

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

8900, Fax: 908 789 8922

## **Prep Standard - Chemical Standard Summary**



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Fax: 908 789 8922

### **VOC STANDARD PREPARATION LOG**

Recipe ID	<u>NAME</u>	NO.	Prep Date	Expiration Date	Prepared By	<u>ScaleID</u>	<u>PipetteID</u>	Supervised By  Mahesh Dadoda
218	BFB, 25PPM	<u>VP131767</u>	11/22/2024	05/18/2025	Semsettin Yesilyurt	None	None	11/27/2024

FROM	0.50000ml of V13391	+ 49.50000ml of V14154	= Final Quantity: 50.000 ml
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Recipe ID	NAME	<u>NO.</u>	Prep Date	Expiration Date	Prepared By	<u>ScaleID</u>	<u>PipetteID</u>	Supervised By  Mahesh Dadoda
3421	SOMO2.4 TRACE ICV 25 PPM	<u>VP132476</u>	01/08/2025	02/22/2025	Semsettin Yesilyurt	None	None	01/17/2025

FROM 0.06250ml of V12993 + 0.06250ml of V13178 + 0.06250ml of V13238 + 0.06250ml of V13587 + 0.06250ml of V13604 + 0.06250ml of V13809 + 0.06250ml of V14224 + 0.25000ml of V13917 + 4.30000ml of V14627 = Final Quantity: 5.000 ml



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### **VOC STANDARD PREPARATION LOG**

Recipe ID	<u>NAME</u>	<u>NO.</u>	Prep Date	Expiration Date	Prepared By	<u>ScaleID</u>	<u>PipettelD</u>	Supervised By  Mahesh Dadoda
1896	Trace internal standard 50 ppm	<u>VP132692</u>	01/27/2025	03/01/2025	Semsettin Yesilyurt	None	None	01/29/2025

Recipe ID	NAME	<u>NO.</u>	Prep Date	Expiration Date	Prepared By	<u>ScaleID</u>	<u>PipetteID</u>	Supervised By  Mahesh Dadoda
1897	Trace surrogate mix 25 ppm	<u>VP132711</u>	01/27/2025	03/01/2025	Semsettin Yesilyurt	None	None	01/29/2025

FROM 0.50000ml of V14454 + 0.50000ml of V14611 + 1.50000ml of V14605 + 1.50000ml of V14607 + 1.50000ml of V14610 + 4.50000ml of V14624 = Final Quantity: 10.000 ml



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### **VOC STANDARD PREPARATION LOG**

Recipe ID	NAME	<u>NO.</u>	Prep Date	Expiration Date	Prepared By	<u>ScaleID</u>	<u>PipetteID</u>	Supervised By  Mahesh Dadoda
1721	SOM01.2 TRACE-Calibration Mix,25 PPM	<u>VP132819</u>	01/30/2025	03/08/2025	Semsettin Yesilyurt	None	None	02/06/2025

FROM 0.12500ml of V13440 + 0.12500ml of V13845 + 0.12500ml of V13858 + 0.12500ml of V14081 + 0.12500ml of V14308 + 0.12500ml of V14554 + 0.12500ml of V14753 + 0.50000ml of V14726 + 8.62500ml of V14624 = Final Quantity: 10.000 ml

Recipe				Expiration	Prepared			Supervised By
<u>ID</u>	<u>NAME</u>	<u>NO.</u>	Prep Date	<u>Date</u>	<u>By</u>	<u>ScaleID</u>	<u>PipetteID</u>	Semsettin Yesilyurt
1722	0.5 PPB ICC SOM01.2 Trace	<u>VP132870</u>	02/04/2025	02/05/2025	Amit Patel	None	None	·
								02/06/2025

FROM 39.99000ml of W3112 + 0.00080ml of VP132711 + 0.00080ml of VP132819 + 0.00400ml of VP132692 = Final Quantity: 40.000 ml



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### **VOC STANDARD PREPARATION LOG**

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	<u>ScaleID</u>	<u>PipetteID</u>	Supervised By Semsettin Yesilyurt
1723	1 PPB ICC SOM01.2 Trace	<u>VP132871</u>	02/04/2025	02/05/2025	Amit Patel	None	None	,
								02/06/2025

FROM 39.99000ml of W3112 + 0.00160ml of VP132711 + 0.00160ml of VP132819 + 0.00400ml of VP132692 = Final Quantity: 40.000 ml

Recipe				Expiration	Prepared			Supervised By
<u>ID</u>	NAME	<u>NO.</u>	Prep Date	<u>Date</u>	<u>By</u>	<u>ScaleID</u>	<u>PipetteID</u>	Semsettin Yesilyurt
1724	5 PPB ICC SOM01.2 Trace	<u>VP132872</u>	02/04/2025	02/05/2025	Amit Patel	None	None	-
								02/06/2025

FROM 39.98000ml of W3112 + 0.00400ml of VP132692 + 0.00800ml of VP132711 + 0.00800ml of VP132819 = Final Quantity: 40.000 ml



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### **VOC STANDARD PREPARATION LOG**

Recipe ID	NAME.	NO.	Prep Date	Expiration Date	Prepared By	<u>ScaleID</u>	<u>PipetteID</u>	Supervised By Semsettin Yesilyurt
1725	10 PPB ICC SOM01.2 Trace	<u>VP132873</u>	02/04/2025	02/05/2025	Amit Patel	None	None	02/06/2025
								02/00/2020

FROM 39.96000ml of W3112 + 0.00400ml of VP132692 + 0.01600ml of VP132711 + 0.01600ml of VP132819 = Final Quantity: 40.000 ml

Recipe				Expiration	Prepared			Supervised By
<u>ID</u>	<u>NAME</u>	NO.	Prep Date	<u>Date</u>	<u>By</u>	<u>ScaleID</u>	<u>PipetteID</u>	Semsettin Yesilyurt
1726	20 PPB ICC SOM01.2 Trace	VP132874	02/04/2025	02/05/2025	Amit Patel	None	None	,
								02/06/2025

FROM 39.93000ml of W3112 + 0.00400ml of VP132692 + 0.03200ml of VP132711 + 0.03200ml of VP132819 = Final Quantity: 40.000 ml





### **VOC STANDARD PREPARATION LOG**

Recipe ID	NAME.	NO.	Prep Date	Expiration Date	Prepared By	<u>ScaleID</u>	<u>PipetteID</u>	Supervised By Semsettin Yesilyurt
3422	5 PPB ICV SOMO2.4 TRACE	<u>VP132875</u>	02/04/2025	02/05/2025	Amit Patel	None	None	02/06/2025
								02/00/2020

FROM 39.98000ml of W3112 + 0.00400ml of VP132692 + 0.00800ml of VP132476 + 0.00800ml of VP132711 = Final Quantity: 40.000 ml

Recipe				<b>Expiration</b>	<u>Prepared</u>			Supervised By
<u>ID</u>	NAME	NO.	Prep Date	<u>Date</u>	<u>By</u>	<u>ScaleID</u>	<u>PipetteID</u>	Semsettin Yesilyurt
1727	5 PPB CCC-CCV SOM01.2 Trace	<u>VP132877</u>	02/04/2025	02/05/2025	Amit Patel	None	None	
								02/06/2025

FROM 39.98000ml of W3112 + 0.00400ml of VP132692 + 0.00800ml of VP132711 + 0.00800ml of VP132819 = Final Quantity: 40.000 ml



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### **VOC STANDARD PREPARATION LOG**

1734 BFB TUNE SOM01.2 TRACE VP132880 02/04/2025 02/05/2025 Amit Patel None None 02/06/2025	Recipe ID	<u>NAME</u>	<u>NO.</u>	Prep Date	Expiration Date	Prepared By	<u>ScaleID</u>	<u>PipetteID</u>	Supervised By Semsettin Yesilyurt
1 1 1 02/00/2020	1734	BFB TUNE SOM01.2 TRACE	<u>VP132880</u>	02/04/2025	02/05/2025	Amit Patel	None	None	02/06/2025

FROM	39.99990ml of W3112 + 0.00320ml of VP131767	' = Final Quantity: 40.000 ml
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Recipe				Expiration	Prepared			Supervised By
<u>ID</u> 1727	NAME 5 PPB CCC-CCV SOM01.2 Trace	NO.	Prep Date 02/05/2025	<u>Date</u> 02/06/2025	<u>By</u> Amit Patel	<u>ScaleID</u> None	PipetteID None	Semsettin Yesilyurt
1721	311 B 000-00 V 00M01.2 Hacc	<u>V1 102004</u>	02/03/2023	02/00/2020	AmitTato	None	TVOIC	02/06/2025

FROM 39.98000ml of W3112 + 0.00400ml of VP132692 + 0.00800ml of VP132711 + 0.00800ml of VP132819 = Final Quantity: 40.000 ml





### **VOC STANDARD PREPARATION LOG**

Recipe ID	NAME.	NO.	Prep Date	Expiration Date	Prepared By	<u>ScaleID</u>	<u>PipetteID</u>	Supervised By Semsettin Yesilyurt
1727	5 PPB CCC-CCV SOM01.2 Trace	VP132895	02/05/2025	02/06/2025	Amit Patel	None	None	
								02/06/2025

FROM 39.98000ml of W3112 + 0.00400ml of VP132692 + 0.00800ml of VP132711 + 0.00800ml of VP132819 = Final Quantity: 40.000 ml

Recipe				Expiration	Prepared			Supervised By
<u>ID</u>	<u>NAME</u>	NO.	Prep Date	<u>Date</u>	<u>By</u>	<u>ScaleID</u>	<u>PipetteID</u>	Semsettin Yesilyurt
1734	BFB TUNE SOM01.2 TRACE	<u>VP132896</u>	02/05/2025	02/06/2025	Amit Patel	None	None	
								02/06/2025

**FROM** 39.99990ml of W3112 + 0.00320ml of VP131767 = Final Quantity: 40.000 ml





### **VOC STANDARD PREPARATION LOG**

Recipe ID	NAME.	NO.	Prep Date	Expiration Date	Prepared By	<u>ScaleID</u>	<u>PipetteID</u>	Supervised By Semsettin Yesilyurt
1727	5 PPB CCC-CCV SOM01.2 Trace	<u>VP132897</u>	02/05/2025	02/06/2025	Amit Patel	None	None	02/06/2025
		l						

FROM 39.98000ml of W3112 + 0.00400ml of VP132692 + 0.00800ml of VP132711 + 0.00800ml of VP132819 = Final Quantity: 40.000 ml

Recipe				<b>Expiration</b>	<u>Prepared</u>			Supervised By
<u>ID</u>	NAME	<u>NO.</u>	Prep Date	<u>Date</u>	<u>By</u>	<u>ScaleID</u>	<u>PipetteID</u>	Semsettin Yesilyurt
1727	5 PPB CCC-CCV SOM01.2 Trace	<u>VP132898</u>	02/05/2025	02/06/2025	Amit Patel	None	None	
								02/06/2025

FROM 39.98000ml of W3112 + 0.00400ml of VP132692 + 0.00800ml of VP132711 + 0.00800ml of VP132819 = Final Quantity: 40.000 ml





### **VOC STANDARD PREPARATION LOG**

1734 BFB TUNE SOM01.2 TRACE VP132902 02/06/2025 02/07/2025 Amit Patel None None 02/12/2025	Recipe ID	<u>NAME</u>	NO.	Prep Date	Expiration Date	Prepared By	<u>ScaleID</u>	<u>PipettelD</u>	Supervised By Romaben Patel
	1734	BFB TUNE SOM01.2 TRACE	<u>VP132902</u>	02/06/2025	02/07/2025	Amit Patel	None	None	02/12/2025

FROM	39.99990ml of W3112 + 0.00320ml of VP131767	' = Final Quantity: 40.000 ml
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Recipe	NAME	NO	Bron Doto	<u>Expiration</u>	<u>Prepared</u>	SocialD	DinettelD	Supervised By
<u>ID</u> 1727	NAME 5 PPB CCC-CCV SOM01.2 Trace	NO. VP132903	<b>Prep Date</b> 02/06/2025	<u>Date</u> 02/07/2025	<u>By</u> Amit Patel	<u>ScaleID</u> None	PipetteID None	Romaben Patel
								02/12/2025

FROM 39.98000ml of W3112 + 0.00400ml of VP132692 + 0.00800ml of VP132711 + 0.00800ml of VP132819 = Final Quantity: 40.000 ml





**VOC STANDARD PREPARATION LOG** 

Recipe <u>ID</u> 1727	NAME 5 PPB CCC-CCV SOM01.2 Trace	NO. VP132904	Prep Date 02/06/2025	Expiration Date 02/07/2025	Prepared By Amit Patel	<u>ScaleID</u> None	PipetteID None	Supervised By Romaben Patel 02/12/2025
FROM	39.98000ml of W3112 + 0.00400ml o ml	f VP132692	+ 0.00800ml	of VP132711 +	0.00800ml of \	/P132819 = Fir	nal Quantity: 40	0.000



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	063022	04/14/2025	10/14/2024 / SAM	07/06/2022 / SAM	V12993
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	063022	04/14/2025	10/14/2024 / SAM	07/06/2022 / SAM	V13178
Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Restek	30492 / VOA Mix, OLC 03.2 VOA Mega Mix, 1mL, 2000ug/mL, P&TM	A0189417	03/03/2025	09/03/2024 / SAM	09/21/2022 / SAM	V13238
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 #
Supplier Restek	ItemCode / ItemName  30429 / 1,2,3-Trichloropropane Standard, 2,000 ug/ml	Lot # A0188973	-	-		
	30429 / 1,2,3-Trichloropropane		Date	Opened By 01/30/2025 /	<b>Received By</b> 01/23/2023 /	Lot #



Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Absolute Standards, Inc.	90298 / Naphthalene, 2000 ug/ml	020223	07/08/2025	01/07/2025 / SAM	02/16/2023 / SAM	V13604
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	A0194279	10/31/2029	01/07/2025 / SAM	05/31/2023 / SAM	V13809
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	040821	07/30/2025	01/30/2025 / SAM	06/22/2023 / SAM	V13845
Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Absolute Standards, Inc.	90319 / 1,3,5-Trimethylbenzene-	061923	07/30/2025	01/30/2025 / SAM	06/22/2023 / SAM	V13858
	2000 ug/mL					
Supplier	2000 ug/mL  ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date /	Chemtech Lot #
Supplier Restek		Lot # A0193887		_		
	ItemCode / ItemName  30006 / VOA Mix, CLP method Calibration Std #1 ketones 5000uq/ml, PTM,		Date	Opened By 10/14/2024 /	Received By 07/24/2023 /	Lot #



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)	22L0562016	05/18/2025	11/18/2024 / pedro	02/06/2024 / SAM	V14154
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	121923	04/14/2025	10/14/2024 / SAM	02/29/2024 / SAM	V14224
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	07/30/2025	01/30/2025 / SAM	04/17/2024 / SAM	V14308
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	04/14/2025	10/14/2024 / SAM	05/03/2024 / SAM	V14352
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	07/27/2025	01/27/2025 / SAM	08/15/2024 / SAM	V14454
Supplier	ItemCode / ItemName	Lot #	Expiration	Date Opened /	Received Date /	Chemtech
Absolute Standards, Inc.	94559 / 1,3,5-Trichlorobenzene, 2000 ug/mL, in methanol	051421	<b>Date</b> 07/30/2025	Opened By 01/30/2025 / SAM	10/09/2024 / SAM	Lot # V14554



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,		07/13/2025	01/13/2025 / SAM	11/18/2024 / SAM	V14605
	500ug/mL, d2O		1	Ī	ī	1
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		07/13/2025	01/13/2025 / SAM	11/18/2024 / SAM	V14607
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,	A0219189	06/12/2025	12/12/2024 / SAM	11/22/2024 / SAM	V14610
	500ug/mL, d2O					
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,	A0219189	06/12/2025	12/12/2024 / SAM	11/22/2024 / SAM	V14611
	500ug/mL, d2O					Ι
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)	2310762004	07/13/2025	01/13/2025 / SAM	11/26/2024 / SAM	V14624
Supplier	ItemCode / ItemName	Lot #	Expiration	Date Opened /	Received Date /	Chemtech
Juppliel	itemoode / iteminanie	LOI #	Date	Opened By	Received By	Lot #
Seidler Chemical	BA9077-02 / Methanol, Purge/Trap (cs=6x1L)	2310762004	07/06/2025	01/06/2025 / SAM	11/26/2024 / SAM	V14627



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	07/30/2025	01/30/2025 / SAM	12/17/2024 / SAM	V14726

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	07/30/2025	01/30/2025 / SAM	12/17/2024 / SAM	V14753

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 / lwona	07/03/2024 / Iwona	W3112

Methanol
ULTRA RESI-ANALYZED
For Purge and Trap Analysis





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 (CH3OH) (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
Titrablė 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

Methanol
ULTRA RESI-ANALYZED
For Purge and Trap Analysis





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 (CH3OH) (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
Titrablė 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 WEIGHT REPORT

A THE THURST BY A	Sh	4159			Solvent:	Lots					ı
Lot Number:	O	012323			Methanol	EF282-USO1			10	1 11	
Description:	O	LP SOM 01.1	Volatiles					*	1	Jan John	ç
	4	42 components	to				utinii	Formulated Bar	7	Drashent Charles	
Expiration Date:	0	012326					1			- CONTROL CANDING	3
Recommended Storage:	Œ	Freezer (0 °C)							1	0	
Nominal Concentration (µg/mL):	>	Varied						*	History	The state of	
NIST Test ID#:	5	GUTB		55-05	Balance Uncertainty	2	1.00	Bornoused Bur		Deda Design	201
olume(s) shown below were combined and diluted to (mL):	1 betufib br	to (mL):	100.0	0.012	Flask Uncertainty	•	udi	neverence oy.		reord L. Henias	٥
								Expanded		SDS Information	
	Part	Ę	ð	fraitial	Uncertainty	Indian	Final	Uncertainty	(Sofve	(Solvent Safety Info. On Attached no.)	
ompound	Number	Number	Factor	Vol. (mL.)	Vol. (mL) Pipethe (mL)	Conc.(ug/mL)	Conc.(ug/mt.) Conc.(ug/mt.) (	(+/-) (wa/m[-)	CASA	OSHA PEL (TWA)	080
								I	- Constant		3

012323	M
DATE	Preshant Chauhan
012323	

Computation   Paral Uncardenty   Paral Chaulum   Capacide   Paral Chaulum   Capacide   Paral Uncardenty   Paral Uncardenty   Capacide   Capac		Description:	<b>0</b> 1 4	A2 components	T VOIBURES						4	so heular	
National Processer (10 kg)   National Proc	m	xpiration Date:		.c. componen 12326	2					Formulated B		Preshant Chauhan	DATE
Mark	Recomme	anded Storage:		reezer (0 °C)	_						1	B	
	Nominal Concent	ration (ug/mL): NIST Test IDE:	ی سر	aried		90 11		j		1	Electo	Hento	012323
Part   Lot	olume(s) shown below	were combined and c	diluted	to (mL):	100.0	0.012	Bask Uncertainty	wuy V		Reviewed By		Pedro L. Rentas	DATE
Sign   George   Color   Colo		ű.	ţ,	5	5	fritial	Urcertainty	leikin.	100	Expanded	/Orb.	SDS Information	
\$2851   GeOrgie   G.10   10,00   0.042   200062   20002   18.7   114.92   10.04444   10.044444   10.04444   10.04444   10.044444   10.04444   10.04444   10.04444	punodwo	Num	mber	Number	Factor	Vol. (mL.)	- 5	Conc.(ug/mt.)	Conc.(ug/mt.)	(++) (ng/mL)	CASE	OSHA PEL (TWA)	
98811 QREGINE         0.10         1.000         0.0042         20002.0         18.7         1.1442.2         1.0044         1.	enzene	388	158	080818	0.10	10.00	8	9 800000	0000	P			
98881         Georgia         0.10         1.00         0.042         20002.5         1.00         1.00         1.00         0.042         20002.5         2000.2         1.00         1.00         1.00         0.042         20002.5         1.00         1.00         1.00         0.042         20002.5         1.00         1.00         1.00         0.042         1.00 <t< td=""><td>ofuene</td><td>936</td><td>831</td><td>060616</td><td>0.10</td><td>10.00</td><td>0.042</td><td>200000</td><td>2000.0</td><td>10.7</td><td>2-54-17</td><td>udd</td><td>orl-rat 4894mg/kg</td></t<>	ofuene	936	831	060616	0.10	10.00	0.042	200000	2000.0	10.7	2-54-17	udd	orl-rat 4894mg/kg
98881         GebSite         0.10         1.00         0.042         2000.03         2000.03         167.1         1.01         1.01         1.00         0.042         1.00         2000.03         18.7         16.4         1.00<	thyl benzene	936	158	060616	0.10	10.00	0.042	20002.5	20002	10.7	108-88-3	200 ppm	orl-rat 5000mg/kg
Segral George   G.10   G.000   G.042	Xylene	936	123	060616	010	100	0.049	00000	2000	10.7	100-61-6	100 ppm (435mg/m3/8H)	orl-rat >2000mg/kg
1000000000000000000000000000000000000	-Xylene	386	128	080616	010	1000	0.042	40000	4000	18.7	9/4-05	100 ppm (435mg/m3/8H)	ipr-mus 1364mg/kg
83171 100220 0.056 5.00 0.017 400073 20003 15.9 75-27-4 INA  83171 100220 0.056 5.00 0.017 400073 20003 15.9 75-27-4 INA  83171 100220 0.056 5.00 0.017 400073 20003 15.9 75-27-4 INA  83171 100220 0.056 5.00 0.017 400073 20003 15.9 15-80-80-8 INA  83171 100220 0.056 5.00 0.017 400073 20003 15.9 15-80-80-9 INA  83171 100220 0.056 5.00 0.017 400073 20003 15.9 15-80-80-9 INA  83171 100220 0.056 5.00 0.017 400073 20003 15.9 15-80-80-9 INA  83171 0.010516 0.10 1.0.00 0.042 200074 20003 18.7 75-80-9 Copper (100mp/mash)  84170 0.10516 0.10 1.0.00 0.042 200052 20003 18.7 75-80-9 Copper (100mp/mash)  84170 0.10516 0.10 1.0.00 0.042 200053 20013 18.7 75-80-9 Copper (100mp/mash)  84171 0.10516 0.10 1.0.00 0.042 200053 20013 18.7 75-80-9 Copper (100mp/mash)  84171 0.10516 0.10 1.0.00 0.042 200053 20013 18.7 75-80-9 Copper (100mp/mash)  84171 0.10516 0.10 1.0.00 0.042 200054 18.7 75-80-9 Copper (100mp/mash)  84171 0.10516 0.10 1.0.00 0.042 200054 20005 18.7 75-80-9 Copper (100mp/mash)  84171 0.10516 0.10 1.0.00 0.042 200054 20005 18.7 75-80-9 Copper (100mp/mash)  84171 0.10516 0.10 1.0.00 0.042 200054 20005 18.7 75-80-9 Copper (100mp/mash)  84171 0.10516 0.10 1.0.00 0.042 200054 20005 18.7 75-80-9 Copper (100mp/mash)  84171 0.10516 0.10 1.0.00 0.042 200054 20005 18.7 75-80-9 Copper (100mp/mash)  84171 0.10516 0.10 1.0.00 0.042 200054 20005 18.7 75-80-9 Copper (100mp/mash)  84171 0.10516 0.10 1.0.00 0.042 200054 20005 18.7 75-80-9 Copper (100mp/mash)  84171 0.10516 0.10 1.0.00 0.042 200054 20005 18.7 75-80-9 Copper (100mp/mash)  84171 0.10516 0.10 1.0.00 0.042 200054 20005 18.7 75-80-9 Copper (100mp/mash)  84171 0.10516 0.10 1.0.00 0.042 200054 20005 18.7 75-80-9 Copper (100mp/mash)  84171 0.10516 0.10 1.0.00 0.042 200054 20005 18.7 75-80-9 Copper (100mp/mash)  84171 0.10516 0.10 1.0.00 0.042 200054 20005 18.7 75-80-9 Copper (100mp/mash)  84171 0.10516 0.10 1.0.00 0.042 200054 20005 18.7 75-80-9 Copper (100mp/mash)  84172 0.10516 0.10 1.0.00 0.042 200054 20005 18.7 75-90-9 Copper (100mp/mash)  84173 0.10516 0.10 1.0.00 0.042	Xylene	936	<u> </u>	060816	0.10	10.00	0.042	10005.3	1000.5	4.0	108-88-3	100 ppm (435mg/m3/8H)	orl-rat Sg/lig
Sig171   100220   0.056   5.00   0.017   4.00124   2.0002   15.9   174-46-1   NA     Sig171   100220   0.056   5.00   0.017   4.00124   2.0002   15.9   174-46-1   NA     Sig171   100220   0.05   5.00   0.017   4.00124   2.0002   15.9   175-69-2   156-69-2   NA     Sig171   100220   0.05   5.00   0.017   4.00124   2.0002   15.9   175-69-2   156-69-2   156-69-2     Sig171   100220   0.05   5.00   0.017   4.00124   2.0002   15.9   175-69-2   156-69-1   156-69-2     Sig171   100220   0.05   5.00   0.017   4.00124   2.0002   15.9   175-69-2   156-69-1   156-69-1     Sig171   0.015616   0.10   0.100   0.042   2.00021   2.0003   18.7   75-25-2   2.0014   10.6016   10.60   0.042   2.00021   2.0003   18.7   75-25-2   2.0014   10.6016   10.60   0.042   2.00021   2.0003   18.7   75-25-2   2.0014   10.6016   10.60   0.042   2.00012   2.0003   18.7   75-25-2   2.0014   10.6016   10.60   0.042   2.00012   2.0003   18.7   75-25-2   2.0014   10.6016   10.60   0.042   2.00012   2.0003   18.7   75-25-2   2.0014   10.6016   10.60   0.042   2.00012   2.0003   18.7   75-25-2   2.0014   10.6016   10.60   0.042   2.00012   2.0003   18.7   75-25-2   2.0014   10.6016   10.60   0.042   2.00012   2.0003   18.7   75-25-2   2.0014   10.6016   10.60   0.042   2.00012   2.0003   18.7   75-26-3   2.0014   10.6016   10.60   0.042   2.00012   2.0003   18.7   75-26-3   2.0014   10.6016   10.60   0.042   2.00012   2.00013   18.7   75-26-2   2.0016   10.6016   10.60   0.042   2.00013   18.7   75-26-2   2.0016   10.6016   10.6016   10.6016   10.60   0.042   2.00013   18.7   75-26-3   2.0016   10.6016   10	omodichloromethane	351	12	100220	0.05	200	0.017	4001g g	0000	t i	26.00	100 ppm (435mg/m3/8H)	Orl-rat 5g/kg
85171 100220 0.05 5.00 0.017 4.00124 2000.5 15.8 156-59-2 NA  85171 100220 0.05 5.00 0.017 4.00124 2000.5 15.8 156-59-2 NA  82251 021821 0.10 0.00 0.045 2000.5 15.8 156-59-2 SODO NA  82251 021821 0.10 0.00 0.042 2000.5 15.8 156-59-2 SODO NA  84170 010616 0.10 0.00 0.042 2000.5 15.8 18.7 75-58-4 1pm (supmissel)  84170 010616 0.10 0.00 0.042 2000.5 10.0 18.7 75-58-4 2ppm (telemymasel)  84170 010616 0.10 0.00 0.042 2000.5 10.0 18.7 75-58-5 10pm (telemymasel)  84170 010616 0.10 0.00 0.042 2000.5 10.0 18.7 75-58-5 10pm (telemymasel)  84170 010616 0.10 0.00 0.042 2000.5 200.1 18.7 75-58-5 10pm (telemymasel)  84171 010616 0.10 0.00 0.042 2000.5 200.1 18.7 75-58-5 10pm (telemymasel)  84171 010616 0.10 0.00 0.042 2000.5 200.1 18.7 75-58-5 10pm (telemymasel)  84171 010616 0.10 0.00 0.042 2000.5 200.1 18.7 75-58-5 10pm (telemymasel)  84171 010616 0.10 0.00 0.042 2000.5 200.1 18.7 75-58-5 10pm (telemymasel)  84171 010616 0.10 0.00 0.042 2000.5 200.1 18.7 76-58-5 10pm (telemymasel)  84171 010616 0.10 0.00 0.042 2000.5 18.7 76-58-5 10pm (telemymasel)  84171 010616 0.10 0.00 0.042 2000.5 200.1 18.7 76-58-5 10pm (telemymasel)  84171 010616 0.10 0.00 0.042 2000.5 200.1 18.7 76-58-5 10pm (telemymasel)  84171 010616 0.10 0.00 0.042 2000.5 200.1 18.7 76-58-5 10pm (telemymasel)  84171 010616 0.10 0.00 0.042 2000.5 200.1 18.7 76-58-5 10pm (telemymasel)  84171 010616 0.10 0.00 0.042 2000.5 200.1 18.7 76-58-5 10pm (telemymasel)  84171 010616 0.10 0.00 0.042 2000.5 200.1 18.7 76-58-5 10pm (telemymasel)  84171 010616 0.10 0.00 0.042 2000.5 200.1 18.7 76-58-5 10pm (telemymasel)  84171 010616 0.10 0.00 0.042 2000.5 200.1 18.7 76-58-5 10pm (telemymasel)  84171 010616 0.10 0.00 0.042 2000.5 200.1 18.7 76-58-5 10pm (telemymasel)  84172 010616 0.10 0.00 0.042 2000.5 2000.5 18.7 76-59-7 5pm (telemymasel)  84173 010616 0.10 0.00 0.042 2000.5 2000.5 18.7 76-59-7 5pm (telemymasel)  84173 010716 0.10 0.00 0.042 2000.5 2000.5 18.7 10-48-7 5pm (telemymasel)  84173 010716 0.10 0.00 0.042 2000.5 18.7 10-48-7 5pm (telemymasel)  84173 010716 0.10 0.00 0	bromochloromethane	351	12	100220	900	200	0.047	40007.7	2000	15.8	\$-12-C/	W.	orf-rat 916mg/kg
8 85171 100220 0.05 5.00 0.017 400056 20002 15.9 15.9 156-55.2 NAA  8 12571 100220 0.05 5.00 0.017 400056 20002 15.9 15.9 156-55.2 Sto perm Characteristics of the control	9-1,2-Dichloroethene	351	171	100220	0.05	5	0.017	40040	2000	0.01	-06-621	NA.	orf-rat B48mg/kg
35171   100220   0.05   5.00   0.017   4.00133   2000.6   15.8	ans-1,2-Dichloroethens		Ē	100220	800	202	0.017	ANDOR &	2000	200	2-90-901	MA	NA
32251         0.10         1.0.00         0.042         20005.1         2000.1         15.0	ethylene chloride		17	100220	0.05	200	0.017	40013 0	Sound	8.01	26.00-00-0	N/A	orl-rat 1235mg/kg
94170         010616         0.10         1,000         0.042         200175         2003         18.7         75-25-4         1 ppm (Haypmissle)           94170         010616         0.10         10.00         0.042         20010         18.7         75-25-2         0.5 ppm (Haypmissle)           94170         010616         0.10         10.00         0.042         20010         18.7         75-25-2         0.5 ppm (Haypmissle)           94170         010616         0.10         10.00         0.042         20007.5         2000.7         18.7         75-26-3         0.5 ppm (Haypmissle)           94170         010616         0.10         10.00         0.042         20007.5         2000.7         18.7         75-26-3         0.5 ppm (Haypmissle)           94170         010616         0.10         10.00         0.042         20007.5         2001.7         18.7         75-26-3         0.5 ppm (Haypmissle)           94171         010616         0.10         10.00         0.042         20007.6         2000.7         18.7         75-26-3         25 ppm (Haypmissle)           94171         010616         0.10         10.00         0.042         20007.4         18.7         75-26-3         25 ppm (Haypmissle	1-Dichloroethene	322	<u>33</u>	031821	0.10	10.00	0.042	20000 1	90000	40.4	75 05 4	and doe	Orl-rat B20mg/kg
94170 010616 0.10 10.00 0.042 200016.4 20005. 18.7 75-25-2 0. Control transmissionary of the control of the con	omochloromethane	941	170	010616	0.10	10.00	0.042	20017.5	2001.7	187	74-07-6	200 com (4mg/m3/8H)	ort-ret 200mg/kg
94170 010616 0.10 10.00 0.042 20005.0 18.7 17-52-2 L2 ppm (126mg/m38h) (124 mg/m38h) (	omoform	941	5	010616	0.10	10.00	0.042	20010.4	2000	18.7	75.05.0	COURT (1050/mg/mg/684)	on-rat 5000mg/kg
94170 010616 0.10 10.00 0.042 20019.5 2001.8 18.7 67-36-3 0.0 ppm (24mgm/s1847) 94170 010616 0.10 10.00 0.042 20007.4 2.000.7 18.7 75-34-3 0.0 ppm (24mgm/s1847) 94170 010616 0.10 10.00 0.042 20007.7 18.7 75-34-3 0.0 ppm (140mgm/s1847) 94171 010616 0.10 10.00 0.042 20007.7 2001.4 18.7 75-36-3 0.0 ppm (140mgm/s1847) 94171 010616 0.10 10.00 0.042 20007.3 2001.4 18.7 75-36-3 0.0 ppm (140mgm/s1847) 94171 010616 0.10 10.00 0.042 20007.3 2001.4 18.7 76-37-5 0.0 ppm (140mgm/s1847) 94171 010616 0.10 10.00 0.042 20006.4 2000.5 18.7 77-36-37-5 0.0 ppm (140mgm/s1847) 94171 010616 0.10 10.00 0.042 20006.4 2000.5 18.7 78-37-5 0.0 ppm (140mgm/s1847) 94171 010616 0.10 10.00 0.042 200016.2 2001.5 18.7 78-37-5 0.0 ppm (140mgm/s1847) 94171 010616 0.10 10.00 0.042 20011.4 2.000.5 18.7 78-37-5 0.0 ppm (140mgm/s1847) 94171 010616 0.10 10.00 0.042 20011.4 2.000.5 18.7 78-37-5 0.0 ppm (140mgm/s1847) 94171 010616 0.10 10.00 0.042 20011.4 2.000.5 18.7 78-37-5 0.0 ppm (140mgm/s1847) 94171 010616 0.10 10.00 0.042 20011.4 2.000.5 18.7 78-37-5 0.0 ppm (140mgm/s1847) 94171 010616 0.10 10.00 0.042 20011.4 2.000.5 18.7 78-37-5 0.0 ppm (140mgm/s1847) 94171 010616 0.10 10.00 0.042 20001.2 18.7 78-37-5 0.0 ppm (140mgm/s1847) 94172 010616 0.10 10.00 0.042 20001.2 2000.2 18.7 78-37-5 0.0 ppm (140mgm/s1847) 94173 010616 0.10 10.00 0.042 20001.2 18.7 78-37-5 0.0 ppm (140mgm/s1847) 94173 010616 0.10 10.00 0.042 20001.2 18.7 78-37-5 0.0 ppm (140mgm/s1847) 94173 010616 0.10 10.00 0.042 20001.2 18.7 78-37-5 0.0 ppm (140mgm/s1847) 94173 010716 0.10 10.00 0.042 20001.3 18.7 78-37-5 0.0 ppm (140mgm/s1847) 94173 010716 0.10 10.00 0.042 20001.3 18.7 78-37-5 0.0 ppm (140mgm/s1847) 94173 010716 0.10 10.00 0.042 20001.3 18.7 78-37-5 0.0 ppm (140mgm/s1847) 94173 010716 0.10 10.00 0.042 20001.3 18.7 78-37-5 0.0 ppm (140mgm/s1847) 94173 010716 0.10 10.00 0.042 20001.3 18.7 78-37-5 0.0 ppm (140mgm/s1847) 94173 010716 0.10 10.00 0.042 20001.3 18.7 78-37-5 0.0 ppm (140mgm/s1847) 94173 010716 0.10 10.00 0.042 20001.3 18.7 78-37-5 0.0 ppm (140mgm/s1847) 94173 010716 0.1	urbon tetrachloride	941	170	010616	0.10	10.00	0.042	20008.0	2000.5	18.7	58.225	O com (42) Economics) (SIGN)	On-rat B33mg/kg
94170 010616 0.10 10.00 0.042 20007.6 18.7 75-34-3 Organicampinol Distriction 0.10 10.00 0.042 20015.7 2001 18.7 17-53-4 20 100 ppm (1400mg/m284)/mag) 94170 010616 0.10 10.00 0.042 20017.3 2001 18.7 17-53-6 50 ppm (1400mg/m284)/mag) 94171 010616 0.10 10.00 0.042 20017.3 2001 18.7 17-53-6 50 ppm (1400mg/m284)/mag) 94171 010616 0.10 10.00 0.042 20017.3 2001 18.7 16-23-6 50 ppm (1400mg/m284)/mag) 94171 010616 0.10 10.00 0.042 20017.3 2001 18.7 16-23-6 50 ppm (1400mg/m284)/mag) 94171 010616 0.10 10.00 0.042 20017.3 2001 18.7 16-23-6 50 ppm (1400mg/m284)/mag) 94171 010616 0.10 10.00 0.042 20017.3 2001 18.7 106-12-8 0.00 ppm (1400mg/m284)/mag) 94171 010616 0.10 10.00 0.042 20017.4 2001 18.7 106-10-5 75 ppm (1500mg/m284)/mag) 94171 010616 0.10 10.00 0.042 20011.4 2001 18.7 106-10-5 75 ppm (1500mg/m284)/mag) 94171 010616 0.10 10.00 0.042 20011.4 2001 18.7 106-10-6 70 ppm (1400mg/m284)/mag) 94171 010616 0.10 10.00 0.042 20011.4 2001 18.7 106-10-6 10 ppm (1400mg/m284)/mag) 94171 010616 0.10 10.00 0.042 20011.4 2001 18.7 106-10-6 5 10 ppm (1400mg/m284)/mag) 94171 010616 0.10 10.00 0.042 20011.3 2001 18.7 10-6-90-7 5 ppm (1400mg/m284)/mag) 94171 010616 0.10 10.00 0.042 20001.3 2001 18.7 106-90-7 5 ppm (1400mg/m284)/mag) 94171 010616 0.10 10.00 0.042 20001.3 2000.3 18.7 106-90-7 5 ppm (1400mg/m284)/mag) 94172 010616 0.10 10.00 0.042 20001.3 2000.3 18.7 106-90-7 5 ppm (1400mg/m284)/mag) 99783 091118 0.10 10.00 0.042 20001.3 2000.3 18.7 106-46-7 5 ppm (1400mg/m284) 98783 091118 0.10 10.00 0.042 20001.3 2000.3 18.7 106-46-7 5 ppm (1400mg/m284) 98783 091118 0.10 10.00 0.042 20001.3 2000.3 18.7 106-46-7 5 ppm (1400mg/m284) 98783 091118 0.10 10.00 0.042 20001.3 2000.3 18.7 106-46-7 5 ppm (1400mg/m284) 98783 091118 0.10 10.00 0.042 20001.3 2000.3 18.7 106-46-7 5 ppm (1400mg/m284) 98783 091118 0.10 10.00 0.042 20001.3 2000.3 18.7 10-48-7 5 ppm (1400mg/m284) 98783 091118 0.10 10.00 0.042 20001.3 2000.3 18.7 10-48-7 5 ppm (1400mg/m284) 98783 091118 0.10 10.00 0.042 20001.3 2000.3 18.7 10-48-7 5 ppm (1400mg/m284) 984173 010716 0.10 10	noroform	941	170	010616	0.10	10.00	0.042	20019.5	2001.8	18.7	67-86-3	En com (340molms) (C1)	ON-FIEL ZCHOMONG
94170 010616 0.10 0.0042 20015.7 20015 18.7 127-18-4 25 ppm (170mg/m38a)-filmed pane 94171 010616 0.10 0.0042 20007.4 20006 18.7 71-55-6 350 ppm (180mg/m38a)-filmed pane 94171 010616 0.10 0.00 0.0042 20007.3 20016 18.7 71-55-6 350 ppm (180mg/m38a)-filmed pane 94171 010616 0.10 0.000 0.0042 20007.3 20016 18.7 106-83-4 20 ppm (84) 0.10 0.00 0.0042 20007.4 18.7 106-83-4 20 ppm (84) 0.10 0.00 0.0042 20007.4 18.7 106-83-4 20 ppm (84) 0.10 0.10 0.0042 20007.4 18.7 106-83-4 20 ppm (84) 0.10 0.10 0.0042 20007.4 18.7 106-83-4 20 ppm (84) 0.10 0.10 0.0042 20007.4 18.7 106-83-4 20 ppm (84) 0.10 0.10 0.0042 20007.4 18.7 106-83-4 20 ppm (84) 0.10 0.10 0.0042 20007.4 18.7 106-10-26 10 ppm (180mg/m384)-filmed pane 94171 010616 0.10 0.004 20007.4 20007.3 18.7 106-10-26 10 ppm (180mg/m384)-filmed pane 94171 010616 0.10 0.004 20007.4 20007.3 18.7 106-10-26 10 ppm (180mg/m384)-filmed pane 98783 091118 0.10 0.00 0.0042 20007.3 2000.3 18.7 106-10-26 5 ppm (180mg/m384)-filmed pane 0.10 0.10 0.004 20007.3 2000.3 18.7 106-10-26 5 ppm (180mg/m384)-filmed pane 0.10 0.10 0.004 20007.3 2000.3 18.7 106-10-26 5 ppm (180mg/m384)-filmed pane 0.10 0.00 0.004 20007.3 2000.3 18.7 106-10-26 5 ppm (180mg/m384)-filmed pane 0.10 0.00 0.004 20007.3 2000.3 18.7 106-10-26 5 ppm (180mg/m384)-filmed pane 0.10 0.00 0.004 20000.3 18.7 106-10-26 5 ppm (180mg/m384)-filmed pane 0.10 0.00 0.004 20000.3 18.7 106-10-26 5 ppm (180mg/m384)-filmed pane 0.10 0.00 0.004 20000.3 18.7 106-10-26 5 ppm (180mg/m384)-filmed pane 0.10 0.00 0.004 20000.3 18.7 106-10-26 5 ppm (180mg/m384)-filmed pane 0.10 0.00 0.004 20000.3 18.7 106-10-20 5 ppm (180mg/m384)-filmed pane 0.10 0.004 20000.3 18.7 106-10-20 5 ppm (180mg/m384)-filmed pane 0.10 0.004 20000.3 18.7 106-10-20 5 ppm (180mg/m384)-filmed pane 0.10 0.004 20000.3 18.7 106-10-20 5 ppm (180mg/m384)-filmed pane 0.10 0.004 20000.3 18.7 106-10-20 5 ppm (180mg/m384)-filmed pane 0.10 0.004 20000.3 18.7 106-10-20 5 ppm (180mg/m384)-filmed pane 0.10 0.10 0.004 20000.3 18.7 106-10-20 5 ppm (180mg/m384)-filmed pane 0.10 0.10 0.004 200	-Dichloroethane	941	Ę	010616	0.10	10.00	0.042	20007.6	2000.7	18.7	75-34-3	100 nom	Ordered 795modes
94170 010616 0.10 10.00 0.042 20007.4 2000.6 18.7 71-55-6 350 ppm (1900mg/m.sea.) 94171 010616 0.10 10.00 0.042 20015.3 2001.4 18.7 16-12-8 0.001 ppm 94171 010616 0.10 10.00 0.042 20005.4 18.7 106-10-2 30 ppm (181) 94171 010616 0.10 10.00 0.042 20005.4 18.7 106-10-2 30 ppm (181) 94171 010616 0.10 10.00 0.042 20005.4 18.7 1061-10-2 30 ppm (181) 94171 010616 0.10 10.00 0.042 20005.4 18.7 78-87-5 75 ppm (181) 94171 010616 0.10 10.00 0.042 20011.3 2001.3 18.7 78-87-5 5 ppm (181) 94171 010616 0.10 10.00 0.042 20011.3 2001.3 18.7 78-87-5 5 ppm (181) 94171 010616 0.10 10.00 0.042 20011.3 2001.3 18.7 78-87-5 5 ppm (181) 94171 010616 0.10 10.00 0.042 20012.4 18.8 72-0.5 10pm (181) 94171 010616 0.10 10.00 0.042 20012.4 18.8 72-0.5 10pm (181) 94171 010616 0.10 10.00 0.042 20012.4 18.8 72-0.5 10pm (181) 98783 091118 0.10 10.00 0.042 20002.3 2001.2 18.7 78-0.5 5 ppm (181) 98783 091118 0.10 10.00 0.042 20002.3 2000.3 18.7 78-0.5 5 ppm (181) 98783 091118 0.10 10.00 0.042 20002.3 2000.3 18.7 78-0.5 5 ppm (180) 98783 091118 0.10 10.00 0.042 20002.3 2000.3 18.7 78-0.5 5 ppm (180) 98783 091118 0.10 10.00 0.042 20005.3 18.7 78-0.5 5 ppm (180) 98783 091118 0.10 10.00 0.042 20005.3 18.7 78-0.5 5 ppm (180) 98783 091118 0.10 10.00 0.042 20005.3 18.7 78-0.5 5 ppm (180) 98783 091118 0.10 10.00 0.042 20005.3 18.7 78-0.5 5 ppm (180) 98783 091118 0.10 10.00 0.042 20005.3 2000.3 18.7 78-0.5 5 ppm (180) 98783 091118 0.10 10.00 0.042 20005.3 18.7 78-0.5 5 ppm (180) 98783 091118 0.10 10.00 0.042 20005.3 18.7 78-0.5 5 ppm (180) 98783 091118 0.10 10.00 0.042 20005.3 18.7 78-0.5 5 ppm (180) 98783 091118 0.10 10.00 0.042 20005.3 18.7 78-0.5 5 ppm (180) 98783 091118 0.10 10.00 0.042 20005.3 18.7 78-0.5 5 ppm (180) 98783 091118 0.10 10.00 0.042 20005.3 18.7 78-0.5 5 ppm (180) 98783 091118 0.10 10.00 0.042 20005.3 18.7 78-0.5 5 ppm (180) 98783 091118 0.10 10.00 0.042 20005.3 18.7 78-0.5 5 ppm (180) 98783 091118 0.10 10.00 0.042 20005.3 18.7 78-0.5 5 ppm (180) 98783 091118 0.10 10.00 0.042 20005.3 18.7 78-0.5 5 ppm (180) 98783 091118 0.10 10.00 0.042	trachloroethene	941	2	010616	0.10	10.00	0.042	20015.7	2001.5	18.7	127-18-4	25 ppm (170mo/m3/8H/Vilnah	1
94171 010616 0.10 10.00 0.042 20015.3 2001.4 18.7 96-12-8 0.001 ppm 0.042 20015.9 18.7 106-894 20 ppm (84) 94171 010616 0.10 10.00 0.042 20006.4 2000.6 18.7 106-894 20 ppm (84) 94171 010616 0.10 10.00 0.042 20006.4 2000.5 18.7 106-894 20 ppm (84) 94171 010616 0.10 10.00 0.042 20006.4 2000.5 18.7 106-804 20 ppm (84) 94171 010616 0.10 10.00 0.042 20006.4 2000.5 18.7 1008-01-6	1,1-Trichlonoethane		2	010616	0.10	10.00	0.042	20007.4	20002	18.7	71-55-6	350 ppm (1900mc/m3/BH)	1
84171 010616 0.10 10.00 0.042 20005.4 2000.5 18.7 10F-875 20pm (84)  84171 010616 0.10 10.00 0.042 20006.4 2000.5 18.7 107-08-2 50pm (84)  84171 010616 0.10 10.00 0.042 20006.4 2000.5 18.7 107-08-2 50pm (84)  84171 010616 0.10 10.00 0.042 20001.4 2001.5 18.7 10061-02-6 50pm (84)  84171 010616 0.10 10.00 0.042 20011.4 2001.0 18.7 10061-02-6 50pm (85)  84171 010616 0.10 10.00 0.042 20011.4 2001.0 18.7 10061-02-6 50pm (85)  84171 010616 0.10 10.00 0.042 20011.4 2001.0 18.7 10061-02-6 50pm (85)  84171 010616 0.10 10.00 0.042 20011.4 2001.0 18.7 10061-02-6 50pm (85)  84171 010616 0.10 10.00 0.042 20011.2 18.7 10061-02-6 50pm (85)  84171 010616 0.10 10.00 0.042 20011.2 18.7 19-01-6 50pm (85)  84172 010616 0.10 10.00 0.042 20012.9 2001.2 18.7 19-01-6 50pm (85)  84173 010616 0.10 10.00 0.042 20012.9 2001.2 18.7 19-01-6 50pm (85)  84174 0.10 10.00 0.042 20002.9 2000.2 18.7 108-97-7 5ppm (85)  84175 010716 0.10 10.00 0.042 20002.9 2000.2 18.7 108-97-7 5ppm (85)  84178 091118 0.10 10.00 0.042 20002.9 2000.2 18.7 108-97-7 5ppm (85)  84173 010716 0.10 10.00 0.042 20002.9 2000.2 18.7 108-97-7 5ppm (85)  84173 010716 0.10 10.00 0.042 20002.9 2000.2 18.7 106-48-7 75ppm (85)  84173 010716 0.10 10.00 0.042 20002.9 2000.5 18.7 106-48-7 75ppm (85)  84173 010716 0.10 10.00 0.042 20002.9 2000.1 18.7 106-48-7 5ppm (12)  84173 010716 0.10 10.00 0.042 20002.9 2000.1 18.7 175-5p- 4ppm (12)  84173 010716 0.10 10.00 0.042 20002.4 2000.2 18.7 106-48-7 5ppm (12)  84173 010716 0.10 10.00 0.042 20002.4 2000.1 18.7 175-15-0 4ppm (12)  84173 010716 0.10 10.00 0.042 20002.4 2000.1 18.7 175-15-0 4ppm (12)  84173 010716 0.10 10.00 0.042 20002.1 18.7 175-15-0 4ppm (12)  84173 010716 0.10 10.00 0.042 20002.1 18.7 175-15-0 20ppm (10)  84173 010716 0.10 10.00 0.042 20002.1 18.7 175-15-0 20ppm (10)  84173 010716 0.10 10.00 0.042 20002.1 18.7 175-15-0 20ppm (10)  84173 010716 0.10 10.00 0.042 20002.1 18.7 175-15-0 20ppm (10)  84173 010716 0.10 10.00 0.042 20002.1 18.7 175-20-2 20000.1 18.7 175-20-1 20ppm (10)  84173 010716 0.10 10.00 0.042 20002.1 18.7	-Dibromo-3-chloropro		<u>-</u>	010818	0.10	10.00	0.042	20015.3	2001.4	18.7	96-12-8	0.001 ppm	ori-ret 170mo/ko
94171 010616 0.10 10.00 0.042 20005.4 2000.4 18.7 107-08.2 50 ppm (84)  94171 010616 0.10 10.00 0.042 20001.0 18.7 10061-02-6 N/A  ne 94171 010616 0.10 10.00 0.042 20001.0 18.7 10061-02-6 N/A  ne 94171 010616 0.10 10.00 0.042 20001.0 18.7 10061-02-6 N/A  ne 94171 010616 0.10 10.00 0.042 2001.0 18.7 10061-02-6 N/A  94171 010616 0.10 10.00 0.042 2001.3 18.7 10061-02-6 N/A  94171 010616 0.10 10.00 0.042 2001.3 18.7 19-01-6 50 ppm (35mg/m38H) (34m)  94171 010616 0.10 10.00 0.042 2001.3 2001.3 18.7 19-01-6 50 ppm (35mg/m38H) (34m)  94172 010616 0.10 10.00 0.042 20001.9 2000.1 18.7 19-01-6 50 ppm (35mg/m38H) (34m)  94173 010616 0.10 10.00 0.042 20001.9 2000.1 18.7 19-01-6 50 ppm (35mg/m38H) (34m)  94173 010618 0.10 10.00 0.042 20001.9 2000.1 18.7 106-90-7 15 ppm (35mg/m38H) (34m)  94173 019118 0.10 10.00 0.042 20001.9 2000.1 18.7 106-90-7 15 ppm (35mg/m38H) (34m)  94173 019118 0.10 10.00 0.042 20001.9 2000.1 18.7 106-90-7 15 ppm (35mg/m38H) (34m)  94173 019118 0.10 10.00 0.042 20001.7 2000.3 18.7 106-90-7 15 ppm (35mg/m38H) (34m)  94173 019118 0.10 10.00 0.042 20001.7 2000.3 18.7 106-90-7 15 ppm (35mg/m38H) (34m)  94173 019718 0.10 10.00 0.042 20001.4 2000.0 18.7 106-90-7 15 ppm (35mg/m38H) (34m)  94173 019718 0.10 10.00 0.042 20001.4 2000.0 18.7 106-92-1 5 ppm (35mg/m38H) (34m)  94173 019718 0.10 10.00 0.042 20001.4 2000.0 18.7 106-92-1 5 ppm (35mg/m38H) (34m)  94173 019718 0.10 10.00 0.042 20001.4 2000.0 18.7 175-04 4 ppm (15mg/m38H) (34m)  94173 019718 0.10 10.00 0.042 20001.4 2000.0 18.7 175-05 4 ppm (15mg/m38H) (34m)  94173 019718 0.10 10.00 0.042 20001.7 18.7 175-05 20000.0 18.7 175-05 20000 100 200	-Upromoemane	941		010616	0.10	10.00	0.042	20017.3	2001.6	18.7	106-93-4	20 ppm (8H)	orl-ret 108ma/kg
94171 010616 0.10 10.00 0.042 20006.4 2000.5 18.7 78-87-5 75 ppm (350mg/m28H) 10.00 0.042 20016.0 2001.3 18.7 10061-02-2 NJA	-Dichloropropries	196		010616	0.10	0.00	0.042	20005.4	2000.4	18.7	107-08-2	50 ppm (8H)	orl-rat 670mg/kg
March	1 3-Dichlomorphone		5 2	919010	0.10	10,00	0.042	20006.4	2000.5	18.7	78-87-5	75 ppm (350mg/m3/8H)	orl-rat 1947mg/kg
March   Marc	T.S. Dichlomopere		5 2	919010	0.10	10.00	0.042	20016.0	2001.5	18.7	10061-01-5	NA	NA
Set   17   010016   0.10   10.00   0.042   20004.3   2001.3   18.7   78-34-5   5 ppm (35mg/m36H)(sich)	2 2-Tetrachiomorphen			910010	0.10	10.00	0.042	20011.4	2001.0	18.7	10061-02-6	NA	NA
94171 010616 0.10 10.00 0.042 20012.9 2002.4 18.8 79-00-5 10 ppm (dsmg/m308h) (dsmg	2-Trichlomethene			010616	0.10	10:00	0.042	20014.3	2001.3	18.7	79-34-5	5 ppm (35mg/m3/9H)(skin)	ort-rat 800mg/kg
September   Sept	chlomethene	044	:   :	010010	2 6	10.00	0.042	20024.9	2002.4	18.8	79-00-5	10 ppm (45mg/m3/8H)(skin)	orf-rat 838mg/lig
September   Sept	lorobenzene	798	183	001118	2 5	20.00	0.042	20012.9	2001.2	18.7	79-01-6	50 ppm (270mg/m3/8H)	ort-mus 2402mg/kg
Septral Control Cont	2-Dichlarobenzene	288	1	001118	2 5	200	0.045	810000	2000.1	18.7	108-90-7	75 ppm (350mg/m3/8H)	ort-rat 2290mg/kg
99783         091118         0.10         10.00         0.042         20005.9         20005.3         18.7         564-73-1         N/A           99783         091118         0.10         10.00         0.042         20005.9         20005.3         18.7         106-46-7         75 ppm (450mg/m38H)           99783         091118         0.10         10.00         0.042         20005.3         2000.3         18.7         106-46-7         75 ppm (450mg/m38H)           99783         091118         0.10         10.00         0.042         20003.7         2000.3         18.7         106-46-7         75 ppm (450mg/m38H)           98783         091118         0.10         10.00         0.042         20004.7         2006.4         18.7         16.2         40pm (424mg/m38H)           94773         010716         0.10         10.00         0.042         20001.4         2004.1         18.7         75-15-0         4ppm (404mg/m38H)           94173         010716         0.10         10.00         0.042         20001.2         2000.1         18.7         75-15-0         4ppm (102mg/m38H)           94173         010716         0.10         10.00         0.042         20002.2         2000.1         18.7	-Dichlorobenzene	200	3 8	001110	2 5	20.00	0.042	SOUCES	20002	18.7	95-50-1	50 ppm (300mg/m3) (CL)	orl-rat 500mg/kg
September   Sept	Dirhomhanzana	200	2 2	001110	0.10	20.00	0.042	20003.7	2000.3	18.7	541-73-1	NA	ipr-mus 1062mg/kg
Section 10   10.00   0.042   20081-B   20081   19.0   98-82-8   50 ppm (Edsing/m38th)	nrontherzene	188	2 2	81118	0.70	10.00	0.042	20005.9	2000.5	18.7	108-48-7	75 ppm (450mg/m3/8H)	orl-rat 500mg/kg
99783         091118         0.10         10.00         0.042         200003.7         20003         18.7         87-61-6         N/A           99783         0941118         0.10         10.00         0.042         20084.7         2008.4         18.7         100-82-1         5 ppm (CL) (40mg/ms)           38281         052120         0.10         10.00         0.042         20084.7         2008.1         18.7         100-82-5         100 ppm           94173         010716         0.10         10.00         0.042         20001.9         2000.1         18.7         75-15-0         4 ppm (12mg/ms) (sign)           94173         010716         0.10         10.00         0.042         20002.0         2000.1         18.7         75-15-0         4 ppm (12mg/ms) (sign)           94173         010716         0.10         10.00         0.042         20002.4         2000.1         18.7         75-15-0         4 ppm (12mg/ms) (sign)           94173         010716         0.10         10.00         0.042         20001.7         2000.1         18.7         79-20-9         200 pm (10mg/ms) (sign)           94173         010716         0.10         10.00         0.042         20001.7         2000.1         1	2-Trichlombanzone	122	3 5	001110	01.10	00.00	0.042	20391.8	2039.1	19.0	98-85-8	50 ppm (245mg/m3/8H)	ort-rat 1400mg/tig
Series   USTITE   USTITE   U.   U.   U.   U.   U.   U.   U.   U	4.Trichlorobonzene	188	3 5	081118	0.70	10.00	0.042	20003.7	2000.3	18.7	87-61-6	NA	ipr-mus 1390mg/kg
94173 010716 0.10 10.00 0.042 20001.4 2004.0 18.7 100-42-5 100 ppm 94173 010716 0.10 10.00 0.042 20002.4 2000.1 18.7 75-15-0 4pm (12mgmis) (skin) 94173 010716 0.10 10.00 0.042 20002.4 2000.1 18.7 79-20-9 200 ppm (10mgmis) (skin) 94173 010716 0.10 10.00 0.042 20002.4 2000.1 18.7 79-20-9 200 ppm (10mgmis) (skin) 94173 010716 0.10 10.00 0.042 20001.7 2000.1 18.7 79-20-9 200 ppm (10mgmis) (skin) 94173 010716 0.10 10.00 0.042 20001.7 2000.1 18.7 109-87-2 NA 4 2478 010716 0.10 10.00 0.042 20001.7 2000.1 18.7 109-87-2 NA 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4	rene	166	3 8	021118	0.70	10.00	0.042	20084.7	2008.4	18.8	120-82-1	5 ppm (CL) (40mg/m3)	orl-rat 758mg/kg
S4173   010716   0.10   10.00   0.042   20001.3   2000.1   18.7   75-15-0   4 ppm (12mg/m38) (eisis)	rhon disulphida	960	R E	000100	0.10	20.02	0.042	20041.4	2004.0	18.7	100-42-5	100 ppm	ori-rat 5000mg/kg
84173 010716 0.10 10.00 0.042 20002.0 2000.1 18.7 110-82-7 300 ppm (1050mg/m3884) 84173 010716 0.10 10.00 0.042 20002.4 2000.1 18.7 78-20-9 200 pm (610mg/m3884) 84173 010716 0.10 10.00 0.042 20001.7 2000.1 18.7 108-87-2 N/A 84173 010716 0.10 10.00 0.042 20001.7 2000.1 18.7 108-87-2 N/A 84173 010716 0.10 10.00 0.042 20001.7 2000.0 18.7 108-87-2 N/A 84173 010716 0.10 10.00 0.042 20001.2 2000.0 18.7 1634-04-4 N/A	richevana	198	2 8	010/16	0.10	10.00	0.042	20001.9	2000.1	18.7	75-15-0	4 ppm (12mg/m3) (slán)	orl-rat 1200mg/kg
84173 010716 0.10 10.00 0.042 200024 2000.1 18.7 79-20-9 200 pm (610mg/m3684) 8473 010716 0.10 10.00 0.042 20001.7 2000.1 18.7 108-87-2 N/A (1010 0.042 20001.7 2000.1 18.7 1634-04-4 N/A (1010 0.042 20001.7 2000.1 18.7 1634-04-4 N/A	ultyl gradata	244	2 5	010/16	0.10	10.00	0.042	20002.0	2000.1	18.7	110-82-7	300 ppm (1050mg/m3/8H)	ort-rat 12705mg/lig
EL (MTBE) 34173 010716 0.10 10.00 0.042 20001.7 2000.3 18.7 109-87-2 N/A 34fbiromethane 84173 010716 0.10 10.00 0.042 20001.2 2000.0 18.7 1634-044 N/A 34fbiromethane 84173 010716 0.10 10.00 0.040 0.040	thycyclohevene	24	2 5	010740	01.0	10.00	0.042	20002.4	2000.1	18.7	79-20-9	200 ppm (610mg/m3/8H)	ort-rist 3705mg/tig
hare 44173 A10774 A10 10.00 UUM2 200012 2000 18.7 1634-04-4 NA	thy lest-buty other (N		3 2	010710	5 0.0	30.05	0.042	20001.7	2000.1	18.7	108-87-2	NA	orl-mus 2250mg/kg
THE PARTY OF THE P	2-Trichloro-1 2 2-trift	hano	2 2	010716	2,5	30.00	0.042	20007.2	2000.0	18.7	1634-04-4	N/A	Ort. pat Anthro

ment Result,"

1 of 2

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# Certified Reference Material CRM



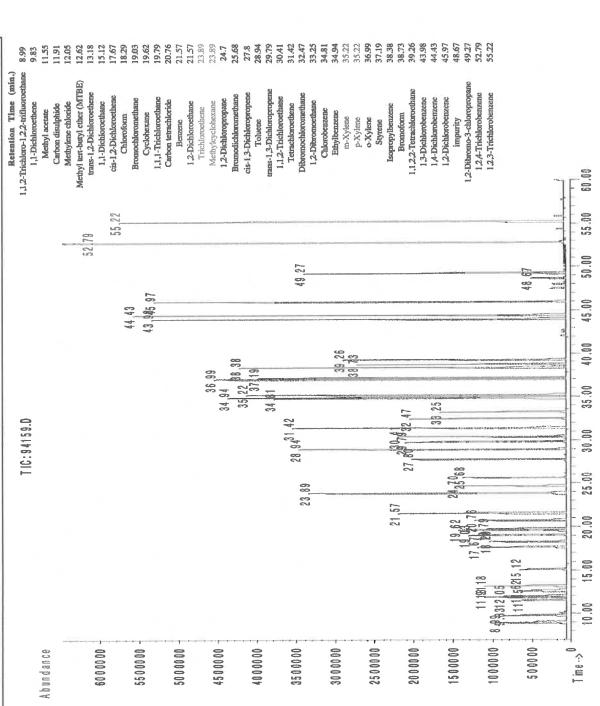
Absolute Standards, Inc.

www.absolutestandards.com

800-368-1131



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, Temp. 2 = 200°C, Detector Temp. = 220°C. Analyst: Gina McLane.



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### Certified Reference Material CRM



Justin Dippold

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

**CERTIFIED WEIGHT REPORT** 

Part Number: Lot Number: **Description:** 

90298

Solvent(s): Methanol

Lot# **EF282-US** 

020123 Naphthalene

**Expiration Date:** 

**NIST Test ID#:** 

020128

**Recommended Storage:** 

Refrigerate (4 °C)

Nominal Concentration (µg/mL):

2000

6UTB

5E-05 Balance Uncertainty

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

100.0

Dilution

Factor

0.012 Flask Uncertainty

Expanded

Reviewed By:

Formulated By:

**SDS Information** 

Pedro L. Rentas

Part Number

Lot Number

Initial Uncertainty Vol. (mL) Pipette (mL) Initial Final

Uncertainty Conc.(ug/mL) Conc.(ug/mL) (+/-) (µg/mL)

(Solvent Safety Info. On Attached pg.) OSHA PEL (TWA)

LD50

1. Naphthalene

Compound

32361

011623 0.10 10.00

0

0.042

20000.3 1999.9 18.7

91-20-3 10 ppm (50mg/m3/8H)

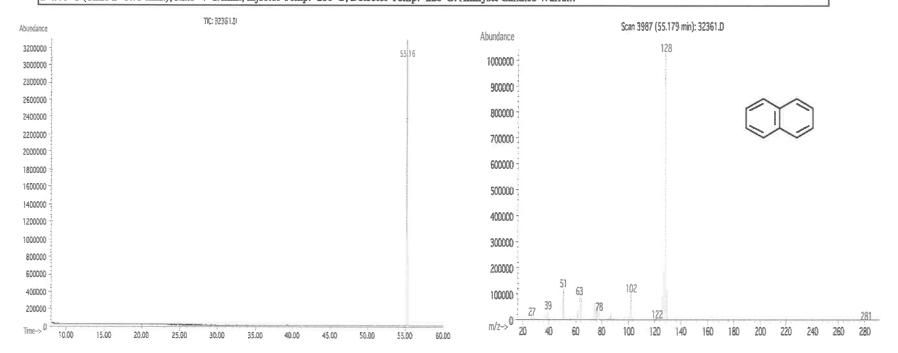
orl-rat 490mg/kg

020123 DATE

020123

DATE

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 certifed (+/-) 9.5% 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 Knyat, C.E., "Guidelines for Evaluating and Expressing the Uncertainty of NIST Measurement Result," NIST Technical Note 1297, U.S. Government Printing Office, Washington, DC, (1994).

### Absolute Standards, Inc.

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### Certified Reference Material CRM



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### **CERTIFIED WEIGHT REPORT**

**Part Number:** Lot Number: 90298 020223

Solvent(s): Methanol

Lot#

Description:

Naphthalene

**EF282-US** 

**Expiration Date:** 

020228

**Recommended Storage:** 

Refrigerate (4 °C)

Nominal Concentration (µg/mL): NIST Test ID#:

2000 **6UTB** 

5E-05 Balance Uncertainty

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

100.0

Dilution

0.10

0.012

Flask Uncertainty

Expanded Uncertainty

(+/-) (µq/mL)

Reviewed By:

Formulated By:

**SDS Information** 

Pedro L. Rentas

Prashant Chauhan

(Solvent Safety Info. On Attached pg.) CAS# OSHA PEL (TWA)

Compound

Naphthalene

Part Number

32361

Lot Number

011623

Factor

Vol. (mL) Pipette (mL)

Initial

10.00

0.042

Uncertainty

20000.3

Initial

Conc.(ug/mL) Conc.(ug/mL)

1999.9

18.7

91-20-3

10 ppm (50mg/m3/8H)

orl-rat 490mg/kg

LD50

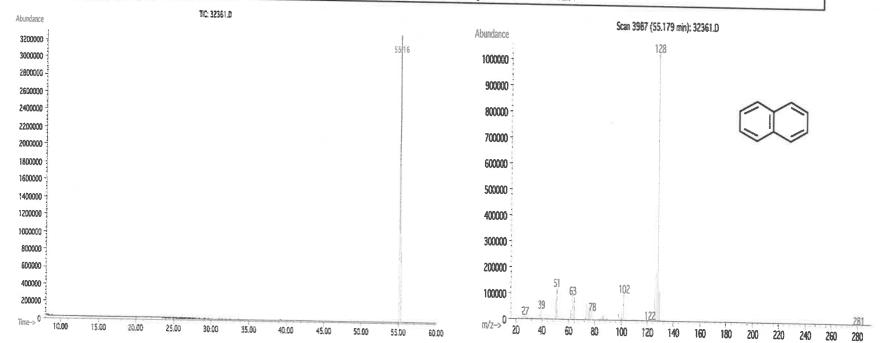
020223

020223

DATE

DATE

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 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).







ANAB ISO 17034 Accredited AR-1539 Certificate Number

CERTIFIED WEIGHT REPORT

1,2,4-Trimethylbenzene 040821 31491 Description: Part Number: Lot Number:

Refrigerate (4 °C) Recommended Storage: Expiration Date:

**6UTB** 2000 Nominal Concentration (µg/mL): NIST Test ID#:

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

Compound

5E-05 Balance Uncertainty

Flask Uncertainty

0.057

cal er Prashant Chauhan Formulated By

DY186-US

Solvent(s): Methanol DATE

040821

DATE 040821 Pedro L. Rentas Reviewed By

1,050 (Solvent Safety Info. On Attached pg.) SDS Information OSHA PEL (TWA) CAS# Conc (µg/ml.) (+/-) (µg/ml.) Uncertainty Expanded Actual Weight(g) Actual Weight(g) Target Uncertainty Purity Purity (%) Conc (ug/mL) Nominal Number ថ្ម ₽# 124

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 N/A 95-63-6 2002.5 0.10140 0.10127 0.2 98.8 2000 WXBC9778V Temp. = 220°C. Analysis performed by Candice Warren. 475 1. 1,2,4-Trimethylbenzene

orl-rat 5g/kg

Scan 2758 (45.670 min): [BSB2]70475.D		2									15472.199 262 3368.666.396.429 474 50 200 250 300 350 400 450
Scan 2758	}					120				1	100
Abundance	1800000	1600000	1400000	1200000	1000000	800000		000009	400000	200000 51	m/z>0 =0
TIC: [BSB2]70475.D	45,69										Time>10.00 15.00 20.00 25.00 30.00 35.00 40.00 45.00 50.00 55.00 60.00
Abundance 550000	2000000	4500000	4000000	3500000	3000000	2500000	2000000	1500000	1000000	500000	Time-> 10.00 15.00

The cartified 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.

1877

31491

Part #

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).

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# Certified Reference Material CRM



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

## CERTIFIED WEIGHT REPORT

Part Number: Lot Number: Description: 051421 94559 ,3,5-Trichlorobenzene Solvent(s): Methanol

DY186-US

Formulated By:

Benson Chan

051421

DATE

Lot#

Recommended Storage: Expiration Date: Refrigerate (4 °C) 051426

Nominal Concentration (µg/mL): NIST Test ID#: **6UTB** 2000

Weight(s) shown below were combined and diluted to (mL): 100.0

0.012 Flask Uncertainty 5E-05 Balance Uncertainty

Reviewed By:

Pedro L. Rentas

051421

DATE

RM# Number Į O Conc (µg/ml.) Nominal Purity (%) Uncertainty Purity Weight(g) Target Weight(g) Actual Conc (µg/mL) Actual (+/-) (µg/mL) Uncertainty Expanded (Solvent Safety Info. On Attached pg.) CAS# **SDS** Information OSHA PEL (TWA)

1. 1,3,5-Trichlorobenzene 69 STBH8643 2000 99.9 0.2 0.20021 0.20084 2006.3 8.1 108-70-3 S orl-rat 800mg/kg LD50

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.



- The certified value is the concentration calculated from gravimetric and volumetric measurements unless otherwise stated.
  Standards are prepared gravimetrically using balances that are calibrated with weights traceable to NIST (see above).
  Standards are certified (+/-) 0.5% of the stated value, unless otherwise stated.

- All Standards, after opening ampule, should be stored with caps tight and under appropriate laboratory conditions.
   Uncertainty Reference: Taylor, B.N. and Kuyat, C.E., "Guidelines for Evaluating and Expressing the Uncertainty of NIST Measurement Result,"

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

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PO Box 5585 Hamden, CT 06518-0585 Phone: 203-281-2917 FAX: 203-281-2922

1-800-535-5053

Safety Data Sheet (SDS)

GHS/OSHA Compliant

Emergency Telephone USA & CANADA

### Section I Product and Company Identification

IDENTITY ANALYTICAL STANDARD DISSOLVED IN METHANOL

Manufacturer's Name ABSOLUTE STANDARDS INC

Address 44 Rossotto Dr. Emergency Telephone International

Hamden CT, 06514 Date Prepared/Revised

gency Telephone International 1-352-323-3500 Prepared/Revised 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

### 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.

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

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

Absolute Standards Inc.

### PO Box 5585 Hamden, CT 06518-0585

Phone: 203-281-2917 FAX: 203-281-2922

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

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 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



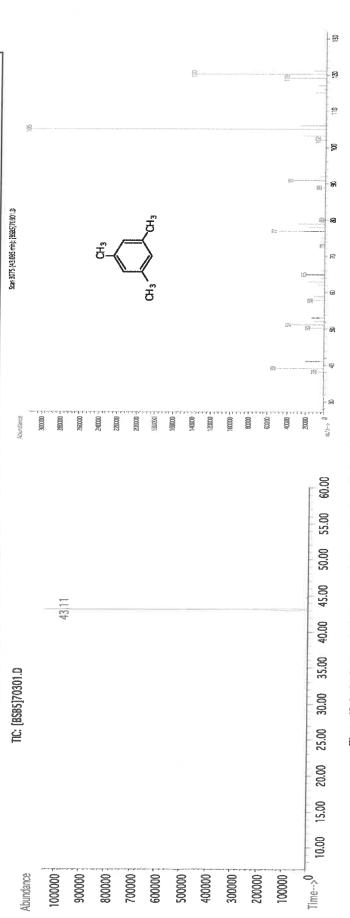
# Certified Reference Material CRM

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

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Lot Solvent: 90319 061923 Lot Number: Part Number: Weigl

Description:	.,	1,3,5-Trimethylbenzene			Methanol	Methanol EF282-US			Section.	Nettonia Antiboria	061923
Expiration Date:	[Mesirylene] e: 061928	_						Formulated By:	By:	Gabriel Helland	DATE
Recommended Storage: Nominal Concentration (µg/mL):	<b>e:</b> Refrigerate (4 °C) 2000	(4 °C)							M	tera	200
NIST Test ID#:	#: 6UTB		5E-05	Balance Uncertainty	rtainty			Reviewed Rv-		Dodro! Donton	U01923
Weight(s) shown below were combined and diluted to (mL):	d and diluted to (mL):	50.0	0.001	0.001 Flask Uncertainty	inty					odo c. nemas	מאומ
		:		;				Expanded		SDS Information	
Compound		Nominal	Purity	Purity Uncertainty	Target	Actual	Actual	Uncertainty	(Solvent	(Solvent Safety Info. On Attached pg.)	pg.)
	Number	Conc (vg/mL)	(%)	Punty (%)	Weight(g)	Weight(g)	Conc (µg/mL) (+/-) (µg/mL)	(+/-) (wg/mL)	CAS#	OSHA PEL (TWA)	LD50
1. 1,3,5-Trimethylbenzene	301 TOOOF-IC 2000	2000	26	00	0.10315	0.40944	0.000	u	60		
					200	100.00	E004:3	0.0	9-70-001	N/A o	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.). Parts – 4°C/min. Tringer. Temp. Temp. 1 = 35°C (10min.). Temp. 2 = 200°C (8.75 min.). Rate – 4°C/min. Tringer. Temp. Temp. 1 = 35°C (10min.). Temp. 2 = 200°C (8.75 min.). Rate – 4°C/min. Tringer. Temp. 2 = 20°C (8.75 min.). Rate – 4°C/min. Tringer. Temp. 2 = 20°C (8.75 min.). Rate – 4°C/min. Tringer. Temp. 2 = 20°C (8.75 min.). Rate – 4°C/min. Tringer. Temp. 2 = 20°C (8.75 min.). Rate – 4°C/min. Tringer. Temp. 2 = 20°C (8.75 min.). Rate – 4°C/min. Tringer. Temp. 2 = 20°C (8.75 min.). Rate – 4°C/min. Tringer. Temp. 2 = 20°C (8.75 min.). Rate – 4°C/min. Tringer. Temp. 2 = 20°C (8.75 min.). Rate – 4°C/min. Tringer. Temp. 2 = 20°C (8.75 min.). Rate – 4°C/min. Tringer. Temp. 2 = 20°C (8.75 min.). Rate – 4°C/min. Tringer. Temp.	I 60m X 0.25mm ID X	1.5µm film thic	kness).	Temp. $l = 3$	5°C (10min.).	Temp. 2=20	0°C (8 75 mi	n ) Pote - 4º	Cimin In	ToologT restood	
Temp. = 220°C. Analysis performed by Candice Warren.	by Candice Warren.				***************************************	~	200	u.), Mary = +		ecior remp.= ∠oo C, De	ector



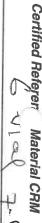
- The certified value is the concentration calculated from gravimetric and volumetric measurements unless otherwise stated.
   Standards are prepared gravimetrically using balances that are calibrated with weights traceable to NiST (see above).
   Standards are certified (+/-) 0.5% of the stated value,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

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.ds.com



https://Absow.estandards.com ANAB ISO 17034 Accredited AR-1539 <sup>a</sup> tificate Number

## CERTIFIED WEIGHT REPORT

Part Number: Lot Number:

063022

**Expiration Date:** Description: 063027 [Mesitylene] 1,3,5-Trimethylbenzene

Nominal Concentration (µg/mL):

2000

Refrigerate (4 °C)

Recommended Storage:

1. 1,3,5-Trimethylbenzene

Temp. = 220°C. Analysis performed by Candice Warren.

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

**EUTB** 

30.0

Methanol

Solvent: Lot#

EC592-US

5E-05 Balance Uncertainty

V12978-983

Reviewed By: ormulated By: MAN JOH Pedro L Rentas Gabriel Helland Nelland 063022 063022 DATE DATE

Method GC6MSD-1: Column: Vocol 60m X 0.25mm ID X 1.5 \( \mu\) film thickness). Temp. 1 = 35°C (10min.), Temp. 2 = 200°C (8.75 min.), Rate = 4°C/min., Injector Temp. = 200°C, Detector 301 RM# 8780.01-13 5 Conc (µg/mL) Nominal 2000 Purity 0.0003 Flask Uncertainty 99.5 38 Uncertainty Purity (%) 0.06033 Target Weight(g) 0.06070 Actual Conc (µg/mL) (+/-) (µg/mL) 2012.1 Actual Uncertainty Expanded 8.7 CAS# (Solvent Safety Info. On Attached pg.) SDS Information OSHA PEL (TWA) orl-rat 5000mg/kg

fime-->0 Abundance 1000000 200000 800000 900000 30000 400000 500000 600000 700000 0.00 15.00 20.00 25.00 TIC: [BSB5]70301.D 30.00 35.00 40.00 45.00 50.03 55.00 60.00 Abundance. 22000 3000 00000 240000 20000 - 00002 2000 4000 9000 90000 10000 12000 000k 160000 - CONTO 继 23 B Ñ 89 13 평-

- 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 traccable to NIST (see above).
   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).

Certified Reference Material CRM

https://Absolutestandards.com

ANAB ISO 17034 Accredited AR-1539 Certificate Number

# CERTIFIED WEIGHT REPORT

Part Number:	94559	Solventie.	-
I as Mirmhall		-/	1
Lot Number:	121923	Mathand	EL/AC
December	1 1 1 1	O POLICIA DE LA COLONIA DE LA	Ĭ
Description:	- Lichlorobenzene		

Refrigerate (4 °C) 121928 Recommended Storage: Expiration Date:

**6UTB** 2000 Nominal Concentration (µg/mL):

5E-05 Balance Uncertainty Flask Uncertainty 0.021 100.0 Weight(s) shown below were combined and diluted to (mL):

121923 DATE DATE 121923 Anthony Mahoney Pedro L. Rentas Formulated By: Reviewed By ota 185-US

Compound	RM#	Lot	Lot Nominal Purity Uncertaint RM# Number Conc.(ug/mL) (%) Purity	Purity (%)	Uncertainty Purity	Target Weight(g)	Actual Weight(g)	Expanded Actual Uncertainty Weight(g) Conc (ug/mt.) (++) (ug/mt.)	Expanded Uncertainty (+/-) (µg/mL)	Solvent Sa CAS#	Expanded SDS Information Uncertainty (Solvent Safety Info. On Attached pg.)  (++) (ugimL) CAS# OSHA PEL (TWA) 1 DSG	thed pg.)
1. 1,3,5-Trichlorobenzene	409	409 STBHB643		9	6	2000 88 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0.000					
Mathod CCKMCD 1.	* 1/2 - 1 // *	200			, i	0.50023	SCOOS.	2003.4	8.1	108-70-3	NA	ori-rat 800mg/kg
Temp.=220°C. Analysis performed by Candice Warren.	our economists. Column: Vocol (60m X 0.25mm ID X 1.5µm).=220°C. Analysis performed by Candice Warren.	C U.ZSmm ID	X i Sµm film th	ickness)	Temp. 1=35	5°C (10min.), 7	Femp. 2=200	°C (8.75 min.	), Rate=4°C	min., Injector	ит film thickness). Temp. 1=35°C (10min.), Temp. 2=200°C (8.75 min.), Rate=4°C/min., Injector Temp.=200°C, Detecto	ector

	Scarl S.236 (53.133 min): [BSB3]70408.D		5	<b>(</b>	Ö										131 156 223 297 320
		000	000	000	000	000	000	000	000	000	74		000	73	54 9
	Abundance	140000	53,11 1300000	120000	1100000	100000	000006	000008	20000	000009	200000	400000	000008	200000	45.00 50.00 55.00 60.00
C COLOTTEGOS S. OTT	Abundance		7000000		0000009	000000		4000000							Time> 10.00 15.00 20.00 25.00 30.00 35.00 40.00

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 veights traceable to NIST (see above).
 Standards are certified (+t-) 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 Kayat, C.E., "Guidelines for Evaluating and Expressing the Uncertainty of NIST Measurement Result," NIST Technical Note 1297, U.S. Government Printing Office, Wackington, DC, (1994).

PO Box 5585 Hamden, CT 06518-0585

Phone: 203-281-2917 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.

**Emergency Telephone International** 

1-352-323-3500

Hamden CT, 06514

Date Prepared/Revised

January 1, 2023

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 P271

Cause damage to organs

H351 P280 Suspected of causing cancer

Use in ventilated area P302,332 If on skin, wash with soap and water

P305,351,338

Use gloves, eye protection/face shelld If in eyes, remove contacts, rinse with water







Signal Word: DANGER

Section III - Composition

Components:

CAS#:

LD50 Oral - Rat

OSHA PEL

% (optional)

Methanol

67-56-1

2,769 mg/kg

200 ppm

> 99

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

INTENDED USE: REFERENCE MATERIAL

Section IV. FIRST AID MEASURES

General advice If inhaled

Consult a physician. Show this safety data sheet to the doctor in attendance. Move to safe area. 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.

Storage Conditions

Use ventilation Keep away from sources of ignition. No smoking. Prevent the build up of electrostatic charge.

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

Methanol-SDS copy.xls

Page 1 of 2

Printed: 2/27/24

### PO Box 5585 Hamden, CT 06518-0585

Phone: 203-281-2917 FAX: 203-281-2922

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. Heat, flames, sparks, extreme temperature and sunlight.

Conditions to avoid 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 EC100 24,500.00 mg/l - 48 h 10,000.00 mg/l - 24 h

### Section XIII. DISPOSAL CONSIDERATIONS

Dispose with normal Laboratory Solvent Waste.

### Section XIV. TRANSPORT INFORMATION

DOT (US)

IATA

UN number: 1230 Class: 3 Packing group: II

Proper shipping name:

Methanol

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

### Section XV. REGULATORY INFORMATION

Flammable liquid, Target Organ Effect, Toxic by inhalation., Toxic by ingestion, Toxic by skin absorption, Irritant OSHA Hazards 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.



## CERTIFIED REFERENCE MATERIAL



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

## **Certificate of Analysis**





www.restek.com

### FOR LABORATORY USE ONLY-READ SDS PRIOR TO USE.

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

Catalog No.: 30429 Lot No.: A0188973 Description: 1,2,3-Trichloropropane Standard

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

Container Size: **Expiration Date:** August 31, 2027

Pkg Amt: 0°C or colder Storage:

> Ship: Ambient

### CERTIFIED

Elution Order	Con	npound	Grav. Conc. (weight/volume)		Expanded (95% C.L.;	Uncertainty K=2)	
1	1,2,3-Trichloropropane CAS # 96-18-4 Purity 99%	(Lot 332900)	2,000.0 μg/mL	+/- +/- +/-	11.7371 112.1494 114.7730	μg/mL μg/mL μg/mL	Gravimetric Unstressed Stressed
Solvent:	P&T Methanol  CAS # 67-56-1  Purity 99%						

Column:

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

Carrier Gas:

hydrogen-constant pressure 11.0 psi.

Temp. Program:

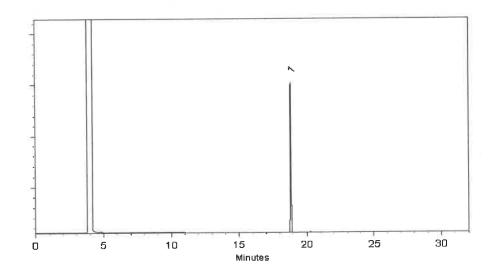
40°C (hold 2 min.) to 240°C @ 8°C/min. (hold 5 min.)

Inj. Temp: 200°C

Det. Temp:

250°C

Det. Type:



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.

Daniel Wasson - Operations Tech I

Date Mixed:

24-Aug-2022

Balance: 1127510105

Christie Mills - Operations Tech II - ARM QC

Date Passed:

29-Aug-2022

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

#### **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 <a href="https://www.restek.com/Contact-Us">www.restek.com/Contact-Us</a> 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 <a href="https://www.restek.com/Contact-Us">www.restek.com/Contact-Us</a>.
- 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.





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.:

30492

Lot No.: A0189417

Description:

OLC 03.2 VOA Mega Mix

OLC 03.2 VOA Mega Mix 1,000-2,000µg/mL, P&T Methanol, 1mL/ampul

Container Size:

2 mL

Pkg Amt:

> 1 mL

**Expiration Date:** 

September 30, 2025

Storage:

e: 0°C or colder

Ship: Ambient

#### CERTIFIED VALUES

Elution Order		Compound -	Grav. Conc. (weight/volume)		Expanded (95% C.L.;	Uncertainty K=2)	
1	1,1,2-Trichlorotrifluc CAS # 76-13-1 Purity 99%	Oroethane (CFC-113) (Lot 00016133)	2,007.0 μg/mL	+/- +/- +/-	11.7782 121.1018 121.3893	μg/mL μg/mL μg/mL	Gravimetric Unstressed Stressed
2	1,1-dichloroethene CAS # 75-35-4 Purity 99%	(Lot SHBG8609V)	2,010.7 μg/mL	+/- +/- +/-	15.5022 121.7394 122.0264	μg/mL μg/mL μg/mL	Gravimetric Unstressed Stressed
3	Methyl acetate CAS # 79-20-9 Purity 99%	(Lot SHBM1320)	2,012.5 μg/mL	+/- +/- +/-	11.8105 121.4337 121.7219	μg/mL μg/mL μg/mL	Gravimetric Unstressed Stressed
4	Methylene chloride (cas # 75-09-2 Purity 99%	dichloromethane) (Lot SHBP1417)	2,010.6 μg/mL	+/- +/- +/-	15.5019 121.7364 122.0234	μg/mL μg/mL μg/mL	Gravimetric Unstressed Stressed
5	Carbon disulfide CAS # 75-15-0 Purity 99%	(Lot N28F701)	2,016.0 μg/mL	+/- +/- +/-	11.8310 121.6448 121.9336	μg/mL μg/mL μg/mL	Gravimetric Unstressed Stressed
6	Methyl-tert-butyl ethology (CAS# 1634-04-4 Purity 99%	er ( MTBE ) (Lot SHBN6497)	2,012.0 μg/mL	+/- +/- +/-	11.8075 121.4035 121.6917	μg/mL μg/mL μg/mL	Gravimetric Unstressed Stressed
7	trans-1,2-Dichloroeth CAS # 156-60-5 Purity 99%	ene (Lot MKBH9850V)	2,013.3 μg/mL	+/- +/- +/-	15.5227 121.8999 122.1873	μg/mL μg/mL μg/mL	Gravimetric Unstressed Stressed

8	1,1-Dichloroethane CAS # 75-34-3 Purity 99%	(Lot 760200)	2,013.4 μg/mL	+/- 15.5229 +/- 121.9014 +/- 122.1888	μg/mL μg/mL μg/mL	Gravimetric Unstressed Stressed
9	cis-1,2-Dichloroethene CAS # 156-59-2 Purity 99%	(Lot MKCP7830)	2,009.0 μg/mL	+/- 11.7899 +/- 121.2225 +/- 121.5102	μg/mL μg/mL μg/mL	Gravimetric Unstressed Stressed
10	chloroform CAS # 67-66-3 Purity 99%	(Lot SHBN8469)	2,012.3 μg/mL	+/- 15.5146 +/- 121.8363 +/- 122.1235	μg/mL μg/mL μg/mL	Gravimetric Unstressed Stressed
11	Bromochloromethane CAS # 74-97-5 Purity 99%	(Lot 00008541)	2,019.0 μg/mL	+/- 11.8486 +/- 121.8259 +/- 122.1150	μg/mL μg/mL μg/mL	Gravimetric Unstressed Stressed
12	1,1,1-trichloroethane CAS # 71-55-6 Purity 99%	(Lot RD220215)	2,012.5 μg/mL	+/- 15.5163 +/- 121.8499 +/- 122.1372	μg/mL μg/mL μg/mL	Gravimetric Unstressed Stressed
13	Cyclohexane CAS # 110-82-7 Purity 99%	(Lot EA003-US)	2,009.5 μg/mL	+/- 11.7929 +/- 121.2526 +/- 121.5405	μg/mL μg/mL μg/mL	Gravimetric Unstressed Stressed
14	carbon tetrachloride CAS # 56-23-5 Purity 99%	(Lot SHBL8097)	2,012.3 μg/mL	+/- 15.5146 +/- 121.8363 +/- 122.1235	μg/mL μg/mL μg/mL	Gravimetric Unstressed Stressed
15	1,2-Dichloroethane CAS # 107-06-2 Purity 99%	(Lot MKCN9758)	2,016.3 μg/mL	+/- 15.5454 +/- 122.0785 +/- 122.3663	μg/mL μg/mL μg/mL	Gravimetric Unstressed Stressed
16	Benzene CAS # 71-43-2 Purity 99%	(Lot MKCM9242)	2,018.0 μg/mL	+/- 11.8428 +/- 121.7655 +/- 122.0546	μg/mL μg/mL μg/mL	Gravimetric Unstressed Stressed
17	Trichloroethene CAS # 79-01-6 Purity 99%	(Lot SHBL5816)	2,009.0 μg/mL	+/- 15.4891 +/- 121.6365 +/- 121.9233	μg/mL μg/mL μg/mL	Gravimetric Unstressed Stressed
18	Methylcyclohexane CAS # 108-87-2 Purity 99%	(Lot SHBN1699)	2,009.5 μg/mL	+/- 11.7929 +/- 121.2526 +/- 121.5405	μg/mL μg/mL μg/mL	Gravimetric Unstressed Stressed
19	1,2-Dichloropropane CAS # 78-87-5 Purity 99%	(Lot BCBR0882V)	2,016.1 μg/mL	+/- 15.5439 +/- 122.0664 +/- 122.3541	μg/mL μg/mL μg/mL	Gravimetric Unstressed Stressed
20	bromodichloromethane CAS # 75-27-4 Purity 99%	(Lot MKCM7156)	2,011.4 µg/mL	+/- 15.5074 +/- 121.7803 +/- 122.0674	μg/mL μg/mL μg/mL	Gravimetric Unstressed Stressed
21	cis-1,3-Dichloropropene CAS # 10061-01-5 Purity 99%	(Lot RD220311)	2,011.3 μg/mL	+/- 15.5073 +/- 121.7788 +/- 122.0659	μg/mL μg/mL μg/mL	Gravimetric Unstressed Stressed
22	Toluene CAS # 108-88-3 Purity 99%	(Lot MKCQ2779)	2,014.0 µg/mL	+/- 11.8193 +/- 121.5242 +/- 121.8126	μg/mL μg/mL μg/mL	Gravimetric Unstressed Stressed
23	trans-1,3-Dichloropropene CAS # 10061-02-6 Purity 98%	(Lot RD220228A)	2,014.7 μg/mL	+/- 15.5331 +/- 121.9821 +/- 122.2697	μg/mL μg/mL μg/mL	Gravimetric Unstressed Stressed

24	1,1,2-Trichloroethane CAS # 79-00-5 Purity 99%	(Lot FGB01)	2,013.0	μg/mL	+/- +/- +/-	- 121.8787	μg/mL μg/mL μg/mL	Gravimetric Unstressed Stressed
25	Tetrachloroethene CAS # 127-18-4 Purity 99%	(Lot SHBJ7422)	2,012.0	μg/mL	+/- +/- +/-	121.8212	μg/mL μg/mL μg/mL	Gravimetric Unstressed Stressed
26	dibromochloromethane CAS # 124-48-1 Purity 99%	(Lot MKCM8659)	2,015.6	μg/mL	+/- +/- +/-	122.0391	μg/mL μg/mL μg/mL	Gravimetric Unstressed Stressed
27	1,2-Dibromoethane (EDB) <b>CAS #</b> 106-93-4 <b>Purity</b> 99%	(Lot BCCF5058)	2,007.5	μg/mL	+/- +/- +/-	121.1320	μg/mL μg/mL μg/mL	Gravimetric Unstressed Stressed
28	Chlorobenzene CAS # 108-90-7 Purity 99%	(Lot SHBL8110)	2,016.5	μg/mL	+/- +/- +/-		μg/mL μg/mL μg/mL	Gravimetric Unstressed Stressed
29	Ethylbenzene CAS # 100-41-4 Purity 99%	(Lot SHBM4308)	2,012.0	μg/mL	+/-+/-+/-	11.8075 121.4035 121.6917	μg/mL μg/mL μg/mL	Gravimetric Unstressed Stressed
30	m-Xylene CAS # 108-38-3 Purity 99%	(Lot Q13G020)	1,008.5	μg/mL	+/- +/- +/-	5.9184 60.8526 60.9970	μg/mL μg/mL μg/mL	Gravimetric Unstressed Stressed
31	p-Xylene CAS# 106-42-3 Purity 99%	(Lot 10234437)	1,004.0	μg/mL	+/- +/- -+/-	5.8920 60.5811 60.7249	μg/mL μg/mL μg/mL	Gravimetric Unstressed Stressed
32	o-Xylene CAS# 95-47-6 Purity 98%	(Lot SHBN5105)	2,006.6	μg/mL	+/- +/- +/-	11.7756 121.0746 121.3620	μg/mL μg/mL μg/mL	Gravimetric Unstressed Stressed
33	Styrene <b>CAS #</b> 100-42-5 <b>Purity</b> 99%	(Lot MKCQ3390)	2,008.0	μg/mL	+/- +/- +/-	11.7841 121.1621 121.4497	μg/mL μg/mL μg/mL	Gravimetric Unstressed Stressed
34	Isopropylbenzene (cumene) CAS # 98-82-8 Purity 99%	(Lot Z20D022)	2,015.0	μg/mL	+/-	11.8251 121.5845 121.8731	μg/mL μg/mL μg/mL	Gravimetric Unstressed Stressed
35	bromoform  CAS # 75-25-2  Purity 98%	(Lot SHBK4455)	2,015.3	μg/mL	+/- +/- +/-	15.5377 122.0177 122.3054	μg/mL μg/mL μg/mL	Gravimetric Unstressed Stressed
36	1,1,2,2-Tetrachloroethane CAS # 79-34-5 Purity 99%	(Lot CFA4D)	2,011.9	μg/mL	+/-	15.5119 121.8151 122.1023	μg/mL μg/mL μg/mL	Gravimetric Unstressed Stressed
37	1,3-Dichlorobenzene CAS # 541-73-1 Purity 99%	(Lot BCCD5315)	2,016.2	μg/mL	+/-	15.5445 122.0709 122.3587	μg/mL μg/mL μg/mL	Gravimetric Unstressed Stressed
38	1,4-Dichlorobenzene CAS # 106-46-7 Purity 99%	(Lot MKBS4401V)	2,019.0	μg/mL	+/-	15.5660 122.2404 122.5286	μg/mL μg/mL μg/mL	Gravimetric Unstressed Stressed
39	1,2-Dichlorobenzene CAS# 95-50-1 Purity 99%	(Lot SHBN3835)	2,011.9	ug/mL	+/_	15.5113 121.8106 122.0977	μg/mL μg/mL μg/mL	Gravimetric Unstressed Stressed

40	1,2-Dibromo-3-chloropropane CAS # 96-12-8 Purity 97%	(Lot HBMVB)	2,016.6 μg/mL	+/- +/- +/-	11.8347 121.6829 121.9717	μg/mL μg/mL μg/mL	Gravimetric Unstressed Stressed
41	1,2,4-Trichlorobenzene CAS # 120-82-1 Purity 99%	(Lot SHBM0526)	2,012.5 µg/mL	+/- +/- +/-	11.8105 121.4337 121.7219	μg/mL μg/mL μg/mL	Gravimetric Unstressed Stressed
42	1,2,3-Trichlorobenzene CAS # 87-61-6 Purity 99%	(Lot MKBX7627V)	2,012.0 μg/mL	+/- +/- +/-	11.8075 121.4035 121.6917	μg/mL μg/mL μg/mL	Gravimetric Unstressed Stressed

Solvent:

P&T Methanol

CAS # 67-56-1

Purity 99%

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 6 min.) to 240°C @ 6°C/min. (hold 10 min.)

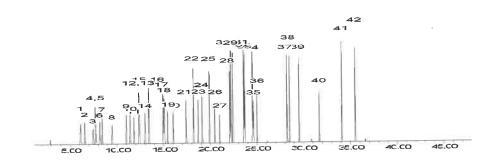
Inj. Temp:

200°C

Det. Temp: 250°C

Det. Type:

MSD



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:

09-Sep-2022

Balance: B707717271

Jennifer Pollino - Operations Tech III - ARM QC

Date Passed: 14-Sep-2022

#### **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 <a href="https://www.restek.com/Contact-Us">www.restek.com/Contact-Us</a> 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 <a href="https://www.restek.com/Contact-Us">www.restek.com/Contact-Us</a>.
- The packaged amount is the minimum sample size for which uncertainty is valid. The ampules are over-filled to ensure
  that the minimum packaged amount can be sufficiently transferred.

#### Manufacturing Notes:

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

### **Handling Notes:**

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











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## Certificate of Analysis

chromatographic plus

#### FOR LABORATORY USE ONLY-READ SDS PRIOR TO USE.

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

Catalog No.: 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

#### 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

Ship:

**Ambient** 

Solvent:

P&T Methanol

CAS # 67-56-1 Purity 99%

<sup>\*</sup> Expanded Uncertainty displayed in same units as Grav. Conc.

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

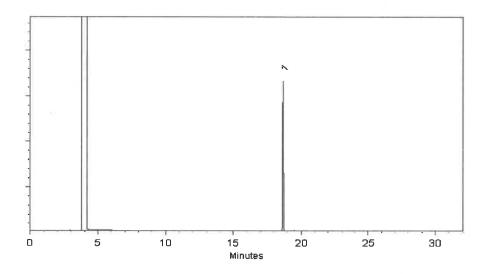
Det. Type:

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

#### **Expiration Notes:**

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

#### **Purity Notes:**

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

#### **Certified Uncertainty Value Notes:**

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

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

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

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

#### Manufacturing Notes:

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

- 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.



8			



Iac-MRA



ACCRED ISO 17034 Ac Reference Mater Certificate 4:





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## **Certificate of Analysis**

chromatographic plus

#### FOR LABORATORY USE ONLY-READ SDS PRIOR TO USE.

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

Catalog No.:

30006

Lot No.: A0193887

**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:

nt: > 1 mL

Expiration Date:

April 30, 2026

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	SHBP8774	99%	5,006.5 μg/mL	+/- 173.0015
2	2-Butanone (MEK)	78-93-3	SHBN9536	99%	5,008.5 μg/mL	+/- 173.0706
3	4-Methyl-2-pentanone (MIBK)	108-10-1	SHBP4724	99%	5,000.3 μg/mL	+/- 172.7884
4	2-Hexanone	591-78-6	MKCQ6663	99%	5,001.7 μg/mL	+/- 172.8345

<sup>\*</sup> 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%

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

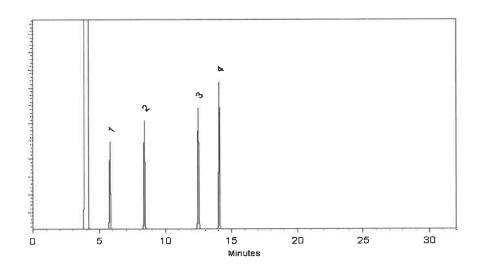
Det. Type:

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.

Josh McCloskey - Operations Technician I

Date Mixed:

24-Jan-2023

Balance Serial #

B707717271

Christie Mills - Operations Tech II - ARM QC

Date Passed:

27-Jan-2023



#### **Expiration Notes:**

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

#### **Purity Notes:**

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

#### **Certified Uncertainty Value Notes:**

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

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

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

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

#### **Manufacturing Notes:**

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

- 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 of Analysis**

chromatographic plus

#### FOR LABORATORY USE ONLY-READ SDS PRIOR TO USE.

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

**Ambient** 

 Catalog No. :
 30429
 Lot No.:
 A0194117

 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 :
 January 31, 2028
 Storage: 0°C or colder

#### 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	BCBH8722V	99%	2,013.8 μg/mL	+/- 113.1502

Ship:

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

Solvent:

P&T Methanol

CAS # 67-56-1 Purity 99%

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

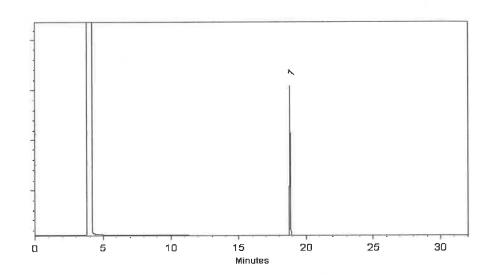
Det. Type:

FID

Split Vent:

40 ml/min

Inj. Vol 1μΙ



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.

Jan Var Daniel Wasson - Operations Tech I

Date Mixed:

30-Jan-2023

Balance Serial #

B707717271

Our th

Christie Mills - Operations Tech II - ARM QC

Date Passed:

02-Feb-2023



#### **Expiration Notes:**

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

#### **Purity Notes:**

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

#### **Certified Uncertainty Value Notes:**

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

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

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

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

#### **Manufacturing Notes:**

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

- 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.:

30042

Lot No.: A0194279

Description:

502.2 Calibration Mix #1

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

Container Size: **Expiration Date:** 

October 31, 2029

Pkg Amt:

> 1 mL

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	00012554	99%	2,001.5 μg/mL	+/- 112.7231
2	Chloromethane (methyl chloride)	74-87-3	SHBK6571	99%	2,001.2 μg/mL	+/- 112.5863
3	Vinyl chloride	75-01-4	00015559	99%	2,001.4 μg/mL	+/- 112.6561
4	Bromomethane (methyl bromide)	74-83-9	101604	99%	2,006.4 μg/mL	+/- 112.8262
5	Chloroethane (ethyl chloride)	75-00-3	107-401039114-1	99%	2,001.9 μg/mL	+/- 112.5897
6	Trichlorofluoromethane (CFC-11)	75-69-4	MKCL8411	99%	2,000.8 μg/mL	+/- 112.6473

<sup>\*</sup> Expanded Uncertainty displayed in same units as Grav. Conc.

Solvent:

P&T Methanol

CAS# 67-56-1 Purity 99%



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

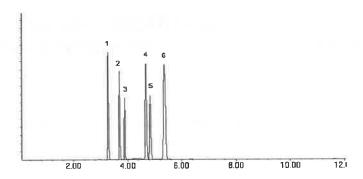
Det. Type: MSD

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:

03-Feb-2023

Balance Serial #

B707717271

Church 1966

Christie Mills - Operations Tech II - ARM QC

Date Passed:

07-Feb-2023



#### **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/μΕCD, GC/MS, LC/MS, RI, and/or melting point.
- Compounds with a listed purity of less than 99% have been weight corrected to compensate for impurities and/or salts. A
  correction factor is used to calculate the amount of compound necessary to achieve the desired concentration of the
  parent compound in solution.
- · Purity of isomeric compounds is reported as the sum of the isomers.
- · Purity values are rounded to the nearest whole number.

#### **Certified Uncertainty Value Notes:**

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

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

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

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

#### Manufacturing Notes:

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

- 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
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  most standards packed in 2mL ampuls. Larger volume deactivated vials are available through Restek as a custom
  ordered item. Additionally, Restek sells DMDCS for the purpose of glassware deactivation as catalog number 31861,
  which includes complete instructions.
- If any undissolved material is visible inside the ampul, sonicate the unopened ampul until the material is completely dissolved.





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## **CERTIFIED REFERENCE MATERIAL**









# **Certificate of Analysis**

chromatographic plus

#### FOR LABORATORY USE ONLY-READ SDS PRIOR TO USE.

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

Catalog No.:

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:

**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

\_\_\_\_\_\_

Solvent:

P&T Methanol

CAS# 67-56-1 **Purity** 99%

<sup>\*</sup> Expanded Uncertainty displayed in same units as Grav. Conc.

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

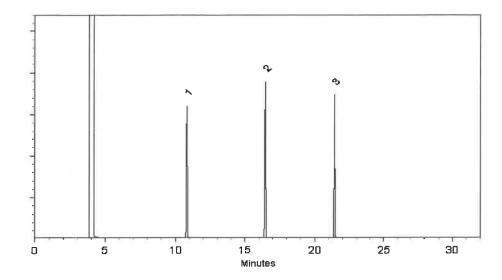
Det. Type:

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.

State

Ethan Winiarski - Operations Tech I

Date Mixed:

05-Apr-2024

Balance Serial #

1127510105

\_\_\_\_\_\_

Dillan Murphy - Operations Technician I

Date Passed:

08-Apr-2024

#### **Expiration Notes:**

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

#### **Purity Notes:**

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

#### **Certified Uncertainty Value Notes:**

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

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

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

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

#### **Manufacturing Notes:**

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

- 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
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  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.



Dec 12/17/24 **CERTIFIED REFERENCE MATERIAL** 

30019





**Certificate of Analysis** chromatographic plus

ISO/IEC 17025 Appredit

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V14697-to-147

#### 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%

#### 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

1μΙ



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

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

#### **Certified Uncertainty Value Notes:**

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

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

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

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

#### **Manufacturing Notes:**

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

- 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 of Analysis**

chromatographic plus

#### FOR LABORATORY USE ONLY-READ SDS PRIOR TO USE.

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

Catalog No.:

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: Expiration Date:**  2 mL

May 31, 2027

Pkg Amt:

> 1 mL

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	



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:

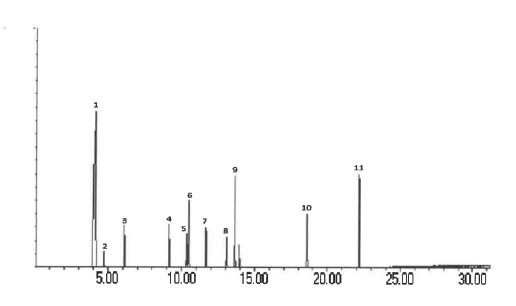
Det. Type:

MSD

Split Vent: 25.0 ml/min.

Inj. Vol

1µi



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

المنافع المنا

Date Passed:

17-May-2024



#### **Expiration Notes:**

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

#### **Purity Notes:**

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

#### **Certified Uncertainty Value Notes:**

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

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

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

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

#### **Manufacturing Notes:**

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

- 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 of Analysis**

chromatographic plus

#### FOR LABORATORY USE ONLY-READ SDS PRIOR TO USE.

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

Catalog No.:

30625

Lot No.: A0216280

**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:** 

March 31, 2026

10°C or colder Storage:

> 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	M-276	99%	504.0 μg/mL	+/- 17.5357
2	2-Hexanone-d5	4840-82-8	GH-242	99%	502.0 μg/mL	+/- 17.4661

<sup>\*</sup> Expanded Uncertainty displayed in same units as Grav. Conc.

Solvent:

Deuterium oxide

CAS# 7789-20-0 **Purity** 99%

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:

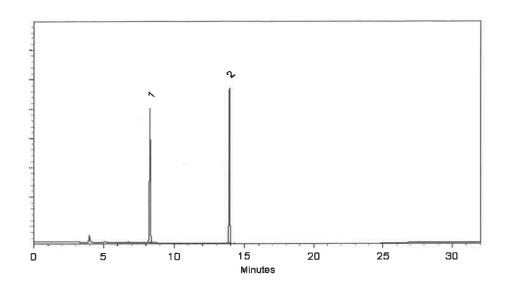
250°C

Det. Type:

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.

Richard Zimmerman - Operations Tech I

Date Mixed:

10-Sep-2024

Balance Serial #

B251644995

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Dillan Murphy - Operations Technician 1

Date Passed:

12-Sep-2024

#### **Expiration Notes:**

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

#### **Purity Notes:**

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

#### **Certified Uncertainty Value Notes:**

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

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

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

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

#### Manufacturing Notes:

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

- 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 of Analysis

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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.:

30625

Lot No.: A0216280

**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:** 

March 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	M-276	99%	504.0 μg/mL	+/- 17.5357
2	2-Hexanone-d5	4840-82-8	GH-242	99%	502.0 μg/mL	+/- 17.4661

<sup>\*</sup> 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:

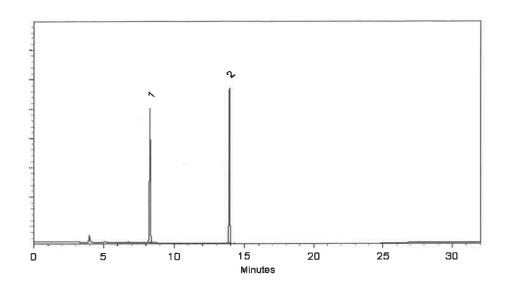
250°C

Det. Type:

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.

Richard Zimmerman - Operations Tech I

Date Mixed:

10-Sep-2024

Balance Serial #

B251644995

\_\_\_\_\_\_

Dillan Murphy - Operations Technician 1

Date Passed:

12-Sep-2024

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

## **Expiration Notes:**

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

## **Purity Notes:**

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

## **Certified Uncertainty Value Notes:**

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

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

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

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

## **Manufacturing Notes:**

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

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



CERTIFIED REFERENCE MATERIAL 30 mid











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## **Certificate of Analysis**

chromatographic plus

V14727 to

## 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

<sup>\*</sup> Expanded Uncertainty displayed in same units as Grav. Conc.

Solvent:

P&T Methanol

CAS# **Purity** 

67-56-1 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

## **Expiration Notes:**

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

## **Purity Notes:**

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

## **Certified Uncertainty Value Notes:**

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

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

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

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

## **Manufacturing Notes:**

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

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



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# **CERTIFIED REFERENCE MATERIAL**











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.

Lot No.: A0219189 30625 Catalog No.:

OLC 3.2 VOA Deuterated Monitoring Compounds Description:

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

10°C or colder > 1 mL Pkg Amt: Storage: May 31, 2026 2 mL Expiration Date: Container Size:

Ambient Ship:

## ALUES CERTIFIED

					Ī		
		Compound	CAS#	Lot#	Purity	Purity Grav. Conc. (weight/volume)	Expanded Uncertainty* (95% C.L.: K=2)
- 1	2-Butanone-d5		24313-50-6 HJ-279	HJ-279	%66	99% 504.0 µg/mL	+/- 17.5357
	2-Hexanone-d5		4840-82-8 I-500		%66	99% 504.0 µg/mL	+/- 17.5357

Deuterium oxide Solvent:

7789-20-0

CAS#

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

%66 Purity

**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.)

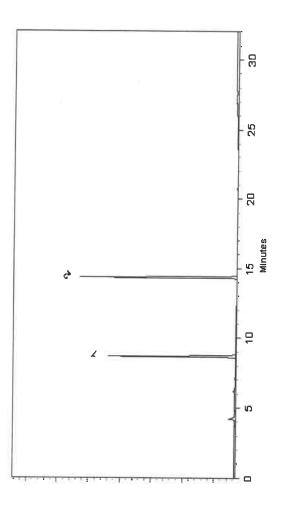
Inj. Temp: 200°C

Det. Temp: 250°C

Det. Type:

Split Vent: 40 ml/min

Inj. Vol



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.

Aaron Enyart - Operations Tech I 40 M

15-Nov-2024 Date Mixed:

Whatever the

Date Passed: Dillan Murphy - Operations Technician I

19-Nov-2024

B345965662 Balance Serial # Manufactured under Restek's ISO 9001:2015 Registered Quality System Certificate #FM 80397

Page 3 of 6

## 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.
- $\langle$ Compounds with a listed purity of less than 99% have been weight corrected to compensate for impurities and/or salts. 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:

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

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

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

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

## Manufacturing Notes:

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

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



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

Certificate of Analysis

chromatographic plus

www.restek.com

# **CERTIFIED REFERENCE MATERIAL**











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.

Lot No.: A0219189 30625 Catalog No.:

OLC 3.2 VOA Deuterated Monitoring Compounds Description:

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

10°C or colder > 1 mL Pkg Amt: Storage: May 31, 2026 2 mL Expiration Date: Container Size:

Ambient Ship:

## ALUES CERTIFIED

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		Compound	CAS#	Lot#	Purity	Purity Grav. Conc. (weight/volume)	Expanded Uncertainty* (95% C.L.: K=2)
- 1	2-Butanone-d5		24313-50-6 HJ-279	HJ-279	%66	99% 504.0 µg/mL	+/- 17.5357
	2-Hexanone-d5		4840-82-8 I-500		%66	99% 504.0 µg/mL	+/- 17.5357

Deuterium oxide Solvent:

7789-20-0

CAS#

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

%66 Purity

**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.)

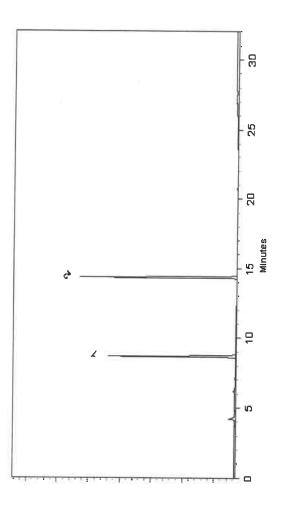
Inj. Temp: 200°C

Det. Temp: 250°C

Det. Type:

Split Vent: 40 ml/min

Inj. Vol



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.

Aaron Enyart - Operations Tech I 40 M

15-Nov-2024 Date Mixed:

Whatever the

Date Passed: Dillan Murphy - Operations Technician I

19-Nov-2024

B345965662 Balance Serial # Manufactured under Restek's ISO 9001:2015 Registered Quality System Certificate #FM 80397

Page 3 of 6

## 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.
- $\langle$ Compounds with a listed purity of less than 99% have been weight corrected to compensate for impurities and/or salts. 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:

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

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

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

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

## Manufacturing Notes:

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



https://Absolutestandards.com

CERTIFIED WEIGHT REPORT

www.absolutestandards.com

800-368-1131

Absolute Standards, Inc.

EC592-US Lot# Solvent(s): Methanol 5E-05 Balance Uncertainty 0.001 Flask Uncertainty 1,2,4-Trimethylbenzene 50.0 Refrigerate (4 °C) Weight(s) shown below were combined and diluted to (mL): 063022 063027 **6UTB** 2000 Recommended Storage: Nominal Concentration (µg/mL): Description: Expiration Date: NIST Test ID#: Part Number: Lot Number:

Formulated By:	Gabriel Helland	DATE
July 1	14 Herto	063022
Reviewed By:	Pedro L. Rentas	DATE

Compound	RM#	RM# Number	Conc (yg/mL) (%)	(%)	Purity	Weight(g)	Weight(g)	Weight(g) Conc (µg/mL) (+/-) (µg/mL) CAS#	+/-) (mg/mL)	CAS#	OSHA PEL (TWA)	1050
1. 1,2,4-Trimethylbenzene	475	475 WXBC9778V	2000	98.8	0.2	0.10129	0.10187	2011.5	8.4 95-63-6	95-63-6	N/A	orl-rat 5a/kg
												D. D.
Method GC6MSD-1: Column: Vocol (60m X 0.25mm ID X 1.5µm fi	ol (60m X (	25mm ID X	1.5µm film this	ckness).	Temp. $1 = 3$	35°C (10min.)	Temp. $2=2$	00°C (8.75 mir	1.). Rate = 4	C/min. Inie	a film thickness). Temp. 1 = 35°C (10min.). Temp. 2 = 200°C (8.75 min.). Rate = 4°C/min. Injector Temp = 200°C. Detector	Jetector
Temp. = 220°С. Analysis performed by Candice Warren.	by Candice	<b>W</b> апеп.			•					of the females	cor remine zoo ca	100000

Uncertainty (Solvent Safety Info. On Attached pg.)

SDS Information

Expanded

Actual

Actual

Target

Uncertainty

Purity

Nominal

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TIC: [BSB2]70475.D	Scan 2758 (45.670 min): [BSB2]70475.D
	105
45.69	1800000
4500000	16000000
4000000	1400000
3500000	1200000
3000000	1000000
2500000	800000 120
2000000	000000
1000000	400000
200000	200000 51
Time-> 0 15.00 20.00 25.00 30.00 35.00 40.00 45.00 50.00 55.00 60.00	m/z> 50 100 150 200 250 3383386 396 429 474

Printed: 7/1/2022, 3:42:19 PM

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 (4+) 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).

Methanol
ULTRA RESI-ANALYZED
For Purge and Trap Analysis





Material No.: 9077-02

Batch No.: 22L0562016

Manufactured Date: 2022-10-26 Expiration Date: 2025-10-25

Revision No.: 0

## Certificate of Analysis

Test	Specification	Result
Assay (CH3OH) (by GC, corrected for water)	≥ 99.9 %	100.0 %
Residue after Evaporation	= 33.3 % ≤ 1.0 ppm	0.2 ppm
Titrable Acid (µeq/g)	= ···	0.2 ppm 0.2
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

