

DATA REPORTING QUALIFIERS- ORGANIC

For reporting results, the following “ Results Qualifiers” are used:

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

LAB CHRONICLE

OrderID: Q3574	OrderDate: 11/7/2025 10:02:13 AM
Client: Pacific Commercial Services Inc.	Project: Kilo Pier
Contact: Wendi Zheng	Location: --Select--,J22,VOA Lab

LabID	ClientID	Matrix	Test	Method	Sample Date	Prep Date	Anal Date	Received
Q3574-01	304641-01 Liquid	Water			11/04/25			11/07/25
			Gasoline Range Organics	8015D			11/10/25	
			TPH GC	8015D		11/10/25	11/11/25	



QC SUMMARY



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

WATER TPH GC SURROGATE RECOVERY

Lab Name: Alliance

Client: Pacific Commercial Services Inc.

Lab Code: ACE

SDG No.: Q3574

CLIENT ID	S1 TETRACOSANE-d50	S2	S3	S4	TOT OUT
PIBLK-FF016644.D	84				0
PIBLK-FF016652.D	90				0
PB170474BL	82				0
PB170474BS	89				0
PB170474BSD	88				0
304641-01 Liquid	1725 *				1

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

WATER TPH GC LABORATORY CONTROL SPIKE/LABORATORY CONTROL SPIKE DUPLICATE RECOVERY

Lab Name: Alliance

Client: Pacific Commercial Services Inc.

Lab Code: ACE

SDG No: Q3574

Client Sample ID : PB170474BS

Datafile: FF016648.D

COMPOUND	SPIKE ADDED ug/L	CONCENTRATION ug/L	LCS/LCSD CONCENTRATION ug/L	% REC	QC LIMITS (%)
Petroleum Hydrocarbons	340	0	328	96	78-117

WATER TPH GC LABORATORY CONTROL SPIKE/LABORATORY CONTROL SPIKE DUPLICATE RECOVERY

Lab Name: Alliance

Client: Pacific Commercial Services Inc.

Lab Code: ACE

SDG No: Q3574

Client Sample ID : PB170474BSD

Datafile: FF016649.D

COMPOUND	SPIKE ADDED ug/L	CONCENTRATION ug/L	LCS/LCSD CONCENTRATION ug/L	% REC	QC LIMITS (%)
Petroleum Hydrocarbons	340	0	328	96	78-117

LCS/LCSD % Recovery RPD : 0

4B
METHOD BLANK SUMMARY

CLIENT SAMPLE NO.

PB170474BL

Lab Name: Alliance

Contract: PACI01

Lab Code: ACE

SDG NO.: Q3574

Lab File ID: FF016647.D

Lab Sample ID: PB170474BL

Instrument ID: FF

Date Extracted: 11/11/2025

Matrix: (soil/water) Water

Date Analyzed: 11/11/25

Level: (low/med) low

Time Analyzed: 12:01

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

CLIENT SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED
PB170474BS	PB170474BS	FF016648.D	11/11/25
PB170474BSD	PB170474BSD	FF016649.D	11/11/25
304641-01 Liquid	Q3574-01	FF016651.D	11/11/25

COMMENTS: _____



SAMPLE DATA

Report of Analysis

Client:	Pacific Commercial Services Inc.	Date Collected:	11/04/25
Project:	Kilo Pier	Date Received:	11/07/25
Client Sample ID:	304641-01 Liquid	SDG No.:	Q3574
Lab Sample ID:	Q3574-01	Matrix:	Water
Analytical Method:	8015D TPH	% Solid:	0
Sample Wt/Vol:	840 mL	Final Vol:	1 mL
Prep Method:	SW3510	Test:	TPH GC
	Prep Date:	11/10/25	

CAS Number	Parameter	Conc.	Qua.	DF	MDL	LOD	LOQ / CRQL	Units	Date Ana.	BatchID
TARGETS										
PHC	Petroleum Hydrocarbons	374000		500	6960	25300	50600	ug/L	11/11/25 13:58	PB170474
SURROGATES										
16416-32-3	TETRACOSANE-d50	0.69	*		29 - 130		1725%	SPK: 20		

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

Data Path : Z:\pestpcbsrv\HPCHEM1\FID_F\Data\FF111125\
Data File : FF016651.D
Signal(s) : FID2B.ch
Acq On : 11 Nov 2025 13:58
Operator : YP\AJ
Sample : Q3574-01 500X
Misc :
ALS Vial : 35 Sample Multiplier: 1

Instrument :
FID_F
ClientSampleId :
304641-01 Liquid

Manual Integrations
APPROVED

Reviewed By :Rahul Chavli 11/12/2025
Supervised By :Yogesh Patel 11/12/2025

Integration File: autoint1.e
Quant Time: Nov 12 00:18:21 2025
Quant Method : Z:\pestpcbsrv\HPCHEM1\FID_F\Method\FF102925.M
Quant Title :
QLast Update : Wed Oct 29 12:48:52 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...	15.099	72313	0.692 ug/mlm
Target Compounds			

(f)=RT Delta > 1/2 Window

(m)=manual int.

Data Path : Z:\pestpcbsrv\HPCHEM1\FID_F\Data\FF111125\
Data File : FF016651.D
Signal(s) : FID2B.ch
Acq On : 11 Nov 2025 13:58
Operator : YP\AJ
Sample : Q3574-01 500X
Misc :
ALS Vial : 35 Sample Multiplier: 1

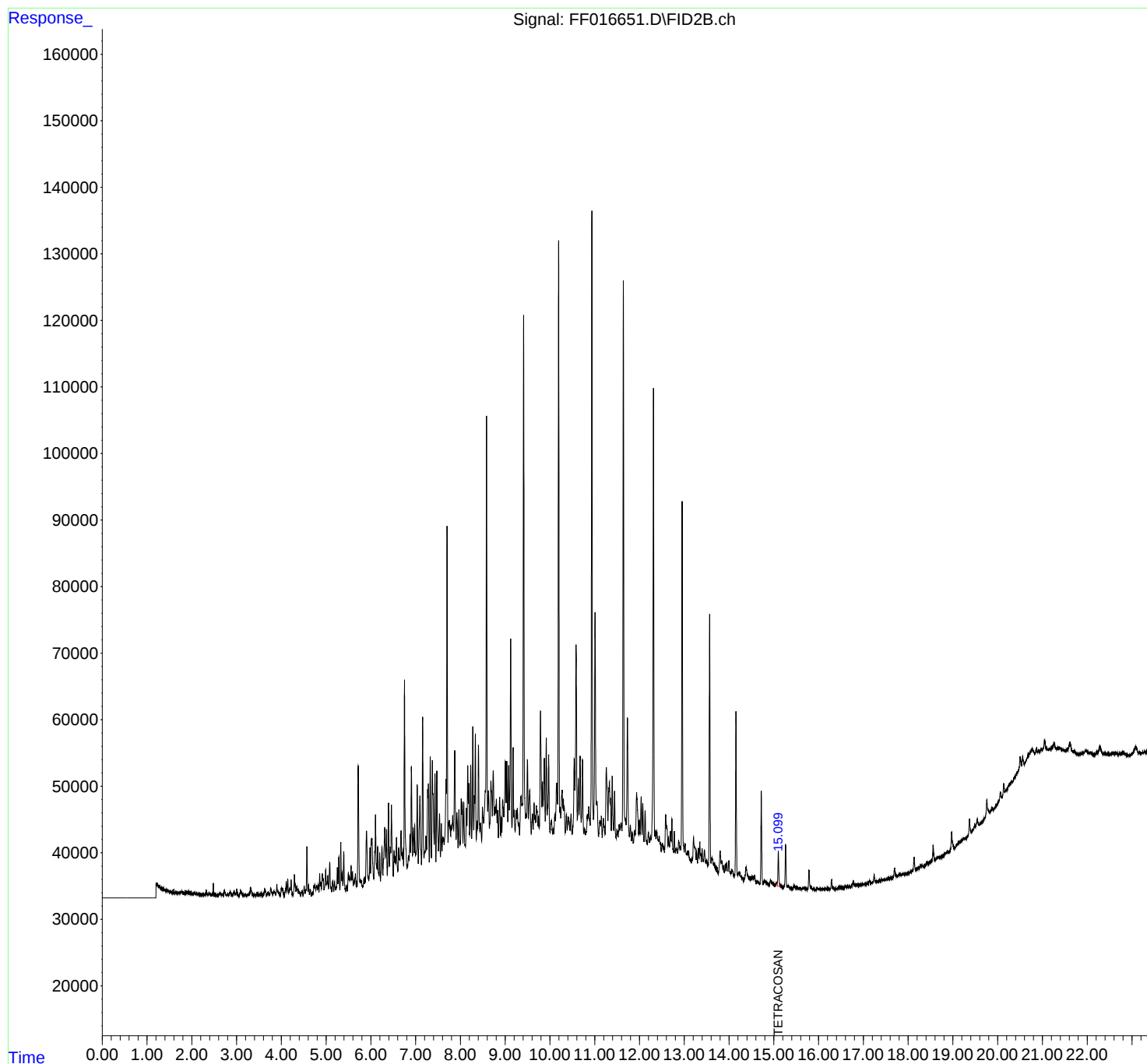
Instrument :
FID_F
ClientSampleId :
304641-01 Liquid

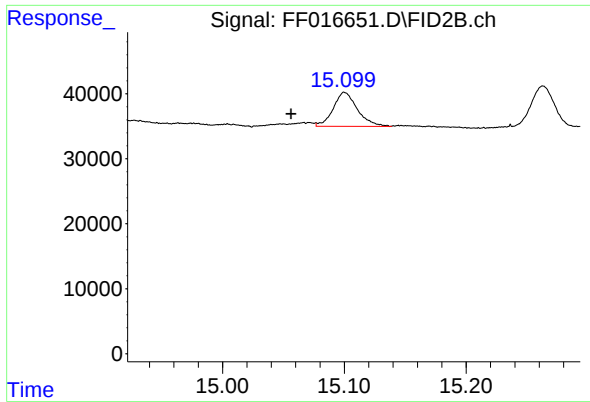
Manual Integrations
APPROVED

Reviewed By :Rahul Chavli 11/12/2025
Supervised By :Yogesh Patel 11/12/2025

Integration File: autoint1.e
Quant Time: Nov 12 00:18:21 2025
Quant Method : Z:\pestpcbsrv\HPCHEM1\FID_F\Method\FF102925.M
Quant Title :
QLast Update : Wed Oct 29 12:48:52 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.: 15.099 min
Delta R.T.: 0.043 min
Response: 72313
Conc: 0.69 ug/ml

Instrument :

FID_F

ClientSampleId :

304641-01 Liquid

Manual Integrations

APPROVED

Reviewed By :Rahul Chavli 11/12/2025
Supervised By :Yogesh Patel 11/12/2025

rters

Instrument :

FID_F

ClientSampleId :

304641-01 Liquid

Area Percent Report

Manual IntegrationsAPPROVED

Data Path : Z:\pestpcbsrv\HPCHEM1\FID_F\Data\FF11112
Data File : FF016651.D
Signal(s) : FID2B.ch
Acq On : 11 Nov 2025 13:58
Sample : Q3574-01 500X
Misc :
ALS Vial : 35 Sample Multiplier: 1

Reviewed By :Rahul Chavli 11/12/2025
Supervised By :Yogesh Patel 11/12/2025

Integration File: Sample.e

Method : Z:\pestpcbsrv\HPCHEM1\FID_F\Method\FF102925.M
Title :

Signal : FID2B.ch

peak #	R.T. min	Start min	End min	PK TY	peak height	peak area	peak % max.	% of total
1	1.925	1.900	1.955	BV	304	3829	0.25%	0.006%
2	1.958	1.955	1.967	VV	159	455	0.03%	0.001%
3	1.976	1.967	1.994	VV	171	2078	0.14%	0.003%
4	1.998	1.994	2.027	VV	100	1048	0.07%	0.002%
5	2.053	2.027	2.089	PV	299	5533	0.36%	0.008%
6	2.102	2.089	2.107	VV	95	914	0.06%	0.001%
7	2.113	2.107	2.132	VV	161	1572	0.10%	0.002%
8	2.137	2.132	2.165	VV	140	1522	0.10%	0.002%
9	2.186	2.165	2.191	PV	125	1076	0.07%	0.002%
10	2.205	2.191	2.210	VV	146	971	0.06%	0.001%
11	2.212	2.210	2.220	VV	76	355	0.02%	0.001%
12	2.227	2.220	2.232	PV	103	506	0.03%	0.001%
13	2.239	2.232	2.283	VV	158	2537	0.17%	0.004%
14	2.288	2.283	2.301	VV	98	675	0.04%	0.001%
15	2.322	2.301	2.353	VV	798	9736	0.64%	0.015%
16	2.387	2.353	2.438	VV	432	9032	0.59%	0.013%
17	2.454	2.438	2.470	VV	263	2804	0.18%	0.004%
18	2.481	2.470	2.517	PV	1368	6016	0.40%	0.009%
19	2.528	2.517	2.578	VV	156	3412	0.22%	0.005%
20	2.619	2.578	2.630	PV	365	5205	0.34%	0.008%
21	2.639	2.630	2.679	VV	437	5221	0.34%	0.008%
22	2.698	2.679	2.707	VV	189	1552	0.10%	0.002%
23	2.726	2.707	2.792	VV	769	16033	1.05%	0.024%
24	2.802	2.792	2.813	VV	204	1848	0.12%	0.003%
25	2.825	2.813	2.833	VV	257	2059	0.14%	0.003%
26	2.859	2.833	2.900	VV	589	11244	0.74%	0.017%
27	2.924	2.900	2.930	VV	257	2633	0.17%	0.004%
28	2.945	2.930	2.971	VV	740	10188	0.67%	0.015%
29	2.978	2.971	2.986	VV	325	2472	0.16%	0.004%
30	3.004	2.986	3.038	VV	1036	14411	0.95%	0.022%
31	3.040	3.038	3.058	VV	117	786	0.05%	0.001%
32	3.062	3.058	3.065	VV	122	268	0.02%	0.000%
33	3.089	3.065	3.107	VV	897	12484	0.82%	0.019%
34	3.116	3.107	3.150	VV	429	5811	0.38%	0.009%
35	3.175	3.150	3.180	VV	158	2009	0.13%	0.003%
36	3.185	3.180	3.221	VV	143	1660	0.11%	0.002%

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37	3.231	3.221	3.247	VV	166	1152	0.08%	0.002%
38	3.267	3.247	3.285	VV	263	3094		
39	3.311	3.285	3.349	VV	1329	24164		
40	3.366	3.349	3.405	VV	304	4649		
41	3.454	3.405	3.473	PV	481	7781		
42	3.478	3.473	3.508	VV	280	4254		
43	3.527	3.508	3.545	VV	296	4152	0.27%	0.006%
44	3.557	3.545	3.581	VV	438	4924	0.32%	0.007%
45	3.593	3.581	3.610	VV	312	3625	0.24%	0.005%
46	3.626	3.610	3.670	VV	1026	19664	1.29%	0.029%
47	3.704	3.670	3.726	VV	623	11526	0.76%	0.017%
48	3.732	3.726	3.742	VV	315	2028	0.13%	0.003%
49	3.761	3.742	3.805	VV	1262	24494	1.61%	0.037%
50	3.840	3.805	3.864	VV	681	17813	1.17%	0.027%
51	3.865	3.864	3.879	VV	539	3106	0.20%	0.005%
52	3.900	3.879	3.916	VV	1765	21451	1.41%	0.032%
53	3.922	3.916	3.938	VV	708	7376	0.49%	0.011%
54	3.947	3.938	3.980	VV	504	5970	0.39%	0.009%
55	4.003	3.980	4.021	PV	1280	20598	1.35%	0.031%
56	4.032	4.021	4.066	VV	1118	15543	1.02%	0.023%
57	4.089	4.066	4.095	VV	864	8470	0.56%	0.013%
58	4.109	4.095	4.124	VV	2179	24672	1.62%	0.037%
59	4.143	4.124	4.162	VV	2578	31924	2.10%	0.048%
60	4.185	4.162	4.203	VV	1068	20820	1.37%	0.031%
61	4.220	4.203	4.240	VV	2454	32800	2.16%	0.049%
62	4.250	4.240	4.264	VV	376	3859	0.25%	0.006%
63	4.293	4.264	4.326	VV	3156	56343	3.71%	0.084%
64	4.342	4.326	4.373	VV	1421	28639	1.88%	0.043%
65	4.381	4.373	4.396	VV	911	9811	0.65%	0.015%
66	4.407	4.396	4.428	VV	639	6710	0.44%	0.010%
67	4.463	4.428	4.487	VV	712	14425	0.95%	0.022%
68	4.510	4.487	4.538	VV	1520	22940	1.51%	0.034%
69	4.572	4.538	4.595	VV	7408	91846	6.04%	0.137%
70	4.609	4.595	4.628	VV	1661	19608	1.29%	0.029%
71	4.646	4.628	4.667	VV	991	13168	0.87%	0.020%
72	4.680	4.667	4.685	VV	308	2642	0.17%	0.004%
73	4.704	4.685	4.710	VV	397	4694	0.31%	0.007%
74	4.729	4.710	4.737	VV	1538	17149	1.13%	0.026%
75	4.747	4.737	4.772	VV	1529	26597	1.75%	0.040%
76	4.787	4.772	4.812	VV	1548	30095	1.98%	0.045%
77	4.825	4.812	4.842	VV	1621	21230	1.40%	0.032%
78	4.857	4.842	4.871	VV	3332	36012	2.37%	0.054%
79	4.881	4.871	4.896	VV	2043	24462	1.61%	0.037%
80	4.916	4.896	4.931	VV	3268	48638	3.20%	0.073%
81	4.936	4.931	4.958	VV	2538	28114	1.85%	0.042%
82	4.991	4.958	5.008	VV	3874	67455	4.44%	0.101%
83	5.016	5.008	5.022	VV	1820	15350	1.01%	0.023%
84	5.036	5.022	5.056	VV	2977	42701	2.81%	0.064%
85	5.082	5.056	5.106	VV	5035	81784	5.38%	0.122%
86	5.110	5.106	5.125	VV	1293	11684	0.77%	0.017%
87	5.150	5.125	5.169	VV	2244	38084	2.50%	0.057%
88	5.190	5.169	5.210	VV	2077	33620	2.21%	0.050%
89	5.227	5.210	5.233	VV	1333	15491	1.02%	0.023%

Instrument :

FID_F

ClientSampleId :

304641-01 Liquid

Manual IntegrationsAPPROVED

Reviewed By :Rahul Chavli 11/12/2025

Supervised By :Yogesh Patel 11/12/2025

90	5.252	5.233	5.266	VV	4225	52625	3.46%	0.079%
91	5.284	5.266	5.308	VV	5800	82379		
92	5.328	5.308	5.346	VV	7976	94185		
93	5.359	5.346	5.375	VV	3449	45172		
94	5.395	5.375	5.435	VV	6616	97668		
95	5.449	5.435	5.475	VV	1283	25047		
96	5.496	5.475	5.508	VV	3366	43244	2.84%	0.065%
97	5.519	5.508	5.540	VV	3018	50370	3.31%	0.075%
98	5.558	5.540	5.575	VV	4444	69010	4.54%	0.103%
99	5.590	5.575	5.608	VV	3533	53897	3.54%	0.081%
100	5.656	5.608	5.671	VV	3266	84558	5.56%	0.126%
101	5.683	5.671	5.695	VV	2047	24437	1.61%	0.037%
102	5.717	5.695	5.758	VV	19467	312879	20.58%	0.467%
103	5.762	5.758	5.773	VV	2209	20185	1.33%	0.030%
104	5.786	5.773	5.808	VV	2222	39497	2.60%	0.059%
105	5.816	5.808	5.825	VV	1417	13625	0.90%	0.020%
106	5.844	5.825	5.857	VV	2473	37197	2.45%	0.056%
107	5.867	5.857	5.878	VV	2550	28902	1.90%	0.043%
108	5.904	5.878	5.937	VV	9588	207000	13.62%	0.309%
109	5.941	5.937	5.954	VV	2753	26819	1.76%	0.040%
110	5.981	5.954	5.993	VV	7078	101177	6.65%	0.151%
111	6.008	5.993	6.017	VV	8403	94082	6.19%	0.141%
112	6.026	6.017	6.066	VV	8510	157199	10.34%	0.235%
113	6.104	6.066	6.137	VV	12052	263533	17.33%	0.394%
114	6.151	6.137	6.181	VV	7218	124628	8.20%	0.186%
115	6.197	6.181	6.214	VV	6340	86700	5.70%	0.130%
116	6.248	6.214	6.268	VV	7199	141361	9.30%	0.211%
117	6.311	6.268	6.332	VV	10141	256137	16.85%	0.383%
118	6.349	6.332	6.367	VV	9822	142157	9.35%	0.212%
119	6.394	6.367	6.414	VV	13832	212714	13.99%	0.318%
120	6.435	6.414	6.444	VV	7199	111236	7.32%	0.166%
121	6.459	6.444	6.501	VV	13480	263807	17.35%	0.394%
122	6.519	6.501	6.532	VV	6609	93217	6.13%	0.139%
123	6.542	6.532	6.555	VV	5738	73475	4.83%	0.110%
124	6.572	6.555	6.602	VV	8655	161178	10.60%	0.241%
125	6.621	6.602	6.647	VV	7057	150693	9.91%	0.225%
126	6.674	6.647	6.707	VV	9636	247251	16.26%	0.369%
127	6.717	6.707	6.730	VV	6810	82543	5.43%	0.123%
128	6.751	6.730	6.803	VV	32249	525214	34.55%	0.785%
129	6.815	6.803	6.822	VV	4268	47760	3.14%	0.071%
130	6.839	6.822	6.853	VV	5834	97448	6.41%	0.146%
131	6.874	6.853	6.887	VV	9100	148799	9.79%	0.222%
132	6.905	6.887	6.930	VV	19180	302994	19.93%	0.453%
133	6.945	6.930	6.965	VV	9970	171824	11.30%	0.257%
134	6.978	6.965	7.003	VV	10507	173062	11.38%	0.259%
135	7.035	7.003	7.058	VV	16488	304604	20.03%	0.455%
136	7.095	7.058	7.129	VV	14862	377132	24.81%	0.563%
137	7.156	7.129	7.187	VV	26771	439434	28.90%	0.657%
138	7.204	7.187	7.211	VV	6586	88589	5.83%	0.132%
139	7.229	7.211	7.246	VV	8779	158911	10.45%	0.237%
140	7.267	7.246	7.274	VV	15814	199511	13.12%	0.298%
141	7.282	7.274	7.304	VV	16654	209670	13.79%	0.313%

Instrument :

FID_F

ClientSampleId :

304641-01 Liquid

Manual IntegrationsAPPROVED

Reviewed By :Rahul Chavli 11/12/2025

Supervised By :Yogesh Patel 11/12/2025

					rters			
142	7.326	7.304	7.351	VV	20702	318931	20.98%	0.477%
143	7.373	7.351	7.415	VV	20137	478111	31.14%	0.477%
144	7.432	7.415	7.451	VV	18200	249751	16.41%	0.477%
145	7.473	7.451	7.509	VV	18543	372003	24.24%	0.477%
146	7.533	7.509	7.554	VV	12116	237770	15.41%	0.168%
147	7.573	7.554	7.589	VV	10663	174843	11.24%	0.168%
148	7.605	7.589	7.613	VV	8617	112603	7.41%	0.168%
149	7.621	7.613	7.639	VV	8415	123728	8.14%	0.185%
150	7.676	7.639	7.684	VV	17301	313595	20.63%	0.469%
151	7.701	7.684	7.724	VV	55048	682713	44.90%	1.020%
152	7.740	7.724	7.745	VV	10833	128784	8.47%	0.192%
153	7.753	7.745	7.764	VV	11089	120680	7.94%	0.180%
154	7.769	7.764	7.782	VV	10235	102522	6.74%	0.153%
155	7.806	7.782	7.813	VV	10435	184341	12.12%	0.275%
156	7.827	7.813	7.850	VV	11864	233263	15.34%	0.349%
157	7.873	7.850	7.904	VV	21545	470417	30.94%	0.703%
158	7.920	7.904	7.947	VV	12288	257532	16.94%	0.385%
159	7.966	7.947	7.985	VV	12701	221930	14.60%	0.332%
160	7.994	7.985	8.000	VV	7873	69082	4.54%	0.103%
161	8.018	8.000	8.029	VV	14383	195062	12.83%	0.291%
162	8.039	8.029	8.057	VV	13898	198362	13.05%	0.296%
163	8.075	8.057	8.112	VV	13865	320644	21.09%	0.479%
164	8.135	8.112	8.146	VV	12938	212180	13.96%	0.317%
165	8.164	8.146	8.178	VV	19284	289342	19.03%	0.432%
166	8.188	8.178	8.207	VV	16661	229236	15.08%	0.343%
167	8.231	8.207	8.251	VV	19436	344724	22.67%	0.515%
168	8.277	8.251	8.297	VV	25230	420475	27.66%	0.628%
169	8.312	8.297	8.319	VV	14812	169410	11.14%	0.253%
170	8.334	8.319	8.355	VV	24118	352858	23.21%	0.527%
171	8.372	8.355	8.385	VV	10915	175321	11.53%	0.262%
172	8.404	8.385	8.437	VV	22394	431400	28.37%	0.645%
173	8.452	8.437	8.475	VV	10683	215835	14.20%	0.322%
174	8.494	8.475	8.519	VV	13059	294272	19.36%	0.440%
175	8.556	8.519	8.562	VV	15541	337657	22.21%	0.505%
176	8.584	8.562	8.610	VV	71885	985031	64.79%	1.472%
177	8.627	8.610	8.648	VV	15530	298950	19.66%	0.447%
178	8.681	8.648	8.714	VV	16830	532729	35.04%	0.796%
179	8.733	8.714	8.759	VV	18515	405114	26.65%	0.605%
180	8.777	8.759	8.790	VV	12986	231695	15.24%	0.346%
181	8.803	8.790	8.820	VV	14228	230097	15.13%	0.344%
182	8.831	8.820	8.849	VV	12571	190680	12.54%	0.285%
183	8.877	8.849	8.899	VV	14517	343365	22.58%	0.513%
184	8.914	8.899	8.926	VV	11444	163869	10.78%	0.245%
185	8.944	8.926	8.970	VV	14039	323697	21.29%	0.484%
186	9.006	8.970	9.022	VV	19898	489915	32.22%	0.732%
187	9.037	9.022	9.059	VV	19890	356988	23.48%	0.533%
188	9.078	9.059	9.094	VV	19228	315079	20.72%	0.471%
189	9.123	9.094	9.151	VV	38098	716484	47.13%	1.071%
190	9.177	9.151	9.194	VV	21934	384698	25.30%	0.575%
191	9.202	9.194	9.223	VV	12490	194824	12.81%	0.291%
192	9.243	9.223	9.260	VV	12412	253987	16.71%	0.379%
193	9.271	9.260	9.294	VV	12752	233194	15.34%	0.348%
194	9.299	9.294	9.321	VV	10681	161808	10.64%	0.242%

Instrument :

FID_F

ClientSampleId :

304641-01 Liquid

Manual IntegrationsAPPROVED

Reviewed By :Rahul Chavli 11/12/2025

Supervised By :Yogesh Patel 11/12/2025

						Instrument : FID_F ClientSampleId : 304641-01 Liquid		
Sl. No.	Peak No.	Area	Height	Ratio	Conc	Conc	Conc	Conc
195	9.358	9.321	9.372	VV	14643	394545	25.95%	0.590%
196	9.380	9.372	9.386	VV	13506	115914	7.00%	0.00%
197	9.412	9.386	9.460	VV	86952	1382965	90.00%	0.00%
198	9.474	9.460	9.479	VV	11795	129073	8.00%	0.00%
199	9.498	9.479	9.520	VV	20110	382517	25.00%	0.00%
200	9.548	9.520	9.582	VV	15524	474820	31.00%	0.00%
Manual IntegrationsAPPROVED								
201	9.611	9.582	9.626	VV	11934	283048	18.62%	0.423%
202	9.646	9.626	9.662	VV	13522	252548	16.61%	0.377%
203	9.670	9.662	9.684	VV	11731	149464	9.83%	0.223%
204	9.696	9.684	9.707	VV	13115	172597	11.35%	0.258%
205	9.714	9.707	9.731	VV	12410	165509	10.89%	0.247%
206	9.745	9.731	9.764	VV	11602	208750	13.73%	0.312%
207	9.789	9.764	9.818	VV	27437	610832	40.18%	0.913%
208	9.831	9.818	9.846	VV	16795	242750	15.97%	0.363%
209	9.874	9.846	9.896	VV	20328	474565	31.21%	0.709%
210	9.919	9.896	9.940	VV	23317	430427	28.31%	0.643%
211	9.972	9.940	9.999	VV	20804	497287	32.71%	0.743%
212	10.036	9.999	10.059	VV	10891	362582	23.85%	0.542%
213	10.061	10.059	10.065	VV	9210	36634	2.41%	0.055%
214	10.073	10.065	10.088	VV	9587	128536	8.45%	0.192%
215	10.109	10.088	10.122	VV	11815	214880	14.13%	0.321%
216	10.150	10.122	10.169	VV	16575	401910	26.43%	0.601%
217	10.194	10.169	10.218	VV	97991	1292323	85.00%	1.931%
218	10.225	10.218	10.241	VV	12898	166027	10.92%	0.248%
219	10.272	10.241	10.288	VV	15444	386278	25.41%	0.577%
220	10.299	10.288	10.310	VV	14115	176159	11.59%	0.263%
221	10.319	10.310	10.343	VV	13060	225025	14.80%	0.336%
222	10.368	10.343	10.385	VV	11813	263355	17.32%	0.393%
223	10.406	10.385	10.449	VV	11441	398563	26.21%	0.596%
224	10.471	10.449	10.494	VV	11868	281575	18.52%	0.421%
225	10.541	10.494	10.556	VV	20080	500602	32.93%	0.748%
226	10.584	10.556	10.611	VV	37321	757045	49.79%	1.131%
227	10.632	10.611	10.650	VV	17113	323666	21.29%	0.484%
228	10.673	10.650	10.698	VV	20576	436686	28.72%	0.652%
229	10.727	10.698	10.754	VV	20022	450225	29.61%	0.673%
230	10.776	10.754	10.795	VV	9574	224898	14.79%	0.336%
231	10.805	10.795	10.811	VV	9216	86594	5.70%	0.129%
232	10.838	10.811	10.851	VV	11724	261821	17.22%	0.391%
233	10.867	10.851	10.898	VV	12973	327339	21.53%	0.489%
234	10.936	10.898	10.972	VV	102536	1520374	100.00%	2.272%
235	11.007	10.972	11.037	VV	42107	885890	58.27%	1.324%
236	11.050	11.037	11.085	VV	13707	335299	22.05%	0.501%
237	11.114	11.085	11.131	VV	10832	274759	18.07%	0.411%
238	11.148	11.131	11.167	VV	11494	220215	14.48%	0.329%
239	11.193	11.167	11.231	VV	11197	374569	24.64%	0.560%
240	11.258	11.231	11.294	VV	18781	552742	36.36%	0.826%
241	11.327	11.294	11.341	VV	16619	412392	27.12%	0.616%
242	11.349	11.341	11.370	VV	14213	215815	14.19%	0.322%
243	11.390	11.370	11.424	VV	17558	397898	26.17%	0.595%
244	11.443	11.424	11.478	VV	15300	354578	23.32%	0.530%
245	11.496	11.478	11.520	VV	9320	224417	14.76%	0.335%
246	11.547	11.520	11.562	VV	10283	236845	15.58%	0.354%

						Instrument : FID_F		
						ClientSampleId : 304641-01 Liquid		
rteres						Manual IntegrationsAPPROVED		
247	11.584	11.562	11.608	VV	10441	272199	17.90%	0.407%
248	11.639	11.608	11.679	VV	91904	1379490	90.66%	1.832%
249	11.684	11.679	11.700	VV	11172	132820	8.93%	0.203%
250	11.731	11.700	11.774	VV	26171	662594	43.81%	0.932%
251	11.796	11.774	11.819	VV	10126	240944	15.56%	0.444%
252	11.836	11.819	11.867	VV	9124	236979	15.49%	0.420%
253	11.885	11.867	11.903	VV	9215	186601	12.27%	0.279%
254	11.936	11.903	11.979	VV	15005	531888	34.98%	0.795%
255	11.996	11.979	12.013	VV	10811	201116	13.23%	0.300%
256	12.037	12.013	12.057	VV	14333	297353	19.56%	0.444%
257	12.074	12.057	12.103	VV	13370	281069	18.49%	0.420%
258	12.125	12.103	12.149	VV	12267	265999	17.50%	0.397%
259	12.155	12.149	12.174	VV	7850	110010	7.24%	0.164%
260	12.200	12.174	12.222	VV	9002	238073	15.66%	0.356%
261	12.245	12.222	12.260	VV	8357	179539	11.81%	0.268%
262	12.312	12.260	12.340	VV	75406	1226408	80.66%	1.832%
263	12.353	12.340	12.365	VV	9303	135836	8.93%	0.203%
264	12.384	12.365	12.427	VV	9218	308616	20.30%	0.461%
265	12.442	12.427	12.461	VV	8470	160873	10.58%	0.240%
266	12.465	12.461	12.485	VV	7495	97321	6.40%	0.145%
267	12.510	12.485	12.527	VV	7368	173127	11.39%	0.259%
268	12.539	12.527	12.559	VV	6872	123919	8.15%	0.185%
269	12.584	12.559	12.613	VV	11645	302572	19.90%	0.452%
270	12.616	12.613	12.635	VV	9535	115480	7.60%	0.173%
271	12.650	12.635	12.669	VV	8304	150234	9.88%	0.224%
272	12.692	12.669	12.709	VV	9145	193247	12.71%	0.289%
273	12.724	12.709	12.759	VV	10954	244311	16.07%	0.365%
274	12.777	12.759	12.804	VV	9116	197852	13.01%	0.296%
275	12.824	12.804	12.852	VV	6582	177262	11.66%	0.265%
276	12.875	12.852	12.923	VV	7778	291387	19.17%	0.435%
277	12.953	12.923	13.000	VV	58826	913909	60.11%	1.366%
278	13.016	13.000	13.054	VV	7205	205631	13.53%	0.307%
279	13.071	13.054	13.087	VV	6182	116585	7.67%	0.174%
280	13.098	13.087	13.122	VV	6185	117623	7.74%	0.176%
281	13.126	13.122	13.130	VV	4928	23586	1.55%	0.035%
282	13.136	13.130	13.159	VV	4937	79098	5.20%	0.118%
283	13.176	13.159	13.184	VV	5081	73599	4.84%	0.110%
284	13.208	13.184	13.239	VV	8149	220467	14.50%	0.329%
285	13.242	13.239	13.262	VV	6576	82601	5.43%	0.123%
286	13.276	13.262	13.296	VV	6136	106846	7.03%	0.160%
287	13.316	13.296	13.331	VV	6534	119515	7.86%	0.179%
288	13.347	13.331	13.384	VV	7363	184532	12.14%	0.276%
289	13.400	13.384	13.429	VV	6451	139140	9.15%	0.208%
290	13.450	13.429	13.482	VV	6304	166410	10.95%	0.249%
291	13.501	13.482	13.523	VV	4722	108086	7.11%	0.161%
292	13.567	13.523	13.598	VV	41691	638781	42.01%	0.954%
293	13.613	13.598	13.657	VV	5105	163923	10.78%	0.245%
294	13.666	13.657	13.697	VV	4160	94312	6.20%	0.141%
295	13.702	13.697	13.718	VV	3609	43461	2.86%	0.065%
296	13.732	13.718	13.758	VV	3562	76592	5.04%	0.114%
297	13.801	13.758	13.823	VV	6072	170427	11.21%	0.255%
298	13.843	13.823	13.863	VV	4544	100661	6.62%	0.150%
299	13.875	13.863	13.900	VV	3832	75278	4.95%	0.112%

Manual IntegrationsAPPROVED

Reviewed By :Rahul Chavli 11/12/2025
Supervised By :Yogesh Patel 11/12/2025

					rters			
300	13.917	13.900	13.930	VV	4107	64712	4.26%	0.097%
301	13.948	13.930	13.972	VV	4282	91390		
302	13.997	13.972	14.026	VV	4582	115510		
303	14.030	14.026	14.043	VV	2811	28833		
304	14.065	14.043	14.108	VV	3257	109726		
305	14.155	14.108	14.193	VV	26870	415317	27	
306	14.212	14.193	14.226	VV	2902	52577	3.46%	0.079%
307	14.241	14.226	14.274	VV	2906	72416	4.76%	0.108%
308	14.280	14.274	14.291	VV	2213	20176	1.33%	0.030%
309	14.297	14.291	14.301	VV	1969	11826	0.78%	0.018%
310	14.308	14.301	14.329	VV	1987	30351	2.00%	0.045%
311	14.379	14.329	14.422	VV	3579	144311	9.49%	0.216%
312	14.424	14.422	14.440	VV	2369	22055	1.45%	0.033%
313	14.453	14.440	14.469	VV	2222	34312	2.26%	0.051%
314	14.487	14.469	14.504	VV	2125	39904	2.62%	0.060%
315	14.518	14.504	14.535	VV	2257	36983	2.43%	0.055%
316	14.547	14.535	14.559	VV	2007	27651	1.82%	0.041%
317	14.573	14.559	14.615	VV	2360	58127	3.82%	0.087%
318	14.633	14.615	14.654	VV	1542	31415	2.07%	0.047%
319	14.657	14.654	14.688	VV	1325	23959	1.58%	0.036%
320	14.720	14.688	14.762	VV	15020	221157	14.55%	0.330%
321	14.790	14.762	14.804	VV	1584	34433	2.26%	0.051%
322	14.811	14.804	14.835	VV	1382	23765	1.56%	0.036%
323	14.847	14.835	14.872	VV	1303	26138	1.72%	0.039%
324	14.874	14.872	14.904	VV	1066	16771	1.10%	0.025%
325	14.927	14.904	14.958	VV	1658	43067	2.83%	0.064%
326	14.964	14.958	14.991	VV	1245	22275	1.47%	0.033%
327	15.003	14.991	15.024	VV	1093	17958	1.18%	0.027%
328	15.049	15.024	15.053	VV	1057	16217	1.07%	0.024%
329	15.100	15.053	15.139	VV	5937	115275	7.58%	0.172%
330	15.146	15.139	15.217	VV	822	29678	1.95%	0.044%
331	15.263	15.217	15.298	VV	6922	111984	7.37%	0.167%
332	15.316	15.298	15.369	VV	796	25594	1.68%	0.038%
333	15.373	15.369	15.392	VV	452	4733	0.31%	0.007%
334	15.402	15.392	15.415	VV	414	4683	0.31%	0.007%
335	15.460	15.415	15.479	VV	746	20221	1.33%	0.030%
336	15.485	15.479	15.494	VV	509	4081	0.27%	0.006%
337	15.513	15.494	15.530	VV	504	9474	0.62%	0.014%
338	15.540	15.530	15.587	VV	446	11063	0.73%	0.017%
339	15.603	15.587	15.617	VV	418	6260	0.41%	0.009%
340	15.623	15.617	15.628	VV	281	1618	0.11%	0.002%
341	15.632	15.628	15.635	VV	234	1109	0.07%	0.002%
342	15.653	15.635	15.666	VV	466	6582	0.43%	0.010%
343	15.688	15.666	15.692	VV	438	5251	0.35%	0.008%
344	15.695	15.692	15.717	VV	397	4097	0.27%	0.006%
345	15.732	15.717	15.752	VV	240	3232	0.21%	0.005%
346	15.785	15.752	15.909	VV	2963	64011	4.21%	0.096%
347	15.913	15.909	15.937	VV	172	1769	0.12%	0.003%
348	15.942	15.937	15.945	PV	87	319	0.02%	0.000%
349	15.967	15.945	15.990	VV	334	6184	0.41%	0.009%
350	15.992	15.990	16.005	VV	257	2039	0.13%	0.003%
351	16.012	16.005	16.029	VV	190	2177	0.14%	0.003%

Instrument :

FID_F

ClientSampleId :

304641-01 Liquid

Manual IntegrationsAPPROVED

Reviewed By :Rahul Chavli 11/12/2025

Supervised By :Yogesh Patel 11/12/2025

						Instrument : FID_F		
						ClientSampleId : 304641-01 Liquid		
352	16.033	16.029	16.042	VV	176	811	0.05%	0.001%
353	16.063	16.042	16.067	VV	120	1369		
354	16.103	16.067	16.170	PV	229	9933		
355	16.176	16.170	16.181	VV	209	980		
						Manual IntegrationsAPPROVED		
						Reviewed By :Rahul Chavli 11/12/2025 Supervised By :Yogesh Patel 11/12/2025		
356	16.195	16.181	16.242	VV	325	5350		
357	16.246	16.242	16.251	VV	82	271		
358	16.288	16.251	16.322	VV	1459	21828	1.44%	0.033%
359	16.333	16.322	16.372	VV	305	3555	0.23%	0.005%
360	16.376	16.372	16.379	PV	71	235	0.02%	0.000%
361	16.385	16.379	16.412	VV	102	840	0.06%	0.001%
362	16.430	16.412	16.447	VV	218	2216	0.15%	0.003%
363	16.469	16.447	16.487	VV	330	5369	0.35%	0.008%
364	16.496	16.487	16.513	VV	200	2795	0.18%	0.004%
365	16.519	16.513	16.544	VV	245	2848	0.19%	0.004%
366	16.549	16.544	16.560	VV	136	1026	0.07%	0.002%
367	16.601	16.560	16.631	PV	308	7676	0.50%	0.011%
368	16.652	16.631	16.706	VV	196	5563	0.37%	0.008%
369	16.736	16.706	16.745	VV	162	2782	0.18%	0.004%
370	16.773	16.745	16.820	VV	899	17119	1.13%	0.026%
371	16.826	16.820	16.845	VV	268	2891	0.19%	0.004%
372	16.856	16.845	16.910	VV	340	5709	0.38%	0.009%
373	16.933	16.910	16.952	VV	262	4313	0.28%	0.006%
374	16.956	16.952	16.975	VV	153	1583	0.10%	0.002%
375	16.991	16.975	16.997	VV	145	1424	0.09%	0.002%
376	17.008	16.997	17.028	VV	123	1860	0.12%	0.003%
377	17.043	17.028	17.050	PV	133	1197	0.08%	0.002%
378	17.051	17.050	17.064	VV	92	242	0.02%	0.000%
379	17.079	17.064	17.085	VV	58	571	0.04%	0.001%
380	17.101	17.085	17.110	PV	130	1151	0.08%	0.002%
381	17.139	17.110	17.163	VV	481	7696	0.51%	0.011%
382	17.243	17.163	17.274	VV	1098	21966	1.44%	0.033%
383	17.286	17.274	17.322	VV	208	4002	0.26%	0.006%
384	17.357	17.322	17.377	VV	175	3771	0.25%	0.006%
385	17.405	17.377	17.414	VV	249	3369	0.22%	0.005%
386	17.417	17.414	17.426	VV	178	1027	0.07%	0.002%
387	17.478	17.426	17.498	VV	172	4795	0.32%	0.007%
388	17.522	17.498	17.539	PV	131	2120	0.14%	0.003%
389	17.569	17.539	17.597	VV	242	5066	0.33%	0.008%
390	17.604	17.597	17.640	VV	140	2042	0.13%	0.003%
391	17.696	17.640	17.753	PV	1412	29533	1.94%	0.044%
392	17.800	17.753	17.822	VV	398	9360	0.62%	0.014%
393	17.833	17.822	17.840	VV	260	2337	0.15%	0.003%
394	17.858	17.840	17.894	VV	227	5410	0.36%	0.008%
395	17.914	17.894	17.930	VV	206	2515	0.17%	0.004%
396	17.989	17.930	18.008	PV	103	3576	0.24%	0.005%
397	18.035	18.008	18.047	VV	123	1746	0.11%	0.003%
398	18.134	18.047	18.170	PV	2165	36564	2.40%	0.055%
399	18.282	18.170	18.307	VV	422	18864	1.24%	0.028%
400	18.315	18.307	18.350	VV	294	4519	0.30%	0.007%
401	18.416	18.350	18.442	PV	590	12553	0.83%	0.019%
402	18.558	18.442	18.607	VV	2547	53633	3.53%	0.080%
403	18.650	18.607	18.664	VV	398	9496	0.62%	0.014%
404	18.695	18.664	18.712	VV	351	7640	0.50%	0.011%

405	18.719	18.712	18.735	VV	178	1720		
406	18.846	18.735	18.855	PV	276	12622		
407	18.972	18.855	19.044	VV	2830	72623		
408	19.237	19.044	19.245	VV	671	54896		
409	19.262	19.245	19.295	VV	666	15720		
410	19.370	19.295	19.409	VV	3045	80044		
411	19.483	19.409	19.510	VV	1522	71514	4.70%	0.107%
412	19.547	19.510	19.585	VV	2084	73100	4.81%	0.109%
413	19.759	19.585	19.825	VV	4149	271683	17.87%	0.406%
414	19.878	19.825	19.894	VV	2284	88175	5.80%	0.132%
415	19.903	19.894	19.912	VV	2101	22098	1.45%	0.033%
416	20.062	19.912	20.095	VV	3913	297272	19.55%	0.444%
417	20.136	20.095	20.161	VV	4871	150545	9.90%	0.225%
418	20.502	20.161	20.526	VV	7260	1027806	67.60%	1.536%
419	20.558	20.526	20.591	VV	7077	245892	16.17%	0.367%
420	20.772	20.591	20.835	VV	7208	966589	63.58%	1.444%
421	20.864	20.835	20.889	VV	6943	210085	13.82%	0.314%
422	20.970	20.889	20.995	VV	6317	394241	25.93%	0.589%
423	21.050	20.995	21.092	VV	7241	375433	24.69%	0.561%
424	21.102	21.092	21.139	VV	5796	158280	10.41%	0.236%
425	21.159	21.139	21.186	VV	5553	154059	10.13%	0.230%
426	21.259	21.186	21.312	VV	5997	411401	27.06%	0.615%
427	21.379	21.312	21.483	VV	4872	459007	30.19%	0.686%
428	21.538	21.483	21.547	VV	3718	141800	9.33%	0.212%
429	21.611	21.547	21.688	VV	4456	303535	19.96%	0.454%
430	21.707	21.688	21.772	VV	2770	120270	7.91%	0.180%
431	21.784	21.772	21.807	VV	2009	39413	2.59%	0.059%
432	21.810	21.807	21.824	VV	1826	17620	1.16%	0.026%
433	21.964	21.824	21.974	VV	1546	141394	9.30%	0.211%
434	21.985	21.974	22.047	VV	1480	52369	3.44%	0.078%
435	22.062	22.047	22.150	VV	953	35520	2.34%	0.053%
436	22.209	22.150	22.233	VV	431	9426	0.62%	0.014%
437	22.284	22.233	22.300	PBA	458	20052	1.32%	0.030%
Sum of corrected areas:						66927857		

Instrument :

FID_F

ClientSampleId :

304641-01 Liquid

0.11% 0.003%

Manual IntegrationsAPPROVED

Reviewed By :Rahul Chavli 11/12/2025

Supervised By :Yogesh Patel 11/12/2025

FF102925.M Wed Nov 12 01:07:18 2025



CALIBRATION SUMMARY

TPH GC INITIAL CALIBRATION SUMMARY

Lab Name: Alliance

Contract: PACI01

ProjectID: Kilo Pier

Lab Code: ACE

SDG No.: Q3574

Calibration Sequence : FF102925		Test : TPH GC	
Concentration (PPM)	Area Count	Reference Factor	File ID
85	9472915	111446	FF016603.D
170	18165984	106859	FF016604.D
340	37023074	108891	FF016605.D
850	89698209	105527	FF016606.D
1700	169764046	99861	FF016607.D
AVG RF : 106517		% RSD : 4.074	AVG RT : 15.059

TPH GC CONTINUING CALIBRATION SUMMARY

50 PPM TRPH STD

Lab Name: Alliane Contract: PACI01
ProjectID: Kilo Pier
Lab Code: ACE SDG No.: Q3574
DataFile: FF016645.D Analyst Name: YP\AJ Analyst Date: 11-11-2025

Conc. (PPM)	Area Count	RF	Average RF	%D
850	85848516	100998	106517	5.181

Data Path : Z:\pestpcbsrv\HPCHEM1\FID_F\Data\FF111125\
 Data File : FF016645.D
 Signal(s) : FID2B.ch
 Acq On : 11 Nov 2025 11:01
 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: Nov 12 00:16:15 2025
 Quant Method : Z:\pestpcbsrv\HPCHEM1\FID_F\Method\FF102925.M
 Quant Title :
 QLast Update : Wed Oct 29 12:48:52 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...	15.063	4845652	46.381 ug/ml
Target Compounds			
1) N-OCTANE	2.040	5366318	48.348 ug/ml
2) N-DECANE	4.574	5470192	49.438 ug/ml
3) N-DODECANE	6.753	5501739	49.527 ug/ml
4) N-TETRADECANE	8.587	5510411	49.326 ug/ml
5) N-HEXADECANE	10.198	5505643	49.001 ug/ml
6) N-OCTADECANE	11.643	5620747	48.029 ug/ml
7) N-EICOSANE	12.957	5737839	46.990 ug/ml
8) N-DOCOSANE	14.160	5549635	46.555 ug/ml
10) N-TETRACOSANE	15.267	5486734	46.306 ug/ml
11) N-HEXACOSANE	16.291	5272201	45.893 ug/ml
12) N-OCTACOSANE	17.247	5163670	45.313 ug/ml
13) N-TRIACONTANE	18.137	5068321	45.109 ug/ml
14) N-DOTRIACONTANE	18.973	4854163	45.283 ug/ml
15) N-TETRATRIACONTANE	19.761	4561629	46.423 ug/ml
16) N-HEXATRIACONTANE	20.505	4077008	47.680 ug/ml
17) N-OCTATRIACONTANE	21.265	3712268	48.366 ug/ml
18) N-TETRACONTANE	22.211	3389998	49.672 ug/ml

(f)=RT Delta > 1/2 Window

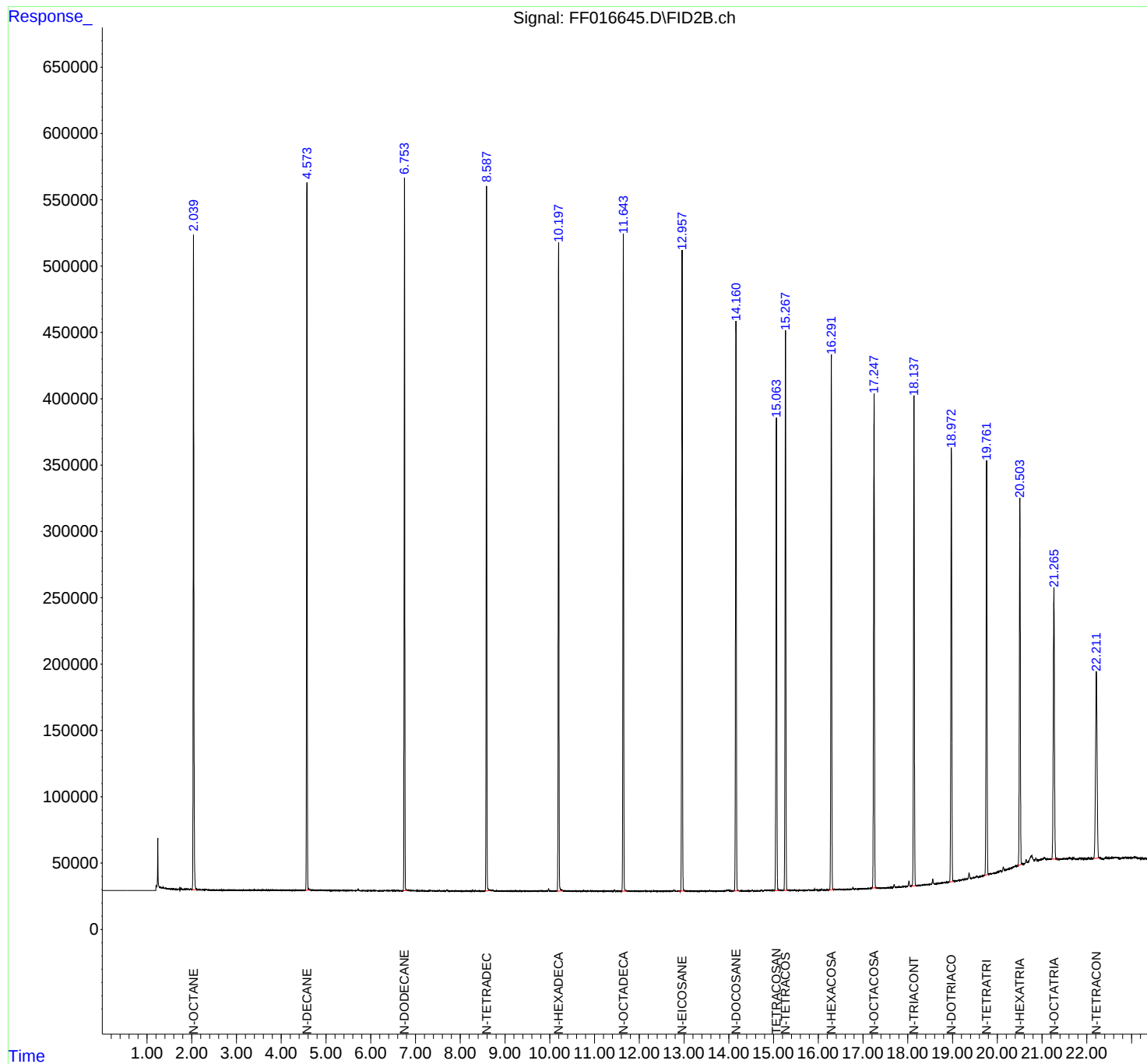
(m)=manual int.

Data Path : Z:\pestpcbsrv\HPCHEM1\FID_F\Data\FF111125\
Data File : FF016645.D
Signal(s) : FID2B.ch
Acq On : 11 Nov 2025 11:01
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: Nov 12 00:16:15 2025
Quant Method : Z:\pestpcbsrv\HPCHEM1\FID_F\Method\FF102925.M
Quant Title :
QLast Update : Wed Oct 29 12:48:52 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\FF111125\
 Data File : FF016645.D
 Signal(s) : FID2B.ch
 Acq On : 11 Nov 2025 11:01
 Sample : 50 PPM TRPH STD
 Misc :
 ALS Vial : 53 Sample Multiplier: 1

Integration File: autoint1.e

Method : Z:\pestpcbsrv\HPCHEM1\FID_F\Method\FF102925.M
 Title :

Signal : FID2B.ch

peak #	R.T. min	Start min	End min	PK TY	peak height	peak area	peak % max.	% of total
1	2.040	2.006	2.111	BB	493612	5366318	93.53%	5.917%
2	4.574	4.539	4.644	BB	532955	5470192	95.34%	6.031%
3	6.753	6.721	6.822	BB	538520	5501739	95.89%	6.066%
4	8.587	8.552	8.674	BB	530199	5510411	96.04%	6.076%
5	10.198	10.161	10.294	BB	489367	5505643	95.95%	6.071%
6	11.643	11.604	11.722	BB	496612	5620747	97.96%	6.197%
7	12.957	12.867	13.024	BB	482177	5737839	100.00%	6.327%
8	14.160	14.119	14.237	BB	429030	5549635	96.72%	6.119%
9	15.063	15.019	15.132	BV	356777	4845652	84.45%	5.343%
10	15.267	15.224	15.326	BB	421444	5486734	95.62%	6.050%
11	16.291	16.231	16.361	BB	403287	5272201	91.88%	5.813%
12	17.247	17.201	17.309	BB	373436	5163670	89.99%	5.693%
13	18.137	18.064	18.191	BB	369522	5068321	88.33%	5.588%
14	18.973	18.921	19.032	BB	326761	4854163	84.60%	5.352%
15	19.761	19.701	19.802	BB	310555	4561629	79.50%	5.030%
16	20.505	20.451	20.542	BV	275939	4077008	71.05%	4.495%
17	21.265	21.201	21.346	BB	203853	3712268	64.70%	4.093%
18	22.211	22.141	22.280	BBA	140657	3389998	59.08%	3.738%
Sum of corrected areas:							90694167	

FF102925.M Wed Nov 12 00:55:24 2025

TPH GC CONTINUING CALIBRATION SUMMARY

50 PPM TRPH STD

Lab Name: Alliane Contract: PACI01
ProjectID: Kilo Pier
Lab Code: ACE SDG No.: Q3574
DataFile: FF016653.D Analyst Name: YP\AJ Analyst Date: 11-11-2025

Conc. (PPM)	Area Count	RF	Average RF	%D
850	92939637	109341	106517	2.651

Data Path : Z:\pestpcbsrv\HPCHEM1\FID_F\Data\FF111125\
 Data File : FF016653.D
 Signal(s) : FID2B.ch
 Acq On : 11 Nov 2025 14:57
 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: Nov 12 00:18:55 2025
 Quant Method : Z:\pestpcbsrv\HPCHEM1\FID_F\Method\FF102925.M
 Quant Title :
 QLast Update : Wed Oct 29 12:48:52 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...	15.061	5221739	49.981 ug/ml
Target Compounds			
1) N-OCTANE	2.040	5805919	52.308 ug/ml
2) N-DECANE	4.573	5930108	53.595 ug/ml
3) N-DODECANE	6.753	5960093	53.653 ug/ml
4) N-TETRADECANE	8.586	5965808	53.403 ug/ml
5) N-HEXADECANE	10.197	5947856	52.937 ug/ml
6) N-OCTADECANE	11.643	6063748	51.814 ug/ml
7) N-EICOSANE	12.957	6185152	50.654 ug/ml
8) N-DOCOSANE	14.159	5977776	50.147 ug/ml
10) N-TETRACOSANE	15.266	5915179	49.922 ug/ml
11) N-HEXACOSANE	16.292	5669834	49.355 ug/ml
12) N-OCTACOSANE	17.245	5565138	48.836 ug/ml
13) N-TRIACONTANE	18.136	5488069	48.845 ug/ml
14) N-DOTRIACONTANE	18.973	5301277	49.454 ug/ml
15) N-TETRATRIACONTANE	19.760	4957983	50.457 ug/ml
16) N-HEXATRIACONTANE	20.504	4448894	52.029 ug/ml
17) N-OCTATRIACONTANE	21.262	4047546	52.735 ug/ml
18) N-TETRACONTANE	22.210	3709257	54.350 ug/ml

(f)=RT Delta > 1/2 Window

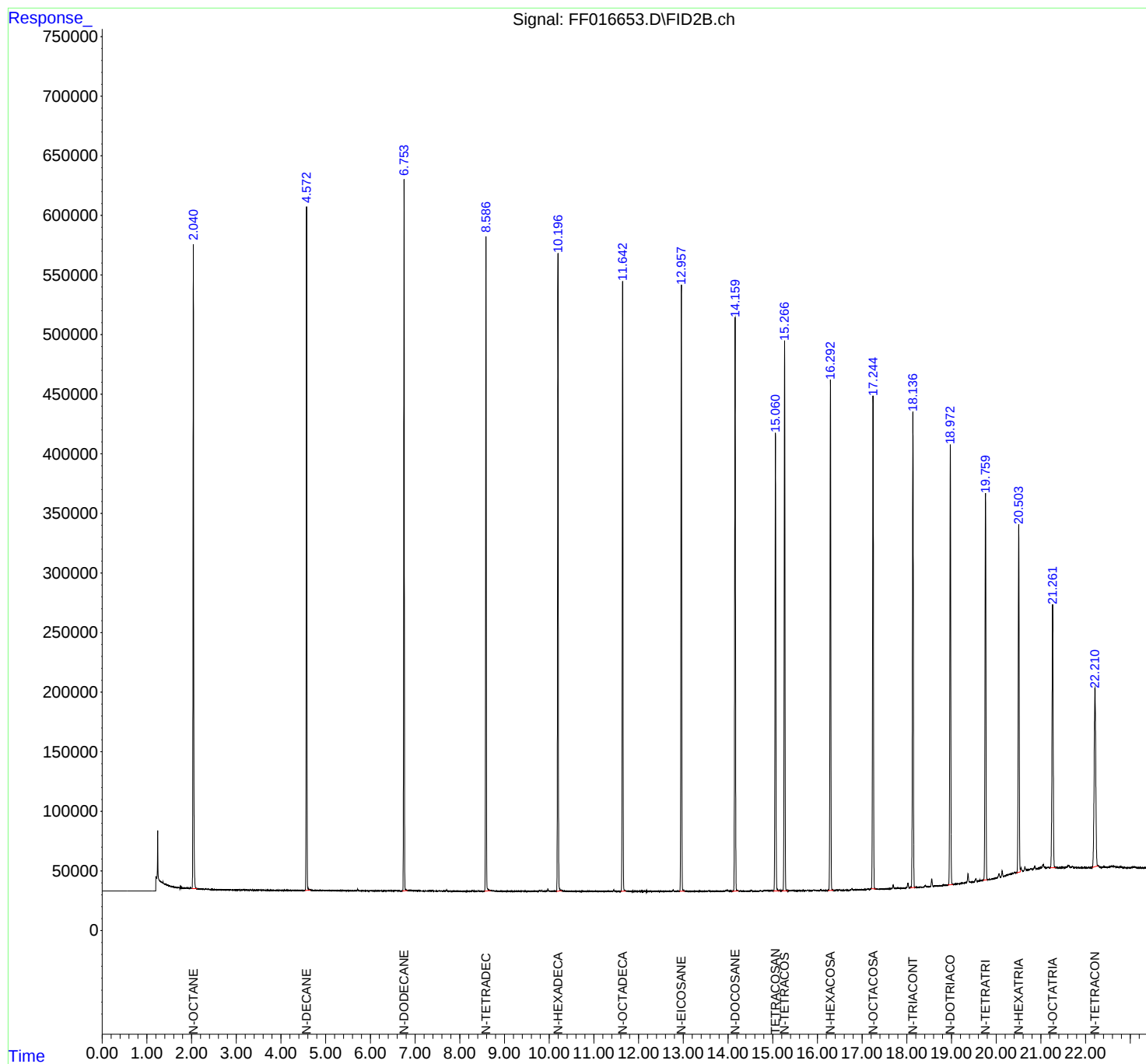
(m)=manual int.

Data Path : Z:\pestpcbsrv\HPCHEM1\FID_F\Data\FF111125\
Data File : FF016653.D
Signal(s) : FID2B.ch
Acq On : 11 Nov 2025 14:57
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: Nov 12 00:18:55 2025
Quant Method : Z:\pestpcbsrv\HPCHEM1\FID_F\Method\FF102925.M
Quant Title :
QLast Update : Wed Oct 29 12:48:52 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\FF111125\
Data File : FF016653.D
Signal(s) : FID2B.ch
Acq On : 11 Nov 2025 14:57
Sample : 50 PPM TRPH STD
Misc :
ALS Vial : 53 Sample Multiplier: 1

Integration File: autoint1.e

Method : Z:\pestpcbsrv\HPCHEM1\FID_F\Method\FF102925.M
Title :

Signal : FID2B.ch

peak #	R.T. min	Start min	End min	PK TY	peak height	peak area	peak % max.	% of total
1	2.040	2.004	2.124	BB	540168	5805919	93.87%	5.915%
2	4.573	4.537	4.655	BB	573513	5930108	95.88%	6.041%
3	6.753	6.715	6.834	BB	597839	5960093	96.36%	6.072%
4	8.586	8.552	8.685	BB	550800	5965808	96.45%	6.078%
5	10.197	10.159	10.289	BB	535620	5947856	96.16%	6.059%
6	11.643	11.605	11.715	BB	511205	6063748	98.04%	6.177%
7	12.957	12.917	13.035	BB	508936	6185152	100.00%	6.301%
8	14.159	14.087	14.229	BB	481053	5977776	96.65%	6.090%
9	15.061	15.017	15.165	BB	384053	5221739	84.42%	5.320%
10	15.266	15.199	15.339	BB	461429	5915179	95.64%	6.026%
11	16.292	16.232	16.357	BB	428347	5669834	91.67%	5.776%
12	17.245	17.200	17.315	BB	413148	5565138	89.98%	5.669%
13	18.136	18.067	18.202	BB	398427	5488069	88.73%	5.591%
14	18.973	18.920	19.035	BB	367575	5301277	85.71%	5.401%
15	19.760	19.700	19.802	BB	321820	4957983	80.16%	5.051%
16	20.504	20.450	20.539	BV	290542	4448894	71.93%	4.532%
17	21.262	21.200	21.334	BB	220753	4047546	65.44%	4.123%
18	22.210	22.140	22.280	BBA	149544	3709257	59.97%	3.779%
Sum of corrected areas:							98161374	

FF102925.M Wed Nov 12 01:03:26 2025

Analytical Sequence

Client: Pacific Commercial Services Inc.

SDG No.: Q3574

Project: Kilo Pier

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 15.059					
CLIENT SAMPLE NO.	LAB SAMPLE ID	DATE AND TIME ANALYZED	DATAFILE	RT	#
PIBLK01	LBLK01	11 Nov 2025 09:30	FF016644.D	15.061	
50 PPM TRPH STD	50 PPM TRPH STD	11 Nov 2025 11:01	FF016645.D	15.063	
PB170474BL	PB170474BL	11 Nov 2025 12:01	FF016647.D	15.060	
PB170474BS	PB170474BS	11 Nov 2025 12:30	FF016648.D	15.060	
PB170474BSD	PB170474BSD	11 Nov 2025 12:59	FF016649.D	15.060	
304641-01 Liquid	Q3574-01	11 Nov 2025 13:58	FF016651.D	15.003	
PIBLK02	LBLK02	11 Nov 2025 14:27	FF016652.D	15.059	
50 PPM TRPH STD	50 PPM TRPH STD	11 Nov 2025 14:57	FF016653.D	15.061	



QC SAMPLE DATA

Report of Analysis

Client:	Pacific Commercial Services Inc.		Date Collected:	
Project:	Kilo Pier		Date Received:	
Client Sample ID:	PB170474BL		SDG No.:	Q3574
Lab Sample ID:	PB170474BL		Matrix:	Water
Analytical Method:	8015D TPH		% Solid:	0
Sample Wt/Vol:	1000 mL	Final Vol: 1 mL	Test:	TPH GC
Prep Method:	SW3510	Prep Date: 11/10/25		

CAS Number	Parameter	Conc.	Qua.	DF	MDL	LOD	LOQ / CRQL	Units	Date Ana.	BatchID
TARGETS										
PHC	Petroleum Hydrocarbons	42.0	U	1	12.0	42.0	85.0	ug/L	11/11/25 12:01	PB170474
SURROGATES										
16416-32-3	TETRACOSANE-d50	16.4			29 - 130		82%	SPK: 20		

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

Data Path : Z:\pestpcbsrv\HPCHEM1\FID_F\Data\FF111125\
Data File : FF016647.D
Signal(s) : FID2B.ch
Acq On : 11 Nov 2025 12:01
Operator : YP\AJ
Sample : PB170474BL
Misc :
ALS Vial : 31 Sample Multiplier: 1

Instrument :
FID_F
ClientSampleId :
PB170474BL

Integration File: autoint1.e
Quant Time: Nov 12 00:16:57 2025
Quant Method : Z:\pestpcbsrv\HPCHEM1\FID_F\Method\FF102925.M
Quant Title :
QLast Update : Wed Oct 29 12:48:52 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...	15.060	1709763	16.365 ug/ml
Target Compounds			

(f)=RT Delta > 1/2 Window

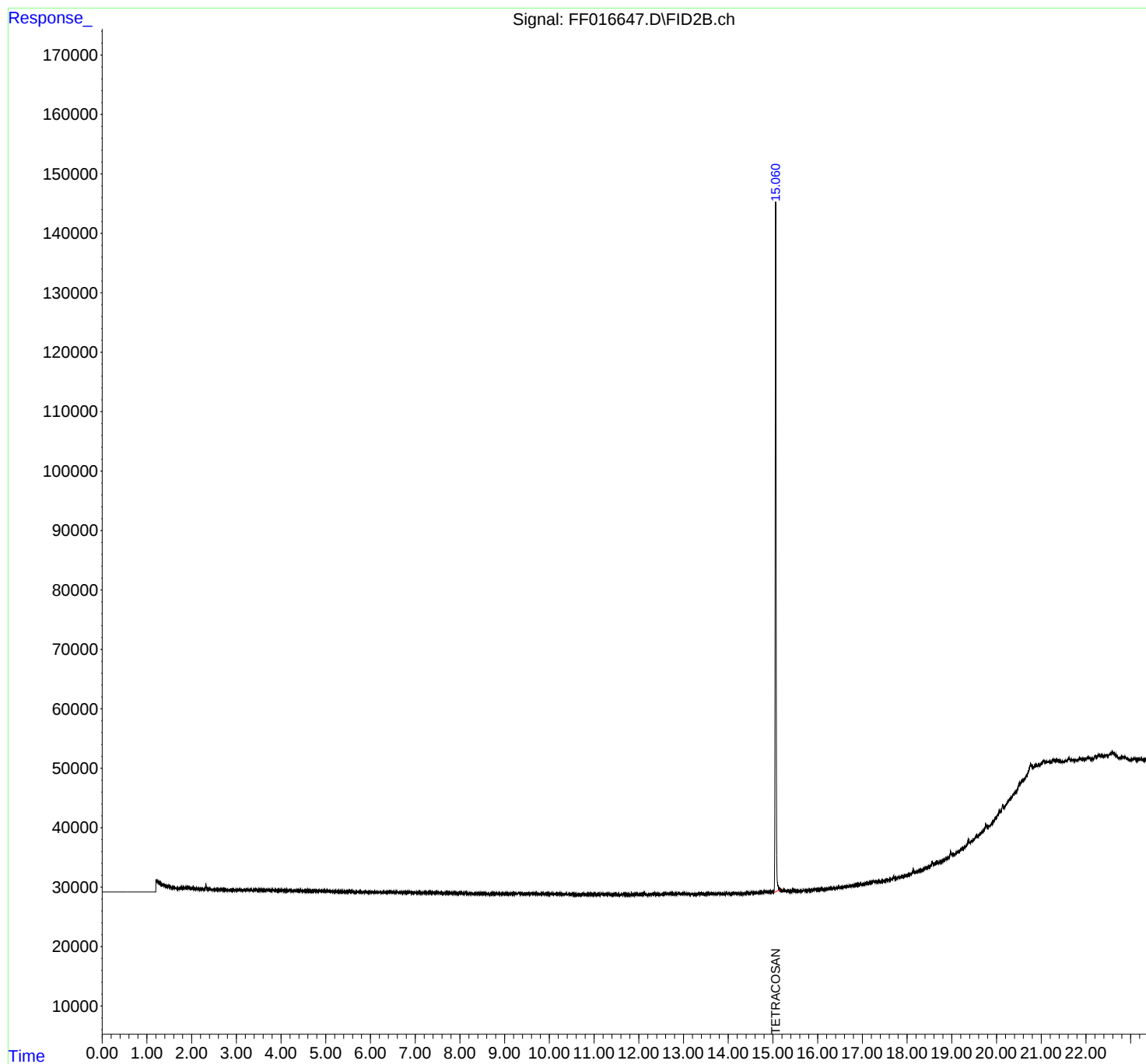
(m)=manual int.

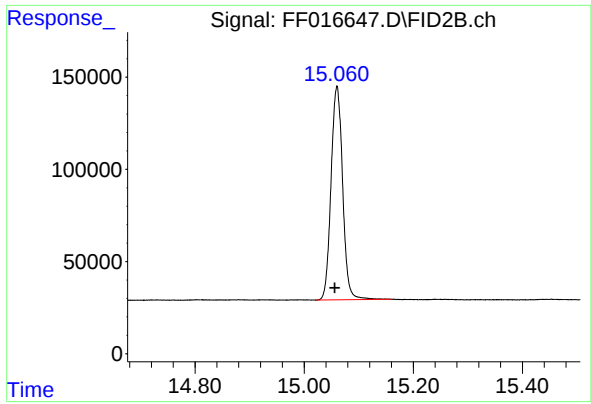
Data Path : Z:\pestpcbsrv\HPCHEM1\FID_F\Data\FF111125\
Data File : FF016647.D
Signal(s) : FID2B.ch
Acq On : 11 Nov 2025 12:01
Operator : YP\AJ
Sample : PB170474BL
Misc :
ALS Vial : 31 Sample Multiplier: 1

Instrument :
FID_F
ClientSampleId :
PB170474BL

Integration File: autoint1.e
Quant Time: Nov 12 00:16:57 2025
Quant Method : Z:\pestpcbsrv\HPCHEM1\FID_F\Method\FF102925.M
Quant Title :
QLast Update : Wed Oct 29 12:48:52 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.: 15.060 min
Delta R.T.: 0.004 min
Response: 1709763
Conc: 16.37 ug/ml

Instrument :
FID_F
ClientSampleId :
PB170474BL

rteres

Area Percent Report

Data Path : Z:\pestpcbsrv\HPCHEM1\FID_F\Data\FF111125\
Data File : FF016647.D
Signal(s) : FID2B.ch
Acq On : 11 Nov 2025 12:01
Sample : PB170474BL
Misc :
ALS Vial : 31 Sample Multiplier: 1

Integration File: autoint1.e

Method : Z:\pestpcbsrv\HPCHEM1\FID_F\Method\FF102925.M
Title :

Signal : FID2B.ch

peak #	R.T. min	Start min	End min	PK TY	peak height	peak area	peak % max.	% of total
1	15.060	15.022	15.160	BB	116186	1709763	100.00%	100.000%
Sum of corrected areas:						1709763		

FF102925.M Wed Nov 12 00:59:59 2025

Report of Analysis

Client:	Pacific Commercial Services Inc.	Date Collected:	11/11/25
Project:	Kilo Pier	Date Received:	11/11/25
Client Sample ID:	PIBLK-FF016644.D	SDG No.:	Q3574
Lab Sample ID:	I.BLK-FF016644.D	Matrix:	Water
Analytical Method:	8015D TPH	% Solid:	0
Sample Wt/Vol:	1000 mL	Final Vol:	1 mL
Prep Method:	SW3510	Test:	TPH GC
	Prep Date:		

CAS Number	Parameter	Conc.	Qua.	DF	MDL	LOD	LOQ / CRQL	Units	Date Ana.	BatchID
TARGETS										
PHC	Petroleum Hydrocarbons	42.0	U	1	12.0	42.0	85.0	ug/L	11/11/25	FF111125
SURROGATES										
16416-32-3	TETRACOSANE-d50	16.9			29 - 130		84%	SPK: 20		

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

Data Path : Z:\pestpcbsrv\HPCHEM1\FID_F\Data\FF111125\
Data File : FF016644.D
Signal(s) : FID2B.ch
Acq On : 11 Nov 2025 09:30
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: Nov 12 00:16:00 2025
Quant Method : Z:\pestpcbsrv\HPCHEM1\FID_F\Method\FF102925.M
Quant Title :
QLast Update : Wed Oct 29 12:48:52 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...	15.061	1765591	16.900 ug/ml
Target Compounds			

(f)=RT Delta > 1/2 Window

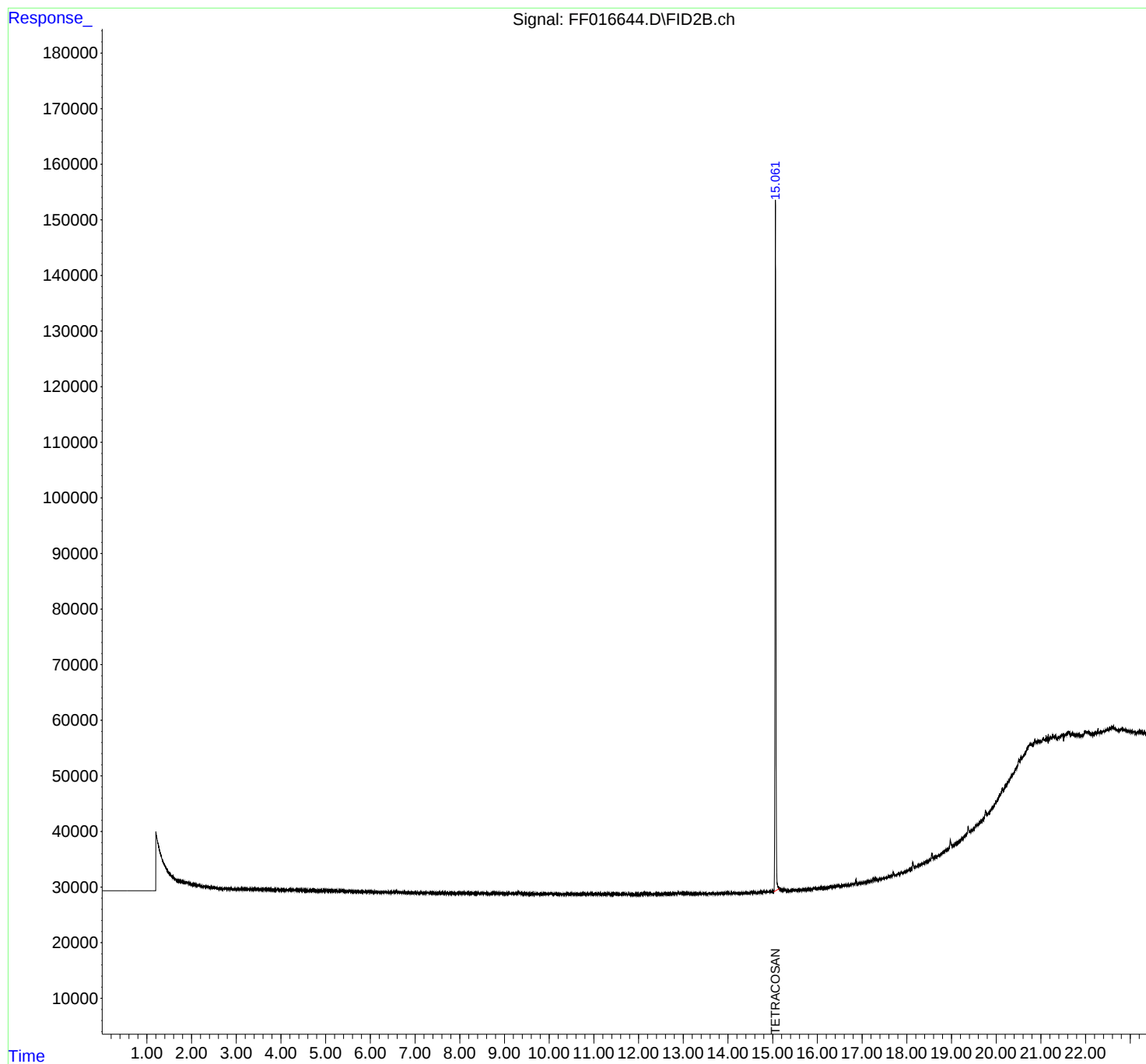
(m)=manual int.

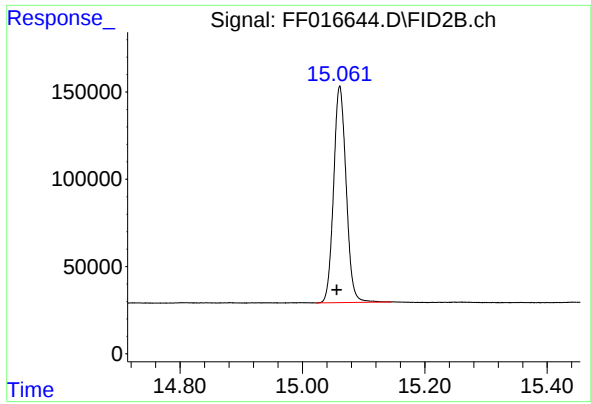
Data Path : Z:\pestpcbsrv\HPCHEM1\FID_F\Data\FF111125\
Data File : FF016644.D
Signal(s) : FID2B.ch
Acq On : 11 Nov 2025 09:30
Operator : YP\AJ
Sample : I.BLK
Misc :
ALS Vial : 52 Sample Multiplier: 1

Instrument :
FID_F
ClientSampleId :
I.BLK

Integration File: autoint1.e
Quant Time: Nov 12 00:16:00 2025
Quant Method : Z:\pestpcbsrv\HPCHEM1\FID_F\Method\FF102925.M
Quant Title :
QLast Update : Wed Oct 29 12:48:52 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.: 15.061 min
Delta R.T.: 0.005 min
Response: 1765591
Conc: 16.90 ug/ml

Instrument :
FID_F
ClientSampleId :
I.BLK

rteres

Area Percent Report

Data Path : Z:\pestpcbsrv\HPCHEM1\FID_F\Data\FF111125\
Data File : FF016644.D
Signal(s) : FID2B.ch
Acq On : 11 Nov 2025 09:30
Sample : I.BLK
Misc :
ALS Vial : 52 Sample Multiplier: 1

Integration File: autoint1.e

Method : Z:\pestpcbsrv\HPCHEM1\FID_F\Method\FF102925.M
Title :

Signal : FID2B.ch

peak #	R.T. min	Start min	End min	PK TY	peak height	peak area	peak % max.	% of total
1	15.061	15.022	15.146	BB	124055	1765591	100.00%	100.000%
Sum of corrected areas:						1765591		

FF102925.M Wed Nov 12 00:54:55 2025

Report of Analysis

Client:	Pacific Commercial Services Inc.	Date Collected:	11/11/25
Project:	Kilo Pier	Date Received:	11/11/25
Client Sample ID:	PIBLK-FF016652.D	SDG No.:	Q3574
Lab Sample ID:	I.BLK-FF016652.D	Matrix:	Water
Analytical Method:	8015D TPH	% Solid:	0
Sample Wt/Vol:	1000 mL	Final Vol:	1 mL
Prep Method:	SW3510	Test:	TPH GC
	Prep Date:		

CAS Number	Parameter	Conc.	Qua.	DF	MDL	LOD	LOQ / CRQL	Units	Date Ana.	BatchID
TARGETS										
PHC	Petroleum Hydrocarbons	42.0	U	1	12.0	42.0	85.0	ug/L	11/11/25	FF111125
SURROGATES										
16416-32-3	TETRACOSANE-d50	18.1			29 - 130		90%	SPK: 20		

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

Data Path : Z:\pestpcbsrv\HPCHEM1\FID_F\Data\FF111125\
Data File : FF016652.D
Signal(s) : FID2B.ch
Acq On : 11 Nov 2025 14:27
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: Nov 12 00:18:40 2025
Quant Method : Z:\pestpcbsrv\HPCHEM1\FID_F\Method\FF102925.M
Quant Title :
QLast Update : Wed Oct 29 12:48:52 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...	15.059	1890696	18.097 ug/ml

Target Compounds

(f)=RT Delta > 1/2 Window

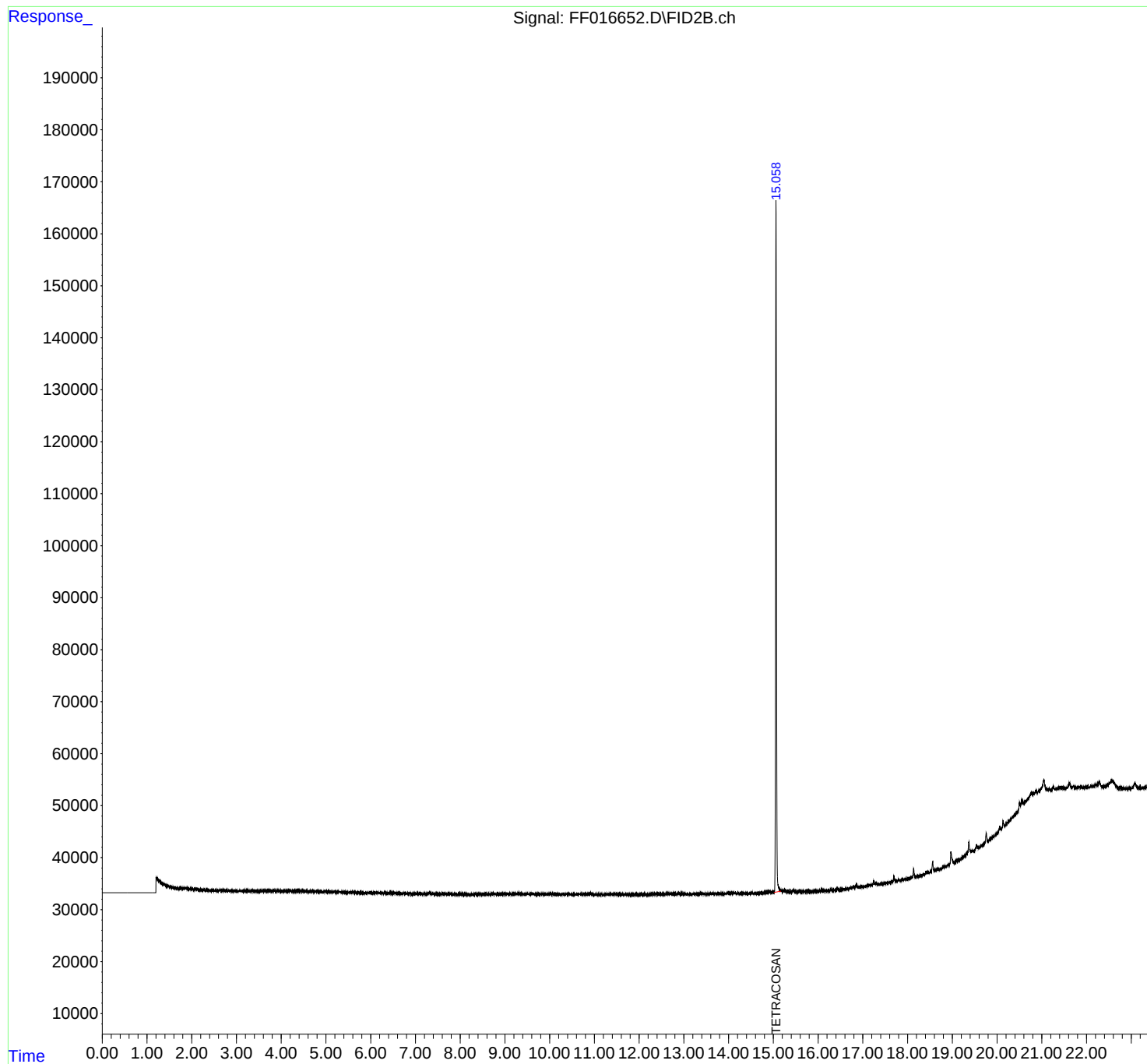
(m)=manual int.

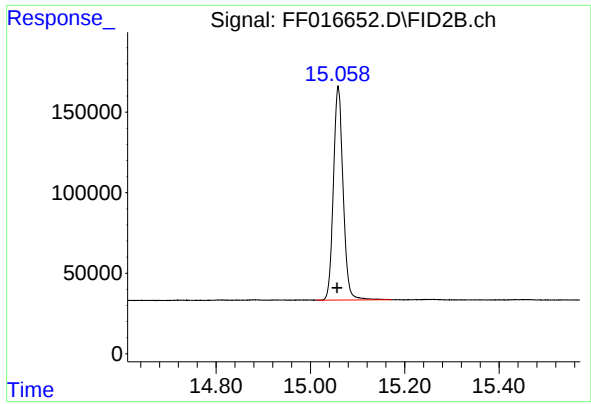
Data Path : Z:\pestpcbsrv\HPCHEM1\FID_F\Data\FF111125\
Data File : FF016652.D
Signal(s) : FID2B.ch
Acq On : 11 Nov 2025 14:27
Operator : YP\AJ
Sample : I.BLK
Misc :
ALS Vial : 52 Sample Multiplier: 1

Instrument :
FID_F
ClientSampleId :
I.BLK

Integration File: autoint1.e
Quant Time: Nov 12 00:18:40 2025
Quant Method : Z:\pestpcbsrv\HPCHEM1\FID_F\Method\FF102925.M
Quant Title :
QLast Update : Wed Oct 29 12:48:52 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.: 15.059 min
Delta R.T.: 0.003 min
Response: 1890696
Conc: 18.10 ug/ml

Instrument :
FID_F
ClientSampleId :
I.BLK

rteres

Area Percent Report

Data Path : Z:\pestpcbsrv\HPCHEM1\FID_F\Data\FF111125\
Data File : FF016652.D
Signal(s) : FID2B.ch
Acq On : 11 Nov 2025 14:27
Sample : I.BLK
Misc :
ALS Vial : 52 Sample Multiplier: 1

Integration File: autoint1.e

Method : Z:\pestpcbsrv\HPCHEM1\FID_F\Method\FF102925.M
Title :

Signal : FID2B.ch

peak #	R.T. min	Start min	End min	PK TY	peak height	peak area	peak % max.	% of total
1	15.059	15.012	15.172	BB	132698	1890696	100.00%	100.000%
Sum of corrected areas:						1890696		

FF102925.M Wed Nov 12 01:01:59 2025

Report of Analysis

Client:	Pacific Commercial Services Inc.		Date Collected:	
Project:	Kilo Pier		Date Received:	
Client Sample ID:	PB170474BS		SDG No.:	Q3574
Lab Sample ID:	PB170474BS		Matrix:	Water
Analytical Method:	8015D TPH		% Solid:	0
Sample Wt/Vol:	1000 mL	Final Vol: 1 mL	Test:	TPH GC
Prep Method:	SW3510	Prep Date: 11/10/25		

CAS Number	Parameter	Conc.	Qua.	DF	MDL	LOD	LOQ / CRQL	Units	Date Ana.	BatchID
TARGETS										
PHC	Petroleum Hydrocarbons	328		1	12.0	42.0	85.0	ug/L	11/11/25 12:30	PB170474
SURROGATES										
16416-32-3	TETRACOSANE-d50	17.7			29 - 130		89%	SPK: 20		

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

Data Path : Z:\pestpcbsrv\HPCHEM1\FID_F\Data\FF111125\
 Data File : FF016648.D
 Signal(s) : FID2B.ch
 Acq On : 11 Nov 2025 12:30
 Operator : YP\AJ
 Sample : PB170474BS
 Misc :
 ALS Vial : 32 Sample Multiplier: 1

Instrument :
 FID_F
 ClientSampleId :
 PB170474BS

Integration File: autoint1.e
 Quant Time: Nov 12 00:17:12 2025
 Quant Method : Z:\pestpcbsrv\HPCHEM1\FID_F\Method\FF102925.M
 Quant Title :
 QLast Update : Wed Oct 29 12:48:52 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...	15.060	1851849	17.725 ug/ml
Target Compounds			
1) N-OCTANE	2.042	1539237	13.868 ug/ml
2) N-DECANE	4.573	1993983	18.021 ug/ml
3) N-DODECANE	6.751	2066202	18.600 ug/ml
4) N-TETRADECANE	8.584	2081084	18.629 ug/ml
5) N-HEXADECANE	10.194	2113274	18.809 ug/ml
6) N-OCTADECANE	11.641	2204317	18.836 ug/ml
7) N-EICOSANE	12.954	2257188	18.485 ug/ml
8) N-DOCOSANE	14.157	2196747	18.428 ug/ml
10) N-TETRACOSANE	15.264	2186959	18.457 ug/ml
11) N-HEXACOSANE	16.288	2093902	18.227 ug/ml
12) N-OCTACOSANE	17.244	2052972	18.016 ug/ml
13) N-TRIACONTANE	18.134	2032025	18.085 ug/ml
14) N-DOTRIACONTANE	18.971	2060816	19.225 ug/ml
15) N-TETRATRIACONTANE	19.759	2196932	22.358 ug/ml
16) N-HEXATRIACONTANE	20.503	2132040	24.934 ug/ml
17) N-OCTATRIACONTANE	21.262	1950522	25.413 ug/ml
18) N-TETRACONTANE	22.209	1759160	25.776 ug/ml

(f)=RT Delta > 1/2 Window

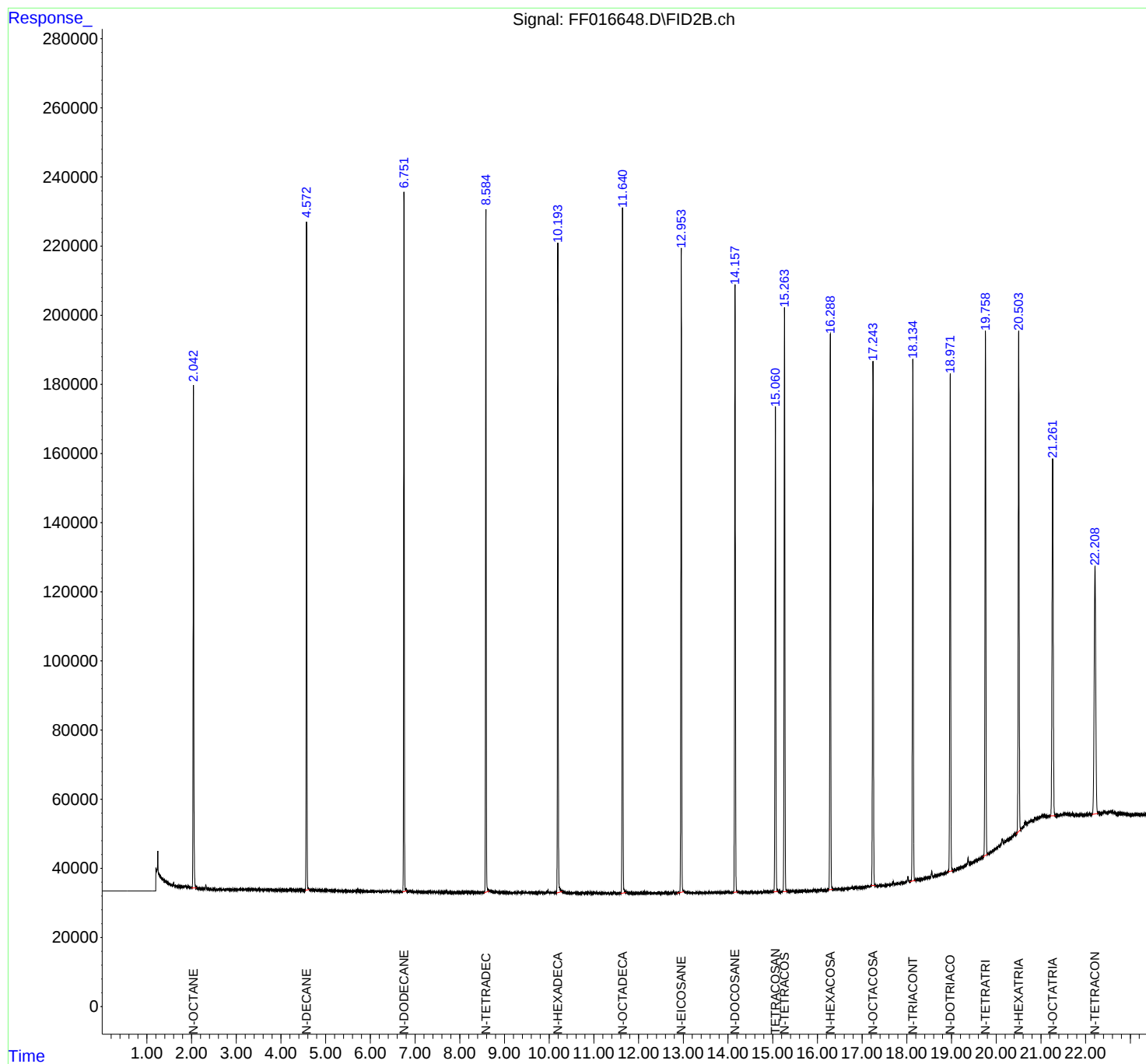
(m)=manual int.

Data Path : Z:\pestpcbsrv\HPCHEM1\FID_F\Data\FF111125\
Data File : FF016648.D
Signal(s) : FID2B.ch
Acq On : 11 Nov 2025 12:30
Operator : YP\AJ
Sample : PB170474BS
Misc :
ALS Vial : 32 Sample Multiplier: 1

Instrument :
FID_F
ClientSampleId :
PB170474BS

Integration File: autoint1.e
Quant Time: Nov 12 00:17:12 2025
Quant Method : Z:\pestpcbsrv\HPCHEM1\FID_F\Method\FF102925.M
Quant Title :
QLast Update : Wed Oct 29 12:48:52 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\FF111125\
 Data File : FF016648.D
 Signal(s) : FID2B.ch
 Acq On : 11 Nov 2025 12:30
 Sample : PB170474BS
 Misc :
 ALS Vial : 32 Sample Multiplier: 1

Integration File: autoint1.e

Method : Z:\pestpcbsrv\HPCHEM1\FID_F\Method\FF102925.M
 Title :

Signal : FID2B.ch

peak #	R.T. min	Start min	End min	PK TY	peak height	peak area	peak % max.	% of total
1	2.042	1.996	2.111	BB	145325	1539237	68.19%	4.186%
2	4.573	4.544	4.631	BB	193239	1993983	88.34%	5.423%
3	6.751	6.717	6.814	BB	202199	2066202	91.54%	5.619%
4	8.584	8.549	8.661	BB	196938	2081084	92.20%	5.660%
5	10.194	10.161	10.289	BB	188002	2113274	93.62%	5.747%
6	11.641	11.602	11.719	BB	197553	2204317	97.66%	5.995%
7	12.954	12.864	13.012	BB	185688	2257188	100.00%	6.139%
8	14.157	14.116	14.217	BB	175666	2196747	97.32%	5.974%
9	15.060	15.016	15.124	BB	139557	1851849	82.04%	5.036%
10	15.264	15.226	15.331	BB	168916	2186959	96.89%	5.948%
11	16.288	16.247	16.341	BB	160234	2093902	92.77%	5.695%
12	17.244	17.201	17.302	BB	151318	2052972	90.95%	5.583%
13	18.134	18.067	18.191	BB	150700	2032025	90.02%	5.526%
14	18.971	18.921	19.031	BB	143947	2060816	91.30%	5.605%
15	19.759	19.701	19.802	BB	151111	2196932	97.33%	5.975%
16	20.503	20.451	20.544	BV	144837	2132040	94.46%	5.798%
17	21.262	21.201	21.332	BB	102607	1950522	86.41%	5.305%
18	22.209	22.141	22.280	BBA	71636	1759160	77.94%	4.784%
Sum of corrected areas:							36769207	

FF102925.M Wed Nov 12 01:00:20 2025

Report of Analysis

Client:	Pacific Commercial Services Inc.		Date Collected:	
Project:	Kilo Pier		Date Received:	
Client Sample ID:	PB170474BSD		SDG No.:	Q3574
Lab Sample ID:	PB170474BSD		Matrix:	Water
Analytical Method:	8015D TPH		% Solid:	0
Sample Wt/Vol:	1000 mL	Final Vol: 1 mL	Test:	TPH GC
Prep Method:	SW3510	Prep Date: 11/10/25		

CAS Number	Parameter	Conc.	Qua.	DF	MDL	LOD	LOQ / CRQL	Units	Date Ana.	BatchID
TARGETS										
PHC	Petroleum Hydrocarbons	328		1	12.0	42.0	85.0	ug/L	11/11/25 12:59	PB170474
SURROGATES										
16416-32-3	TETRACOSANE-d50	17.6			29 - 130		88%	SPK: 20		

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

Data Path : Z:\pestpcbsrv\HPCHEM1\FID_F\Data\FF111125\
 Data File : FF016649.D
 Signal(s) : FID2B.ch
 Acq On : 11 Nov 2025 12:59
 Operator : YP\AJ
 Sample : PB170474BSD
 Misc :
 ALS Vial : 33 Sample Multiplier: 1

Instrument :
 FID_F
 ClientSampleId :
 PB170474BSD

Integration File: autoint1.e
 Quant Time: Nov 12 00:17:38 2025
 Quant Method : Z:\pestpcbsrv\HPCHEM1\FID_F\Method\FF102925.M
 Quant Title :
 QLast Update : Wed Oct 29 12:48:52 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...	15.060	1843121	17.642 ug/ml
Target Compounds			
1) N-OCTANE	2.042	1537223	13.850 ug/ml
2) N-DECANE	4.572	1991045	17.995 ug/ml
3) N-DODECANE	6.751	2059274	18.538 ug/ml
4) N-TETRADECANE	8.584	2075005	18.574 ug/ml
5) N-HEXADECANE	10.194	2107445	18.757 ug/ml
6) N-OCTADECANE	11.640	2191893	18.730 ug/ml
7) N-EICOSANE	12.954	2247404	18.405 ug/ml
8) N-DOCOSANE	14.156	2188749	18.361 ug/ml
10) N-TETRACOSANE	15.264	2173624	18.344 ug/ml
11) N-HEXACOSANE	16.289	2083933	18.140 ug/ml
12) N-OCTACOSANE	17.243	2050212	17.991 ug/ml
13) N-TRIACONTANE	18.135	2039545	18.152 ug/ml
14) N-DOTRIACONTANE	18.971	2080136	19.405 ug/ml
15) N-TETRATRIACONTANE	19.759	2225755	22.651 ug/ml
16) N-HEXATRIACONTANE	20.502	2148260	25.123 ug/ml
17) N-OCTATRIACONTANE	21.262	1967608	25.636 ug/ml
18) N-TETRACONTANE	22.208	1778550	26.060 ug/ml

(f)=RT Delta > 1/2 Window

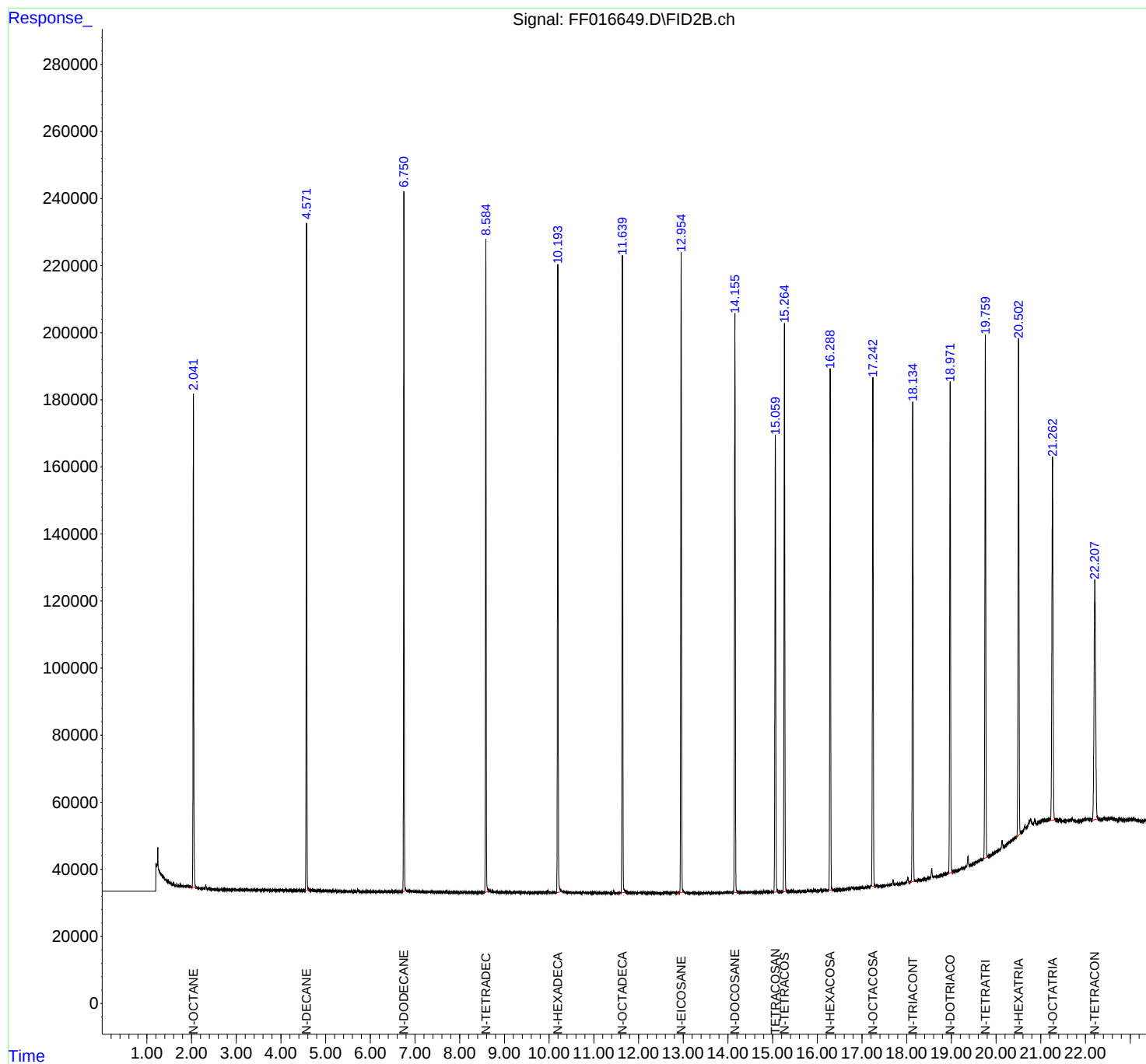
(m)=manual int.

Data Path : Z:\pestpcbsrv\HPCHEM1\FID_F\Data\FF111125\
Data File : FF016649.D
Signal(s) : FID2B.ch
Acq On : 11 Nov 2025 12:59
Operator : YP\AJ
Sample : PB170474BSD
Misc :
ALS Vial : 33 Sample Multiplier: 1

Instrument :
FID_F
ClientSampleId :
PB170474BSD

Integration File: autoint1.e
Quant Time: Nov 12 00:17:38 2025
Quant Method : Z:\pestpcbsrv\HPCHEM1\FID_F\Method\FF102925.M
Quant Title :
QLast Update : Wed Oct 29 12:48:52 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\FF111125\
Data File : FF016649.D
Signal(s) : FID2B.ch
Acq On : 11 Nov 2025 12:59
Sample : PB170474BSD
Misc :
ALS Vial : 33 Sample Multiplier: 1

Integration File: autoint1.e

Method : Z:\pestpcbsrv\HPCHEM1\FID_F\Method\FF102925.M
Title :

Signal : FID2B.ch

peak #	R.T. min	Start min	End min	PK TY	peak height	peak area	peak % max.	% of total
1	2.042	1.947	2.102	BB	147079	1537223	68.40%	4.179%
2	4.572	4.539	4.629	BB	198743	1991045	88.59%	5.412%
3	6.751	6.714	6.807	BB	208873	2059274	91.63%	5.598%
4	8.584	8.549	8.662	BB	194705	2075005	92.33%	5.640%
5	10.194	10.162	10.289	BB	187165	2107445	93.77%	5.729%
6	11.640	11.594	11.709	BB	189583	2191893	97.53%	5.958%
7	12.954	12.861	13.012	BB	190582	2247404	100.00%	6.109%
8	14.156	14.121	14.222	BB	172561	2188749	97.39%	5.950%
9	15.060	15.021	15.129	BB	135966	1843121	82.01%	5.010%
10	15.264	15.226	15.319	BB	169358	2173624	96.72%	5.908%
11	16.289	16.251	16.346	BB	154790	2083933	92.73%	5.665%
12	17.243	17.201	17.299	BB	151524	2050212	91.23%	5.573%
13	18.135	18.061	18.194	BB	143026	2039545	90.75%	5.544%
14	18.971	18.921	19.029	BB	145989	2080136	92.56%	5.654%
15	19.759	19.701	19.826	BB	155773	2225755	99.04%	6.050%
16	20.502	20.451	20.544	BB	148014	2148260	95.59%	5.839%
17	21.262	21.201	21.339	BB	108402	1967608	87.55%	5.348%
18	22.208	22.141	22.280	BBA	71527	1778550	79.14%	4.834%
Sum of corrected areas:						36788781		

FF102925.M Wed Nov 12 01:01:31 2025

Manual Integration Report

Sample ID	ClientId ID	File ID	Sequence ID	Parameter	Supervised By	Supervised On	Reason
Q3574-01		FF016651.D	FF111125	TETRACOSANE-d50 (SURROGA	yogesh	11/12/2025 9:45:32 AM	Peak Integrated by Software incorrectly

Instrument ID: FID_F

Daily Analysis Runlog For Sequence/QC Batch ID # FF102925

Review By	yogesh	Review On	10/29/2025 11:13:33 AM
Supervise By	Sohil	Supervise On	10/30/2025 3:49:06 PM
SubDirectory	FF102925	HP Acquire Method	HP Processing Method FF102925
STD. NAME	STD REF.#		
Tune/Reschk Initial Calibration Stds	PP24962,PP24964,PP24965,PP24966,PP24967		
CCC Internal Standard/PEM ICV/I.BLK Surrogate Standard MS/MSD Standard LCS Standard	PP24963,PP24968		

Sr#	SampleId	Data File Name	Date-Time	Operator	Status
1	MECL2	FF016601.D	29 Oct 2025 09:11	YP\AJ	Ok
2	I.BLK	FF016602.D	29 Oct 2025 09:40	YP\AJ	Ok
3	100 TRPH STD	FF016603.D	29 Oct 2025 10:39	YP\AJ	Ok
4	50 TRPH STD	FF016604.D	29 Oct 2025 11:08	YP\AJ	Ok
5	20 TRPH STD	FF016605.D	29 Oct 2025 11:38	YP\AJ	Ok
6	10 TRPH STD	FF016606.D	29 Oct 2025 12:07	YP\AJ	Ok
7	5 TRPH STD	FF016607.D	29 Oct 2025 12:37	YP\AJ	Ok
8	FF102925ICV	FF016608.D	29 Oct 2025 13:06	YP\AJ	Ok

M : Manual Integration

Instrument ID: FID_F

Daily Analysis Runlog For Sequence/QC Batch ID # FF111125

Review By	rahul	Review On	11/12/2025 9:46:05 AM
Supervise By	yogesh	Supervise On	11/12/2025 9:49:37 AM
SubDirectory	FF111125	HP Acquire Method	HP Processing Method FF102925
STD. NAME	STD REF.#		
Tune/Reschk Initial Calibration Stds	PP24962,PP24964,PP24965,PP24966,PP24967		
CCC Internal Standard/PEM	PP24964		
ICV/I.BLK Surrogate Standard MS/MSD Standard LCS Standard	PP24963,PP24968		

Sr#	SampleId	Data File Name	Date-Time	Operator	Status
1	MECL2	FF016643.D	11 Nov 2025 09:01	YP\AJ	Ok
2	I.BLK	FF016644.D	11 Nov 2025 09:30	YP\AJ	Ok
3	50 PPM TRPH STD	FF016645.D	11 Nov 2025 11:01	YP\AJ	Ok
4	RT MARKER	FF016646.D	11 Nov 2025 11:31	YP\AJ	Ok
5	PB170474BL	FF016647.D	11 Nov 2025 12:01	YP\AJ	Ok
6	PB170474BS	FF016648.D	11 Nov 2025 12:30	YP\AJ	Ok
7	PB170474BSD	FF016649.D	11 Nov 2025 12:59	YP\AJ	Ok
8	Q3574-01	FF016650.D	11 Nov 2025 13:29	YP\AJ	Dilution
9	Q3574-01	FF016651.D	11 Nov 2025 13:58	YP\AJ	Ok,M
10	I.BLK	FF016652.D	11 Nov 2025 14:27	YP\AJ	Ok
11	50 PPM TRPH STD	FF016653.D	11 Nov 2025 14:57	YP\AJ	Ok

M : Manual Integration

Instrument ID: FID_F

Daily Analysis Runlog For Sequence/QC Batch ID # FF102925

Review By	yogesh	Review On	10/29/2025 11:13:33 AM
Supervise By	Sohil	Supervise On	10/30/2025 3:49:06 PM
SubDirectory	FF102925	HP Acquire Method	HP Processing Method FF102925
STD. NAME	STD REF.#		
Tune/Reschk Initial Calibration Stds	PP24962,PP24964,PP24965,PP24966,PP24967		
CCC Internal Standard/PEM ICV/I.BLK Surrogate Standard MS/MSD Standard LCS Standard	PP24963,PP24968		

Sr#	SampleID	ClientID	Data File Name	Date-Time	Comment	Operator	Status
1	MECL2		FF016601.D	29 Oct 2025 09:11		YP\AJ	Ok
2	I.BLK		FF016602.D	29 Oct 2025 09:40		YP\AJ	Ok
3	100 TRPH STD		FF016603.D	29 Oct 2025 10:39		YP\AJ	Ok
4	50 TRPH STD		FF016604.D	29 Oct 2025 11:08		YP\AJ	Ok
5	20 TRPH STD		FF016605.D	29 Oct 2025 11:38		YP\AJ	Ok
6	10 TRPH STD		FF016606.D	29 Oct 2025 12:07		YP\AJ	Ok
7	5 TRPH STD		FF016607.D	29 Oct 2025 12:37		YP\AJ	Ok
8	FF102925ICV		FF016608.D	29 Oct 2025 13:06		YP\AJ	Ok

M : Manual Integration

Instrument ID: FID_F

Daily Analysis Runlog For Sequence/QC Batch ID # FF111125

Review By	rahul	Review On	11/12/2025 9:46:05 AM
Supervise By	yogesh	Supervise On	11/12/2025 9:49:37 AM
SubDirectory	FF111125	HP Acquire Method	HP Processing Method FF102925

STD. NAME	STD REF.#
Tune/Reschk Initial Calibration Stds	PP24962,PP24964,PP24965,PP24966,PP24967
CCC Internal Standard/PEM	PP24964
ICV/I.BLK Surrogate Standard MS/MSD Standard LCS Standard	PP24963,PP24968

Sr#	SampleID	ClientID	Data File Name	Date-Time	Comment	Operator	Status
1	MECL2		FF016643.D	11 Nov 2025 09:01		YP\AJ	Ok
2	I.BLK		FF016644.D	11 Nov 2025 09:30		YP\AJ	Ok
3	50 PPM TRPH STD		FF016645.D	11 Nov 2025 11:01		YP\AJ	Ok
4	RT MARKER		FF016646.D	11 Nov 2025 11:31		YP\AJ	Ok
5	PB170474BL		FF016647.D	11 Nov 2025 12:01		YP\AJ	Ok
6	PB170474BS		FF016648.D	11 Nov 2025 12:30		YP\AJ	Ok
7	PB170474BSD		FF016649.D	11 Nov 2025 12:59		YP\AJ	Ok
8	Q3574-01		FF016650.D	11 Nov 2025 13:29	Need further dilution	YP\AJ	Dilution
9	Q3574-01		FF016651.D	11 Nov 2025 13:58		YP\AJ	Ok,M
10	I.BLK		FF016652.D	11 Nov 2025 14:27		YP\AJ	Ok
11	50 PPM TRPH STD		FF016653.D	11 Nov 2025 14:57		YP\AJ	Ok

M : Manual Integration

SOP ID:	M3510C,3580A-Extraction DRO-13		
Clean Up SOP #:	N/A	Extraction Start Date :	11/10/2025
Matrix :	Water	Extraction Start Time :	09:00
Weigh By:	N/A	Extraction By:	RS
Balance check:	N/A	Filter By:	RJ
Balance ID:	N/A	Extraction End Date :	11/10/2025
pH Strlp Lot#:	E3953	Extraction End Time :	13:10
		Concentration By:	EH
		Supervisor By :	RUPESH
Extraction Method:	☒ Separatory Funnel ☐ Continous Liquid/Liquid ☐ Sonication ☐ Waste Dilution ☐ Soxhlet		

Standard Name	MLS USED	Concentration ug/mL	STD REF. # FROM LOG
Spike Sol 1	1.0ML	20 PPM	PP25013
Surrogate	1.0ML	20 PPM	PP24596
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	E3980
Baked Na2SO4	N/A	EP2655
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.

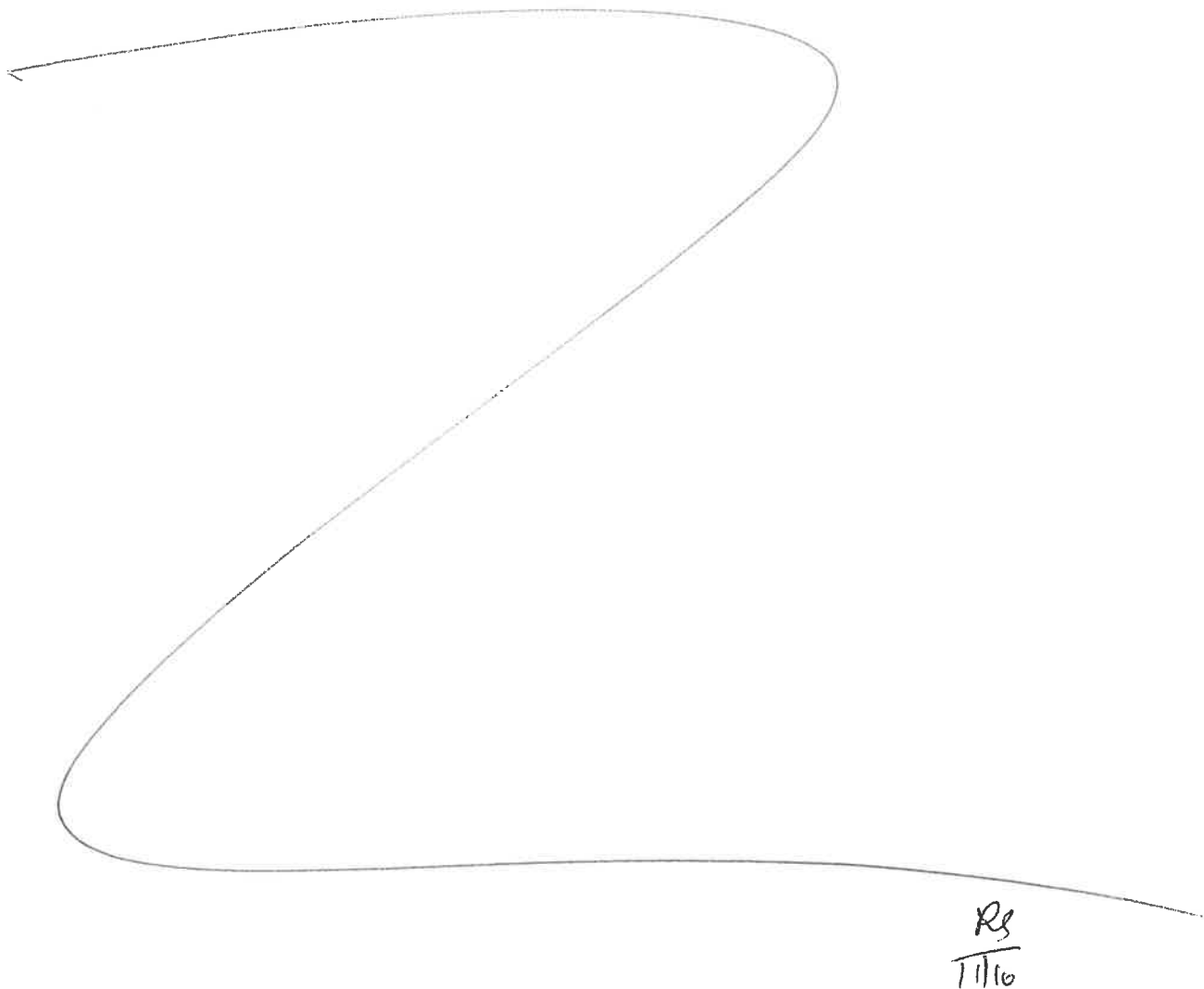
KD Bath ID:	WATER BATH-1	Envap ID:	NEVAP-02
KD Bath Temperature:	60 °C	Envap Temperature:	40 °C

Date / Time	Prepped Sample Relinquished By/Location	Received By/Location
11/10/25	RS (Eg lab)	Y. P. RESTIPAS
13:15	Preparation Group	Analysis Group

Analytical Method: M3510C,3580A-Extraction DRO-13

Concentration Date: 11/10/2025

Sample ID	Client Sample ID	Test	g / (mL)	PH	Surr/Spike By:		Final Vol. (mL)	JarID	Comments	Prep Pos
					AddedBy	VerifiedBy				
PB170474BL	PB170474BL	TPH GC	1000	6	RUPESH	ritesh	1			SEP-13
PB170474BS	PB170474BS	TPH GC	1000	6	RUPESH	ritesh	1			14
PB170474BSD	PB170474BSD	TPH GC	1000	6	RUPESH	ritesh	1			15
Q3574-01	304641-01 LIQUID	TPH GC	840	6	RUPESH	ritesh	1	H		16



11/10/25 8:55

WORKLIST(Hardcopy Internal Chain)

WorkList Name : Q3574 WorkList ID : 193016 Department : Extraction Date : 11-10-2025 08:54:34

Sample	Customer Sample	Matrix	Test	Preservative	Customer	Raw Sample Storage Location	Collect Date	Method
Q3574-01	304641-01 Liquid	Water	TPH GC	Cool 4 deg C	PAC101	J22	11/04/2025	8015D

Date/Time 11/10/25 8:55
Raw Sample Received by: RS (Ext 196)
Raw Sample Relinquished by: Ch Gu

Date/Time 11/10/25 9:20
Raw Sample Received by: Op Gu
Raw Sample Relinquished by: RS (Ext 196)

Prep Standard - Chemical Standard Summary

Order ID : Q3574

Test : TPH GC

Prepbatch ID : PB170474,

Sequence ID/Qc Batch ID: FF111125,

Standard ID :

EP2655,PP24596,PP24962,PP24963,PP24964,PP24965,PP24966,PP24967,PP24968,PP25013,

Chemical ID :

E3875,E3931,E3964,E3973,E3980,P11957,P11961,P13220,P13221,P13222,P13223,P13483,P13484,P13485,P13486,
P13491,



<u>Recipe ID</u>	<u>NAME</u>	<u>NO.</u>	<u>Prep Date</u>	<u>Expiration Date</u>	<u>Prepared By</u>	<u>ScaleID</u>	<u>PipetteID</u>	<u>Supervised By</u>
3923	Baked Sodium Sulfate	EP2655	10/24/2025	01/28/2026	RUPESHKUMAR SHAH	Extraction_SCALE_2 (EX-SC-2)	None	Riteshkumar Patel 10/24/2025
<u>FROM</u> 4000.00000gram of E3875 = Final Quantity: 4000.000 gram								

<u>Recipe ID</u>	<u>NAME</u>	<u>NO.</u>	<u>Prep Date</u>	<u>Expiration Date</u>	<u>Prepared By</u>	<u>ScaleID</u>	<u>PipetteID</u>	<u>Supervised By</u>
147	20 PPM DRO Surrogate Spike Solution	PP24596	05/20/2025	11/20/2025	Abdul Mirza	None	None	Yogesh Patel 05/22/2025
<u>FROM</u> 1.00000ml of P13483 + 1.00000ml of P13484 + 1.00000ml of P13485 + 1.00000ml of P13486 + 196.00000ml of E3931 = Final Quantity: 200.000 ml								

Pest/Pcb STANDARD PREPARATION LOG

<u>Recipe ID</u>	<u>NAME</u>	<u>NO.</u>	<u>Prep Date</u>	<u>Expiration Date</u>	<u>Prepared By</u>	<u>ScaleID</u>	<u>PipetteID</u>	<u>Supervised By</u>
433	100/100 PPM DRO (Restek)	PP24962	10/02/2025	04/02/2026	Yogesh Patel	None	None	Abdul Mirza
								10/10/2025

FROM 1.00000ml of P11957 + 1.00000ml of P11961 + 1.00000ml of P13491 = Final Quantity: 10.000 ml

<u>Recipe ID</u>	<u>NAME</u>	<u>NO.</u>	<u>Prep Date</u>	<u>Expiration Date</u>	<u>Prepared By</u>	<u>ScaleID</u>	<u>PipetteID</u>	<u>Supervised By</u>
3796	100/100 PPM DRO STD (CPI)	PP24963	10/02/2025	04/02/2026	Yogesh Patel	None	None	Abdul Mirza
								10/10/2025

FROM 1.00000ml of P13220 + 1.00000ml of P13221 + 1.00000ml of P13491 + 7.00000ml of E3964 = Final Quantity: 10.000 ml

Pest/Pcb STANDARD PREPARATION LOG

<u>Recipe ID</u>	<u>NAME</u>	<u>NO.</u>	<u>Prep Date</u>	<u>Expiration Date</u>	<u>Prepared By</u>	<u>ScaleID</u>	<u>PipetteID</u>	<u>Supervised By</u>
435	50 PPM ICC DRO STD (Restek)	PP24964	10/02/2025	04/02/2026	Yogesh Patel	None	None	Abdul Mirza
								10/10/2025

FROM 0.50000ml of E3973 + 0.50000ml of PP24962 = Final Quantity: 1.000 ml

<u>Recipe ID</u>	<u>NAME</u>	<u>NO.</u>	<u>Prep Date</u>	<u>Expiration Date</u>	<u>Prepared By</u>	<u>ScaleID</u>	<u>PipetteID</u>	<u>Supervised By</u>
437	20 PPM ICC DRO STD (Restek)	PP24965	10/02/2025	04/02/2026	Yogesh Patel	None	None	Abdul Mirza
								10/10/2025

FROM 0.80000ml of E3973 + 0.20000ml of PP24962 = Final Quantity: 1.000 ml

Pest/Pcb STANDARD PREPARATION LOG

<u>Recipe ID</u>	<u>NAME</u>	<u>NO.</u>	<u>Prep Date</u>	<u>Expiration Date</u>	<u>Prepared By</u>	<u>ScaleID</u>	<u>PipetteID</u>	<u>Supervised By</u>
438	10 PPM ICC DRO STD (Restek)	PP24966	10/02/2025	04/02/2026	Yogesh Patel	None	None	Abdul Mirza
								10/10/2025

FROM 0.90000ml of E3973 + 0.10000ml of PP24962 = Final Quantity: 1.000 ml

<u>Recipe ID</u>	<u>NAME</u>	<u>NO.</u>	<u>Prep Date</u>	<u>Expiration Date</u>	<u>Prepared By</u>	<u>ScaleID</u>	<u>PipetteID</u>	<u>Supervised By</u>
439	5 PPM ICC DRO STD (Restek)	PP24967	10/02/2025	04/02/2026	Yogesh Patel	None	None	Abdul Mirza
								10/10/2025

FROM 0.90000ml of E3973 + 0.10000ml of PP24964 = Final Quantity: 1.000 ml

Pest/Pcb STANDARD PREPARATION LOG

<u>Recipe ID</u>	<u>NAME</u>	<u>NO.</u>	<u>Prep Date</u>	<u>Expiration Date</u>	<u>Prepared By</u>	<u>ScaleID</u>	<u>PipetteID</u>	<u>Supervised By</u>
3797	50 PPM DRO ICV STD (CPI)	PP24968	10/02/2025	04/02/2026	Yogesh Patel	None	None	Abdul Mirza
								10/10/2025

FROM 0.50000ml of E3973 + 0.50000ml of PP24963 = Final Quantity: 1.000 ml

<u>Recipe ID</u>	<u>NAME</u>	<u>NO.</u>	<u>Prep Date</u>	<u>Expiration Date</u>	<u>Prepared By</u>	<u>ScaleID</u>	<u>PipetteID</u>	<u>Supervised By</u>
3795	20 PPM DRO SPIKE SOLUTION (CPI)	PP25013	10/28/2025	04/16/2026	Abdul Mirza	None	None	Yogesh Patel
								11/04/2025

FROM 1.00000ml of P13222 + 1.00000ml of P13223 + 48.00000ml of E3980 = Final Quantity: 50.000 ml

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	417203	07/28/2026	07/28/2025 / RUPESH	01/29/2025 / Rajesh	E3875

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	E3931

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)	25C1262005	04/16/2026	08/14/2025 / RUPESH	03/06/2025 / RUPESH	E3964

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)	25C1262005	04/16/2026	09/15/2025 / Riteshkumar	09/15/2025 / Riteshkumar	E3973

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)	25C1262005	04/16/2026	10/10/2025 / RUPESH	10/10/2025 / RUPESH	E3980

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Restek	31266 / Florida TRPH Standard	A0186840	04/02/2026	10/02/2025 / yogesh	07/11/2022 / Yogesh	P11957

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	04/02/2026	10/02/2025 / yogesh	07/11/2022 / Yogesh	P11961

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
CPI International	Z-110400-05-01 / TRPH Standard (C8-C40), 500 mg/L, 1 ml	514983	10/02/2026	10/02/2025 / yogesh	01/31/2024 / Ankita	P13220

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
CPI International	Z-110400-05-01 / TRPH Standard (C8-C40), 500 mg/L, 1 ml	514983	10/02/2026	10/02/2025 / yogesh	01/31/2024 / Ankita	P13221

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
CPI International	Z-110400-05-01 / TRPH Standard (C8-C40), 500 mg/L, 1 ml	514983	04/28/2026	10/28/2025 / Abdul	01/31/2024 / Ankita	P13222

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
CPI International	Z-110400-05-01 / TRPH Standard (C8-C40), 500 mg/L, 1 ml	514983	04/28/2026	10/28/2025 / Abdul	01/31/2024 / Ankita	P13223

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	11/20/2025	05/20/2025 / Abdul	07/24/2024 / yogesh	P13483

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	11/20/2025	05/20/2025 / Abdul	07/24/2024 / yogesh	P13484

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	11/20/2025	05/20/2025 / Abdul	07/24/2024 / yogesh	P13485

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	11/20/2025	05/20/2025 / Abdul	07/24/2024 / yogesh	P13486

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	04/02/2026	10/02/2025 / yogesh	07/24/2024 / yogesh	P13491



**PRODUCTOS
QUÍMICOS
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CP 64070
TEL +52 81 13 52 67 67
www.pqm.com.mx

CERTIFICATE OF ANALYSIS

PRODUCT :	SODIUM SULFATE CRYSTALS ANHYDROUS		
QUALITY :	ACS (CODE RMB3375)	FORMULA :	Na ₂ SO ₄
SPECIFICATION NUMBER:	6399	RELEASE DATE:	MAY/23/2024
LOT NUMBER :	417203		

TEST	SPECIFICATIONS	LOT VALUES
Assay (Na ₂ SO ₄)	Min. 99.0%	99.8 %
pH of a 5% solution at 25°C	5.2 - 9.2	6.2
Insoluble matter	Max. 0.01%	0.001 %
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%	0.001 %
Magnesium (Mg)	Max. 0.005%	0.001 %
Potassium (K)	Max. 0.008%	0.001 %
Extraction-concentration suitability	Passes test	Passes test
Appearance	Passes test	Passes test
Identification	Passes test	Passes test
Solubility and foreign matter	Passes test	Passes test
Retained on US Standard No. 10 sieve	Max. 1%	0.2 %
Retained on US Standard No. 60 sieve	Min. 94%	96.2 %
Through US Standard No. 60 sieve	Max. 5%	3.5 %
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.

RE-02-01, Ed. 3

E 3875

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

avantor



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 ₂ Cl ₂) (by GC, exclusive of preservative, corrected for water)	$\geq 99.8 \%$	99.9 %
Color (APHA)	≤ 10	10
Residue after Evaporation	≤ 1.0 ppm	0.8 ppm
Titration Acid (μ eq/g)	≤ 0.3	<0.1
Chloride (Cl)	≤ 10 ppm	<5 ppm
Water (by KF, coulometric)	$\leq 0.02 \%$	<0.01 %

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

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

E3930

J. Croak

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

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



Material No.: 9266-A4
Batch No.: 25C1262005
Manufactured Date: 2025-01-15
Expiration Date: 2026-04-16
Revision No.: 0

Certificate of Analysis

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

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

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

Received on .

E 3964

Jamie Croak
Director Quality Operations, Bioscience Production

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



Material No.: 9266-A4
Batch No.: 25C1262005
Manufactured Date: 2025-01-15
Expiration Date: 2026-04-16
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	1
Assay (CH_2Cl_2) (by GC, exclusive of preservative, corrected for water)	$\geq 99.8\%$	100.0 %
Color (APHA)	≤ 10	5
Residue after Evaporation	≤ 1.0 ppm	0.1 ppm
Titration Acid ($\mu\text{eq/g}$)	≤ 0.3	< 0.1
Chloride (Cl)	≤ 10 ppm	< 5 ppm
Water (by KF, coulometric)	$\leq 0.02\%$	$< 0.01\%$

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

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

REC. ON 10/10/25
RJ

E3980

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



CERTIFIED REFERENCE MATERIAL

110 Benner Circle

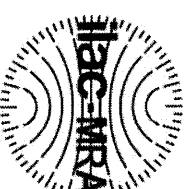
Bellefonte, PA 16823-8812

Tel: (800)356-1688

Fax: (814)353-1309

www.restek.com

Certificate of Analysis



FOR LABORATORY USE ONLY-READ SDS PRIOR TO USE.

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

Catalog No. : 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 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 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 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 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 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 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 Purity 99%	503.5 µg/mL	+/- 2.9906 µg/mL +/- 12.5092 µg/mL +/- 14.9944 µg/mL	Gravimetric Unstressed Stressed

P11948 } 7.8
P11962 } 07/11/16

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:

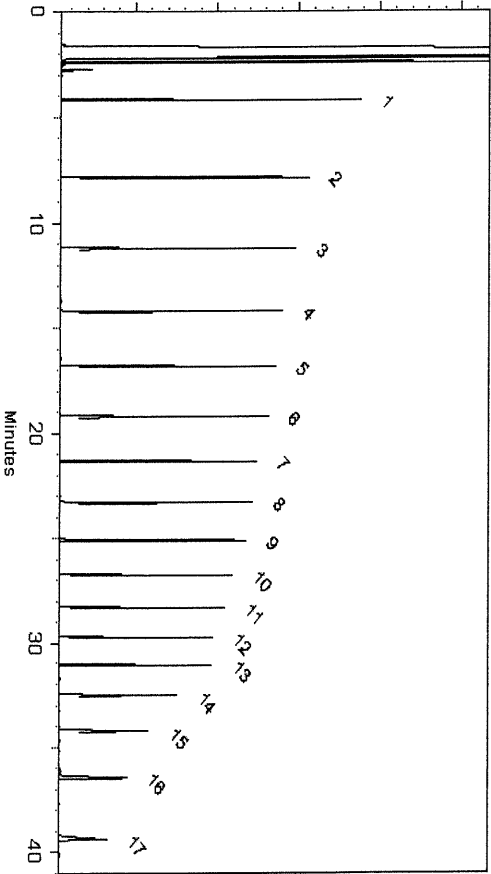
250°C

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
Brittany Federinko - Operations Tech I

Date Mixed: 29-Jun-2022

Balance: 1128360905

Christie Mills
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:

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

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

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

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

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

Manufacturing Notes:

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

Handling Notes:

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



CERTIFIED REFERENCE MATERIAL

110 Benner Circle

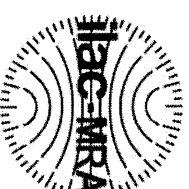
Bellefonte, PA 16823-8812

Tel: (800)356-1688

Fax: (814)353-1309

www.restek.com

Certificate of Analysis



FOR LABORATORY USE ONLY-READ SDS PRIOR TO USE.

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

Catalog No. : 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 Purity 99%	505.0 µg/mL	+/- 2.9995 µg/mL +/- 12.5465 µg/mL +/- 15.0390 µg/mL	Gravimetric Unstressed Unstressed Stressed
2	n-Decane (C10) CAS # 124-18-5 Purity 99%	503.0 µg/mL	+/- 2.9877 µg/mL +/- 12.4968 µg/mL +/- 14.9795 µg/mL	Gravimetric Unstressed Unstressed Stressed
3	n-Dodecane (C12) CAS # 112-40-3 Purity 99%	503.5 µg/mL	+/- 2.9906 µg/mL +/- 12.5092 µg/mL +/- 14.9944 µg/mL	Gravimetric Unstressed Unstressed Stressed
4	n-Tetradecane (C14) CAS # 629-59-4 Purity 99%	505.0 µg/mL	+/- 2.9995 µg/mL +/- 12.5465 µg/mL +/- 15.0390 µg/mL	Gravimetric Unstressed Unstressed Stressed
5	n-Hexadecane (C16) CAS # 544-76-3 Purity 98%	504.7 µg/mL	+/- 2.9978 µg/mL +/- 12.5390 µg/mL +/- 15.0301 µg/mL	Gravimetric Unstressed Unstressed Stressed
6	n-Octadecane (C18) CAS # 593-45-3 Purity 97%	504.4 µg/mL	+/- 2.9960 µg/mL +/- 12.5316 µg/mL +/- 15.0212 µg/mL	Gravimetric Unstressed Unstressed Stressed
7	n-Eicosane (C20) CAS # 112-95-8 Purity 99%	503.5 µg/mL	+/- 2.9906 µg/mL +/- 12.5092 µg/mL +/- 14.9944 µg/mL	Gravimetric Unstressed Unstressed Stressed

P11948 } 7.8
P11962 } 07/11/16

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:

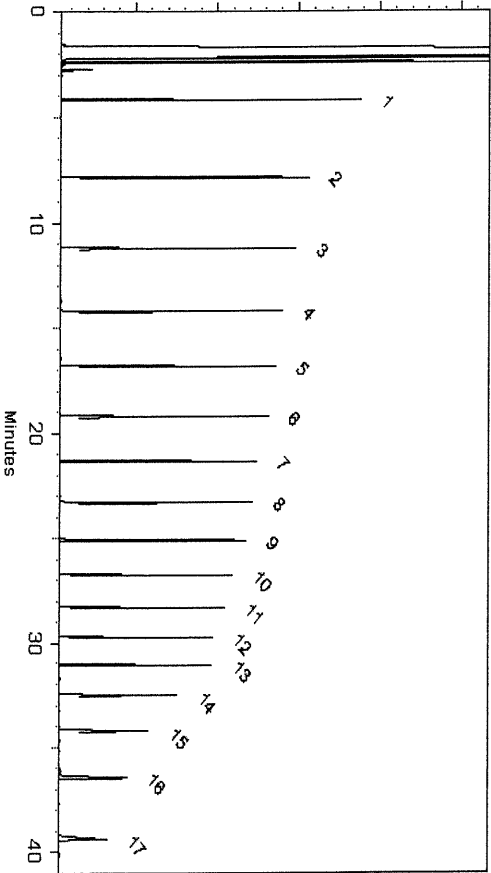
250°C

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

Brittany Federinko - Operations Tech I

Date Mixed: 29-Jun-2022

Balance: 1128360905

Christie Mills

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

Certified Uncertainty Value Notes:

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

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

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

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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.



5580 Skylane Blvd
Santa Rosa, CA 95403

Manufacturer's Quality System
Audited & Registered
by TUV USA to ISO 9001:2015

(707)525-5788
(800)878-7654 Toll Free
(707)545-7901 Fax

Date Received: _____

Certificate of Analysis

Page 1 of 1

Catalog No.: Lot No.: Storage:

Z-110400-05 514983 ≤ -10 Degrees C

Solvent:

Hexane

Exp. Date:

11/20/2028

Description:

TRPH Standard (C8-C40), 500 mg/L, 1 ml

-01

Compound

CAS No.

Purity (%)

Compound Lot No.

Concentration, mg/L

decane (C10)

124-18-5

99.7

415.7.2P

498.5 ± 6.92

docosane (C22)

629-97-0

98.8

420.9.1P

499.4 ± 6.93

dodecane (C12)

112-40-3

99.7

416.9.3P

502 ± 6.97

dotriacontane (C32)

544-85-4

97

425.9.2.2P

499.6 ± 8.53

eicosane (C20)

112-95-8

99.8

419.7.1P

501 ± 6.95

hexacosane (C26)

630-01-3

99.3

422.7.2.1P

501 ± 6.95

hexatriacontane (C36)

630-06-8

98

427.29.1.1P

499.3 ± 8.53

n-hexadecane (C16)

544-76-3

99.45

368.27.1.1P

498.7 ± 6.91

octacosane (C28)

630-02-4

99.1

423.24.1P

500.5 ± 6.95

n-octadecane (C18)

593-45-3

99.5

418.29.1P

499.5 ± 6.92

octane (C8)

111-65-9

99.4

385.7.2.1P

498.5 ± 6.92

octatriacontane (C38)

7194-85-6

95

428.1.2P

500.2 ± 6.94

tetracontane (C40)

4181-95-7

97

429.7.2P

499.6 ± 6.93

n-tetracosane (C24)

646-31-1

99.5

421.7.1P

499.5 ± 6.93

n-tetradecane (C14)

629-59-4

99.3

417.9.1P

500 ± 6.94

tetatriacontane (C34)

14167-59-0

96.1

426.7.2.2P

499.7 ± 8.53

triacontane (C30)

638-68-6

99.5

424.7.1.1P

500 ± 6.94

Let the standard warm to room temperature and sonicate before opening.

P 13215

↓

P 13224

AJ
01131124

*Not a certified value

Andrea Schaible

Andrea Schaible
Chemist

Certified By: _____

All weights are traceable through N. I. S. T. Test No. 822/264157-00.
Concentration (correct for purity) and uncertainty (95% confidence) values
listed are determined gravimetrically.



5580 Skylane Blvd
Santa Rosa, CA 95403

Manufacturer's Quality System
Audited & Registered
by TUV USA to ISO 9001:2015

(707)525-5788
(800)878-7654 Toll Free
(707)545-7901 Fax

Date Received: _____

Certificate of Analysis

Page 1 of 1

Catalog No.: Lot No.: Storage:

Z-110400-05 514983 ≤-10 Degrees C

Solvent:

Hexane

Exp. Date:

11/20/2028

Description:

TRPH Standard (C8-C40), 500 mg/L, 1 ml

-01

Compound

CAS No.

Purity (%)

Compound Lot No.

Concentration, mg/L

decane (C10)

124-18-5

99.7

415.7.2P

498.5 ± 6.92

docosane (C22)

629-97-0

98.8

420.9.1P

499.4 ± 6.93

dodecane (C12)

112-40-3

99.7

416.9.3P

502 ± 6.97

dotriacontane (C32)

544-85-4

97

425.9.2.2P

499.6 ± 8.53

eicosane (C20)

112-95-8

99.8

419.7.1P

501 ± 6.95

hexacosane (C26)

630-01-3

99.3

422.7.2.1P

501 ± 6.95

hexatriacontane (C36)

630-06-8

98

427.29.1.1P

499.3 ± 8.53

n-hexadecane (C16)

544-76-3

99.45

368.27.1.1P

498.7 ± 6.91

octacosane (C28)

630-02-4

99.1

423.24.1P

500.5 ± 6.95

n-octadecane (C18)

593-45-3

99.5

418.29.1P

499.5 ± 6.92

octane (C8)

111-65-9

99.4

385.7.2.1P

498.5 ± 6.92

octatriacontane (C38)

7194-85-6

95

428.1.2P

500.2 ± 6.94

tetracontane (C40)

4181-95-7

97

429.7.2P

499.6 ± 6.93

n-tetracosane (C24)

646-31-1

99.5

421.7.1P

499.5 ± 6.93

n-tetradecane (C14)

629-59-4

99.3

417.9.1P

500 ± 6.94

tetatriacontane (C34)

14167-59-0

96.1

426.7.2.2P

499.7 ± 8.53

triacontane (C30)

638-68-6

99.5

424.7.1.1P

500 ± 6.94

Let the standard warm to room temperature and sonicate before opening.

P 13215

↓

P 13224

AJ
01131124

*Not a certified value

Andrea Schaible

Andrea Schaible
Chemist

Certified By: _____

All weights are traceable through N. I. S. T. Test No. 822/264157-00.
Concentration (correct for purity) and uncertainty (95% confidence) values
listed are determined gravimetrically.



5580 Skylane Blvd
Santa Rosa, CA 95403

Manufacturer's Quality System
Audited & Registered
by TUV USA to ISO 9001:2015

(707)525-5788
(800)878-7654 Toll Free
(707)545-7901 Fax

Date Received: _____

Certificate of Analysis

Page 1 of 1

Catalog No.: Lot No.: Storage:

Z-110400-05 514983 ≤ -10 Degrees C

Solvent:

Hexane

Exp. Date:

11/20/2028

Description:

TRPH Standard (C8-C40), 500 mg/L, 1 ml

-01

Compound

CAS No.

Purity (%)

Compound Lot No.

Concentration, mg/L

decane (C10)

124-18-5

99.7

415.7.2P

498.5 ± 6.92

docosane (C22)

629-97-0

98.8

420.9.1P

499.4 ± 6.93

dodecane (C12)

112-40-3

99.7

416.9.3P

502 ± 6.97

dotriacontane (C32)

544-85-4

97

425.9.2.2P

499.6 ± 8.53

eicosane (C20)

112-95-8

99.8

419.7.1P

501 ± 6.95

hexacosane (C26)

630-01-3

99.3

422.7.2.1P

501 ± 6.95

hexatriacontane (C36)

630-06-8

98

427.29.1.1P

499.3 ± 8.53

n-hexadecane (C16)

544-76-3

99.45

368.27.1.1P

498.7 ± 6.91

octacosane (C28)

630-02-4

99.1

423.24.1P

500.5 ± 6.95

n-octadecane (C18)

593-45-3

99.5

418.29.1P

499.5 ± 6.92

octane (C8)

111-65-9

99.4

385.7.2.1P

498.5 ± 6.92

octatriacontane (C38)

7194-85-6

95

428.1.2P

500.2 ± 6.94

tetracontane (C40)

4181-95-7

97

429.7.2P

499.6 ± 6.93

n-tetracosane (C24)

646-31-1

99.5

421.7.1P

499.5 ± 6.93

n-tetradecane (C14)

629-59-4

99.3

417.9.1P

500 ± 6.94

tetratriacontane (C34)

14167-59-0

96.1

426.7.2.2P

499.7 ± 8.53

triacontane (C30)

638-68-6

99.5

424.7.1.1P

500 ± 6.94

Let the standard warm to room temperature and sonicate before opening.

P13215

↓

P13224

AJ
01131124

*Not a certified value

Andrea Schaible

Andrea Schaible
Chemist

Certified By: _____

All weights are traceable through N. I. S. T. Test No. 822/264157-00.
Concentration (correct for purity) and uncertainty (95% confidence) values
listed are determined gravimetrically.



5580 Skylane Blvd
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(707)545-7901 Fax

Date Received: _____

Certificate of Analysis

Page 1 of 1

Catalog No.: Lot No.: Storage:

Z-110400-05 514983 ≤ -10 Degrees C

Solvent:

Hexane

Exp. Date:

11/20/2028

Description:

TRPH Standard (C8-C40), 500 mg/L, 1 ml

-01

Compound

CAS No.

Purity (%)

Compound Lot No.

Concentration, mg/L

decane (C10)

124-18-5

99.7

415.7.2P

498.5 ± 6.92

docosane (C22)

629-97-0

98.8

420.9.1P

499.4 ± 6.93

dodecane (C12)

112-40-3

99.7

416.9.3P

502 ± 6.97

dotriacontane (C32)

544-85-4

97

425.9.2.2P

499.6 ± 8.53

eicosane (C20)

112-95-8

99.8

419.7.1P

501 ± 6.95

hexacosane (C26)

630-01-3

99.3

422.7.2.1P

501 ± 6.95

hexatriacontane (C36)

630-06-8

98

427.29.1.1P

499.3 ± 8.53

n-hexadecane (C16)

544-76-3

99.45

368.27.1.1P

498.7 ± 6.91

octacosane (C28)

630-02-4

99.1

423.24.1P

500.5 ± 6.95

n-octadecane (C18)

593-45-3

99.5

418.29.1P

499.5 ± 6.92

octane (C8)

111-65-9

99.4

385.7.2.1P

498.5 ± 6.92

octatriacontane (C38)

7194-85-6

95

428.1.2P

500.2 ± 6.94

tetracontane (C40)

4181-95-7

97

429.7.2P

499.6 ± 6.93

n-tetracosane (C24)

646-31-1

99.5

421.7.1P

499.5 ± 6.93

n-tetradecane (C14)

629-59-4

99.3

417.9.1P

500 ± 6.94

tetatriacontane (C34)

14167-59-0

96.1

426.7.2.2P

499.7 ± 8.53

triacontane (C30)

638-68-6

99.5

424.7.1.1P

500 ± 6.94

Let the standard warm to room temperature and sonicate before opening.

P13215

↓

P13224

AJ
01131124

*Not a certified value

Andrea Schaible

Andrea Schaible
Chemist

Certified By: _____

All weights are traceable through N. I. S. T. Test No. 822/264157-00.
Concentration (correct for purity) and uncertainty (95% confidence) values
listed are determined gravimetrically.

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 $\pm 0.5\%$ 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 $\pm 5\%$ unless specifically stated on the Certified Wt. Report.

Verification: Uncertainties that are due to the analytical procedure(s) are within $\pm 5\%$ 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: UCRM 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

Page 1 of 2



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
Scope: http://AbsoluteStandards.com

CERTIFIED WEIGHT REPORT

Part # 10009R
Lot # 070716
Shelf Life Description: CLP Priority Pollutant Internal Standards
GC/MS Calibration - 6 components
070721
Expiration Date: Ambient (20 °C)
Recommended Storage: 4000
Nominal Concentration (µg/mL): 822-275872-11
NIST Test ID#: 5E-05 Balance Uncertainty
0.058 Mass Uncertainty

Solvent(s): Methylene chloride
Lot# 78782

Formulated By: Paul Barron
Reviewed By: Pedro L. Rentes

070716
070716

Weight(s) shown below were combined and diluted to (mL): 500.0

Compound	SMW	Lot Number	Nominal Conc (µg/mL)	Purity (%)	Uncertainty Purity	Target Weight (µg)	Actual Weight (µg)	Actual Conc (µg/mL)	Expanded Uncertainty (µg/mL)	CAS#	MSDS Information (Solvent Safety Info. On Attached pg.)	OSHA PEL (TWA)	LD50
1. 1,4-Dichlorobenzene-d4	118	PR-1845M07287CB1	4000	98	0.2	2.04093	2.04335	4004.7	15.4	2055-02-1	N/A	N/A	or-nr 500mg/kg
2. Naphthalene-d8	223	PR-2339M031612HP1	4000	99	0.2	2.02032	2.02084	4001.0	15.2	1146-85-2	10 ppm (50mg/m3/8h)	N/A	or-nr 400mg/kg
3. Acenaphthene-d10	2	PR-25444	4000	99	0.2	2.02032	2.02245	4004.2	15.2	15067-28-2	N/A	N/A	or-nr 500mg/kg
4. Phenanthrene-d10	248	PR-2305M081711PM1	4000	98	0.2	2.04093	2.04135	4000.8	15.4	1517-25-2	N/A	N/A	N/A
5. Chrysene-d12	92	I-19290	4000	98	0.2	2.04093	2.04150	4001.3	15.4	1719-03-5	N/A	N/A	N/A
6. Perylene-d12	247	PR-24113	4000	98	0.2	2.04093	2.04155	4001.2	15.4	1503-58-3	N/A	N/A	N/A

Run 35, "P10009R L070716 [4000µg/mL in MeCl2]"
Run Length: 40.00 min, 23900 points at 10 points/second.
Created: Sat, Jul 9, 2016 at 1:54:53 PM.
Sampled: Sequence "070716-GC/MS", Method "GC-MS".
Analyzed using Method "GC-MS".

Comments:
GC-MS Analysis by Melissa Siciric
Column ID SPB-5 30 meter x 0.53mm x 1.5um Film Thickness.
Flow rates: Total Flow = 300 mL/min, Helium (carrier) = 0.5 mL, Helium (make-up) = 25 mL.
Hydrogen (detector) = 30 mL, Air (detector) = 300 mL, Oven Temp 1 = 50°C (1 min).
Rise = 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 = sData Channel 1.
Gas Chromatograph = HP 5890, Auto Sampler = HP 7673, Standard Injection = 0.5 µL, Range = 4

Peak No. Name FID RT (min)

1	1,4-Dichlorobenzene-d4	6.34
2	Naphthalene-d8	8.98
3	Acenaphthene-d10	12.97
4	Phenanthrene-d10	16.37
5	Chrysene-d12	22.62
6	Perylene-d12	25.75

Printed: 5/8/2019, 12:55:50 PM

Formulator
Reviewer

Actual
Concentration
Uncertainty
Values

Health &
Safety

3rd Party
Comparison

For More Information, Contact:

StephenArpie@AbsoluteStandards.com

Page 2 of 2



CERTIFIED WEIGHT REPORT

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

Solvent(s):
Methylene chloride
Lot#
105345

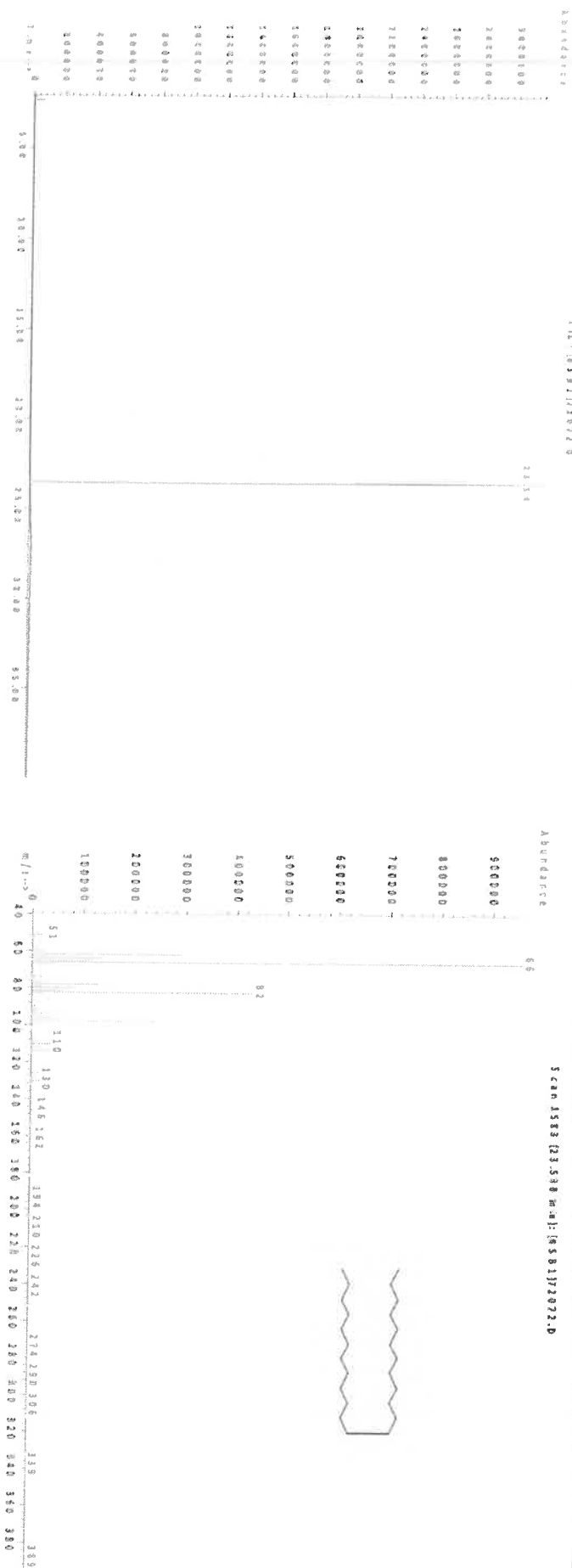
Expiration Date: **101132**
Recommended Storage: **Ambient (20 °C)**
Nominal Concentration (µg/mL): **1000**
NIST Test ID#: **6UB3**
Weight(s) shown below were combined and diluted to (mL): **200.0**
5E-05 Balance Uncertainty
0.058 Flask Uncertainty

P13437
13436
07/24/24
X.F.

Formulated By:	<i>Prashant Chauhan</i>	101122
Reviewed By:	<i>Pedro L. Rentas</i>	101122
DATE		DATE

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.)	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
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 Results," 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 $\pm 0.5\%$ 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 $\pm 5\%$ unless specifically stated on the Certified Wt. Report.

Verification: Uncertainties that are due to the analytical procedure(s) are within $\pm 5\%$ 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: UCRM 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

Page 1 of 2



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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



ABSOLUTE STANDARDS, INC.

ISO - 17034

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

Certified Reference Material CRM

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

CERTIFIED WEIGHT REPORT

Part # 10009R
Lot # 070716
Shelf Life Description: CLP Priority Pollutant Internal Standards
GC/MS Calibration - 6 components
070721
Expiration Date: Ambient (20 °C)
Recommended Storage: 4000
Nominal Concentration (µg/mL): 822-275872-11
NIST Test ID#: 5E-05 Balance Uncertainty
0.058 Mass Uncertainty

Solvent(s): Methylene chloride
Lot# 78782

Formulated By: Paul Barron
Reviewed By: Pedro L. Rentes

070716
070716

Weight(s) shown below were combined and diluted to (mL): 500.0

Compound	SMW	Lot Number	Nominal Conc (µg/mL)	Purity (%)	Uncertainty Purity	Target Weight (µg)	Actual Weight (µg)	Actual Conc (µg/mL)	Expanded Uncertainty (µg/mL)	CAS#	MSDS Information (Solvent Safety Info. On Attached pg.)	OSHA PEL (TWA)	LD50
1. 1,4-Dichlorobenzene-d4	118	PR-1845M07287CB1	4000	98	0.2	2.04093	2.04335	4004.7	15.4	2055-02-1	N/A	N/A	or-rat 500mg/kg
2. Naphthalene-d8	223	PR-2339M031612HP1	4000	99	0.2	2.02032	2.02084	4001.0	15.2	1146-85-2	10 ppm (50mg/m3/8h)	N/A	or-rat 400mg/kg
3. Acenaphthene-d10	2	PR-25444	4000	99	0.2	2.02032	2.02245	4004.2	15.2	15067-28-2	N/A	N/A	or-rat 500mg/kg
4. Phenanthrene-d10	248	PR-2305M081711PM1	4000	98	0.2	2.04093	2.04135	4000.8	15.4	1517-25-2	N/A	N/A	N/A
5. Chrysene-d12	92	I-19290	4000	98	0.2	2.04093	2.04150	4001.3	15.4	1719-03-5	N/A	N/A	N/A
6. Perylene-d12	247	PR-24113	4000	98	0.2	2.04093	2.04155	4001.2	15.4	1503-58-3	N/A	N/A	N/A

Run 35, "P10009R L070716 [4000µg/mL in MeCl2]"
Run Length: 40.00 min, 23900 points at 10 points/second.
Created: Sat, Jul 9, 2016 at 1:54:53 PM.
Sampled: Sequence "070716-GC/MS", Method "GC-MS".
Analyzed using Method "GC-MS".

Comments:
GC-MS Analysis by Melissa Siciric
Column ID SPB-5 30 meter x 0.53mm x 1.5um Film Thickness.
Flow rates: Total Flow = 300 mL/min, Helium (carrier) = 0.5 mL, Helium (make-up) = 25 mL.
Hydrogen (detector) = 30 mL, Air (detector) = 300 mL, Oven Temp 1 = 50°C (1 min).
Rise = 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 µL, Range = 4

Peak No. Name FID RT (min)

1	1,4-Dichlorobenzene-d4	6.34
2	Naphthalene-d8	8.98
3	Acenaphthene-d10	12.97
4	Phenanthrene-d10	16.37
5	Chrysene-d12	22.62
6	Perylene-d12	25.75

Printed: 5/8/2019, 12:55:50 PM

Part # 10009R Lot # 041219 1 of 2

Formulator
Reviewer

Actual
Concentration
Uncertainty
Values

Health &
Safety

3rd Party
Comparison

For More Information, Contact:

StephenArpie@AbsoluteStandards.com

Page 2 of 2



CERTIFIED WEIGHT REPORT

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

Solvent(s):
Methylene chloride
Lot#
105345

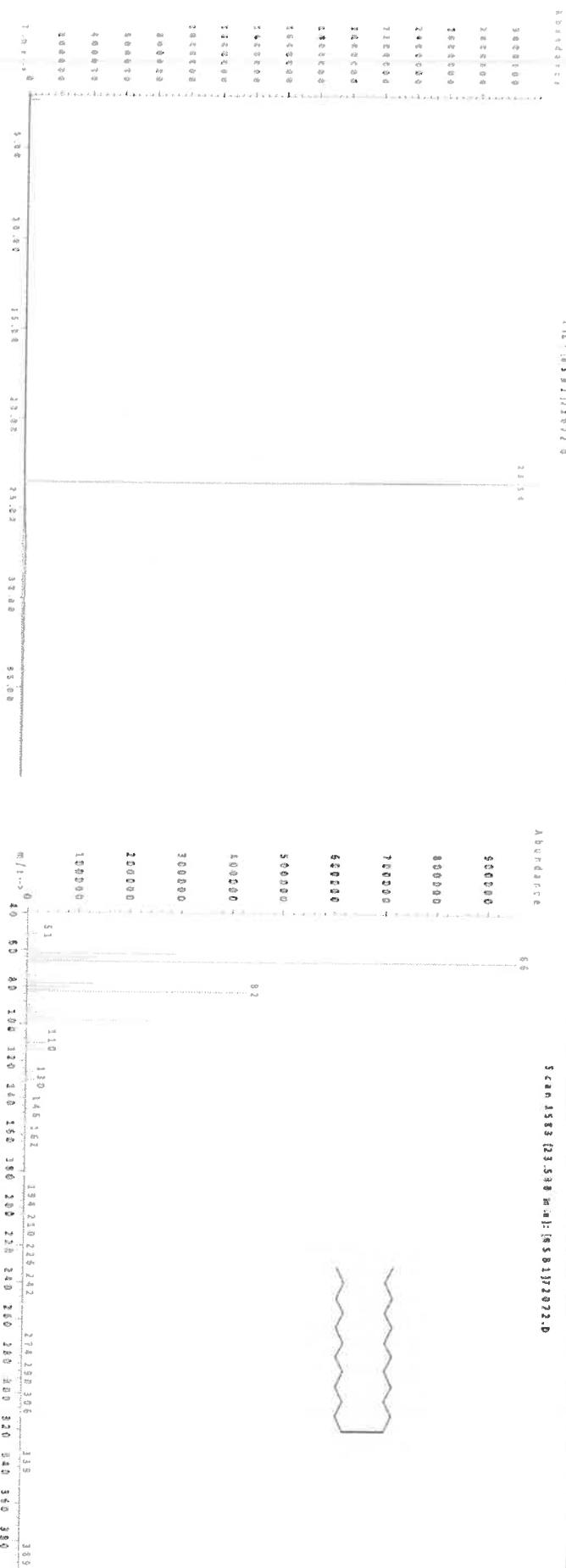
Expiration Date: **101132**
Recommended Storage: **Ambient (20 °C)**
Nominal Concentration (µg/mL): **1000**
NIST Test ID#: **6UB3**
Weight(s) shown below were combined and diluted to (mL): **200.0**
5E-05 Balance Uncertainty
0.058 Flask Uncertainty

P13437
13496
07/24/24
X.F.

Formulated By:	<i>Prashant Chauhan</i>	101122
Reviewed By:	<i>Pedro L. Rentas</i>	101122
DATE		DATE

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.)	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

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 References: Taylor, B.N., and Kuyat, C.E., "Guidelines for Evaluating and Expressing the Uncertainty of NIST Measurement Results," 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 $\pm 0.5\%$ 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 $\pm 5\%$ unless specifically stated on the Certified Wt. Report.

Verification: Uncertainties that are due to the analytical procedure(s) are within $\pm 5\%$ 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: UCRM 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

Page 1 of 2



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

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

Certified Reference Material CRM

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

CERTIFIED WEIGHT REPORT

Part # 10009R
Lot # 070716
Shelf Life Description: CLP Priority Pollutant Internal Standards
GC/MS Calibration - 6 components
070721
Expiration Date: Ambient (20 °C)
Recommended Storage: 4000
Nominal Concentration (µg/mL): 822-275872-11
NIST Test ID#: 5E-05 Balance Uncertainty
0.058 Mass Uncertainty

Solvent(s): Methylene chloride
Lot# 78782

Formulated By: Paul Barron
Reviewed By: Pedro L. Rentes

070716
070716

Weight(s) shown below were combined and diluted to (mL): 500.0

Compound	SMW	Lot Number	Nominal Conc (µg/mL)	Purity (%)	Uncertainty Purity	Target Weight (µg)	Actual Weight (µg)	Actual Conc (µg/mL)	Expanded Uncertainty (µg/mL)	CAS#	MSDS Information (Solvent Safety Info. On Attached pg.)	OSHA PEL (TWA)	LD50
1. 1,4-Dichlorobenzene-d4	118	PR-1845M07287CB1	4000	98	0.2	2.04093	2.04335	4004.7	15.4	2055-02-1	N/A	N/A	or-rat 500mg/kg
2. Naphthalene-d8	223	PR-2339M031612HP1	4000	99	0.2	2.02032	2.02084	4001.0	15.2	1146-85-2	10 ppm (50mg/m3/8h)	N/A	or-rat 400mg/kg
3. Acenaphthene-d10	2	PR-25444	4000	99	0.2	2.02032	2.02245	4004.2	15.2	15067-28-2	N/A	N/A	or-rat 500mg/kg
4. Phenanthrene-d10	248	PR-2305M081711PM1	4000	98	0.2	2.04093	2.04135	4000.8	15.4	1517-25-2	N/A	N/A	N/A
5. Chrysene-d12	92	I-19290	4000	98	0.2	2.04093	2.04150	4001.3	15.4	1719-03-5	N/A	N/A	N/A
6. Perylene-d12	247	PR-24113	4000	98	0.2	2.04093	2.04155	4001.2	15.4	1503-58-3	N/A	N/A	N/A

Run 35, "P10009R L070716 [4000µg/mL in MeCl2]"
Run Length: 40.00 min, 23900 points at 10 points/second.
Created: Sat, Jul 9, 2016 at 1:54:53 PM.
Sampled: Sequence "070716-GC/MS", Method "GC-MS".
Analyzed using Method "GC-MS".

Comments:
GC-MS Analysis by Melissa Siciric
Column ID SPB-5 30 meter x 0.53mm x 1.5um Film Thickness.
Flow rates: Total Flow = 300 mL/min, Helium (carrier) = 0.5 mL, Helium (make-up) = 25 mL.
Hydrogen (detector) = 30 mL, Air (detector) = 300 mL, Oven Temp 1 = 50°C (1 min).
Rise = 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 = sData Channel 1.
Gas Chromatograph = HP 5890, Auto Sampler = HP 7673, Standard Injection = 0.5 µL, Range = 4

Peak No. Name FID RT (min)

1	1,4-Dichlorobenzene-d4	8.34
2	Naphthalene-d8	8.98
3	Acenaphthene-d10	12.97
4	Phenanthrene-d10	16.37
5	Chrysene-d12	22.62
6	Perylene-d12	25.75

Printed: 5/8/2019, 12:55:50 PM

Formulator
Reviewer

Actual
Concentration
Uncertainty
Values

Health &
Safety

3rd Party
Comparison

For More Information, Contact:

StephenArpie@AbsoluteStandards.com

Page 2 of 2



CERTIFIED WEIGHT REPORT

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

Solvent(s):
Methylene chloride
Lot#
105345

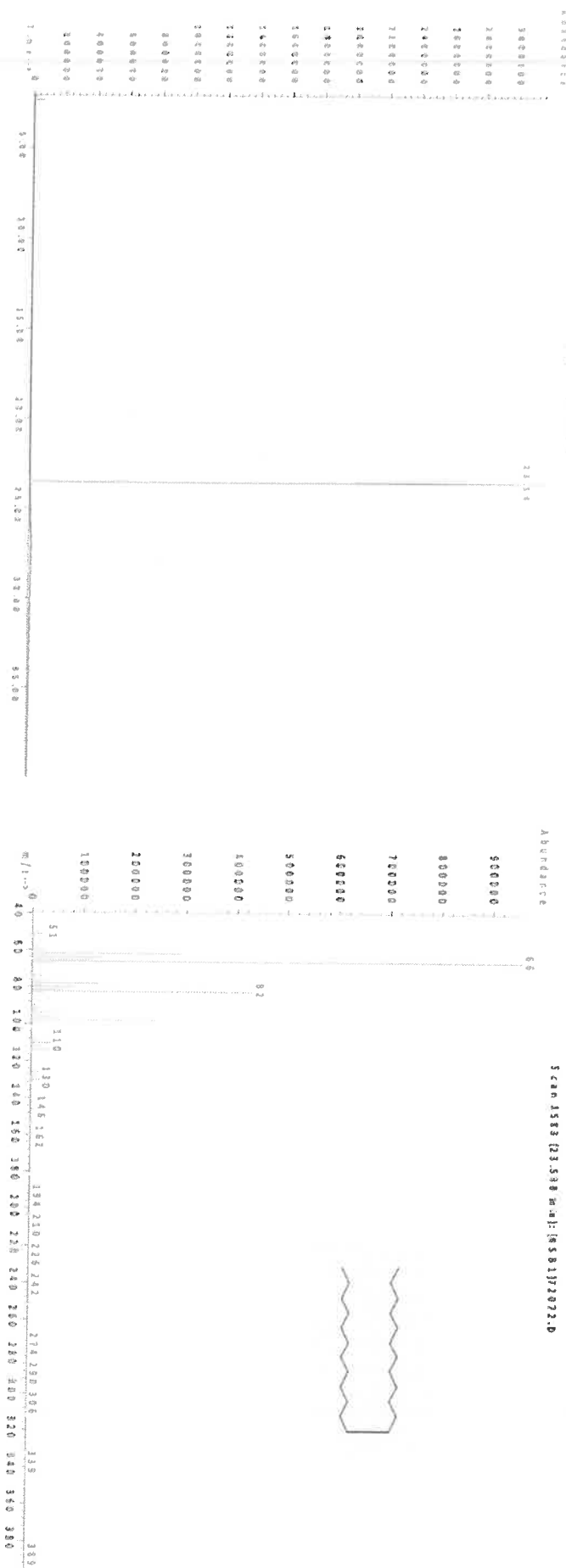
Expiration Date: **101132**
Recommended Storage: **Ambient (20 °C)**
Nominal Concentration (µg/mL): **1000**
NIST Test ID#: **6UB3**
Weight(s) shown below were combined and diluted to (mL): **200.0**
5E-05 Balance Uncertainty
0.058 Flask Uncertainty

P13437
13436
07/24/24
X.F.

Formulated By:	<i>Prashant Chauhan</i>	101122
Reviewed By:	<i>Pedro L. Rentas</i>	101122
	Pedro L. Rentas	DATE

Compound	RM#	Lot Number	Nominal Conc (µg/mL)	Purity (%)	Uncertainty Purity (%)	Assay (%)	Target Weight(g)	Actual Weight(g)	Actual Conc (µg/mL)	Expanded Uncertainty (+/-) (µg/mL)	SDS Information (Solvent Safety Info. On Attached pg.)	LD50
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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
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 Results," NIST Technical Note 1297, U.S. Government Printing Office, Washington, DC, (1994).

ABSOLUTE STANDARDS, INC.

ISO - 17034



Certificate of Analysis



Certified Reference Material (CRM)

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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.

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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

Page 1 of 2



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



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ISO - 17034

Understanding the Certified Weight Report

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Certified Reference Material CRM

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

CERTIFIED WEIGHT REPORT

Part # 10009R
Lot # 070716
Shelf Life 070716

Part Number: 10009R
Lot Number: 070716
Description: CLP Priority Pollutant Internal Standards
GC/MS Calibration - 6 components
070721
Expiration Date:
Recommended Storage: Ambient (20 °C)
Nominal Concentration (µg/mL): 4000
NIST Test ID#: 822-275872-11
Weight(s) shown below were combined and diluted to (mL): 500.0

Solvent(s): Methylene chloride
Lot# 78782

5E-05 Balance Uncertainty
0.058 Peak Uncertainty

Formulated By: Paul Barron
Reviewed By: Pedro L. Rentes

070716
070716

MSDS Information
(Solvent Safety Info. On Attached pg.)

Compound	SMW	Lot Number	Nominal Conc (µg/mL)	Purity (%)	Uncertainty (%)	Target Weight (µg)	Actual Weight (µg)	Actual Conc (µg/mL)	Expanded Uncertainty (µg/mL)	CAS#	OSHA PEL (TWA)	LD50
1. 1,4-Dichlorobenzene-d4	118	PR-1845M07287CB1	4000	98	0.2	2.04093	2.04335	4004.7	15.4	2055-02-1	N/A	or-rat 500mg/kg
2. Naphthalene-d8	223	PR-2339M031612HP1	4000	99	0.2	2.02032	2.02084	4001.0	15.2	1148-65-2	10 ppm (50mg/m3/8h)	or-rat 400mg/kg
3. Acenaphthene-d10	2	PR-25444	4000	99	0.2	2.02032	2.02245	4004.2	15.2	15067-28-2	N/A	or-rat 500mg/kg
4. Phenanthrene-d10	248	PR-2305M081711PM1	4000	98	0.2	2.04093	2.04135	4000.8	15.4	1517-25-2	N/A	N/A
5. Chrysene-d12	92	I-19290	4000	98	0.2	2.04093	2.04159	4001.3	15.4	1719-03-5	N/A	N/A
6. Perylene-d12	247	PR-24113	4000	98	0.2	2.04093	2.04158	4001.2	15.4	1503-58-3	N/A	N/A

Run 35, "P10009R L070716 [4000µg/mL in MeCl2]"
Run Length: 40.00 min, 23900 points at 10 points/second.
Created: Sat, Jul 9, 2016 at 1:54:53 PM.
Sampled: Sequence "070716-GC/MS", Method "GC-MS".
Analyzed using Method "GC-MS".

Comments:
GC-MS Analysis by Melissa Siciric
Column ID SPB-5 30 meter x 0.53mm x 1.5um Film Thickness.
Flow rates: Total Flow = 300 mL/min, Helium (carrier) = 0.5 mL, Helium (make-up) = 25 mL.
Hydrogen (detector) = 30 mL, Air (detector) = 300 mL, Oven Temp 1 = 50°C (1 min).
Rise = 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 = sData Channel 1.
Gas Chromatograph = HP 5890, Auto Sampler = HP 7673, Standard Injection = 0.5 µL, Range = 4

Peak Data:

Peak No.	Name	RT (min)
1	1,4-Dichlorobenzene-d4	6.34
2	Naphthalene-d8	8.98
3	Acenaphthene-d10	12.97
4	Phenanthrene-d10	16.37
5	Chrysene-d12	22.62
6	Perylene-d12	25.75

Qualitative Quantitative

3rd Party Comparison

Analyte	Sup/Abs Dev (%)
1,4-Dichlorobenzene-d4	2.55
Naphthalene-d8	2.43
Acenaphthene-d10	2.74
Phenanthrene-d10	0.65
Chrysene-d12	1.93
Perylene-d12	-1.72
Total	-0.55

Printed: 5/8/2019, 12:55:50 PM

For More Information, Contact:

StephenArpie@AbsoluteStandards.com

Page 2 of 2



CERTIFIED WEIGHT REPORT

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

Solvent(s):
Methylene chloride
Lot#
105345

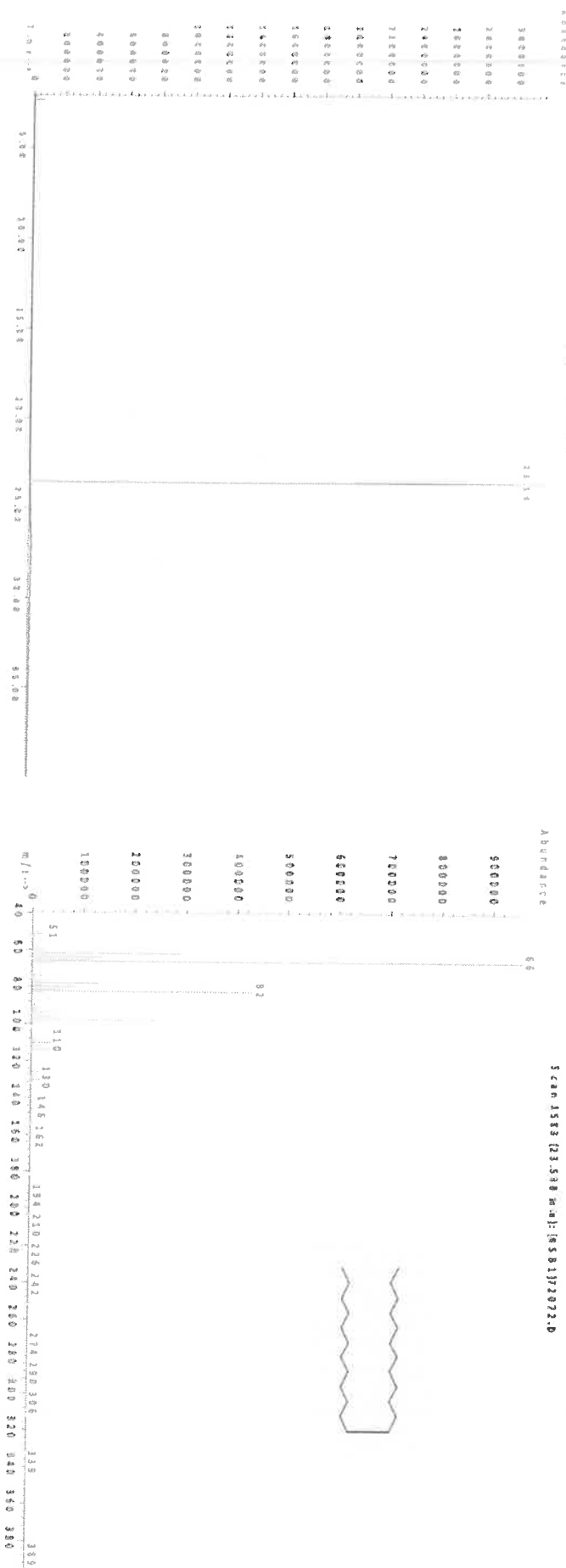
Expiration Date: **101132**
Recommended Storage: **Ambient (20 °C)**
Nominal Concentration (µg/mL): **1000**
NIST Test ID#: **6UB3**
Weight(s) shown below were combined and diluted to (mL): **200.0**
5E-05 Balance Uncertainty
0.058 Flask Uncertainty

P13437
13436
07/24/24
X.F.

Formulated By:	<i>Prashant Chauhan</i>	101122
Reviewed By:	<i>Pedro L. Rentas</i>	101122
DATE		

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.)	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

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 Results," NIST Technical Note 1297, U.S. Government Printing Office, Washington, DC, (1994).

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ISO - 17034



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Page 1 of 2



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Certified Reference Material CRM

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

CERTIFIED WEIGHT REPORT

Part # 10009R
Lot # 070716
Shelf Life Description: CLP Priority Pollutant Internal Standards
GC/MS Calibration - 6 components
070721
Expiration Date: Ambient (20 °C)
Recommended Storage: 4000
Nominal Concentration (µg/mL): 822-275872-11
NIST Test ID#: 5E-05 Balance Uncertainty
0.058 Mass Uncertainty

Solvent(s): Methylene chloride
Lot# 78782

Formulated By: Paul Barron
Reviewed By: Pedro L. Rentes

070716
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Weight(s) shown below were combined and diluted to (mL): 500.0

Compound	SMW	Lot Number	Nominal Conc (µg/mL)	Purity (%)	Uncertainty Purity	Target Weight (µg)	Actual Weight (µg)	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-1845M07287CB1	4000	98	0.2	2.04093	2.04335	4004.7	15.4	2055-02-1	N/A	N/A	or-rat 500mg/kg
2. Naphthalene-d8	223	PR-2339M031612HP1	4000	99	0.2	2.02032	2.02084	4001.0	15.2	1146-85-2	10 ppm (50mg/m3)(H)	N/A	or-rat 400mg/kg
3. Acenaphthene-d10	2	PR-25444	4000	99	0.2	2.02032	2.02245	4004.2	15.2	15067-28-2	N/A	N/A	or-rat 500mg/kg
4. Phenanthrene-d10	248	PR-2305M081711PM1	4000	98	0.2	2.04093	2.04136	4000.8	15.4	1517-25-2	N/A	N/A	N/A
5. Chrysene-d12	92	I-19290	4000	98	0.2	2.04093	2.04159	4001.3	15.4	1719-03-5	N/A	N/A	N/A
6. Perylene-d12	247	PR-24113	4000	98	0.2	2.04093	2.04156	4001.2	15.4	1503-58-3	N/A	N/A	N/A

Run 35, "P10009R L070716 [4000µg/mL in MeCl2]"
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Sampled: Sequence "070716-GC/MS", Method "GC-MS".
Analyzed using Method "GC-MS".

Comments:
GC-MS Analysis by Melissa Siciric
Column ID SPB-5 30 meter x 0.53mm x 1.5um Film Thickness.
Flow rates: Total Flow = 300 mL/min, Helium (carrier) = 0.5 mL, Helium (make-up) = 25 mL.
Hydrogen (detector) = 30 mL, Air (detector) = 300 mL, Oven Temp 1 = 50°C (1 min).
Rise = 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 = sData Channel 1.
Gas Chromatograph = HP 5890, Auto Sampler = HP 7673, Standard Injection = 0.5 µL, Range = 4

Peak No. Name FID RT (min)

1	1,4-Dichlorobenzene-d4	8.34
2	Naphthalene-d8	8.98
3	Acenaphthene-d10	12.97
4	Phenanthrene-d10	16.37
5	Chrysene-d12	22.62
6	Perylene-d12	25.75

Printed: 5/8/2019, 12:55:50 PM

Formulator
Reviewer

Actual
Concentration
Uncertainty
Values

Health &
Safety

3rd Party
Comparison

For More Information, Contact:

StephenArpie@AbsoluteStandards.com

Page 2 of 2



CERTIFIED WEIGHT REPORT

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

Solvent(s):
Methylene chloride
Lot#
105345

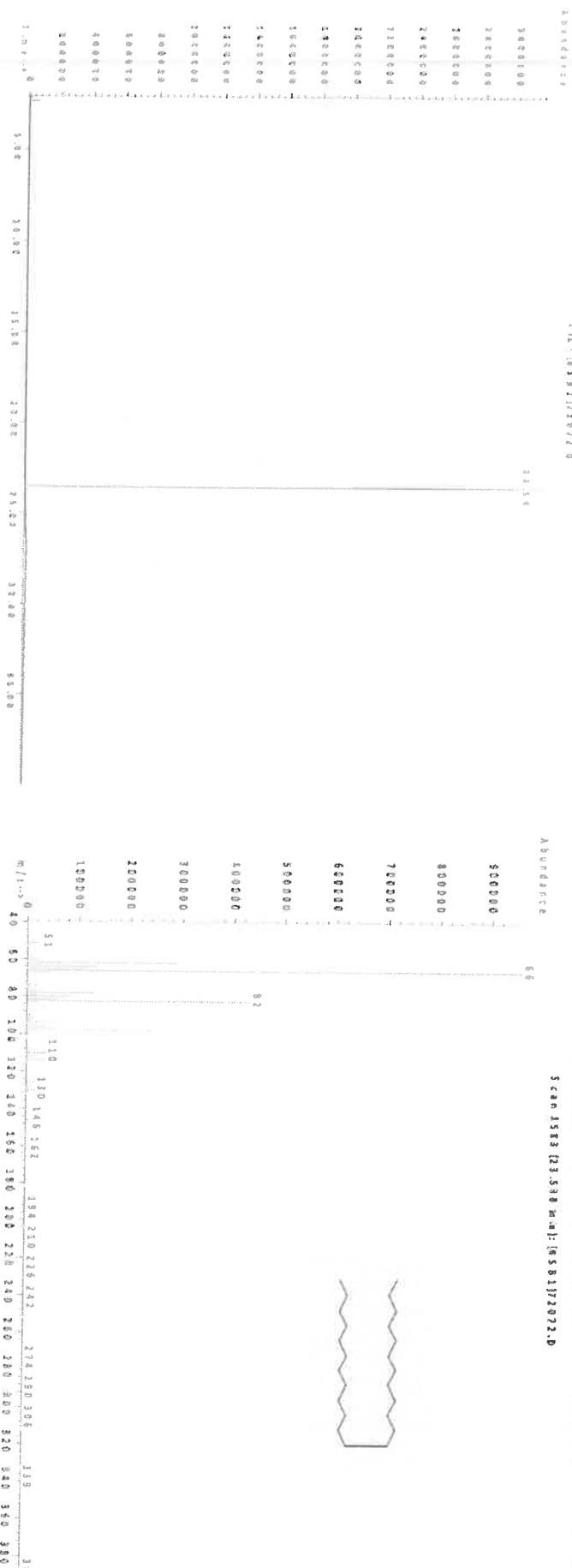
Expiration Date: **101132**
Recommended Storage: **Ambient (20 °C)**
Nominal Concentration (µg/mL): **1000**
NIST Test ID#: **6UB3**
Weight(s) shown below were combined and diluted to (mL): **200.0**
5E-05 Balance Uncertainty
0.058 Flask Uncertainty

P13437
13436
07/24/24
X.F.

Formulated By:	<i>Prashant Chauhan</i>	101122
Reviewed By:	<i>Pedro L. Rentas</i>	101122
DATE		

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.)	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

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 Results," NIST Technical Note 1297, U.S. Government Printing Office, Washington, DC, (1994).



SHIPPING DOCUMENTS



284 Sheffield Street, Mountainside, NJ 07092

(908) 789-8900 Fax: (908) 788-9222

www.chemtech.net

CHAIN OF CUSTODY RECORD

Alliance Project Number:

Q3574

COC Number:

CLIENT INFORMATION

PROJECT INFORMATION

BILLING INFORMATION

COMPANY: Pacific Commercial Services, Inc.

PROJECT NAME: Kilo Pier

BILL TO: Pacific Commercial Services

PO#

ADDRESS: 91-254 Olai Street

PROJECT #: 304641-01

LOCATION: JBPHH

ADDRESS: PO Box 235117

CITY: Kapolei

STATE: HI

ZIP: 96707

PROJECT MANAGER: Wendi Zheng, Daniel Barragan

CITY: Honolulu

STATE: HI ZIP: 96823

ATTENTION: Wendi Zheng

E-MAIL: Wendi.Zheng@pcshi.com

ATTENTION:

PHONE:

PHONE: 808-545-4599

FAX:

PHONE: 808-729-0889

FAX:

DATA TURNAROUND INFORMATION

DATA DELIVERABLE INFORMATION

ANALYSIS

FAX: _____ DAYS*
HARD COPY: _____ DAYS*
EDD _____ DAYS*

- ☐ RESEULTS ONLY ☐ USEPA CLP
☐ RESULTS + QC ☐ New York State ASP "B"
☐ New Jersey REDUCED ☐ New York State ASP "A"
☐ New Jersey CLP ☐ Other _____
☐ EDD Format _____

TPH GC	GRO	VOC	PCB	Priority metals	TCLP metals	pH	Flash point	PAH
1	2	3	4	5	6	7	8	9

PRESERVATIVES

COMMENTS

<-- Specify Preservatives
A-HCl B-HNO3
C-H2SO4 D-NaOH
E-ICE F-Other

CHEMTECH SAMPLE ID	PROJECT SAMPLE IDENTIFICATION	SAMPLE MATRIX	SAMPLE TYPE		SAMPLE COLLECTION		# of Bottles										
			COMP	GRAB	DATE	TIME		1	2	3	4	5	6	7	8	9	
1.	304641-01-Wash water	liquid		X	11/4/25	8:45	9	X	X	X	X	X	X	X	X	X	
2.	304614-01-Fuel			X	11/4/25	8:45	1								X		
3.																	
4.																	
5.																	
6.																	
7.																	
8.																	
9.																	
10.																	

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

RELINQUISHED BY SAMPLER	DATE/TIME	RECEIVED BY	Conditions of bottles or coolers at receipt: ☐ Compliant ☐ Non Compliant ☐ Cooler Temp <u>2.3°</u> MeOH extraction requires an additional 4oz. Jar for percent solid ☐ Ice in Cooler?: <u>yes</u>
1. <u>Amrit Krishna</u>	<u>11/4/25</u>	<u>[Signature]</u>	Comments: <u>13.7 + 0.2 = 13.9 (FEDER)</u> <u>IR Count 1</u>
RELINQUISHED BY	DATE/TIME	RECEIVED BY	
2. <u>[Signature]</u>	<u>11/6/25</u> <u>10:35</u>	2. <u>[Signature]</u>	
RELINQUISHED BY	DATE/TIME	RECEIVED FOR LAB BY	SHIPPED VIA: CLIENT: ☐ Hand Delivered ☐ Overnight ALLIANCE: ☐ Picked Up ☐ Overnight
3. <u>[Signature]</u>	<u>11/7/25</u> <u>9:40</u>	3. <u>[Signature]</u>	Shipment Complete ☐ YES ☐ NO

WHITE - ALLIANCE COPY FOR RETURN TO CLIENT

YELLOW - ALLIANCE COPY

PINK - SAMPLER COPY

Laboratory Certification

Certified By	License No.
Connecticut	PH-0830
DOD ELAP (ANAB)	L2219
Maine	2024021
Maryland	296
New Hampshire	255425
New Jersey	20012
New York	11376
Pennsylvania	68-00548
Soil Permit	525-24-234-08441
Texas	TX-C25-00189
Virginia	460312

LOGIN REPORT/SAMPLE TRANSFER

Order ID : Q3574	PACI01	Order Date : 11/7/2025 10:02:13 AM	Project Mgr : Deepak
Client Name : Pacific Commercial Service		Project Name : Kilo Pier	Report Type : Level 2
Client Contact : Wendi Zheng		Receive DateTime : 11/7/2025 9:40:00 AM	EDD Type : EXCEL NOCLEANUP
Invoice Name : Pacific Commercial Service		Purchase Order :	Hard Copy Date :
Invoice Contact : Wendi Zheng			Date Signoff : 11/7/2025 11:34:12 AM

LAB ID	CLIENT ID	MATRIX	SAMPLE DATE	SAMPLE TIME	TEST	TEST GROUP	METHOD	FAX DATE	DUE DATES
Q3574-01	304641-01 Liquid	Water	11/04/2025	08:45					
					Gasoline Range Organics		8015D		10 Bus. Days

Relinquished By : afDate / Time : 11/7/25 11:45Received By : SeemyDate / Time : 11/07/25 11:45

Storage Area : VOA Refridgerator Room

LOGIN REPORT/SAMPLE TRANSFER

Order ID : Q3574	PACI01	Order Date : 11/7/2025 10:02:13 AM	Project Mgr : Deepak
Client Name : Pacific Commercial Service		Project Name : Kilo Pier	Report Type : Level 2
Client Contact : Wendi Zheng		Receive DateTime : 11/7/2025 9:40:00 AM	EDD Type : EXCEL NOCLEANUP
Invoice Name : Pacific Commercial Service		Purchase Order :	Hard Copy Date :
Invoice Contact : Wendi Zheng			Date Signoff : 11/7/2025 11:34:12 AM

LAB ID	CLIENT ID	MATRIX	SAMPLE DATE	SAMPLE TIME	TEST	TEST GROUP	METHOD	FAX DATE	DUE DATES
Q3574-01	304641-01 Liquid	Water	11/04/2025	08:45	VOC-TCLVOA-10		8260-Low		10 Bus. Days

Relinquished By : cl

Date / Time : 11/7/25 11:45

Received By : Sam

Date / Time : 11/7/25 11:45 Pg # 4

Storage Area : VOA Refridgerator Room