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Prep Standard - Chemical Standard Summary

Order ID : Q3688

Test : VOC-SFAM

Prepbatch ID :

Sequence ID/Qc Batch ID: VU112125,VU112425,VU111725

Standard ID :
VP134957,VP135423,VP136255,VP136256,VP136259,VP136260,VP136262,VP136264,VP136266,VP136268,VP136273,VP136276,VP136367,VP136368,VP136369,VP136376,VP136379,VP136380,VP136381,

Chemical ID :
MDL-VP136272,V13391,V13392,V13860,V14083,V14310,V14349,V14556,V14625,V14689,V14699,V14730,V14771,V14779,V14859,V14936,V14937,W3112,

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VOC STANDARD PREPARATION LOG

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
218	BFB, 25PPM	VP134957	08/01/2025	11/22/2025	Semsettin Yesilyurt	None	None	Mahesh Dadoda 08/06/2025

FROM 0.50000ml of V13391 + 49.50000ml of V14625 = Final Quantity: 50.000 ml

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
649	SOM01.2 Internal Standard, 250PPM	VP135423	09/11/2025	12/31/2025	Semsettin Yesilyurt	None	None	Mahesh Dadoda 09/19/2025

FROM 0.50000ml of V14349 + 4.50000ml of V14625 = Final Quantity: 5.000 ml

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VOC STANDARD PREPARATION LOG

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
589	BFB TUNE CHECK	VP136255	11/17/2025	11/18/2025	Mahesh Dadoda	None	None	Amit Patel 11/18/2025

FROM 39.98400ml of W3112 + 0.01600ml of VP134957 = Final Quantity: 40.000 ml

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
651	SOM01.2 Calibration Mix, 200PPM	VP136256	11/17/2025	01/17/2026	Semsettin Yesilyurt	None	None	Mahesh Dadoda 11/18/2025

FROM 0.40000ml of V14699 + 0.50000ml of V13860 + 0.50000ml of V14083 + 0.50000ml of V14310 + 0.50000ml of V14556 + 0.50000ml of V14730 + 0.50000ml of V14779 + 0.50000ml of V14859 + 1.10000ml of V14937 = Final Quantity: 5.000 ml

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VOC STANDARD PREPARATION LOG

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
650	SOM01.2 Surrogate, 100PPM	VP136259	11/17/2025	01/19/2026	Semsettin Yesilyurt	None	None	Mahesh Dadoda 11/18/2025

FROM 1.00000ml of V14771 + 2.00000ml of V14689 + 2.00000ml of V14937 = Final Quantity: 5.000 ml

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
652	5 PPB ICC, SOM01.2LM-Water	VP136260	11/17/2025	11/18/2025	Mahesh Dadoda	None	None	Amit Patel 11/18/2025

FROM 39.98000ml of W3112 + 0.00100ml of VP136256 + 0.00200ml of VP136259 + 0.00800ml of VP135423 = Final Quantity: 40.000 ml

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VOC STANDARD PREPARATION LOG

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
653	10 PPB ICC, SOM01.2LM-Water	VP136262	11/17/2025	11/18/2025	Mahesh Dadoda	None	None	Amit Patel 11/18/2025

FROM 39.98000ml of W3112 + 0.00200ml of VP136256 + 0.00400ml of VP136259 + 0.00800ml of VP135423 = Final Quantity: 40.000 ml

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
654	50 PPB ICC, SOM01.2LM-Water	VP136264	11/17/2025	11/18/2025	Mahesh Dadoda	None	None	Amit Patel 11/18/2025

FROM 39.96000ml of W3112 + 0.00800ml of VP135423 + 0.01000ml of VP136256 + 0.02000ml of VP136259 = Final Quantity: 40.000 ml

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VOC STANDARD PREPARATION LOG

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
655	100 PPB ICC, SOM01.2LM-Water	VP136266	11/17/2025	11/18/2025	Mahesh Dadoda	None	None	Amit Patel 11/18/2025

FROM 39.93000ml of W3112 + 0.00800ml of VP135423 + 0.02000ml of VP136256 + 0.04000ml of VP136259 = Final Quantity: 40.000 ml

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
656	200 PPB ICC, SOM01.2LM-Water	VP136268	11/17/2025	11/18/2025	Mahesh Dadoda	None	None	Amit Patel 11/18/2025

FROM 39.87000ml of W3112 + 0.00800ml of VP135423 + 0.04000ml of VP136256 + 0.08000ml of VP136259 = Final Quantity: 40.000 ml

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VOC STANDARD PREPARATION LOG

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
1754	2.5 PPB MDL,SOM01.2LM-WATER	VP136273	11/17/2025	11/18/2025	Mahesh Dadoda	None	None	Amit Patel 11/18/2025

FROM 39.79000ml of W3112 + 0.00050ml of VP136256 + 0.00800ml of VP135423 + 0.02000ml of VP136259 = Final Quantity: 40.000 ml

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
657	50 PPB CCC-CCV, SOM01.2LM-Water	VP136276	11/17/2025	11/18/2025	Mahesh Dadoda	None	None	Amit Patel 11/18/2025

FROM 39.96000ml of W3112 + 0.00800ml of VP135423 + 0.01000ml of VP136256 + 0.02000ml of VP136259 = Final Quantity: 40.000 ml

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VOC STANDARD PREPARATION LOG

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
589	BFB TUNE CHECK	VP136367	11/21/2025	11/22/2025	Mahesh Dadoda	None	None	Amit Patel 11/21/2025

FROM 39.98400ml of W3112 + 0.01600ml of VP134957 = Final Quantity: 40.000 ml

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
657	50 PPB CCC-CCV, SOM01.2LM-Water	VP136368	11/21/2025	11/22/2025	Mahesh Dadoda	None	None	Amit Patel 11/21/2025

FROM 39.96000ml of W3112 + 0.00800ml of VP135423 + 0.01000ml of VP136256 + 0.02000ml of VP136259 = Final Quantity: 40.000 ml

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VOC STANDARD PREPARATION LOG

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
657	50 PPB CCC-CCV, SOM01.2LM-Water	VP136369	11/21/2025	11/22/2025	Mahesh Dadoda	None	None	Amit Patel 11/21/2025

FROM 39.96000ml of W3112 + 0.00800ml of VP135423 + 0.01000ml of VP136256 + 0.02000ml of VP136259 = Final Quantity: 40.000 ml

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
218	BFB, 25PPM	VP136376	11/24/2025	05/24/2026	Semsettin Yesilyurt	None	None	Mahesh Dadoda 11/25/2025

FROM 0.50000ml of V13392 + 49.50000ml of V14936 = Final Quantity: 50.000 ml

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VOC STANDARD PREPARATION LOG

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
589	BFB TUNE CHECK	VP136379	11/24/2025	11/25/2025	Mahesh Dadoda	None	None	Amit Patel 11/26/2025

FROM 39.98400ml of W3112 + 0.01600ml of VP136376 = Final Quantity: 40.000 ml

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
657	50 PPB CCC-CCV, SOM01.2LM-Water	VP136380	11/24/2025	11/25/2025	Mahesh Dadoda	None	None	Amit Patel 11/26/2025

FROM 39.96000ml of W3112 + 0.00800ml of VP135423 + 0.01000ml of VP136256 + 0.02000ml of VP136259 = Final Quantity: 40.000 ml

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VOC STANDARD PREPARATION LOG

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
657	50 PPB CCC-CCV, SOM01.2LM-Water	VP136381	11/24/2025	11/25/2025	Mahesh Dadoda	None	None	Amit Patel 11/26/2025

FROM 39.96000ml of W3112 + 0.00800ml of VP135423 + 0.01000ml of VP136256 + 0.02000ml of VP136259 = Final Quantity: 40.000 ml

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CHEMICAL RECEIPT LOG BOOK

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Restek	30067 / BFB tuneing solution	A0191805	11/22/2025	11/22/2024 / SAM	01/13/2023 / SAM	V13391

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Restek	30067 / BFB tuneing solution	A0191805	11/24/2026	11/24/2025 / sam	01/13/2023 / SAM	V13392

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Absolute Standards, Inc.	90319 / 1,3,5-Trimethylbenzene-2000 ug/mL	061923	09/24/2026	09/24/2025 / sam	06/22/2023 / SAM	V13860

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Absolute Standards, Inc.	94159 / CLP SOM01.1 Volatiles	012323	01/23/2026	09/24/2025 / sam	12/21/2023 / SAM	V14083

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Absolute Standards, Inc.	90298 / Naphthalene, 2000 ug/ml	020123	03/24/2026	09/24/2025 / sam	04/17/2024 / SAM	V14310

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Restek	30091 / VOA Mix, CLP method L/C Internal Std 2500uq/ml, PT&M, 1ml/ampul	A0209905	09/11/2026	09/11/2025 / sam	05/03/2024 / SAM	V14349

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CHEMICAL RECEIPT LOG BOOK

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Absolute Standards, Inc.	94559 / 1,3,5-Trichlorobenzene, 2000 ug/mL, in methanol	051421	05/14/2026	09/24/2025 / sam	10/09/2024 / SAM	V14556

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Seidler Chemical	BA9077-02 / Methanol, Purge/Trap (cs=6x1L)	23I0762004	01/29/2026	07/29/2025 / SAM	11/26/2024 / SAM	V14625

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Restek	30625 / VOA Stock Std, OLC 3.2 VOA Ketone Deuterated Monitoring Compounds, 1mL, 500ug/mL, d2O	A0219189	05/31/2026	11/04/2025 / sam	12/17/2024 / SAM	V14689

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Restek	30006 / VOA Mix, CLP method Calibration Std #1 ketones 5000uq/ml, PTM, 1ml	A02110618	05/17/2026	11/17/2025 / sam	12/17/2024 / SAM	V14699

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Restek	30042 / VOA Mix,500 series method 502.2 Calibration Std #1 gases, 2000uq/ml, PTM, 1ml	A0216826	05/17/2026	11/17/2025 / sam	12/17/2024 / SAM	V14730

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Restek	30624 / VOA Stock Standard, OLC 3.2 VOA non-ketone, deuterated monitoring compounds, 1mL, 500ug/mL, Methanol-d	A0211457	05/04/2026	11/04/2025 / sam	12/17/2024 / SAM	V14771

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CHEMICAL RECEIPT LOG BOOK

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Absolute Standards, Inc.	31491 / 1,2,4-Trimethylbenzene 2000ppm	070122	09/24/2026	09/24/2025 / sam	01/02/2025 / SAM	V14779

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Restek	30429 / 1,2,3-Trichloropropane Standard, 2,000 ug/ml	A0218772	09/24/2026	09/24/2025 / sam	01/23/2025 / SAM	V14859

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Seidler Chemical	BA9077-02 / Methanol, Purge/Trap (cs=6x1L)	24G0262002	05/24/2026	11/24/2025 / sam	05/09/2025 / SAM	V14936

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Seidler Chemical	BA9077-02 / Methanol, Purge/Trap (cs=6x1L)	24G0262002	04/30/2026	10/31/2025 / Amit	05/09/2025 / SAM	V14937

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Seidler Chemical	DIW / DI Water	Daily Lab-Certified	07/03/2029	07/03/2024 / Iwona	07/03/2024 / Iwona	W3112

Methanol
ULTRA RESI-ANALYZED
For Purge and Trap Analysis

avantor™ | J.T.Baker®

Material No.: 9077-02
Batch No.: 2310762004
Manufactured Date: 2023-08-11
Expiration Date: 2026-08-10
Revision No.: 0

Certificate of Analysis

Test	Specification	Result
Assay (CH_3OH) (by GC, corrected for water)	≥ 99.9 %	100.0 %
Residue after Evaporation	≤ 1.0 ppm	0.5 ppm
Titrable Acid (µeq/g)	≤ 0.3	0.2
Titrable Base (µeq/g)	≤ 0.10	0.01
Water (by KF, coulometric)	≤ 0.08 %	< 0.01 %
Volatile Organic Trace Analysis – Below EPA 8260B CRQL	Conforms	Conforms

For Laboratory,Research,or Manufacturing Use
Performance Tested for Use in EPA Methods
500 Series for Drinking Water
600 Series for Wastewater
846 for Solid Waste

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

Ken Koehnlein
Sr. Manager, Quality Assurance

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

Certified Reference Material CRM

10 - 1cap

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

CERTIFIED WEIGHT REPORT

Part Number: 94159
Lot Number: 012323
Description: CLP SOM 01.1 Volatiles
42 components
Expiration Date: 012326
Recommended Storage: Freezer (0 °C)
Nominal Concentration (µg/mL): Varied
NIST Test ID#: 6UTB — 5E-05 Balance Uncertainty
Volume(s) shown below were combined and diluted to (mL): 100.0 — 0.012 Flask Uncertainty

Solvent: Methanol — **Lot#** EF282-USQ1

Formulated By:	Prashant Chauhan	012323 DATE
Reviewed By:	Pedro L. Rentas	012323 DATE

	Compound	Part Number	Lot Number	Dil. Factor	Initial Vol. (mL)	Uncertainty Pipette (mL)	Initial Conc.(ug/mL)	Final Conc.(ug/mL)	Expanded Uncertainty (+/-) (µg/mL)	CAS#	OSHA PEL (TWA)	LD50
										SDS Information (Solvent Safety Info. On Attached pg.)		
1.	Benzene	93831	060616	0.10	10.00	0.042	20006.6	2000.6	18.7	71-43-2	1 ppm	orl-rat 4894mg/kg
2.	Toluene	93831	060616	0.10	10.00	0.042	20002.8	2000.2	18.7	108-88-3	200 ppm	orl-rat 5000mg/kg
3.	Ethyl benzene	93831	060616	0.10	10.00	0.042	20002.5	2000.2	18.7	100-41-4	100 ppm (435mg/m3/8H)	orl-rat >2000mg/kg
4.	o-Xylene	93831	060616	0.10	10.00	0.042	20003.8	2000.3	18.7	95-47-6	100 ppm (435mg/m3/8H)	ipr-mus 1364mg/kg
5.	m-Xylene	93831	060616	0.10	10.00	0.042	10003.3	1000.3	9.4	108-38-3	100 ppm (435mg/m3/8H)	orl-rat 5g/kg
6.	p-Xylene	93831	060616	0.10	10.00	0.042	10005.2	1000.5	9.4	106-42-3	100 ppm (435mg/m3/8H)	orl-rat 5g/kg
7.	Bromodichloromethane	35171	100220	0.05	5.00	0.017	40018.8	2000.8	15.9	75-27-4	N/A	orl-rat 916mg/kg
8.	Dibromochloromethane	35171	100220	0.05	5.00	0.017	40007.7	2000.3	15.9	124-48-1	N/A	orl-rat 848mg/kg
9.	cis-1,2-Dichloroethene	35171	100220	0.05	5.00	0.017	40012.4	2000.5	15.8	156-59-2	N/A	N/A
10.	trans-1,2-Dichloroethene	35171	100220	0.05	5.00	0.017	40005.6	2000.2	15.9	156-60-5	N/A	orl-rat 1235mg/kg
11.	Methylene chloride	35171	100220	0.05	5.00	0.017	40013.9	2000.6	15.8	75-09-2	500 ppm	orl-rat 820mg/kg
12.	1,1-Dichloroethene	32251	031821	0.10	10.00	0.042	20009.1	2000.8	18.7	75-35-4	1 ppm (4mg/m3/8H)	orl-rat 200mg/kg
13.	Bromochloromethane	94170	010616	0.10	10.00	0.042	20017.5	2001.7	18.7	74-97-5	200 ppm (1050mg/m3/8H)	orl-rat 5000mg/kg
14.	Bromoform	94170	010616	0.10	10.00	0.042	20010.4	2000.9	18.7	75-25-2	0.5 ppm (5mg/m3) (skin)	orl-rat 933mg/kg
15.	Carbon tetrachloride	94170	010616	0.10	10.00	0.042	20006.0	2000.5	18.7	56-23-5	2 ppm (12.6mg/m3/8H)	orl-rat 2350mg/kg
16.	Chloroform	94170	010616	0.10	10.00	0.042	20019.5	2001.8	18.7	67-66-3	50 ppm (240mg/m3) (CL)	orl-rat 908mg/kg
17.	1,1-Dichloroethane	94170	010616	0.10	10.00	0.042	20007.6	2000.7	18.7	75-34-3	100 ppm	orl-rat 725mg/kg
18.	Tetrachloroethene	94170	010616	0.10	10.00	0.042	20015.7	2001.5	18.7	127-18-4	25 ppm (170mg/m3/8H)(final)	orl-rat 2629mg/kg
19.	1,1,1-Trichloroethane	94170	010616	0.10	10.00	0.042	20007.4	2000.6	18.7	71-55-6	350 ppm (1900mg/m3/8H)	orl-rat 10300mg/kg
20.	1,2-Dibromo-3-chloropropane	94171	010616	0.10	10.00	0.042	20015.3	2001.4	18.7	96-12-8	0.001 ppm	orl-rat 170mg/kg
21.	1,2-Dibromoethane	94171	010616	0.10	10.00	0.042	20017.3	2001.6	18.7	106-93-4	20 ppm (8H)	orl-rat 108mg/kg
22.	1,2-Dichloroethane	94171	010616	0.10	10.00	0.042	20005.4	2000.4	18.7	107-06-2	50 ppm (8H)	orl-rat 670mg/kg
23.	1,2-Dichloropropane	94171	010616	0.10	10.00	0.042	20006.4	2000.5	18.7	78-87-5	75 ppm (350mg/m3/8H)	orl-rat 1947mg/kg
24.	cis-1,3-Dichloropropene	94171	010616	0.10	10.00	0.042	20016.0	2001.5	18.7	10061-01-5	N/A	N/A
25.	trans-1,3-Dichloropropene	94171	010616	0.10	10.00	0.042	20011.4	2001.0	18.7	10061-02-6	N/A	N/A
26.	1,1,2,2-Tetrachloroethane	94171	010616	0.10	10.00	0.042	20014.3	2001.3	18.7	79-34-5	5 ppm (35mg/m3/8H)(skin)	orl-rat 800mg/kg
27.	1,1,2-Trichloroethane	94171	010616	0.10	10.00	0.042	20024.9	2002.4	18.8	79-00-5	10 ppm (45mg/m3/8H)(skin)	orl-rat 836mg/kg
28.	Trichloroethene	94171	010616	0.10	10.00	0.042	20012.9	2001.2	18.7	79-01-6	50 ppm (270mg/m3/8H)	orl-mus 2402mg/kg
29.	Chlorobenzene	99783	091118	0.10	10.00	0.042	20001.9	2000.1	18.7	108-90-7	75 ppm (350mg/m3/8H)	orl-rat 2290mg/kg
30.	1,2-Dichlorobenzene	99783	091118	0.10	10.00	0.042	20002.9	2000.2	18.7	95-50-1	50 ppm (300mg/m3) (CL)	orl-rat 500mg/kg
31.	1,3-Dichlorobenzene	99783	091118	0.10	10.00	0.042	20003.7	2000.3	18.7	541-73-1	N/A	ipr-mus 1062mg/kg
32.	1,4-Dichlorobenzene	99783	091118	0.10	10.00	0.042	20005.9	2000.5	18.7	106-46-7	75 ppm (450mg/m3/8H)	orl-rat 500mg/kg
33.	Isopropylbenzene	99783	091118	0.10	10.00	0.042	20391.8	2039.1	19.0	98-82-8	50 ppm (245mg/m3/8H)	orl-rat 1400mg/kg
34.	1,2,3-Trichlorobenzene	99783	091118	0.10	10.00	0.042	20003.7	2000.3	18.7	87-61-6	N/A	ipr-mus 1390mg/kg
35.	1,2,4-Trichlorobenzene	99783	091118	0.10	10.00	0.042	20084.7	2008.4	18.8	120-82-1	5 ppm (CL) (40mg/m3)	orl-rat 756mg/kg
36.	Styrene	32381	052120	0.10	10.00	0.042	20041.4	2004.0	18.7	100-42-5	100 ppm	orl-rat 5000mg/kg
37.	Carbon disulphide	94173	010716	0.10	10.00	0.042	20001.9	2000.1	18.7	75-15-0	4 ppm (12mg/m3) (skin)	orl-rat 1200mg/kg
38.	Cyclohexane	94173	010716	0.10	10.00	0.042	20002.0	2000.1	18.7	110-82-7	300 ppm (1050mg/m3/8H)	orl-rat 12705mg/kg
39.	Methyl acetate	94173	010716	0.10	10.00	0.042	20002.4	2000.1	18.7	79-20-9	200 ppm (610mg/m3/8H)	orl-rbt 3705mg/kg
40.	Methylcyclohexane	94173	010716	0.10	10.00	0.042	20001.7	2000.1	18.7	108-87-2	N/A	orl-mus 2250mg/kg
41.	Methyl tert-butyl ether (MTBE)	94173	010716	0.10	10.00	0.042	20001.2	2000.0	18.7	1634-04-4	N/A	orl-rat 4g/kg
42.	1,1,2-Trichloro-1,2,2-trifluoroethane	94173	010716	0.10	10.00	0.042	20001.9	2000.1	18.7	76-13-1	1000 ppm (7600mg/m3/8H)	orl-rat 43g/kg

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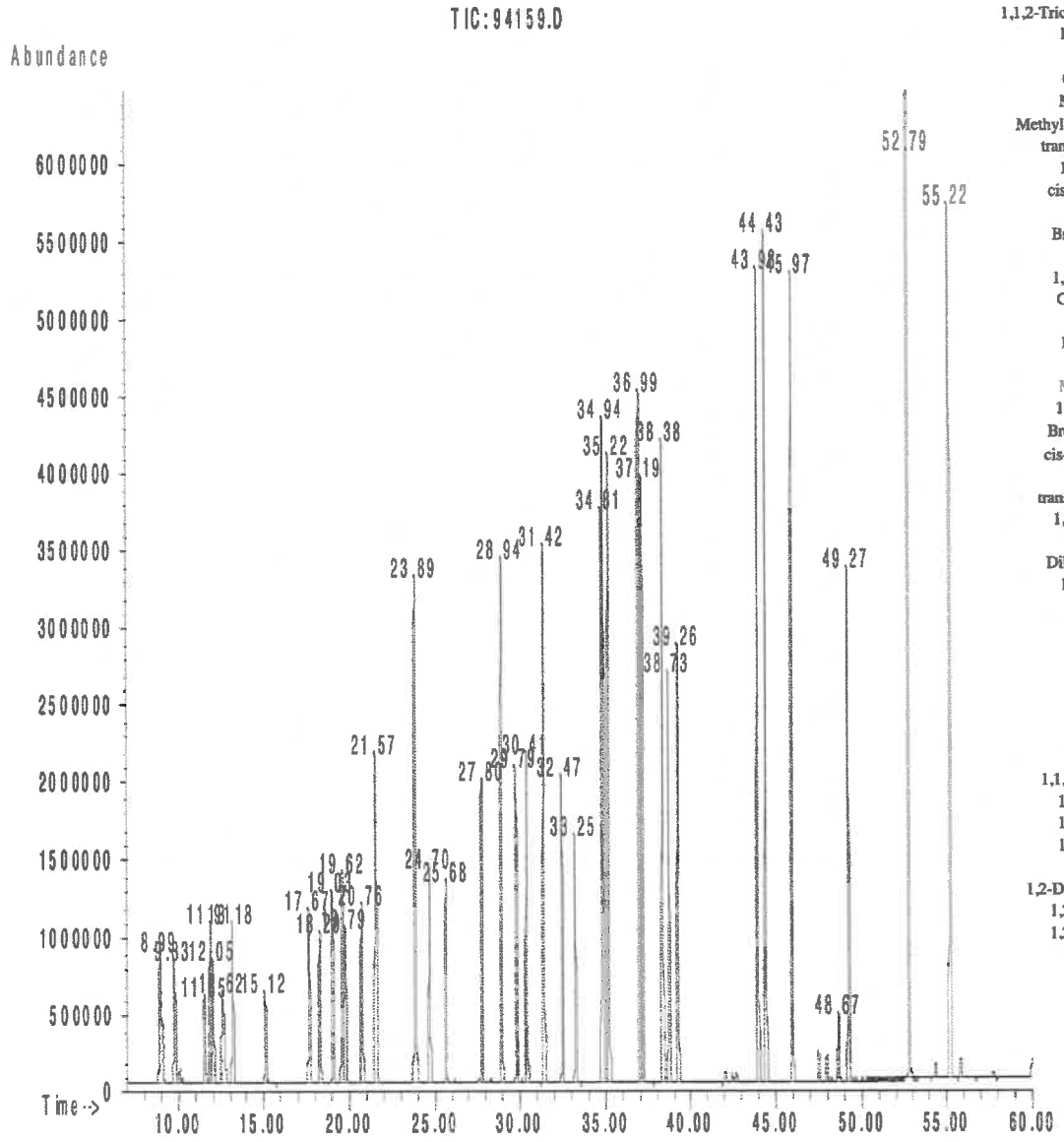
- Standards are certifed (+/-) 0.5% of the stated value, unless otherwise stated.
- All Standards, after opening ampule, should be stored with caps tight and under appropriate laboratory conditions.
- Uncertainty Reference: Taylor, B.N. and Kuyat, C.E., "Guidelines for Evaluating and Expressing the Uncertainty of NIST Measurement Result," NIST Technical Note 1297, U.S. Government Printing Office, Washington, DC, (1994).

Method: GC6MSD1. **Detector:** Mass Selective Detector. **Column:** Vocol (60m X 0.25mm ID X 1.5µm film thickness). **Oven Profile:** Temp. 1 = 35°C (Time 1=10min.), Temp. 2 = 200°C (Time 2=8.75 min.), Rate = 4°C/min., Injector Temp.= 200°C, Detector Temp. = 220°C. **Analyst:** Gina McLane.



Retention Time (min.)	
1,1,2-Trichloro-1,2,2-trifluoroethane	8.99
1,1-Dichloroethene	9.83
Methyl acetate	11.55
Carbon disulphide	11.91
Methylene chloride	12.05
Methyl tert-butyl ether (MTBE)	12.62
trans-1,2-Dichloroethene	13.18
1,1-Dichloroethane	15.12
cis-1,2-Dichloroethene	17.67
Chloroform	18.29
Bromochloromethane	19.03
Cyclohexane	19.62
1,1,1-Trichloroethane	19.79
Carbon tetrachloride	20.76
Benzene	21.57
1,2-Dichloroethane	21.57
Trichloroethene	23.89
Methylcyclohexane	23.89
1,2-Dichloropropane	24.7
Bromodichloromethane	25.68
cis-1,3-Dichloropropene	27.8
Toluene	28.94
trans-1,3-Dichloropropene	29.79
1,1,2-Trichloroethane	30.41
Tetrachloroethene	31.42
Dibromochloromethane	32.47
1,2-Dibromoethane	33.25
Chlorobenzene	34.81
Ethylbenzene	34.94
m-Xylene	35.22
p-Xylene	35.22
o-Xylene	36.99
Styrene	37.19
Isopropylbenzene	38.38
Bromoform	38.73
1,1,2,2-Tetrachloroethane	39.26
1,3-Dichlorobenzene	43.98
1,4-Dichlorobenzene	44.43
1,2-Dichlorobenzene	45.97
impurity	48.67
1,2-Dibromo-3-chloropropane	49.27
1,2,4-Trichlorobenzene	52.79
1,2,3-Trichlorobenzene	55.22

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10

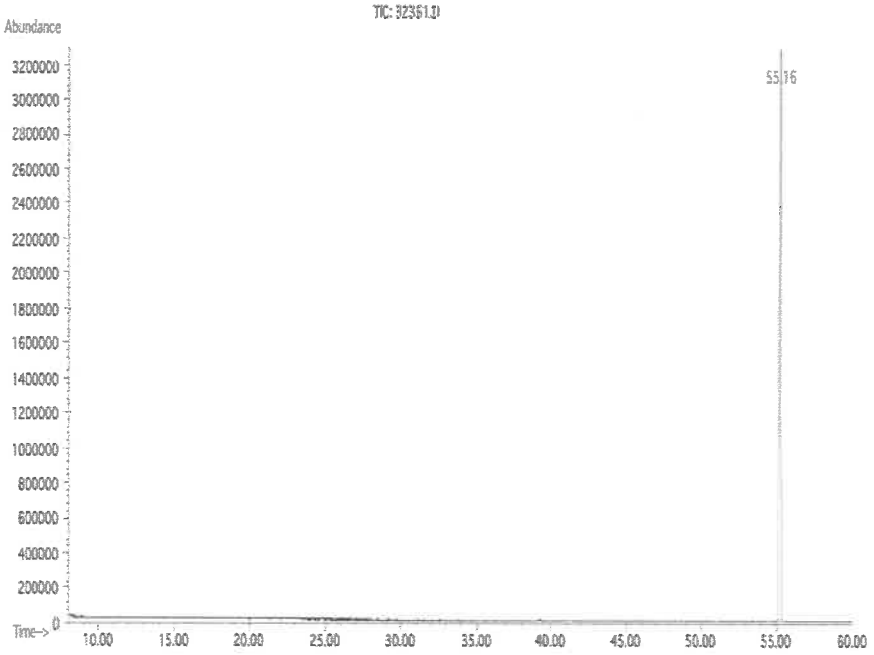
CERTIFIED WEIGHT REPORT

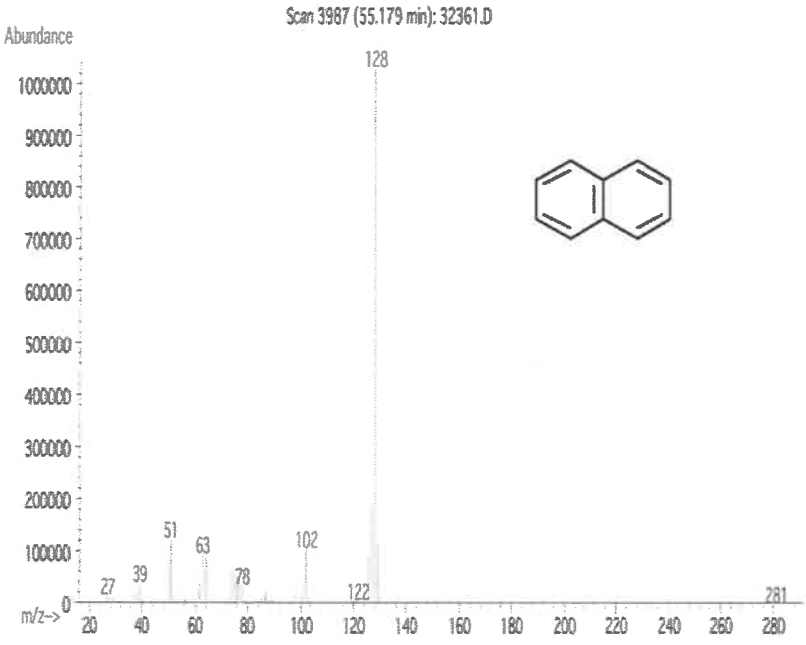
Part Number:	**90298**	**Solvent(s):**	**Lot#**	
Lot Number:	020123	Methanol	EF282-US	
Description:	Naphthalene			
Expiration Date:	020128			
Recommended Storage:	Refrigerate (4 °C)			
Nominal Concentration (µg/mL):	2000			
NIST Test ID#:	6UTB	5E-05	Balance Uncertainty	
Volume(s) shown below were combined and diluted to (mL):	100.0	0.012	Flask Uncertainty	

Justin Dippold		020123
Formulated By:	Justin Dippold	DATE
Pedro Rentas		020123
Reviewed By:	Pedro L. Rentas	DATE

Compound	Part Number	Lot Number	Dilution Factor	Initial Vol. (mL)	Uncertainty Pipette (mL)	Initial Conc.(ug/mL)	Final Conc.(ug/mL)	Expanded Uncertainty (+/-) (µg/mL)	SDS Information (Solvent Safety Info. On Attached pg.) CAS#	OSHA PEL (TWA)	LD50
1. Naphthalene	32361	011623	0.10	10.00	0.042	20000.3	1999.9	18.7	91-20-3	10 ppm (50mg/m3/8H)	orl-rat 490mg/kg

Method: GC6MSD-1. **Detector:** MSD (Scan mode). **Column:** Vocol (60m X 0.25mm ID X 1.5µm film thickness). **Oven Profile:** Temp. 1=35°C (Time 1=10min.), Temp. 2=200°C (Time 2=8.75 min.), Rate=4°C/min., Injector Temp.=200°C, Detector Temp.=220°C. **Analyst:** 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.
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CERTIFIED WEIGHT REPORT

Part Number: 94559
Lot Number: 051421
Description: 1,3,5-Trichlorobenzene

Expiration Date: 051426
Recommended Storage: Refrigerate (4 °C)
Nominal Concentration (µg/mL): 2000
NIST Test ID#: 6UTB

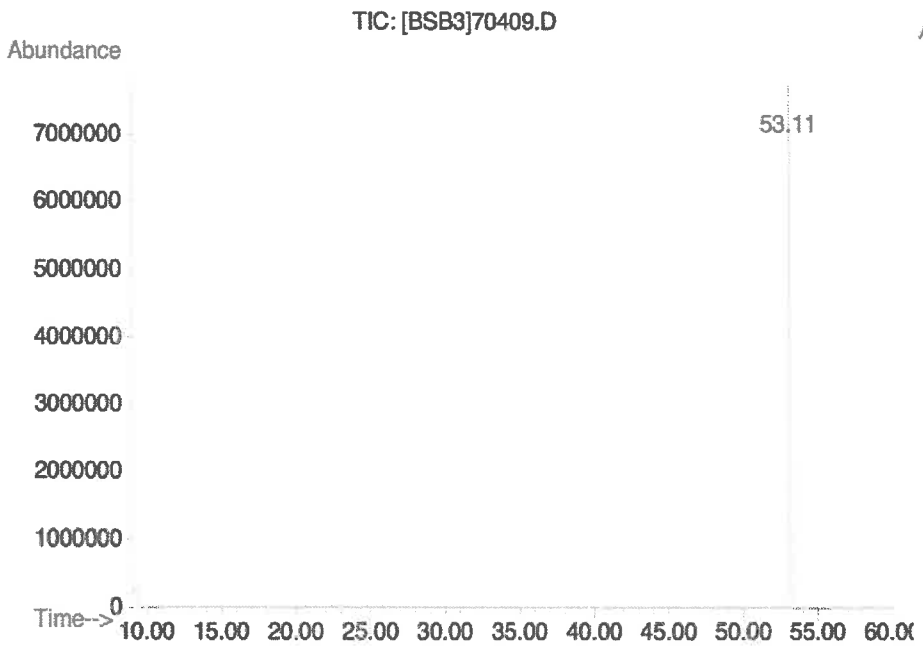
Solvent(s): **Lot#**
Methanol DY186-US

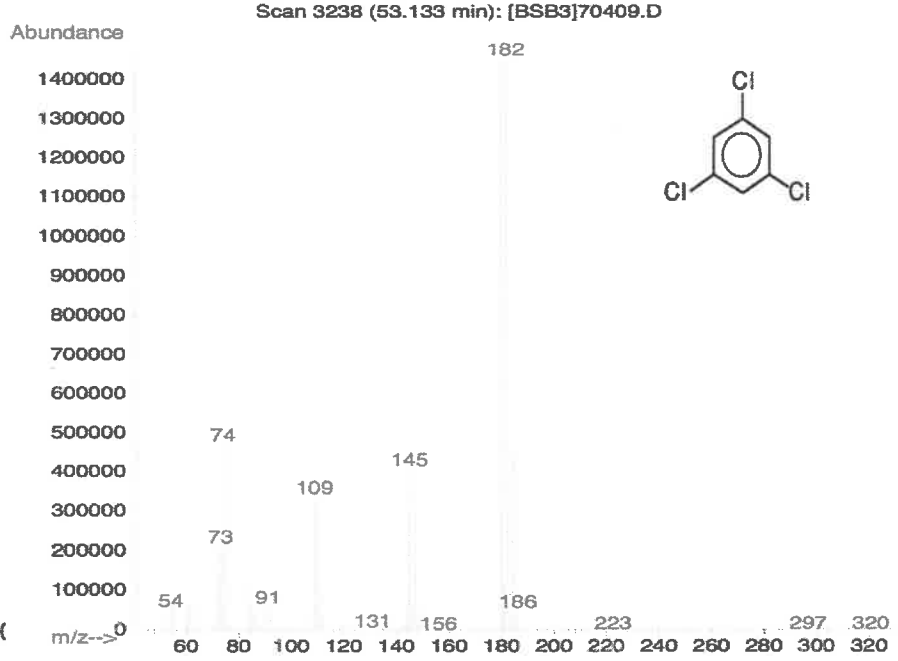
5E-05 Balance Uncertainty
Weight(s) shown below were combined and diluted to (mL): 100.0 0.012 Flask Uncertainty

		051421
Formulated By:	Benson Chan	DATE
		051421
Reviewed By:	Pedro L. Rentas	DATE

Compound	RM#	Lot Number	Nominal Conc (µg/mL)	Purity (%)	Uncertainty Purity	Target Weight(g)	Actual Weight(g)	Actual Conc (µg/mL)	Expanded Uncertainty (+/-) (µg/mL)	SDS Information (Solvent Safety Info. On Attached pg.) CAS#	OSHA PEL (TWA)	LD50
1. 1,3,5-Trichlorobenzene	409	STBH8643	2000	99.9	0.2	0.20021	0.20084	2006.3	8.1	108-70-3	N/A	orl-rat 800mg/kg

Method GC6MSD-1: Column: Vocol (60m X 0.25mm ID X 1.5µm film thickness). Temp. 1=35°C (10min.), Temp. 2=200°C (8.75 min.), Rate=4°C/min., Injector Temp.=200°C, Detector Temp.=220°C. Analysis performed by Candice Warren.





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FAX: 203-281-2922

Safety Data Sheet (SDS) GHS/OSHA Compliant

Section I Product and Company Identification

IDENTITY **ANALYTICAL STANDARD DISSOLVED IN METHANOL**

Manufacturer's Name	ABSOLUTE STANDARDS INC	Emergency Telephone USA & CANADA	**1-800-535-5053**
Address	44 Rossotto Dr. Hamden CT, 06514	Emergency Telephone International Date Prepared/Revised	**1-352-323-3500** January 1, 2024

Section II - Hazards Identification

GHS Classification in accordance with 29 CFR 1910 (OSHA HCS)

H225	**Highly Flammable Liquid and Vapor**	**H301, 311, 331**	**Toxic if swallowed, skin contact, inhaled**
H370	**Cause damage to organs**	**H351**	**Suspected of causing cancer**
P271	**Use in ventilated area**	**P280**	**Use gloves, eye protection/face sheild**
P302,332	**If on skin, wash with soap and water**	**P305,351,338**	**If in eyes, remove contacts, rinse with water**

Signal Word: DANGER

Section III - Composition

Components (Specific Chemical Identity; Common Name(s))			% (optional)
Methanol	METHYL ALCOHOL	CAS#: 67-56-1	> 97

See Certified Weight Report For Other Analytes Present At Trace Quantities.

INTENDED USE: REFERENCE MATERIAL

Section IV. FIRST AID MEASURES

General advice	Consult a physician. Show this safety data sheet to the doctor in attendance.Move to safe area.
If inhaled	If inhaled, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.
In case of skin contact	Wash with soap and water. Consult a physician.
In case of eye contact	Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician.
If swallowed	Do NOT induce vomiting. Rinse mouth with water. Consult a physician.

Section V. FIREFIGHTING MEASURES

Flammability	Flammable in the presence of a source of ignition when the temperature is above the flash point. Keep away from heat/sparks/open flame/hot surface. No smoking.
Suitable extinguishing media	Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.
Protective equipment for fire	Wear self contained breathing apparatus for fire fighting if necessary.

Section VI. ACCIDENTAL RELEASE MEASURES

Personal precautions	Wear respiratory protection. Avoid breathing vapors, mist or gas. Ensure adequate ventilation. Remove all sources of ignition. Vapours accumulate to form explosive concentrations.
Environmental precautions	Prevent further leakage or spillage if safe to do so. Do not let product enter drains.
Clean up	Contain spillage, and then collect and place in container for disposal according to local regulations (see section 13).

Section VII. HANDLING AND STORAGE

Precautions for safe handling	Avoid contact with skin and eyes. Avoid inhalation of vapour or mist. Use ventilation Keep away from sources of ignition. No smoking. Prevent the build up of electrostatic charge.
Storage Conditions	Keep container tightly closed in a dry and well-ventilated place. Containers which are opened must be carefully resealed and kept upright to prevent leakage.

Section VIII. EXPOSURE CONTROLS/PERSONAL PROTECTION

Methanol 67-56-1 TWA 200 ppm
Skin notation TWA 200 ppm
Potential for skin absorption , ingestion and inhalation.
Personal protective equipment Respiratory protection Handle with gloves. Gloves must be inspected prior to use. Eye protection.
Avoid contact with skin, eyes and clothing. Wash hands thoroughly after handling the product.

Section IX - Physical/Chemical Characteristics

Boiling Point	65°C	Specific Gravity (H2O = 1)	0.79
Vapor Pressure (mm Hg)	96	Melting Point	-98°C
Vapor Density (AIR = 1)	1.11	Evaporation rate (Butyl Acetate = 1)	4.6

Solubility in Water COMPLETE

Appearance and Odor CLEAR, COLORLESS LIQUID WITH CHARACTERISTIC PUNGENT ODOR.

Section X. STABILITY AND REACTIVITY

Chemical stability Stable under recommended storage conditions.
Possibility of hazardous reactions Vapours may form explosive mixture with air.
Conditions to avoid Heat, flames, sparks, extreme temperature and sunlight.
Materials to avoid Acid chlorides, Acid anhydrides, Oxidizing agents, Alkali metals, Reducing agents, Acids
Hazardous decomposition products formed under fire conditions. - Carbon oxides

Section XI. TOXICOLOGICAL INFORMATION

LD50 Oral - rat - 5,628 mg/kg
LC50 Inhalation - rat - 4 h - 64000 ppm
LD50 Dermal - rabbit - 15,800 mg/kg
Toxic if absorbed through skin. Causes skin irritation.
Eye damage/eye irritation
Toxic if inhaled. Causes respiratory tract irritation.
Toxic if swallowed.

Section XII. ECOLOGICAL INFORMATION FOR REPORTABLE QUANTITY OF 5000 lbs.

LC50	15,400 mg/l - 96 h
EC50	24,500.00 mg/l - 48 h
EC100	10,000.00 mg/l - 24 h

Section XIII. DISPOSAL CONSIDERATIONS

Dispose with normal Laboratory Solvent Waste.

Section XIV. TRANSPORT INFORMATION

DOT (US)
UN number: 1230 Class: 3 Packing group: II
Proper shipping name: Methanol

IATA
UN number: 1230 Class: 3 Packing group: II
Proper shipping name: Methanol

Section XV. REGULATORY INFORMATION

OSHA Hazards Flammable liquid, Target Organ Effect, Toxic by inhalation., Toxic by ingestion, Toxic by skin absorption, Irritant
SARA 302: No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

Section XVI. Misc. INFORMATION

The information in this Material Safety Data Sheet meets the requirements of the United States Occupational Safety and Health Act and regulations promulgated thereunder (29 CFR 1910.1200 et. seq.) and Global Harmonized System (GHS). This document is intended only as a guide to the appropriate precautionary handling of the material by trained personnel, or supervised by a person trained in chemical handling. The user is responsible for determining the precautions and dangers of this chemical for his or her particular application. Depending on usage, protective clothing including eye and face guards and respirators must be used to avoid contact with material or breathing chemical vapors/fumes. Exposure to this product may have serious adverse health effects. This chemical may interact with other substances. Since the potential uses are so varied, ABSOLUTE STANDARDS INC. cannot warn of all the potential dangers of use or interaction with other chemicals or substances. ABSOLUTE STANDARDS INC. warrants that the chemical meets the specifications set forth on the label. ABSOLUTE STANDARDS INC DISCLAIMS ANY OTHER WARRANTIES, EXPRESSED OR IMPLIED WITH REGARD TO THE PRODUCT SUPPLIED HEREUNDER, ITS MERCHANTABILITY OR ITS FITNESS FOR A PARTICULAR APPLICATION. The user should recognize that this product can cause severe injury or death, especially if improperly handled or the known dangers of use are not heeded. READ ALL PRECAUTIONARY INFORMATION. As new documented general safety information becomes available, Absolute Standards Inc. will periodically revise this Safety Data Sheet. If you have any questions, please call Technical Service at 1-203-281-2917 for assistance.

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CERTIFIED WEIGHT REPORT

Part Number: 90319
Lot Number: 061923
Description: 1,3,5-Trimethylbenzene [Mesitylene]
Expiration Date: 061928
Recommended Storage: Refrigerate (4 °C)
Nominal Concentration (µg/mL): 2000
NIST Test ID#: 6UTB

Solvent: Methanol **Lot#** EF282-US

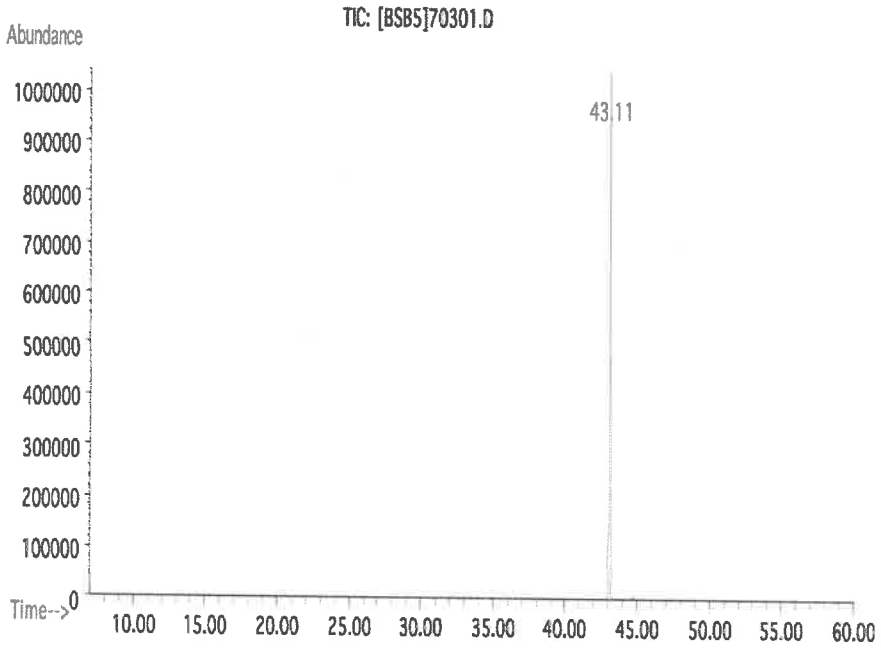
5E-05 Balance Uncertainty
Weight(s) shown below were combined and diluted to (mL): 50.0 0.001 Flask Uncertainty

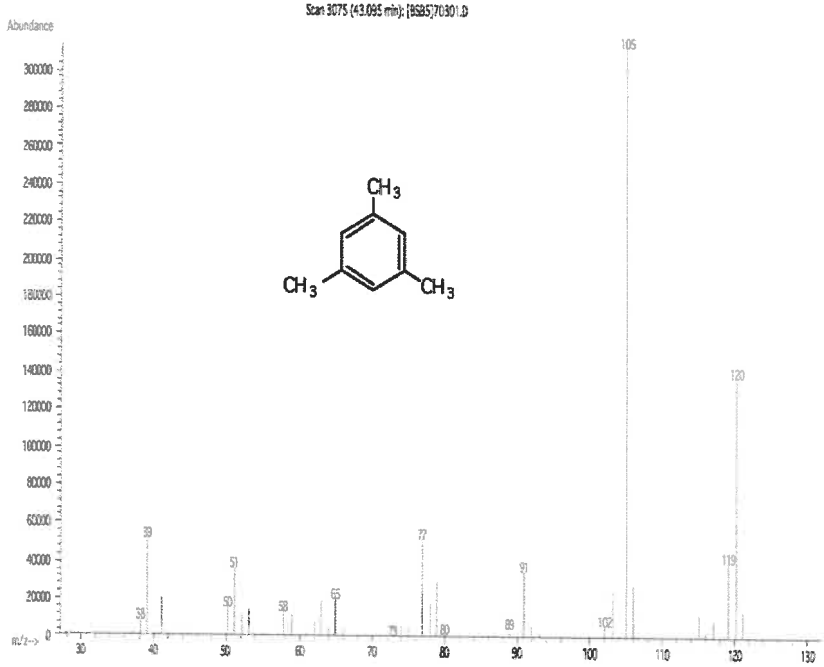
Gabriel Helland 061923
Formulated By: Gabriel Helland DATE

Pedro Rentas 061923
Reviewed By: Pedro L. Rentas DATE

	Compound	RM#	Lot Number	Nominal Conc (µg/mL)	Purity (%)	Uncertainty Purity (%)	Target Weight(g)	Actual Weight(g)	Actual Conc (µg/mL)	Expanded Uncertainty (+/-) (µg/mL)	SDS Information (Solvent Safety Info. On Attached pg.) CAS#	OSHA PEL (TWA)	LD50
1.	1,3,5-Trimethylbenzene	301	TOOOF-IC	2000	97	0.2	0.10315	0.10341	2004.9	8.5	108-67-8	N/A	orl-rat 5000mg/kg

Method GC6MSD-1: Column: Vocol 60m X 0.25mm ID X 1.5µm film thickness). Temp. 1 = 35°C (10min.), Temp. 2 = 200°C (8.75 min.), Rate = 4°C/min., Injector Temp.= 200°C, Detector Temp. = 220°C. Analysis performed by Candice Warren.





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Rec 01/02/25 F.L.

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CERTIFIED WEIGHT REPORT

10 vials.

Part Number: 31491
Lot Number: 070122
Description: 1,2,4-Trimethylbenzene

Solvent(s): Methanol **Lot#** EC592-US

Expiration Date: 070127
Recommended Storage: Refrigerate (4 °C)
Nominal Concentration (µg/mL): 2000
NIST Test ID#: 6UTB

5E-05 Balance Uncertainty
0.001 Flask Uncertainty

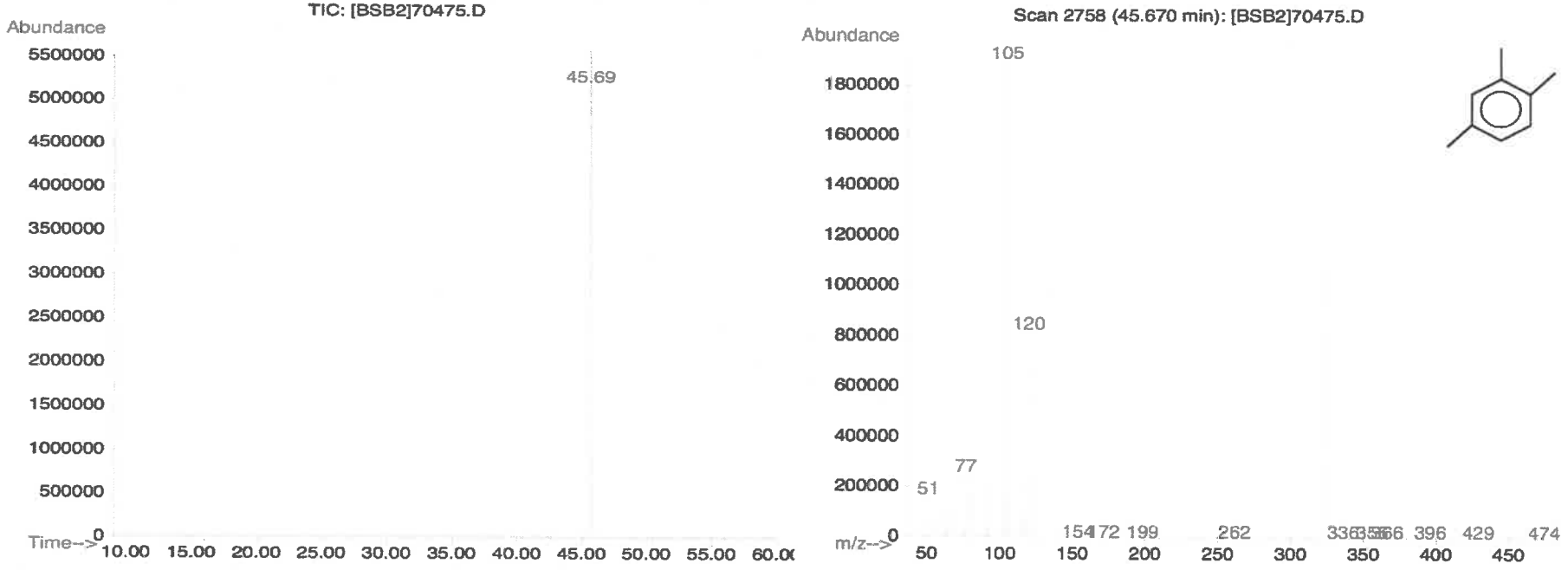
Weight(s) shown below were combined and diluted to (mL): 50.0

Gabriel Helland 070122
Formulated By: Gabriel Helland DATE

Pedro Rentas 070122
Reviewed By: Pedro L. Rentas DATE

Compound	RM#	Lot Number	Nominal Conc (µg/mL)	Purity (%)	Uncertainty Purity	Target Weight(g)	Actual Weight(g)	Actual Conc (µg/mL)	Expanded Uncertainty (+/-) (µg/mL)	SDS Information (Solvent Safety Info. On Attached pg.) CAS#	OSHA PEL (TWA)	LD50
1. 1,2,4-Trimethylbenzene	475	D78OH-KV	2000	98	0.2	0.10211	0.10243	2006.2	8.4	95-63-6	N/A	orl-rat 5g/kg

Method GC6MSD-1: Column: Vocol (60m X 0.25mm ID X 1.5µm film thickness). Temp. 1 = 35°C (10min.), Temp. 2 = 200°C (8.75 min.), Rate = 4°C/min., Injector Temp.= 200°C, Detector Temp. = 220°C. Analysis performed by Candice Warren.



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FAX: 203-281-2922

Safety Data Sheet (SDS) GHS/OSHA Compliant

Section I Product and Company Identification

IDENTITY **ANALYTICAL STANDARD DISSOLVED IN METHANOL**

Manufacturer's Name	ABSOLUTE STANDARDS INC	Emergency Telephone USA & CANADA	**1-800-535-5053**
Address	44 Rossotto Dr. Hamden CT, 06514	Emergency Telephone International Date Prepared/Revised	**1-352-323-3500** January 1, 2024

Section II - Hazards Identification

GHS Classification in accordance with 29 CFR 1910 (OSHA HCS)

H225	**Highly Flammable Liquid and Vapor**	**H301, 311, 331**	**Toxic if swallowed, skin contact, inhaled**
H370	**Cause damage to organs**	**H351**	**Suspected of causing cancer**
P271	**Use in ventilated area**	**P280**	**Use gloves, eye protection/face sheild**
P302,332	**If on skin, wash with soap and water**	**P305,351,338**	**If in eyes, remove contacts, rinse with water**

Signal Word: DANGER

Section III - Composition

Components (Specific Chemical Identity; Common Name(s))			% (optional)
Methanol	METHYL ALCOHOL	CAS#: 67-56-1	> 97

See Certified Weight Report For Other Analytes Present At Trace Quantities.

INTENDED USE: REFERENCE MATERIAL

Section IV. FIRST AID MEASURES

General advice	Consult a physician. Show this safety data sheet to the doctor in attendance.Move to safe area.
If inhaled	If inhaled, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.
In case of skin contact	Wash with soap and water. Consult a physician.
In case of eye contact	Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician.
If swallowed	Do NOT induce vomiting. Rinse mouth with water. Consult a physician.

Section V. FIREFIGHTING MEASURES

Flammability	Flammable in the presence of a source of ignition when the temperature is above the flash point. Keep away from heat/sparks/open flame/hot surface. No smoking.
Suitable extinguishing media	Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.
Protective equipment for fire	Wear self contained breathing apparatus for fire fighting if necessary.

Section VI. ACCIDENTAL RELEASE MEASURES

Personal precautions	Wear respiratory protection. Avoid breathing vapors, mist or gas. Ensure adequate ventilation. Remove all sources of ignition. Vapours accumulate to form explosive concentrations.
Environmental precautions	Prevent further leakage or spillage if safe to do so. Do not let product enter drains.
Clean up	Contain spillage, and then collect and place in container for disposal according to local regulations (see section 13).

Section VII. HANDLING AND STORAGE

Precautions for safe handling	Avoid contact with skin and eyes. Avoid inhalation of vapour or mist. Use ventilation Keep away from sources of ignition. No smoking. Prevent the build up of electrostatic charge.
Storage Conditions	Keep container tightly closed in a dry and well-ventilated place. Containers which are opened must be carefully resealed and kept upright to prevent leakage.

Section VIII. EXPOSURE CONTROLS/PERSONAL PROTECTION

Methanol 67-56-1 TWA 200 ppm
Skin notation TWA 200 ppm
Potential for skin absorption , ingestion and inhalation.
Personal protective equipment Respiratory protection Handle with gloves. Gloves must be inspected prior to use. Eye protection.
Avoid contact with skin, eyes and clothing. Wash hands thoroughly after handling the product.

Section IX - Physical/Chemical Characteristics

Boiling Point	65°C	Specific Gravity (H2O = 1)	0.79
Vapor Pressure (mm Hg)	96	Melting Point	-98°C
Vapor Density (AIR = 1)	1.11	Evaporation rate (Butyl Acetate = 1)	4.6

Solubility in Water COMPLETE

Appearance and Odor CLEAR, COLORLESS LIQUID WITH CHARACTERISTIC PUNGENT ODOR.

Section X. STABILITY AND REACTIVITY

Chemical stability Stable under recommended storage conditions.
Possibility of hazardous reactions Vapours may form explosive mixture with air.
Conditions to avoid Heat, flames, sparks, extreme temperature and sunlight.
Materials to avoid Acid chlorides, Acid anhydrides, Oxidizing agents, Alkali metals, Reducing agents, Acids
Hazardous decomposition products formed under fire conditions. - Carbon oxides

Section XI. TOXICOLOGICAL INFORMATION

LD50 Oral - rat - 5,628 mg/kg
LC50 Inhalation - rat - 4 h - 64000 ppm
LD50 Dermal - rabbit - 15,800 mg/kg
Toxic if absorbed through skin. Causes skin irritation.
Eye damage/eye irritation
Toxic if inhaled. Causes respiratory tract irritation.
Toxic if swallowed.

Section XII. ECOLOGICAL INFORMATION FOR REPORTABLE QUANTITY OF 5000 lbs.

LC50	15,400 mg/l - 96 h
EC50	24,500.00 mg/l - 48 h
EC100	10,000.00 mg/l - 24 h

Section XIII. DISPOSAL CONSIDERATIONS

Dispose with normal Laboratory Solvent Waste.

Section XIV. TRANSPORT INFORMATION

DOT (US)
UN number: 1230 Class: 3 Packing group: II
Proper shipping name: Methanol

IATA
UN number: 1230 Class: 3 Packing group: II
Proper shipping name: Methanol

Section XV. REGULATORY INFORMATION

OSHA Hazards Flammable liquid, Target Organ Effect, Toxic by inhalation., Toxic by ingestion, Toxic by skin absorption, Irritant
SARA 302: No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

Section XVI. Misc. INFORMATION

The information in this Material Safety Data Sheet meets the requirements of the United States Occupational Safety and Health Act and regulations promulgated thereunder (29 CFR 1910.1200 et. seq.) and Global Harmonized System (GHS). This document is intended only as a guide to the appropriate precautionary handling of the material by trained personnel, or supervised by a person trained in chemical handling. The user is responsible for determining the precautions and dangers of this chemical for his or her particular application. Depending on usage, protective clothing including eye and face guards and respirators must be used to avoid contact with material or breathing chemical vapors/fumes. Exposure to this product may have serious adverse health effects. This chemical may interact with other substances. Since the potential uses are so varied, ABSOLUTE STANDARDS INC. cannot warn of all the potential dangers of use or interaction with other chemicals or substances. ABSOLUTE STANDARDS INC. warrants that the chemical meets the specifications set forth on the label. ABSOLUTE STANDARDS INC DISCLAIMS ANY OTHER WARRANTIES, EXPRESSED OR IMPLIED WITH REGARD TO THE PRODUCT SUPPLIED HEREUNDER, ITS MERCHANTABILITY OR ITS FITNESS FOR A PARTICULAR APPLICATION. The user should recognize that this product can cause severe injury or death, especially if improperly handled or the known dangers of use are not heeded. READ ALL PRECAUTIONARY INFORMATION. As new documented general safety information becomes available, Absolute Standards Inc. will periodically revise this Safety Data Sheet. If you have any questions, please call Technical Service at 1-203-281-2917 for assistance.

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Testing Laboratory
Certificate #3222.02

FOR LABORATORY USE ONLY-READ SDS PRIOR TO USE.

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

Catalog No. : 30067 **Lot No.:** A0191805

Description : 4-Bromofluorobenzene Standard

4-Bromofluorobenzene Standard 2,500µg/mL, P&T Methanol, 1mL/ampul

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

Expiration Date : November 30, 2027 **Storage:** 0°C or colder

Ship: Ambient

CERTIFIED VALUES

Elution Order	Compound	CAS #	Lot #	Purity	Grav. Conc. (weight/volume)	Expanded Uncertainty * (95% C.L.; K=2)
1	1-Bromo-4-fluorobenzene (BFB)	460-00-4	184975	99%	2,483.9 µg/mL	+/- 139.5488

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

Solvent: P&T Methanol
CAS # 67-56-1
Purity 99%

Quality Confirmation Test

Column:
105m x 0.53mm x 3.0µm
Rtx-502.2 (cat.#10910)

Carrier Gas:
hydrogen-constant pressure 11.0 psi.

Temp. Program:
40°C (hold 2 min.) to 240°C
@ 8°C/min. (hold 5 min.)

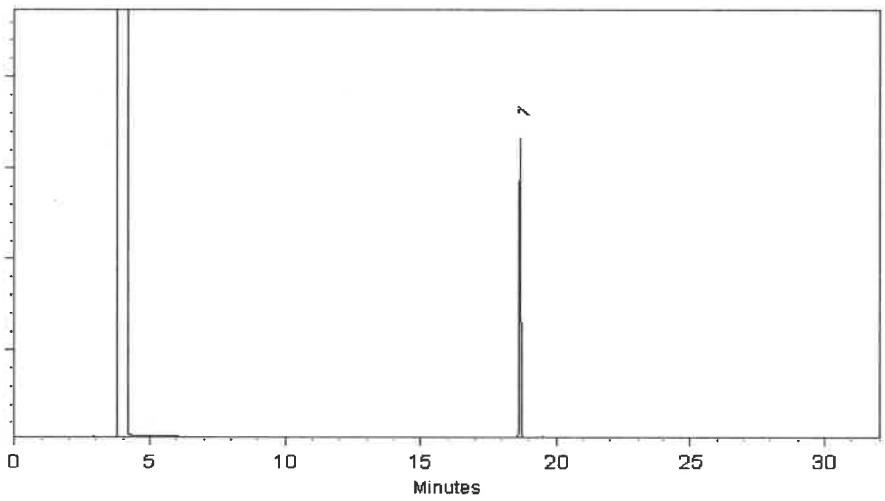
Inj. Temp:
200°C

Det. Temp:
250°C

Det. Type:
FID

Split Vent:
40 ml/min

Inj. Vol
1µl



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

Alicia Leathers - Operation Technician I **Date Mixed:** 17-Nov-2022 **Balance Serial #** B251644995

Jennifer Pollino - Operations Tech III - ARM QC **Date Passed:** 21-Nov-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 expanded uncertainty value includes gravimetric uncertainty, homogeneity between-ampul uncertainty, storage stability uncertainty and shipping stability uncertainty and were combined using the following formula:

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

  k is a coverage factor of 2, which gives a level of confidence of approximately 95%.
- The packaged amount is the minimum sample size for which uncertainty is valid. The ampuls are over-filled to ensure that the minimum packaged amount can be sufficiently transferred.

Manufacturing Notes:

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

Handling Notes:

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

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Certificate #3222.02

FOR LABORATORY USE ONLY-READ SDS PRIOR TO USE.

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

Catalog No. : 30067 **Lot No.:** A0191805

Description : 4-Bromofluorobenzene Standard

4-Bromofluorobenzene Standard 2,500µg/mL, P&T Methanol, 1mL/ampul

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

Expiration Date : November 30, 2027 **Storage:** 0°C or colder

Ship: Ambient

CERTIFIED VALUES

Elution Order	Compound	CAS #	Lot #	Purity	Grav. Conc. (weight/volume)	Expanded Uncertainty * (95% C.L.; K=2)
1	1-Bromo-4-fluorobenzene (BFB)	460-00-4	184975	99%	2,483.9 µg/mL	+/- 139.5488

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

Solvent: P&T Methanol
CAS # 67-56-1
Purity 99%

Quality Confirmation Test

Column:
105m x 0.53mm x 3.0µm
Rtx-502.2 (cat.#10910)

Carrier Gas:
hydrogen-constant pressure 11.0 psi.

Temp. Program:
40°C (hold 2 min.) to 240°C
@ 8°C/min. (hold 5 min.)

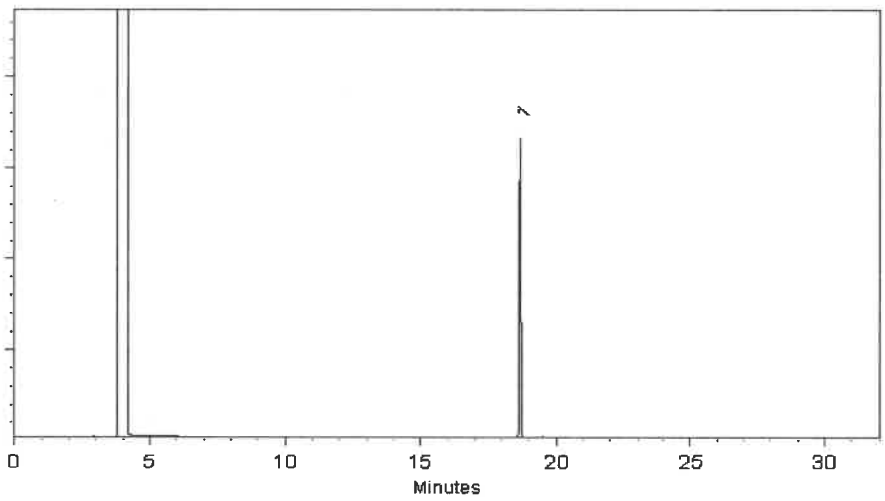
Inj. Temp:
200°C

Det. Temp:
250°C

Det. Type:
FID

Split Vent:
40 ml/min

Inj. Vol
1µl



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

Alicia Leathers - Operation Technician I **Date Mixed:** 17-Nov-2022 **Balance Serial #** B251644995

Jennifer Pollino - Operations Tech III - ARM QC **Date Passed:** 21-Nov-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 expanded uncertainty value includes gravimetric uncertainty, homogeneity between-ampul uncertainty, storage stability uncertainty and shipping stability uncertainty and were combined using the following formula:

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

  k is a coverage factor of 2, which gives a level of confidence of approximately 95%.
- The packaged amount is the minimum sample size for which uncertainty is valid. The ampuls are over-filled to ensure that the minimum packaged amount can be sufficiently transferred.

Manufacturing Notes:

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

Handling Notes:

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

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FOR LABORATORY USE ONLY-READ SDS PRIOR TO USE.

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

Catalog No. : 30091 **Lot No.:** A0209905

Description : L/C VOA Internal Standard Mix

L/C Internal Std 2500µg/mL, P&T Methanol, 1mL/ampul

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

Expiration Date : March 31, 2029 **Storage:** 0°C or colder

Ship: Ambient

CERTIFIED VALUES

Elution Order	Compound	CAS #	Lot #	Purity	Grav. Conc. (weight/volume)	Expanded Uncertainty * (95% C.L.; K=2)
1	1,4-Difluorobenzene	540-36-3	MKCS8657	99%	2,508.0 µg/mL	+/- 142.0596
2	Chlorobenzene-d5	3114-55-4	PR-31132	99%	2,512.0 µg/mL	+/- 142.2862
3	1,4-Dichlorobenzene-d4	3855-82-1	PR-30447	99%	2,512.0 µg/mL	+/- 142.2862

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

Solvent: P&T Methanol
CAS # 67-56-1
Purity 99%

Quality Confirmation Test

Column:
105m x 0.53mm x 3.0µm
Rtx-502.2 (cat.#10910)

Carrier Gas:
hydrogen-constant pressure 11.0 psi.

Temp. Program:
40°C (hold 2 min.) to 240°C
@ 8°C/min. (hold 5 min.)

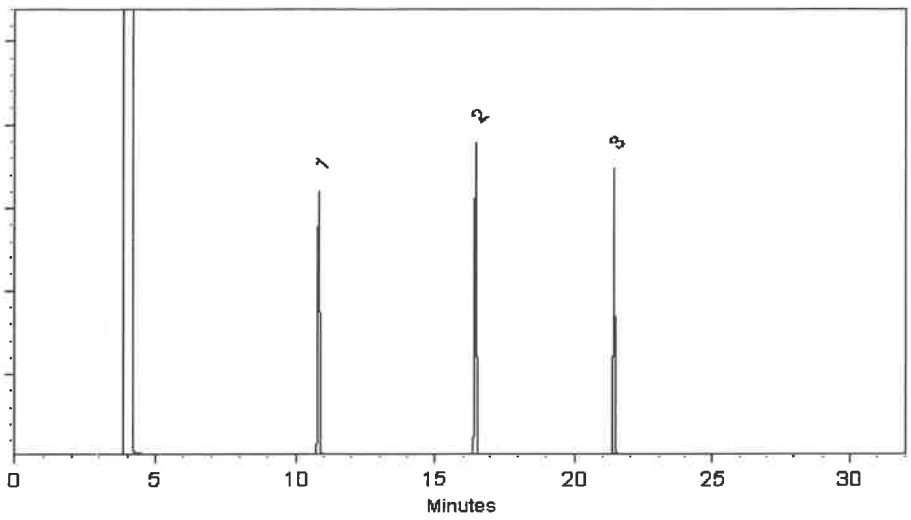
Inj. Temp:
200°C

Det. Temp:
250°C

Det. Type:
FID

Split Vent:
40 ml/min

Inj. Vol
1µl



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

Ethan Winiarski - Operations Tech I

Date Mixed: 05-Apr-2024 **Balance Serial #** 1127510105

Dillan Murphy - Operations Technician I

Date Passed: 08-Apr-2024

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

General Certified Reference Material Notes

Expiration Notes:

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

Purity Notes:

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

Certified Uncertainty Value Notes:

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

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

  k is a coverage factor of 2, which gives a level of confidence of approximately 95%.
- The packaged amount is the minimum sample size for which uncertainty is valid. The ampuls are over-filled to ensure that the minimum packaged amount can be sufficiently transferred.

Manufacturing Notes:

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

Handling Notes:

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

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FOR LABORATORY USE ONLY-READ SDS PRIOR TO USE.

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

Catalog No. : 30006 **Lot No.:** A0210618

Description : VOA Calibration Mix #1

VOA Calibration Mix #1 5,000µg/mL, P&T Methanol/Water(90:10), 1mL/ampul

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

Expiration Date : July 31, 2027 **Storage:** 0°C or colder

Ship: Ambient

CERTIFIED VALUES

Elution Order	Compound	CAS #	Lot #	Purity	Grav. Conc. (weight/volume)	Expanded Uncertainty * (95% C.L.; K=2)
1	Acetone	67-64-1	SHBQ8504	99%	5,014.8 µg/mL	+/- 173.2883
2	2-Butanone (MEK)	78-93-3	SHBQ4704	99%	5,012.4 µg/mL	+/- 173.2054
3	4-Methyl-2-pentanone (MIBK)	108-10-1	SHBP9200	99%	5,011.6 µg/mL	+/- 173.1777
4	2-Hexanone	591-78-6	MKCQ6663	99%	5,013.0 µg/mL	+/- 173.2261

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

Solvent: P&T Methanol/Water (90:10)
CAS # 67-56-1/7732-18-5
Purity 99%

Quality Confirmation Test

Column:
105m x 0.53mm x 3.0µm
Rtx-502.2 (cat.#10910)

Carrier Gas:
hydrogen-constant pressure 11.0 psi.

Temp. Program:
40°C (hold 2 min.) to 240°C
@ 8°C/min. (hold 5 min.)

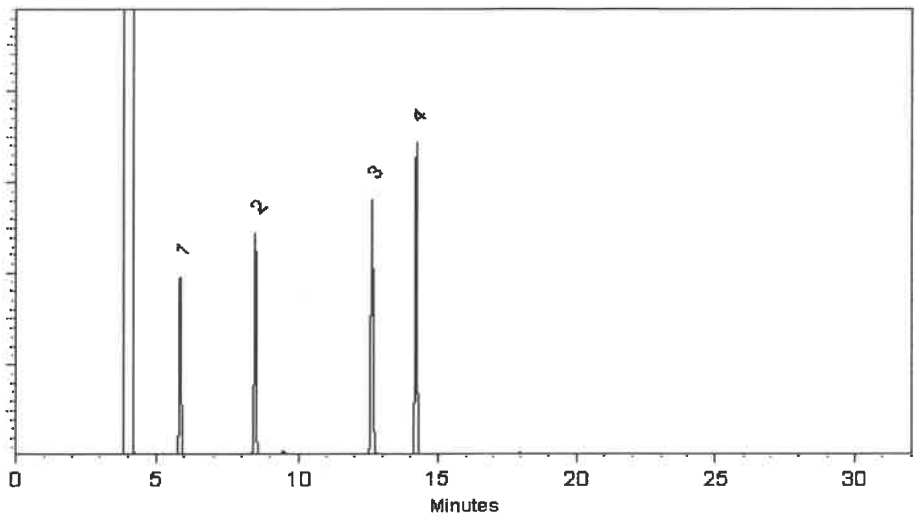
Inj. Temp:
200°C

Det. Temp:
250°C

Det. Type:
FID

Split Vent:
40 ml/min

Inj. Vol
1µl



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

Dakota Parson - Operations Technician I

Date Mixed: 22-Apr-2024 **Balance Serial #** B707717271

Jennifer Pollino - Operations Tech III - ARM QC

Date Passed: 24-Apr-2024

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

General Certified Reference Material Notes

Expiration Notes:

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

Purity Notes:

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

Certified Uncertainty Value Notes:

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

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

  k is a coverage factor of 2, which gives a level of confidence of approximately 95%.
- The packaged amount is the minimum sample size for which uncertainty is valid. The ampuls are over-filled to ensure that the minimum packaged amount can be sufficiently transferred.

Manufacturing Notes:

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

Handling Notes:

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

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

Catalog No. : 30624 **Lot No.:** A0211457

Description : SOM 01.1 VOA DMC Non-Ketones Standard

SOM 01.1 VOA DMC Non-Ketones Standard 500µg/mL, Methanol-OD, 1mL/ampul

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

Expiration Date : May 31, 2027 **Storage:** 0°C or colder

Ship: Ambient

CERTIFIED VALUES

Elution Order	Compound	CAS #	Lot #	Purity	Grav. Conc. (weight/volume)	Expanded Uncertainty * (95% C.L.; K=2)
1	Vinyl Chloride-d3	6745-35-3	PR-26294	99%	515.3 µg/mL	+/- 42.5161
2	Chloroethane-d5	19199-91-8	PR-19060	99%	498.2 µg/mL	+/- 40.0866
3	1,1-Dichloroethylene-d2	22280-73-5	PR-21050	99%	503.0 µg/mL	+/- 28.2630
4	Chloroform-d	865-49-6	A0219685001	99%	503.0 µg/mL	+/- 28.2630
5	1,2-Dichloroethane-d4	17060-07-0	PR-33313	99%	503.0 µg/mL	+/- 28.2630
6	Benzene-d6	1076-43-3	PR-33510	99%	501.0 µg/mL	+/- 28.1506
7	1,2-Dichloropropane-d6	93952-08-0	Z-322	99%	503.0 µg/mL	+/- 28.2630
8	1,3-Dichloropropene-d4 (cis/ trans mixture) 58% cis Isomer; 42% trans Isomer	202656-23-3	Z-181	99%	504.0 µg/mL	+/- 28.3192
9	Toluene-d8	2037-26-5	PR-34141	99%	503.0 µg/mL	+/- 28.2630
10	1,1,2,2-Tetrachloroethane-d2	33685-54-0	F465P1	99%	502.0 µg/mL	+/- 28.2068
11	1,2-Dichlorobenzene-d4	2199-69-1	PR-32597	99%	503.0 µg/mL	+/- 28.2630

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

Solvent: Methanol-OD
CAS # 1455-13-6
Purity 99%

Quality Confirmation Test

Column:
60m x 0.25mm x 1.4µm
Rtx-502.2 (cat.#10916)

Carrier Gas:
helium-constant pressure 30 psi

Temp. Program:
40°C (hold 2 min.) to 240°C
@ 8°C/min. (hold 5 min.)

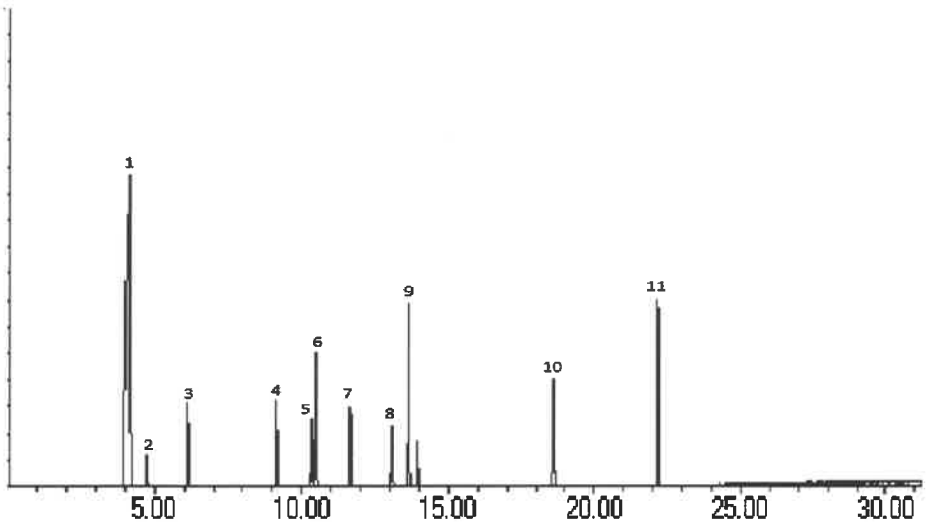
Inj. Temp:
200°C

Det. Temp:
250°C

Det. Type:
MSD

Split Vent:
25.0 ml/min.

Inj. Vol
1µl



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

Tom Suckar - Mix Technician

Date Mixed: 15-May-2024 **Balance Serial #** 1128342314

Dillan Murphy - Operations Technician I

Date Passed: 17-May-2024

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

General Certified Reference Material Notes

Expiration Notes:

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

Purity Notes:

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

Certified Uncertainty Value Notes:

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

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

  k is a coverage factor of 2, which gives a level of confidence of approximately 95%.
- The packaged amount is the minimum sample size for which uncertainty is valid. The ampuls are over-filled to ensure that the minimum packaged amount can be sufficiently transferred.

Manufacturing Notes:

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

Handling Notes:

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

30 Vial

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V14727 to
V14756

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Reference Material Producer
Certificate #3222.01

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FOR LABORATORY USE ONLY-READ SDS PRIOR TO USE.

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

Catalog No. : 30042 **Lot No.:** A0216826

Description : 502.2 Calibration Mix #1

502.2 Calibration Mix #1 2,000µg/mL, P&T Methanol, 1mL/ampul

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

Expiration Date : May 31, 2031 **Storage:** 0°C or colder

Ship: Ambient

CERTIFIED VALUES

Elution Order	Compound	CAS #	Lot #	Purity	Grav. Conc. (weight/volume)	Expanded Uncertainty * (95% C.L.; K=2)
1	Dichlorodifluoromethane (CFC-12)	75-71-8	00022922	99%	2,000.9 µg/mL	+/- 112.4144
2	Chloromethane (methyl chloride)	74-87-3	00022694	99%	2,000.7 µg/mL	+/- 112.3998
3	Vinyl chloride	75-01-4	00015559	99%	2,000.3 µg/mL	+/- 112.3779
4	Bromomethane (methyl bromide)	74-83-9	00017022	99%	2,001.8 µg/mL	+/- 112.4650
5	Chloroethane (ethyl chloride)	75-00-3	107-401039114-1	99%	2,000.1 µg/mL	+/- 112.3700
6	Trichlorofluoromethane (CFC-11)	75-69-4	MKCJ8658	99%	2,000.7 µg/mL	+/- 112.3992

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

Solvent: P&T Methanol
CAS # 67-56-1
Purity 99%

Quality Confirmation Test

Column:
60m x 0.25mm x 1.4µm
Rtx-502.2 (cat.#10916)

Carrier Gas:
helium-constant flow 2.0 mL/min.

Temp. Program:
40°C (hold 6 min.) to 100°C
@ 6°C/min.

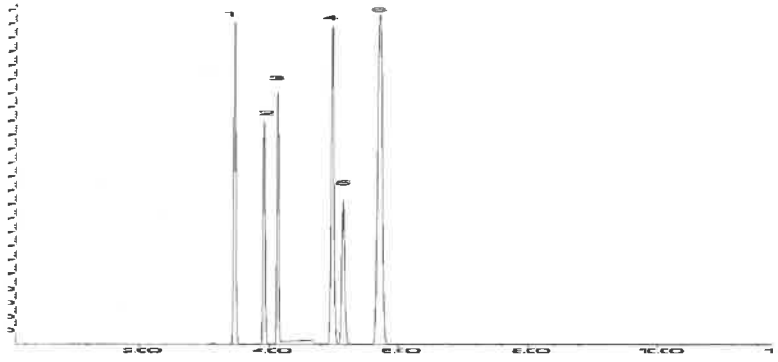
Inj. Temp:
200°C

Det. Temp:
250°C

Det. Type:
MSD

Split Vent:
Split ratio 10:1

Inj. Vol
1µl



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

Tom Suckar - Mix Technician

Date Mixed: 23-Sep-2024 **Balance Serial #** B707717271

Jennifer Pollino - Operations Tech III - ARM QC

Date Passed: 04-Oct-2024

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

General Certified Reference Material Notes

Expiration Notes:

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

Purity Notes:

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

Certified Uncertainty Value Notes:

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

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

  k is a coverage factor of 2, which gives a level of confidence of approximately 95%.
- The packaged amount is the minimum sample size for which uncertainty is valid. The ampuls are over-filled to ensure that the minimum packaged amount can be sufficiently transferred.

Manufacturing Notes:

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

Handling Notes:

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

15 vial

Certificate of Analysis

chromatographic plus

V 14857+0

V 14871

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Reference Material Producer
Certificate #3222.01

ACCREDITED
ISO/IEC 17025 Accredited
Testing Laboratory
Certificate #3222.02

FOR LABORATORY USE ONLY-READ SDS PRIOR TO USE.

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

Catalog No. : 30429 **Lot No.:** A0218772

Description : 1,2,3-Trichloropropane Standard

1,2,3-Trichloropropane 2000µg/mL, P&T Methanol, 1mL/ampul

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

Expiration Date : November 30, 2029 **Storage:** 0°C or colder

Ship: Ambient

CERTIFIED VALUES

Elution Order	Compound	CAS #	Lot #	Purity	Grav. Conc. (weight/volume)	Expanded Uncertainty * (95% C.L.; K=2)
1	1,2,3-Trichloropropane	96-18-4	Q91-34	98%	2,001.0 µg/mL	+/- 112.4359

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

Solvent: P&T Methanol
CAS # 67-56-1
Purity 99%

Quality Confirmation Test

Column:
105m x 0.53mm x 3.0µm
Rtx-502.2 (cat.#10910)

Carrier Gas:
hydrogen-constant pressure 11.0 psi.

Temp. Program:
40°C (hold 2 min.) to 240°C
@ 8°C/min. (hold 5 min.)

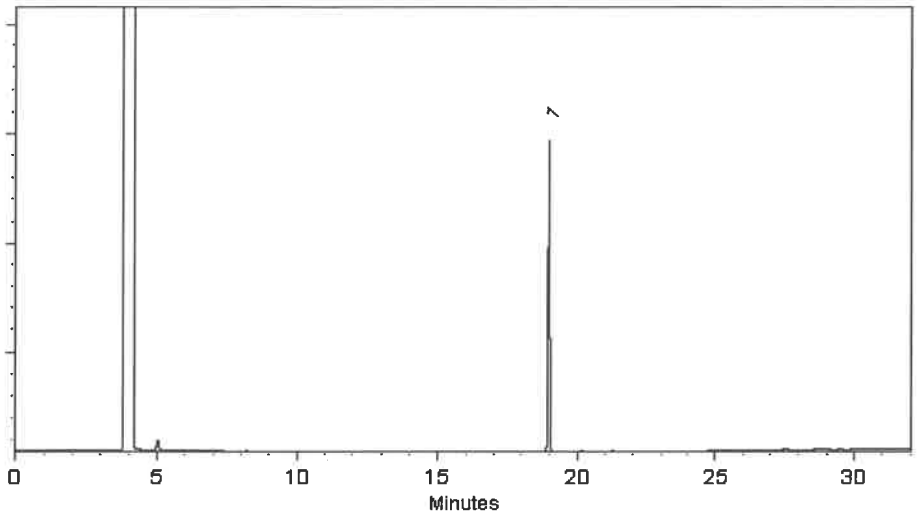
Inj. Temp:
200°C

Det. Temp:
250°C

Det. Type:
FID

Split Vent:
40 ml/min

Inj. Vol
1µl



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

Brandon Reish - Operations Technician III

Date Mixed: 05-Nov-2024 **Balance Serial #** 1128342314

Dillan Murphy - Operations Technician I

Date Passed: 07-Nov-2024

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

General Certified Reference Material Notes

Expiration Notes:

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

Purity Notes:

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

Certified Uncertainty Value Notes:

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

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

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

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

Manufacturing Notes:

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

Handling Notes:

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

20 Vial

Certificate of Analysis

chromatographic plus

V14677-696

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Reference Material Producer
Certificate #3222.01

ACCREDITED
ISO/IEC 17025 Accredited
Testing Laboratory
Certificate #3222.02

FOR LABORATORY USE ONLY-READ SDS PRIOR TO USE.

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

Catalog No. : 30625 **Lot No.:** A0219189

Description : OLC 3.2 VOA Deuterated Monitoring Compounds

OLC 3.2 VOA Ketone Deuterated Monitoring Compounds 500µg/mL, Deuterium Oxide, 1mL/ampul

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

Expiration Date : May 31, 2026 **Storage:** 10°C or colder

Ship: Ambient

CERTIFIED VALUES

Elution Order	Compound	CAS #	Lot #	Purity	Grav. Conc. (weight/volume)	Expanded Uncertainty * (95% C.L.; K=2)
1	2-Butanone-d5	24313-50-6	HJ-279	99%	504.0 µg/mL	+/- 17.5357
2	2-Hexanone-d5	4840-82-8	I-500	99%	504.0 µg/mL	+/- 17.5357

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

Solvent: Deuterium oxide
CAS # 7789-20-0
Purity 99%

Quality Confirmation Test

Column:
105m x 0.53mm x 3.0µm
Rtx-502.2 (cat.#10910)

Carrier Gas:
hydrogen-constant pressure 11.0 psi.

Temp. Program:
40°C (hold 2 min.) to 240°C
@ 8°C/min. (hold 5 min.)

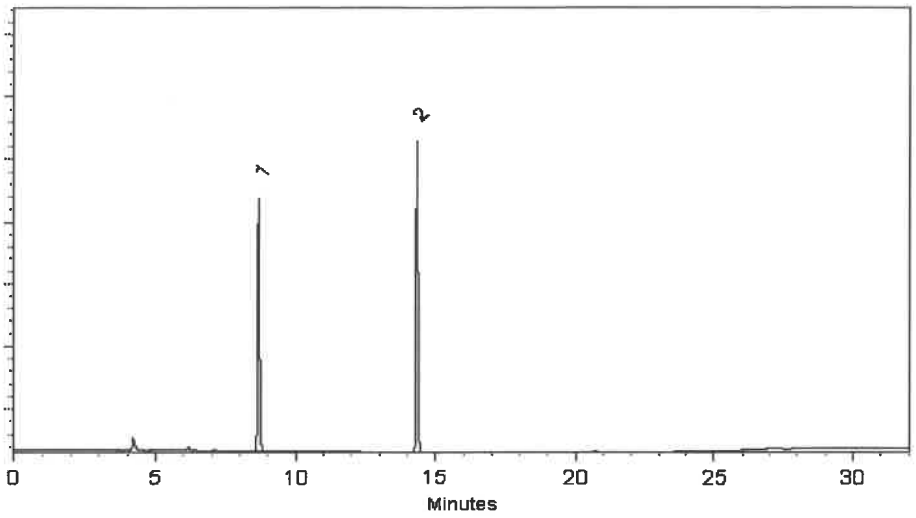
Inj. Temp:
200°C

Det. Temp:
250°C

Det. Type:
FID

Split Vent:
40 ml/min

Inj. Vol
1µl



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Aaron Enyart - Operations Tech I

Date Mixed: 15-Nov-2024 **Balance Serial #** B345965662

Dillan Murphy - Operations Technician I

Date Passed: 19-Nov-2024

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

General Certified Reference Material Notes

Expiration Notes:

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

Purity Notes:

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Manufacturing Notes:

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Handling Notes:

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Methanol
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V 14921 to
V 14938

Material No.: 9077-02
Batch No.: 24G0262002
Manufactured Date: 2024-05-14
Expiration Date: 2027-05-14
Revision No.: 0

Certificate of Analysis

Test	Specification	Result
Assay (CH_3OH) (by GC, corrected for water)	≥ 99.9 %	100.0 %
Residue after Evaporation	≤ 1.0 ppm	0.3 ppm
Titrable Acid (µeq/g)	≤ 0.3	0.3
Titrable Base (µeq/g)	≤ 0.10	0.03
Water (by KF, coulometric)	≤ 0.08 %	< 0.01 %
Volatile Organic Trace Analysis - Below EPA 8260B CRQL	Conforms	Conforms

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Performance Tested for Use in EPA Methods
500 Series for Drinking Water
600 Series for Wastewater
846 for Solid Waste

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

JCroak

Jamie Croak
Director Quality Operations, Bioscience Production

Methanol
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For Purge and Trap Analysis

Rec 05/09/25

avantor™ | J.T.Baker®

V 14921 to
V 14938

Material No.: 9077-02
Batch No.: 24G0262002
Manufactured Date: 2024-05-14
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Revision No.: 0

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Test	Specification	Result
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Residue after Evaporation	≤ 1.0 ppm	0.3 ppm
Titrable Acid (µeq/g)	≤ 0.3	0.3
Titrable Base (µeq/g)	≤ 0.10	0.03
Water (by KF, coulometric)	≤ 0.08 %	< 0.01 %
Volatile Organic Trace Analysis - Below EPA 8260B CRQL	Conforms	Conforms

For Laboratory,Research,or Manufacturing Use
Performance Tested for Use in EPA Methods
500 Series for Drinking Water
600 Series for Wastewater
846 for Solid Waste

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

JCroak

Jamie Croak
Director Quality Operations, Bioscience Production