Project ID : Former Schlumberger Site Princeton NJ 2025

Client : JACOBS Engineering Group, Inc.

Lab Sample Number	Client Sample Number
Q2008-01	IDW-AQ-DRUM-633-05092025

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: 5/15/2025

NYDOH CERTIFICATION NO - 11376

NJDEP CERTIFICATION NO - 20012

284 Sheffield Street, Mountainside NJ 07092 Tel. 908-789-8900 Fax: 908-789-8922

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 is 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

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APPENDIX A

QA REVIEW GENERAL DOCUMENTATION

Project #: **Q2008**

	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	✓

QA Review Signature: **MAHESH PATEL** **Date:** **05/15/2025**

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LAB CHRONICLE

OrderID:	Q2008	**OrderDate:**	5/9/2025 3:21:23 PM
Client:	JACOBS Engineering Group, Inc.	**Project:**	Former Schlumberger Site Princeton NJ 2025
Contact:	Mary I. Murphy	**Location:**	L41,VOA Ref. #3 Water

LabID	ClientID	Matrix	Test	Method	Sample Date	Prep Date	Anal Date	Received
Q2008-01	**IDW-AQ-DRUM-633-05092025**	**Water**			**05/09/25**			**05/09/25**
			Diesel Range Organics	8015D		05/13/25	05/13/25	
			Gasoline Range Organics	8015D			05/12/25	

QC SUMMARY

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WATER DIESEL RANGE ORGANICS SURROGATE RECOVERY

Lab Name: Chemtech Client: JACOBS Engineering Group, Inc.

Lab Code: CHEM Case No.: Q2008 SAS No.: Q2008 SDG No.: Q2008

EPA SAMPLE NO.	S1 TETRACOSANE-d50	S2	S3	S4	TOT OUT
PIBLK-FF015827.D	82				0
PIBLK-FF015834.D	82				0
PB167981BL	83				0
PB167981BS	101				0
PB167981BSD	99				0
IDW-AQ-DRUM-633-05092025	86				0

	QC LIMITS
TETRACOSANE-d50	For Water : 29-130 For Soil : 37-130

Column to be used to flag recovery values
* Values outside of contract required QC limits
D Surrogate Diluted Out

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WATER DIESEL RANGE ORGANICS LABORATORY CONTROL SPIKE/LABORATORY CONTROL SPIKE DUPLICATE

Lab Name: Chemtech **Client:** JACOBS Engineering Group, Inc.

Lab Code: CHEM **Cas No:** Q2008 **SAS No :** Q2008 **SDG No:** Q2008

Matrix Spike - EPA Sample No : PB167981BS **Datafile:** FF015831.D

COMPOUND	SPIKE ADDED ug/L	CONCENTRATION ug/L	LCS/LCSD CONCENTRATION ug/L	% REC	QC LIMITS
DRO	200	0	207	104	78-117

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WATER DIESEL RANGE ORGANICS LABORATORY CONTROL SPIKE/LABORATORY CONTROL SPIKE DUPLICATE

Lab Name: Chemtech **Client:** JACOBS Engineering Group, Inc.

Lab Code: CHEM **Cas No:** Q2008 **SAS No :** Q2008 **SDG No:** Q2008

Matrix Spike - EPA Sample No : PB167981BSD **Datafile:** FF015832.D

COMPOUND	SPIKE ADDED ug/L	CONCENTRATION ug/L	LCS/LCSD CONCENTRATION ug/L	% REC	QC LIMITS
DRO	200	0	203	102	78-117

LCS/LCSD % Recovery RPD : 2.0

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4B

METHOD BLANK SUMMARY

EPA SAMPLE NO.

PB167981BL

Lab Name: CHEMTECH Contract: JACO05

Lab Code: CHEM Case No.: Q2008 SAS No.: Q2008 SDG NO.: Q2008

Lab File ID: FF015830.D Lab Sample ID: PB167981BL

Instrument ID: FF Date Extracted: 05/13/2025

Matrix: (soil/water) Water Date Analyzed: 05/13/25

Level: (low/med) low Time Analyzed: 13:22

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

EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED
PB167981BS	PB167981BS	FF015831.D	05/13/25
PB167981BSD	PB167981BSD	FF015832.D	05/13/25
IDW-AQ-DRUM-633-05092025	Q2008-01	FF015833.D	05/13/25

COMMENTS:

SAMPLE DATA

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Report of Analysis

Client:	JACOBS Engineering Group, Inc.	Date Collected:	05/09/25
Project:	Former Schlumberger Site Princeton NJ 2025	Date Received:	05/09/25
Client Sample ID:	IDW-AQ-DRUM-633-05092025	SDG No.:	Q2008
Lab Sample ID:	Q2008-01	Matrix:	Water
Analytical Method:	8015D DRO	% Solid:	0 Decanted:
Sample Wt/Vol:	940 Units: mL	Final Vol:	1 mL
Soil Aliquot Vol:	uL	Test:	Diesel Range Organics
Extraction Type:		Injection Volume :	
GPC Factor :	PH :		
Prep Method :	SW3510		

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
FF015833.D	1	05/13/25 08:56	05/13/25 15:54	PB167981

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units
TARGETS						
DRO	DRO	251		7.00	53.0	ug/L
SURROGATES						
16416-32-3	Tetracosane-d50	17.1		29 - 130	86%	SPK: 20

Comments:

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
E = Value Exceeds Calibration Range
P = Indicates >25% difference for detected concentrations between the two GC columns
Q = indicates LCS control criteria did not meet requirements
M = MS/MSD acceptance 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
S = Indicates estimated value where valid five-point calibration was not performed prior to analyte detection in sample.
() = Laboratory InHouse Limit

Quantitation Report (QT Reviewed)

Data Path : Z:\pestpcbsrv\HPCHEM1\FID_F\Data\FF051325\
Data File : FF015833.D
Signal(s) : FID2B.ch
Acq On : 13 May 2025 15:54
Operator : YP\AJ
Sample : Q2008-01
Misc :
ALS Vial : 74 Sample Multiplier: 1

Instrument :
FID_F
ClientSampleId :
IDW-AQ-DRUM-633-05092025

Integration File: autoint1.e
Quant Time: May 14 05:51:07 2025
Quant Method : Z:\pestpcbsrv\HPCHEM1\FID_F\Method\FF042225.M
Quant Title :
QLast Update : Tue Apr 22 11:27:50 2025
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. : 1uL
Signal Phase : Rxi-1ms
Signal Info : 20mx0.18mmx0.18um

	Compound	R.T.	Response	Conc Units
	System Monitoring Compounds			
9) S	TETRACOSANE-d50 (SURR...	15.016	1930224	17.105 ug/ml
	Target Compounds			

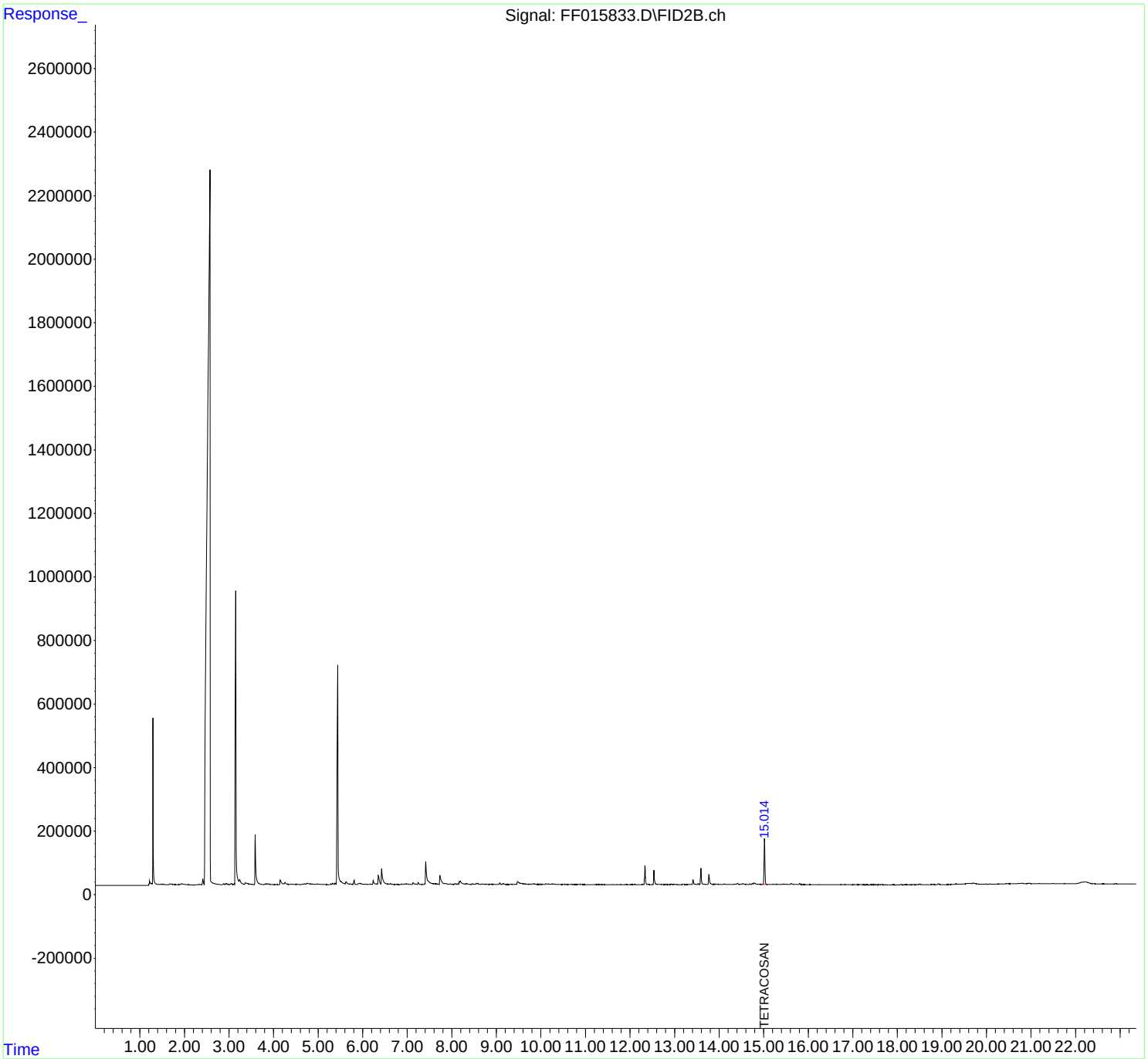
(f)=RT Delta > 1/2 Window (m)=manual int.

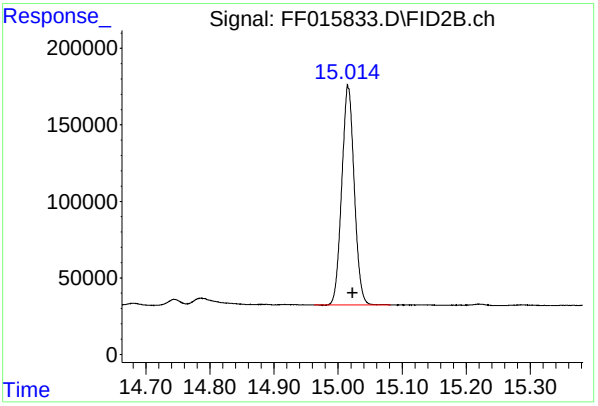
Data Path : Z:\pestpcbsrv\HPCHEM1\FID_F\Data\FF051325\
Data File : FF015833.D
Signal(s) : FID2B.ch
Acq On : 13 May 2025 15:54
Operator : YP\AJ
Sample : Q2008-01
Misc :
ALS Vial : 74 Sample Multiplier: 1

Instrument :
FID_F
ClientSampleId :
IDW-AQ-DRUM-633-05092025

Integration File: autoint1.e
Quant Time: May 14 05:51:07 2025
Quant Method : Z:\pestpcbsrv\HPCHEM1\FID_F\Method\FF042225.M
Quant Title :
QLast Update : Tue Apr 22 11:27:50 2025
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. : 1uL
Signal Phase : Rxi-1ms
Signal Info : 20mx0.18mmx0.18um





#9 TETRACOSANE-d50 (SURROGATE)

R.T.: 15.016 min
Delta R.T.: -0.007 mi
Response: 1930224
Conc: 17.10 ug/m

Instrument :
FID_F
ClientSampleId :
IDW-AQ-DRUM-633-05092025

Area Percent Report

Data Path : Z:\pestpcbsrv\HPCHEM1\FID_F\Data\FF051325\
Data File : FF015833.D
Signal(s) : FID2B.ch
Acq On : 13 May 2025 15:54
Sample : Q2008-01
Misc :
ALS Vial : 74 Sample Multiplier: 1

Integration File: Sample.e

Method : Z:\pestpcbsrv\HPCHEM1\FID_F\Method\FF042225.M
Title :

Signal : FID2B.ch

peak #	R.T. min	Start min	End min	PK TY	peak height	peak area	peak % max.	% of total
1	4.391	4.347	4.407	BV	1125	18543	0.19%	0.062%
2	4.413	4.407	4.454	VV	1001	13869	0.14%	0.046%
3	4.457	4.454	4.467	VV	172	487	0.00%	0.002%
4	4.506	4.467	4.535	PV	811	20746	0.21%	0.069%
5	4.542	4.535	4.554	VV	415	4177	0.04%	0.014%
6	4.558	4.554	4.562	VV	319	1549	0.02%	0.005%
7	4.573	4.562	4.610	VV	584	8311	0.08%	0.028%
8	4.654	4.610	4.666	PV	1279	30044	0.30%	0.100%
9	4.685	4.666	4.730	VV	2735	77826	0.78%	0.259%
10	4.749	4.730	4.783	VV	4399	106291	1.06%	0.353%
11	4.791	4.783	4.849	VV	3147	96020	0.96%	0.319%
12	4.869	4.849	4.954	VV	1954	92930	0.93%	0.309%
13	4.968	4.954	5.015	VV	2439	68761	0.69%	0.229%
14	5.022	5.015	5.030	VV	1529	13688	0.14%	0.045%
15	5.040	5.030	5.070	VV	1532	29475	0.30%	0.098%
16	5.080	5.070	5.102	VV	1117	18291	0.18%	0.061%
17	5.121	5.102	5.140	VV	929	18462	0.18%	0.061%
18	5.151	5.140	5.156	VV	890	7269	0.07%	0.024%
19	5.169	5.156	5.226	VV	863	24134	0.24%	0.080%
20	5.232	5.226	5.250	VV	367	2673	0.03%	0.009%
21	5.290	5.250	5.318	PV	2513	58072	0.58%	0.193%
22	5.329	5.318	5.362	VV	4997	79065	0.79%	0.263%
23	5.381	5.362	5.405	VV	5795	74445	0.75%	0.247%
24	5.441	5.405	5.607	VV	690618	9990937	100.00%	33.205%
25	5.625	5.607	5.745	VV	9889	323132	3.23%	1.074%
26	5.762	5.745	5.779	VV	1576	29729	0.30%	0.099%
27	5.809	5.779	5.862	VV	14636	226240	2.26%	0.752%
28	5.874	5.862	5.879	VV	1101	9801	0.10%	0.033%
29	5.912	5.879	5.921	VV	3636	69988	0.70%	0.233%
30	5.938	5.921	6.003	VV	4504	150996	1.51%	0.502%
31	6.006	6.003	6.034	VV	1726	29672	0.30%	0.099%
32	6.060	6.034	6.112	VV	2164	73105	0.73%	0.243%
33	6.116	6.112	6.122	VV	1139	6548	0.07%	0.022%
34	6.123	6.122	6.152	VV	1114	16944	0.17%	0.056%
35	6.176	6.152	6.220	VV	2638	56712	0.57%	0.188%
36	6.238	6.220	6.255	VV	13678	155898	1.56%	0.518%

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37	6.259	6.255	6.301	VV	5984	94294	0.94%	0.313%
38	6.309	6.301	6.321	VV	2235	25065	0.25%	0.083%
39	6.353	6.321	6.409	VV	28763	597508	5.98%	1.986%
40	6.426	6.409	6.566	VV	50709	1141898	11.43%	3.795%
41	6.572	6.566	6.605	VV	2181	46950	0.47%	0.156%
42	6.626	6.605	6.691	VV	4017	101519	1.02%	0.337%
43	6.694	6.691	6.703	VV	770	5689	0.06%	0.019%
44	6.708	6.703	6.722	VV	690	7532	0.08%	0.025%
45	6.735	6.722	6.753	VV	1083	15515	0.16%	0.052%
46	6.769	6.753	6.830	VV	1591	43378	0.43%	0.144%
47	6.873	6.830	6.918	VV	2522	68222	0.68%	0.227%
48	6.940	6.918	6.977	VV	2846	78452	0.79%	0.261%
49	6.992	6.977	7.021	VV	2774	59812	0.60%	0.199%
50	7.036	7.021	7.059	VV	1811	34444	0.34%	0.114%
51	7.069	7.059	7.082	VV	1423	16800	0.17%	0.056%
52	7.098	7.082	7.106	VV	1269	16626	0.17%	0.055%
53	7.129	7.106	7.230	VV	6318	192048	1.92%	0.638%
54	7.248	7.230	7.316	VV	7432	133500	1.34%	0.444%
55	7.335	7.316	7.368	VV	1535	37188	0.37%	0.124%
56	7.396	7.368	7.401	VV	4504	42029	0.42%	0.140%
57	7.416	7.401	7.599	VV	73025	1712917	17.14%	5.693%
58	7.612	7.599	7.636	VV	3624	70531	0.71%	0.234%
59	7.646	7.636	7.667	VV	3050	50457	0.51%	0.168%
60	7.679	7.667	7.717	VV	2483	60918	0.61%	0.202%
61	7.735	7.717	7.838	VV	29359	799338	8.00%	2.657%
62	7.852	7.838	7.947	VV	4458	192980	1.93%	0.641%
63	7.971	7.947	8.017	VV	2604	84333	0.84%	0.280%
64	8.041	8.017	8.048	VV	1585	27020	0.27%	0.090%
65	8.067	8.048	8.101	VV	3130	83330	0.83%	0.277%
66	8.115	8.101	8.132	VV	2451	42955	0.43%	0.143%
67	8.145	8.132	8.155	VV	2570	33328	0.33%	0.111%
68	8.169	8.155	8.178	VV	9831	97406	0.97%	0.324%
69	8.191	8.178	8.299	VV	11970	388544	3.89%	1.291%
70	8.310	8.299	8.315	VV	2470	23292	0.23%	0.077%
71	8.334	8.315	8.419	VV	3857	145462	1.46%	0.483%
72	8.435	8.419	8.440	VV	1433	17046	0.17%	0.057%
73	8.460	8.440	8.502	VV	3528	88958	0.89%	0.296%
74	8.507	8.502	8.521	VV	1623	17568	0.18%	0.058%
75	8.560	8.521	8.648	VV	4715	192038	1.92%	0.638%
76	8.673	8.648	8.677	VV	2120	31908	0.32%	0.106%
77	8.698	8.677	8.747	VV	2506	79274	0.79%	0.263%
78	8.765	8.747	8.793	VV	2606	48458	0.49%	0.161%
79	8.861	8.793	8.870	VV	1707	65998	0.66%	0.219%
80	8.881	8.870	8.913	VV	1741	40665	0.41%	0.135%
81	8.919	8.913	8.961	VV	1530	34894	0.35%	0.116%
82	8.999	8.961	9.027	VV	1159	40413	0.40%	0.134%
83	9.042	9.027	9.051	VV	1347	17336	0.17%	0.058%
84	9.076	9.051	9.135	VV	5409	121902	1.22%	0.405%
85	9.154	9.135	9.228	VV	4100	109487	1.10%	0.364%
86	9.255	9.228	9.265	VV	796	14851	0.15%	0.049%
87	9.268	9.265	9.283	VV	775	7206	0.07%	0.024%
88	9.300	9.283	9.309	VV	1285	16203	0.16%	0.054%
89	9.328	9.309	9.346	VV	1769	32115	0.32%	0.107%

rteres

90	9.359	9.346	9.395	VV	1427	38226	0.38%	0.127%
91	9.434	9.395	9.459	VV	1694	54552	0.55%	0.181%
92	9.476	9.459	9.553	VV	10490	360845	3.61%	1.199%
93	9.568	9.553	9.604	VV	4492	113081	1.13%	0.376%
94	9.616	9.604	9.700	VV	3354	134271	1.34%	0.446%
95	9.704	9.700	9.730	VV	1653	28023	0.28%	0.093%
96	9.749	9.730	9.791	VV	2378	63279	0.63%	0.210%
97	9.811	9.791	9.825	VV	2968	47753	0.48%	0.159%
98	9.839	9.825	9.881	VV	3132	84307	0.84%	0.280%
99	9.897	9.881	9.927	VV	2178	50832	0.51%	0.169%
100	9.929	9.927	9.989	VV	1616	54063	0.54%	0.180%
101	10.001	9.989	10.018	VV	1466	23106	0.23%	0.077%
102	10.032	10.018	10.058	VV	1499	31870	0.32%	0.106%
103	10.073	10.058	10.086	VV	1394	21259	0.21%	0.071%
104	10.110	10.086	10.161	VV	3095	106988	1.07%	0.356%
105	10.176	10.161	10.219	VV	2326	68999	0.69%	0.229%
106	10.245	10.219	10.376	VV	2479	160807	1.61%	0.534%
107	10.391	10.376	10.403	VV	1019	15733	0.16%	0.052%
108	10.416	10.403	10.432	VV	1119	17802	0.18%	0.059%
109	10.434	10.432	10.476	VV	1059	21885	0.22%	0.073%
110	10.507	10.476	10.523	VV	1099	25813	0.26%	0.086%
111	10.538	10.523	10.571	VV	1472	31427	0.31%	0.104%
112	10.585	10.571	10.605	VV	921	16683	0.17%	0.055%
113	10.662	10.605	10.682	VV	1347	50112	0.50%	0.167%
114	10.686	10.682	10.707	VV	1054	13907	0.14%	0.046%
115	10.726	10.707	10.766	VV	1167	31389	0.31%	0.104%
116	10.791	10.766	10.815	VV	866	22657	0.23%	0.075%
117	10.844	10.815	10.854	VV	1301	25505	0.26%	0.085%
118	10.883	10.854	10.938	VV	1520	56770	0.57%	0.189%
119	10.943	10.938	10.956	VV	813	8900	0.09%	0.030%
120	10.967	10.956	11.010	VV	884	21814	0.22%	0.072%
121	11.040	11.010	11.072	VV	685	21524	0.22%	0.072%
122	11.085	11.072	11.105	VV	618	10770	0.11%	0.036%
123	11.125	11.105	11.144	VV	643	12043	0.12%	0.040%
124	11.158	11.144	11.163	VV	509	5475	0.05%	0.018%
125	11.167	11.163	11.175	VV	536	3290	0.03%	0.011%
126	11.183	11.175	11.198	VV	629	7389	0.07%	0.025%
127	11.221	11.198	11.248	VV	1229	26664	0.27%	0.089%
128	11.282	11.248	11.305	VV	1033	29437	0.29%	0.098%
129	11.323	11.305	11.371	VV	1240	33449	0.33%	0.111%
130	11.380	11.371	11.395	VV	759	10381	0.10%	0.035%
131	11.400	11.395	11.410	VV	751	5950	0.06%	0.020%
132	11.431	11.410	11.461	VV	1092	21734	0.22%	0.072%
133	11.464	11.461	11.469	VV	599	2814	0.03%	0.009%
134	11.501	11.469	11.521	VV	652	18087	0.18%	0.060%
135	11.525	11.521	11.541	VV	563	6302	0.06%	0.021%
136	11.545	11.541	11.552	VV	483	3228	0.03%	0.011%
137	11.557	11.552	11.561	VV	575	2912	0.03%	0.010%
138	11.610	11.561	11.645	VV	1085	31873	0.32%	0.106%
139	11.649	11.645	11.653	VV	467	1870	0.02%	0.006%
140	11.656	11.653	11.670	VV	441	4342	0.04%	0.014%
141	11.695	11.670	11.743	VV	911	24674	0.25%	0.082%

rteres

142	11.759	11.743	11.770	VV	425	5544	0.06%	0.018%
143	11.789	11.770	11.808	VV	758	12501	0.13%	0.042%
144	11.811	11.808	11.847	VV	621	11056	0.11%	0.037%
145	11.853	11.847	11.864	VV	430	4087	0.04%	0.014%
146	11.902	11.864	11.955	VV	1212	41202	0.41%	0.137%
147	11.962	11.955	11.978	VV	659	8400	0.08%	0.028%
148	11.981	11.978	11.987	VV	648	3369	0.03%	0.011%
149	12.009	11.987	12.030	VV	926	19365	0.19%	0.064%
150	12.046	12.030	12.076	VV	879	20141	0.20%	0.067%
151	12.105	12.076	12.148	VV	1820	38880	0.39%	0.129%
152	12.167	12.148	12.174	VV	523	6862	0.07%	0.023%
153	12.185	12.174	12.190	VV	552	5023	0.05%	0.017%
154	12.195	12.190	12.221	VV	506	8154	0.08%	0.027%
155	12.282	12.221	12.304	VV	1704	39086	0.39%	0.130%
156	12.335	12.304	12.384	VV	58874	742600	7.43%	2.468%
157	12.402	12.384	12.503	VV	1675	64594	0.65%	0.215%
158	12.536	12.503	12.630	VV	46508	688204	6.89%	2.287%
159	12.654	12.630	12.678	VV	1286	32248	0.32%	0.107%
160	12.683	12.678	12.703	VV	968	14065	0.14%	0.047%
161	12.722	12.703	12.761	VV	1072	31871	0.32%	0.106%
162	12.776	12.761	12.791	VV	899	14810	0.15%	0.049%
163	12.804	12.791	12.825	VV	1021	17406	0.17%	0.058%
164	12.840	12.825	12.847	VV	909	10341	0.10%	0.034%
165	12.849	12.847	12.877	VV	904	12821	0.13%	0.043%
166	12.920	12.877	12.946	VV	2565	52815	0.53%	0.176%
167	12.952	12.946	12.966	VV	908	10146	0.10%	0.034%
168	12.987	12.966	13.012	VV	1778	36277	0.36%	0.121%
169	13.015	13.012	13.056	VV	1217	26236	0.26%	0.087%
170	13.075	13.056	13.106	VV	833	20173	0.20%	0.067%
171	13.112	13.106	13.125	VV	638	6642	0.07%	0.022%
172	13.139	13.125	13.153	VV	674	10560	0.11%	0.035%
173	13.182	13.153	13.223	VV	1233	40337	0.40%	0.134%
174	13.243	13.223	13.267	VV	1064	23017	0.23%	0.076%
175	13.284	13.267	13.296	VV	903	13641	0.14%	0.045%
176	13.337	13.296	13.350	VV	1458	36451	0.36%	0.121%
177	13.366	13.350	13.387	VV	1640	31054	0.31%	0.103%
178	13.414	13.387	13.441	VV	15764	229832	2.30%	0.764%
179	13.449	13.441	13.484	VV	2274	46679	0.47%	0.155%
180	13.492	13.484	13.505	VV	1323	15457	0.15%	0.051%
181	13.531	13.505	13.557	VV	3350	65860	0.66%	0.219%
182	13.589	13.557	13.655	VV	52081	766412	7.67%	2.547%
183	13.660	13.655	13.729	VV	1975	67989	0.68%	0.226%
184	13.769	13.729	13.868	VV	32528	590451	5.91%	1.962%
185	13.875	13.868	13.895	VV	1659	25209	0.25%	0.084%
186	13.915	13.895	13.934	VV	1855	39473	0.40%	0.131%
187	13.937	13.934	13.945	VV	1756	11057	0.11%	0.037%
188	13.957	13.945	13.997	VV	1848	52124	0.52%	0.173%
189	14.004	13.997	14.008	VV	1360	8626	0.09%	0.029%
190	14.017	14.008	14.023	VV	1468	12533	0.13%	0.042%
191	14.027	14.023	14.058	VV	1441	28338	0.28%	0.094%
192	14.085	14.058	14.097	VV	1361	29066	0.29%	0.097%
193	14.118	14.097	14.154	VV	2828	61701	0.62%	0.205%
194	14.177	14.154	14.194	VV	1568	32937	0.33%	0.109%

rteres

195	14.197	14.194	14.229	VV	1531	28358	0.28%	0.094%
196	14.232	14.229	14.238	VV	1251	6899	0.07%	0.023%
197	14.265	14.238	14.281	VV	1413	31631	0.32%	0.105%
198	14.286	14.281	14.310	VV	1349	21212	0.21%	0.070%
199	14.366	14.310	14.390	VV	2328	84376	0.84%	0.280%
200	14.409	14.390	14.462	VV	4718	111336	1.11%	0.370%
201	14.480	14.462	14.498	VV	2120	39147	0.39%	0.130%
202	14.530	14.498	14.638	VV	3703	172413	1.73%	0.573%
203	14.681	14.638	14.710	VV	2554	71090	0.71%	0.236%
204	14.744	14.710	14.764	VV	5099	92117	0.92%	0.306%
205	14.786	14.764	14.873	VV	5843	209523	2.10%	0.696%
206	14.878	14.873	14.885	VV	1842	12807	0.13%	0.043%
207	14.888	14.885	14.904	VV	1852	19577	0.20%	0.065%
208	14.918	14.904	14.979	VV	1780	70056	0.70%	0.233%
209	15.016	14.979	15.060	VV	144121	2002008	20.04%	6.654%
210	15.064	15.060	15.095	VV	1674	33055	0.33%	0.110%
211	15.098	15.095	15.103	VV	1476	6388	0.06%	0.021%
212	15.107	15.103	15.120	VV	1439	14751	0.15%	0.049%
213	15.134	15.120	15.141	VV	1528	17754	0.18%	0.059%
214	15.144	15.141	15.162	VV	1482	17138	0.17%	0.057%
215	15.184	15.162	15.195	VV	1389	26221	0.26%	0.087%
216	15.220	15.195	15.253	VV	2048	51025	0.51%	0.170%
217	15.287	15.253	15.318	VV	1465	49881	0.50%	0.166%
218	15.322	15.318	15.332	VV	1173	9640	0.10%	0.032%
219	15.357	15.332	15.365	VV	1241	22173	0.22%	0.074%
220	15.367	15.365	15.376	VV	1195	8069	0.08%	0.027%
221	15.420	15.376	15.435	VV	1993	54286	0.54%	0.180%
222	15.454	15.435	15.489	VV	2566	60504	0.61%	0.201%
223	15.509	15.489	15.569	VV	2073	66977	0.67%	0.223%
224	15.577	15.569	15.584	VV	1025	8928	0.09%	0.030%
225	15.614	15.584	15.703	VV	4087	150872	1.51%	0.501%
226	15.706	15.703	15.720	VV	1169	11727	0.12%	0.039%
227	15.739	15.720	15.757	VV	1558	29357	0.29%	0.098%
228	15.773	15.757	15.784	VV	1421	22215	0.22%	0.074%
229	15.809	15.784	15.860	VV	4029	84957	0.85%	0.282%
230	15.881	15.860	15.912	VV	987	26170	0.26%	0.087%
231	15.916	15.912	15.921	VV	959	4728	0.05%	0.016%
232	15.924	15.921	15.945	VV	883	11238	0.11%	0.037%
233	15.955	15.945	15.963	VV	745	7919	0.08%	0.026%
234	15.981	15.963	15.991	VV	860	12690	0.13%	0.042%
235	16.005	15.991	16.018	VV	851	12368	0.12%	0.041%
236	16.035	16.018	16.105	VV	902	36066	0.36%	0.120%
237	16.114	16.105	16.127	VV	564	6970	0.07%	0.023%
238	16.130	16.127	16.136	VV	582	3006	0.03%	0.010%
239	16.142	16.136	16.158	VV	610	7227	0.07%	0.024%
240	16.169	16.158	16.196	VV	703	13972	0.14%	0.046%
241	16.199	16.196	16.206	VV	623	3369	0.03%	0.011%
242	16.212	16.206	16.222	VV	588	5061	0.05%	0.017%
243	16.242	16.222	16.275	VV	969	23315	0.23%	0.077%
244	16.284	16.275	16.292	VV	640	6130	0.06%	0.020%
245	16.306	16.292	16.309	VV	663	6607	0.07%	0.022%
246	16.316	16.309	16.355	VV	772	15096	0.15%	0.050%

rteres

247	16.376	16.355	16.401	VV	674	14611	0.15%	0.049%
248	16.415	16.401	16.439	VV	659	12862	0.13%	0.043%
249	16.442	16.439	16.460	VV	612	6939	0.07%	0.023%
250	16.468	16.460	16.508	VV	585	13338	0.13%	0.044%
251	16.532	16.508	16.541	VV	676	11004	0.11%	0.037%
252	16.546	16.541	16.566	VV	666	8818	0.09%	0.029%
253	16.577	16.566	16.586	VV	636	7061	0.07%	0.023%
254	16.603	16.586	16.628	VV	877	17258	0.17%	0.057%
255	16.644	16.628	16.680	VV	622	16694	0.17%	0.055%
256	16.728	16.680	16.773	VV	948	31826	0.32%	0.106%
257	16.798	16.773	16.820	VV	1197	24137	0.24%	0.080%
258	16.828	16.820	16.874	VV	873	17203	0.17%	0.057%
259	16.897	16.874	16.917	VV	655	12768	0.13%	0.042%
260	16.919	16.917	16.928	VV	423	2369	0.02%	0.008%
261	16.932	16.928	16.936	VV	340	1433	0.01%	0.005%
262	16.940	16.936	16.948	VV	350	2055	0.02%	0.007%
263	16.952	16.948	16.977	VV	284	4032	0.04%	0.013%
264	16.991	16.977	17.001	VV	235	2725	0.03%	0.009%
265	17.033	17.001	17.057	VV	926	20024	0.20%	0.067%
266	17.070	17.057	17.146	VV	683	18676	0.19%	0.062%
267	17.160	17.146	17.164	VV	292	2377	0.02%	0.008%
268	17.168	17.164	17.172	VV	252	949	0.01%	0.003%
269	17.194	17.172	17.256	VV	1082	20582	0.21%	0.068%
270	17.281	17.256	17.309	VV	249	4360	0.04%	0.014%
271	17.321	17.309	17.332	PV	185	1793	0.02%	0.006%
272	17.341	17.332	17.347	VV	212	1513	0.02%	0.005%
273	17.357	17.347	17.379	VV	206	2177	0.02%	0.007%
274	17.384	17.379	17.392	VV	56	339	0.00%	0.001%
275	17.430	17.392	17.451	PV	331	4109	0.04%	0.014%
276	17.453	17.451	17.484	VV	172	1278	0.01%	0.004%

Sum of corrected areas: 30088729

FF042225.M Wed May 14 06:54:07 2025

CALIBRATION SUMMARY

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

DIESEL RANGE ORGANICS INITIAL CALIBRATION SUMMARY

Lab Name: Chemtech Contract: JACO05

ProjectID: Former Schlumberger Site Princeton NJ 2025

Lab Code: CHEM Case No.: Q2008 SAS No.: Q2008 SDG No.: Q2008

Calibration Sequence : FF042225		Test : Diesel Range Organics	
Concentration (PPM)	**Area Count**	**Reference Factor**	**File ID**
1000	116059922	116060	FF015786.D
500	58079559	116159	FF015787.D
200	21235975	106180	FF015788.D
100	11342548	113425	FF015789.D
50	7274526	145491	FF015790.D
AVG RF : 119463	**% RSD : 12.646**		**AVG RT : 15.02**

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

DIESEL RANGE ORGANICS CONTINUING CALIBRATION SUMMARY

50 PPM TRPH STD

Lab Name: Chemtech Contract: JACO05

ProjectID: Former Schlumberger Site Princeton NJ 2025

Lab Code: CHEM Case No.: Q2008 SAS No.: Q2008 SDG No.: Q2008

DataFile: FF015828.D Analyst Name: YP\AJ Analyst Date: 05-13-2025

Conc. (PPM)	Area Count	RF	Average RF	%D
500	63743979	127488	119463	6.718

Quantitation Report (QT Reviewed)

Data Path : Z:\pestpcbsrv\HPCHEM1\FID_F\Data\FF051325\
Data File : FF015828.D
Signal(s) : FID2B.ch
Acq On : 13 May 2025 11:40
Operator : YP\AJ
Sample : 50 PPM TRPH STD
Misc :
ALS Vial : 53 Sample Multiplier: 1

Instrument :
FID_F
ClientSampleId :
50 PPM TRPH STD

Integration File: autoint1.e
Quant Time: May 14 05:50:11 2025
Quant Method : Z:\pestpcbsrv\HPCHEM1\FID_F\Method\FF042225.M
Quant Title :
QLast Update : Tue Apr 22 11:27:50 2025
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. : 1uL
Signal Phase : Rxi-1ms
Signal Info : 20mx0.18mmx0.18um

	Compound	R.T.	Response	Conc Units
	System Monitoring Compounds			
9)	S TETRACOSANE-d50 (SURR...	15.020	5888447	52.180 ug/ml
	Target Compounds			
2)	N-DECANE	4.563	5958749	58.393 ug/ml
3)	N-DODECANE	6.732	6221405	56.819 ug/ml
4)	N-TETRADECANE	8.559	6235954	54.028 ug/ml
5)	N-HEXADECANE	10.167	6335415	53.681 ug/ml
6)	N-OCTADECANE	11.610	6549695	52.066 ug/ml
7)	N-EICOSANE	12.921	6558792	50.275 ug/ml
8)	N-DOCOSANE	14.120	6475635	50.837 ug/ml
10)	N-TETRACOSANE	15.223	6508827	51.744 ug/ml
11)	N-HEXACOSANE	16.245	6429876	52.748 ug/ml
12)	N-OCTACOSANE	17.196	6469631	54.675 ug/ml

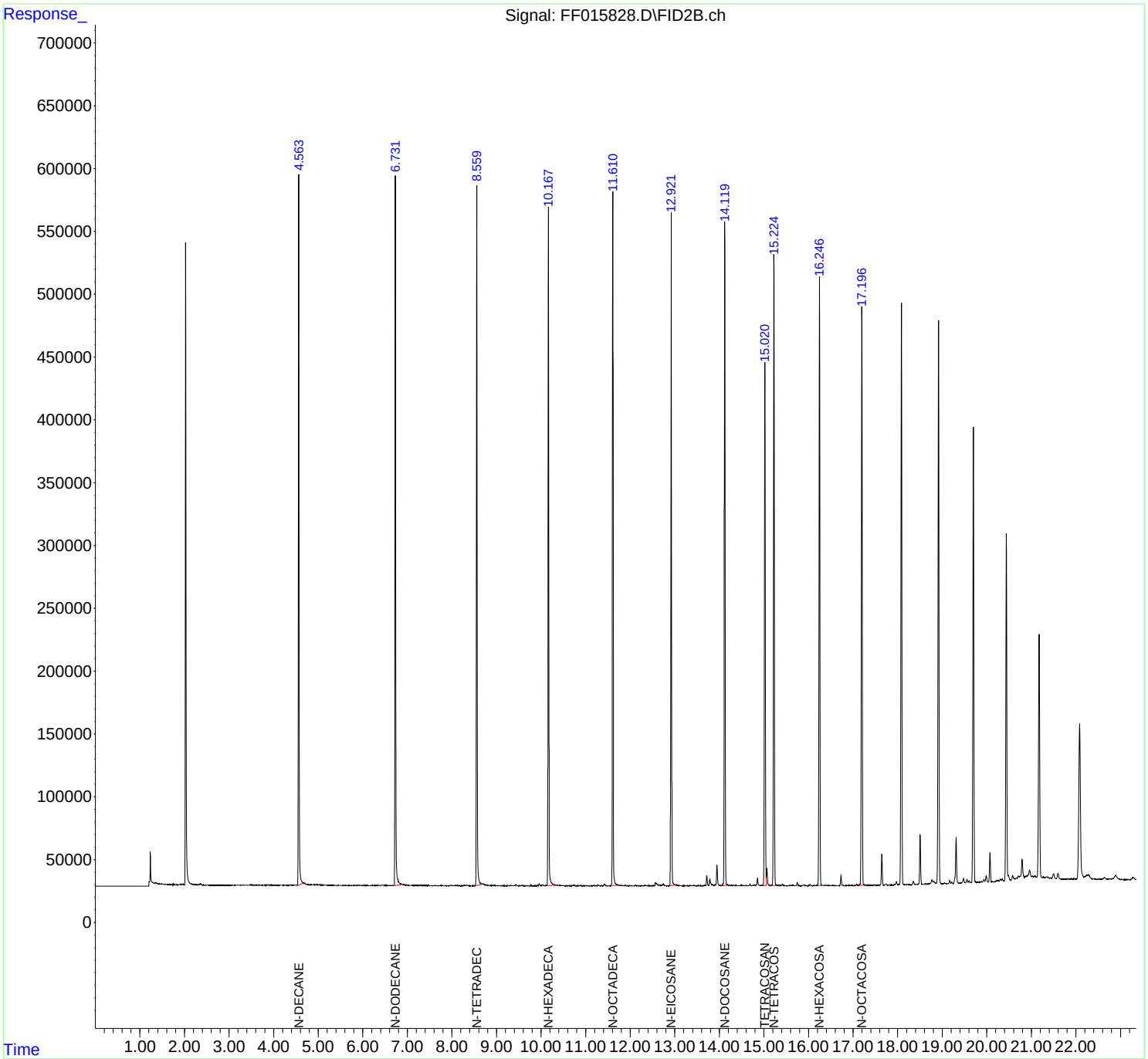
(f)=RT Delta > 1/2 Window (m)=manual int.

Data Path : Z:\pestpcbsrv\HPCHEM1\FID_F\Data\FF051325\
Data File : FF015828.D
Signal(s) : FID2B.ch
Acq On : 13 May 2025 11:40
Operator : YP\AJ
Sample : 50 PPM TRPH STD
Misc :
ALS Vial : 53 Sample Multiplier: 1

Instrument :
FID_F
ClientSampleId :
50 PPM TRPH STD

Integration File: autoint1.e
Quant Time: May 14 05:50:11 2025
Quant Method : Z:\pestpcbsrv\HPCHEM1\FID_F\Method\FF042225.M
Quant Title :
QLast Update : Tue Apr 22 11:27:50 2025
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. : 1uL
Signal Phase : Rxi-1ms
Signal Info : 20mx0.18mmx0.18um



Area Percent Report

Data Path : Z:\pestpcbsrv\HPCHEM1\FID_F\Data\FF051325\
Data File : FF015828.D
Signal(s) : FID2B.ch
Acq On : 13 May 2025 11:40
Sample : 50 PPM TRPH STD
Misc :
ALS Vial : 53 Sample Multiplier: 1

Integration File: autoint1.e

Method : Z:\pestpcbsrv\HPCHEM1\FID_F\Method\FF042225.M
Title :

Signal : FID2B.ch

peak #	R.T. min	Start min	End min	PK TY	peak height	peak area	peak % max.	% of total
1	4.563	4.536	4.669	BV	563385	5958749	90.85%	8.557%
2	6.732	6.702	6.897	BB	564349	6221405	94.86%	8.935%
3	8.559	8.526	8.677	BV	557031	6235954	95.08%	8.956%
4	10.167	10.134	10.311	PB	539501	6335415	96.59%	9.098%
5	11.610	11.572	11.726	BB	553370	6549695	99.86%	9.406%
6	12.921	12.882	13.016	BB	534572	6558792	100.00%	9.419%
7	14.120	14.085	14.202	VB	527669	6475635	98.73%	9.300%
8	15.020	14.937	15.050	BV	416223	5888447	89.78%	8.456%
9	15.223	15.157	15.306	BB	502593	6508827	99.24%	9.347%
10	16.245	16.192	16.321	BB	484328	6429876	98.03%	9.234%
11	17.196	17.122	17.266	BB	458539	6469631	98.64%	9.291%
			Sum of corrected areas:			69632425		

FF042225.M Wed May 14 06:40:04 2025

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

DIESEL RANGE ORGANICS CONTINUING CALIBRATION SUMMARY

50 PPM TRPH STD

Lab Name: Chemtech Contract: JACO05

ProjectID: Former Schlumberger Site Princeton NJ 2025

Lab Code: CHEM Case No.: Q2008 SAS No.: Q2008 SDG No.: Q2008

DataFile: FF015835.D Analyst Name: YP\AJ Analyst Date: 05-13-2025

Conc. (PPM)	Area Count	RF	Average RF	%D
500	59789393	119579	119463	0.097

Quantitation Report (QT Reviewed)

Data Path : Z:\pestpcbsrv\HPCHEM1\FID_F\Data\FF051325\
Data File : FF015835.D
Signal(s) : FID2B.ch
Acq On : 13 May 2025 16:53
Operator : YP\AJ
Sample : 50 PPM TRPH STD
Misc :
ALS Vial : 53 Sample Multiplier: 1

Instrument :
FID_F
ClientSampleId :
50 PPM TRPH STD

Integration File: autoint1.e
Quant Time: May 14 05:51:25 2025
Quant Method : Z:\pestpcbsrv\HPCHEM1\FID_F\Method\FF042225.M
Quant Title :
QLast Update : Tue Apr 22 11:27:50 2025
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. : 1uL
Signal Phase : Rxi-1ms
Signal Info : 20mx0.18mmx0.18um

	Compound	R.T.	Response	Conc Units
	System Monitoring Compounds			
9)	S TETRACOSANE-d50 (SURR...	15.019	5541961	49.110 ug/ml
	Target Compounds			
2)	N-DECANE	4.564	5585020	54.731 ug/ml
3)	N-DODECANE	6.733	5797250	52.945 ug/ml
4)	N-TETRADECANE	8.560	5816239	50.392 ug/ml
5)	N-HEXADECANE	10.167	5908301	50.062 ug/ml
6)	N-OCTADECANE	11.610	6124561	48.686 ug/ml
7)	N-EICOSANE	12.921	6148088	47.127 ug/ml
8)	N-DOCOSANE	14.119	6100209	47.890 ug/ml
10)	N-TETRACOSANE	15.223	6131229	48.743 ug/ml
11)	N-HEXACOSANE	16.245	6064363	49.750 ug/ml
12)	N-OCTACOSANE	17.196	6114133	51.670 ug/ml

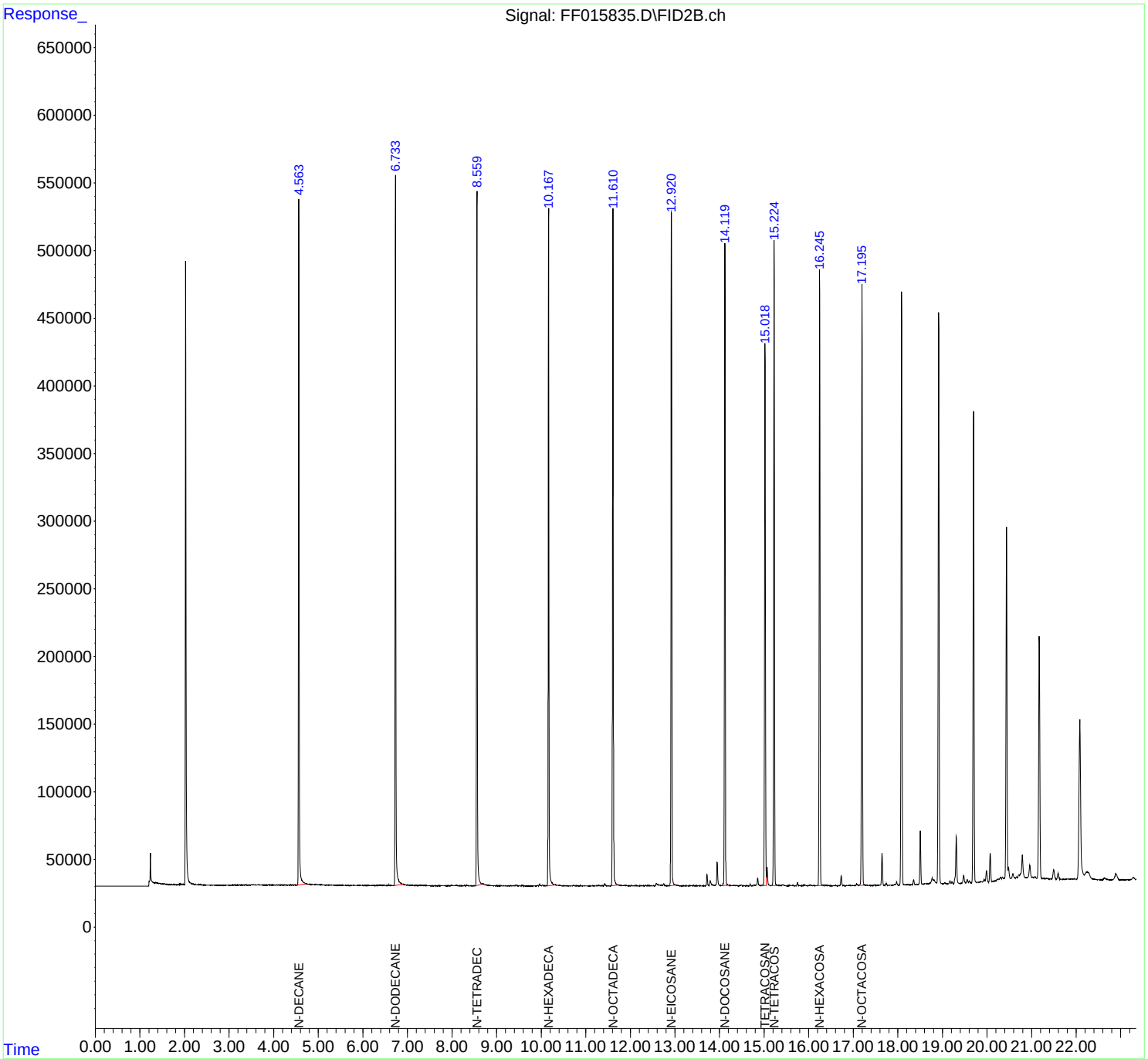
(f)=RT Delta > 1/2 Window (m)=manual int.

Data Path : Z:\pestpcbsrv\HPCHEM1\FID_F\Data\FF051325\
Data File : FF015835.D
Signal(s) : FID2B.ch
Acq On : 13 May 2025 16:53
Operator : YP\AJ
Sample : 50 PPM TRPH STD
Misc :
ALS Vial : 53 Sample Multiplier: 1

Instrument :
FID_F
ClientSampleId :
50 PPM TRPH STD

Integration File: autoint1.e
Quant Time: May 14 05:51:25 2025
Quant Method : Z:\pestpcbsrv\HPCHEM1\FID_F\Method\FF042225.M
Quant Title :
QLast Update : Tue Apr 22 11:27:50 2025
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. : 1uL
Signal Phase : Rxi-1ms
Signal Info : 20mx0.18mmx0.18um



Area Percent Report

Data Path : Z:\pestpcbsrv\HPCHEM1\FID_F\Data\FF051325\
Data File : FF015835.D
Signal(s) : FID2B.ch
Acq On : 13 May 2025 16:53
Sample : 50 PPM TRPH STD
Misc :
ALS Vial : 53 Sample Multiplier: 1

Integration File: autoint1.e

Method : Z:\pestpcbsrv\HPCHEM1\FID_F\Method\FF042225.M
Title :

Signal : FID2B.ch

peak #	R.T. min	Start min	End min	PK TY	peak height	peak area	peak % max.	% of total
1	4.564	4.510	4.734	BB	506736	5585020	90.84%	8.549%
2	6.733	6.702	6.900	BB	524627	5797250	94.29%	8.874%
3	8.560	8.517	8.679	BV	510768	5816239	94.60%	8.903%
4	10.167	10.134	10.310	BB	500393	5908301	96.10%	9.044%
5	11.610	11.564	11.730	BB	501026	6124561	99.62%	9.375%
6	12.921	12.880	13.019	BB	497512	6148088	100.00%	9.411%
7	14.119	14.059	14.210	BB	472208	6100209	99.22%	9.337%
8	15.019	14.934	15.050	BV	400380	5541961	90.14%	8.483%
9	15.223	15.162	15.312	BB	477052	6131229	99.73%	9.385%
10	16.245	16.180	16.324	BB	455894	6064363	98.64%	9.282%
11	17.196	17.124	17.265	BB	443585	6114133	99.45%	9.359%

Sum of corrected areas: 65331354

FF042225.M Wed May 14 06:44:56 2025

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

Analytical Sequence

Client: JACOBS Engineering Group, Inc. **SDG No.:** Q2008

Project: Former Schlumberger Site Princeton NJ 2025 **Instrument ID:** FID_F

GC Column: RXI-1MS **ID:** 0.18 **(mm)**

THE ANALYTICAL SEQUENCE OF PERFORMANCE EVALUATION MIXTURES, BLANKS, SAMPLES, AND STANDARDS IS GIVEN BELOW:

MEAN SUROGATE RT FROM INITIAL CALIBRATION **15.02**

EPA SAMPLE NO.	LAB SAMPLE ID	DATE AND TIME ANALYZED	DATAFILE	RT	#
PIBLK01	I.BLK01	13 May 2025 11:11	FF015827.D	15.020	
50 PPM TRPH STD	50 PPM TRPH STD	13 May 2025 11:40	FF015828.D	15.020	
PB167981BL	PB167981BL	13 May 2025 13:22	FF015830.D	15.018	
PB167981BS	PB167981BS	13 May 2025 13:51	FF015831.D	15.017	
PB167981BSD	PB167981BSD	13 May 2025 15:25	FF015832.D	15.015	
IDW-AQ-DRUM-633-05092025	Q2008-01	13 May 2025 15:54	FF015833.D	15.016	
PIBLK02	I.BLK02	13 May 2025 16:24	FF015834.D	15.021	
50 PPM TRPH STD	50 PPM TRPH STD	13 May 2025 16:53	FF015835.D	15.019	

 # Column used to flag RT values with an * values outside of QC limits

QC Limits	Lower Limit	Upper Limits
(± 0.10 minutes)	14.92	15.12

QC SAMPLE DATA

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

Report of Analysis

Client:	JACOBS Engineering Group, Inc.	Date Collected:	
Project:	Former Schlumberger Site Princeton NJ 2025	Date Received:	
Client Sample ID:	PB167981BL	SDG No.:	Q2008
Lab Sample ID:	PB167981BL	Matrix:	Water
Analytical Method:	8015D DRO	% Solid:	0 Decanted:
Sample Wt/Vol:	1000 Units: mL	Final Vol:	1 mL
Soil Aliquot Vol:	uL	Test:	Diesel Range Organics
Extraction Type:		Injection Volume :	
GPC Factor :	PH :		
Prep Method :	SW3510		

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
FF015830.D	1	05/13/25 08:56	05/13/25 13:22	PB167981

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units
TARGETS						
DRO	DRO	6.00	U	6.00	50.0	ug/L
SURROGATES						
16416-32-3	Tetracosane-d50	16.5		29 - 130	83%	SPK: 20

Comments:

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
E = Value Exceeds Calibration Range
P = Indicates >25% difference for detected concentrations between the two GC columns
Q = indicates LCS control criteria did not meet requirements
M = MS/MSD acceptance 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
S = Indicates estimated value where valid five-point calibration was not performed prior to analyte detection in sample.
() = Laboratory InHouse Limit

Quantitation Report (QT Reviewed)

Data Path : Z:\pestpcbsrv\HPCHEM1\FID_F\Data\FF051325\
Data File : FF015830.D
Signal(s) : FID2B.ch
Acq On : 13 May 2025 13:22
Operator : YP\AJ
Sample : PB167981BL
Misc :
ALS Vial : 71 Sample Multiplier: 1

Instrument :
FID_F
ClientSampleId :
PB167981BL

Integration File: autoint1.e
Quant Time: May 14 05:50:33 2025
Quant Method : Z:\pestpcbsrv\HPCHEM1\FID_F\Method\FF042225.M
Quant Title :
QLast Update : Tue Apr 22 11:27:50 2025
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. : 1uL
Signal Phase : Rxi-1ms
Signal Info : 20mx0.18mmx0.18um

	Compound	R.T.	Response	Conc	Units
System Monitoring Compounds					
9) S	TETRACOSANE-d50 (SURR...	15.018	1864779	16.525	ug/ml
Target Compounds					

(f)=RT Delta > 1/2 Window (m)=manual int.

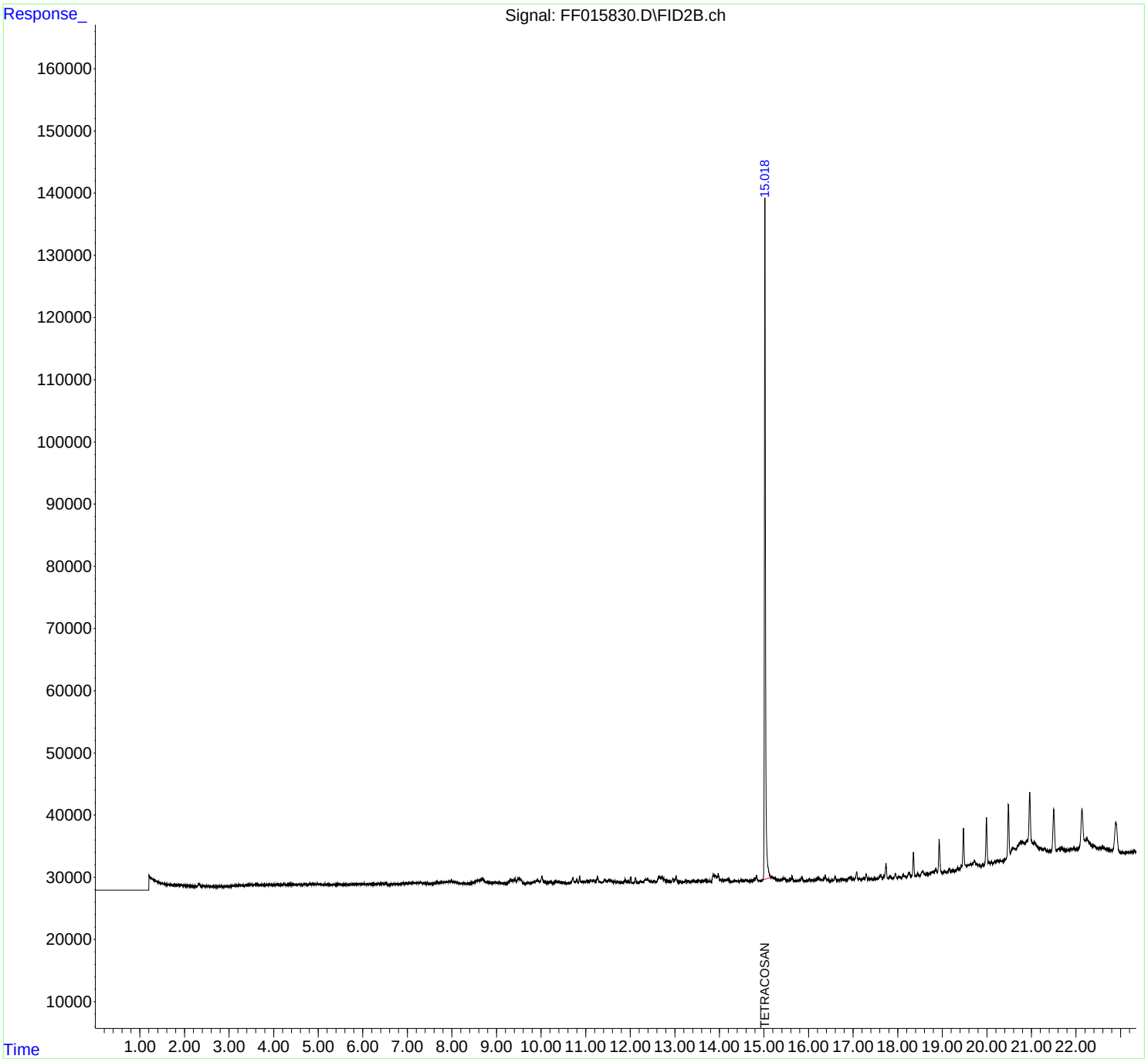
Quantitation Report (QT Reviewed)

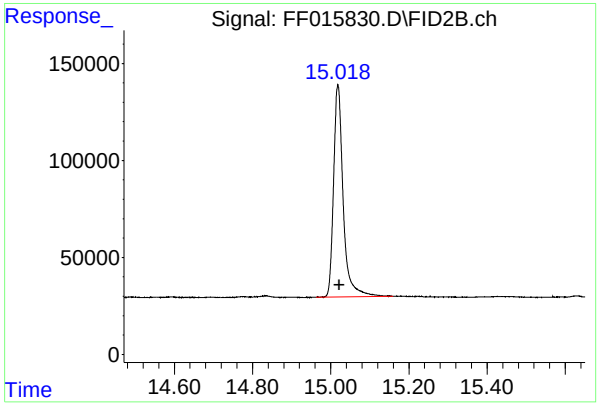
Data Path : Z:\pestpcbsrv\HPCHEM1\FID_F\Data\FF051325\
Data File : FF015830.D
Signal(s) : FID2B.ch
Acq On : 13 May 2025 13:22
Operator : YP\AJ
Sample : PB167981BL
Misc :
ALS Vial : 71 Sample Multiplier: 1

Instrument :
FID_F
ClientSampleId :
PB167981BL

Integration File: autoint1.e
Quant Time: May 14 05:50:33 2025
Quant Method : Z:\pestpcbsrv\HPCHEM1\FID_F\Method\FF042225.M
Quant Title :
QLast Update : Tue Apr 22 11:27:50 2025
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. : 1uL
Signal Phase : Rxi-1ms
Signal Info : 20mx0.18mmx0.18um





#9 TETRACOSANE-d50 (SURROGATE)

R.T.: 15.018 min
Delta R.T.: -0.004 mi
Response: 1864779
Conc: 16.52 ug/m

Instrument :
FID_F
ClientSampleId :
PB167981BL

rteres

Area Percent Report

Data Path : Z:\pestpcbsrv\HPCHEM1\FID_F\Data\FF051325\
Data File : FF015830.D
Signal(s) : FID2B.ch
Acq On : 13 May 2025 13:22
Sample : PB167981BL
Misc :
ALS Vial : 71 Sample Multiplier: 1

Integration File: autoint1.e

Method : Z:\pestpcbsrv\HPCHEM1\FID_F\Method\FF042225.M
Title :

Signal : FID2B.ch

peak #	R.T. min	Start min	End min	PK TY	peak height	peak area	peak % max.	% of total
1	15.018	14.962	15.159	BB	109297	1864779	100.00%	100.000%

Sum of corrected areas: 1864779

FF042225.M Wed May 14 06:41:08 2025

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

Report of Analysis

Client:	JACOBS Engineering Group, Inc.	Date Collected:	05/13/25
Project:	Former Schlumberger Site Princeton NJ 2025	Date Received:	05/13/25
Client Sample ID:	PIBLK-FF015827.D	SDG No.:	Q2008
Lab Sample ID:	I.BLK-FF015827.D	Matrix:	Water
Analytical Method:	8015D DRO	% Solid:	0 Decanted:
Sample Wt/Vol:	1000 Units: mL	Final Vol:	1 mL
Soil Aliquot Vol:	uL	Test:	Diesel Range Organics
Extraction Type:		Injection Volume :	
GPC Factor :	PH :		
Prep Method :	SW3510		

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
FF015827.D	1		05/13/25	FF051325

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units
TARGETS						
DRO	DRO	6.00	U	6.00	50.0	ug/L
SURROGATES						
16416-32-3	Tetracosane-d50	16.3		29 - 130	82%	SPK: 20

Comments:

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
E = Value Exceeds Calibration Range
P = Indicates >25% difference for detected concentrations between the two GC columns
Q = indicates LCS control criteria did not meet requirements
M = MS/MSD acceptance 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
S = Indicates estimated value where valid five-point calibration was not performed prior to analyte detection in sample.
() = Laboratory InHouse Limit

Quantitation Report (QT Reviewed)

Data Path : Z:\pestpcbsrv\HPCHEM1\FID_F\Data\FF051325\
Data File : FF015827.D
Signal(s) : FID2B.ch
Acq On : 13 May 2025 11:11
Operator : YP\AJ
Sample : I.BLK
Misc :
ALS Vial : 52 Sample Multiplier: 1

Instrument :
FID_F
ClientSampleId :
I.BLK

Integration File: autoint1.e
Quant Time: May 14 05:50:01 2025
Quant Method : Z:\pestpcbsrv\HPCHEM1\FID_F\Method\FF042225.M
Quant Title :
QLast Update : Tue Apr 22 11:27:50 2025
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. : 1uL
Signal Phase : Rxi-1ms
Signal Info : 20mx0.18mmx0.18um

Compound	R.T.	Response	Conc Units
System Monitoring Compounds			
9) S TETRACOSANE-d50 (SURR...	15.020	1842353	16.326 ug/ml
Target Compounds			

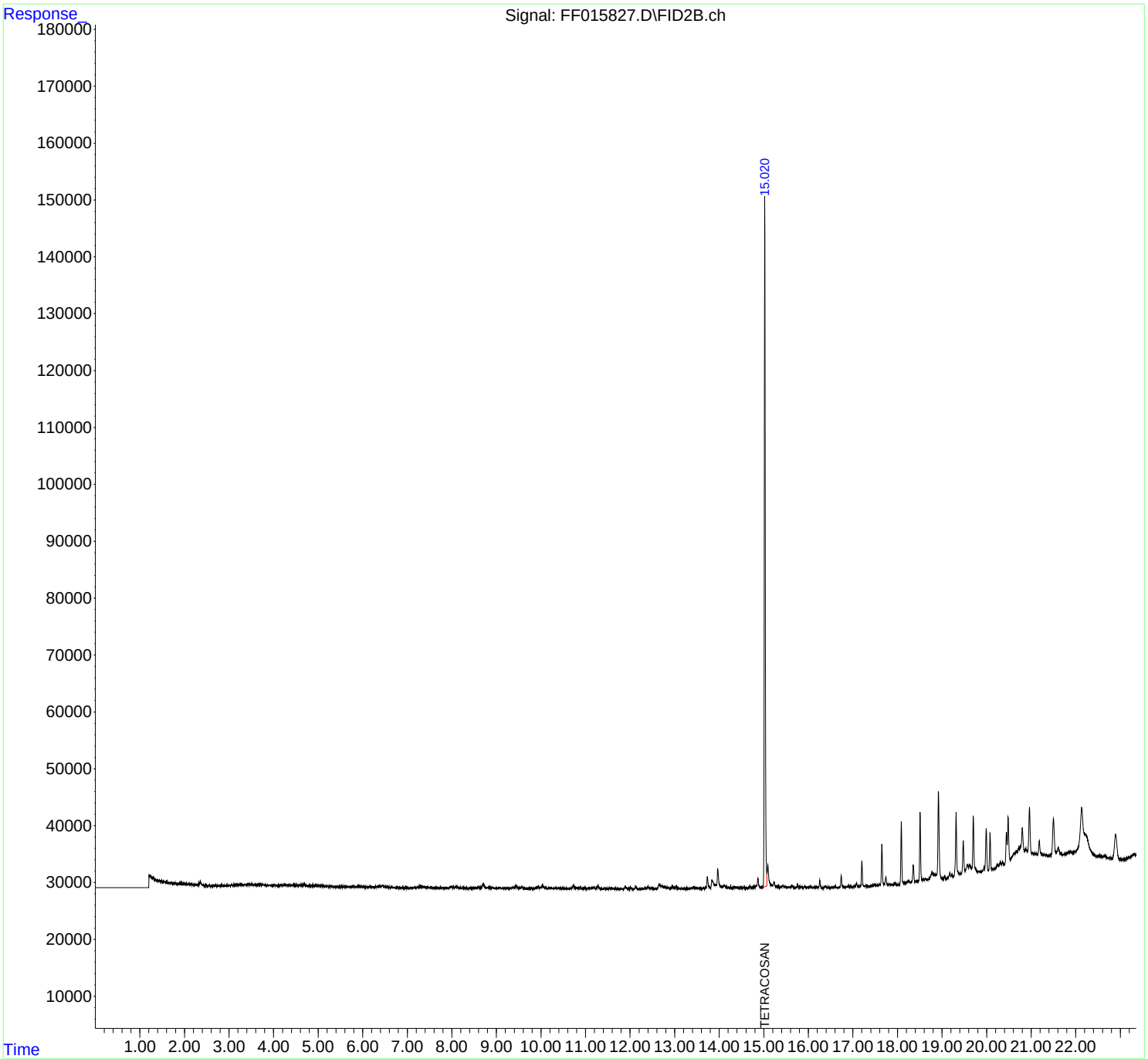
(f)=RT Delta > 1/2 Window (m)=manual int.

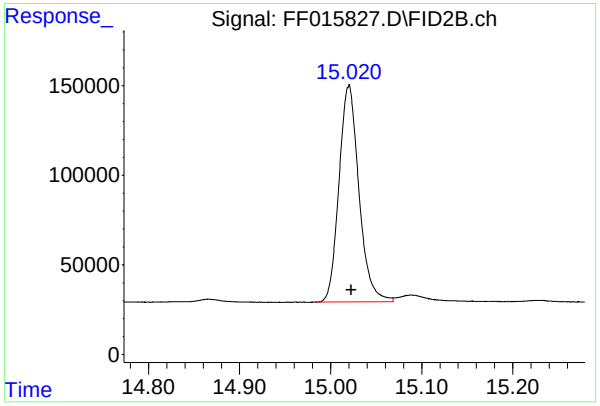
Data Path : Z:\pestpcbsrv\HPCHEM1\FID_F\Data\FF051325\
Data File : FF015827.D
Signal(s) : FID2B.ch
Acq On : 13 May 2025 11:11
Operator : YP\AJ
Sample : I.BLK
Misc :
ALS Vial : 52 Sample Multiplier: 1

Instrument :
FID_F
ClientSampleId :
I.BLK

Integration File: autoint1.e
Quant Time: May 14 05:50:01 2025
Quant Method : Z:\pestpcbsrv\HPCHEM1\FID_F\Method\FF042225.M
Quant Title :
QLast Update : Tue Apr 22 11:27:50 2025
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. : 1uL
Signal Phase : Rxi-1ms
Signal Info : 20mx0.18mmx0.18um





#9 TETRACOSANE-d50 (SURROGATE)

R.T.: 15.020 min
Delta R.T.: -0.002 mi
Response: 1842353
Conc: 16.33 ug/m

Instrument :
FID_F
ClientSampleId :
I.BLK

rteres

Area Percent Report

Data Path : Z:\pestpcbsrv\HPCHEM1\FID_F\Data\FF051325\
Data File : FF015827.D
Signal(s) : FID2B.ch
Acq On : 13 May 2025 11:11
Sample : I.BLK
Misc :
ALS Vial : 52 Sample Multiplier: 1

Integration File: autoint1.e

Method : Z:\pestpcbsrv\HPCHEM1\FID_F\Method\FF042225.M
Title :

Signal : FID2B.ch

peak #	R.T. min	Start min	End min	PK TY	peak height	peak area	peak % max.	% of total
1	15.020	14.984	15.069	BV	121439	1842353	100.00%	100.000%
			Sum of corrected areas:			1842353		

FF042225.M Wed May 14 06:39:21 2025

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

Report of Analysis

Client:	JACOBS Engineering Group, Inc.	Date Collected:	05/13/25
Project:	Former Schlumberger Site Princeton NJ 2025	Date Received:	05/13/25
Client Sample ID:	PIBLK-FF015834.D	SDG No.:	Q2008
Lab Sample ID:	I.BLK-FF015834.D	Matrix:	Water
Analytical Method:	8015D DRO	% Solid:	0 Decanted:
Sample Wt/Vol:	1000 Units: mL	Final Vol:	1 mL
Soil Aliquot Vol:	uL	Test:	Diesel Range Organics
Extraction Type:		Injection Volume :	
GPC Factor :	PH :		
Prep Method :	SW3510		

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
FF015834.D	1		05/13/25	FF051325

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units
TARGETS						
DRO	DRO	6.00	U	6.00	50.0	ug/L
SURROGATES						
16416-32-3	Tetracosane-d50	16.4		29 - 130	82%	SPK: 20

Comments:

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
E = Value Exceeds Calibration Range
P = Indicates >25% difference for detected concentrations between the two GC columns
Q = indicates LCS control criteria did not meet requirements
M = MS/MSD acceptance 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
S = Indicates estimated value where valid five-point calibration was not performed prior to analyte detection in sample.
() = Laboratory InHouse Limit

Quantitation Report (QT Reviewed)

Data Path : Z:\pestpcbsrv\HPCHEM1\FID_F\Data\FF051325\
Data File : FF015834.D
Signal(s) : FID2B.ch
Acq On : 13 May 2025 16:24
Operator : YP\AJ
Sample : I.BLK
Misc :
ALS Vial : 52 Sample Multiplier: 1

Instrument :
FID_F
ClientSampleId :
I.BLK

Integration File: autoint1.e
Quant Time: May 14 05:51:15 2025
Quant Method : Z:\pestpcbsrv\HPCHEM1\FID_F\Method\FF042225.M
Quant Title :
QLast Update : Tue Apr 22 11:27:50 2025
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. : 1uL
Signal Phase : Rxi-1ms
Signal Info : 20mx0.18mmx0.18um

Compound	R.T.	Response	Conc Units
System Monitoring Compounds			
9) S TETRACOSANE-d50 (SURR...	15.021	1851737	16.409 ug/ml
Target Compounds			

(f)=RT Delta > 1/2 Window (m)=manual int.

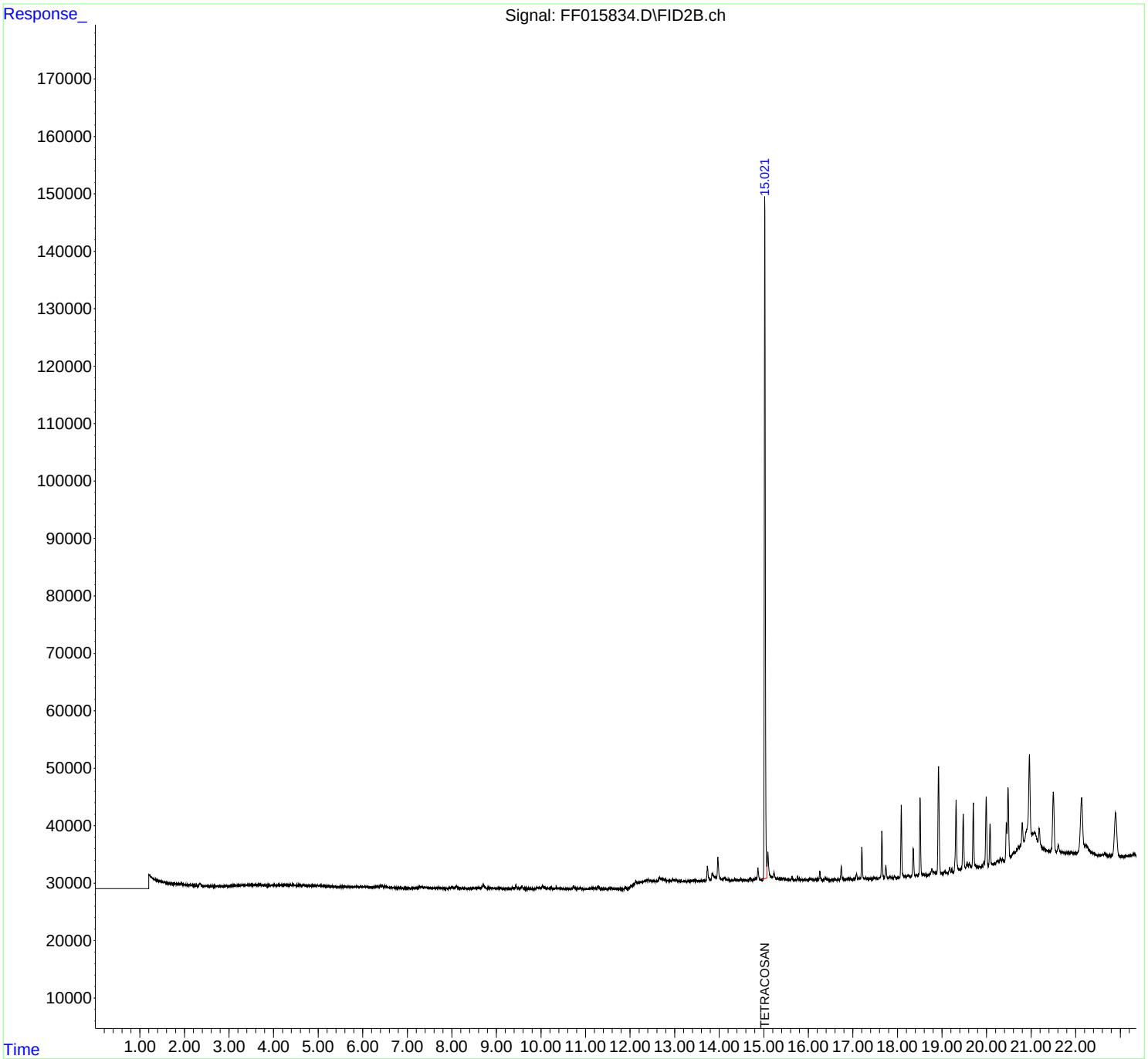
Quantitation Report (QT Reviewed)

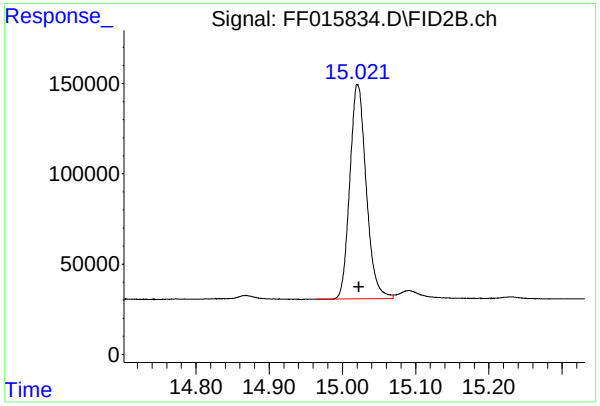
Data Path : Z:\pestpcbsrv\HPCHEM1\FID_F\Data\FF051325\
Data File : FF015834.D
Signal(s) : FID2B.ch
Acq On : 13 May 2025 16:24
Operator : YP\AJ
Sample : I.BLK
Misc :
ALS Vial : 52 Sample Multiplier: 1

Instrument :
FID_F
ClientSampleId :
I.BLK

Integration File: autoint1.e
Quant Time: May 14 05:51:15 2025
Quant Method : Z:\pestpcbsrv\HPCHEM1\FID_F\Method\FF042225.M
Quant Title :
QLast Update : Tue Apr 22 11:27:50 2025
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. : 1uL
Signal Phase : Rxi-1ms
Signal Info : 20mx0.18mmx0.18um





#9 TETRACOSANE-d50 (SURROGATE)

R.T.: 15.021 min
Delta R.T.: -0.002 mi
Response: 1851737
Conc: 16.41 ug/m

Instrument :
FID_F
ClientSampleId :
I.BLK

rteres

Area Percent Report

Data Path : Z:\pestpcbsrv\HPCHEM1\FID_F\Data\FF051325\
Data File : FF015834.D
Signal(s) : FID2B.ch
Acq On : 13 May 2025 16:24
Sample : I.BLK
Misc :
ALS Vial : 52 Sample Multiplier: 1

Integration File: autoint1.e

Method : Z:\pestpcbsrv\HPCHEM1\FID_F\Method\FF042225.M
Title :

Signal : FID2B.ch

peak #	R.T. min	Start min	End min	PK TY	peak height	peak area	peak % max.	% of total
1	15.021	14.964	15.069	BV	118622	1851737	100.00%	100.000%
			Sum of corrected areas:			1851737		

FF042225.M Wed May 14 06:43:57 2025

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

Report of Analysis

Client:	JACOBS Engineering Group, Inc.	Date Collected:	
Project:	Former Schlumberger Site Princeton NJ 2025	Date Received:	
Client Sample ID:	PB167981BS	SDG No.:	Q2008
Lab Sample ID:	PB167981BS	Matrix:	Water
Analytical Method:	8015D DRO	% Solid:	0 Decanted:
Sample Wt/Vol:	1000 Units: mL	Final Vol:	1 mL
Soil Aliquot Vol:	uL	Test:	Diesel Range Organics
Extraction Type:		Injection Volume :	
GPC Factor :	PH :		
Prep Method :	SW3510		

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
FF015831.D	1	05/13/25 08:56	05/13/25 13:51	PB167981

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units
TARGETS						
DRO	DRO	207		6.00	50.0	ug/L
SURROGATES						
16416-32-3	Tetracosane-d50	20.2		29 - 130	101%	SPK: 20

Comments:

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
E = Value Exceeds Calibration Range
P = Indicates >25% difference for detected concentrations between the two GC columns
Q = indicates LCS control criteria did not meet requirements
M = MS/MSD acceptance 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
S = Indicates estimated value where valid five-point calibration was not performed prior to analyte detection in sample.
() = Laboratory InHouse Limit

Quantitation Report (QT Reviewed)

Data Path : Z:\pestpcbsrv\HPCHEM1\FID_F\Data\FF051325\
Data File : FF015831.D
Signal(s) : FID2B.ch
Acq On : 13 May 2025 13:51
Operator : YP\AJ
Sample : PB167981BS
Misc :
ALS Vial : 72 Sample Multiplier: 1

Instrument :
FID_F
ClientSampleId :
PB167981BS

Integration File: autoint1.e
Quant Time: May 14 05:50:42 2025
Quant Method : Z:\pestpcbsrv\HPCHEM1\FID_F\Method\FF042225.M
Quant Title :
QLast Update : Tue Apr 22 11:27:50 2025
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. : 1uL
Signal Phase : Rxi-1ms
Signal Info : 20mx0.18mmx0.18um

	Compound	R.T.	Response	Conc Units
	System Monitoring Compounds			
9) S	TETRACOSANE-d50 (SURR...	15.017	2276385	20.172 ug/ml
	Target Compounds			
2)	N-DECANE	4.563	2172601	21.291 ug/ml
3)	N-DODECANE	6.731	2347847	21.442 ug/ml
4)	N-TETRADECANE	8.558	2344101	20.309 ug/ml
5)	N-HEXADECANE	10.166	2396754	20.308 ug/ml
6)	N-OCTADECANE	11.608	2578387	20.496 ug/ml
7)	N-EICOSANE	12.918	2588305	19.840 ug/ml
8)	N-DOCOSANE	14.116	2607435	20.470 ug/ml
10)	N-TETRACOSANE	15.221	2627111	20.885 ug/ml
11)	N-HEXACOSANE	16.242	2586042	21.215 ug/ml
12)	N-OCTACOSANE	17.193	2535471	21.427 ug/ml

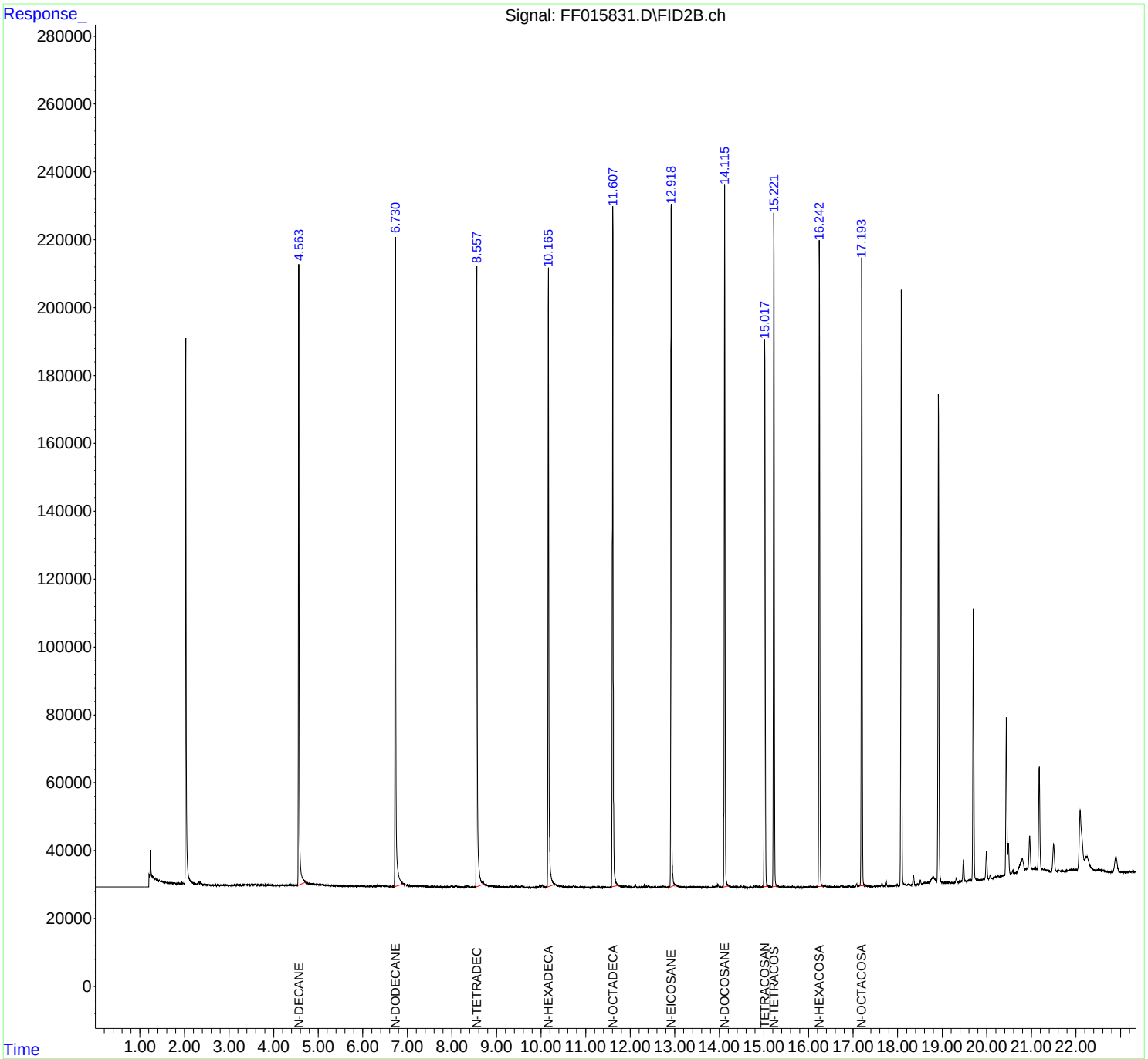
(f)=RT Delta > 1/2 Window (m)=manual int.

Data Path : Z:\pestpcbsrv\HPCHEM1\FID_F\Data\FF051325\
Data File : FF015831.D
Signal(s) : FID2B.ch
Acq On : 13 May 2025 13:51
Operator : YP\AJ
Sample : PB167981BS
Misc :
ALS Vial : 72 Sample Multiplier: 1

Instrument :
FID_F
ClientSampleId :
PB167981BS

Integration File: autoint1.e
Quant Time: May 14 05:50:42 2025
Quant Method : Z:\pestpcbsrv\HPCHEM1\FID_F\Method\FF042225.M
Quant Title :
QLast Update : Tue Apr 22 11:27:50 2025
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. : 1uL
Signal Phase : Rxi-1ms
Signal Info : 20mx0.18mmx0.18um



rteres

Area Percent Report

Data Path : Z:\pestpcbsrv\HPCHEM1\FID_F\Data\FF051325\
Data File : FF015831.D
Signal(s) : FID2B.ch
Acq On : 13 May 2025 13:51
Sample : PB167981BS
Misc :
ALS Vial : 72 Sample Multiplier: 1

Integration File: autoint1.e

Method : Z:\pestpcbsrv\HPCHEM1\FID_F\Method\FF042225.M
Title :

Signal : FID2B.ch

peak #	R.T. min	Start min	End min	PK TY	peak height	peak area	peak % max.	% of total
1	4.563	4.537	4.717	BB	182667	2172601	82.70%	8.029%
2	6.731	6.696	6.909	BB	191402	2347847	89.37%	8.676%
3	8.558	8.527	8.724	BB	182201	2344101	89.23%	8.662%
4	10.166	10.134	10.304	BB	182453	2396754	91.23%	8.857%
5	11.608	11.571	11.734	BB	200133	2578387	98.15%	9.528%
6	12.918	12.882	13.014	BB	200908	2588305	98.52%	9.565%
7	14.116	14.077	14.207	BB	207030	2607435	99.25%	9.636%
8	15.017	14.979	15.096	BB	161318	2276385	86.65%	8.412%
9	15.221	15.182	15.297	BB	197234	2627111	100.00%	9.708%
10	16.242	16.201	16.317	BB	190113	2586042	98.44%	9.557%
11	17.193	17.149	17.267	BB	184575	2535471	96.51%	9.370%
			Sum of corrected areas:			27060438		

FF042225.M Wed May 14 06:42:55 2025

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

Report of Analysis

Client:	JACOBS Engineering Group, Inc.	Date Collected:	
Project:	Former Schlumberger Site Princeton NJ 2025	Date Received:	
Client Sample ID:	PB167981BSD	SDG No.:	Q2008
Lab Sample ID:	PB167981BSD	Matrix:	Water
Analytical Method:	8015D DRO	% Solid:	0 Decanted:
Sample Wt/Vol:	1000 Units: mL	Final Vol:	1 mL
Soil Aliquot Vol:	uL	Test:	Diesel Range Organics
Extraction Type:		Injection Volume :	
GPC Factor :	PH :		
Prep Method :	SW3510		

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
FF015832.D	1	05/13/25 08:56	05/13/25 15:25	PB167981

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units
TARGETS						
DRO	DRO	203		6.00	50.0	ug/L
SURROGATES						
16416-32-3	Tetracosane-d50	19.7		29 - 130	99%	SPK: 20

Comments:

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
E = Value Exceeds Calibration Range
P = Indicates >25% difference for detected concentrations between the two GC columns
Q = indicates LCS control criteria did not meet requirements
M = MS/MSD acceptance 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
S = Indicates estimated value where valid five-point calibration was not performed prior to analyte detection in sample.
() = Laboratory InHouse Limit

Quantitation Report (QT Reviewed)

Data Path : Z:\pestpcbsrv\HPCHEM1\FID_F\Data\FF051325\
Data File : FF015832.D
Signal(s) : FID2B.ch
Acq On : 13 May 2025 15:25
Operator : YP\AJ
Sample : PB167981BSD
Misc :
ALS Vial : 73 Sample Multiplier: 1

Instrument :
FID_F
ClientSampleId :
PB167981BSD

Integration File: autoint1.e
Quant Time: May 14 05:50:55 2025
Quant Method : Z:\pestpcbsrv\HPCHEM1\FID_F\Method\FF042225.M
Quant Title :
QLast Update : Tue Apr 22 11:27:50 2025
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. : 1uL
Signal Phase : Rxi-1ms
Signal Info : 20mx0.18mmx0.18um

	Compound	R.T.	Response	Conc Units
	System Monitoring Compounds			
9) S	TETRACOSANE-d50 (SURR...	15.015	2226568	19.731 ug/ml
	Target Compounds			
2)	N-DECANE	4.553	2151211	21.081 ug/ml
3)	N-DODECANE	6.724	2320115	21.189 ug/ml
4)	N-TETRADECANE	8.553	2294216	19.877 ug/ml
5)	N-HEXADECANE	10.162	2354193	19.948 ug/ml
6)	N-OCTADECANE	11.605	2522613	20.053 ug/ml
7)	N-EICOSANE	12.916	2524499	19.351 ug/ml
8)	N-DOCOSANE	14.115	2536993	19.917 ug/ml
10)	N-TETRACOSANE	15.219	2565009	20.392 ug/ml
11)	N-HEXACOSANE	16.241	2527358	20.733 ug/ml
12)	N-OCTACOSANE	17.192	2481462	20.971 ug/ml

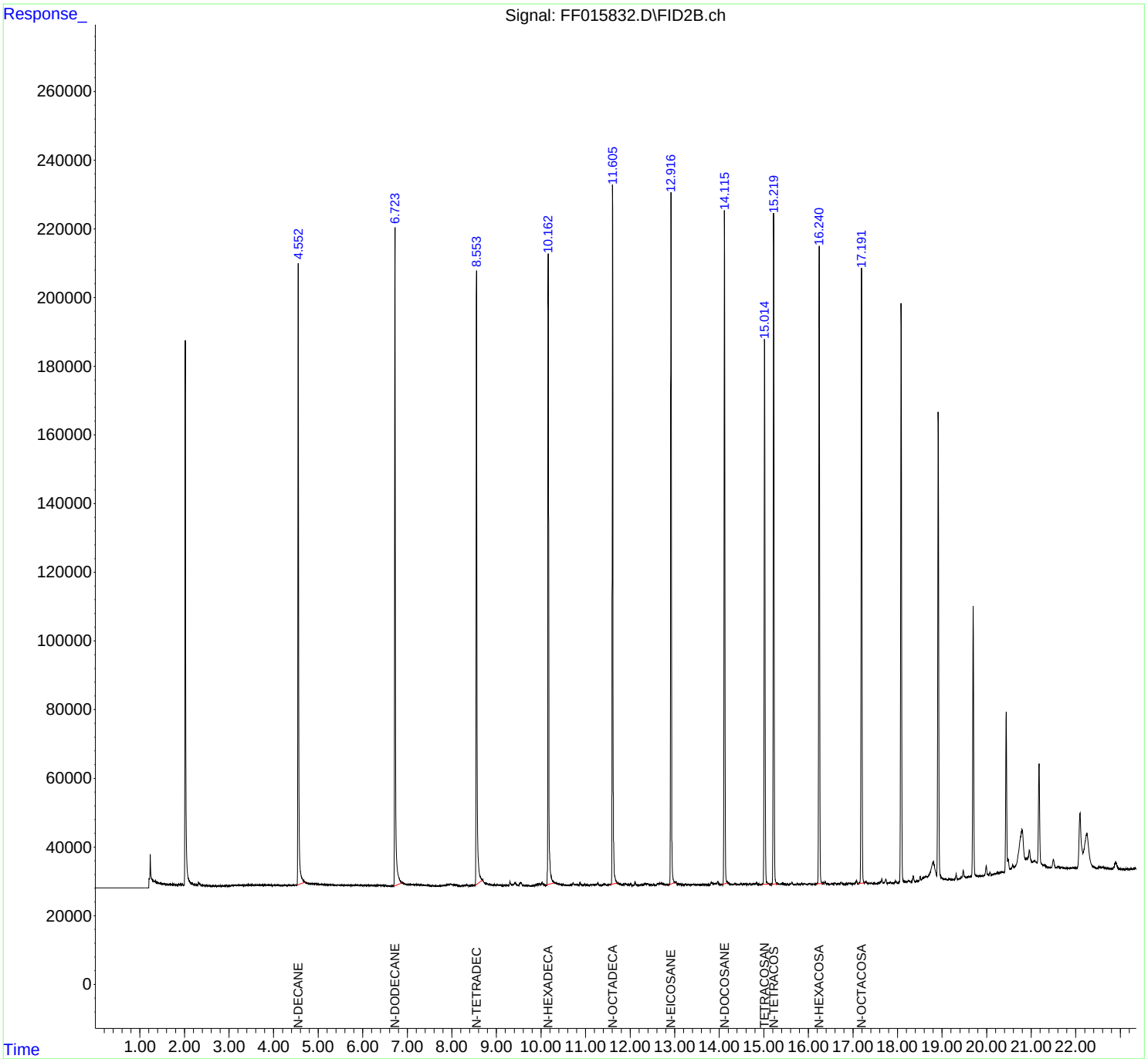
(f)=RT Delta > 1/2 Window (m)=manual int.

Data Path : Z:\pestpcbsrv\HPCHEM1\FID_F\Data\FF051325\
Data File : FF015832.D
Signal(s) : FID2B.ch
Acq On : 13 May 2025 15:25
Operator : YP\AJ
Sample : PB167981BSD
Misc :
ALS Vial : 73 Sample Multiplier: 1

Instrument :
FID_F
ClientSampleId :
PB167981BSD

Integration File: autoint1.e
Quant Time: May 14 05:50:55 2025
Quant Method : Z:\pestpcbsrv\HPCHEM1\FID_F\Method\FF042225.M
Quant Title :
QLast Update : Tue Apr 22 11:27:50 2025
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. : 1uL
Signal Phase : Rxi-1ms
Signal Info : 20mx0.18mmx0.18um



rteres

Area Percent Report

Data Path : Z:\pestpcbsrv\HPCHEM1\FID_F\Data\FF051325\
Data File : FF015832.D
Signal(s) : FID2B.ch
Acq On : 13 May 2025 15:25
Sample : PB167981BSD
Misc :
ALS Vial : 73 Sample Multiplier: 1

Integration File: autoint1.e

Method : Z:\pestpcbsrv\HPCHEM1\FID_F\Method\FF042225.M
Title :

Signal : FID2B.ch

peak #	R.T. min	Start min	End min	PK TY	peak height	peak area	peak % max.	% of total
1	4.553	4.526	4.701	BB	180908	2151211	83.87%	8.116%
2	6.724	6.697	6.881	BB	191414	2320115	90.45%	8.754%
3	8.553	8.526	8.689	BB	178546	2294216	89.44%	8.656%
4	10.162	10.109	10.301	BB	183015	2354193	91.78%	8.882%
5	11.605	11.551	11.716	BB	203350	2522613	98.35%	9.518%
6	12.916	12.859	12.999	BB	200811	2524499	98.42%	9.525%
7	14.115	14.062	14.191	BB	196825	2536993	98.91%	9.572%
8	15.015	14.966	15.114	BB	158086	2226568	86.81%	8.401%
9	15.219	15.164	15.304	BB	195343	2565009	100.00%	9.678%
10	16.241	16.177	16.322	BB	185249	2527358	98.53%	9.536%
11	17.192	17.112	17.261	BB	178072	2481462	96.74%	9.363%
			Sum of corrected areas:			26504237		

FF042225.M Wed May 14 06:43:24 2025

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

Manual Integration Report

Sample ID	ClientId ID	File ID	Sequence ID	Parameter	Supervised By	Supervised On	Reason
5 TRPH STD		FF015790.D	FF042225	N-TETRACONTANE	mohammad	4/24/2025 6:33:56 AM	Peak Integrated by Software incorrectly

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

Manual Integration Report

Sample ID	ClientId ID	File ID	Sequence ID	Parameter	Supervised By	Supervised On	Reason
Q1872-14		FF015846.D	FF051325	TETRACOSANE-d50 (SURROGA			Peak Integrated by Software incorrectly

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

Instrument ID: FID_F

Daily Analysis Runlog For Sequence/QCBatch ID # FF042225

Review By	yogesh	Review On	4/22/2025 1:28:06 PM		
Supervise By	mohammad	Supervise On	4/24/2025 6:33:56 AM		
SubDirectory	FF042225	HP Acquire Method		HP Processing Method	FF042225

STD. NAME	STD REF.#
Tune/Reschk	
Initial Calibration Stds	PP24467,PP24469,PP24470,PP24471,PP24472
CCC	
Internal Standard/PEM	
ICV/I.BLK	PP24468,PP24473
Surrogate Standard	
MS/MSD Standard	
LCS Standard	

Sr#	SampleId	Data File Name	Date-Time	Operator	Status
1	MECL2	FF015784.D	22 Apr 2025 08:12	YP\AJ	Ok
2	I.BLK	FF015785.D	22 Apr 2025 08:42	YP\AJ	Ok
3	100 TRPH STD	FF015786.D	22 Apr 2025 09:11	YP\AJ	Ok
4	50 TRPH STD	FF015787.D	22 Apr 2025 09:40	YP\AJ	Ok
5	20 TRPH STD	FF015788.D	22 Apr 2025 10:09	YP\AJ	Ok
6	10 TRPH STD	FF015789.D	22 Apr 2025 10:39	YP\AJ	Ok
7	5 TRPH STD	FF015790.D	22 Apr 2025 11:08	YP\AJ	Ok,M
8	FF042225ICV	FF015791.D	22 Apr 2025 11:39	YP\AJ	Ok

M : Manual Integration

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

Instrument ID: FID_F

Daily Analysis Runlog For Sequence/QCBatch ID # FF051325

Review By	yogesh	Review On	5/13/2025 1:15:36 PM		
Supervise By		Supervise On			
SubDirectory	FF051325	HP Acquire Method		HP Processing Method	FF042225

STD. NAME	STD REF.#
Tune/Reschk	
Initial Calibration Stds	PP24467,PP24469,PP24470,PP24471,PP24472
CCC	PP24469
Internal Standard/PEM	
ICV/I.BLK	PP24468,PP24473
Surrogate Standard	
MS/MSD Standard	
LCS Standard	

Sr#	SampleId	Data File Name	Date-Time	Operator	Status
1	MECL2	FF015826.D	13 May 2025 10:42	YP\AJ	Ok
2	I.BLK	FF015827.D	13 May 2025 11:11	YP\AJ	Ok
3	50 PPM TRPH STD	FF015828.D	13 May 2025 11:40	YP\AJ	Ok
4	RT MARKER	FF015829.D	13 May 2025 12:13	YP\AJ	Ok
5	PB167981BL	FF015830.D	13 May 2025 13:22	YP\AJ	Ok
6	PB167981BS	FF015831.D	13 May 2025 13:51	YP\AJ	Ok
7	PB167981BSD	FF015832.D	13 May 2025 15:25	YP\AJ	Ok
8	Q2008-01	FF015833.D	13 May 2025 15:54	YP\AJ	Ok
9	I.BLK	FF015834.D	13 May 2025 16:24	YP\AJ	Ok
10	50 PPM TRPH STD	FF015835.D	13 May 2025 16:53	YP\AJ	Ok
11	Q1982-04	FF015836.D	13 May 2025 17:22	YP\AJ	Ok
12	Q1982-05	FF015837.D	13 May 2025 17:51	YP\AJ	Ok
13	Q1982-06	FF015838.D	13 May 2025 18:21	YP\AJ	Ok
14	Q1982-07	FF015839.D	13 May 2025 18:50	YP\AJ	Ok
15	Q1982-08	FF015840.D	13 May 2025 19:19	YP\AJ	Ok
16	I.BLK	FF015841.D	13 May 2025 19:49	YP\AJ	Ok
17	50 PPM TRPH STD	FF015842.D	13 May 2025 20:18	YP\AJ	Ok
18	PB167975BL	FF015843.D	13 May 2025 21:16	YP\AJ	Ok
19	PB167975BS	FF015844.D	13 May 2025 21:46	YP\AJ	Ok
20	Q1872-14	FF015845.D	13 May 2025 22:15	YP\AJ	Not Ok
21	Q1872-14	FF015846.D	13 May 2025 22:44	YP\AJ	Not Ok

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Fax : 908 789 8922

Instrument ID: FID_F

Daily Analysis Runlog For Sequence/QCBatch ID # FF051325

Review By	yogesh	Review On	5/13/2025 1:15:36 PM		
Supervise By		Supervise On			
SubDirectory	FF051325	HP Acquire Method		HP Processing Method	FF042225

STD. NAME	STD REF.#
Tune/Reschk	
Initial Calibration Stds	PP24467,PP24469,PP24470,PP24471,PP24472
CCC	PP24469
Internal Standard/PEM	
ICV/I.BLK	PP24468,PP24473
Surrogate Standard	
MS/MSD Standard	
LCS Standard	

22	I.BLK	FF015847.D	13 May 2025 23:14	YP\AJ	Ok
23	50 PPM TRPH STD	FF015848.D	14 May 2025 00:12	YP\AJ	Ok

M : Manual Integration

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

Instrument ID: FID_F

Daily Analysis Runlog For Sequence/QCBatch ID # FF042225

Review By	yogesh	Review On	4/22/2025 1:28:06 PM		
Supervise By	mohammad	Supervise On	4/24/2025 6:33:56 AM		
SubDirectory	FF042225	HP Acquire Method		HP Processing Method	FF042225

STD. NAME	STD REF.#
Tune/Reschk	
Initial Calibration Stds	PP24467,PP24469,PP24470,PP24471,PP24472
CCC	
Internal Standard/PEM	
ICV/I.BLK	PP24468,PP24473
Surrogate Standard	
MS/MSD Standard	
LCS Standard	

Sr#	SampleId	ClientID	Data File Name	Date-Time	Comment	Operator	Status
1	MECL2		FF015784.D	22 Apr 2025 08:12		YP\AJ	Ok
2	I.BLK		FF015785.D	22 Apr 2025 08:42		YP\AJ	Ok
3	100 TRPH STD		FF015786.D	22 Apr 2025 09:11		YP\AJ	Ok
4	50 TRPH STD		FF015787.D	22 Apr 2025 09:40		YP\AJ	Ok
5	20 TRPH STD		FF015788.D	22 Apr 2025 10:09		YP\AJ	Ok
6	10 TRPH STD		FF015789.D	22 Apr 2025 10:39		YP\AJ	Ok
7	5 TRPH STD		FF015790.D	22 Apr 2025 11:08		YP\AJ	Ok,M
8	FF042225ICV		FF015791.D	22 Apr 2025 11:39		YP\AJ	Ok

M : Manual Integration

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

Instrument ID: FID_F

Daily Analysis Runlog For Sequence/QCBatch ID # FF051325

Review By	yogesh	Review On	5/13/2025 1:15:36 PM		
Supervise By		Supervise On			
SubDirectory	FF051325	HP Acquire Method		HP Processing Method	FF042225

STD. NAME	STD REF.#
Tune/Reschk	
Initial Calibration Stds	PP24467,PP24469,PP24470,PP24471,PP24472
CCC	PP24469
Internal Standard/PEM	
ICV/I.BLK	PP24468,PP24473
Surrogate Standard	
MS/MSD Standard	
LCS Standard	

Sr#	SampleId	ClientID	Data File Name	Date-Time	Comment	Operator	Status
1	MECL2		FF015826.D	13 May 2025 10:42		YP\AJ	Ok
2	I.BLK		FF015827.D	13 May 2025 11:11		YP\AJ	Ok
3	50 PPM TRPH STD		FF015828.D	13 May 2025 11:40		YP\AJ	Ok
4	RT MARKER		FF015829.D	13 May 2025 12:13		YP\AJ	Ok
5	PB167981BL		FF015830.D	13 May 2025 13:22		YP\AJ	Ok
6	PB167981BS		FF015831.D	13 May 2025 13:51		YP\AJ	Ok
7	PB167981BSD		FF015832.D	13 May 2025 15:25		YP\AJ	Ok
8	Q2008-01		FF015833.D	13 May 2025 15:54		YP\AJ	Ok
9	I.BLK		FF015834.D	13 May 2025 16:24		YP\AJ	Ok
10	50 PPM TRPH STD		FF015835.D	13 May 2025 16:53		YP\AJ	Ok
11	Q1982-04		FF015836.D	13 May 2025 17:22		YP\AJ	Ok
12	Q1982-05		FF015837.D	13 May 2025 17:51		YP\AJ	Ok
13	Q1982-06		FF015838.D	13 May 2025 18:21		YP\AJ	Ok
14	Q1982-07		FF015839.D	13 May 2025 18:50		YP\AJ	Ok
15	Q1982-08		FF015840.D	13 May 2025 19:19		YP\AJ	Ok
16	I.BLK		FF015841.D	13 May 2025 19:49		YP\AJ	Ok
17	50 PPM TRPH STD		FF015842.D	13 May 2025 20:18		YP\AJ	Ok
18	PB167975BL		FF015843.D	13 May 2025 21:16		YP\AJ	Ok

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

Instrument ID: FID_F

Daily Analysis Runlog For Sequence/QCBatch ID # FF051325

Review By	yogesh	Review On	5/13/2025 1:15:36 PM		
Supervise By		Supervise On			
SubDirectory	FF051325	HP Acquire Method		HP Processing Method	FF042225

STD. NAME	STD REF.#
Tune/Reschk	
Initial Calibration Stds	PP24467,PP24469,PP24470,PP24471,PP24472
CCC	PP24469
Internal Standard/PEM	
ICV/I.BLK	PP24468,PP24473
Surrogate Standard	
MS/MSD Standard	
LCS Standard	

19	PB167975BS		FF015844.D	13 May 2025 21:46		YP\AJ	Ok
20	Q1872-14		FF015845.D	13 May 2025 22:15	need 5x dilution	YP\AJ	Not Ok
21	Q1872-14		FF015846.D	13 May 2025 22:44		YP\AJ	Not Ok
22	I.BLK		FF015847.D	13 May 2025 23:14		YP\AJ	Ok
23	50 PPM TRPH STD		FF015848.D	14 May 2025 00:12		YP\AJ	Ok

M : Manual Integration

Alliance TECHNICAL GROUP

EXTRACTION LOGPAGE

PB167981

SOP ID:	M3510C,3580A-Extraction DRO-12				
Clean Up SOP #:	N/A			**Extraction Start Date :**	05/13/2025
Matrix :	Water			**Extraction Start Time :**	08:56
Weigh By:	N/A	**Extraction By:**	RS	**Extraction End Date :**	05/13/2025
Balance check:	N/A	**Filter By:**	RJ	**Extraction End Time :**	13:10
Balance ID:	N/A	**pH Meter ID:**	N/A	**Concentration By:**	EH
pH Strip Lot#:	E3880	**Hood ID:**	4,5,6,7	**Supervisor By :**	RUPESH

Extraction Method: [√] Seperatory Funnel [ ] Continious Liquid/Liquid [ ] Sonication [ ] Waste Dilution [ ] Soxhlet

Standared Name	MLS USED	Concentration ug/mL	STD REF. # FROM LOG
Surrogate	1.0ML	20 PPM	PP24162
Spike Sol 1	1.0ML	20 PPM	PP24180
N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A

Chemical Used	ML/SAMPLE USED	Lot Number
Methylene Chloride	N/A	E3930
Baked Na2SO4	N/A	EP2611
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
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# 2210443. pH Adjusted with 10N NaOH.

KD Bath ID:	WATER BATH-1	**Envap ID:**	NEVAP-02
KD Bath Temperature:	60 °C	**Envap Temperature:**	40 °C

Date / Time	Prepped Sample Relinquished By/Location	Received By/Location
5/13/25	RS (Ext Lab)	R. Pest/PCB Lab
13:15	**Preparation Group**	**Analysis Group**

Alliance TECHNICAL GROUP

EXTRACTION LOGPAGE

PrepBatch ID : PB167981

Analytical Method: M3510C,3580A-Extraction DRO-12 **Concentration Date:** 05/13/2025

Sample ID	Client Sample ID	Test	g / mL	PH	Surr/Spike By:		Final Vol. (mL)	JarID	Comments	Prep Pos
					AddedBy	VerifiedBy				
PB167981BL	PB167981BL	Diesel Range Organics	1000	6	RUPESH	ritesh	1			SEP-11
PB167981BS	PB167981BS	Diesel Range Organics	1000	6	RUPESH	ritesh	1			12
PB167981BSD	PB167981BSD	Diesel Range Organics	1000	6	RUPESH	ritesh	1			13
Q2008-01	IDW-AQ-DRUM-633-05092025	Diesel Range Organics	940	6	RUPESH	ritesh	1	H		14

RS
5/13

* **Extracts relinquished on the same date as received.**

1699981 8:56

WORKLIST(Hardcopy Internal Chain)

WorkList Name : Q2008D **WorkList ID :** 189486 **Department :** Extraction **Date :** 05-13-2025 08:50:44

Sample	Customer Sample	Matrix	Test	Preservative	Customer	Raw Sample Storage Location	Collect Date	Method
Q2008-01	IDW-AQ-DRUM-633-05092025	Water	Diesel Range Organics	Cool 4 deg C	JACO05	L41	05/09/2025	8015D

Date/Time 5/13/25 8:52
Raw Sample Received by: RS (EXT lab)
Raw Sample Relinquished by: CP

Date/Time 5/13/25 9:15
Raw Sample Received by: CP
Raw Sample Relinquished by: RS (EXT lab)

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

Prep Standard - Chemical Standard Summary

Order ID : Q2008

Test : Diesel Range Organics

Prepbatch ID : PB167981,

Sequence ID/Qc Batch ID: FF051325,

Standard ID :
EP2611,PP24162,PP24180,PP24467,PP24468,PP24469,PP24470,PP24471,PP24472,PP24473,

Chemical ID :
E3551,E3874,E3926,E3930,P11951,P11952,P11955,P11956,P13106,P13108,P13477,P13479,P13487,P13488,P13489,P13490,

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

Extractions STANDARD PREPARATION LOG

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
3923	Baked Sodium Sulfate	EP2611	05/09/2025	07/01/2025	RUPESHKUMAR SHAH	Extraction_SCALE_2 (EX-SC-2)	None	Riteshkumar Patel 05/09/2025

FROM 4000.00000gram of E3551 = Final Quantity: 4000.000 gram

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
3609	20 PPM DRO SPIKE SOLUTION (RESTEK)	PP24162	01/31/2025	07/30/2025	Yogesh Patel	None	None	Ankita Jodhani 01/31/2025

FROM 1.00000ml of P11955 + 1.00000ml of P11956 + 48.00000ml of E3874 = Final Quantity: 50.000 ml

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Pest/Pcb STANDARD PREPARATION LOG

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
147	20 PPM DRO Surrogate Spike Solution	PP24180	02/03/2025	07/30/2025	Yogesh Patel	None	None	Ankita Jodhani 02/03/2025

FROM 1.00000ml of P13487 + 1.00000ml of P13488 + 1.00000ml of P13489 + 1.00000ml of P13490 + 196.00000ml of E3874 = Final Quantity: 200.000 ml

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
433	100/100 PPM DRO (Restek)	PP24467	04/22/2025	10/08/2025	Yogesh Patel	None	None	Abdul Mirza 05/08/2025

FROM 1.00000ml of P11951 + 1.00000ml of P11952 + 1.00000ml of P13477 + 7.00000ml of E3926 = Final Quantity: 10.000 ml

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Fax : 908 789 8922

Pest/Pcb STANDARD PREPARATION LOG

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
3979	100/100 PPM DRO ICV (RESTEK)	PP24468	04/22/2025	10/08/2025	Yogesh Patel	None	None	Abdul Mirza 05/08/2025

FROM 1.00000ml of P13106 + 1.00000ml of P13108 + 1.00000ml of P13479 + 7.00000ml of E3926 = Final Quantity: 10.000 ml

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
435	50 PPM ICC DRO STD (Restek)	PP24469	04/22/2025	10/08/2025	Yogesh Patel	None	None	Abdul Mirza 05/08/2025

FROM 0.50000ml of E3926 + 0.50000ml of PP24467 = Final Quantity: 1.000 ml

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Fax : 908 789 8922

Pest/Pcb STANDARD PREPARATION LOG

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
437	20 PPM ICC DRO STD (Restek)	PP24470	04/22/2025	10/08/2025	Yogesh Patel	None	None	Abdul Mirza 05/08/2025

FROM 0.80000ml of E3926 + 0.20000ml of PP24467 = Final Quantity: 1.000 ml

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
438	10 PPM ICC DRO STD (Restek)	PP24471	04/22/2025	10/08/2025	Yogesh Patel	None	None	Abdul Mirza 05/08/2025

FROM 0.90000ml of E3926 + 0.10000ml of PP24467 = Final Quantity: 1.000 ml

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Fax : 908 789 8922

Pest/Pcb STANDARD PREPARATION LOG

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
439	5 PPM ICC DRO STD (Restek)	PP24472	04/22/2025	10/08/2025	Yogesh Patel	None	None	Abdul Mirza 05/08/2025

FROM 0.90000ml of E3926 + 0.10000ml of PP24469 = Final Quantity: 1.000 ml

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
3608	50 PPM ICV DRO STD (RESTEK)	PP24473	04/22/2025	10/08/2025	Yogesh Patel	None	None	Abdul Mirza 05/08/2025

FROM 0.50000ml of E3926 + 0.50000ml of PP24468 = Final Quantity: 1.000 ml

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Fax : 908 789 8922

CHEMICAL RECEIPT LOG BOOK

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	313201	07/01/2025	01/03/2024 / Rajesh	07/20/2023 / Rajesh	E3551

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)	25A0262002	07/30/2025	01/30/2025 / Rajesh	01/20/2025 / Rajesh	E3874

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)	25A0262002	10/08/2025	04/08/2025 / Rajesh	02/07/2025 / Rajesh	E3926

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)	25A0262002	02/20/2026	05/02/2025 / RUPESH	03/09/2025 / RUPESH	E3930

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Restek	31266 / Florida TRPH Standard	A0186840	10/22/2025	04/22/2025 / yogesh	07/11/2022 / Yogesh	P11951

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Restek	31266 / Florida TRPH Standard	A0186840	10/22/2025	04/22/2025 / yogesh	07/11/2022 / Yogesh	P11952

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Fax : 908 789 8922

CHEMICAL RECEIPT LOG BOOK

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Restek	31266 / Florida TRPH Standard	A0186840	07/31/2025	01/31/2025 / yogesh	07/11/2022 / Yogesh	P11955

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Restek	31266 / Florida TRPH Standard	A0186840	07/31/2025	01/31/2025 / yogesh	07/11/2022 / Yogesh	P11956

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Restek	31266 / Florida TRPH Standard	A0204859	10/22/2025	04/22/2025 / yogesh	01/12/2024 / Yogesh	P13106

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Restek	31266 / Florida TRPH Standard	A0204859	10/22/2025	04/22/2025 / yogesh	01/12/2024 / Yogesh	P13108

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Absolute Standards, Inc.	72072 / n-Tetracosane-d50, 1000 ug/ml	101122	10/22/2025	04/22/2025 / yogesh	07/24/2024 / yogesh	P13477

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Absolute Standards, Inc.	72072 / n-Tetracosane-d50, 1000 ug/ml	101122	10/22/2025	04/22/2025 / yogesh	07/24/2024 / yogesh	P13479

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Fax : 908 789 8922

CHEMICAL RECEIPT LOG BOOK

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Absolute Standards, Inc.	72072 / n-Tetracosane-d50, 1000 ug/ml	101122	08/03/2025	02/03/2025 / yogesh	07/24/2024 / yogesh	P13487

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Absolute Standards, Inc.	72072 / n-Tetracosane-d50, 1000 ug/ml	101122	08/03/2025	02/03/2025 / yogesh	07/24/2024 / yogesh	P13488

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Absolute Standards, Inc.	72072 / n-Tetracosane-d50, 1000 ug/ml	101122	08/03/2025	02/03/2025 / yogesh	07/24/2024 / yogesh	P13489

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Absolute Standards, Inc.	72072 / n-Tetracosane-d50, 1000 ug/ml	101122	08/03/2025	02/03/2025 / yogesh	07/24/2024 / yogesh	P13490

PRODUCTOS QUIMICOS MONTERREY, S.A. DE C.V.

MIRADOR 201, COL. MIRADOR
MONTERREY, N.L. MEXICO
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 :	Na_2SO_4
SPECIFICATION NUMBER :	6399	RELEASE DATE:	ABR/21/2023
LOT NUMBER :	313201		

TEST	SPECIFICATIONS	LOT VALUES
Assay (Na_2SO_4)	Min. 99.0%	99.7 %
pH of a 5% solution at 25°C	5.2 - 9.2	6.1
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%	0.003 %
Extraction-concentration suitability	Passes test	Passes test
Appearance	Passes test	Passes test
Identification	Passes test	Passes test
Solubility and foreing matter	Passes test	Passes test
Retained on US Standard No. 10 sieve	Max. 1%	0.1 %
Retained on US Standard No. 60 sieve	Min. 94%	97.3 %
Through US Standard No. 60 sieve	Max. 5%	2.5 %
Through US Standard No. 100 sieve	Max. 10%	0.1 %

COMMENTS

QC: PhC Irma Belmares

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

RG-02-01, Ed. 3

Recd. by RB on 7/24/23 E3551

PO: PO2-1178.2 PRODUCT CODE: SHIP DATE: 1/20/2025

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

avantor | J.T.Baker

Material No.: 9266-A4
Batch No.: 25A0262002
Manufactured Date: 2024-11-21
Expiration Date:2026-02-20
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 HeptachlorEpoxide) Single Peak (pg/mL)	<= 10	4
Assay (CH_2Cl_2) (by GC, exclusive of preservative, corrected for water)	>= 99.8 %	99.9 %
Color (APHA)	<= 10	10
Residue after Evaporation	<= 1.0 ppm	0.8 ppm
Titrable Acid (µeq/g)	<= 0.3	<0.1
Chloride (Cl)	<= 10 ppm	<5 ppm
Water (by KF, coulometric)	<= 0.02 %	<0.01 %

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

Country of Origin: United States
Packaging Site: Phillipsburg Mfg Ctr & DC

E 3874

Jamie Croak
Director Quality Operations, Bioscience Production

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

PO: PO2-1308 PRODUCT CODE: SHIP DATE: 2/7/25

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

avantor | J.T.Baker

Material No.: 9266-A4
Batch No.: 25A0262002
Manufactured Date: 2024-11-21
Expiration Date:2026-02-20
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 HeptachlorEpoxide) Single Peak (pg/mL)	<= 10	4
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Residue after Evaporation	<= 1.0 ppm	0.8 ppm
Titrable Acid (µeq/g)	<= 0.3	<0.1
Chloride (Cl)	<= 10 ppm	<5 ppm
Water (by KF, coulometric)	<= 0.02 %	<0.01 %

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

Country of Origin: United States
Packaging Site: Phillipsburg Mfg Ctr & DC

E 3926

Jamie Croak
Director Quality Operations, Bioscience Production

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

PO: PO2-1178.2 PRODUCT CODE: SHIP DATE: 1/20/2025

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

avantor | J.T.Baker

Material No.: 9266-A4
Batch No.: 25A0262002
Manufactured Date: 2024-11-21
Expiration Date:2026-02-20
Revision No.: 0

Certificate of Analysis

Test	Specification	Result
FID-Sensitive Impurities (as 2-Octanol)Single Impurity Peak (ng/mL)	<= 5	1
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Assay (CH_2Cl_2) (by GC, exclusive of preservative, corrected for water)	>= 99.8 %	99.9 %
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Titrable Acid (µeq/g)	<= 0.3	<0.1
Chloride (Cl)	<= 10 ppm	<5 ppm
Water (by KF, coulometric)	<= 0.02 %	<0.01 %

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

Country of Origin: United States
Packaging Site: Phillipsburg Mfg Ctr & DC

E3930

JCroak
Jamie Croak
Director Quality Operations, Bioscience Production

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

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

www.restek.com

CERTIFIED REFERENCE MATERIAL

Certificate of Analysis

ACCREDITED
ISO 17034 Accredited
Reference Material Producer
Certificate #3222.01

ACCREDITED
ISO/IEC 17025 Accredited
Testing Laboratory
Certificate #3222.02

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.

P11948
&
P11962
7.8
07/11/2

Catalog No. : 31266 **Lot No.:** A0186840

Description : Florida TRPH Standard

Florida TRPH Standard 500µg/mL, Hexane, 1mL/ampul

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

Expiration Date : July 31, 2029 **Storage:** 25°C nominal

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

CERTIFIED VALUES

Elution Order	Compound	Grav. Conc. (weight/volume)	Expanded Uncertainty (95% C.L.; K=2)	
1	n-Octane (C8) **CAS #** 111-65-9 (Lot SHBN3807) **Purity** 99%	505.0 µg/mL	+/- 2.9995 µg/mL +/- 12.5465 µg/mL +/- 15.0390 µg/mL	Gravimetric Unstressed Stressed
2	n-Decane (C10) **CAS #** 124-18-5 (Lot SHBN8619) **Purity** 99%	503.0 µg/mL	+/- 2.9877 µg/mL +/- 12.4968 µg/mL +/- 14.9795 µg/mL	Gravimetric Unstressed Stressed
3	n-Dodecane (C12) **CAS #** 112-40-3 (Lot SHBN7174) **Purity** 99%	503.5 µg/mL	+/- 2.9906 µg/mL +/- 12.5092 µg/mL +/- 14.9944 µg/mL	Gravimetric Unstressed Stressed
4	n-Tetradecane (C14) **CAS #** 629-59-4 (Lot STBK2282) **Purity** 99%	505.0 µg/mL	+/- 2.9995 µg/mL +/- 12.5465 µg/mL +/- 15.0390 µg/mL	Gravimetric Unstressed Stressed
5	n-Hexadecane (C16) **CAS #** 544-76-3 (Lot SHBM4146) **Purity** 98%	504.7 µg/mL	+/- 2.9978 µg/mL +/- 12.5390 µg/mL +/- 15.0301 µg/mL	Gravimetric Unstressed Stressed
6	n-Octadecane (C18) **CAS #** 593-45-3 (Lot VZKOJ) **Purity** 97%	504.4 µg/mL	+/- 2.9960 µg/mL +/- 12.5316 µg/mL +/- 15.0212 µg/mL	Gravimetric Unstressed Stressed
7	n-Eicosane (C20) **CAS #** 112-95-8 (Lot MKCF7888) **Purity** 99%	503.5 µg/mL	+/- 2.9906 µg/mL +/- 12.5092 µg/mL +/- 14.9944 µg/mL	Gravimetric Unstressed Stressed

8	n-Docosane (C22) **CAS #** 629-97-0 **Purity** 99%	(Lot MKCL8918)	504.5	µg/mL	+/- 2.9966 +/- 12.5340 +/- 15.0241	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
9	n-Tetracosane (C24) **CAS #** 646-31-1 **Purity** 99%	(Lot MKCN2863)	503.5	µg/mL	+/- 2.9906 +/- 12.5092 +/- 14.9944	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
10	n-Hexacosane (C26) **CAS #** 630-01-3 **Purity** 99%	(Lot MKCD4540)	504.0	µg/mL	+/- 2.9936 +/- 12.5216 +/- 15.0093	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
11	n-Octacosane (C28) **CAS #** 630-02-4 **Purity** 99%	(Lot BCCG0084)	504.5	µg/mL	+/- 2.9966 +/- 12.5340 +/- 15.0241	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
12	n-Triacontane (C30) **CAS #** 638-68-6 **Purity** 99%	(Lot MKCN9321)	505.0	µg/mL	+/- 2.9995 +/- 12.5465 +/- 15.0390	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
13	n-Dotriacontane (C32) **CAS #** 544-85-4 **Purity** 99%	(Lot BCBW0661)	505.0	µg/mL	+/- 2.9995 +/- 12.5465 +/- 15.0390	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
14	n-Tetratriacontane (C34) **CAS #** 14167-59-0 **Purity** 99%	(Lot OML4N)	504.5	µg/mL	+/- 2.9966 +/- 12.5340 +/- 15.0241	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
15	n-Hexatriacontane (C36) **CAS #** 630-06-8 **Purity** 99%	(Lot U25B014)	504.0	µg/mL	+/- 2.9936 +/- 12.5216 +/- 15.0093	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
16	n-Octatriacontane (C38) **CAS #** 7194-85-6 **Purity** 97%	(Lot 0000127235)	504.4	µg/mL	+/- 2.9960 +/- 12.5316 +/- 15.0212	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
17	n-Tetracontane (C40) **CAS #** 4181-95-7 **Purity** 98%	(Lot PADGI)	504.7	µg/mL	+/- 2.9978 +/- 12.5390 +/- 15.0301	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed

Solvent: Hexane
CAS # 110-54-3
Purity 99%

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

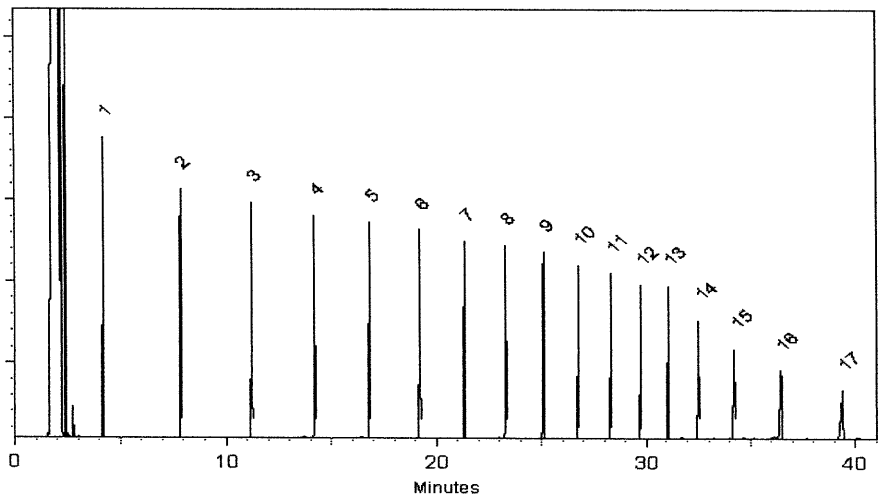
Carrier Gas:
hydrogen-constant pressure 10 psi.

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



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: 29-Jun-2022 **Balance:** 1128360905

Christie Mills - Operations Tech II - ARM QC

Date Passed: 01-Jul-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:

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

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.

RESTEK®
110 Benner Circle
Bellefonte, PA 16823-8812
Tel: (800)356-1688
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www.restek.com

CERTIFIED REFERENCE MATERIAL

Certificate of Analysis

ACCREDITED
ISO 17034 Accredited
Reference Material Producer
Certificate #3222.01

ACCREDITED
ISO/IEC 17025 Accredited
Testing Laboratory
Certificate #3222.02

FOR LABORATORY USE ONLY-READ SDS PRIOR TO USE.

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P11948
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P11962
7.8
07/11/2

Catalog No. : 31266 **Lot No.:** A0186840

Description : Florida TRPH Standard

Florida TRPH Standard 500µg/mL, Hexane, 1mL/ampul

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

Expiration Date : July 31, 2029 **Storage:** 25°C nominal

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

CERTIFIED VALUES

Elution Order	Compound	Grav. Conc. (weight/volume)	Expanded Uncertainty (95% C.L.; K=2)	
1	n-Octane (C8) **CAS #** 111-65-9 (Lot SHBN3807) **Purity** 99%	505.0 µg/mL	+/- 2.9995 µg/mL +/- 12.5465 µg/mL +/- 15.0390 µg/mL	Gravimetric Unstressed Stressed
2	n-Decane (C10) **CAS #** 124-18-5 (Lot SHBN8619) **Purity** 99%	503.0 µg/mL	+/- 2.9877 µg/mL +/- 12.4968 µg/mL +/- 14.9795 µg/mL	Gravimetric Unstressed Stressed
3	n-Dodecane (C12) **CAS #** 112-40-3 (Lot SHBN7174) **Purity** 99%	503.5 µg/mL	+/- 2.9906 µg/mL +/- 12.5092 µg/mL +/- 14.9944 µg/mL	Gravimetric Unstressed Stressed
4	n-Tetradecane (C14) **CAS #** 629-59-4 (Lot STBK2282) **Purity** 99%	505.0 µg/mL	+/- 2.9995 µg/mL +/- 12.5465 µg/mL +/- 15.0390 µg/mL	Gravimetric Unstressed Stressed
5	n-Hexadecane (C16) **CAS #** 544-76-3 (Lot SHBM4146) **Purity** 98%	504.7 µg/mL	+/- 2.9978 µg/mL +/- 12.5390 µg/mL +/- 15.0301 µg/mL	Gravimetric Unstressed Stressed
6	n-Octadecane (C18) **CAS #** 593-45-3 (Lot VZKOJ) **Purity** 97%	504.4 µg/mL	+/- 2.9960 µg/mL +/- 12.5316 µg/mL +/- 15.0212 µg/mL	Gravimetric Unstressed Stressed
7	n-Eicosane (C20) **CAS #** 112-95-8 (Lot MKCF7888) **Purity** 99%	503.5 µg/mL	+/- 2.9906 µg/mL +/- 12.5092 µg/mL +/- 14.9944 µg/mL	Gravimetric Unstressed Stressed

8	n-Docosane (C22) **CAS #** 629-97-0 **Purity** 99%	(Lot MKCL8918)	504.5	µg/mL	+/- 2.9966 +/- 12.5340 +/- 15.0241	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
9	n-Tetracosane (C24) **CAS #** 646-31-1 **Purity** 99%	(Lot MKCN2863)	503.5	µg/mL	+/- 2.9906 +/- 12.5092 +/- 14.9944	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
10	n-Hexacosane (C26) **CAS #** 630-01-3 **Purity** 99%	(Lot MKCD4540)	504.0	µg/mL	+/- 2.9936 +/- 12.5216 +/- 15.0093	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
11	n-Octacosane (C28) **CAS #** 630-02-4 **Purity** 99%	(Lot BCCG0084)	504.5	µg/mL	+/- 2.9966 +/- 12.5340 +/- 15.0241	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
12	n-Triacontane (C30) **CAS #** 638-68-6 **Purity** 99%	(Lot MKCN9321)	505.0	µg/mL	+/- 2.9995 +/- 12.5465 +/- 15.0390	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
13	n-Dotriacontane (C32) **CAS #** 544-85-4 **Purity** 99%	(Lot BCBW0661)	505.0	µg/mL	+/- 2.9995 +/- 12.5465 +/- 15.0390	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
14	n-Tetratriacontane (C34) **CAS #** 14167-59-0 **Purity** 99%	(Lot OML4N)	504.5	µg/mL	+/- 2.9966 +/- 12.5340 +/- 15.0241	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
15	n-Hexatriacontane (C36) **CAS #** 630-06-8 **Purity** 99%	(Lot U25B014)	504.0	µg/mL	+/- 2.9936 +/- 12.5216 +/- 15.0093	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
16	n-Octatriacontane (C38) **CAS #** 7194-85-6 **Purity** 97%	(Lot 0000127235)	504.4	µg/mL	+/- 2.9960 +/- 12.5316 +/- 15.0212	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
17	n-Tetracontane (C40) **CAS #** 4181-95-7 **Purity** 98%	(Lot PADGI)	504.7	µg/mL	+/- 2.9978 +/- 12.5390 +/- 15.0301	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed

Solvent: Hexane
CAS # 110-54-3
Purity 99%

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

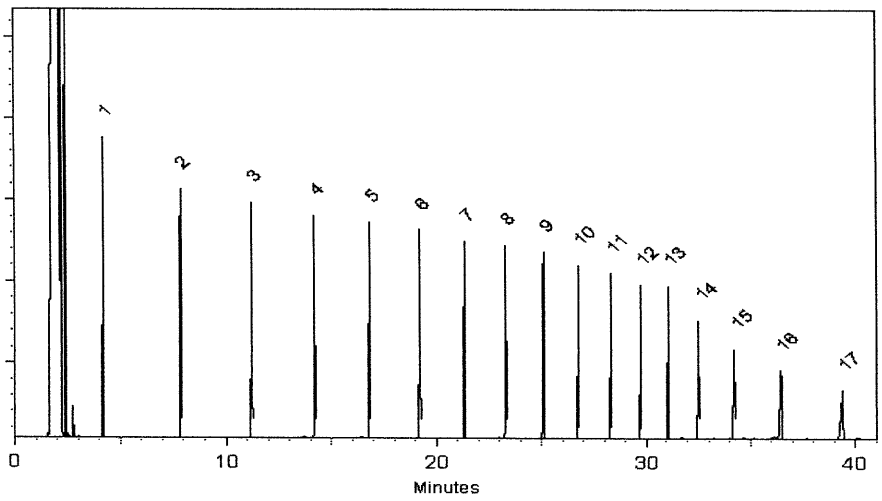
Carrier Gas:
hydrogen-constant pressure 10 psi.

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



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: 29-Jun-2022 **Balance:** 1128360905

Christie Mills - Operations Tech II - ARM QC

Date Passed: 01-Jul-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:

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

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

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ISO 17034 Accredited
Reference Material Producer
Certificate #3222.01

ACCREDITED
ISO/IEC 17025 Accredited
Testing Laboratory
Certificate #3222.02

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.

P11948
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P11962
7.8
07/11/2

Catalog No. : 31266 **Lot No.:** A0186840

Description : Florida TRPH Standard

Florida TRPH Standard 500µg/mL, Hexane, 1mL/ampul

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

Expiration Date : July 31, 2029 **Storage:** 25°C nominal

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

CERTIFIED VALUES

Elution Order	Compound	Grav. Conc. (weight/volume)	Expanded Uncertainty (95% C.L.; K=2)	
1	n-Octane (C8) **CAS #** 111-65-9 (Lot SHBN3807) **Purity** 99%	505.0 µg/mL	+/- 2.9995 µg/mL +/- 12.5465 µg/mL +/- 15.0390 µg/mL	Gravimetric Unstressed Stressed
2	n-Decane (C10) **CAS #** 124-18-5 (Lot SHBN8619) **Purity** 99%	503.0 µg/mL	+/- 2.9877 µg/mL +/- 12.4968 µg/mL +/- 14.9795 µg/mL	Gravimetric Unstressed Stressed
3	n-Dodecane (C12) **CAS #** 112-40-3 (Lot SHBN7174) **Purity** 99%	503.5 µg/mL	+/- 2.9906 µg/mL +/- 12.5092 µg/mL +/- 14.9944 µg/mL	Gravimetric Unstressed Stressed
4	n-Tetradecane (C14) **CAS #** 629-59-4 (Lot STBK2282) **Purity** 99%	505.0 µg/mL	+/- 2.9995 µg/mL +/- 12.5465 µg/mL +/- 15.0390 µg/mL	Gravimetric Unstressed Stressed
5	n-Hexadecane (C16) **CAS #** 544-76-3 (Lot SHBM4146) **Purity** 98%	504.7 µg/mL	+/- 2.9978 µg/mL +/- 12.5390 µg/mL +/- 15.0301 µg/mL	Gravimetric Unstressed Stressed
6	n-Octadecane (C18) **CAS #** 593-45-3 (Lot VZKOJ) **Purity** 97%	504.4 µg/mL	+/- 2.9960 µg/mL +/- 12.5316 µg/mL +/- 15.0212 µg/mL	Gravimetric Unstressed Stressed
7	n-Eicosane (C20) **CAS #** 112-95-8 (Lot MKCF7888) **Purity** 99%	503.5 µg/mL	+/- 2.9906 µg/mL +/- 12.5092 µg/mL +/- 14.9944 µg/mL	Gravimetric Unstressed Stressed

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9	n-Tetracosane (C24) **CAS #** 646-31-1 **Purity** 99%	(Lot MKCN2863)	503.5	µg/mL	+/- 2.9906 +/- 12.5092 +/- 14.9944	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
10	n-Hexacosane (C26) **CAS #** 630-01-3 **Purity** 99%	(Lot MKCD4540)	504.0	µg/mL	+/- 2.9936 +/- 12.5216 +/- 15.0093	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
11	n-Octacosane (C28) **CAS #** 630-02-4 **Purity** 99%	(Lot BCCG0084)	504.5	µg/mL	+/- 2.9966 +/- 12.5340 +/- 15.0241	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
12	n-Triacontane (C30) **CAS #** 638-68-6 **Purity** 99%	(Lot MKCN9321)	505.0	µg/mL	+/- 2.9995 +/- 12.5465 +/- 15.0390	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
13	n-Dotriacontane (C32) **CAS #** 544-85-4 **Purity** 99%	(Lot BCBW0661)	505.0	µg/mL	+/- 2.9995 +/- 12.5465 +/- 15.0390	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
14	n-Tetratriacontane (C34) **CAS #** 14167-59-0 **Purity** 99%	(Lot OML4N)	504.5	µg/mL	+/- 2.9966 +/- 12.5340 +/- 15.0241	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
15	n-Hexatriacontane (C36) **CAS #** 630-06-8 **Purity** 99%	(Lot U25B014)	504.0	µg/mL	+/- 2.9936 +/- 12.5216 +/- 15.0093	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
16	n-Octatriacontane (C38) **CAS #** 7194-85-6 **Purity** 97%	(Lot 0000127235)	504.4	µg/mL	+/- 2.9960 +/- 12.5316 +/- 15.0212	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
17	n-Tetracontane (C40) **CAS #** 4181-95-7 **Purity** 98%	(Lot PADGI)	504.7	µg/mL	+/- 2.9978 +/- 12.5390 +/- 15.0301	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed

Solvent: Hexane
CAS # 110-54-3
Purity 99%

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
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Inj. Temp:
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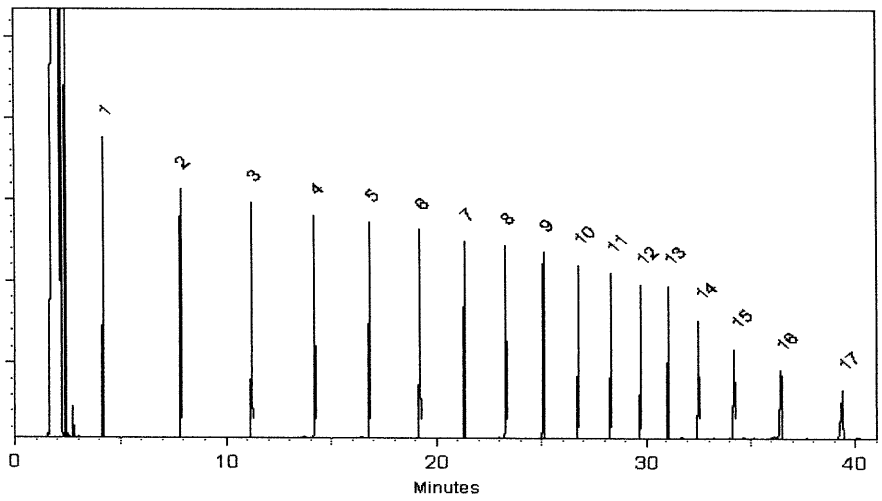
Det. Temp:
330°C

Det. Type:
FID



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Brittany Federinko - Operations Tech I

Date Mixed: 29-Jun-2022 **Balance:** 1128360905

Christie Mills - Operations Tech II - ARM QC

Date Passed: 01-Jul-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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CAS # 110-54-3
Purity 99%

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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:
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Det. Temp:
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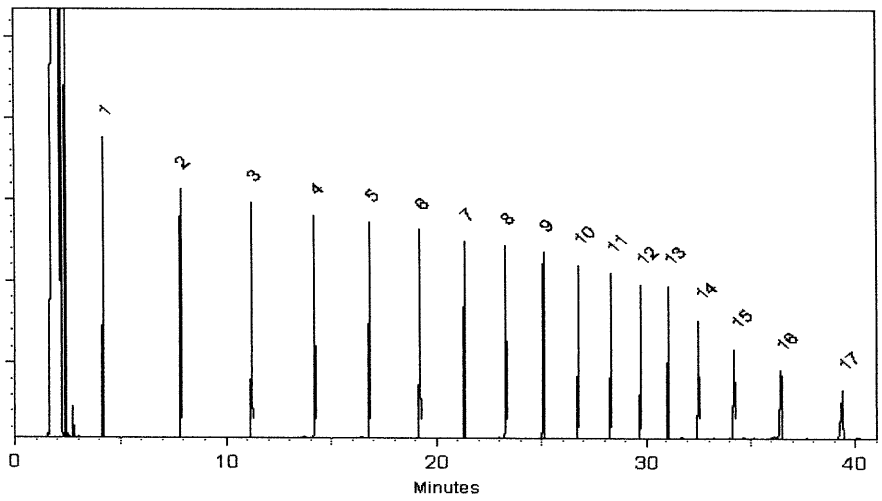
Det. Type:
FID



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Brittany Federinko - Operations Tech I

Date Mixed: 29-Jun-2022 **Balance:** 1128360905

Christie Mills - Operations Tech II - ARM QC

Date Passed: 01-Jul-2022

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

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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.

RESTEK

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

ilac-MRA A2LA ACCREDITED ISO 17034 Accredited Reference Material Producer Certificate #3222.01

ilac-MRA A2LA ACCREDITED ISO/IEC 17025 Accredited Testing Laboratory Certificate #3222.02

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. : 31266 **Lot No.:** A0204859

Description : Florida TRPH Standard

Florida TRPH Standard 500µg/mL, Hexane, 1mL/ampul

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

Expiration Date : December 31, 2030 **Storage:** 25°C nominal

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

P13103 → P13112 Y.P. 01/12/2024

CERTIFIED VALUES

Elution Order	Compound	CAS #	Lot #	Purity	Grav. Conc. (weight/volume)	Expanded Uncertainty * (95% C.L.; K=2)
1	n-Octane (C8)	111-65-9	SHBP9758	99%	504.4 µg/mL	+/- 13.0305
2	n-Decane (C10)	124-18-5	SHBQ1342	99%	503.6 µg/mL	+/- 13.0098
3	n-Dodecane (C12)	112-40-3	SHBP7054	99%	503.6 µg/mL	+/- 13.0098
4	n-Tetradecane (C14)	629-59-4	STBK5437	99%	504.0 µg/mL	+/- 13.0201
5	n-Hexadecane (C16)	544-76-3	SHBP8192	99%	504.0 µg/mL	+/- 13.0201
6	n-Octadecane (C18)	593-45-3	UE5NG	98%	504.1 µg/mL	+/- 13.0230
7	n-Eicosane (C20)	112-95-8	MKCN8767	97%	504.0 µg/mL	+/- 13.0204
8	n-Docosane (C22)	629-97-0	MKCQ3882	99%	503.6 µg/mL	+/- 13.0098
9	n-Tetracosane (C24)	646-31-1	MKCQ8345	99%	504.0 µg/mL	+/- 13.0201
10	n-Hexacosane (C26)	630-01-3	MKCQ4814	99%	504.0 µg/mL	+/- 13.0201
11	n-Octacosane (C28)	630-02-4	BCCG0084	99%	504.0 µg/mL	+/- 13.0201
12	n-Triacontane (C30)	638-68-6	MKCQ9436	97%	504.0 µg/mL	+/- 13.0204
13	n-Dotriacontane (C32)	544-85-4	BCBW0661	99%	504.0 µg/mL	+/- 13.0201
14	n-Tetratriacontane (C34)	14167-59-0	OML4N	99%	504.4 µg/mL	+/- 13.0305
15	n-Hexatriacontane (C36)	630-06-8	Z27H018	99%	504.0 µg/mL	+/- 13.0201
16	n-Octatriacontane (C38)	7194-85-6	0000145137	96%	503.8 µg/mL	+/- 13.0152
17	n-Tetracontane (C40)	4181-95-7	OKEGA	99%	503.6 µg/mL	+/- 13.0098

* 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.)

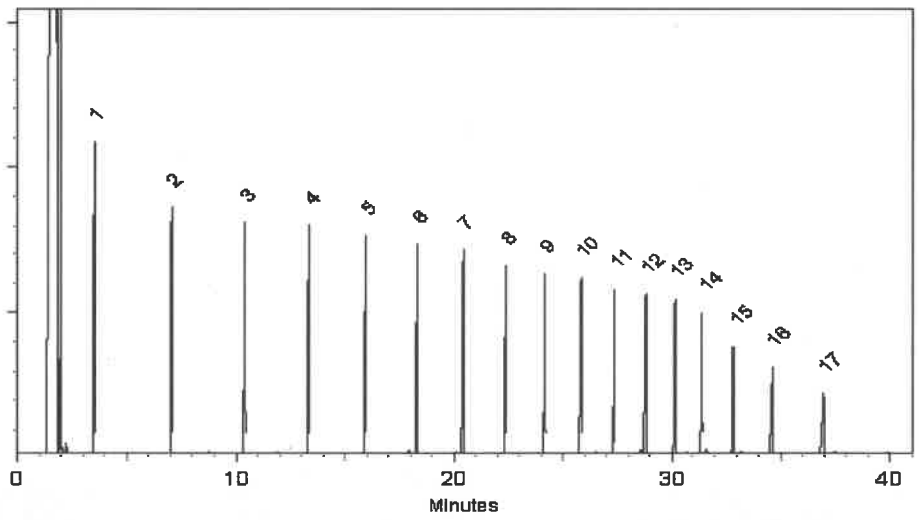
Inj. Temp:
250°C

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: 29-Nov-2023 **Balance Serial #** B442140311

Jennifer Pollino - Operations Tech III - ARM QC

Date Passed: 01-Dec-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:

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

  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.

RESTEK

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www.restek.com

CERTIFIED REFERENCE MATERIAL

Certificate of Analysis

chromatographic plus

ilac-MRA A2LA ACCREDITED ISO 17034 Accredited Reference Material Producer Certificate #3222.01

ilac-MRA A2LA ACCREDITED ISO/IEC 17025 Accredited Testing Laboratory Certificate #3222.02

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. : 31266 **Lot No.:** A0204859

Description : Florida TRPH Standard

Florida TRPH Standard 500µg/mL, Hexane, 1mL/ampul

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

Expiration Date : December 31, 2030 **Storage:** 25°C nominal

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

P13103 → P13112 Y.P. 01/12/2024

CERTIFIED VALUES

Elution Order	Compound	CAS #	Lot #	Purity	Grav. Conc. (weight/volume)	Expanded Uncertainty * (95% C.L.; K=2)
1	n-Octane (C8)	111-65-9	SHBP9758	99%	504.4 µg/mL	+/- 13.0305
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6	n-Octadecane (C18)	593-45-3	UE5NG	98%	504.1 µg/mL	+/- 13.0230
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8	n-Docosane (C22)	629-97-0	MKCQ3882	99%	503.6 µg/mL	+/- 13.0098
9	n-Tetracosane (C24)	646-31-1	MKCQ8345	99%	504.0 µg/mL	+/- 13.0201
10	n-Hexacosane (C26)	630-01-3	MKCQ4814	99%	504.0 µg/mL	+/- 13.0201
11	n-Octacosane (C28)	630-02-4	BCCG0084	99%	504.0 µg/mL	+/- 13.0201
12	n-Triacontane (C30)	638-68-6	MKCQ9436	97%	504.0 µg/mL	+/- 13.0204
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14	n-Tetratriacontane (C34)	14167-59-0	OML4N	99%	504.4 µg/mL	+/- 13.0305
15	n-Hexatriacontane (C36)	630-06-8	Z27H018	99%	504.0 µg/mL	+/- 13.0201
16	n-Octatriacontane (C38)	7194-85-6	0000145137	96%	503.8 µg/mL	+/- 13.0152
17	n-Tetracontane (C40)	4181-95-7	OKEGA	99%	503.6 µg/mL	+/- 13.0098

* 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.)

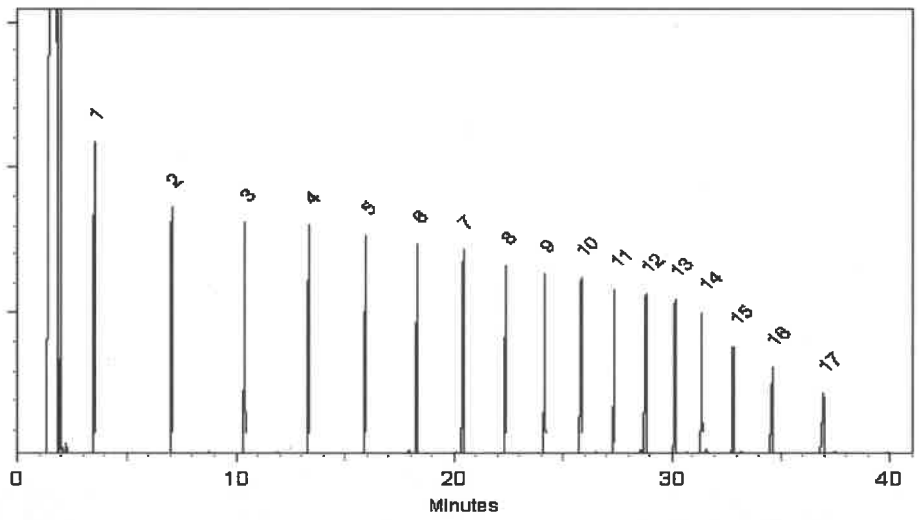
Inj. Temp:
250°C

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: 29-Nov-2023 **Balance Serial #** B442140311

Jennifer Pollino - Operations Tech III - ARM QC

Date Passed: 01-Dec-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:

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

  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.

ABSOLUTE STANDARDS, INC.

ISO - 17034

Certificate of Analysis

Certified Reference Material (CRM)

Conformance: The "Certificate of Analysis" is applicable for CRM's, fulfilling the requirements in the current version of: ISO 17034.

Health & Safety: See the attached SDS & Certified Weight Report before use.

Intended Use: This Certified Reference Material (CRM) is intended primarily for use in the characterization of unknowns and the establishment of analyzer or instrument response factors by qualified personnel. Typical instrumental organic assays include: GC & LC, and inorganic assays include: ICP & AA. This product is for laboratory use only.

Characterization Values: In production, gravimetric/volumetric readings are certified to be within +/- 0.5% of the stated value & are valid between 18 °C & 30 °C. The measured characterization of uncertainty can be found on the Certified Weight Report. All product weighings are performed on an analytical balance that is calibrated to NIST Traceable standard weights & certified by the manufacturer. The volumetric glassware used is Class "A" type & conforms to ASTM E-288 unless otherwise stated. The solvents & compounds used are of the highest practical purity & typically meet or exceed ACS Reagent Grade & ACS Standards Grade specifications. The expanded uncertainty field on Certified Wt. Report represents CRM uncertainty as described in ISO 17034.

Homogeneity: Uncertainties that are due to the analytical procedure(s) are within +/-5% unless specifically stated on the Certified Wt. Report.

Verification: Uncertainties that are due to the analytical procedure(s) are within +/-5% unless specifically stated on the Certified Wt. Report.

Stability: Uncertainties for short-term stability are determined in accordance with ISO 17034. Long-term stability is determined in accordance with ISO 17034. The shelf life is limited by the stated expiration for each product. Expiration dates and additional technical information can be found on the Certified Weight Report and on the product label.

Uncertainty: U_{CRM} is the expanded uncertainty which utilizes a K = 2 (coverage factor of 2), in accordance with ISO 17034 as listed above (Characterization, Homogeneity, Verification, and Stability).

Purity & Identity: Organic solutions are typically formulated from neat materials whose purity & identity have been characterized by GC-MSD & LC-PDA techniques with comparison to a NIST Traceable library of mass spectra when available. Additional characterization techniques may include but are not limited to: refractive index measurements of liquids, melting point measurements of solids, & GC-FID, ECD, PID, ELCD, LC-PDA measurements for purity. Inorganic solutions & neats are typically formulated from materials whose purity & identity have been characterized by ICPMS with comparison to a NIST SRM® when available. Additional characterization techniques may include but are not limited to: titrimetry, and densitometry.

Storage: Sealed ampules and other containers should be stored in the dark and at temperatures indicated on the Certified Weight Report or product label. Certification by Absolute Standards, Inc. is typically valid for 3 years from the date of manufacture. Each product will show its own expiration date as the limit of certification. Certified values are not applicable to opened ampules or for any materials stored in re-sealable containers. Please see the "Certified Weight Report" for specific values and any exceptions.

Usage: Ampules & bottles should be brought to room temperature (18 to 30 °C) before opening. Sonication may be required for high concentration solutions or solutions that may precipitate during storage. After opening, care should be exercised to avoid concentration changes owing to evaporation of the solvent or essential components. We recommend that a suitable re-sealable container be available before opening an ampule to decant the standard for short-term storage and use.

Minimum Sample Size: 0.5 uL for analytical applications.

Legal Notice: Warranty of products are as described when shipped. No warranty as to fitness for any particular application is expressed or implied. Errant shipments and/or quality claims must be made within 10 days of receipt. Liability is limited solely to the replacement of the product or refund of purchase price.

Certifying Officer: Stephen J. Arpie, M.S., Director General

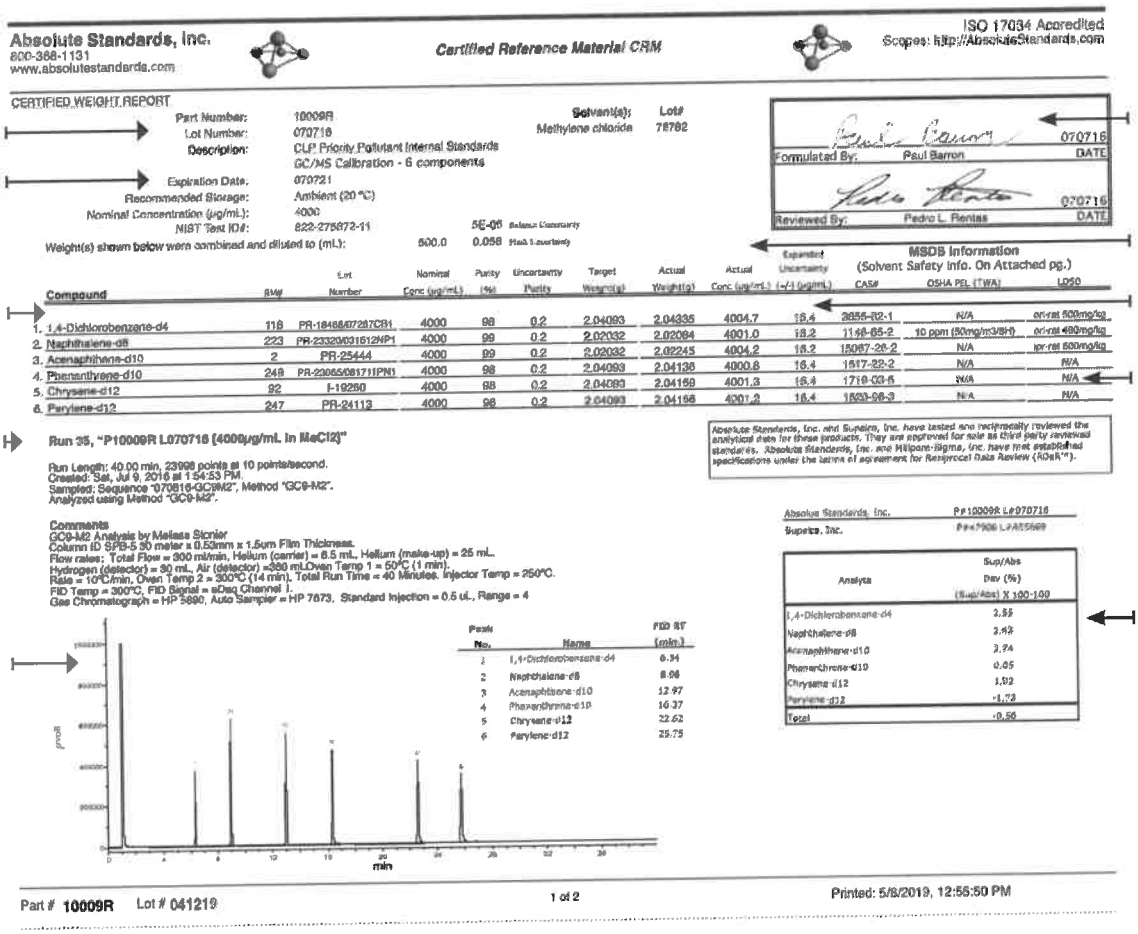
Absolute Standards, Inc. • 44 Rossotto Drive • Hamden, CT 06514
Voice: 800-368-1131 • Fax: 800-410-2577 • eMail: StephenArpie@AbsoluteStandards.com
Document Identification: Certificate of Analysis Rev 14, Date Issued: 05/30/2019

ABSOLUTE STANDARDS, INC.

ISO - 17034

Understanding the Certified Weight Report

Each Certified Reference Material (CRM) is supported by a Certified Weight Report. Assigned values for concentrations and associated uncertainties are based upon NIST traceable masses & volumes used in production.



Absolute Standards, Inc.
800-368-1131
www.absolutestandards.com

Certified Reference Material CRM

ISO 17034 Accredited
Scopes: http://AbsoluteStandards.com

CERTIFIED WEIGHT REPORT

Part Number: 10009R
Lot Number: 070716
Description: CLP Priority Pollutant Internal Standards GC/MS Calibration - 6 components
Expiration Date: 070721
Recommended Storage: Ambient (20 °C)
Nominal Concentration (µg/mL): 4000
NIST Test ID#: 822-275872-11

Solvent(s): Methylene chloride
Lot#: 78782

Formulated By: Paul Barron DATE 070716
Reviewed By: Pedro L. Reinas DATE 070716

Weight(s) shown below were combined and diluted to (mL): 500.0 5E-05 Balance Uncertainty 0.050 Flask Uncertainty

Compound	RM#	Lot Number	Nominal Conc (µg/mL)	Purity (%)	Uncertainty Purity	Target Weight(g)	Actual Weight(g)	Actual Conc (µg/mL)	Expanded Uncertainty (+/-) (µg/mL)	MSDS Information (Solvent Safety Info. On Attached pg.) CAS#	OSHA PEL (TWA)	LD50
1. 1,4-Dichlorobenzene-d4	118	PR-18488/07267CB1	4000	98	0.2	2.04093	2.04335	4004.7	16.4	3855-82-1	N/A	or-rat 500mg/kg
2. Naphthalene-d8	223	PR-233203031612NP1	4000	99	0.2	2.02032	2.02064	4001.0	16.2	1146-65-2	10 ppm (50mg/m3/8H)	or-rat 490mg/kg
3. Acenaphthene-d10	2	PR-25444	4000	99	0.2	2.02032	2.02245	4004.2	16.2	15067-26-2	N/A	ipr-rat 500mg/kg
4. Phenanthrene-d10	248	PR-23065/051711PN1	4000	98	0.2	2.04093	2.04136	4000.8	16.4	1517-22-2	N/A	N/A
5. Chrysene-d12	92	I-19250	4000	98	0.2	2.04093	2.04159	4001.3	16.4	1719-03-5	N/A	N/A
6. Perylene-d12	247	PR-24113	4000	96	0.2	2.04093	2.04156	4001.2	16.4	1520-96-3	N/A	N/A

Absolute Standards, Inc. and Supelco, Inc. have tested and reciprocally reviewed the analytical data for these products. They are approved for sale as third party reviewed standards. Absolute Standards, Inc. and Millipore-Sigma, Inc. have met established specifications under the terms of agreement for Reciprocal Data Review (RDaR™).

Run 35, "P10009R L070716 (4000µg/mL in MeC12)"

Run Length: 40.00 min, 23998 points at 10 points/second.
Created: Sat, Jul 9, 2016 at 1:54:53 PM.
Sampled: Sequence "070816-GC9M2", Method "GC9-M2".
Analyzed using Method "GC9-M2".

Comments
GC9-M2 Analysis by Melissa Sicnier
Column ID SPB-5 30 meter x 0.53mm x 1.5um 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) =300 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 = aDaq Channel 1.
Gas Chromatograph = HP 5890, Auto Sampler = HP 7673, Standard Injection = 0.5 uL, Range = 4

Peak No.	Name	FID RT (min.)
1	1,4-Dichlorobenzene-d4	6.34
2	Naphthalene-d8	8.06
3	Acenaphthene-d10	12.97
4	Phenanthrene-d10	16.37
5	Chrysene-d12	22.62
6	Perylene-d12	25.75

Absolute Standards, Inc. P# 10009R L# 070716
Supelco, Inc. P# [illegible] L# [illegible]

Analyte	Sup/Abs Dev (%) (Sup/Abs) X 100-100
1,4-Dichlorobenzene-d4	2.55
Naphthalene-d8	2.43
Acenaphthene-d10	3.74
Phenanthrene-d10	0.05
Chrysene-d12	1.02
Perylene-d12	-1.73
Total	-0.56

Part # 10009R Lot # 041219 1 of 2 Printed: 5/8/2019, 12:55:50 PM

Part #
Lot #
Shelf Life

Formulator
Reviewer

Actual Concentration

Target Compounds

Uncertainty Values

Health & Safety

Method of Analysis

Qualitative
Quantitative

3rd Party Comparison

For More Information, Contact:

StephenArpie@AbsoluteStandards.com

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Voice: 800-368-1131 • Fax: 800-410-2577 • eMail: StephenArpie@AbsoluteStandards.com
Document Identification: Certificate of Analysis Rev 14, Date Issued: 05/30/2019

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800-368-1131
www.absolutestandards.com

Certified Reference Material CRM

ANAB ISO 17034 Accredited
AR-1539 Certificate Number
https://Absolutestandards.com

CERTIFIED WEIGHT REPORT

Part Number: 72072
Lot Number: 101122
Description: n-Tetracosane-d50

Expiration Date: 101132
Recommended Storage: Ambient (20 °C)
Nominal Concentration (µg/mL): 1000
NIST Test ID#: 6UTB

Solvent(s):	Lot#
Methylene chloride	105345

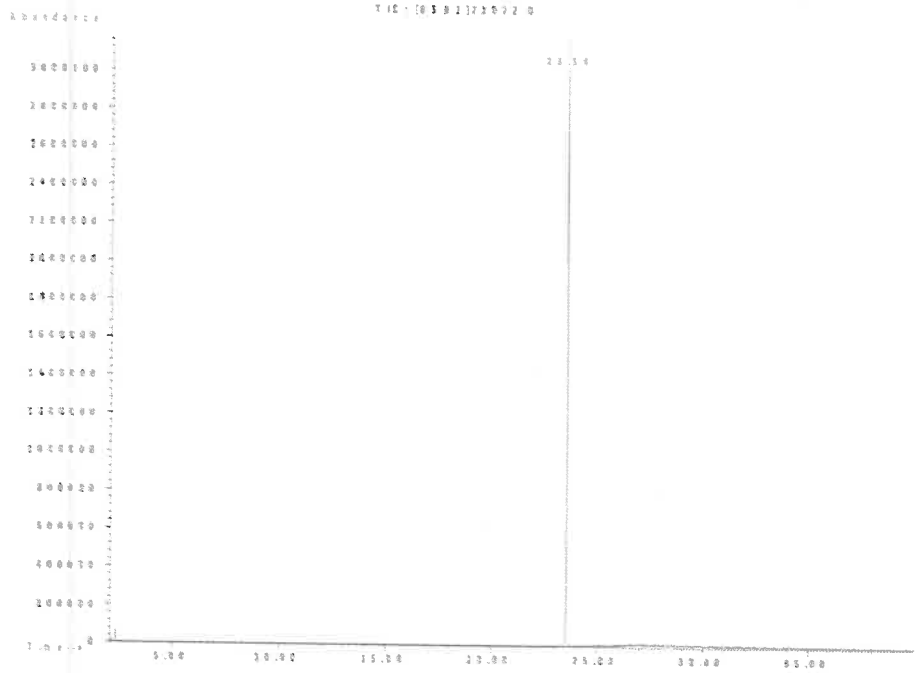
P13477 → P13496 } X.P. 07/24/24

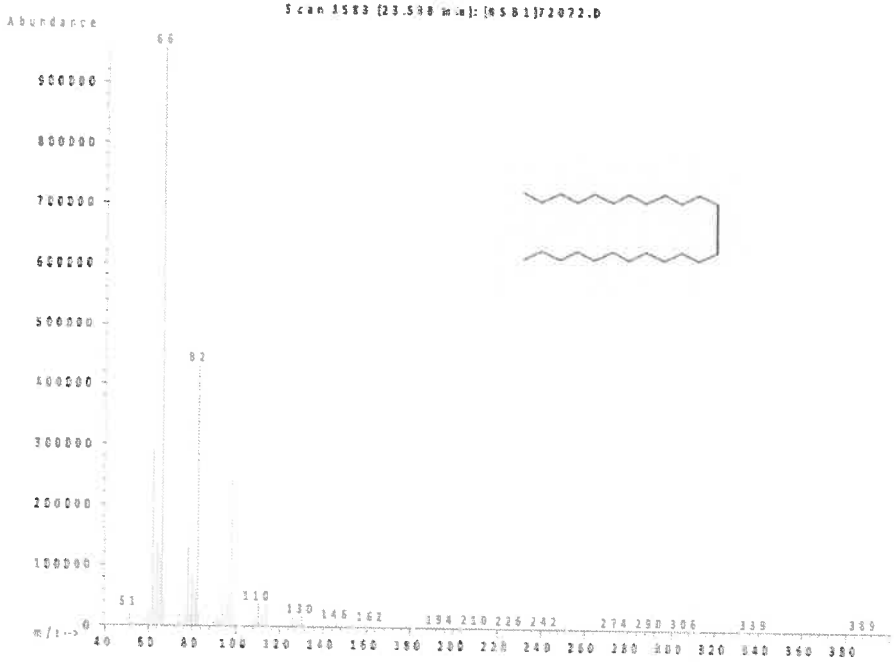
Formulated By:	Prashant Chauhan	101122 DATE
Reviewed By:	Pedro L. Rentas	101122 DATE

5E-05 Balance Uncertainty
Weight(s) shown below were combined and diluted to (mL): 200.0 0.058 Flask Uncertainty

Compound	RM#	Lot Number	Nominal Conc (µg/mL)	Purity (%)	Uncertainty Purity	Assay (%D)	Target Weight(g)	Actual Weight(g)	Actual Conc (µg/mL)	Expanded Uncertainty (+/-) (µg/mL)	SDS Information (Solvent Safety Info. On Attached pg.) CAS#	OSHA PEL (TWA)	LD50
1. n-Tetracosane-d50	2072	PR-26606	1000	98.7	0.2	99.0	0.20471	0.20482	1000.6	4.1	16416-32-3	N/A	N/A

Method GC8MSD-3.M: Column:SPB-5 (30m X 0.25mm ID X 0.25µm film thickness) Temp 1 = 50°C (1min.), Temp 2 = 300°C (9min.), Rate = 10°C/min., Injector B= 250°C, Detector B = 275°C, Split Ratio = 100:1, Scan Rate = 2. Analysis performed by: Candice Warren.





- 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, DC, (1994).

ABSOLUTE STANDARDS, INC.

ISO - 17034

Certificate of Analysis

Certified Reference Material (CRM)

Conformance: The "Certificate of Analysis" is applicable for CRM's, fulfilling the requirements in the current version of: ISO 17034.

Health & Safety: See the attached SDS & Certified Weight Report before use.

Intended Use: This Certified Reference Material (CRM) is intended primarily for use in the characterization of unknowns and the establishment of analyzer or instrument response factors by qualified personnel. Typical instrumental organic assays include: GC & LC, and inorganic assays include: ICP & AA. This product is for laboratory use only.

Characterization Values: In production, gravimetric/volumetric readings are certified to be within +/- 0.5% of the stated value & are valid between 18 °C & 30 °C. The measured characterization of uncertainty can be found on the Certified Weight Report. All product weighings are performed on an analytical balance that is calibrated to NIST Traceable standard weights & certified by the manufacturer. The volumetric glassware used is Class "A" type & conforms to ASTM E-288 unless otherwise stated. The solvents & compounds used are of the highest practical purity & typically meet or exceed ACS Reagent Grade & ACS Standards Grade specifications. The expanded uncertainty field on Certified Wt. Report represents CRM uncertainty as described in ISO 17034.

Homogeneity: Uncertainties that are due to the analytical procedure(s) are within +/-5% unless specifically stated on the Certified Wt. Report.

Verification: Uncertainties that are due to the analytical procedure(s) are within +/-5% unless specifically stated on the Certified Wt. Report.

Stability: Uncertainties for short-term stability are determined in accordance with ISO 17034. Long-term stability is determined in accordance with ISO 17034. The shelf life is limited by the stated expiration for each product. Expiration dates and additional technical information can be found on the Certified Weight Report and on the product label.

Uncertainty: U_{CRM} is the expanded uncertainty which utilizes a K = 2 (coverage factor of 2), in accordance with ISO 17034 as listed above (Characterization, Homogeneity, Verification, and Stability).

Purity & Identity: Organic solutions are typically formulated from neat materials whose purity & identity have been characterized by GC-MSD & LC-PDA techniques with comparison to a NIST Traceable library of mass spectra when available. Additional characterization techniques may include but are not limited to: refractive index measurements of liquids, melting point measurements of solids, & GC-FID, ECD, PID, ELCD, LC-PDA measurements for purity. Inorganic solutions & neats are typically formulated from materials whose purity & identity have been characterized by ICPMS with comparison to a NIST SRM® when available. Additional characterization techniques may include but are not limited to: titrimetry, and densitometry.

Storage: Sealed ampules and other containers should be stored in the dark and at temperatures indicated on the Certified Weight Report or product label. Certification by Absolute Standards, Inc. is typically valid for 3 years from the date of manufacture. Each product will show its own expiration date as the limit of certification. Certified values are not applicable to opened ampules or for any materials stored in re-sealable containers. Please see the "Certified Weight Report" for specific values and any exceptions.

Usage: Ampules & bottles should be brought to room temperature (18 to 30 °C) before opening. Sonication may be required for high concentration solutions or solutions that may precipitate during storage. After opening, care should be exercised to avoid concentration changes owing to evaporation of the solvent or essential components. We recommend that a suitable re-sealable container be available before opening an ampule to decant the standard for short-term storage and use.

Minimum Sample Size: 0.5 uL for analytical applications.

Legal Notice: Warranty of products are as described when shipped. No warranty as to fitness for any particular application is expressed or implied. Errant shipments and/or quality claims must be made within 10 days of receipt. Liability is limited solely to the replacement of the product or refund of purchase price.

Certifying Officer: Stephen J. Arpie, M.S., Director General

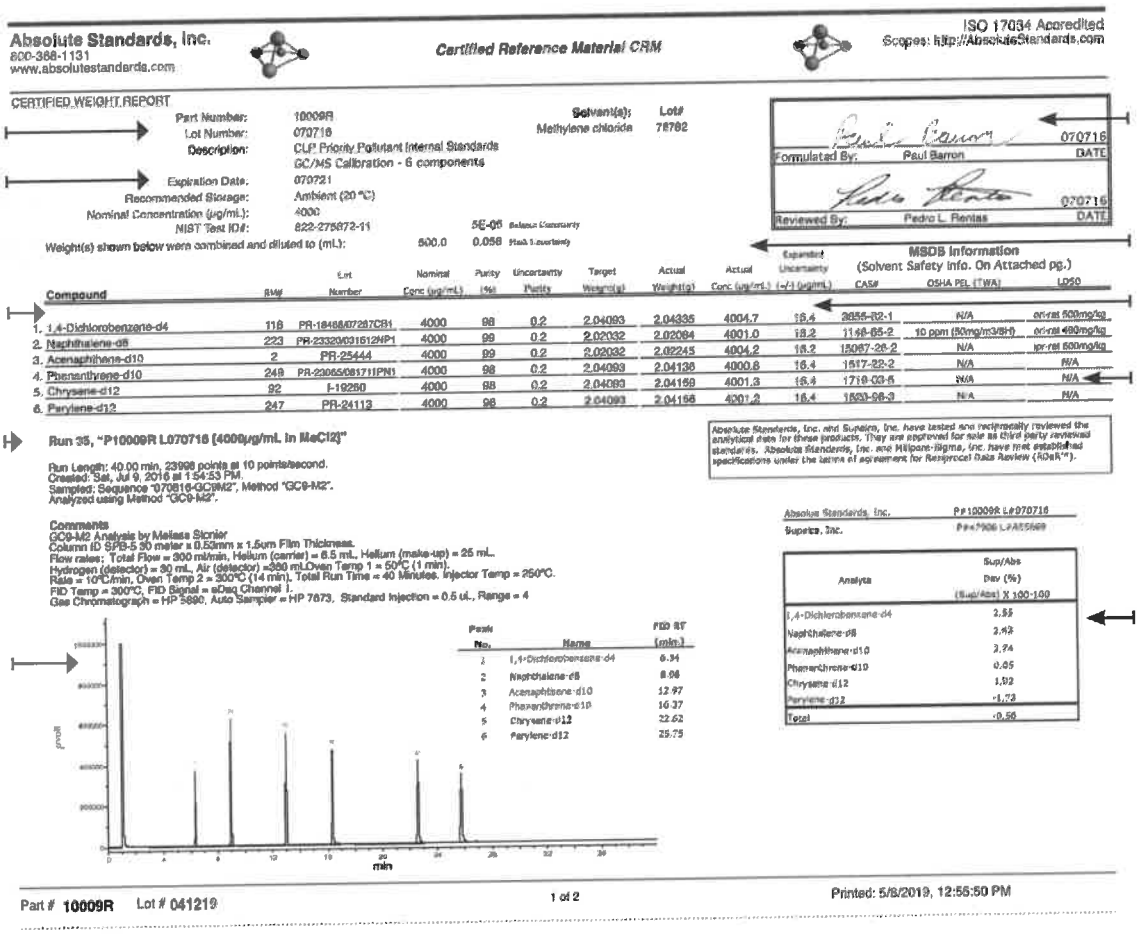
Absolute Standards, Inc. • 44 Rossotto Drive • Hamden, CT 06514
Voice: 800-368-1131 • Fax: 800-410-2577 • eMail: StephenArpie@AbsoluteStandards.com
Document Identification: Certificate of Analysis Rev 14, Date Issued: 05/30/2019

ABSOLUTE STANDARDS, INC.

ISO - 17034

Understanding the Certified Weight Report

Each Certified Reference Material (CRM) is supported by a Certified Weight Report. Assigned values for concentrations and associated uncertainties are based upon NIST traceable masses & volumes used in production.



Absolute Standards, Inc.
800-368-1131
www.absolutestandards.com

Certified Reference Material CRM

ISO 17034 Accredited
Scopes: http://AbsoluteStandards.com

CERTIFIED WEIGHT REPORT

Part Number: 10009R
Lot Number: 070716
Description: CLP Priority Pollutant Internal Standards GC/MS Calibration - 6 components
Expiration Date: 070721
Recommended Storage: Ambient (20 °C)
Nominal Concentration (µg/mL): 4000
NIST Test ID#: 822-275872-11

Solvent(s): Methylene chloride
Lot#: 78782

Formulated By: Paul Barron DATE 070716
Reviewed By: Pedro L. Reinas DATE 070716

Weight(s) shown below were combined and diluted to (mL): 500.0 5E-05 Balance Uncertainty 0.050 Flask Uncertainty

Compound	RM#	Lot Number	Nominal Conc (µg/mL)	Purity (%)	Uncertainty Purity	Target Weight(g)	Actual Weight(g)	Actual Conc (µg/mL)	Expanded Uncertainty (+/-) (µg/mL)	MSDS Information (Solvent Safety Info. On Attached pg.) CAS#	OSHA PEL (TWA)	LD50
1. 1,4-Dichlorobenzene-d4	118	PR-18488/07267CB1	4000	98	0.2	2.04093	2.04335	4004.7	16.4	3855-82-1	N/A	or-rat 500mg/kg
2. Naphthalene-d8	223	PR-233203031612NP1	4000	99	0.2	2.02032	2.02064	4001.0	16.2	1146-65-2	10 ppm (50mg/m3/8H)	or-rat 490mg/kg
3. Acenaphthene-d10	2	PR-25444	4000	99	0.2	2.02032	2.02245	4004.2	16.2	15067-26-2	N/A	ipr-rat 500mg/kg
4. Phenanthrene-d10	248	PR-23065/051711PN1	4000	98	0.2	2.04093	2.04136	4000.8	16.4	1517-22-2	N/A	N/A
5. Chrysene-d12	92	I-19250	4000	98	0.2	2.04093	2.04159	4001.3	16.4	1719-03-5	N/A	N/A
6. Perylene-d12	247	PR-24113	4000	96	0.2	2.04093	2.04156	4001.2	16.4	1520-96-3	N/A	N/A

Absolute Standards, Inc. and Supelco, Inc. have tested and reciprocally reviewed the analytical data for these products. They are approved for sale as third party reviewed standards. Absolute Standards, Inc. and Millipore-Sigma, Inc. have met established specifications under the terms of agreement for Reciprocal Data Review (RDaR™).

Run 35, "P10009R L070716 (4000µg/mL in MeC12)"

Run Length: 40.00 min, 23998 points at 10 points/second.
Created: Sat, Jul 9, 2016 at 1:54:53 PM.
Sampled: Sequence "070816-GC9M2", Method "GC9-M2".
Analyzed using Method "GC9-M2".

Comments
GC9-M2 Analysis by Melissa Sicnier
Column ID SPB-5 30 meter x 0.53mm x 1.5um 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) =300 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 = aDaq Channel 1.
Gas Chromatograph = HP 5890, Auto Sampler = HP 7673, Standard Injection = 0.5 uL, Range = 4

Peak No.	Name	FID RT (min.)
1	1,4-Dichlorobenzene-d4	6.34
2	Naphthalene-d8	8.06
3	Acenaphthene-d10	12.97
4	Phenanthrene-d10	16.37
5	Chrysene-d12	22.62
6	Perylene-d12	25.75

Absolute Standards, Inc. P# 10009R L# 070716
Supelco, Inc. P# [illegible] L# [illegible]

Analyte	Sup/Abs Dev (%) (Sup/Abs) X 100-100
1,4-Dichlorobenzene-d4	2.55
Naphthalene-d8	2.43
Acenaphthene-d10	3.74
Phenanthrene-d10	0.05
Chrysene-d12	1.02
Perylene-d12	-1.73
Total	-0.56

Part # 10009R Lot # 041219 1 of 2 Printed: 5/8/2019, 12:55:50 PM

Part #
Lot #
Shelf Life

Formulator
Reviewer

Actual Concentration

Target Compounds

Uncertainty Values

Health & Safety

Method of Analysis

Qualitative
Quantitative

3rd Party Comparison

For More Information, Contact:

StephenArpie@AbsoluteStandards.com

Absolute Standards, Inc. • 44 Rossotto Drive • Hamden, CT 06514
Voice: 800-368-1131 • Fax: 800-410-2577 • eMail: StephenArpie@AbsoluteStandards.com
Document Identification: Certificate of Analysis Rev 14, Date Issued: 05/30/2019

Absolute Standards, Inc.
800-368-1131
www.absolutestandards.com

Certified Reference Material CRM

ANAB ISO 17034 Accredited
AR-1539 Certificate Number
https://Absolutestandards.com

CERTIFIED WEIGHT REPORT

Part Number: 72072
Lot Number: 101122
Description: n-Tetracosane-d50

Expiration Date: 101132
Recommended Storage: Ambient (20 °C)
Nominal Concentration (µg/mL): 1000
NIST Test ID#: 6UTB

Solvent(s):	Lot#
Methylene chloride	105345

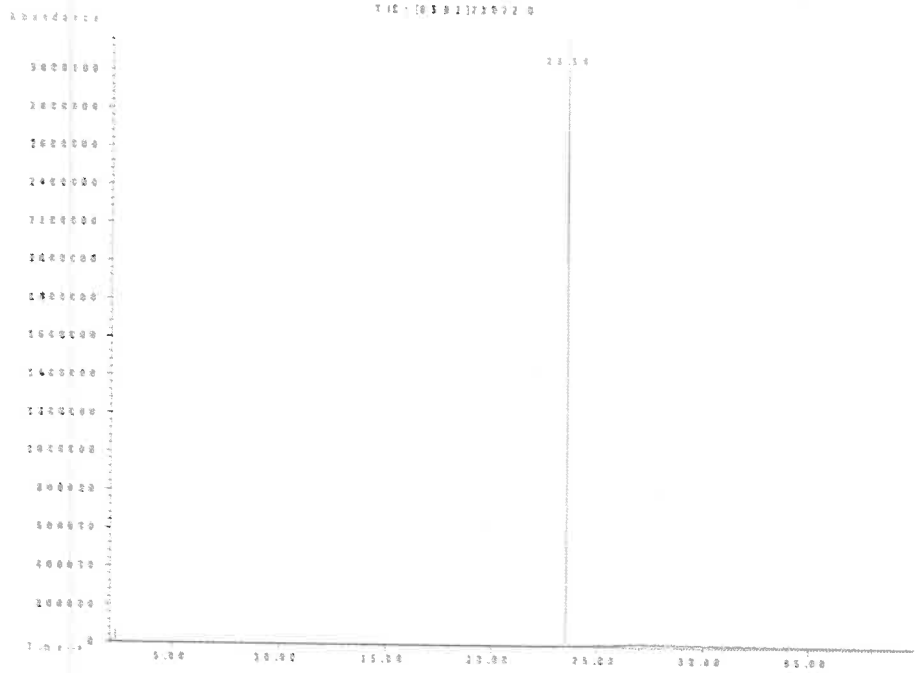
P13477 → P13496 } X.P. 07/24/24

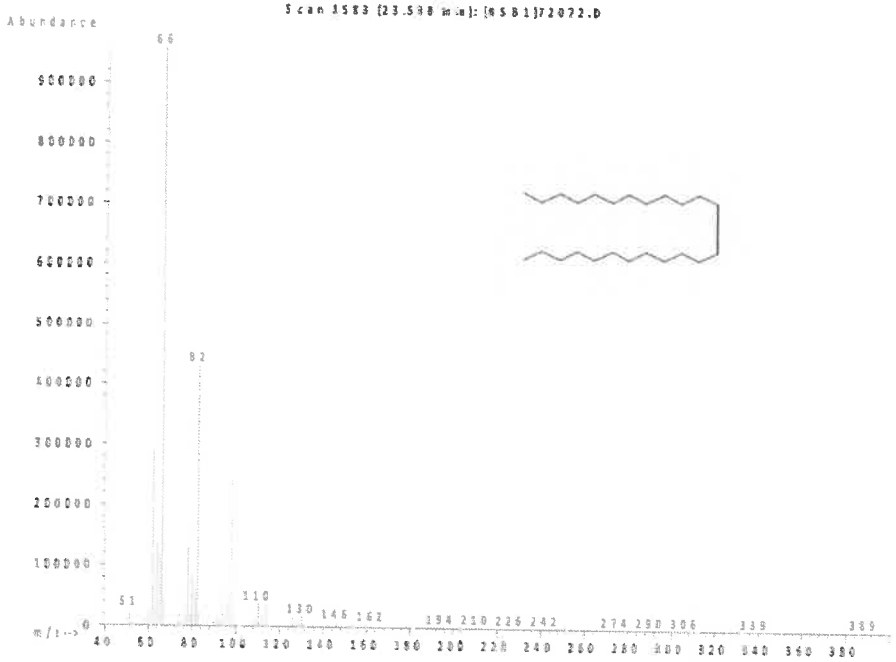
Formulated By:	Prashant Chauhan	101122 DATE
Reviewed By:	Pedro L. Rentas	101122 DATE

5E-05 Balance Uncertainty
Weight(s) shown below were combined and diluted to (mL): 200.0 0.058 Flask Uncertainty

Compound	RM#	Lot Number	Nominal Conc (µg/mL)	Purity (%)	Uncertainty Purity	Assay (%D)	Target Weight(g)	Actual Weight(g)	Actual Conc (µg/mL)	Expanded Uncertainty (+/-) (µg/mL)	SDS Information (Solvent Safety Info. On Attached pg.) CAS#	OSHA PEL (TWA)	LD50
1. n-Tetracosane-d50	2072	PR-26606	1000	98.7	0.2	99.0	0.20471	0.20482	1000.6	4.1	16416-32-3	N/A	N/A

Method GC8MSD-3.M: Column:SPB-5 (30m X 0.25mm ID X 0.25µm film thickness) Temp 1 = 50°C (1min.), Temp 2 = 300°C (9min.), Rate = 10°C/min., Injector B= 250°C, Detector B = 275°C, Split Ratio = 100:1, Scan Rate = 2. Analysis performed by: Candice Warren.





- 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, DC, (1994).

ABSOLUTE STANDARDS, INC.

ISO - 17034

Certificate of Analysis

Certified Reference Material (CRM)

Conformance: The "Certificate of Analysis" is applicable for CRM's, fulfilling the requirements in the current version of: ISO 17034.

Health & Safety: See the attached SDS & Certified Weight Report before use.

Intended Use: This Certified Reference Material (CRM) is intended primarily for use in the characterization of unknowns and the establishment of analyzer or instrument response factors by qualified personnel. Typical instrumental organic assays include: GC & LC, and inorganic assays include: ICP & AA. This product is for laboratory use only.

Characterization Values: In production, gravimetric/volumetric readings are certified to be within +/- 0.5% of the stated value & are valid between 18 °C & 30 °C. The measured characterization of uncertainty can be found on the Certified Weight Report. All product weighings are performed on an analytical balance that is calibrated to NIST Traceable standard weights & certified by the manufacturer. The volumetric glassware used is Class "A" type & conforms to ASTM E-288 unless otherwise stated. The solvents & compounds used are of the highest practical purity & typically meet or exceed ACS Reagent Grade & ACS Standards Grade specifications. The expanded uncertainty field on Certified Wt. Report represents CRM uncertainty as described in ISO 17034.

Homogeneity: Uncertainties that are due to the analytical procedure(s) are within +/-5% unless specifically stated on the Certified Wt. Report.

Verification: Uncertainties that are due to the analytical procedure(s) are within +/-5% unless specifically stated on the Certified Wt. Report.

Stability: Uncertainties for short-term stability are determined in accordance with ISO 17034. Long-term stability is determined in accordance with ISO 17034. The shelf life is limited by the stated expiration for each product. Expiration dates and additional technical information can be found on the Certified Weight Report and on the product label.

Uncertainty: U_{CRM} is the expanded uncertainty which utilizes a K = 2 (coverage factor of 2), in accordance with ISO 17034 as listed above (Characterization, Homogeneity, Verification, and Stability).

Purity & Identity: Organic solutions are typically formulated from neat materials whose purity & identity have been characterized by GC-MSD & LC-PDA techniques with comparison to a NIST Traceable library of mass spectra when available. Additional characterization techniques may include but are not limited to: refractive index measurements of liquids, melting point measurements of solids, & GC-FID, ECD, PID, ELCD, LC-PDA measurements for purity. Inorganic solutions & neats are typically formulated from materials whose purity & identity have been characterized by ICPMS with comparison to a NIST SRM® when available. Additional characterization techniques may include but are not limited to: titrimetry, and densitometry.

Storage: Sealed ampules and other containers should be stored in the dark and at temperatures indicated on the Certified Weight Report or product label. Certification by Absolute Standards, Inc. is typically valid for 3 years from the date of manufacture. Each product will show its own expiration date as the limit of certification. Certified values are not applicable to opened ampules or for any materials stored in re-sealable containers. Please see the "Certified Weight Report" for specific values and any exceptions.

Usage: Ampules & bottles should be brought to room temperature (18 to 30 °C) before opening. Sonication may be required for high concentration solutions or solutions that may precipitate during storage. After opening, care should be exercised to avoid concentration changes owing to evaporation of the solvent or essential components. We recommend that a suitable re-sealable container be available before opening an ampule to decant the standard for short-term storage and use.

Minimum Sample Size: 0.5 uL for analytical applications.

Legal Notice: Warranty of products are as described when shipped. No warranty as to fitness for any particular application is expressed or implied. Errant shipments and/or quality claims must be made within 10 days of receipt. Liability is limited solely to the replacement of the product or refund of purchase price.

Certifying Officer: Stephen J. Arpie, M.S., Director General

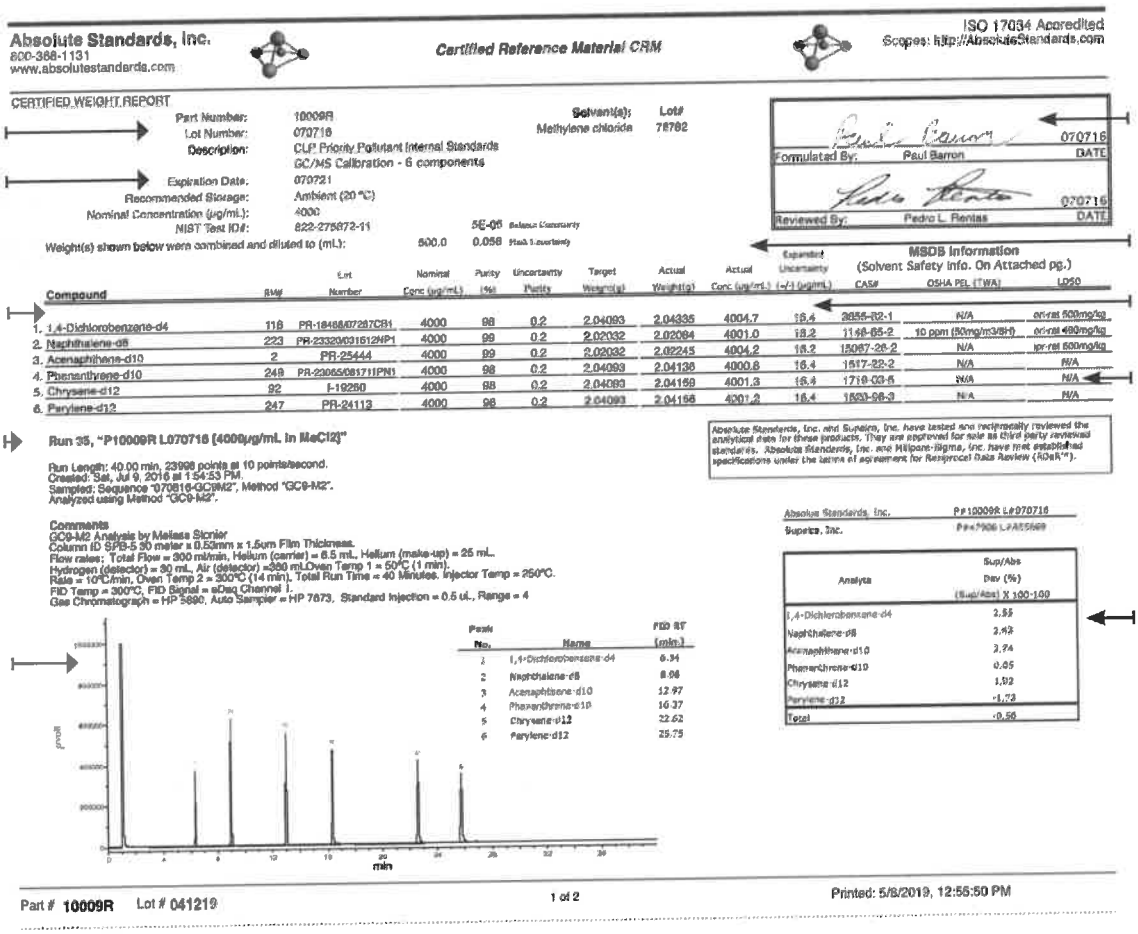
Absolute Standards, Inc. • 44 Rossotto Drive • Hamden, CT 06514
Voice: 800-368-1131 • Fax: 800-410-2577 • eMail: StephenArpie@AbsoluteStandards.com
Document Identification: Certificate of Analysis Rev 14, Date Issued: 05/30/2019

ABSOLUTE STANDARDS, INC.

ISO - 17034

Understanding the Certified Weight Report

Each Certified Reference Material (CRM) is supported by a Certified Weight Report. Assigned values for concentrations and associated uncertainties are based upon NIST traceable masses & volumes used in production.



Absolute Standards, Inc.
800-368-1131
www.absolutestandards.com

Certified Reference Material CRM

ISO 17034 Accredited
Scopes: http://AbsoluteStandards.com

CERTIFIED WEIGHT REPORT

Part Number: 10009R
Lot Number: 070716
Description: CLP Priority Pollutant Internal Standards GC/MS Calibration - 6 components
Expiration Date: 070721
Recommended Storage: Ambient (20 °C)
Nominal Concentration (µg/mL): 4000
NIST Test ID#: 822-275872-11

Solvent(s): Methylene chloride
Lot#: 78782

Formulated By: Paul Barron DATE 070716
Reviewed By: Pedro L. Reinas DATE 070716

Weight(s) shown below were combined and diluted to (mL): 500.0 5E-05 Balance Uncertainty 0.050 Flask Uncertainty

Compound	RM#	Lot Number	Nominal Conc (µg/mL)	Purity (%)	Uncertainty Purity	Target Weight(g)	Actual Weight(g)	Actual Conc (µg/mL)	Expanded Uncertainty (+/-) (µg/mL)	MSDS Information (Solvent Safety Info. On Attached pg.) CAS#	OSHA PEL (TWA)	LD50
1. 1,4-Dichlorobenzene-d4	118	PR-18488/07267CB1	4000	98	0.2	2.04093	2.04335	4004.7	16.4	3855-82-1	N/A	or-rat 500mg/kg
2. Naphthalene-d8	223	PR-233203031612NP1	4000	99	0.2	2.02032	2.02064	4001.0	16.2	1146-65-2	10 ppm (50mg/m3/8H)	or-rat 490mg/kg
3. Acenaphthene-d10	2	PR-25444	4000	99	0.2	2.02032	2.02245	4004.2	16.2	15067-26-2	N/A	ipr-rat 500mg/kg
4. Phenanthrene-d10	248	PR-23065/051711PN1	4000	98	0.2	2.04093	2.04136	4000.8	16.4	1517-22-2	N/A	N/A
5. Chrysene-d12	92	I-19250	4000	98	0.2	2.04093	2.04159	4001.3	16.4	1719-03-5	N/A	N/A
6. Perylene-d12	247	PR-24113	4000	96	0.2	2.04093	2.04156	4001.2	16.4	1520-96-3	N/A	N/A

Absolute Standards, Inc. and Supelco, Inc. have tested and reciprocally reviewed the analytical data for these products. They are approved for sale as third party reviewed standards. Absolute Standards, Inc. and Millipore-Sigma, Inc. have met established specifications under the terms of agreement for Reciprocal Data Review (RDaR™).

Run 35, "P10009R L070716 (4000µg/mL in MeC12)"

Run Length: 40.00 min, 23998 points at 10 points/second.
Created: Sat, Jul 9, 2016 at 1:54:53 PM.
Sampled: Sequence "070816-GC9M2", Method "GC9-M2".
Analyzed using Method "GC9-M2".

Comments
GC9-M2 Analysis by Melissa Sicnier
Column ID SPB-5 30 meter x 0.53mm x 1.5um 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) =300 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 = aDaq Channel 1.
Gas Chromatograph = HP 5890, Auto Sampler = HP 7673, Standard Injection = 0.5 uL, Range = 4

Peak No.	Name	FID RT (min.)
1	1,4-Dichlorobenzene-d4	6.34
2	Naphthalene-d8	8.06
3	Acenaphthene-d10	12.97
4	Phenanthrene-d10	16.37
5	Chrysene-d12	22.62
6	Perylene-d12	25.75

Absolute Standards, Inc. P# 10009R L# 070716
Supelco, Inc. P# [illegible] L# [illegible]

Analyte	Sup/Abs Dev (%) (Sup/Abs) X 100-100
1,4-Dichlorobenzene-d4	2.55
Naphthalene-d8	2.43
Acenaphthene-d10	3.74
Phenanthrene-d10	0.05
Chrysene-d12	1.02
Perylene-d12	-1.73
Total	-0.56

Part # 10009R Lot # 041219 1 of 2 Printed: 5/8/2019, 12:55:50 PM

Part #
Lot #
Shelf Life

Formulator
Reviewer

Actual Concentration

Target Compounds

Uncertainty Values

Health & Safety

Method of Analysis

Qualitative
Quantitative

3rd Party Comparison

For More Information, Contact:

StephenArpie@AbsoluteStandards.com

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Document Identification: Certificate of Analysis Rev 14, Date Issued: 05/30/2019

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www.absolutestandards.com

Certified Reference Material CRM

ANAB ISO 17034 Accredited
AR-1539 Certificate Number
https://Absolutestandards.com

CERTIFIED WEIGHT REPORT

Part Number: 72072
Lot Number: 101122
Description: n-Tetracosane-d50

Expiration Date: 101132
Recommended Storage: Ambient (20 °C)
Nominal Concentration (µg/mL): 1000
NIST Test ID#: 6UTB

Solvent(s):	Lot#
Methylene chloride	105345

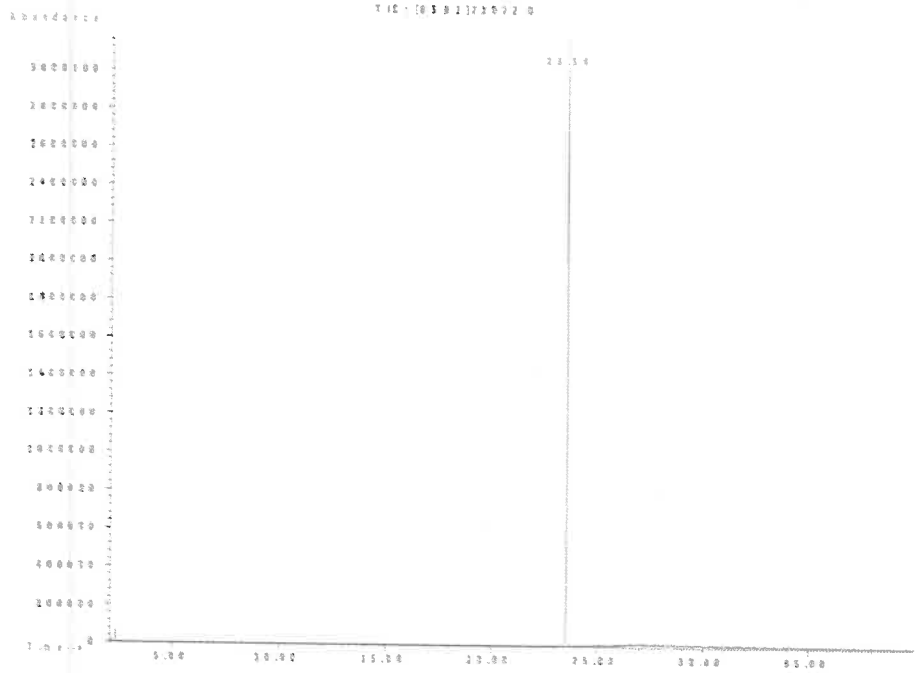
P13477 → P13496 } X.P. 07/24/24

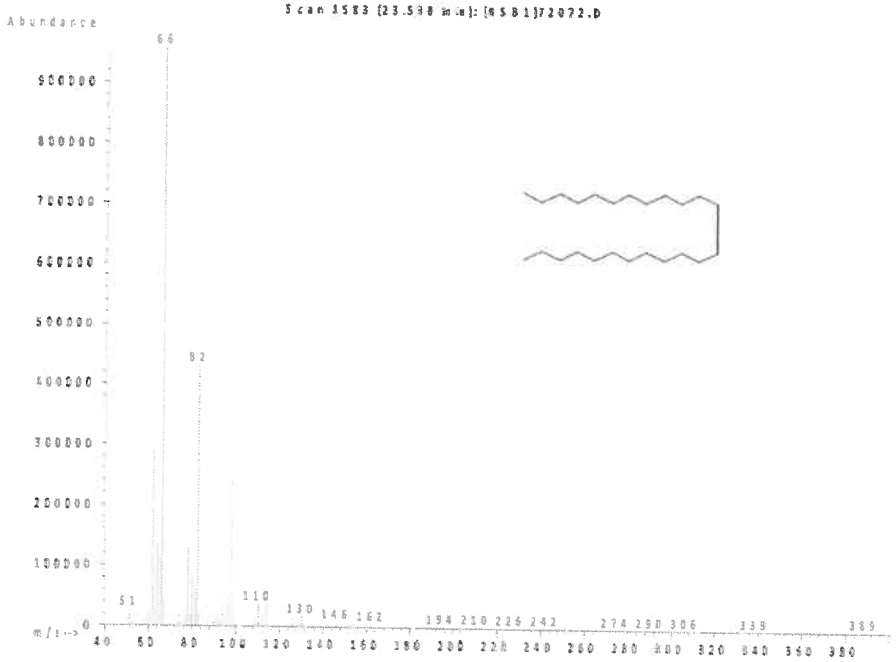
Formulated By:	Prashant Chauhan	101122 DATE
Reviewed By:	Pedro L. Rentas	101122 DATE

5E-05 Balance Uncertainty
Weight(s) shown below were combined and diluted to (mL): 200.0 0.058 Flask Uncertainty

Compound	RM#	Lot Number	Nominal Conc (µg/mL)	Purity (%)	Uncertainty Purity	Assay (%D)	Target Weight(g)	Actual Weight(g)	Actual Conc (µg/mL)	Expanded Uncertainty (+/-) (µg/mL)	SDS Information (Solvent Safety Info. On Attached pg.) CAS#	OSHA PEL (TWA)	LD50
1. n-Tetracosane-d50	2072	PR-26606	1000	98.7	0.2	99.0	0.20471	0.20482	1000.6	4.1	16416-32-3	N/A	N/A

Method GC8MSD-3.M: Column:SPB-5 (30m X 0.25mm ID X 0.25µm film thickness) Temp 1 = 50°C (1min.), Temp 2 = 300°C (9min.), Rate = 10°C/min., Injector B= 250°C, Detector B = 275°C, Split Ratio = 100:1, Scan Rate = 2. Analysis performed by: Candice Warren.





- 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, DC, (1994).

ABSOLUTE STANDARDS, INC.

ISO - 17034

Certificate of Analysis

Certified Reference Material (CRM)

Conformance: The "Certificate of Analysis" is applicable for CRM's, fulfilling the requirements in the current version of: ISO 17034.

Health & Safety: See the attached SDS & Certified Weight Report before use.

Intended Use: This Certified Reference Material (CRM) is intended primarily for use in the characterization of unknowns and the establishment of analyzer or instrument response factors by qualified personnel. Typical instrumental organic assays include: GC & LC, and inorganic assays include: ICP & AA. This product is for laboratory use only.

Characterization Values: In production, gravimetric/volumetric readings are certified to be within +/- 0.5% of the stated value & are valid between 18 °C & 30 °C. The measured characterization of uncertainty can be found on the Certified Weight Report. All product weighings are performed on an analytical balance that is calibrated to NIST Traceable standard weights & certified by the manufacturer. The volumetric glassware used is Class "A" type & conforms to ASTM E-288 unless otherwise stated. The solvents & compounds used are of the highest practical purity & typically meet or exceed ACS Reagent Grade & ACS Standards Grade specifications. The expanded uncertainty field on Certified Wt. Report represents CRM uncertainty as described in ISO 17034.

Homogeneity: Uncertainties that are due to the analytical procedure(s) are within +/-5% unless specifically stated on the Certified Wt. Report.

Verification: Uncertainties that are due to the analytical procedure(s) are within +/-5% unless specifically stated on the Certified Wt. Report.

Stability: Uncertainties for short-term stability are determined in accordance with ISO 17034. Long-term stability is determined in accordance with ISO 17034. The shelf life is limited by the stated expiration for each product. Expiration dates and additional technical information can be found on the Certified Weight Report and on the product label.

Uncertainty: U_{CRM} is the expanded uncertainty which utilizes a K = 2 (coverage factor of 2), in accordance with ISO 17034 as listed above (Characterization, Homogeneity, Verification, and Stability).

Purity & Identity: Organic solutions are typically formulated from neat materials whose purity & identity have been characterized by GC-MSD & LC-PDA techniques with comparison to a NIST Traceable library of mass spectra when available. Additional characterization techniques may include but are not limited to: refractive index measurements of liquids, melting point measurements of solids, & GC-FID, ECD, PID, ELCD, LC-PDA measurements for purity. Inorganic solutions & neats are typically formulated from materials whose purity & identity have been characterized by ICPMS with comparison to a NIST SRM® when available. Additional characterization techniques may include but are not limited to: titrimetry, and densitometry.

Storage: Sealed ampules and other containers should be stored in the dark and at temperatures indicated on the Certified Weight Report or product label. Certification by Absolute Standards, Inc. is typically valid for 3 years from the date of manufacture. Each product will show its own expiration date as the limit of certification. Certified values are not applicable to opened ampules or for any materials stored in re-sealable containers. Please see the "Certified Weight Report" for specific values and any exceptions.

Usage: Ampules & bottles should be brought to room temperature (18 to 30 °C) before opening. Sonication may be required for high concentration solutions or solutions that may precipitate during storage. After opening, care should be exercised to avoid concentration changes owing to evaporation of the solvent or essential components. We recommend that a suitable re-sealable container be available before opening an ampule to decant the standard for short-term storage and use.

Minimum Sample Size: 0.5 uL for analytical applications.

Legal Notice: Warranty of products are as described when shipped. No warranty as to fitness for any particular application is expressed or implied. Errant shipments and/or quality claims must be made within 10 days of receipt. Liability is limited solely to the replacement of the product or refund of purchase price.

Certifying Officer: Stephen J. Arpie, M.S., Director General

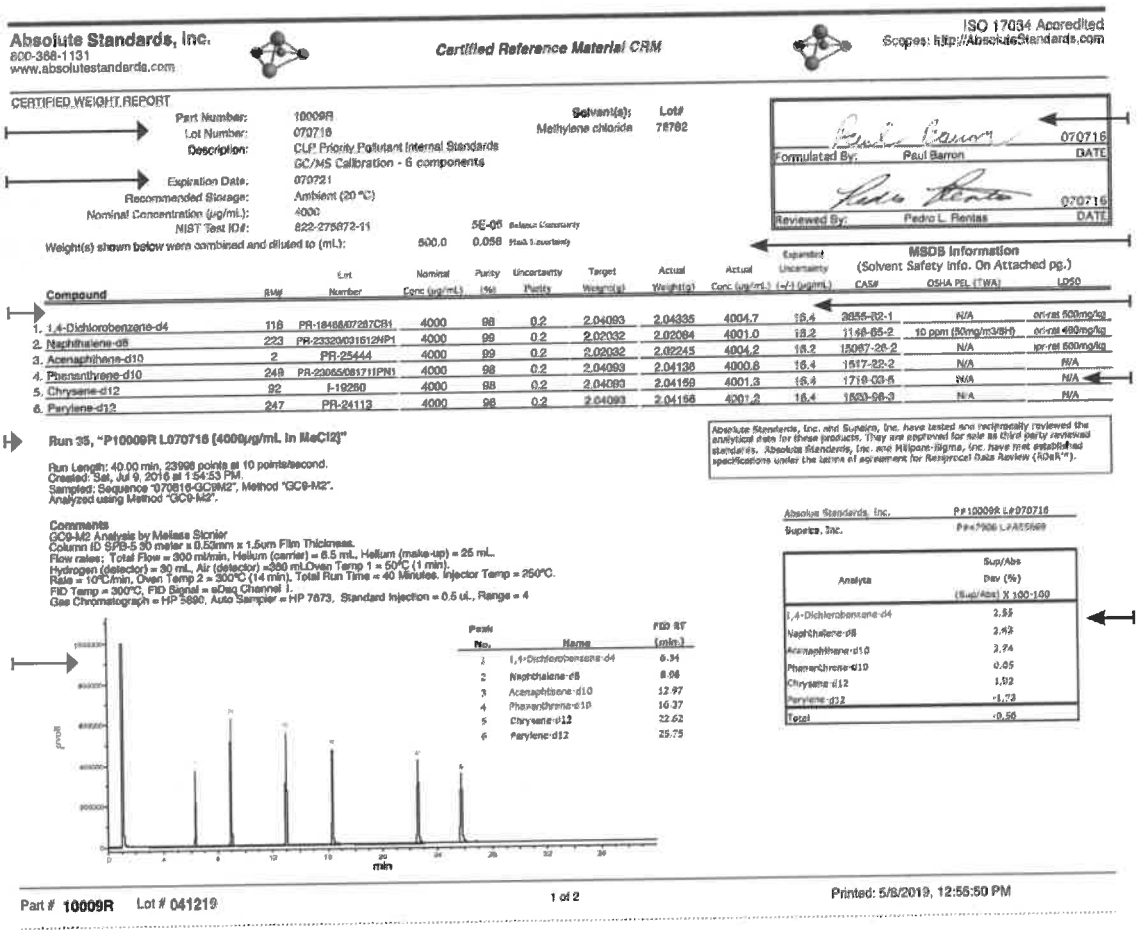
Absolute Standards, Inc. • 44 Rossotto Drive • Hamden, CT 06514
Voice: 800-368-1131 • Fax: 800-410-2577 • eMail: StephenArpie@AbsoluteStandards.com
Document Identification: Certificate of Analysis Rev 14, Date Issued: 05/30/2019

ABSOLUTE STANDARDS, INC.

ISO - 17034

Understanding the Certified Weight Report

Each Certified Reference Material (CRM) is supported by a Certified Weight Report. Assigned values for concentrations and associated uncertainties are based upon NIST traceable masses & volumes used in production.



Absolute Standards, Inc.
800-368-1131
www.absolutestandards.com

Certified Reference Material CRM

ISO 17034 Accredited
Scopes: http://AbsoluteStandards.com

CERTIFIED WEIGHT REPORT

Part Number: 10009R
Lot Number: 070716
Description: CLP Priority Pollutant Internal Standards GC/MS Calibration - 6 components
Expiration Date: 070721
Recommended Storage: Ambient (20 °C)
Nominal Concentration (µg/mL): 4000
NIST Test ID#: 822-275872-11

Solvent(s): Methylene chloride
Lot#: 78782

Formulated By: Paul Barron DATE 070716
Reviewed By: Pedro L. Reinas DATE 070716

Weight(s) shown below were combined and diluted to (mL): 500.0 5E-05 Balance Uncertainty 0.050 Flask Uncertainty

Compound	RM#	Lot Number	Nominal Conc (µg/mL)	Purity (%)	Uncertainty Purity	Target Weight(g)	Actual Weight(g)	Actual Conc (µg/mL)	Expanded Uncertainty (+/-) (µg/mL)	MSDS Information (Solvent Safety Info. On Attached pg.) CAS#	OSHA PEL (TWA)	LD50
1. 1,4-Dichlorobenzene-d4	118	PR-18488/07267CB1	4000	98	0.2	2.04093	2.04335	4004.7	16.4	3855-82-1	N/A	or-rat 500mg/kg
2. Naphthalene-d8	223	PR-233203031612NP1	4000	99	0.2	2.02032	2.02064	4001.0	16.2	1146-65-2	10 ppm (50mg/m3/8H)	or-rat 490mg/kg
3. Acenaphthene-d10	2	PR-25444	4000	99	0.2	2.02032	2.02245	4004.2	16.2	15067-26-2	N/A	ipr-rat 500mg/kg
4. Phenanthrene-d10	248	PR-23065/051711PN1	4000	98	0.2	2.04093	2.04136	4000.8	16.4	1517-22-2	N/A	N/A
5. Chrysene-d12	92	I-19250	4000	98	0.2	2.04093	2.04159	4001.3	16.4	1719-03-5	N/A	N/A
6. Perylene-d12	247	PR-24113	4000	96	0.2	2.04093	2.04156	4001.2	16.4	1520-96-3	N/A	N/A

Absolute Standards, Inc. and Supelco, Inc. have tested and reciprocally reviewed the analytical data for these products. They are approved for sale as third party reviewed standards. Absolute Standards, Inc. and Millipore-Sigma, Inc. have met established specifications under the terms of agreement for Reciprocal Data Review (RDaR™).

Run 35, "P10009R L070716 (4000µg/mL in MeC12)"

Run Length: 40.00 min, 23998 points at 10 points/second.
Created: Sat, Jul 9, 2016 at 1:54:53 PM.
Sampled: Sequence "070816-GC9M2", Method "GC9-M2".
Analyzed using Method "GC9-M2".

Comments
GC9-M2 Analysis by Melissa Sicnier
Column ID SPB-5 30 meter x 0.53mm x 1.5um 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) =300 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 = aDaq Channel 1.
Gas Chromatograph = HP 5890, Auto Sampler = HP 7673, Standard Injection = 0.5 uL, Range = 4

Peak No.	Name	FID RT (min.)
1	1,4-Dichlorobenzene-d4	6.34
2	Naphthalene-d8	8.06
3	Acenaphthene-d10	12.97
4	Phenanthrene-d10	16.37
5	Chrysene-d12	22.62
6	Perylene-d12	25.75

Absolute Standards, Inc. P# 10009R L# 070716
Supelco, Inc. P# [illegible] L# [illegible]

Analyte	Sup/Abs Dev (%) (Sup/Abs) X 100-100
1,4-Dichlorobenzene-d4	2.55
Naphthalene-d8	2.43
Acenaphthene-d10	3.74
Phenanthrene-d10	0.05
Chrysene-d12	1.02
Perylene-d12	-1.73
Total	-0.56

Part # 10009R Lot # 041219 1 of 2 Printed: 5/8/2019, 12:55:50 PM

Part #
Lot #
Shelf Life

Formulator
Reviewer

Actual Concentration

Target Compounds

Uncertainty Values

Health & Safety

Method of Analysis

Qualitative
Quantitative

3rd Party Comparison

For More Information, Contact:

StephenArpie@AbsoluteStandards.com

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Absolute Standards, Inc.
800-368-1131
www.absolutestandards.com

Certified Reference Material CRM

ANAB ISO 17034 Accredited
AR-1539 Certificate Number
https://Absolutestandards.com

CERTIFIED WEIGHT REPORT

Part Number: 72072
Lot Number: 101122
Description: n-Tetracosane-d50

Expiration Date: 101132
Recommended Storage: Ambient (20 °C)
Nominal Concentration (µg/mL): 1000
NIST Test ID#: 6UTB

Solvent(s):	Lot#
Methylene chloride	105345

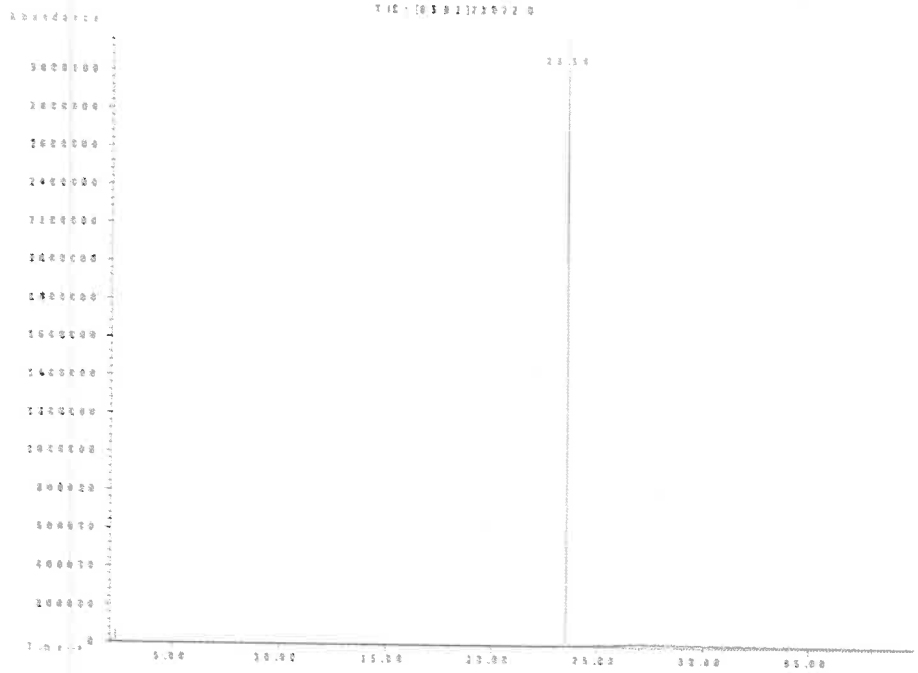
P13477 → P13496 } X.P. 07/24/24

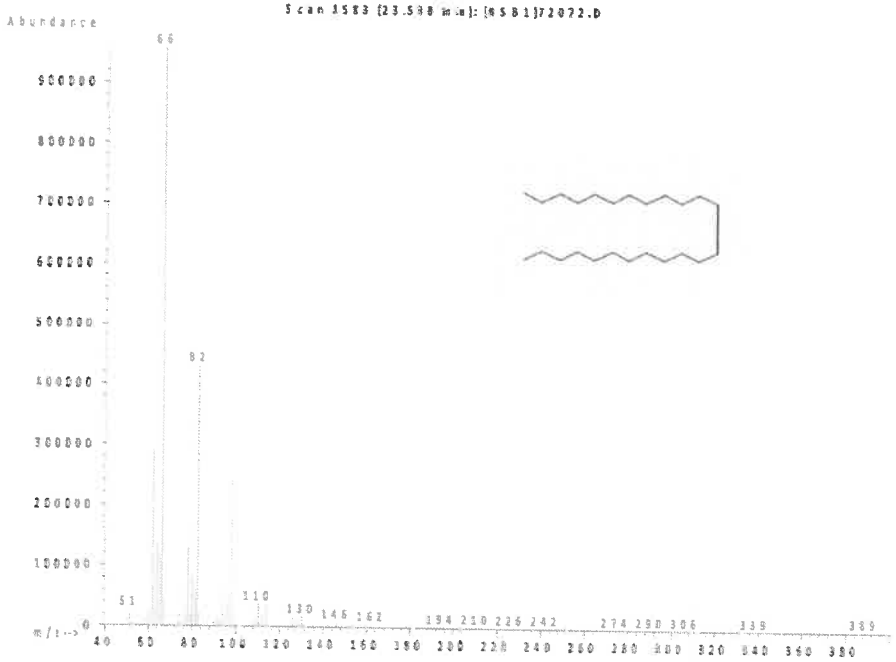
Formulated By:	Prashant Chauhan	101122 DATE
Reviewed By:	Pedro L. Rentas	101122 DATE

5E-05 Balance Uncertainty
Weight(s) shown below were combined and diluted to (mL): 200.0 0.058 Flask Uncertainty

Compound	RM#	Lot Number	Nominal Conc (µg/mL)	Purity (%)	Uncertainty Purity	Assay (%D)	Target Weight(g)	Actual Weight(g)	Actual Conc (µg/mL)	Expanded Uncertainty (+/-) (µg/mL)	SDS Information (Solvent Safety Info. On Attached pg.) CAS#	OSHA PEL (TWA)	LD50
1. n-Tetracosane-d50	2072	PR-26606	1000	98.7	0.2	99.0	0.20471	0.20482	1000.6	4.1	16416-32-3	N/A	N/A

Method GC8MSD-3.M: Column:SPB-5 (30m X 0.25mm ID X 0.25µm film thickness) Temp 1 = 50°C (1min.), Temp 2 = 300°C (9min.), Rate = 10°C/min., Injector B= 250°C, Detector B = 275°C, Split Ratio = 100:1, Scan Rate = 2. Analysis performed by: Candice Warren.





- 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, DC, (1994).

ABSOLUTE STANDARDS, INC.

ISO - 17034

Certificate of Analysis

Certified Reference Material (CRM)

Conformance: The "Certificate of Analysis" is applicable for CRM's, fulfilling the requirements in the current version of: ISO 17034.

Health & Safety: See the attached SDS & Certified Weight Report before use.

Intended Use: This Certified Reference Material (CRM) is intended primarily for use in the characterization of unknowns and the establishment of analyzer or instrument response factors by qualified personnel. Typical instrumental organic assays include: GC & LC, and inorganic assays include: ICP & AA. This product is for laboratory use only.

Characterization Values: In production, gravimetric/volumetric readings are certified to be within +/- 0.5% of the stated value & are valid between 18 °C & 30 °C. The measured characterization of uncertainty can be found on the Certified Weight Report. All product weighings are performed on an analytical balance that is calibrated to NIST Traceable standard weights & certified by the manufacturer. The volumetric glassware used is Class "A" type & conforms to ASTM E-288 unless otherwise stated. The solvents & compounds used are of the highest practical purity & typically meet or exceed ACS Reagent Grade & ACS Standards Grade specifications. The expanded uncertainty field on Certified Wt. Report represents CRM uncertainty as described in ISO 17034.

Homogeneity: Uncertainties that are due to the analytical procedure(s) are within +/-5% unless specifically stated on the Certified Wt. Report.

Verification: Uncertainties that are due to the analytical procedure(s) are within +/-5% unless specifically stated on the Certified Wt. Report.

Stability: Uncertainties for short-term stability are determined in accordance with ISO 17034. Long-term stability is determined in accordance with ISO 17034. The shelf life is limited by the stated expiration for each product. Expiration dates and additional technical information can be found on the Certified Weight Report and on the product label.

Uncertainty: U_{CRM} is the expanded uncertainty which utilizes a K = 2 (coverage factor of 2), in accordance with ISO 17034 as listed above (Characterization, Homogeneity, Verification, and Stability).

Purity & Identity: Organic solutions are typically formulated from neat materials whose purity & identity have been characterized by GC-MSD & LC-PDA techniques with comparison to a NIST Traceable library of mass spectra when available. Additional characterization techniques may include but are not limited to: refractive index measurements of liquids, melting point measurements of solids, & GC-FID, ECD, PID, ELCD, LC-PDA measurements for purity. Inorganic solutions & neats are typically formulated from materials whose purity & identity have been characterized by ICPMS with comparison to a NIST SRM® when available. Additional characterization techniques may include but are not limited to: titrimetry, and densitometry.

Storage: Sealed ampules and other containers should be stored in the dark and at temperatures indicated on the Certified Weight Report or product label. Certification by Absolute Standards, Inc. is typically valid for 3 years from the date of manufacture. Each product will show its own expiration date as the limit of certification. Certified values are not applicable to opened ampules or for any materials stored in re-sealable containers. Please see the "Certified Weight Report" for specific values and any exceptions.

Usage: Ampules & bottles should be brought to room temperature (18 to 30 °C) before opening. Sonication may be required for high concentration solutions or solutions that may precipitate during storage. After opening, care should be exercised to avoid concentration changes owing to evaporation of the solvent or essential components. We recommend that a suitable re-sealable container be available before opening an ampule to decant the standard for short-term storage and use.

Minimum Sample Size: 0.5 uL for analytical applications.

Legal Notice: Warranty of products are as described when shipped. No warranty as to fitness for any particular application is expressed or implied. Errant shipments and/or quality claims must be made within 10 days of receipt. Liability is limited solely to the replacement of the product or refund of purchase price.

Certifying Officer: Stephen J. Arpie, M.S., Director General

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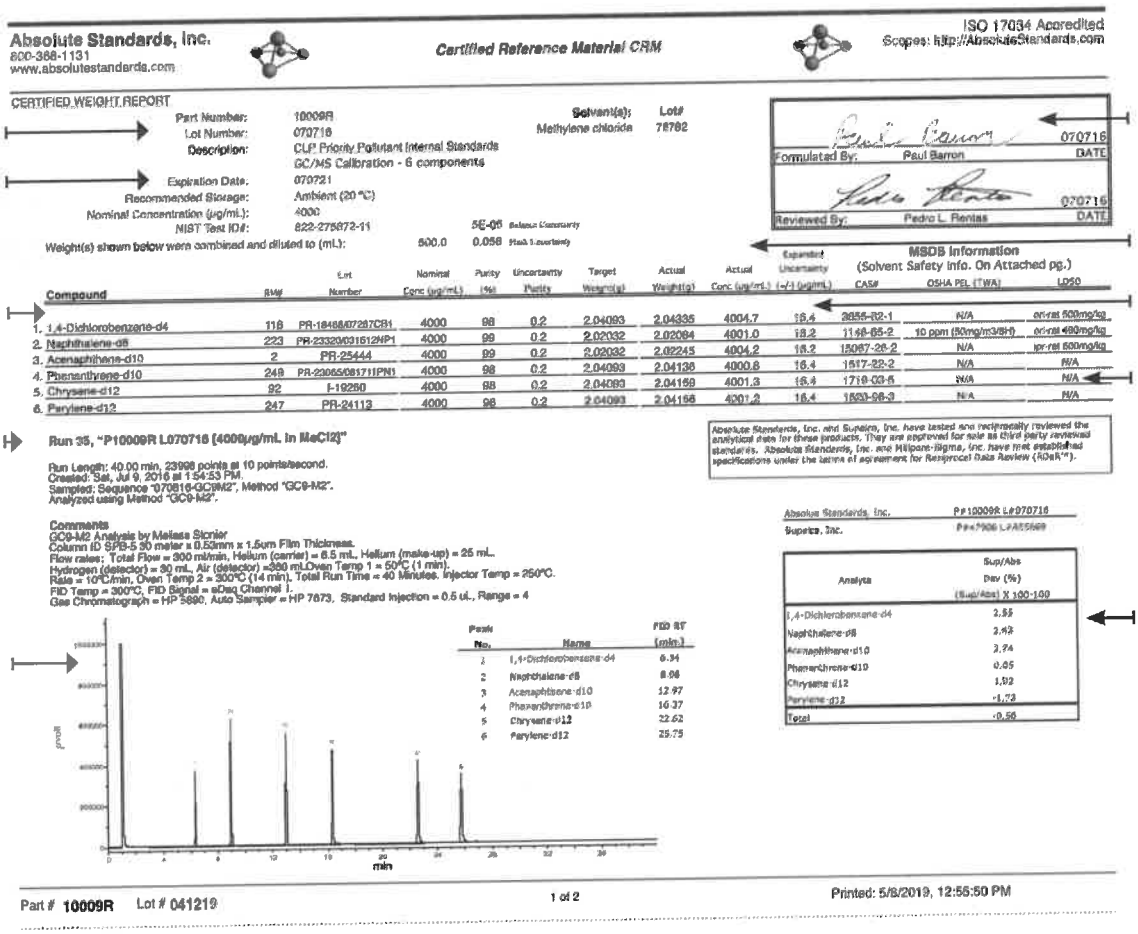
Document Identification: Certificate of Analysis Rev 14, Date Issued: 05/30/2019

ABSOLUTE STANDARDS, INC.

ISO - 17034

Understanding the Certified Weight Report

Each Certified Reference Material (CRM) is supported by a Certified Weight Report. Assigned values for concentrations and associated uncertainties are based upon NIST traceable masses & volumes used in production.



Absolute Standards, Inc.
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Certified Reference Material CRM

ISO 17034 Accredited
Scopes: http://AbsoluteStandards.com

CERTIFIED WEIGHT REPORT

Part Number: 10009R
Lot Number: 070716
Description: CLP Priority Pollutant Internal Standards GC/MS Calibration - 6 components
Expiration Date: 070721
Recommended Storage: Ambient (20 °C)
Nominal Concentration (µg/mL): 4000
NIST Test ID#: 822-275872-11

Solvent(s): Methylene chloride
Lot#: 78782

Formulated By: Paul Barron DATE 070716
Reviewed By: Pedro L. Reinas DATE 070716

Weight(s) shown below were combined and diluted to (mL): 500.0 5E-05 Balance Uncertainty 0.050 Flask Uncertainty

Compound	RM#	Lot Number	Nominal Conc (µg/mL)	Purity (%)	Uncertainty Purity	Target Weight(g)	Actual Weight(g)	Actual Conc (µg/mL)	Expanded Uncertainty (+/-) (µg/mL)	MSDS Information (Solvent Safety Info. On Attached pg.) CAS#	OSHA PEL (TWA)	LD50
1. 1,4-Dichlorobenzene-d4	118	PR-18488/07267CB1	4000	98	0.2	2.04093	2.04335	4004.7	16.4	3855-82-1	N/A	or-rat 500mg/kg
2. Naphthalene-d8	223	PR-233203031612NP1	4000	99	0.2	2.02032	2.02064	4001.0	16.2	1146-65-2	10 ppm (50mg/m3/8H)	or-rat 490mg/kg
3. Acenaphthene-d10	2	PR-25444	4000	99	0.2	2.02032	2.02245	4004.2	16.2	15067-26-2	N/A	ipr-rat 500mg/kg
4. Phenanthrene-d10	248	PR-23065/051711PN1	4000	98	0.2	2.04093	2.04136	4000.8	16.4	1517-22-2	N/A	N/A
5. Chrysene-d12	92	I-19250	4000	98	0.2	2.04093	2.04159	4001.3	16.4	1719-03-5	N/A	N/A
6. Perylene-d12	247	PR-24113	4000	96	0.2	2.04093	2.04156	4001.2	16.4	1520-96-3	N/A	N/A

Absolute Standards, Inc. and Supelco, Inc. have tested and reciprocally reviewed the analytical data for these products. They are approved for sale as third party reviewed standards. Absolute Standards, Inc. and Millipore-Sigma, Inc. have met established specifications under the terms of agreement for Reciprocal Data Review (RDaR™).

Run 35, "P10009R L070716 (4000µg/mL in MeC12)"

Run Length: 40.00 min, 23998 points at 10 points/second.
Created: Sat, Jul 9, 2016 at 1:54:53 PM.
Sampled: Sequence "070816-GC9M2", Method "GC9-M2".
Analyzed using Method "GC9-M2".

Comments
GC9-M2 Analysis by Melissa Sicnier
Column ID SPB-5 30 meter x 0.53mm x 1.5um 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) =300 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 = aDaq Channel 1.
Gas Chromatograph = HP 5890, Auto Sampler = HP 7673, Standard Injection = 0.5 uL, Range = 4

Peak No.	Name	FID RT (min.)
1	1,4-Dichlorobenzene-d4	6.34
2	Naphthalene-d8	8.06
3	Acenaphthene-d10	12.97
4	Phenanthrene-d10	16.37
5	Chrysene-d12	22.62
6	Perylene-d12	25.75

Absolute Standards, Inc. P# 10009R L# 070716
Supelco, Inc. P# [illegible] L# [illegible]

Analyte	Sup/Abs Dev (%) (Sup/Abs) X 100-100
1,4-Dichlorobenzene-d4	2.55
Naphthalene-d8	2.43
Acenaphthene-d10	3.74
Phenanthrene-d10	0.05
Chrysene-d12	1.02
Perylene-d12	-1.73
Total	-0.56

Part # 10009R Lot # 041219 1 of 2 Printed: 5/8/2019, 12:55:50 PM

Part #
Lot #
Shelf Life

Formulator
Reviewer

Actual Concentration

Target Compounds

Uncertainty Values

Health & Safety

Method of Analysis

Qualitative
Quantitative

3rd Party Comparison

For More Information, Contact:

StephenArpie@AbsoluteStandards.com

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Document Identification: Certificate of Analysis Rev 14, Date Issued: 05/30/2019

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Certified Reference Material CRM

ANAB ISO 17034 Accredited
AR-1539 Certificate Number
https://Absolutestandards.com

CERTIFIED WEIGHT REPORT

Part Number: 72072
Lot Number: 101122
Description: n-Tetracosane-d50

Expiration Date: 101132
Recommended Storage: Ambient (20 °C)
Nominal Concentration (µg/mL): 1000
NIST Test ID#: 6UTB

Solvent(s):	Lot#
Methylene chloride	105345

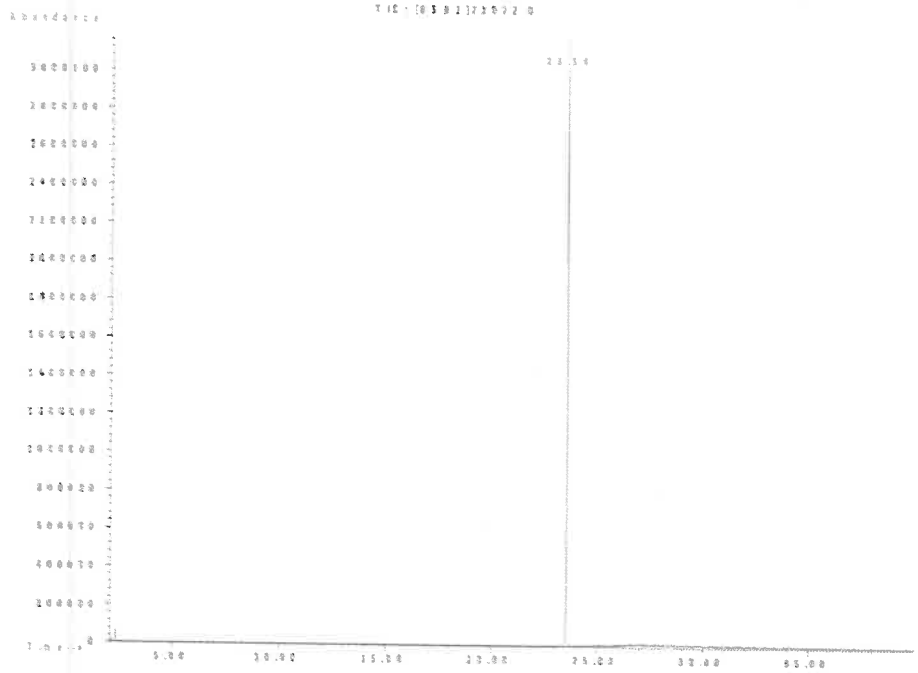
P13477 → P13496 } X.P. 07/24/24

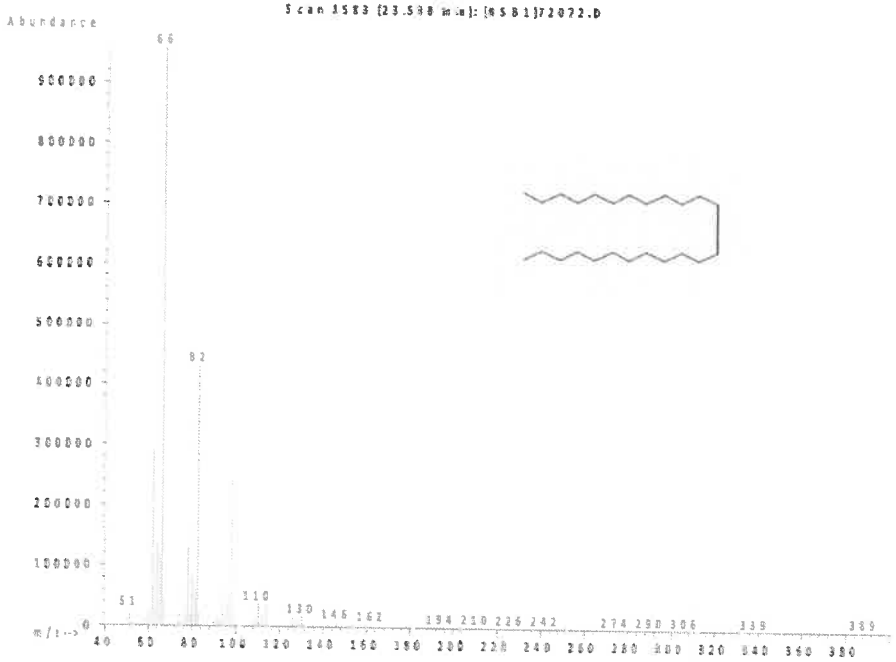
Formulated By:	Prashant Chauhan	101122 DATE
Reviewed By:	Pedro L. Rentas	101122 DATE

5E-05 Balance Uncertainty
Weight(s) shown below were combined and diluted to (mL): 200.0 0.058 Flask Uncertainty

Compound	RM#	Lot Number	Nominal Conc (µg/mL)	Purity (%)	Uncertainty Purity	Assay (%D)	Target Weight(g)	Actual Weight(g)	Actual Conc (µg/mL)	Expanded Uncertainty (+/-) (µg/mL)	SDS Information (Solvent Safety Info. On Attached pg.) CAS#	OSHA PEL (TWA)	LD50
1. n-Tetracosane-d50	2072	PR-26606	1000	98.7	0.2	99.0	0.20471	0.20482	1000.6	4.1	16416-32-3	N/A	N/A

Method GC8MSD-3.M: Column:SPB-5 (30m X 0.25mm ID X 0.25µm film thickness) Temp 1 = 50°C (1min.), Temp 2 = 300°C (9min.), Rate = 10°C/min., Injector B= 250°C, Detector B = 275°C, Split Ratio = 100:1, Scan Rate = 2. Analysis performed by: Candice Warren.





- 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, DC, (1994).

ABSOLUTE STANDARDS, INC.

ISO - 17034

Certificate of Analysis

Certified Reference Material (CRM)

Conformance: The "Certificate of Analysis" is applicable for CRM's, fulfilling the requirements in the current version of: ISO 17034.

Health & Safety: See the attached SDS & Certified Weight Report before use.

Intended Use: This Certified Reference Material (CRM) is intended primarily for use in the characterization of unknowns and the establishment of analyzer or instrument response factors by qualified personnel. Typical instrumental organic assays include: GC & LC, and inorganic assays include: ICP & AA. This product is for laboratory use only.

Characterization Values: In production, gravimetric/volumetric readings are certified to be within +/- 0.5% of the stated value & are valid between 18 °C & 30 °C. The measured characterization of uncertainty can be found on the Certified Weight Report. All product weighings are performed on an analytical balance that is calibrated to NIST Traceable standard weights & certified by the manufacturer. The volumetric glassware used is Class "A" type & conforms to ASTM E-288 unless otherwise stated. The solvents & compounds used are of the highest practical purity & typically meet or exceed ACS Reagent Grade & ACS Standards Grade specifications. The expanded uncertainty field on Certified Wt. Report represents CRM uncertainty as described in ISO 17034.

Homogeneity: Uncertainties that are due to the analytical procedure(s) are within +/-5% unless specifically stated on the Certified Wt. Report.

Verification: Uncertainties that are due to the analytical procedure(s) are within +/-5% unless specifically stated on the Certified Wt. Report.

Stability: Uncertainties for short-term stability are determined in accordance with ISO 17034. Long-term stability is determined in accordance with ISO 17034. The shelf life is limited by the stated expiration for each product. Expiration dates and additional technical information can be found on the Certified Weight Report and on the product label.

Uncertainty: U_{CRM} is the expanded uncertainty which utilizes a K = 2 (coverage factor of 2), in accordance with ISO 17034 as listed above (Characterization, Homogeneity, Verification, and Stability).

Purity & Identity: Organic solutions are typically formulated from neat materials whose purity & identity have been characterized by GC-MSD & LC-PDA techniques with comparison to a NIST Traceable library of mass spectra when available. Additional characterization techniques may include but are not limited to: refractive index measurements of liquids, melting point measurements of solids, & GC-FID, ECD, PID, ELCD, LC-PDA measurements for purity. Inorganic solutions & neats are typically formulated from materials whose purity & identity have been characterized by ICPMS with comparison to a NIST SRM® when available. Additional characterization techniques may include but are not limited to: titrimetry, and densitometry.

Storage: Sealed ampules and other containers should be stored in the dark and at temperatures indicated on the Certified Weight Report or product label. Certification by Absolute Standards, Inc. is typically valid for 3 years from the date of manufacture. Each product will show its own expiration date as the limit of certification. Certified values are not applicable to opened ampules or for any materials stored in re-sealable containers. Please see the "Certified Weight Report" for specific values and any exceptions.

Usage: Ampules & bottles should be brought to room temperature (18 to 30 °C) before opening. Sonication may be required for high concentration solutions or solutions that may precipitate during storage. After opening, care should be exercised to avoid concentration changes owing to evaporation of the solvent or essential components. We recommend that a suitable re-sealable container be available before opening an ampule to decant the standard for short-term storage and use.

Minimum Sample Size: 0.5 uL for analytical applications.

Legal Notice: Warranty of products are as described when shipped. No warranty as to fitness for any particular application is expressed or implied. Errant shipments and/or quality claims must be made within 10 days of receipt. Liability is limited solely to the replacement of the product or refund of purchase price.

Certifying Officer: Stephen J. Arpie, M.S., Director General

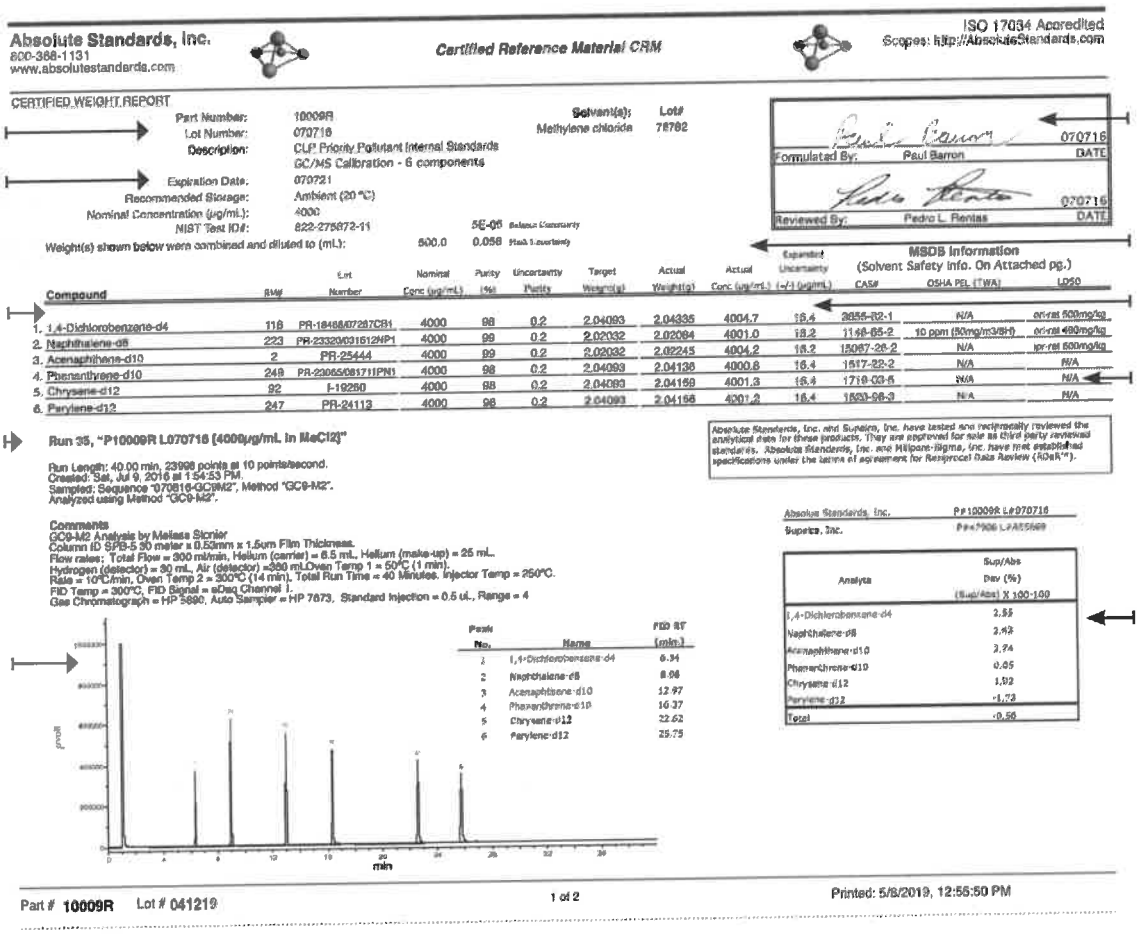
Absolute Standards, Inc. • 44 Rossotto Drive • Hamden, CT 06514
Voice: 800-368-1131 • Fax: 800-410-2577 • eMail: StephenArpie@AbsoluteStandards.com
Document Identification: Certificate of Analysis Rev 14, Date Issued: 05/30/2019

ABSOLUTE STANDARDS, INC.

ISO - 17034

Understanding the Certified Weight Report

Each Certified Reference Material (CRM) is supported by a Certified Weight Report. Assigned values for concentrations and associated uncertainties are based upon NIST traceable masses & volumes used in production.



Absolute Standards, Inc.
800-368-1131
www.absolutestandards.com

Certified Reference Material CRM

ISO 17034 Accredited
Scopes: http://AbsoluteStandards.com

CERTIFIED WEIGHT REPORT

Part Number: 10009R
Lot Number: 070716
Description: CLP Priority Pollutant Internal Standards GC/MS Calibration - 6 components
Expiration Date: 070721
Recommended Storage: Ambient (20 °C)
Nominal Concentration (µg/mL): 4000
NIST Test ID#: 822-275872-11

Solvent(s): Methylene chloride
Lot#: 78782

Formulated By: Paul Barron DATE 070716
Reviewed By: Pedro L. Reinas DATE 070716

Weight(s) shown below were combined and diluted to (mL): 500.0 5E-05 Balance Uncertainty 0.050 Flask Uncertainty

Compound	RM#	Lot Number	Nominal Conc (µg/mL)	Purity (%)	Uncertainty Purity	Target Weight(g)	Actual Weight(g)	Actual Conc (µg/mL)	Expanded Uncertainty (+/-) (µg/mL)	MSDS Information (Solvent Safety Info. On Attached pg.) CAS#	OSHA PEL (TWA)	LD50
1. 1,4-Dichlorobenzene-d4	118	PR-18488/07267CB1	4000	98	0.2	2.04093	2.04335	4004.7	16.4	3855-82-1	N/A	or-rat 500mg/kg
2. Naphthalene-d8	223	PR-233203031612NP1	4000	99	0.2	2.02032	2.02064	4001.0	16.2	1146-65-2	10 ppm (50mg/m3/8H)	or-rat 490mg/kg
3. Acenaphthene-d10	2	PR-25444	4000	99	0.2	2.02032	2.02245	4004.2	16.2	15067-26-2	N/A	ipr-rat 500mg/kg
4. Phenanthrene-d10	248	PR-23065/051711PN1	4000	98	0.2	2.04093	2.04136	4000.8	16.4	1517-22-2	N/A	N/A
5. Chrysene-d12	92	I-19250	4000	98	0.2	2.04093	2.04159	4001.3	16.4	1719-03-5	N/A	N/A
6. Perylene-d12	247	PR-24113	4000	96	0.2	2.04093	2.04156	4001.2	16.4	1520-96-3	N/A	N/A

Absolute Standards, Inc. and Supelco, Inc. have tested and reciprocally reviewed the analytical data for these products. They are approved for sale as third party reviewed standards. Absolute Standards, Inc. and Millipore-Sigma, Inc. have met established specifications under the terms of agreement for Reciprocal Data Review (RDaR™).

Run 35, "P10009R L070716 (4000µg/mL in MeC12)"

Run Length: 40.00 min, 23998 points at 10 points/second.
Created: Sat, Jul 9, 2016 at 1:54:53 PM.
Sampled: Sequence "070816-GC9M2", Method "GC9-M2".
Analyzed using Method "GC9-M2".

Comments
GC9-M2 Analysis by Melissa Sicnier
Column ID SPB-5 30 meter x 0.53mm x 1.5um 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) =300 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 = aDaq Channel 1.
Gas Chromatograph = HP 5890, Auto Sampler = HP 7673, Standard Injection = 0.5 uL, Range = 4

Peak No.	Name	FID RT (min.)
1	1,4-Dichlorobenzene-d4	6.34
2	Naphthalene-d8	8.06
3	Acenaphthene-d10	12.97
4	Phenanthrene-d10	16.37
5	Chrysene-d12	22.62
6	Perylene-d12	25.75

Absolute Standards, Inc. P# 10009R L# 070716
Supelco, Inc. P# [illegible] L# [illegible]

Analyte	Sup/Abs Dev (%) (Sup/Abs) X 100-100
1,4-Dichlorobenzene-d4	2.55
Naphthalene-d8	2.43
Acenaphthene-d10	3.74
Phenanthrene-d10	0.05
Chrysene-d12	1.02
Perylene-d12	-1.73
Total	-0.56

Part # 10009R Lot # 041219 1 of 2 Printed: 5/8/2019, 12:55:50 PM

Part #
Lot #
Shelf Life

Formulator
Reviewer

Actual Concentration

Target Compounds

Uncertainty Values

Health & Safety

Method of Analysis

Qualitative
Quantitative

3rd Party Comparison

For More Information, Contact:

StephenArpie@AbsoluteStandards.com

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www.absolutestandards.com

Certified Reference Material CRM

ANAB ISO 17034 Accredited
AR-1539 Certificate Number
https://Absolutestandards.com

CERTIFIED WEIGHT REPORT

Part Number: 72072
Lot Number: 101122
Description: n-Tetracosane-d50

Expiration Date: 101132
Recommended Storage: Ambient (20 °C)
Nominal Concentration (µg/mL): 1000
NIST Test ID#: 6UTB

Solvent(s):	Lot#
Methylene chloride	105345

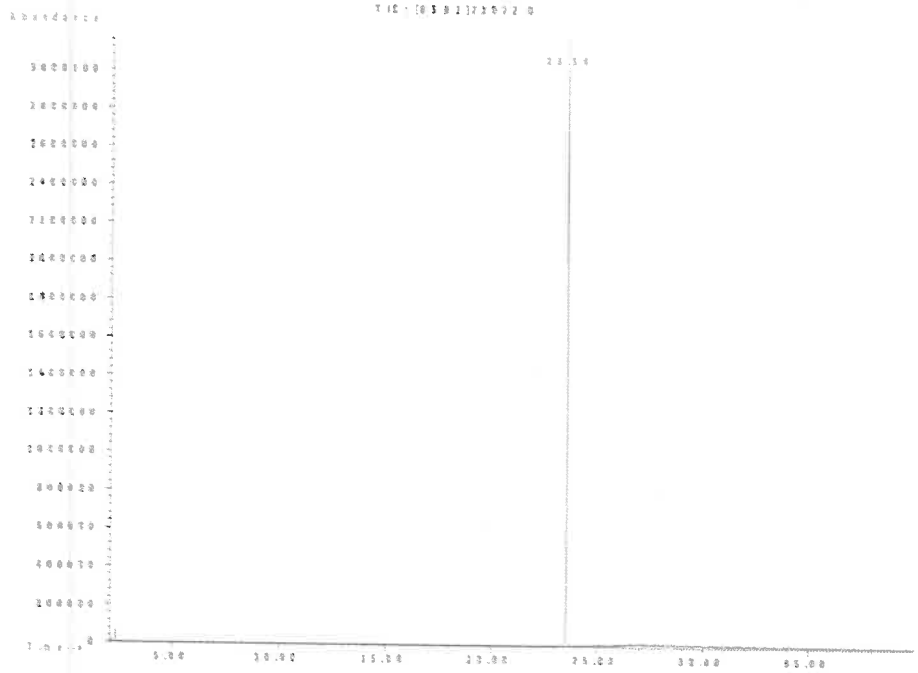
P13477 → P13496 } X.P. 07/24/24

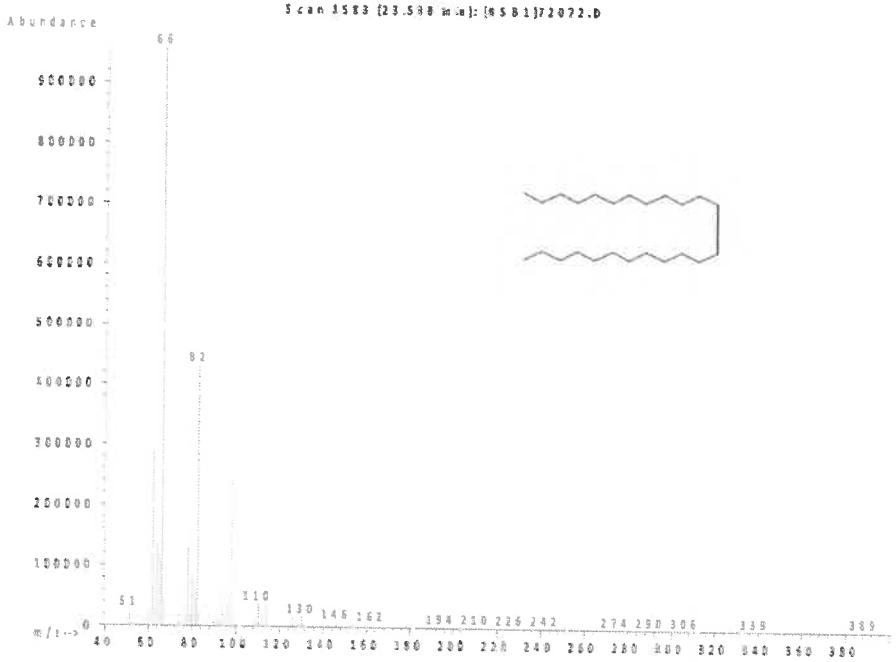
Formulated By:	Prashant Chauhan	101122 DATE
Reviewed By:	Pedro L. Rentas	101122 DATE

5E-05 Balance Uncertainty
Weight(s) shown below were combined and diluted to (mL): 200.0 0.058 Flask Uncertainty

Compound	RM#	Lot Number	Nominal Conc (µg/mL)	Purity (%)	Uncertainty Purity	Assay (%D)	Target Weight(g)	Actual Weight(g)	Actual Conc (µg/mL)	Expanded Uncertainty (+/-) (µg/mL)	SDS Information (Solvent Safety Info. On Attached pg.) CAS#	OSHA PEL (TWA)	LD50
1. n-Tetracosane-d50	2072	PR-26606	1000	98.7	0.2	99.0	0.20471	0.20482	1000.6	4.1	16416-32-3	N/A	N/A

Method GC8MSD-3.M: Column:SPB-5 (30m X 0.25mm ID X 0.25µm film thickness) Temp 1 = 50°C (1min.), Temp 2 = 300°C (9min.), Rate = 10°C/min., Injector B= 250°C, Detector B = 275°C, Split Ratio = 100:1, Scan Rate = 2. Analysis performed by: Candice Warren.





- 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, DC, (1994).

SHIPPING DOCUMENTS

Alliance TECHNICAL GROUP

284 Sheffield Street, Mountainside, NJ 07092
(908) 789-8900 • Fax (908) 789-8922
www.chemtech.net

ALLIANCE PROJECT NO.
QUOTE NO. Q2008/09
COC Number 2047098

CLIENT INFORMATION

REPORT TO BE SENT TO:
COMPANY: JACOBS
ADDRESS: 412 MT KEMBLE AVE, SUITE 100
CITY: MORRISTOWN STATE: NJ ZIP: 07960
ATTENTION: JOHN YNFANTE
PHONE: 281-414-1719 FAX: ——

CLIENT PROJECT INFORMATION

PROJECT NAME: STC PRINCETON
PROJECT NO. D3868221 LOCATION: PRINCETON JUNCTION NJ
PROJECT MANAGER: MARY MURPHY
e-mail: MARY.MURPHY@JACOBS.COM
PHONE: 201-936-0586 FAX: ——

CLIENT BILLING INFORMATION

BILL TO: MARY.MURPHY@JACOBS.COM PO#:
ADDRESS:
CITY: STATE: ZIP:
ATTENTION: PHONE:

DATA TURNAROUND INFORMATION

FAX (RUSH) ______ DAYS*
HARDCOPY (DATA PACKAGE) ______ DAYS*
EDD: RUSH 2 DAYS*
*TO BE APPROVED BY CHEMTECH
STANDARD HARDCOPY TURNAROUND TIME IS 10 BUSINESS

DATA DELIVERABLE INFORMATION

- ☐ Level 1 (Results Only)
- ☒ Level 2 (Results + QC)
- ~~☒ Level 3 (Results + QC + Raw Data)~~
- ☐ EDD FORMAT
- ☐ Level 4 (QC + Full Raw Data)
- ☐ NJ Reduced
- ☐ US EPA CLP
- ☐ NYS ASP A
- ☐ NYS ASP B
- ☐ Other

ANALYSIS

1. SVOC TCL BNA-20C
2. DRO 8015M
3. PCBs
4. OXIDIZING LIQ 1040
5. FLASH POINT 1010B
6. PH 9040C
7. VOC TCL -10C 8260
8. GRO 8015M
9. METALS ICP TAL 6010

ALLIANCE SAMPLE ID	PROJECT SAMPLE IDENTIFICATION	SAMPLE MATRIX	SAMPLE TYPE COMP	SAMPLE TYPE GRAB	SAMPLE COLLECTION DATE	SAMPLE COLLECTION TIME	# OF BOTTLES	1 E	2 E	3 E	4 E	5 E	6 A/E	7 A/E	8 B/E	9	COMMENTS
1.	IDW-AQ-DRUM-633-05092025	AQ		X	5/9/25	1230	10	X	X	X	X	X	X	X	X		
2.																	
3.																	
4.																	
5.																	
6.																	
7.																	
8.																	
9.																	
10.																	

← Specify Preservatives: A-HCl, B-HN03, C-H2SO4, D-NaOH, E-ICE, F-OTHER

SAMPLE CUSTODY MUST BE DOCUMENTED BELOW EACH TIME SAMPLES CHANGE POSSESSION INCLUDING COURIER DELIVERY

RELINQUISHED BY SAMPLER:	DATE/TIME:	RECEIVED BY:
1. [signature]	5/9/25 15:05	1. [signature] 5-9-25 1505
2.		2.
3. [signature]	1650 5-9-25	3.

Conditions of bottles or coolers at receipt: ☐ COMPLIANT ☐ NON COMPLIANT ☐ COOLER TEMP 3.0° °C
Comments: LEVEL 2 EDD REQUESTED.
Temp 3.0°C (Adjustment factor + 0) IR Gun #1,
PH 1-3 LOT# 80A0441

Page ____ of

CLIENT: ☐ Hand Delivered ☐ Other

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-0830
DOD ELAP (ANAB)	L2219
Maine	2024021
Maryland	296
New Hampshire	255424 Rev 1
New Jersey	20012
New York	11376
Pennsylvania	68-00548
Soil Permit	525-24-234-08441
Texas	T104704488

QA Control Code: A2070148

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

LOGIN REPORT/SAMPLE TRANSFER

Order ID : Q2008 JACO05
Client Name : JACOBS Engineering Grou
Client Contact : Mary I. Murphy
Invoice Name : JACOBS Engineering Grou
Invoice Contact : Mary I. Murphy

Order Date : 5/9/2025 3:21:23 PM
Project Name : Former Schlumberger Site I
Receive DateTime : 5/9/2025 ~~12:00:00~~ AM
Purchase Order : 16:50

Project Mgr :
Report Type : Level 4
EDD Type : CH2MHILL
Hard Copy Date :
Date Signoff :

LAB ID	CLIENT ID	MATRIX	SAMPLE DATE	SAMPLE TIME	TEST	TEST GROUP	METHOD	FAX DATE	DUE DATES
Q2008-01	IDW-AQ-DRUM-633-05092025	Water	05/09/2025	12:30					
					VOC-TCLVOA-10		8260D		2 Bus. Days

Relinquished By :
Date / Time : 5/12/25 1000

Received By :
Date / Time : 05/12/25 10:20

Rpt # 5

Storage Area : VOA Refridgerator Room