

## Prep Standard - Chemical Standard Summary

Order ID : Q1383

Test : VOCMS Group3

Prepbatch ID :

Sequence ID/Qc Batch ID: vy022125,VY022625,

### Standard ID :

VP130432, VP131767, VP131783, VP132035, VP132036, VP132098, VP132613, VP132614, VP133036, VP133037, VP133100, VP133101, VP133102, VP133161, VP133162, VP133163,

### **Chemical ID :**

V13391,V13446,V13466,V13707,V14145,V14154,V14175,V14176,V14289,V14433,V14439,V14521,V14522,V14614,V14624,V14630,V14631,V14632,V14633,V14722,V14723,V14724,V14754,V14756,V14801,V14814,V14872,V14873,V14874,V14875,W3112,



Recipe ID 249	NAME 8260 Surrogate, 100PPM	<u>NO.</u> VP130432	Prep Date 09/20/2024	Expiration Date 02/28/2025	Prepared By Semsettin Yesilyurt	<u>ScaleID</u> None	<u>PipetteID</u> None	Supervised By Mahesh Dadoda 09/26/2024
FROM	0.10000ml of V13707 + 24.90000ml	of V14145 =	= Final Quanti	ty: 25.000 ml				

Recipe				<b>Expiration</b>	Prepared			Supervised By
ID	NAME	<u>NO.</u>	Prep Date	<u>Date</u>	<u>By</u>	<u>ScaleID</u>	PipettelD	Mahesh Dadoda
218	BFB, 25PPM	<u>VP131767</u>	11/22/2024	05/18/2025	Semsettin	None	None	
					Yesilyurt			11/27/2024
FROM	0.50000ml of V13391 + 49.50000ml	of V14154 =	= Final Quanti	ty: 50.000 ml				



<u>Recipe</u> <u>ID</u> 1917	NAME 8260 Internal standard 50 ppm	<u>NO.</u> VP131783	Prep Date 11/22/2024	Expiration Date 05/18/2025	Prepared By Semsettin Yesilyurt	<u>ScaleID</u> None	PipetteID None	Supervised By Mahesh Dadoda 11/27/2024
<u>FROM</u>	0.02000ml of V14289 + 9.98000ml of	f V14154 =	Final Quantity	/: 10.000 ml				
<u>Recipe</u>				Expiration	<u>Prepared</u>			Supervised By

<b>Recipe</b>				Expiration	<b>Prepared</b>			Supervised By		
<u>ID</u>	NAME	<u>NO.</u>	Prep Date	<u>Date</u>	<u>By</u>	<u>ScaleID</u>	PipetteID	Mahesh Dadoda		
1810	8260 Working Std(2-CVE)-800ppm	<u>VP132035</u>	12/10/2024	06/10/2025	Semsettin Yesilyurt	None	None	12/12/2024		
FROM	FROM         1.00000ml of V14630 + 1.00000ml of V14631 + 1.00000ml of V14632 + 1.00000ml of V14633 + 46.00000ml of V14614 = Final           Quantity: 50.000 ml									
1										



# VOC STANDARD PREPARATION LOG

<u>Recipe</u> <u>ID</u> 1811	NAME 8260 Working Std(2-CVE)-500ppm	<u>NO.</u> VP132036	Prep Date 12/10/2024	Expiration Date 06/10/2025	Prepared By Semsettin Yesilyurt	<u>ScaleID</u> None	<u>PipetteID</u> None	Supervised By Mahesh Dadoda 12/12/2024
FROM	7.50000ml of V14614 + 12.50000ml of	of VP13203	5 = Final Qua	intity: 20.000 n				

<u>Recipe</u>				<b>Expiration</b>	Prepared			Supervised By
<u>ID</u>	NAME	<u>NO.</u>	Prep Date	<u>Date</u>	<u>By</u>	<u>ScaleID</u>	PipettelD	Mahesh Dadoda
252		<u>VP132098</u>	12/12/2024	06/10/2025	Semsettin	None	None	
	source, 100PPM				Yesilyurt			12/19/2024
FROM	1.25000ml of V13466 + 23.75000ml of	of V14614 =	= Final Quanti	ty: 25.000 ml				

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# VOC STANDARD PREPARATION LOG

Recipe ID 257	NAME 8260 Calibration Working STD Mix-First source, 160PPM	<u>NO.</u> VP132613	Prep Date 01/20/2025	Expiration Date 02/28/2025	Prepared By Semsettin Yesilyurt	<u>ScaleID</u> None	<u>PipetteID</u> None	Supervised By Mahesh Dadoda 01/29/2025
FROM	0.40000ml of V13446 + 1.00000ml of 1.00000ml of V14521 + 1.00000ml of 1.00000ml of V14801 + 1.00000ml of Quantity: 25.000 ml	f V14522 +	1.00000ml of '	V14722 + 1.000	00ml of V1475	4 + 1.00000ml d	of V14756 +	Final

<u>Recipe</u>				Expiration	<b>Prepared</b>			Supervised By
ID	NAME	<u>NO.</u>	Prep Date	<u>Date</u>	<u>By</u>	<u>ScaleID</u>	<u>PipetteID</u>	Mahesh Dadoda
244	8260 Calibration Working STD	<u>VP132614</u>	01/20/2025	02/28/2025	Semsettin	None	None	
	Mix-First source, 100PPM				Yesilyurt			01/29/2025
FROM	5.62500ml of V14624 + 9.37500ml of	VP132613	= Final Quar	ntity: 15.000 ml				

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Recipe ID 51	NAME 8260 Working STD (Acrolein) -first source, 800PPM	<u>NO.</u> VP133036	Prep Date 02/14/2025	Expiration Date 03/13/2025	Prepared By Semsettin Yesilyurt	<u>ScaleID</u> None	<u>PipetteID</u> None	Supervised By Mahesh Dadoda 02/18/2025
FROM	1.00000ml of V14872 + 1.00000ml o Quantity: 25.000 ml	f V14873 + <sup>-</sup>	1.00000ml of '	V14874 + 1.00(	000ml of V1487	5 + 21.00000ml	of V14624 =	Final

Recipe				Expiration	Prepared			Supervised By
ID	NAME	<u>NO.</u>	Prep Date	<u>Date</u>	<u>By</u>	<u>ScaleID</u>	PipetteID	Mahesh Dadoda
56		<u>VP133037</u>	02/14/2025	03/13/2025	Semsettin	None	None	
	source, 500PPM				Yesilyurt			02/18/2025
FROM	5.62500ml of V14624 + 9.37500ml of	FVP133036	= Final Quar	ntity: 15.000 ml				



Recipe ID 732	NAME BFB TUNE CHECK - SOIL	<u>NO.</u> VP133100	Prep Date 02/21/2025		<u>Prepared</u> <u>By</u> Romaben Patel	<u>ScaleID</u> None	<u>PipetteID</u> None	Supervised By Mahesh Dadoda 02/28/2025
FROM	4.99800ml of W3112 + 0.00200ml of	L VP131767	= Final Quant	Lity: 5.000 ml	<u> </u>			

Recipe ID 773	NAME 50 PPB CCC, 8260-SOIL	<u>NO.</u> VP133101	Prep Date 02/21/2025	Prepared By Romaben Patel	<u>ScaleID</u> None	PipettelD None	Supervised By Mahesh Dadoda 02/28/2025
FROM	4.98000ml of W3112 + 0.00250ml of + 0.00250ml of VP133037 + 0.00500				P132098 + 0.00	250ml of VP13	32614



Recipe ID 773	NAME 50 PPB CCC, 8260-SOIL	<u>NO.</u> VP133102	Prep Date 02/21/2025	Prepared By Romaben Patel	<u>ScaleID</u> None	<u>PipetteID</u> None	Supervised By Mahesh Dadoda 02/28/2025
FROM	4.98000ml of W3112 + 0.00250ml of + 0.00250ml of VP133037 + 0.00500				P132098 + 0.00	250ml of VP13	32614

<u>Recipe</u>				Expiration	Prepared			Supervised By
<u>ID</u>	NAME	<u>NO.</u>	Prep Date	<u>Date</u>	<u>By</u>	<u>ScaleID</u>	PipetteID	Mahesh Dadoda
732	BFB TUNE CHECK - SOIL	<u>VP133161</u>	02/26/2025	02/27/2025	Romaben Patel	None	None	
								02/28/2025
FROM	4.99800ml of W3112 + 0.00200ml of	VP131767	= Final Quant	tity: 5.000 ml				



Recipe ID 773	NAME 50 PPB CCC, 8260-SOIL	<u>NO.</u> VP133162	Prep Date 02/26/2025	Prepared By Romaben Patel	<u>ScaleID</u> None	<u>PipetteID</u> None	Supervised By Mahesh Dadoda 02/28/2025
FROM	4.98000ml of W3112 + 0.00250ml of + 0.00250ml of VP133037 + 0.00500				P132098 + 0.00	250ml of VP13	32614

Recipe ID 773	<u>NAME</u> 50 PPB CCC, 8260-SOIL	<u>NO.</u> VP133163	Prep Date 02/26/2025	<u>Prepared</u> <u>By</u> Romaben Patel	<u>ScaleID</u> None	PipetteID None	<u>Supervised By</u> Mahesh Dadoda 02/28/2025
FROM	4.98000ml of W3112 + 0.00250ml of + 0.00250ml of VP133037 + 0.00500				9132098 + 0.00	250ml of VP13	32614



Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Restek	30067 / BFB tuneing solution	A0191805	11/22/2025	11/22/2024 / SAM	01/13/2023 / SAM	V13391
Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Restek	30470 / VOA Stock Solution, tert-butanol std, 1mL, P&TM	A0181905	02/28/2025	01/10/2025 / SAM	01/23/2023 / SAM	V13446
Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Restek	30225 / VOA Mix, bromochloromethane, 2000ug/mL, P&TM, 1mL/ampul	A0193071	06/12/2025	12/12/2024 / SAM	01/27/2023 / SAM	V13466
Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Restek	555582 / Custom Mixture, 8260 A/B Surrogate Mix [CS 5179-2]	A0196865	06/10/2025	06/10/2024 / SAM	04/12/2023 / SAM	V13707
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	02/28/2025	08/29/2024 / SAM	02/06/2024 / SAM	V14145
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



## CHEMICAL RECEIPT LOG BOOK

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Absolute Standards, Inc.	95317 / Universal VOA Mega Mix (Min order = 5)	021624	07/10/2025	01/10/2025 / SAM	02/20/2024 / SAM	V14175
Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Absolute Standards, Inc.	95317 / Universal VOA Mega Mix (Min order = 5)	021624	07/10/2025	01/10/2025 / SAM	02/20/2024 / SAM	V14176
Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Restek	555581 / Custom Standard, 8260 Internal Std [CS 5179-1]	A0210184	11/22/2025	11/22/2024 / SAM	04/15/2024 / SAM	V14289
Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Restek	30489 / VOA Mix, 8260B Acetates Mix, P&TM, 1mL	A0209618	07/10/2025	01/10/2025 / SAM	08/15/2024 / SAM	V14433
Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Restek	30489 / VOA Mix, 8260B Acetates Mix, P&TM, 1mL	A0209618	07/10/2025	01/10/2025 / SAM	08/15/2024 / SAM	V14439
Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Absolute Standards, Inc.	95319 / Revised Additions Mix (Min = 5)	091724	07/10/2025	01/10/2025 / SAM	09/18/2024 / SAM	V14521



## CHEMICAL RECEIPT LOG BOOK

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Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Absolute Standards, Inc.	95319 / Revised Additions Mix (Min = 5)	091724	07/10/2025	01/10/2025 / SAM	09/18/2024 / SAM	V14522
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	06/10/2025	12/10/2024 / SAM	11/26/2024 / SAM	V14614
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	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Absolute Standards, Inc.	/ 2-Chloroethyl vinyl ether	120524	06/10/2025	12/10/2024 / SAM	12/06/2024 / SAM	V14630
Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Absolute Standards, Inc.	/ 2-Chloroethyl vinyl ether	120524	06/10/2025	12/10/2024 / SAM	12/06/2024 / SAM	V14631
Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Absolute Standards, Inc.	/ 2-Chloroethyl vinyl ether	120524	06/10/2025	12/10/2024 / SAM	12/06/2024 / SAM	V14632



Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Absolute Standards, Inc.	/ 2-Chloroethyl vinyl ether	120524	06/10/2025	12/10/2024 / SAM	12/06/2024 / SAM	V14633
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	07/10/2025	01/10/2025 / SAM	12/17/2024 / SAM	V14722
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	07/10/2025	01/10/2025 / SAM	12/17/2024 / SAM	V14723
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	07/10/2025	01/10/2025 / SAM	12/17/2024 / SAM	V14724
Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Restek	30042 / VOA Mix,500 series method 502.2 Calibration Std #1 gases, 2000uq/ml, PTM, 1ml	A0216826	05/31/2031	01/10/2025 / SAM	12/17/2024 / SAM	V14754
	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Supplier			Date			



Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Restek	555408 / Custom Standard, Vinyl Acetate Standard w/ Grav [CS 5066-6] TWO SEPARATE LOTS	A0220563	06/30/2026	01/10/2025 / SAM	01/08/2025 / SAM	V14801
Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Restek	555408 / Custom Standard, Vinyl Acetate Standard w/ Grav [CS 5066-6] TWO SEPARATE LOTS	A0220471	07/10/2025	01/10/2025 / SAM	01/08/2025 / SAM	V14814
Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Absolute Standards, Inc.	91980 / Acrolin Std (Min = 5)	021325	03/13/2025	02/14/2025 / SAM	02/14/2025 / SAM	V14872
Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Absolute Standards, Inc.	91980 / Acrolin Std (Min = 5)	021325	03/13/2025	02/14/2025 / SAM	02/14/2025 / SAM	V14873
Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Absolute Standards, Inc.	91980 / Acrolin Std (Min = 5)	021325	03/13/2025	02/14/2025 / SAM	02/14/2025 / SAM	V14874
Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Absolute	91980 / Acrolin Std (Min =	021325	03/13/2025	02/14/2025 /	02/14/2025 /	V14875



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

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

Methanol ULTRA RESI-ANALYZED For Purge and Trap Analysis





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)	≤ <b>0.10</b>	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

fermetrikel.

Ken Koehnlein Sr. Manager, Quality Assurance 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	≤ 1.0 ppm	0.2 ppm
Titrable Acid (µeq/g)	≤ 0.3	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

James Techie

Jamie Ethier Vice President Global Quality

Absolute Standards, Inc. 800-368-1131 www.absolutestandards.com				G	Sertified I	Certified Reference Material CRM テッ・イ	Material	CRM				ANAB I: AR-153 https://Ab	ANAB ISO 17034 Accredited AR-1539 Certificate Number https://Absolutestandards.com
CERTIFIED WEIGHT REPORT Part Number: Lot Number: Description:	ber: ber: tion:	91980 021325 Acrolein			2	Vater 07	2 14 Lott	t x	Formulated By:	ind By:	Anthony Markoney	03	1325 DATE
Expiration Date: Recommended Storage: Nominal Concentration (µg/mL):	ate: age: nL):	031325 Refrigerate (4 °C) 5000	(4 °C)	a L		トロナフ	T co	1.0		Je .	4 Herto	20	325
NIST Test ID#: 6UTB Weight(s) shown below were combined and diluted to (mL): Lot <b>Compound</b> Rw# Number	ID#: ned and dilu RM#	6U1B Jted to (mL): Lot Number	10.0 Nominal Conc (ug/mL)		<ul> <li>5E-05 Balance Uncertainty</li> <li>0.001 Flask Uncertainty</li> <li>Purity Uncertainty</li> <li>(%) Purity</li> </ul>	ny Target Weight(g)	Actual Weight(g)	Actual Conc (µg/ml.	Expanded By Expanded Actual Uncertainty ( Conc (ug/mt.) (+/-) (ug/mt.)	ଳା	<ul> <li>Pedro L. Herntas</li> <li>SDS information</li> <li>(Solvent Safety Info. On Attached pg.)</li> <li>CAS# OSHA PEL (TWA) LDE</li> </ul>		DATE
1.         5         103755V10F         5000         97         0.5         0.05166         0.05178         5011.8         52.6         107-02-8         0.1 ppm         c           Method: GC0NSD-1. Detector: Mass Selective Detector (Sean mode). Columni Vocol (60m X 0.25mm ID X 1.5mm flln thickness). Over Profile: Temp. 1 = 35°C (Time 1 = 10min). Temp. 2=20°C (Time 2 = 8.75 min)	5 ss Selective De	103755V10F etector (Scan mode	5000 ie). Columni: Voc	97 201 (60m X ()	0.5 1.25mm ID X 1.	0.05166 Sym film thickness	0.05178	5011.8 e: Temp. 1 = 3	52.6 35°C (Time 1 =	107-02-8 10min.), Temp.	0.1 ppm 2=200°C (Time 2 = 8.7	orl-rat 46mg/kg	<u> </u>
Long term storage is not recommended. Please contact our technical department if further information is required. To TIC: IBSB2179005.D	Inded. Please contact our techn TIC: [BSB2]79005.D	ract our technical	department if furt	ther informat	ion is required.	internet in Annapas		Scan	332 (8.927	Scan 232 (8.927 min): [BSB2]79005.D	179005.D	(roots the	
Abundance						Abundance	27	3					
<b>250000</b> <sup>8.93</sup>		1	2			6000	6						
200000		/	0//			50000	6	56	(0				
150000						40000	6						
						30000	_						
100000						2000	<u> </u>						
50000						10000		37					
Time>0 10.00 15.00 20.00 25.00 30.00 35.00 40.00 45.00 50.00 55.00	25.00 30.	00 35.00 4	0.00 45.00	50.00	55.00 60.0(	0 <z )(<="" td="" ш=""><td>20 30</td><td>44 40 50 (</td><td>65 75 8 60 70 80</td><td>öo</td><td>5 119 150 150 160 170 100 110 120 130 140 150 160 170</td><td>158 169 0 150 160 170</td><td></td></z>	20 30	44 40 50 (	65 75 8 60 70 80	öo	5 119 150 150 160 170 100 110 120 130 140 150 160 170	158 169 0 150 160 170	
	The certified v Standards are Standards are All Standards, Uncertainty R NIST Technic	<ul> <li>The certified value is the concentration calculated from gravimetric Standards are prepared gravimetrically using balances that are call standards are certified (++) 0.5% of the stated value, unless otherwis All Standards, after topening annule, should be stored with caps dg Uncertainty Reference: Taylor, B.N. and Kuyat, C.E., "Guidelines NIST Technical Note 1297, U.S. Government Printing Office, Wash</li> </ul>	mtration calcula metrically using 1% of the stated mpule, should be r, B.N. and Kuya S. Government F	ted from gri balances tha value, unles s stored with th, C.E., "Gi Yrinting Offi	avimetric and it are calibrate s otherwise sta o caps tight and utdelines for E- ce, Washingto	<ul> <li>The certified value is the concentration calculated from gravimetric and volumetric measurements unless otherwise stated.</li> <li>Standards are prepared gravimetrically using balances that are calibrated with weights traceable to NIST (see above).</li> <li>Standards after openling annule, should be stored with caps tight and under appropriate laboratory conditions.</li> <li>Uncertainty Reference: Taylor, B.N. and Kuyat, C.E., "Guidelines for Evaluation and Expressing the Uncertainty of NIST Measurement Result," NIST Technical Note 1297, U.S. Government Printing Office, Washington, DC, (1994).</li> </ul>	urements unless aceable to NIS late laboratory pressing the Ur	s otherwise st T (see above). conditions. ucertainty of 1	ated. NIST Measure	ement Result,"			

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Part # 91980 Lot # 021325

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ection VIII. EXPOSURE CON	CONTROLS/PERSONAL PROTECT	NO	
recautions for safe handling torage Conditions	Use ventilation Keep away from s	Avoid inhalation of vapour or mist. ources of ignition. No smoking. Prevent the build up of electr dry and well-ventilated place. Containers which are opened m e.	
BONA DNILUANAH .IIV noitoe	AD STORAGE		
igi Precautions Pr Pr	ignition. Vapours accumulate to form exp Prevent further leakage or spillage if safe		
ection VI. ACCIDENTAL REL	RELEASE MEASURES		
uitable extinguishing media rotective equipment for fire lazardous Decomposition product	Wear self contained breathing app	foam, dry chemical or carbon dioxide. varatus for fire fighting if necessary.	
Section V. FIREFIGHTING ME	SARUSAAM		
eneral advice Contact W	Consult a physician. Show this safety dat If inhaled, move person into fresh air. If n Wash with soap and water. Consult a ph	a sheet to the doctor in attendance.Move to safe area. 5 breathing, give artificial respiration. Consult a physician. /sician. at least 15 minutes and consult a physician.	
USAENDED USE: REFERENC USAEM IV. FIRST AID MEASU			
Section III - Composition Components (Specific Chemics Vater	mical Identity; Common المهود))	CAS#: 7732-18-5	(lɕnoiîqo) % 79 <
9302,332 If on skin, we Signal Word:	entilated area n, wash with soap and water ford: DANGER	H315 Causes skin and eye irritatic P280 Use gloves, eye protection/f P305,351,338 If in eyes, remove contacts,	
	GHS Classification in acco	rdance with 29 CFR 1910 (OSHA HCS)	
section II - Hazards Identifica	ification		
A Anufacturer's Name A Address 4.	<b>W II CAL STANDARD DISSOLVED IN W</b> ABSOLUTE STANDARDS INC 44 Rossotto Dr. Hamden CT, 06514	ATER Emergency Telephone USA & CANADA Emergency Telephone International Date Prepared\Pevised	1-362-535-5053 1-352-323-3500 1-362-535-5053
section I Product and Compa	noitsoititnebl ynsqm		
	Safety Data Sheet (SDS)	GHS/OSHB Compliant	
Absolute Standards Inc.		smden, CT 06518-0585 PO Box 5585	7162-182-203-2972 723-203-2922

Melting Point

Specific Gravity (H2O = 1)

100°C

mqq 008 :AWT

Personal protective equipment Respiratory protection Handle with gloves. Gloves must be inspected prior to use. Avoid contact with skin, eyes and clothing. Wash hands thoroughly after handling the product.

F

Eye protection.

Vapor Pressure (mm Hg)

Section IX - PHYSICAL/CHEMICAL CHARACTERISTICS

CAS#: 7732-18-5

Boiling Point

Vater

Eye irritation Causes skin irritation. LD50 Dermal - Guinea pig ΨN ΑN LC50 Inhalation - Rat LD50 Oral - Rat ΑN Section XI. TOXICOLOGICAL INFORMATION Hazardous decomposition products - No data available biove of elensieM ΑN Conditions to avoid ΨN

ΨN Possibility of hazardous reactions Stable under recommended storage conditions. Chemical stability

### Section X. STABILITY AND REACTIVITY

CLEAR, COLORLESS LIQUID WITH SLIGHT CHEMICAL ODOR. Appearance and Odor

			Completely miscible	Solubility in Water
AN	(F = etate = 1)	ΨN		
	Evaporation rate			<pre>(t = AIA) (tisned rods)</pre>
2.0		WNI.		

aldiosim vlatalomo? ateW ni vtilidulo2			
	ΑN	(Butyl Acetate = 1)	ΨN
(t = AIA) viened rodsv		Evaporation rate	
	AN		0°C

Section XII. ECOLOGICAL INFORMATION

**NOITAMROANI TROGENART .VIX noitoe2** Dispose with normal Laboratory Solvent Waste.

Proper shipping name: Water

Not dangerous goods

(SU) TOA

EC60

09DT

Proper shipping name: Water Not dangerous goods ATAI

## Section XV. REGULATORY INFORMATION

Section XIII. DISPOSAL CONSIDERATIONS

ΨN ΑN

ASARA 302: No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

### Section XVI. Misc. INFORMATION

you have any questions, please call Technical Service at 1-203-281-2917 for assistance. 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 Material Safety Data Sheet. If including eye and face guards and respirators must be used to avoid contact with material or breathing chemical vapors/funces. Exposure to this product may have serious adverse health effects. 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, see,) 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 see, and Celobing. The user is responsible for determining the precautions and dangers of this chemical for his or her particular application. Depending on usage, protective clobing trained in chemical intended and the precautions and dangers of this chemical for his or her particular application. Depending on usage, protective clobing

Absolute Standards, Inc. 800-368-1131 www.absolutestandards.com				G	Sertified I	Certified Reference Material CRM テッ・イ	Material	CRM				ANAB I: AR-153 https://Ab	ANAB ISO 17034 Accredited AR-1539 Certificate Number https://Absolutestandards.com
CERTIFIED WEIGHT REPORT Part Number: Lot Number: Description:	ber: ber: tion:	91980 021325 Acrolein			2	Vater 07	2 14 Lott	t x	Formulated By:	ind By:	Anthony Markoney	03	1325 DATE
Expiration Date: Recommended Storage: Nominal Concentration (µg/mL):	ate: age: nL):	031325 Refrigerate (4 °C) 5000	(4 °C)	a L E		トロナフ	T co	1.0		Je .	4 Herto	20	325
NIST Test ID#: 6UTB Weight(s) shown below were combined and diluted to (mL): Lot <b>Compound</b> Rw# Number	ID#: ned and dilu RM#	6U1B Jted to (mL): Lot Number	10.0 Nominal Conc (ug/mL)		<ul> <li>5E-05 Balance Uncertainty</li> <li>0.001 Flask Uncertainty</li> <li>Purity Uncertainty</li> <li>(%) Purity</li> </ul>	ny Target Weight(g)	Actual Weight(g)	Actual Conc (µg/ml.	Expanded By Expanded Actual Uncertainty ( Conc (ug/mt.) (+/-) (ug/mt.)	ଳା	<ul> <li>Pedro L. Herntas</li> <li>SDS information</li> <li>(Solvent Safety Info. On Attached pg.)</li> <li>CAS# OSHA PEL (TWA) LDE</li> </ul>		DATE
1.         5         103755V10F         5000         97         0.5         0.05166         0.05178         5011.8         52.6         107-02-8         0.1 ppm         c           Method: GC0NSD-1. Detector: Mass Selective Detector (Sean mode). Columni Vocol (60m X 0.25mm ID X 1.5mm flln thickness). Over Profile: Temp. 1 = 35°C (Time 1 = 10min). Temp. 2=20°C (Time 2 = 8.75 min)	5 ss Selective De	103755V10F etector (Scan mode	5000 ie). Columni: Voc	97 201 (60m X ()	0.5 1.25mm ID X 1.	0.05166 Sym film thickness	0.05178	5011.8 e: Temp. 1 = 3	52.6 35°C (Time 1 =	107-02-8 10min.), Temp.	0.1 ppm 2=200°C (Time 2 = 8.7	orl-rat 46mg/kg	<u> </u>
Long term storage is not recommended. Please contact our technical department if further information is required. To TIC: IBSB2179005.D	Inded. Please contact our techn TIC: [BSB2]79005.D	ract our technical	department if furt	ther informat	ion is required.	internet in Annapas		Scan	332 (8.927	Scan 232 (8.927 min): [BSB2]79005.D	179005.D	(roots the	
Abundance						Abundance	27	3					
<b>250000</b> <sup>8.93</sup>		1	2			6000	6						
200000		/	0//			50000	6	56	(0				
150000						40000	6						
						30000	_						
100000						2000	<u> </u>						
50000						10000		37					
Time>0 10.00 15.00 20.00 25.00 30.00 35.00 40.00 45.00 50.00 55.00	25.00 30.	00 35.00 4	0.00 45.00	50.00	55.00 60.0(	0 <z )(<="" td="" ш=""><td>20 30</td><td>44 40 50 (</td><td>65 75 8 60 70 80</td><td>öo</td><td>5 119 150 150 160 170 150 160 170</td><td>158 169 0 150 160 170</td><td></td></z>	20 30	44 40 50 (	65 75 8 60 70 80	öo	5 119 150 150 160 170 150 160 170	158 169 0 150 160 170	
	The certified v Standards are Standards are All Standards, Uncertainty R NIST Technic	<ul> <li>The certified value is the concentration calculated from gravimetric Standards are prepared gravimetrically using balances that are call standards are certified (++) 0.5% of the stated value, unless otherwis All Standards, after topening annule, should be stored with caps dg Uncertainty Reference: Taylor, B.N. and Kuyat, C.E., "Guidelines NIST Technical Note 1297, U.S. Government Printing Office, Wash</li> </ul>	mtration calcula metrically using 1% of the stated mpule, should be r, B.N. and Kuya S. Government F	ted from gri balances tha value, unles s stored with th, C.E., "Gi Yrinting Offi	avimetric and it are calibrate s otherwise sta o caps tight and utdelines for E- ce, Washingto	<ul> <li>The certified value is the concentration calculated from gravimetric and volumetric measurements unless otherwise stated.</li> <li>Standards are prepared gravimetrically using balances that are calibrated with weights traceable to NIST (see above).</li> <li>Standards after openling annule, should be stored with caps tight and under appropriate laboratory conditions.</li> <li>Uncertainty Reference: Taylor, B.N. and Kuyat, C.E., "Guidelines for Evaluation and Expressing the Uncertainty of NIST Measurement Result," NIST Technical Note 1297, U.S. Government Printing Office, Washington, DC, (1994).</li> </ul>	urements unless aceable to NIS late laboratory pressing the Ur	s otherwise st T (see above). conditions. ucertainty of 1	ated. NIST Measure	ement Result,"			

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Part # 91980 Lot # 021325

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ection VIII. EXPOSURE CON	CONTROLS/PERSONAL PROTECT	NO	
recautions for safe handling torage Conditions	Use ventilation Keep away from s	Avoid inhalation of vapour or mist. ources of ignition. No smoking. Prevent the build up of electr dry and well-ventilated place. Containers which are opened m e.	
BONA DNILUANAH .IIV noitoe	AD STORAGE		
igi Precautions Pr Pr	ignition. Vapours accumulate to form exp Prevent further leakage or spillage if safe		
ection VI. ACCIDENTAL REL	RELEASE MEASURES		
uitable extinguishing media rotective equipment for fire lazardous Decomposition product	Wear self contained breathing app	foam, dry chemical or carbon dioxide. varatus for fire fighting if necessary.	
Section V. FIREFIGHTING ME	SARUSAAM		
eneral advice Contact W	Consult a physician. Show this safety dat If inhaled, move person into fresh air. If n Wash with soap and water. Consult a ph	a sheet to the doctor in attendance.Move to safe area. 5 breathing, give artificial respiration. Consult a physician. /sician. at least 15 minutes and consult a physician.	
USAENDED USE: REFERENC USAEM IV. FIRST AID MEASU			
Section III - Composition Components (Specific Chemics Vater	mical Identity; Common المهود))	CAS#: 7732-18-5	(lɕnoiîqo) % 79 <
9302,332 If on skin, we Signal Word:	entilated area n, wash with soap and water ford: DANGER	H315 Causes skin and eye irritatic P280 Use gloves, eye protection/f P305,351,338 If in eyes, remove contacts,	
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section II - Hazards Identifica	ification		
A Anufacturer's Name A Address 4.	<b>W II CAL STANDARD DISSOLVED IN W</b> ABSOLUTE STANDARDS INC 44 Rossotto Dr. Hamden CT, 06514	ATER Emergency Telephone USA & CANADA Emergency Telephone International Date Prepared\Pevised	1-362-535-5053 1-352-323-3500 1-362-535-5053
section I Product and Compa	noitsoititnebl ynsqm		
	Safety Data Sheet (SDS)	GHS/OSHB Compliant	
Absolute Standards Inc.		smden, CT 06518-0585 PO Box 5585	7162-182-203-2972 723-203-2922

Melting Point

Specific Gravity (H2O = 1)

100°C

mqq 008 :AWT

Personal protective equipment Respiratory protection Handle with gloves. Gloves must be inspected prior to use. Avoid contact with skin, eyes and clothing. Wash hands thoroughly after handling the product.

F

Eye protection.

Vapor Pressure (mm Hg)

Section IX - PHYSICAL/CHEMICAL CHARACTERISTICS

CAS#: 7732-18-5

Boiling Point

Vater

Eye irritation Causes skin irritation. LD50 Dermal - Guinea pig ΨN ΑN LC50 Inhalation - Rat LD50 Oral - Rat ΑN Section XI. TOXICOLOGICAL INFORMATION Hazardous decomposition products - No data available biove of elensieM ΑN Conditions to avoid ΨN

ΨN Possibility of hazardous reactions Stable under recommended storage conditions. Chemical stability

### Section X. STABILITY AND REACTIVITY

CLEAR, COLORLESS LIQUID WITH SLIGHT CHEMICAL ODOR. Appearance and Odor

			Completely miscible	Solubility in Water
AN	(F = etate = 1)	ΨN		
	Evaporation rate			<pre>(t = AIA) (tisned rods)</pre>
2.0		WNI.		

aldiosim vlatalomo? ateW ni vtilidulo2			
	ΑN	(Butyl Acetate = 1)	ΨN
(t = AIA) viened rodsv		Evaporation rate	
	AN		0°C

Section XII. ECOLOGICAL INFORMATION

**NOITAMROANI TROGENART .VIX noitoe2** Dispose with normal Laboratory Solvent Waste.

Proper shipping name: Water

Not dangerous goods

(SU) TOA

EC60

09DT

Proper shipping name: Water Not dangerous goods ATAI

## Section XV. REGULATORY INFORMATION

Section XIII. DISPOSAL CONSIDERATIONS

ΨN ΑN

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### Section XVI. Misc. INFORMATION

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Absolute Standards, Inc. 800-368-1131 www.absolutestandards.com				J	Sertified I	Certified Reference Material CRM テッ・イ	Material	CRM				ANAB I: AR-153 https://Ab	ANAB ISO 17034 Accredited AR-1539 Certificate Number https://Absolutestandards.com
CERTIFIED WEIGHT REPORT Part Number: Lot Number: Description:	ber: ber: tion:	91980 021325 Acrolein			2	Vater 07	2 14 Lott	t x	Formulated By:	ind By:	Anthony Markoney	03	1325 DATE
Expiration Date: Recommended Storage: Nominal Concentration (µg/mL):	ate: age: nL):	031325 Refrigerate (4 °C) 5000	(4 °C)	a L E		トロナフ	T co	1.0		Je .	4 Herto	20	325
NIST Test ID#: 6UTB Weight(s) shown below were combined and diluted to (mL): Lot <b>Compound</b> Rw# Number	ID#: ned and dilu RM#	6U1B Jted to (mL): Lot Number	10.0 Nominal Conc (ug/mL)		<ul> <li>5E-05 Balance Uncertainty</li> <li>0.001 Flask Uncertainty</li> <li>Purity Uncertainty</li> <li>(%) Purity</li> </ul>	ny Target Weight(g)	Actual Weight(g)	Actual Conc (µg/ml.	Expanded By Expanded Actual Uncertainty ( Conc (ug/mt.) (+/-) (ug/mt.)	ଳା	<ul> <li>Pedro L. Herntas</li> <li>SDS information</li> <li>(Solvent Safety Info. On Attached pg.)</li> <li>CAS# OSHA PEL (TWA) LDE</li> </ul>		DATE
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Abundance						Abundance	27	3					
<b>250000</b> 8.93		1	2			6000	6						
200000		/	0//			50000	6	56	(0				
150000						40000	6						
						30000	_						
100000						2000	<u> </u>						
50000						10000		37					
Time>0 10.00 15.00 20.00 25.00 30.00 35.00 40.00 45.00 50.00 55.00	25.00 30.	00 35.00 4	0.00 45.00	50.00	55.00 60.0(	0 <z )(<="" td="" ш=""><td>20 30</td><td>44 40 50 (</td><td>65 75 8 60 70 80</td><td>öo</td><td>5 119 150 150 160 170 150 160 170</td><td>158 169 0 150 160 170</td><td></td></z>	20 30	44 40 50 (	65 75 8 60 70 80	öo	5 119 150 150 160 170 150 160 170	158 169 0 150 160 170	
	The certified v Standards are Standards are All Standards, Uncertainty R NIST Technic	<ul> <li>The certified value is the concentration calculated from gravimetric Standards are prepared gravimetrically using balances that are call standards are certified (++) 0.5% of the stated value, unless otherwis All Standards, after topening annule, should be stored with caps dg Uncertainty Reference: Taylor, B.N. and Kuyat, C.E., "Guidelines NIST Technical Note 1297, U.S. Government Printing Office, Wash</li> </ul>	mtration calcula metrically using 1% of the stated mpule, should be r, B.N. and Kuys S. Government F	ted from gri balances tha value, unles s stored with th, C.E., "Gi Yrinting Offi	avimetric and it are calibrate s otherwise sta o caps tight and uidelines for E- ce, Washingto	<ul> <li>The certified value is the concentration calculated from gravimetric and volumetric measurements unless otherwise stated.</li> <li>Standards are prepared gravimetrically using balances that are calibrated with weights traceable to NIST (see above).</li> <li>Standards after openling annule, should be stored with caps tight and under appropriate laboratory conditions.</li> <li>Uncertainty Reference: Taylor, B.N. and Kuyat, C.E., "Guidelines for Evaluation and Expressing the Uncertainty of NIST Measurement Result," NIST Technical Note 1297, U.S. Government Printing Office, Washington, DC, (1994).</li> </ul>	urements unless aceable to NIS late laboratory pressing the Ur	s otherwise st T (see above). conditions. ucertainty of 1	ated. NIST Measure	ement Result,"			

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Part # 91980 Lot # 021325

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ection VIII. EXPOSURE CON	CONTROLS/PERSONAL PROTECT	NO	
recautions for safe handling torage Conditions	Use ventilation Keep away from s	Avoid inhalation of vapour or mist. ources of ignition. No smoking. Prevent the build up of electr dry and well-ventilated place. Containers which are opened m e.	
BONA DNILUANAH .IIV noitoe	AD STORAGE		
igi Precautions Pr Pr	ignition. Vapours accumulate to form exp Prevent further leakage or spillage if safe		
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USAENDED USE: REFERENC USAEM IV. FIRST AID MEASU			
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9302,332 If on skin, we Signal Word:	entilated area n, wash with soap and water ford: DANGER	H315 Causes skin and eye irritatic P280 Use gloves, eye protection/f P305,351,338 If in eyes, remove contacts,	
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section I Product and Compa	noitsoititnebl ynsqm		
	Safety Data Sheet (SDS)	GHS/OSHB Compliant	
Absolute Standards Inc.		smden, CT 06518-0585 PO Box 5585	7162-182-203-2972 723-203-2922

Melting Point

Specific Gravity (H2O = 1)

100°C

mqq 008 :AWT

Personal protective equipment Respiratory protection Handle with gloves. Gloves must be inspected prior to use. Avoid contact with skin, eyes and clothing. Wash hands thoroughly after handling the product.

F

Eye protection.

Vapor Pressure (mm Hg)

Section IX - PHYSICAL/CHEMICAL CHARACTERISTICS

CAS#: 7732-18-5

Boiling Point

Vater

Eye irritation Causes skin irritation. LD50 Dermal - Guinea pig ΨN ΑN LC50 Inhalation - Rat LD50 Oral - Rat ΑN Section XI. TOXICOLOGICAL INFORMATION Hazardous decomposition products - No data available biove of elensieM ΑN Conditions to avoid ΨN

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CLEAR, COLORLESS LIQUID WITH SLIGHT CHEMICAL ODOR. Appearance and Odor

			Completely miscible	Solubility in Water
AN	(F = etate = 1)	ΨN		
	Evaporation rate			<pre>(t = AIA) (tisned rods)</pre>
2.0		WNI.		

aldiosim vlatalomo? ateW ni vtilidulo2			
	ΑN	(Butyl Acetate = 1)	ΨN
(t = AIA) viened rodsv		Evaporation rate	
	AN		0°C

Section XII. ECOLOGICAL INFORMATION

**NOITAMROANI TROGENART .VIX noitoe2** Dispose with normal Laboratory Solvent Waste.

Proper shipping name: Water

Not dangerous goods

(SU) TOA

EC60

09DT

Proper shipping name: Water Not dangerous goods ATAI

## Section XV. REGULATORY INFORMATION

Section XIII. DISPOSAL CONSIDERATIONS

ΨN ΑN

ASARA 302: No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

### Section XVI. Misc. INFORMATION

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Absolute Standards, Inc. 800-368-1131 www.absolutestandards.com			Ö	ertified F	Certified Reference Material CRM	Material (	CRM				ANAB ISO AR-1539 ( https://Absol	ANAB ISO 17034 Accredited AR-1539 Certificate Number https://Absolutestandards.com
CERTIFIED WEIGHT REPORT Part Number: Lot Number: Description:	r: <u>91980</u> r: <u>021325</u> n: <u>Acrolein</u>			2	Vater 07	2     4   Lot# 0723240	X I	Formulated By:	Mr.	Anthoniv Markonev	021325 DATE	
Expiration Date: Recommended Storage: Nominal Concentration (µg/mL):		031325 Refrigerate (4 °C) 5000	a c		トロナンフ	41			an la	Kente	021325	
NIST Test ID#: 6UTB Weight(s) shown below were combined and diluted to (mL): Lot <b>Compound</b> Rw# Number	#: 6U18 d and diluted to (mL) Lot RM# Number	1L): 10.0 t Nominal ber Conc (vg/mL)		<ul> <li>5E-05 Balance Uncertainty</li> <li>0.001 Flask Uncertainty</li> <li>Purity Uncertainty</li> <li>(%) Purity</li> </ul>	Target Weight(g)	Actual Weight(g) C	Expanded Actual Uncertainty Conc (ug/mL) (+/-) (ug/mL)	Expanded Expanded Uncertainty (+/-) (ug/mL)	ଳା	<ul> <li>Pedro L. Herntas</li> <li>SDS information</li> <li>(Solvent Safety Info. On Attached pg.)</li> <li>CAS# OSHA PEL (TWA) LDE</li> </ul>	DALE ached pg.) La50	
1.     5     103755V10F     5000     97     0.5     0.05166     0.05178     5011.8     52.6     107-02-8     0.1 ppm     0       Method: GC0NSD-1. Detector: Mass Selective Detector (Scan mode). Columni: Vocol (60m X 0.25mm ID X 1.5µm film thickness). Over Profile: Temp. 1 = 35°C (Time 1 = 10min), Temp. 2=20°C (Time 2 = 8.75 min)     0.05178	5 103755V10F elective Detector (Scan mod	V10F 5000 m mode). Column: Vo	97 col (60m X 0.2	0.5 25mm ID X 1.5	0.05166 ( wm film thickness)	0.05178 ). Oven Profile:	<b>5011.8</b> Temp.1 = 35°	52.6 C (Thre 1 = 10	107-02-8 0min.), Temp. 2-	0.1 ppm 200°C ( Time 2 = 8.75 r	ori-rat 46mg/vg min.)	н. т
Long term storage is not recommended. Please contact our technical department if further information is required. TIC: [BSB2]79005.D	Inded. Please contact our technic TIC: [BSB2]79005.D	mical department if fu	ther information	on is required.	Abundance		Scan 23	12 (8.927 n	Scan 232 (8.927 min): [BSB2]79005.D	79005.D	( revenue	
<b>250000</b> 8.93					60000	27						
200000		0/////			50000		56					
150000					40000							
					30000							
100000					20000							
50000					10000	37						
Time> 10.00 15.00 25.00 30.00 35.00 40.00 45.00 50.00 55.00	00 30.00 35.0	0 40.00 45.00	50.00 5	5.00 60.0(	0 <z td="" uj<=""><td>20 30</td><td>44 6 40 50 60</td><td>5 75 70 81</td><td>0.00</td><td>5 119 150 150 150 160 170 90 100 110 120 130 140 150 160 170</td><td>158 169 150 160 170</td><td></td></z>	20 30	44 6 40 50 60	5 75 70 81	0.00	5 119 150 150 150 160 170 90 100 110 120 130 140 150 160 170	158 169 150 160 170	
• The • Stat • All ! • Unc • NIS	: certified value is the adards are prepared adards are certified (: Standards, after opei strainty Reference. )? Technical Note 12	<ul> <li>The certified value is the concentration calculated from gravimetric and volumetric measurements unless otherwise stated.</li> <li>Standards are prepared gravimetrically using balances that are calibrated with weights traceable to NIST (see above).</li> <li>Standards after openling annule, should be stored with caps tight and under appropriate laboratory conditions.</li> <li>Uncertainty Reference: Taylor, B.N. and Kuyat, C.E., "Guidelines for Evaluation and Expressing the Uncertainty of NIST Measurement Result," NIST Technical Note 1297, U.S. Government Printing Office, Washington, DC, (1994).</li> </ul>	ated from gra t balances that I value, unless ce stored with rat, C.E., "Gui Printing Offic	vimetric and v are calibrated otherwise statt caps tight and idelines for Ev v, Washington	and volumetric measurements unless otherwise stated. brated with weights traceable to NIST (see above). as stated. It and under appropriate taboratory conditions. for Evaluating and Expressing the Uncertainty of NIST ington, DC, (1994).	ements unless ( ceable to NIST c aboratory cu ussing the Unc	otherwise statt (see above). onditions. :ertainty of NI	ed. ST Measurem	tenî Result,"			

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1 of 1

Part # 91980 Lot # 021325

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ection VIII. EXPOSURE CON	CONTROLS/PERSONAL PROTECT	NO	
recautions for safe handling torage Conditions	Use ventilation Keep away from s	Avoid inhalation of vapour or mist. ources of ignition. No smoking. Prevent the build a dry and well-ventilated place. Containers which are e.	
ection VII. HANDLING AND S	<b>BDAROTS ON</b>		
ingi nvironmental precautions Pre	ignition. Vapours accumulate to form exp Prevent further leakage or spillage if safe		
Section VI. ACCIDENTAL REL	RELEASE MEASURES		
uitable extinguishing media rotective equipment for fire azardous Decomposition producti	Wear self contained breathing app	້າຈາກ, dry chemical or carbon dioxide. ນລາອໂບຣ ໂດເ ກີເຕ ກິ່ງກໍ່ເກເງ if necessary.	
ection V. FIREFIGHTING ME	SARUSAAM 6		
eneral advice Co inhaled fi inhaled fi in v case of skin contact Wa	Consult a physician. Show this safety dat If inhaled, move person into fresh air. If n Wash with soap and water. Consult a ph	at least 15 minutes and consult a physician.	
VTENDED USE: REFERENCI UCATION IV. FIRST AID MEASU			
section III - Composition Components (Specific Chemica Vater	amical Identity; Common Name(s))	CAS#: 7732-18-5	(Isnoitqo) % 79 <
:broW Isngis	Aord: DANGER	P305,351,338 If in eyes, remove c	
	GHS Classification in acco entilated area n, wash with soap and water	rdance with 29 CFR 1910 (OSHA HCS) H315 Causes skin and ey P280 Use gloves, eye pro	
section II - Hazards Identificat	ification		
Aanufacturer's Name AE Adress Address	<b>W ICAL STANDARD DISSOLVED IN W</b> SBSOLUTE STANDARDS INC 44 Rossotto Dr. Hamden CT, 06514	ATER Emergency Telephone USA & CANAD Emergency Telephone International Date Prepared/Revised	<b>1-352-535-5053</b> <b>1-352-323-3500</b> לפחטפוץ 1, 2024
section I Product and Compa	mpany identification		
	Safety Data Sheet (SDS)	GHS/OSHB Compliant	
Absolute Standards Inc.		PO Box 5585 amden, CT 06518-0585	7102-183-803 :snor9 2292-183-803 :XA7

Melting Point

Specific Gravity (H2O = 1)

100°C

mqq 008 :AWT

Personal protective equipment Respiratory protection Handle with gloves. Gloves must be inspected prior to use. Avoid contact with skin, eyes and clothing. Wash hands thoroughly after handling the product.

F

Eye protection.

Vapor Pressure (mm Hg)

Section IX - PHYSICAL/CHEMICAL CHARACTERISTICS

CAS#: 7732-18-5

Boiling Point

Vater

Eye irritation Causes skin irritation. LD50 Dermal - Guinea pig ΨN ΑN LC50 Inhalation - Rat LD50 Oral - Rat ΑN Section XI. TOXICOLOGICAL INFORMATION Hazardous decomposition products - No data available biove of elensieM ΑN Conditions to avoid ΨN

ΨN Possibility of hazardous reactions Stable under recommended storage conditions. Chemical stability

### Section X. STABILITY AND REACTIVITY

CLEAR, COLORLESS LIQUID WITH SLIGHT CHEMICAL ODOR. Appearance and Odor

			Completely miscible	Solubility in Water
AN	(h = etate = 1)	ΨN		
	Evaporation rate			<pre>(f = AIA) (AIA roughly (AIA = 1)</pre>
2.0		₩NI	*	

aldiosim vlatalomo? ateW ni vtilidulo2			
	ΑN	(Butyl Acetate = 1)	ΨN
(t = AIA) viened rodsv		Evaporation rate	
	AN		0°C

Section XII. ECOLOGICAL INFORMATION

**NOITAMROANI TROGENART .VIX noitoe2** Dispose with normal Laboratory Solvent Waste.

Proper shipping name: Water

Not dangerous goods

(SU) TOA

EC60

09DT

Proper shipping name: Water Not dangerous goods ATAI

## Section XV. REGULATORY INFORMATION

Section XIII. DISPOSAL CONSIDERATIONS

ΨN ΑN

ASARA 302: No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

### Section XVI. Misc. INFORMATION

you have any questions, please call Technical Service at 1-203-281-2917 for assistance. 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 Material Safety Data Sheet. If including eye and face guards and respirators must be used to avoid contact with material or breathing chemical vapors/funces. Exposure to this product may have serious adverse health effects. 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, see,) 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 see, and Celobing. The user is responsible for determining the precautions and dangers of this chemical for his or her particular application. Depending on usage, protective clobing trained in chemical intended and the precautions and dangers of this chemical for his or her particular application. Depending on usage, protective clobing



www.absolutestandards.com

-**Certified Reference Material CRM**  ¢,



CEF	TIFIED WEIGHT REPORT		_														
		er: 02162	4	-						Solvent(s): Methanol	EG359-US	Q12			0	GHI	
	Expiration Dat	69 con	sal VOA Meg mponents											Formula	ated By:	Preshant Chaufer	021624 DATE
	Recommended Storag Nominal Concentration (µg/mt	e: Freezer													4	1. A	
	NIST Test ID	#: BUTB				5 Balance Unce								Review		Pedro L. Rentas	021624 DATE
	Weight(a) shown below were combine		. ,	100.	0 0.02	Flask Uncerta	daty							Expande	nd	SDS information	
	Compound	(RM#) Pert Numb	Lot Xer Number	Di). Facto	initial ar Vol. (mi	initial L) Conc.(ug/mi	Nominal	Purity L) (%)	Purity Uncertainty	Uncontainty y Pipetts (mL)	Target Weight(g)	Actual Weight(g)	Actual Conc (µg/mL	Uncertain	rty (Sol	vent Safety Info. On Atta OSHA PEL (TWA)	
1. 2.	Acetonitrie	(0324)	021644	NA		NA	2000	99.99	0.2	NA	0.20007	0.20020	2001.3	8.1	75-05-8	40 ppm (70mg/m3/8H)	ori-rat 2460mg/kg
3.	Allyl chloride (3-Chloropropene) Carbon disulphide	(0325) (0060)	102396 MKCR858	NA 11 NA	NA	NA NA	2000	99.99	0.2	NA	0.20207	0.20221	2001.4 2001.6	8.2 8.1	107-05-1	1 ppm (3mg/m3/8H)	orl-rat 700mg/kg
4,	cis-1,4-Dichloro-2-butene	(1198)	14718EF		NA	NA	2000	95	0.2	NA	0.21058	0.21069	2001.1	B,5	1478-11-5	4 ppm (12mg/m3) (skin) 5 N/A	ori-rat 1200mg/kg N/A
6.	trans-1,4-Dichloro-2-butene Diethyl ether	(0486) (0153)			NA	NA	2000	96.5	0.2	NA	0.20731	0.20748	2001.7	8.4	110-57-6	N/A	N/A
7.		(0381)	06126PX	NA	NA	NA	2000	99	0.2	NA	0.20025	0.20240	2001.5	8.1	80-29-7 97-63-2	N/A N/A	NA
8. 9.	lodomethane	(0489)			NA	NA	2000	99.5	0.2	NA	0.20106	0.20121	2001.5	8.2	74-88-4	5 ppm(28mp/m3/8H)(sidn	orl-rat 14800mg/kg i) orl-rat 76mg/kg
8. 10.	2-Methyl-1-propanol Methacrylonitrile	(0445)	15241EB 00427ET	NA	NA	NA	2000	99.5	0.2	NA	0.20106	0.20120	2001.4	8.1	78-83-1	60 ppm (150mg/m3/8H)	ori-rat 2460mg/kg
11.	Methyl acrylate	(1075)	SHBI00679		NA	NA	2000	99 99.9	0.2	NA NA	0.20207	0.20221	2001.4	8.2	126-98-7	1 ppm (3mg/m3/8H)(skin)	
	Methyl methacrylate	(0404)	MKBW5137	V NA	NA	NA	2000	99.9	0.2	NA	0.20025	0.20040	2001.5	8.1	96-33-3 80-62-6	10 ppm(35mg/m3/8H)(sidn 100 ppm (410mg/m3/8H)	ori-ret 277mg/kg ori-ret 7872mg/kg
	Nitrobenzene 2-Nitropropane	(0228)	01213TV	NA	NA	NA	2000	99	0.2	NA	0.20207	0.20220	2001.3	8.2	98-95-3	1 ppm (5mg/m3/8H)(skin)	
	Peniachioroethane	(0461) (0450)	14002JX HGA01	NA	NA	NA NA	2000	97.3 98	0.2	NA	0.20560	0.20577	2001.6	6.3	79-46-9	10 ppm (35mg/m3/8H)	orl-rat 720mg/kg
16.	1,1,2-Trichlorotrificoroethane	(0474)	18930	NA	NA	NA	2000	99	0.2	NA NA	0.20413	0.20430	2001.8	8.3	76-01-7	NEA	N/A
	Bromodichloromethane	35171	101623	0.05	5.00	40001.7	2000	NA	NA	0.017	NA	NA	1999.6	22.9	75-27-4	1000 ppm (7600mg/m3/8H N/A	orf-rat 43g/kg orf-rat 916mg/kg
	Dibromochloromethane cis-1,2-Dichloroethene	35171	101623	0.05	6.00	40002.1	2000	NA	NA	0.017	NA	NA	1999.6	23.0	124-48-1	N/A	orl-rat 648mg/kg
	trans-1,2-Dichloroethone	35171	101623	0.05	5.00	40003,1 40002,4	2000	NA	NA	0.017	NA	NA	1999.7	22.9	158-59-2	N/A	N/A
	Methylene chloride	35171	101623	0.05	5.00	40002.8	2000	NA	NA	0.017	NA	NA	1999.6	23.0	156-60-5	500 ppm	ort-rat 1235mg/kg
	1,1-Dichloroethene	32251	102023	0.10	10.00	20001.8	2000	NA	NA	0.042	NA	NA	1009.7	20,4	75-35-4	1 ppm (4mg/m3/8H)	ori-rat 820mg/kg ori-rat 200mg/kg
	Bromotorm Carbon tetrachloride	95321	020724	0.10	10.00	20003.2	2000	NA	NA	0.042	NA	NA	1999.8	20.5	75-25-2	0.5 ppm (5mg/m3) (skin)	orl-rat 933mg/kg
	Chloroform	85321	020724	0.10	10.00	20003.4 20024.0	2000	NA	NA	0.042	NA	NA	1999.8	20.4	58-23-5	2 ppm (12.6mg/m3/8H)	ori-rat 2350mg/kg
	Dibromomethane	95321	020724	0.10	10.00	20002.9	2000	NA	NA	0.042	NA	NA	2001.9	20.5	67-68-3 74-95-3	50 ppm (240mp/m3) (CL) N/A	orl-rat 908mg/kg orl-rat 106mg/kg
	1,1-Dichloroethane	95321	020724	0,10	10.00	20003.4	2000	NA	NA	0.042	NA	NA	1999.8	20.5	75-34-3	100 ppm	orl-rat 725mg/kg
	2,2-Dichloropropane Tetrachloroethene	95321 95321	020724	0.10	10.00	20003.4 20201.1	2000	NA	NA	0.042	NA	NA	1999.8	20.4	594-20-7	N/A	N/A
_	1,1,1-Trichloroethane	95321	020724	0.10	10.00	20003.0	2000	NA	NA	0.042	NA	NA	2019.6	20.6	127-18-4 71-55-6	25 ppm (170mg/m3/8H)(final	
	1,2-Dibromo-3-chioropropane	35161	112322	0.05	5.00	40016.5	2000	NA	NA	0.017	NA	NA	2000.3	20.0	96-12-8	350 ppm (1900mg/m3/8H) 0.001 ppm	orl-rat 10300mg/kg orl-rat 170mg/kg
	I,2-Dibromoethane	35161 35161	112322	0.05	5.00	40024.8	2000	NA	NA	0.017	NA	NA	2000.7	22.9	106-93-4	20 ppm (8H)	orf-rat 108mg/kg
	,2-Dichloropropana	35161	112322	0.08	5.00	40018.0 40051.0	2000	NA	NA	0.017	NA NA	NA	2000.4	22.9	107-08-2	50 ppm (8H)	orl-rat 670mg/kg
	,3-Dichloropropane	35161	112322	0.05	5.00	40005.9	2000	NA	NA	0.017	NA	NA	2002.0	22.9	78-87-5	75 ppm (350mg/m3/8H) N/A	orl-rat 1947mg/kg Unr-mus 3600mg/kg
	1-Dichloropropene	35161	112322	0.05	5.00	40012.1	2000	NA	NA	0.017	NA	NA	2000.1	29.7	563-58-6	N/A	N/A
_	ia-1,3-Dichioropropene rans-1,3-Dichioropropene	35161 35161	112322	0.05	5.00 5.00	40010.0	2000	NA NA	NA	0.017	NA	NA	2000.0	23.0	10061-01-5	N/A	N/A
	lexachloro-1,3-butadiene	35181	112322	0.05	5.00	40021.9	2000	NA	NA	0.017	NA	NA	2000.4 2000.6	23.0 29.7	10061-02-8 87-68-3	N/A	N/A
	1,1,2-Tetrachloroethane	35161	112322	0.05	5.00	40011.9	2000	NA	NA	0.017	NA	NA	2000.0	22.9	630-20-6	0.02 ppm (0.24mg/m3/8H) N/A	ori-rat 62mg/kg ori-rat 670mg/kg
	,1,2,2-Tetrachioroethane ,1,2-Tetrachioroethane	35161 35161	112322	0.05	5.00	40007.5	2000	NA	NA	0.017	NA	NA	1999.9	22.9	79-34-5	5 ppm (35mg/m3/9H)(aldri)	gAgm008 tsr-Ito
	richloroethene	35161	112322	0.05	5.00 5.00	40006.6	2000	NA	NA	0.017	NA NA	NA	1999.8	23.0	79-00-5	10 ppm (46mg/m3/8H)(skin)	ori-rat 636mg/kg
44. 1	,2,3-Trichloropropane	35181	112322	0.05	5.00	40007.5	2000	NA	NA	0.017	NA	NA	2000.9	22.9	79-01-6 96-18-4	50 ppm (270mg/m3/8H)	orl-mus 2402mg/kg
	enzene	36162	050823	0.05	5.00	40005.0	2000	NA	NA	0.017	NA	NA	1999.7	22.9	71-43-2	10 ppm (60mg/m3/8H) 1 ppm	orl-rat 149.6mg/kg orl-rat 4894mg/kg
	romobenzene Butvi benzene	35162 35162	050823	0.05	5.00	40005.9	2000	NA	NA	0.017	NA	NA	1999.8	22.9	108-86-1	N/A	orl-rat 2699mg/kg
48. E	thyi benzene	35162	050823	0.05	5.00	40003.8	2000	NA	NA	0.017	NA	NA	1999.7 1999.7	22.9	104-51-8	N/A	N/A
49. P	in the second se	35162	050823	0.05	5.00	40005.8	2000	NA	NA	0.017	NA	NA	1999.8	22.9	99-87-6	100 ppm (435mg/m3/8H) N/A	orl-rat >2000mg/kg orl-rat 4750mg/kg
50. N 51. 5	aphthalene	35162	050823	0.05	5.00	40006.2	2000	NA	NA	0.017	NA	NA	1999.8	22.9	91-20-3	10 ppm (50mg/m3/8H)	orl-rat 490mg/kg
52. Tt		35162 35162	050823	0.05	5.00	40004.8	2000	NA	NA	0.017	NA	NA	1999.7	22.9	100-42-5	100 ppm	orl-rat 5000mg/kg
	2,3-Trichlorobenzene	35162	050823	0.05		40003.1	2000	NA	NA	0.017	NA NA	NA	1999.8	22.9	108-88-3 87-61-6	200 ppm N/A	orl-rat 5000mg/kg
	2,4-Trichlorobenzene	35162	050823	0.05		40006.8	2000	NA	NA	0.017	NA	NA	1999.8	22.9	120-82-1	5 ppm (CL) (40mg/m3)	lpr-mus 1390mg/kg off-rat 750mg/kg
	2,4-Trimethylbenzene 3,5-Trimethylbenzene	35162	050823	0.05		40001.8	2000	NA	NA	0.017	NA	NA	1999.6	23.0	95-63-6	N/A	ort-rat 5g/kg
	-Xylene	35162	050823	_		40008.7 40005.8	2000	NA NA	NA	0.017	NA	NA	1999.0	22.9	108-67-8	N/A	orl-rat 5000mg/kg
58. 1e	rt-Butyl benzene	35163	101923			40001.2	2000	NA	NA	0.017	NA	NA	1999.8 1999.6	22.9	108-38-3 98-06-6	100 ppm (435mg/m3/8H) N/A	orl-rat 5g/kg N/A
j9. se		35163	101923			40002.4	2000	NA	NA	0.017	NA	NA	1999.6	22.9	135-98-8	N/A	ori-rat 2240mg/kg
			101923			40003.8	2000	NA	NA	0.017	NA	NA	1999.7	22.9	108-90-7	75 ppm (350mg/m3/8H)	orl-rail 2290mg/kg
80. Čř	Chiorotoluena	00100				40000.3	2000	NA	NA	0.017	NA	NA NA	1999.5 1999.7	22.9	95-49-8	50 ppm (250mg/m3/8H)	orl-rat 3900mg/kg
80. Cr 81. 24		35163	101923					NA	NA	0.017	NA	NA	1999.7	22.9	106-43-4	N/A	orl-rat 2100mg/kg orl-rat 500mg/kg
80. Cr 61. 24 62. 44 63. 1.	Chicrotoluene 2-Dichicrobenzene	35163	101923	0.05	5.00	40003.8	2000			0.017	F-W/W	PUN			95-50-1	50 ppps (300mm/m/h) //** 1	
80. Cr 81. 24 82. 44 83. 1.1 84. 1.3	Chlorototuene 2-Dichlorobenzene 3-Dichlorobenzene	35163 35163	101923 101923	0.05	5.00	40001.7	2000	NA	NA	0.017	NA	NA	1999.6	23.0	95-50-1 541-73-1	50 ppm (300mp/m3) (CL) N/A	ipr-mus 1062mg/kg
BO.         Cr           B1.         2-4           B2.         4-4           B3.         1.3           B4.         1.3           B5.         1.4	Chlorotoluene 2-Dichlorobenzene 3-Dichlorobenzene 1-Dichlorobenzone	35163 35163 35163	101923 101923 101923	0.05 0.05 0.05	5.00 5.00	40001.7 40001.8	2000 2000	NA NA	NA NA	0.017 0.017	NA NA	NA NA	1999.6 1999.6	23.0 22.9	541-73-1 106-46-7	N/A 76 ppm (450mg/m3/8H)	ipr-mus 1062mg/kg orl-rat 500mg/kg
BO.         Cr           81.         24           82.         44           83.         1.1           84.         1.3           85.         1.4           86.         1sc	Chlorototuens 2-Dichlorobenzene 3-Dichlorobenzene Dichlorobenzene spropylibenzene	35163 35163 35163 35163	101923 101923 101923 101923	0.05 0.05 0.05 0.05	5.00 5.00 5.00	40001.7	2000 2000 2000	NA NA NA	NA NA NA	0.017 0.017 0.017	NA NA NA	NA NA NA	1999.6 1999.6 1999.5	23.0 22.9 22.9	541-73-1 106-48-7 98-82-8	N/A 76 ppm (450mg/m3/8H) 50 ppm (245mg/m3/8H)	ori-rat 500mg/kg ori-rat 500mg/kg
60. Cr 61. 2-4 62. 4-4 63. 1,1 64. 1,2 64. 1,2 64. 1,2 66. 150 67. n-1 66. 0-)	Chlorotoluene 2-Dichlorobenzene 3-Dichlorobenzene 1-Dichlorobenzene progribenzene Progribenzene Kylene	35163 35163 35163 35163 35163 35163 35163	101923 101923 101923 101923 101923	0.05 0.05 0.05 0.05 0.05	5.00 5.00 5.00 5.00	40001.7 40001.8 40000.8	2000 2000	NA NA	NA NA	0.017 0.017	NA NA	NA NA	1999.6 1999.6	23.0 22.9	541-73-1 106-46-7	N/A 76 ppm (450mg/m3/8H)	ipr-mus 1062mg/kg orl-rat 500mg/kg

The certified value is the concentration exclusion of the gravimetric and volumetric measurements unless otherwise stated,
 Standards are perpared gravimetrically using balances their are calibration with weights traceable to NEST (see above),
 Standards are certified (<) 0.5% of the stated value, usion otherwise stated,
 Ad Standards, full and the stated value, usion otherwise stated,
 Ad Standards, full empirically using anyote, should be stored with complete light and under appropriate theoretically candillions.
 Uncertainty Reference: Taylor, R.N. and Kuyat, C.E., "Calciolines for Evaluating and Expressing the Uncertainty of NIST Measurement Resolt,"
 NIST Technical Note 1297, U.S. Government Printing Office, Washington, UC, (1994).

Certified Reference Material CRM

10



 contac.)
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Run 16, "P95317 L021624 [2000µg/mL in MeOH]" Faher 1,1,2-Trichtoro-1,2,2-tr Run Length: 60.00 min, 35998 points at 10 points/second. Created: Sat, Feb 17, 2024 at 8:56:46 AM. Sampled: Sequence "021624-GC5M1", Method "GC5-M1". 1,1-Dichiorosthane Acetonitrile Iodomethane Allyi chloride Carbon disullide/Nathylene ( trans-1,2-Dicklonethene 1.1-Dicklonethane 2,2-Dicklonethane Analyzed using Method "GC5-M1". 2,2:0:0kileropropana cis-1,2:0ciliarosthane Mathacrytonityle/Methyl ecry Isobutane/1,1,1-Trictikoredit 1,1-0ciliaropropana Carbon tetrachioride Bernsen(1,2:0kinarostnana 1,2:0kinarosthana 1,2:0kinarosthana Bichonderkhane/1,3kitzgene Comments Column ID SPB-Vocol 105 meter X 0.53mm X 3.0µm film thickness Flow rates: Total flow=290mL/min., Helium (carrier)=10mL/min., Helium(make-up)=10mL/min., Hydogen(make-up)=40mL/min., Air (make-up)=230mL/min. Oven Profile: Temp. 1=35°C (Time 1=10 min.), Temp 2=200°C (Time 2=8.75 min.), Rate = 4°C/min., Total run time=60 min. Injector temp.=200°C, FID Temp.=200°C. GC5-M1 Analysis by Candice Warren amethane/2-Nik Dibrom Distriminanti anti Anteoproje els 1,3-Dickiorpetta Distante Ethyl methacryfels/trans-1,3-D 1,1,2-Trichloroethene Tigtrachiersethene/1,3-Dickior FID Signal = Edaq Channel 1 Standard injection = 0.5µL, Range=3 Dibromochioromethe 1,2-Dibromoethene 1,2-Directmeethene
 Chorobarrene
 L,2,2-Titterioreabhare
 L,2,2-Titterioreabhare
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 Eronobarrene 1000000 800000 чась 1, и обстоит-3-сти Висопольтана Висопольтана 2.-Спартовона и станоровона и стано 600000 N 400000 Nitrobenzane 1,2,4-Trichkorobenzan Hexachiorobutadiima Naphchalena 1,2,3-Trichkorobenker \$2 200000 50 20 30 10 min

Absolute Standards Inc.

### Safety Data Sheet (SDS) GHS/OSHA Compliant

## Section I Product and Company Identification

GHS Classif Highly Flammable Liquid and Cause damage to organs Use In ventilated area 1370 2302,332 If on skin, wash with soap and 302,332 Signal Word Section III - Composition Components (Specific Chemical Identity; Components (Specifi	Emergency 514 Date Prepa fication In accordance with 2 nd Vapor H301, 311, H351 P280 and water P305,351,3 I: DANGER I: DANGER I: DANGER I: DANGER I: DANGER I: DANGER I: Show this safety data sheet to the do	<ul> <li>331 Toxic if swallowed, skin contact, inhaled Suspected of causing cancer Use gloves, eye protection/face sheild</li> <li>38 If in eyes, remove contacts, rinse with water</li> </ul>
Harnden CT, 069         Section II - Hazards Identification         GHS Classif         1225       Highly Flammable Liquid and Cause damage to organs         1370       Cause damage to organs         2271       Use In ventilated area         2302,332       If on skin, wash with soap a         220       220         220       220         221       Use In ventilated area         2302,332       If on skin, wash with soap a         220       220         220       220         220       220         220       220         221       Use In ventilated area         2302,332       If on skin, wash with soap a         220       220         220       220         220       220         220       220         221       Use In ventilated area         220       220         221       220         222       220         221       220         222       Signal Word         220       220         221       220         222       220         222       220	514       Date Preparity         fication In accordance with 24         ind Vapor       H301, 311, H351         P280         and water       P305,351,3         I: DANGER         imon Name(s))         COHOL       CAS#: 67-5         er Analytes Present At Transformer         Show this safety data sheet to the do on into fresh air. If not breathing, give water. Consult a physician.         plenty of water for at least 15 minute	ared/Revised       January 1, 2023         29 CFR 1910 (OSHA HCS)       331 Toxic if swallowed, skin contact, inhaled Suspected of causing cancer Use gloves, eye protection/face sheild         38 If in eyes, remove contacts, rinse with water         56-1       % (optional) > 97         ace Quantities.         bctor in attendance.Move to safe area.         e artificial respiration. Consult a physician.         es and consult a physician.
Section II - Hazards Identification         GHS Classif         H225       Highly Flammable Liquid at Cause damage to organs         H370       Cause damage to organs         P271       Use In ventilated area         P302,332       If on skin, wash with soap at         If on skin, wash with soap at       Signal Word         Section III - Composition       Signal Word         Components (Specific Chemical Identity; Com Methanol       METHYL ALC         See Certified Weight Report For Othe NENDED USE: REFERENCE MATERIAL       METHYL ALC         Section IV. FIRST AID MEASURES       If inhaled, move person with soap and with soap and	fication in accordance with 2 nd Vapor H301, 311, H351 P280 and water P305,351,3 I: DANGER I: DA	9 CFR 1910 (OSHA HCS)         331 Toxic if swallowed, skin contact, inhaled         Suspected of causing cancer         Use gloves, eye protection/face sheild         038 If in eyes, remove contacts, rinse with water         56-1         % (optional)         > 97         ace Quantities.         octor in attendance.Move to safe area.         e artificial respiration. Consult a physician.         es and consult a physician.
GHS Classif H225 Highly Flammable Liquid at Cause damage to organs Use In ventilated area P302,332 If on skin, wash with soap at Signal Word Section III - Composition Components (Specific Chemical Identity; Com Methanol Components (Specific Chemical Identity; Com Methanol Section IV. FIRST AID MEASURES If inhaled Inhaled Inhaled If inhaled, move person Vash with soap and w Rinse thoroughly with Do NOT induce vomit Section V. FIREFIGHTING MEASURES	nd Vapor H301, 311, H351 P280 P305,351,3 H: DANGER HIDDA	<ul> <li>331 Toxic if swallowed, skin contact, inhaled Suspected of causing cancer Use gloves, eye protection/face sheild</li> <li>38 If in eyes, remove contacts, rinse with water</li> </ul>
Highly Flammable Liquid at Cause damage to organs Use In ventilated area If on skin, wash with soap at Signal Word         If on skin, wash with soap at If on skin, wash with soap at Signal Word         If on skin, wash with soap at If on skin, wash with soap at Signal Word         If on skin, wash with soap at If on skin, wash with soap at If on skin, wash with soap at Signal Word         If on skin, wash with soap at If on skin, wash with soap at If on skin, wash with soap at If on skin, wash with soap at Methanol         Seection III - Composition         Components (Specific Chemical Identity; Com Methanol         See Certified Weight Report For Othe NTENDED USE: REFERENCE MATERIAL         Section IV. FIRST AID MEASURES         Inhaled       If inhaled, move person Vash with soap and V Rinse thoroughly with Do NOT induce vomit         If entaled       Use horoughly with Do NOT induce vomit         If entaled       Flammable in the	nd Vapor H301, 311, H351 P280 P305,351,3 H: DANGER HIDDA	<ul> <li>331 Toxic if swallowed, skin contact, inhaled Suspected of causing cancer Use gloves, eye protection/face sheild</li> <li>38 If in eyes, remove contacts, rinse with water</li> </ul>
H370 Cause damage to organs P271 Use In ventilated area If on skin, wash with soap a Signal Word Section III - Composition Components (Specific Chemical Identity; Com Methanol METHYL ALC See Certified Weight Report For Othe NTENDED USE: REFERENCE MATERIAL Section IV. FIRST AID MEASURES Seneral advice Consult a physician. S inhaled If inhaled, move person a case of skin contact a case of skin contact a case of skin contact b case of skin contact a case of skin contact b case of skin contact case of skin contact b case of skin contact b case of skin contact b case of skin contact b case of skin contact case of skin contact b case of skin contact case of skin contact b case of skin contact case of skin co	H351 P280 P305,351,3 P305,9 P305,351,3 P305,9 P30	Suspected of causing cancer Use gloves, eye protection/face sheild If in eyes, remove contacts, rinse with water 56-1 % (optional) > 97 ace Quantities.
P271       Use In ventilated area         P302,332       If on skin, wash with soap a         If on skin, wash with soap a       Signal Word         Section III - Composition       Signal Word         Components (Specific Chemical Identity; Com       METHYL ALC         See Certified Weight Report For Othe       METHYL ALC         See Certified Weight Report For Othe       METHYL ALC         Section IV. FIRST AID MEASURES       Seneral advice         General advice       Consult a physician. S         n case of skin contact       Kinse thoroughly with soap and w         n case of eye contact       Rinse thoroughly with soap and w         f swallowed       Do NOT induce vomit         Section V. FIREFIGHTING MEASURES       Flammable in the	P280 P305,351,3 P305,9 P305,351,3 P305,9 P305,351,3 P305,9 P30	Use gloves, eye protection/face sheild If in eyes, remove contacts, rinse with water 56-1 % (optional) > 97 ace Quantities. Dector in attendance.Move to safe area. e artificial respiration. Consult a physician. es and consult a physician.
Section III - Composition Components (Specific Chemical Identity; Com Methanol See Certified Weight Report For Othe NTENDED USE: REFERENCE MATERIAL Section IV. FIRST AID MEASURES Seneral advice f inhaled in case of skin contact in case of skin contact f swallowed Consult a physician. S If inhaled, move perso Vash with soap and w Rinse thoroughly with Do NOT induce vomit Section V. FIREFIGHTING MEASURES Itammability Flammable in the	and water P305,351,3 P305,254	138       If in eyes, remove contacts, rinse with water         56-1       % (optional)         56-1       > 97         ace Quantities.       > 97         octor in attendance.Move to safe area.       = artificial respiration. Consult a physician.         es and consult a physician.       = artificial respiration.
Section III - Composition Components (Specific Chemical Identity; Com Methanol METHYL ALC See Certified Weight Report For Othe NTENDED USE: REFERENCE MATERIAL Section IV. FIRST AID MEASURES General advice f inhaled in case of skin contact in case of skin contact in case of eye contact if inhaled in case of eye contact if iswallowed Consult a physician. Since thoroughly with Do NOT induce vomit Section V. FIREFIGHTING MEASURES Iammability Flammable in the	mon Name(s)) COHOL CAS#: 67-5 er Analytes Present At Tra Show this safety data sheet to the do on into fresh air. If not breathing, give water. Consult a physician. a plenty of water for at least 15 minute	56-1 > 97 ace Quantities.  Dector in attendance.Move to safe area. e artificial respiration. Consult a physician. es and consult a physician.
Components (Specific Chemical Identity; Com Methanol METHYL ALC See Certified Weight Report For Othe INTENDED USE: REFERENCE MATERIAL Section IV. FIRST AID MEASURES General advice Consult a physician. S f inhaled If inhaled, move person n case of skin contact Nash with soap and w n case of eye contact Rinse thoroughly with f swallowed Do NOT induce vomit Section V. FIREFIGHTING MEASURES	COHOL CAS#: 67-5 CAS#: 67-5	56-1 > 97 ace Quantities.  Dector in attendance.Move to safe area. e artificial respiration. Consult a physician. es and consult a physician.
See Certified Weight Report For Othe INTENDED USE: REFERENCE MATERIAL Section IV. FIRST AID MEASURES General advice f inhaled n case of skin contact n case of eye contact f swallowed Section V. FIREFIGHTING MEASURES	COHOL CAS#: 67-5 CAS#: 67-5	56-1 > 97 ace Quantities.  Dector in attendance.Move to safe area. e artificial respiration. Consult a physician. es and consult a physician.
See Certified Weight Report For Othe INTENDED USE: REFERENCE MATERIAL Section IV. FIRST AID MEASURES General advice f inhaled n case of skin contact n case of skin contact f swallowed Section V. FIREFIGHTING MEASURES	Show this safety data sheet to the do on into fresh air. If not breathing, give water. Consult a physician.	ace Quantities.
INTENDED USE: REFERENCE MATERIAL         Section IV. FIRST AID MEASURES         Seneral advice       Consult a physician. S         f inhaled       If inhaled, move person         n case of skin contact       Wash with soap and work work with soap and work work work work work work work work	Show this safety data sheet to the do on into fresh air. If not breathing, give water. Consult a physician. a plenty of water for at least 15 minute	octor in attendance.Move to safe area. e artificial respiration. Consult a physician. es and consult a physician.
INTENDED USE: REFERENCE MATERIAL         Section IV. FIRST AID MEASURES         Seneral advice       Consult a physician. S         f inhaled       If inhaled, move person         n case of skin contact       Wash with soap and work work with soap and work work work work work work work work	Show this safety data sheet to the do on into fresh air. If not breathing, give water. Consult a physician. a plenty of water for at least 15 minute	octor in attendance.Move to safe area. e artificial respiration. Consult a physician. es and consult a physician.
General advice       Consult a physician. 5         f inhaled       If inhaled, move person         n case of skin contact       Wash with soap and with soap	on into fresh air. If not breathing, give water. Consult a physician. I plenty of water for at least 15 minute	e artificial respiration. Consult a physician. es and consult a physician.
In naled       If inhaled, move personance         In case of skin contact       Wash with soap and vertice         In case of eye contact       Rinse thoroughly with         If swallowed       Do NOT induce vomite         Section V. FIREFIGHTING MEASURES       Flammability	on into fresh air. If not breathing, give water. Consult a physician. I plenty of water for at least 15 minute	e artificial respiration. Consult a physician. es and consult a physician.
If inhaled, move person n case of skin contact Wash with soap and v n case of eye contact Rinse thoroughly with f swallowed Do NOT induce vomit Section V. FIREFIGHTING MEASURES	on into fresh air. If not breathing, give water. Consult a physician. I plenty of water for at least 15 minute	e artificial respiration. Consult a physician. es and consult a physician.
In case of skin contact Wash with soap and w	water. Consult a physician. I plenty of water for at least 15 minute	es and consult a physician.
Section V. FIREFIGHTING MEASURES	a plenty of water for at least 15 minute ling. Rinse mouth with water. Consult	es and consult a physician. t a physician.
Section V. FIREFIGHTING MEASURES	ting. Rinse mouth with water. Consul	t a physician.
lammability Flammable in the		
lammability Flammable in the		
heat/sparks/oper	e presence of a source of ignition when n flame/hot surface. No smoking,	en the temperature is above the flash point. Keep away from
Suitable extinguishing media Use water spray,	alcohol-resistant foam, dry chemical	I or carbon dioxide.
Protective equipment for fire Wear self contain	ned breathing apparatus for fire fighti	ing if necessary.
Section VI. ACCIDENTAL RELEASE MEASU	RES	
Personal precautions Wear respiratory prote	ection. Avoid breathing vapors, mist c	or gas. Ensure adequate ventilation. Remove all sources of
ignition. Vapours accu	mulate to form explosive concentration	ions.
lean up Contain spillage, and t	e or spillage if safe to do so. Do not then collect and place in container for	let product enter drains. r disposal according to local regulations (see section 13).
ection VII. HANDLING AND STORAGE		
recautions for safe handling Avoid contact with Use ventilation Ke	h skin and eyes. Avoid inhalation of v eep away from sources of ignition N	/apour or mist. Jo smoking. Prevent the build up of electrostatic charge.
torage Conditions Keep container tig	o prevent leakage.	ted place. Containers which are opened must be carefully resealed
ection VIII. EXPOSURE CONTROLS/PERSO	NAL PROTECTION	
lethanol 67-56-1 TWA 200 ppm kin notation TWA 200 ppm otential for skin absorption , ingestion and inhalation.		
ersonal protective equipment Respiratory protection void contact with skin, eyes and clothing. Wash hands the	Handle with gloves. Gloves must b	e inspected prior to use. Eye protection.

Section IX - Physical/Chemical Characteristics

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

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 Possibility of hazardous reactions Conditions to avoid Materials to avoid Hazardous decomposition products for

Stable under recommended storage conditions. Vapours may form explosive mixture with air. Heat, flames, sparks, extreme temperature and sunlight.

void Acid chlorides, Acid anhydrides, Oxidizing agents, Alkali metals, Reducing agents, Acids

Hazardous decomposition products formed under fire conditions. - Carbon oxides

# Section XI. TOXICOLOGICAL INFORMATION

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

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

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

#### Section XIII. DISPOSAL CONSIDERATIONS

Dispose with normal Laboratory Solvent Waste.

# Section XIV. TRANSPORT INFORMATION

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

#### Section XV. REGULATORY INFORMATION

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

#### Section XVI. Misc. INFORMATION

The information in this Material Safety Data Sheet meets the requirements of the United States Occupational Safety and Health Act and regulations promulgated thereunder (29 CFR 1910.1200 et. seq.) and Global Harmonized System (GHS). This document is intended only as a guide to the appropriate precautionary handling of the material by trained personnel, or supervised by a person trained in chemical handling. The user is responsible for determining the precautions and dangers of this chemical for his or her particular application. Depending on usage, protective clothing including eye and face guards and respirators must be used to avoid contact with material or breathing chemical vapors/fumes. Exposure to this product may have serious adverse health effects. This chemical may interact with other substances. Since the potential uses are so varied, ABSOLUTE STANDARDS INC. cannot warn of all the potential dangers of use or interaction with other chemicals or substances. ABSOLUTE STANDARDS INC 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.



www.absolutestandards.com

-**Certified Reference Material CRM**  ¢,



CEF	TIFIED WEIGHT REPORT																
		er: 02162	4	-						Solvent(s): Methanoi	EG359-US	Q12			0	GHI	
	Expiration Da	69 con	sal VOA Meg nponents											Formula	ated By:	Preshant Chaufer	021624 DATE
	Recommended Storag Nominal Concentration (µg/m)	e: Freezer													4	2. A.	
	NIST Test IC	#: BUTB				5 Balance Unce								Review		Pedro L. Rentas	021624 DATE
	Weight(a) shown below were combine			100.	0 0.02	1 Flask Uncerta	daty							Expande	rd	SDS information	
	Compound	(RM#) Pert Numb	Lot er Number	Di). Facto	Initial r Vol. (m	initial L) Conc.(ug/mi	Nominal	Purity L) (%)	Purity Uncertainty	Uncortainty y Pipette (mL)	Target Weight(g)	Actual Weight(g)	Actual Conc (µg/mL	Uncertain	rty (Sol	vent Safety Info. On Atta OSHA PEL (TWA)	
1. 2.	Acetonitrile	(0324)	021644	NA		NA	2000	99.99	0.2	NA	0.20007	0.20020	2001.3	8.1	75-05-8	40 ppm (70mg/m3/8H)	ori-rat 2460mg/kg
3.	Allyl chloride (3-Chloropropene) Carbon disulphide	(0325) (0060)	102396 MKCR858	NA 11 NA	NA	NA NA	2000	99.99	0.2	NA	0.20207	0.20221	2001.4 2001.6	8.2 8.1	107-05-1 75-15-0	1 ppm (3mg/m3/8H)	orl-rat 700mg/kg
4,	cis-1,4-Dichloro-2-butene	(1198)	14718EF		NA	NA	2000	95	0.2	NA	0.21058	0.21069	2001.1	B,5	1478-11-5	4 ppm (12mg/m3) (skin) 5 N/A	ori-rat 1200mg/kg N/A
6.	trans-1,4-Dichloro-2-butene Diethyl ether	(0486) (0153)	MKBP6041 K18CAS00		NA	NA	2000	96.5	0.2	NA	0.20731	0.20748	2001.7	8.4	110-57-6	N/A	N/A
7.		(0381)	06126PX	NA	NA	NA	2000	99	0.2	NA	0.20025	0.20240	2001.5	8.1	80-29-7 97-63-2	N/A N/A	NA
8. 9.	lodomethane	(0489)	SH8F8718		NA	NA	2000	99.5	0.2	NA	0.20106	0.20121	2001.5	8.2	74-88-4	5 ppm(28mp/m3/8H)(sidn	orl-rat 14800mg/kg i) orl-rat 76mg/kg
10.	2-Methyl-1-propanol Methacrylonitrile	(0445)	15241EB 00427ET	NA	NA	NA NA	2000	99.5	0.2	NA	0.20106	0.20120	2001.4	8.1	78-83-1	60 ppm (150mg/m3/8H)	orl-rat 2460mg/kg
11.	Methyl acrylate	(1075)	SHBK0679		NA	NA	2000	99 99.9	0.2	NA NA	0.20207	0.20221	2001.4	8.2	126-98-7 96-33-3	1 ppm (3mg/m3/8H)(skin)	
	Methyl methacrylate	(0404)	MKBW5137		NA	NA	2000	99.9	0.2	NA	0.20025	0.20041	2001.6	8.1	80-62-6	10 ppm(35mg/m3/8H)(sidn 100 ppm (410mg/m3/8H)	ori-ret 277mg/kg ori-ret 7872mg/kg
	Nitrobenzene 2-Nitropropane	(0228) (0461)	01213TV 14002JX	NA	NA	NA	2000	99	0.2	NA	0.20207	0.20220	2001.3	8.2	98-95-3	1 ppm (5mg/m3/8H)(akin)	
	Peniactiloroethane	(0450)	HGA01	NA	NA	NA NA	2000	97.3 98	0.2	NA NA	0.20560	0.20577	2001.6	6.3	79-46-9	10 ppm (35mg/m3/6H)	orl-rat 720mg/kg
	1,1,2-Trichlorotrifiuoroethane	(0474)	18930	NA	NA	NA	2000	88	0.2	NA	0.20413	0.20430	2001.8	8.3	76-01-7 78-13-1	N/A 1000 ppm (7500mg/m3/8H	N/A orl-rat 43g/kg
	Bromodichioromethane	35171	101623	0.05	5.00	40001.7	2000	NA	NA	0.017	NA	NA	1999.6	22.9	75-27-4	N/A	orf-rat 43g/kg
	Dibromochloromethane cis-1,2-Dichloroethene	35171	101623	0.05	6.00	40002.1	2000	NA	NA	0.017	NA	NA	1999.6	23.0	124-48-1	NA	orl-rat 648mg/kg
	trans-1,2-Dichloroethone	35171	101623	0.05	5.00	40003.1 40002.4	2000	NA	NA	0.017	NA	NA	1999.7	22.9	158-59-2	N/A	N/A
	Methylene chloride	35171	101623	0.05	5.00	40002.8	2000	NA	NA	0.017	NA	NA	1999.6	23.0	156-60-5	500 ppm	ort-rat 1235mg/kg
	1,1-Dichloroethene	32251	102023	0.10	10,00	20001.8	2000	NA	NA	0.042	NA	NA	1009.7	20,4	75-35-4	1 ppm (4mg/m3/8H)	ori-rat 820mg/kg ori-rat 200mg/kg
	Bromotorm Carbon tetrachloride	95321	020724	0.10	10.00	20003.2	2000	NA	NA	0.042	NA	NA	1999.8	20.5	75-25-2	0.5 ppm (5mg/m3) (skin)	orl-rat 933mg/kg
	Chloroform	85321	020724	0.10	10.00	20003.4 20024.0	2000	NA	NA	0.042	NA	NA	1999.8	20.4	58-23-5	2 ppm (12.6mg/m3/8H)	ori-rat 2350mg/kg
	Dibromomethane	95321	020724	0.10	10.00	20002.9	2000	NA	NA	0.042	NA	NA	2001.9	20.5	67-68-3 74-95-3	50 ppm (240mp/m3) (CL) N/A	orf-ret 908mg/kg
	1,1-Dichloroethane	95321	020724	0.10	10.00	20003.4	2000	NA	NA	0.042	NA	NA	1999.8	20.5	75-34-3	100 ppm	orl-rat 106mg/kg orl-rat 725mg/kg
	2,2-Dichloropropane Tetrachloroethene	95321 95321	020724	0.10	10.00	20003.4 20201.1	2000	NA	NA	0.042	NA	NA	1999.8	20.4	594-20-7	N/A	N/A
-	1,1,1-Trichloroethane	95321	020724	0.10	10.00	20201.1	2000	NA	NA	0.042	NA	NA	2019.6	20.6	127-18-4 71-55-6	25 ppm (170mg/m3/8H)(final	
	2-Dibromo-3-chloropropane	35161	112322	0.05	5.00	40016.5	2000	NA	NA	0.017	NA	NA	2000.3	20.0	96-12-8	350 ppm (1900mg/m3/8H) 0.001 ppm	orl-rat 10300mg/kg orl-rat 170mg/kg
	I,2-Dibromoethane	35161 35161	112322	0.05	5.00	40024.8	2000	NA	NA	0.017	NA	NA	2000.7	22.9	108-93-4	20 ppm (8H)	orf-rat 108mg/kg
	,2-Dichloropropane	35161	112322	0.08	5.00	40018.0 40051.0	2000	NA	NA	0.017	NA NA	NA	2000.4	22.9	107-08-2	50 ppm (8H)	orl-rat 670mg/kg
	,3-Dichloropropane	35161	112322	0.05	5.00	40005.9	2000	NA	NA	0.017	NA	NA	2002.0	22.9	78-87-5	75 ppm (350mg/m3/8H) N/A	orl-rat 1947mg/kg Unr-muli 3600mg/kg
	.1-Dichloropropene	35161	112322	0.05	5.00	40012.1	2000	NA	NA	0.017	NA	NA	2000.1	29.7	563-58-6	N/A	N/A
_	ia-1,3-Dichloropropene rans-1,3-Dichloropropene	35161 35161	112322	0.05	5.00	40010.0	2000	NA NA	NA	0.017	NA	NA	2000.0	23.0	10061-01-5	N/A	N/A
	lexachloro-1,3-butadiene	35181	112322	0.05	5.00	40021.9	2000	NA	NA	0.017	NA	NA	2000.4 2000.6	23.0 29.7	10061-02-8 87-68-3	N/A	N/A
	1,1,2-Tetrachloroethane	35161	112322	0.05	5.00	40011.9	2000	NA	NA	0.017	NA	NA	2000.0	22.9	630-20-6	0.02 ppm (0.24mg/m3/8H) N/A	ori-rat 62mg/kg ori-rat 670mg/kg
	,1,2,2-Tetrachloroethane ,1,2-Trichloroethane	35161 35161	112322	0.05	5.00	40007.5	2000	NA	NA	0.017	NA	NA	1999.9	22.9	79-34-5	5 ppm (35mg/m3/9H)(eldn)	gAgm008 tsr-ho
	richloroethene	35161	112322	0.05	5.00 5.00	40006.6	2000	NA	NA	0.017	NA NA	NA	1999.8	23.0	79-00-5	10 ppm (46mg/m3/8H)(skin)	orl-rat 636mg/kg
44. 1	,2,3-Trichloropropane	35181	112322	0.05	5.00	40007.5	2000	NA	NA	0.017	NA	NA	2000.9	22.9	79-01-6 98-18-4	50 ppm (270mg/m3/8H)	orl-mus 2402mg/kg
	enzene	36162	050823	0.05	5.00	40005.0	2000	NA	NA	0.017	NA	NA	1999.7	22.9	71-43-2	10 ppm (60mg/m3/8H) 1 ppm	orl-rat 149.6mg/kg orl-rat 4894mg/kg
	romobenzene Butvi benzene	35162 35162	050823	0.05	5.00	40005.9	2000	NA	NA	0.017	NA	NA	1999.8	22.9	108-86-1	N/A	orl-rat 2000mg/kg
48. E	thyi benzene	35162	050823	0.05	5.00	40003.8 40004.8	2000	NA	NA	0.017	NA	NA	1999.7 1999.7	22.9	104-51-8	N/A	N/A
49. P	isopropyl toluene	35162	050823	0.05	5.00	40005.8	2000	NA	NA	0.017	NA	NA	1999.7	22.9	100-41-4	100 ppm (435mg/m3/8H) N/A	orl-rat >2000mg/kg orl-rat 4750mg/kg
50. N 51. 5	aphthalene	35162	050823	0.05	5.00	40006.2	2000	NA	NA	0.017	NA	NA	1999.8	22.9	91-20-3	10 ppm (50mg/m3/8H)	orl-rat 490mg/kg
52. To		35162 35162	050823	0.05	5.00	40004.8	2000	NA	NA	0.017	NA	NA	1999.7	22.9	100-42-5	100 ppm	orl-rat 5000mg/kg
53. 1	2,3-Trichlorobenzene	35162	050823	0.05		40003.1	2000	NA	NA	0.017	NA NA	NA	1999.8	22.9	108-88-3 87-61-6	200 ppm	orl-rat 5000mg/kg
	2,4-Trichlorobenzene	35162	050823	0.05	5.00	40006.8	2000	NA	NA	0.017	NA	NA	1999.8	22.9	120-82-1	N/A 5 ppm (CL) (40mg/m3)	lpr-mus 1390mg/kg off-rat 750mg/kg
	2,4-Trimethylbenzene 3,5-Trimethylbenzene	35162	050823			40001.8	2000	NA	NA	0.017	NA	NA	1999.6	23.0	95-63-6	N/A	ori-rat 5g/kg
	-Xylane	35162	050823	0.05		40006.7 40005.8	2000	NA NA	NA	0.017	NA	NA	1999.0	22.9	108-67-8	N/A	orl-rat 5000mg/kg
58. 1e	rt-Butyl benzene	35163	101923			40001.2	2000	NA	NA	0.017	NA	NA	1999.8 1999.6	22.9	108-38-3 98-06-6	100 ppm (435mg/m3/8H) N/A	orl-rat 5g/kg N/A
	c-Butyl benzene Norobenzene	35163	101923			40002.4	2000	NA	NA	0.017	NA	NA	1999.6	22.9	135-98-8	N/A	ori-rat 2240mg/kg
	PROFESSION CONTRACTOR OF CONTRACTOR		101923			40003.8	2000	NA	NA	0.017	NA	NA	1999.7	22.9	108-90-7	75 ppm (350mg/m3/8H)	orl-rail 2290mg/kg
60. Či			101020			40000.3	2000	NA	NA	0.017	NA	NA NA	1999.5 1999.7	22.9	95-49-8	50 ppm (250mg/m3/8H)	orl-rat 3900mg/kg
60. Cr 61. 2-	Chiorotoluene Chiorotoluene	35163	101923	0.05					NA				1999.7		106-43-4	N/A	orl-ret 2100mg/kg
60. Cr 61. 2-4 62. 4-4 63. 1,1	Chlorotoluene Chlorotoluene 2-Dichlorobenzene	35163 35163	101923	0.05		40003.8	2000	NA	THPIC .	0.017	NA	NA		22.9	95-50-1	50 ppps (300mm/m/h) //** 1	
60. Cr 61. 24 62. 44 63. 1. 64. 1.	Chlorotoluene Chlorotoluene 2-Dichlorobenzene 3-Dichlorobenzene	35163 35163 35163	101923 101923	0.05	5.00 5.00	40001.7	2000	NA	NA	0.017	NA	NA	1999.6	22.9 23.0	95-50-1 541-73-1	50 ppm (300mp/m3) (CL) N/A	orl-rat 500mg/kg lpr-mus 1062mg/kg
60. Cr 61. 2-4 62. 4-4 63. 1.1 64. 1.1 65. 1.4	Chlorotoluene Chlorotoluene 2-Dichlorobenzene 3-Dichlorobenzene 1-Dichlorobenzene	35163 35163 35163 35163	101923 101923 101923	0.05 0.05 0.05	5.00 5.00 5.00	40001.7 40001.8	2000 2000	NA NA	NA NA	0.017 0.017	NA NA	NA NA	1999.6 1999.6	23.0 22.9	541-73-1 106-48-7	N/A 76 ppm (450mg/m3/8H)	ipr-mus 1062mg/kg orl-rat 500mg/kg
60. Cr 61. 2-4 62. 4-4 63. 1.1 64. 1.1 65. 1.4 66. 1sc	Chlorotoluene Chlorotoluene 2-Dichlorobenzene 3-Dichlorobenzene 1-Dichlorobenzene apropy/benzene	35163 35163 35163 35163 35163	101923 101923 101923 101923	0.05 0.05 0.05 0.05	5.00 5.00 5.00 5.00	40001.7	2000 2000 2000	NA NA NA	NA NA NA	0.017 0.017 0.017	NA NA NA	NA NA NA	1999.6 1999.6 1999.5	23.0 22.9 22.9	541-73-1 106-48-7 98-82-8	N/A 76 ppm (450mg/m3/8H) 50 ppm (245mg/m3/8H)	ori-rat 500mg/kg ori-rat 500mg/kg
60. Cr 61. 2-4 62. 4-4 63. 1.1 64. 1.1 65. 1.4 66. 1sc	Chiorotoluene Chiorotoluene 2-Dichiorobenzene 3-Dichiorobenzene 1-Dichiorobenzene 8-ropytbenzene ?ropytbenzene Kylene	35163 35163 35163 35163 35163 35163 35163	101923 101923 101923 101923 101923 101923 101923	0.05 0.05 0.08 0.05 0.05 0.05	5.00 5.00 5.00 5.00 5.00 5.00 5.00	40001.7 40001.8 40000.8	2000 2000	NA NA	NA NA	0.017 0.017	NA NA	NA NA	1999.6 1999.6	23.0 22.9	541-73-1 106-48-7	N/A 76 ppm (450mg/m3/8H)	ipr-mus 1062mg/kg orl-rat 500mg/kg

The certified value is the concentration exclusion of the gravimetric and volumetric measurements unless otherwise stated,
 Standards are perpared gravimetrically using balances their are calibration with weights traceable to NEST (see above),
 Standards are certified (<) 0.5% of the stated value, usion otherwise stated,
 Ad Standards, full and the stated value, usion otherwise stated,
 Ad Standards, full empirically using anyote, should be stored with complete light and under appropriate theoretically candillions.
 Uncertainty Reference: Taylor, R.N. and Kuyat, C.E., "Calciolines for Evaluating and Expressing the Uncertainty of NIST Measurement Resolt,"
 NIST Technical Note 1297, U.S. Government Printing Office, Washington, UC, (1994).

Certified Reference Material CRM

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 contac.)
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Run 16, "P95317 L021624 [2000µg/mL in MeOH]" Faher 1,1,2-Trichtoro-1,2,2-tr Run Length: 60.00 min, 35998 points at 10 points/second. Created: Sat, Feb 17, 2024 at 8:56:46 AM. Sampled: Sequence "021624-GC5M1", Method "GC5-M1". 1,1-Dichiorosthane Acetonitrile Iodomethane Allyi chloride Carbon disullide/Nathylene ( trans-1,2-Dicklonethene 1.1-Dicklonethane 2,2-Dicklonethane Analyzed using Method "GC5-M1". 2,2:0:0kileropropana cis-1,2:0ciliarosthane Mathacrytonityle/Methyl ecry Isobutane/1,1,1-Trictikoredit 1,1-0ciliaropropana Carbon tetrachioride Bernsen(1,2:0kinarostnana 1,2:0kinarosthana 1,2:0kinarosthana Bichmontetkinana/3:Nikropana Comments Column ID SPB-Vocol 105 meter X 0.53mm X 3.0µm film thickness Flow rates: Total flow=290mL/min., Helium (carrier)=10mL/min., Helium(make-up)=10mL/min., Hydogen(make-up)=40mL/min., Air (make-up)=230mL/min. Oven Profile: Temp. 1=35°C (Time 1=10 min.), Temp 2=200°C (Time 2=8.75 min.), Rate = 4°C/min., Total run time=60 min. Injector temp.=200°C, FID Temp.=200°C. GC5-M1 Analysis by Candice Warren amethane/2-Nik Dibrom Distrimining and Anterprese FID Signal = Edaq Channel 1 Standard injection = 0.5µL, Range=3 Dibromochioromethe 1,2-Dibromoethene 1,2-Directmeethene
 Chorobarrene
 L,2,2-Titterioreabhare
 L,2,2-Titterioreabhare
 Torson-1,A-Oldistan T 1000000 800000 600000 N 400000 Nitrobenzane 1,2,4-Trichkorobenzan Hexachiorobutadiima Naphchalena 1,2,3-Trichkorobenken \$2 200000 50 20 30 10 min

Absolute Standards Inc.

# Safety Data Sheet (SDS) GHS/OSHA Compliant

# Section I Product and Company Identification

Manufacturer's Name	ABSOLUTE STANDARDS INC		ephone USA & CANADA	1-800-535-5053
Address	44 Rossotto Dr. Hamden CT, 06514	Emergency Tele	phone International	1-352-323-3500
Section II - Hazards Ider		Date Prepared/	Hevised	January 1, 2023
	GHS Classification In accor			
H225 Highly Fi H370 Cause da	lammable Liquid and Vapor amage to organs	H301, 311, 331	Toxic if swallowed, skin con	tact, inhaled
P271 Use in ve	entilated area	H351 P280	Suspected of causing cance Use gloves, eye protection/	er er sheild
P302,332 If on skir	n, wash with soap and water	P305,351,338	If in eyes, remove contacts,	rinse with water
	Signal Word: DANGER			
Section III - Composition	1			
Components (Specific Che Methanol	emical Identity; Common Name(s))	010# 07 50 1		% (optional)
vietriarior	METHYL ALCOHOL	CAS#: 67-56-1		> 97
See Certified Weight	Report For Other Analytes Pre	esent At Trace	Quantities.	
NTENDED USE: REFER				
Section IV. FIRST AID ME	ASURES			
General advice	Consult a physician. Show this safety data	a sheet to the doctor i	n attendance Move to sefe area	
finhaled	If inhaled, move person into fresh air. If no	ot breathing, give artifi	cial respiration. Consult a physician.	
n case of skin contact	Wash with soap and water. Consult a phy	/sician.		
n case of eye contact f swallowed	Rinse thoroughly with plenty of water for a Do NOT induce vomiting. Rinse mouth with	at least 15 minutes and	d consult a physician.	
		in water. Consult a pri	ysiciali.	
Section V. FIREFIGHTING	MEASURES			
lammability	Flammable in the presence of a sour	ce of ignition when the No smoking.	e temperature is above the flash point	. Keep away from
lammability uitable extinguishing media	Flammable in the presence of a sour heat/sparks/open flame/hot surface. Use water spray, alcohol-resistant for	No smoking. am, dry chemical or ca	arbon dioxide.	. Keep away from
lammability	Flammable in the presence of a sour heat/sparks/open flame/hot surface.	No smoking. am, dry chemical or ca	arbon dioxide.	. Keep away from
lammability uitable extinguishing media	Flammable in the presence of a sour heat/sparks/open flame/hot surface. Use water spray, alcohol-resistant for Wear self contained breathing appara	No smoking. am, dry chemical or ca	arbon dioxide.	. Keep away from
lammability uitable extinguishing media rotective equipment for fire	Flammable in the presence of a sour heat/sparks/open flame/hot surface. Use water spray, alcohol-resistant for Wear self contained breathing appara <b>RELEASE MEASURES</b> Wear respiratory protection. Avoid breathing	No smoking. am, dry chemical or ca atus for fire fighting if r	arbon dioxide. necessary.	
lammability uitable extinguishing media rotective equipment for fire section VI. ACCIDENTAL ersonal precautions	Flammable in the presence of a sour heat/sparks/open flame/hot surface. Use water spray, alcohol-resistant for Wear self contained breathing appara <b>RELEASE MEASURES</b> Wear respiratory protection. Avoid breathin ignition. Vapours accumulate to form explo	No smoking. am, dry chemical or ca atus for fire fighting if r ng vapors, mist or gas sive concentrations.	arbon dioxide. necessary. . Ensure adequate ventilation. Remov	
lammability uitable extinguishing media rotective equipment for fire ection VI. ACCIDENTAL	Flammable in the presence of a sour heat/sparks/open flame/hot surface. Use water spray, alcohol-resistant for Wear self contained breathing appara <b>RELEASE MEASURES</b> Wear respiratory protection. Avoid breathing	No smoking. am, dry chemical or ca atus for fire fighting if r ng vapors, mist or gas usive concentrations. o do so. Do not let pro	arbon dioxide. hecessary. . Ensure adequate ventilation. Remov	ve all sources of
lammability uitable extinguishing media rotective equipment for fire ection VI. ACCIDENTAL ersonal precautions nvironmental precautions	Flammable in the presence of a sourn heat/sparks/open flame/hot surface. Use water spray, alcohol-resistant for Wear self contained breathing appara <b>RELEASE MEASURES</b> Wear respiratory protection. Avoid breathin ignition. Vapours accumulate to form explo Prevent further leakage or spillage if safe t Contain spillage, and then collect and plac	No smoking. am, dry chemical or ca atus for fire fighting if r ng vapors, mist or gas usive concentrations. o do so. Do not let pro	arbon dioxide. hecessary. . Ensure adequate ventilation. Remov	re all sources of
lammability uitable extinguishing media rotective equipment for fire ection VI. ACCIDENTAL ersonal precautions nvironmental precautions lean up	Flammable in the presence of a sourn heat/sparks/open flame/hot surface. Use water spray, alcohol-resistant for Wear self contained breathing appare <b>RELEASE MEASURES</b> Wear respiratory protection. Avoid breathin ignition. Vapours accumulate to form explo Prevent further leakage or spillage if safe t Contain spillage, and then collect and plac <b>ND STORAGE</b>	No smoking. am, dry chemical or ca atus for fire fighting if r ng vapors, mist or gas usive concentrations. to do so. Do not let pro- te in container for disp	arbon dioxide. hecessary. . Ensure adequate ventilation. Remov oduct enter drains. osal according to local regulations (se	re all sources of
lammability uitable extinguishing media rotective equipment for fire ection VI. ACCIDENTAL ersonal precautions nvironmental precautions lean up ection VII. HANDLING AP recautions for safe handling	Flammable in the presence of a sourn heat/sparks/open flame/hot surface. Use water spray, alcohol-resistant for Wear self contained breathing appara <b>RELEASE MEASURES</b> Wear respiratory protection. Avoid breathin ignition. Vapours accumulate to form explo Prevent further leakage or spillage if safe to Contain spillage, and then collect and plac <b>ND STORAGE</b> Avoid contact with skin and eyes. Avo Use ventilation Keep away from source	No smoking. am, dry chemical or ca atus for fire fighting if r atus for fire fighting if r or vapors, mist or gas psive concentrations. to do so. Do not let pro- e in container for disp id inhalation of vapour ces of ignition. No smo	arbon dioxide. hecessary. . Ensure adequate ventilation. Remove oduct enter drains. osal according to local regulations (se or or mist.	re all sources of se section 13).
lammability uitable extinguishing media rotective equipment for fire ection VI. ACCIDENTAL ersonal precautions nvironmental precautions lean up ection VII. HANDLING A	Flammable in the presence of a sourn heat/sparks/open flame/hot surface. Use water spray, alcohol-resistant for Wear self contained breathing appare <b>RELEASE MEASURES</b> Wear respiratory protection. Avoid breathin ignition. Vapours accumulate to form explo Prevent further leakage or spillage if safe t Contain spillage, and then collect and plac <b>ND STORAGE</b> Avoid contact with skin and eyes. Avo	No smoking. am, dry chemical or ca atus for fire fighting if r atus for fire fighting if r or vapors, mist or gas psive concentrations. to do so. Do not let pro- e in container for disp id inhalation of vapour ces of ignition. No smo	arbon dioxide. hecessary. . Ensure adequate ventilation. Remove oduct enter drains. osal according to local regulations (se or or mist.	re all sources of se section 13).
lammability uitable extinguishing media rotective equipment for fire ecction VI. ACCIDENTAL ersonal precautions nvironmental precautions lean up ection VII. HANDLING AI recautions for safe handling orage Conditions	Flammable in the presence of a sourn heat/sparks/open flame/hot surface. Use water spray, alcohol-resistant for Wear self contained breathing appara <b>RELEASE MEASURES</b> Wear respiratory protection. Avoid breathin ignition. Vapours accumulate to form explo Prevent further leakage or spillage if safe t Contain spillage, and then collect and plac <b>ND STORAGE</b> Avoid contact with skin and eyes. Avo Use ventilation Keep away from sourc Keep container tightly closed in a dry	No smoking. am, dry chemical or ca atus for fire fighting if r ng vapors, mist or gas usive concentrations. to do so. Do not let pro- e in container for disp id inhalation of vapour ces of ignition. No smo and well-ventilated pla	arbon dioxide. hecessary. . Ensure adequate ventilation. Remove oduct enter drains. osal according to local regulations (se or or mist.	re all sources of se section 13).
lammability uitable extinguishing media rotective equipment for fire eection VI. ACCIDENTAL ersonal precautions nvironmental precautions lean up ection VII. HANDLING AI recautions for safe handling orage Conditions ection VIII. EXPOSURE C	Flammable in the presence of a sourn heat/sparks/open flame/hot surface. Use water spray, alcohol-resistant for Wear self contained breathing appara <b>RELEASE MEASURES</b> Wear respiratory protection. Avoid breathin ignition. Vapours accumulate to form explo Prevent further leakage or spillage if safe to Contain spillage, and then collect and plac <b>ND STORAGE</b> Avoid contact with skin and eyes. Avo Use ventilation Keep away from source Keep container tightly closed in a dry and kept upright to prevent leakage.	No smoking. am, dry chemical or ca atus for fire fighting if r ng vapors, mist or gas usive concentrations. to do so. Do not let pro- e in container for disp id inhalation of vapour ces of ignition. No smo and well-ventilated pla	arbon dioxide. hecessary. . Ensure adequate ventilation. Remove oduct enter drains. osal according to local regulations (se or or mist.	re all sources of se section 13).
lammability uitable extinguishing media rotective equipment for fire eection VI. ACCIDENTAL ersonal precautions nvironmental precautions lean up ection VII. HANDLING AI recautions for safe handling orage Conditions ection VIII. EXPOSURE C	Flammable in the presence of a sourn heat/sparks/open flame/hot surface. Use water spray, alcohol-resistant for Wear self contained breathing appara <b>RELEASE MEASURES</b> Wear respiratory protection. Avoid breathin ignition. Vapours accumulate to form explo Prevent further leakage or spillage if safe t Contain spillage, and then collect and plac <b>ND STORAGE</b> Avoid contact with skin and eyes. Avo Use ventilation Keep away from sourc Keep container tightly closed in a dry and kept upright to prevent leakage.	No smoking. am, dry chemical or ca atus for fire fighting if r ng vapors, mist or gas usive concentrations. to do so. Do not let pro- e in container for disp id inhalation of vapour ces of ignition. No smo and well-ventilated pla	arbon dioxide. hecessary. . Ensure adequate ventilation. Remove oduct enter drains. osal according to local regulations (se or or mist.	re all sources of se section 13).
lammability uitable extinguishing media rotective equipment for fire eection VI. ACCIDENTAL ersonal precautions nvironmental precautions lean up ection VII. HANDLING AI recautions for safe handling orage Conditions ection VIII. EXPOSURE C ethanol 67-56-1 TVVA in notation TVVA 200 ppn tential for skin absorption , inge	Flammable in the presence of a sourn heat/sparks/open flame/hot surface. Use water spray, alcohol-resistant for Wear self contained breathing appara <b>RELEASE MEASURES</b> Wear respiratory protection. Avoid breathin ignition. Vapours accumulate to form explo Prevent further leakage or spillage if safe t Contain spillage, and then collect and plac <b>ND STORAGE</b> Avoid contact with skin and eyes. Avo Use ventilation Keep away from sourc Keep container tightly closed in a dry and kept upright to prevent leakage. <b>CONTROLS/PERSONAL PROTECTI</b>	No smoking. am, dry chemical or ca atus for fire fighting if r atus for fire fighting if r ng vapors, mist or gas usive concentrations. to do so. Do not let pro- e in container for disp id inhalation of vapour es of ignition. No smo and well-ventilated pla	arbon dioxide. hecessary. . Ensure adequate ventilation. Remove oduct enter drains. osal according to local regulations (se r or mist. oking. Prevent the build up of electros ace. Containers which are opened mu	re all sources of se section 13).

Section IX - Physical/Chemical Characteristics

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

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 Possibility of hazardous reactions Conditions to avoid Materials to avoid Hazardous decomposition products for

Stable under recommended storage conditions. Vapours may form explosive mixture with air. Heat, flames, sparks, extreme temperature and sunlight.

void Acid chlorides, Acid anhydrides, Oxidizing agents, Alkali metals, Reducing agents, Acids

Hazardous decomposition products formed under fire conditions. - Carbon oxides

# Section XI. TOXICOLOGICAL INFORMATION

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

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

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

#### Section XIII. DISPOSAL CONSIDERATIONS

Dispose with normal Laboratory Solvent Waste.

# Section XIV. TRANSPORT INFORMATION

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

#### Section XV. REGULATORY INFORMATION

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

#### Section XVI. Misc. INFORMATION

The information in this Material Safety Data Sheet meets the requirements of the United States Occupational Safety and Health Act and regulations promulgated thereunder (29 CFR 1910.1200 et. seq.) and Global Harmonized System (GHS). This document is intended only as a guide to the appropriate precautionary handling of the material by trained personnel, or supervised by a person trained in chemical handling. The user is responsible for determining the precautions and dangers of this chemical for his or her particular application. Depending on usage, protective clothing including eye and face guards and respirators must be used to avoid contact with material or breathing chemical vapors/fumes. Exposure to this product may have serious adverse health effects. This chemical may interact with other substances. Since the potential uses are so varied, ABSOLUTE STANDARDS INC. cannot warn of all the potential dangers of use or interaction with other chemicals or substances. ABSOLUTE STANDARDS INC 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.

Absolute Standards, 800-368-1131 www.absolutestandards.com	Absolute Standards, Inc. 800-368-1131 www.absolutestandards.com			Certified	Certified Reference Material CRM	e Material C	I CRM	2 119	to the second se	 	ANAB ISO 1 AR-1539 Ce https://Absolut	ANAB ISO 17034 Accredited AR-1539 Certificate Number https://Absolutestandards.com
CERTIFIED WEIGHT REPORT	HT REPORI Part Number: Lot Number: Description:	91980 091424 Acrolein			Solve	Lots 072324			Justine	Harden K		
Nomi Weight(s) shc	Expiration Date: 101424 Recommended Storage: Refrigerate Nominal Concentration ( <i>ug/mL</i> ): 5000 NIST Test ID#; 6UTB Weight(s) shown below were combined and diluted to (mL):	101424 Refrigerate (4 °C) 5000 6UTB d diluted to (mL):	10.0	5E-05 Balance Uncertainty 0.001 Flask Uncertainty	ertainty ainty			Formulated By:	N N	Justin Dippold	091424 DATE 091424 DATE	
Compound	L	Lot RM# Number	Nominat Conc (µg/mL)	Purity Uncertainty (%) Purity	ty Target Weight(g)	Actual Weight(g)	Expanded Actual Uncertainty Conc (µg/mL) (+/-) (µg/mL)		Solvent Safety CAS# 0SH	SDS Information (Solvent Safety info. On Attached pg.) CAS# 05HA PEL (TWA) UDS	hed pg.) LDS0	
1. Acrolein Method: Rate = 4 <sup>o</sup> Lone tern	oil         5         103755V10F         5000         97         0.5         0.05166         0.05175         5008.9         52.5         107-02-8         0.1 ppm         o           Mathed         GC6MSD-1. Detector:         Mass Selective Detector (Scan mode). Columns: Vocol (60m X 0.25mm ID X 1.5µm film thickness). Oven Profile: Temp. 1 = 35°C (Time 1 = 10min.). Temp. 2=20°C (Time 2 = 8.75 min.)         0           Lone term strater is not recommended for comment of the mode.         NOTE: Due to the instability of acrolein in solutions of acrolein. and any dilutions thereaf, found it mode is mode.         0.8.00 (60m X 0.25mm ID X 1.5µm film thickness). Oven Profile: Temp. 1 = 35°C (Time 1 = 10min.). Temp. 2=20°C (Time 2 = 8.75 min.)         0	5 103755V10F we Detector (Scan mode) ector Temp. = 220°C. An	5000 ). Column: Vocol ( nalyst: Pedro Rent	97 0.5 (60m X 0.25mm ID) as. NOTE: Due to th	0.05166 X 1.5µm film thicknown in the context of acrol	0.05175 css). Oven Profile cia in solution, all	5008.9 le: Temp. 1 = 35°C. Il solutions of acrol	52.5 10 (Time 1 = 10min lein, and any dilut	107-02-8 0 nin.), Temp. 2–200°C ( littions thereof, should	0.1 ppm (Time 2 = 8.75 min.) ( he need inversely	-La	
Abundance	TIC: [BS	TIC: [BSB2]79005.D	partners n surber	unotmation is requ	Abundance	φ	Scan 232	(8.927 min)	Scan 232 (8.927 min): [BSB2]79005.D	D.		
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200000		Ì	0////		5000	0	50					
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10000					30000	0						
					2000	0						
50000					10000	0 37	~					
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	<ul> <li>The certification</li> <li>Shandards:</li> <li>Shandards:</li> <li>All Shandards:</li> <li>Uncertainty</li> <li>NIST Tech</li> </ul>	<ul> <li>The certified value is the concentration calculated from gravimetric and volumetric measurements unless otherwise stated.</li> <li>Shandards are prepared gravimetrically using hadances that are calibrated with weights traceable to MIST (see above).</li> <li>Shandards are certified (++) 0.5% of the stated value, unless otherwise stated.</li> <li>All Shandards, after opening ampule, should be stored with eags tight stated.</li> <li>All Shandards, after opening ampule, should be stored with cass tight and under appropriate taboratory conditions.</li> <li>Uncertainty Reference: Taylor, B.N. and Kuyat, C.B., "Guidelines for Evaluating and Expressing the Uncertainty of NIST Measurement Result," NIST Technical Note 1297, U.S. Government Printing Office, Washington, DC, (1994).</li> </ul>	ation calculated f rically using bala of the stated value ule, should be stor .N. and Kuyat, C.	rom gravimetric au nocs that are calibr e, unless otherwise: red with caps tight, E, "Guidelines for ing Office, Washing	d volumetric means aled with weights th stated. In under appropri- tind under appropri- tion, DC, (1994).	arements unless ( aceable to NIST afe laboratory ex pressing the Une	otherwise stated. (see above), onditions. certainty of NIST )	Measurement R	esstafe <sup>a</sup>			

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Lot # 091424 Part # 91980

Absolute Standards, 800-368-1131 www.absolutestandards.com	Absolute Standards, Inc. 800-368-1131 www.absolutestandards.com			Certified	Certified Reference Material CRM	e Material C	I CRM	2 119	to the second se	 	ANAB ISO 1 AR-1539 Ce https://Absolut	ANAB ISO 17034 Accredited AR-1539 Certificate Number https://Absolutestandards.com
CERTIFIED WEIGHT REPORT	HT REPORI Part Number: Lot Number: Description:	91980 091424 Acrolein			Solve	Lots 072324			Justine	Harden K		
Nomi Weight(s) shc	Expiration Date: 101424 Recommended Storage: Refrigerate Nominal Concentration ( <i>ug/mL</i> ): 5000 NIST Test ID#; 6UTB Weight(s) shown below were combined and diluted to (mL):	101424 Refrigerate (4 °C) 5000 6UTB d diluted to (mL):	10.0	5E-05 Balance Uncertainty 0.001 Flask Uncertainty	ertainty ainty			Formulated By:	N N	Justin Dippold	091424 DATE 091424 DATE	
Compound	L	Lot RM# Number	Nominat Conc (µg/mL)	Purity Uncertainty (%) Purity	ty Target Weight(g)	Actual Weight(g)	Expanded Actual Uncertainty Conc (µg/mL) (+/-) (µg/mL)		Solvent Safety CAS# 0SH	SDS Information (Solvent Safety info. On Attached pg.) CAS# 05HA PEL (TWA) UDS	hed pg.) LDS0	
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Abundance	TIC: [BS	TIC: [BSB2]79005.D	partners n sunner	unotmation is requ	Abundance	φ	Scan 232	(8.927 min)	Scan 232 (8.927 min): [BSB2]79005.D	D.		
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200000		Ì	0////		5000	0	50					
15000					40000	0						
10000					30000	0						
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50000					10000	0 37	~					
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	<ul> <li>The certification</li> <li>Shandards:</li> <li>Shandards:</li> <li>All Shandards:</li> <li>Uncertainty</li> <li>NIST Tech</li> </ul>	<ul> <li>The certified value is the concentration calculated from gravimetric and volumetric measurements unless otherwise stated.</li> <li>Shandards are prepared gravimetrically using hadances that are calibrated with weights traceable to MIST (see above).</li> <li>Shandards are certified (++) 0.5% of the stated value, unless otherwise stated.</li> <li>All Shandards, after opening ampule, should be stored with eags tight stated.</li> <li>All Shandards, after opening ampule, should be stored with cass tight and under appropriate taboratory conditions.</li> <li>Uncertainty Reference: Taylor, B.N. and Kuyat, C.B., "Guidelines for Evaluating and Expressing the Uncertainty of NIST Measurement Result," NIST Technical Note 1297, U.S. Government Printing Office, Washington, DC, (1994).</li> </ul>	ation calculated f rically using bala of the stated value ule, should be stor .N. and Kuyat, C.	rom gravimetric au nocs that are calibr e, unless otherwise: red with caps tight, E, "Guidelines for ing Office, Washing	d volumetric means aled with weights th stated. In under appropri- tind under appropri- tion, DC, (1994).	arements unless ( aceable to NIST afe laboratory ex pressing the Une	otherwise stated. (see above), onditions. certainty of NIST )	Measurement R	esstafe <sup>a</sup>			

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1 of 1

Lot # 091424 Part # 91980

Absolute Standards, Inc. 800-368-1131 www.absolutestandards.com		Certified Reference Material CRM	ANAB ISO 17034 Accredited AR-1539 Certificate Number https://Absolutestandards.com
CERTIFIED WEIGHT REPORT     95318       Part Number:     95318       Lot Number:     120524       Description:     2-Chloroet       Expiration Date:     120527       Recommended Storage:     Refrigerat       Nominal Concentration ( <i>ug/mL</i> ):     10000       Neight(s) shown below were combined and diluted to (mL):     Under the tot (mL):	95318 120524 2-Chloroethyl vinyl ether 120527 Refrigerate (4 °C) 10000 6UTB 10000 6UTB 30.0 M# Lot Number Conc (vg/mt)	2.6.1 $1.1$ $2.6Solvent(s): LotsMethanol EJ143-US1.14.520 t^{2}1.14.520 t^{2}1.14$	Formulated By: Prashant Chaufuan 120524 Formulated By: Prashant Chaufuan DATE Reviewed By: Pedro L. Rentas DATE Expanded SDS Information Uncertainty (Solvent Safety Info. On Attached pg.) (++) (ug/mL) Case OstA PEL (TWA) LD50
1. 2-Chloroethyl vinyl ether 74 MKCD0033 10000 99 Method: GC6MSD-1 M. Detector: MSD. Column: (60m X 0.25mm X 1.5 $\mu$ m). Injector B Temp = 200°C, Detector B Temp. = 220°C. Analyst: Candice Warren.	74 MKCD0033 10000 . Column: (60m X 0.25mm X 1.5 np. = 220°C. Analyst: Candice W	2-Chloroethyl viryl ether 74 MKCD0033 10000 99 0.2 0.50536 0.50550 10002.9 40.5 110-75-8 NA 00 Method: GC6MSD-1 M. Detector: MSD. Column: (60m X 0.25mm X 1.5 µm). Oven Profile: Temp 1 = 35°C (Time 1=10min.), Temp 2 = 200°C (Time 2=8.75 min.), Rate = 4°C/min., Injector B Temp = 200°C, Detector B Temp = 220°C. Analyst: Candice Warren.	40.5         110-75-8         N/A         ort-rat 250mg/kg           ap 2 = 200°C (Time 2=8.75 min.), Rate = 4°C/min.,
Abordance 222000 160000 140000 100000 60000 60000 20000 100000 100000 100000 100000 100000 100000 15.00 2.00 2.00 2.00 2.00 2.00 2.00 2.00	MG 553162	Abordance 20005 20005 20005 20005 20005 16000 16000 16000 16000 200 200	
<ul> <li>The ce</li> <li>Stands</li> <li>Stands</li> <li>Stands</li> <li>All Sta</li> <li>Uncert</li> <li>NUST'</li> </ul>	<ul> <li>The certified value is the concentration calculated from gravimetri standards are prepend gravinetrically using balances that are cal smalards are precrifted (<i>H</i>-1) 0.3% of the stated value, unless otherw - All Standards, after opening ampule, should be stored with caps fig of Uncertainty Reference: Taylor, B.N. and Kuyat, C.B., "Guidelines NIST Technical Note 1297, U.S. Government Printing Office, Wasl</li> </ul>	<ul> <li>The certified value is the concentration calculated from gravimetric and volumetric measurements unless otherwise stated.</li> <li>Standards are prepared gravimetrically using balances that are calibrated with weights traceable to NIST (see above).</li> <li>Standards are certified (+/-) 0.5% of the stated value, unless otherwise stated.</li> <li>All Standards are certified (+/-) 0.5% of the stated value, unless otherwise stated.</li> <li>All Standards, after opening ampule, should be stored with cass tight and under appropriate taboratory conditions.</li> <li>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).</li> </ul>	tated. ). NIST Measurement Result,"

Constant Con

Safety Data Sheet (SDS)

GHS/OSHA Compliant

Section I Product and Co	mpany Identification			
	CAL STANDARD DISSOLVED IN ME			4 000 525 5052
Manufacturer's Name	ABSOLUTE STANDARDS INC 44 Rossotto Dr.		phone USA & CANADA phone International	1-800-535-5053 1-352-323-3500
Address	Hamden CT, 06514	Date Prepared/F		January 1, 2024
Section II - Hazards Identi				
	GHS Classification in accord	ance with 29 CF	R 1910 (OSHA HCS)	
H370 Cause dar P271 Use in ver	mmable Liquid and Vapor nage to organs ntilated area wash with soap and water Signal Word: DANGER		Toxic if swallowed, skin co Suspected of causing canc Use gloves, eye protection if in eyes, remove contacts	er fface sheild
Section III - Composition	·			
Components (Specific Cher Methanol	nical Identity; Common Name(s)) METHYL ALCOHOL	CAS#: 67-56-1		% (optional) > 97
See Certified Weight F	Report For Other Analytes Pre	esent At Trace	Quantities.	
Section IV. FIRST AID ME	ASURES			
If inhaled In case of skin contact In case of eye contact If swallowed	If inhaled, move person into fresh air. If no Wash with soap and water. Consult a phy Rinse thoroughly with plenty of water for a Do NOT induce vomiting. Rinse mouth wit	/sician. at least 15 minutes ar	d consult a physician.	
Section V. FIREFIGHTING	MEASURES			
Flammability Suitable extinguishing media Protective equipment for fire	Flammable in the presence of a sour heat/sparks/open flame/hot surface. Use water spray, alcohol-resistant for Wear self contained breathing appare	No smoking. am, dry chemical or c	arbon dioxide.	int. Keep away from
Section VI. ACCIDENTAL	RELEASE MEASURES			
Personal precautions Environmental precautions Clean up	Wear respiratory protection. Avoid breathin ignition. Vapours accumulate to form explo Prevent further leakage or spillage if safe Contain spillage, and then collect and place	osive concentrations. to do so. Do not let p	roduct enter drains.	
Section VII. HANDLING A	ND STORAGE			
Precautions for safe handling Storage Conditions	Avoid contact with skin and eyes. Ave Use ventilation Keep away from sour Keep container tightly closed in a dry and kept upright to prevent leakage.	ces of ignition. No si	noking. Prevent the build up of elec	
Section VIII. EXPOSURE (	CONTROLS/PERSONAL PROTECT	ION		
	m =		spected prior to use. Eye protect	ion.
Section IX - Physical/Che	mical Characteristics			

Boiling Point			Specific Gravity (H2O = 1)	
J. J		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 stabilityStable under recommended storage conditions.Possibility of hazardous reactionsVapours may form explosive mixture with air.Conditions to avoidHeat, flames, sparks, extreme temperature and sunlight.Materials to avoidAcid chlorides, Acid anhydrides, Oxidizing agents, Alkali metals, Reducing agents, AcidsHazardous decomposition products formed under fire conditions. - Carbon oxides

# Section XI. TOXICOLOGICAL INFORMATION

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

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

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

#### Section XIII. DISPOSAL CONSIDERATIONS

Dispose with normal Laboratory Solvent Waste.

#### Section XIV. TRANSPORT INFORMATION

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

#### Section XV. REGULATORY INFORMATION

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

#### Section XVI. Misc. INFORMATION

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

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Abordance 222000 160000 140000 100000 60000 60000 20000 100000 100000 100000 100000 100000 100000 15.00 2.00 2.00 2.00 2.00 2.00 2.00 2.00	MG 553162	Abordance 20005 20005 20005 20005 20005 16000 16000 16000 16000 200 200	
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Constant Con

Safety Data Sheet (SDS)

GHS/OSHA Compliant

Section I Product and Co	mpany Identification			
	CAL STANDARD DISSOLVED IN ME			4 000 525 5052
Manufacturer's Name	ABSOLUTE STANDARDS INC 44 Rossotto Dr.		phone USA & CANADA phone International	1-800-535-5053 1-352-323-3500
Address	Hamden CT, 06514	Date Prepared/F		January 1, 2024
Section II - Hazards Identi				
	GHS Classification in accord	ance with 29 CF	R 1910 (OSHA HCS)	
H370 Cause dar P271 Use in ver	mmable Liquid and Vapor nage to organs ntilated area wash with soap and water Signal Word: DANGER		Toxic if swallowed, skin co Suspected of causing canc Use gloves, eye protection if in eyes, remove contacts	er fface sheild
Section III - Composition	·			
Components (Specific Cher Methanol	nical Identity; Common Name(s)) METHYL ALCOHOL	CAS#: 67-56-1		% (optional) > 97
See Certified Weight F	Report For Other Analytes Pre	esent At Trace	Quantities.	
Section IV. FIRST AID ME	ASURES			
If inhaled In case of skin contact In case of eye contact If swallowed	If inhaled, move person into fresh air. If no Wash with soap and water. Consult a phy Rinse thoroughly with plenty of water for a Do NOT induce vomiting. Rinse mouth wit	/sician. at least 15 minutes ar	d consult a physician.	
Section V. FIREFIGHTING	MEASURES			
Flammability Suitable extinguishing media Protective equipment for fire	Flammable in the presence of a sour heat/sparks/open flame/hot surface. Use water spray, alcohol-resistant for Wear self contained breathing appare	No smoking. am, dry chemical or c	arbon dioxide.	int. Keep away from
Section VI. ACCIDENTAL	RELEASE MEASURES			
Personal precautions Environmental precautions Clean up	Wear respiratory protection. Avoid breathin ignition. Vapours accumulate to form explo Prevent further leakage or spillage if safe Contain spillage, and then collect and place	osive concentrations. to do so. Do not let p	roduct enter drains.	
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Section VIII. EXPOSURE (	CONTROLS/PERSONAL PROTECT	ION		
	m =		spected prior to use. Eye protect	ion.
Section IX - Physical/Che	mical Characteristics			

Boiling Point			Specific Gravity (H2O = 1)	
J. J		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

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

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

#### Section XIII. DISPOSAL CONSIDERATIONS

Dispose with normal Laboratory Solvent Waste.

#### Section XIV. TRANSPORT INFORMATION

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

#### Section XV. REGULATORY INFORMATION

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

#### Section XVI. Misc. INFORMATION

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Absolute Standards, Inc. 800-368-1131 www.absolutestandards.com		Certified Reference Material CRM	ANAB ISO 17034 Accredited AR-1539 Certificate Number https://Absolutestandards.com
CERTIFIED WEIGHT REPORT     95318       Part Number:     95318       Lot Number:     120524       Description:     2-Chloroet       Expiration Date:     120527       Recommended Storage:     Refrigerat       Nominal Concentration ( <i>ug/mL</i> ):     10000       Neight(s) shown below were combined and diluted to (mL):     Under the tot (mL):	95318 120524 2-Chloroethyl vinyl ether 120527 Refrigerate (4 °C) 10000 6UTB 10000 6UTB 30.0 M# Lot Number Conc (vg/mt)	2.6.1 $1.1$ $2.6Solvent(s): LotsMethanol EJ143-US1.14.520 t^{2}1.14.520 t^{2}1.14$	Formulated By: Prashant Chaufuan 120524 Formulated By: Prashant Chaufuan DATE Reviewed By: Pedro L. Rentas DATE Expanded SDS Information Uncertainty (Solvent Safety Info. On Attached pg.) (++) (ug/mL) Case OstA PEL (TWA) LD50
1. 2-Chloroethyl vinyl ether 74 MKCD0033 10000 99 Method: GC6MSD-1 M. Detector: MSD. Column: (60m X 0.25mm X 1.5 $\mu$ m). Injector B Temp = 200°C, Detector B Temp. = 220°C. Analyst: Candice Warren.	74 MKCD0033 10000 . Column: (60m X 0.25mm X 1.5 np. = 220°C. Analyst: Candice W	2-Chloroethyl viryl ether 74 MKCD0033 10000 99 0.2 0.50536 0.50550 10002.9 40.5 110-75-8 NA 00 Method: GC6MSD-1 M. Detector: MSD. Column: (60m X 0.25mm X 1.5 µm). Oven Profile: Temp 1 = 35°C (Time 1=10min.), Temp 2 = 200°C (Time 2=8.75 min.), Rate = 4°C/min., Injector B Temp = 200°C, Detector B Temp = 220°C. Analyst: Candice Warren.	40.5         110-75-8         N/A         ort-rat 250mg/kg           ap 2 = 200°C (Time 2=8.75 min.), Rate = 4°C/min.,
Abordance 222000 160000 140000 100000 60000 60000 20000 100000 100000 100000 100000 100000 100000 15.00 2.00 2.00 2.00 2.00 2.00 2.00 2.00	MG 553162	Abordance 20005 20005 20005 20005 20005 16000 16000 16000 16000 200 200	
<ul> <li>The ce</li> <li>Stands</li> <li>Stands</li> <li>Stands</li> <li>All Sta</li> <li>Uncert</li> <li>NUST'</li> </ul>	<ul> <li>The certified value is the concentration calculated from gravimetri standards are prepend gravinetrically using balances that are cal smalards are precrifted (<i>H</i>-1) 0.3% of the stated value, unless otherw - All Standards, after opening ampule, should be stored with caps fig of Uncertainty Reference: Taylor, B.N. and Kuyat, C.B., "Guidelines NIST Technical Note 1297, U.S. Government Printing Office, Wasl</li> </ul>	<ul> <li>The certified value is the concentration calculated from gravimetric and volumetric measurements unless otherwise stated.</li> <li>Standards are prepared gravimetrically using balances that are calibrated with weights traceable to NIST (see above).</li> <li>Standards are certified (+/-) 0.5% of the stated value, unless otherwise stated.</li> <li>All Standards are certified (+/-) 0.5% of the stated value, unless otherwise stated.</li> <li>All Standards, after opening ampule, should be stored with caps tight and under appropriate laboratory conditions.</li> <li>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).</li> </ul>	tated. ). NIST Measurement Result,"

Constant Con

Safety Data Sheet (SDS)

GHS/OSHA Compliant

Section I Product and Co	mpany Identification			
	CAL STANDARD DISSOLVED IN ME			4 000 525 5052
Manufacturer's Name	ABSOLUTE STANDARDS INC 44 Rossotto Dr.		phone USA & CANADA phone International	1-800-535-5053 1-352-323-3500
Address	Hamden CT, 06514	Date Prepared/F		January 1, 2024
Section II - Hazards Identi				
	GHS Classification in accord	ance with 29 CF	R 1910 (OSHA HCS)	
H370 Cause dar P271 Use in ver	mmable Liquid and Vapor nage to organs ntilated area wash with soap and water Signal Word: DANGER		Toxic if swallowed, skin co Suspected of causing canc Use gloves, eye protection if in eyes, remove contacts	er fface sheild
Section III - Composition	·			
Components (Specific Cher Methanol	nical Identity; Common Name(s)) METHYL ALCOHOL	CAS#: 67-56-1		% (optional) > 97
See Certified Weight F	Report For Other Analytes Pre	esent At Trace	Quantities.	
Section IV. FIRST AID ME	ASURES			
If inhaled In case of skin contact In case of eye contact If swallowed	If inhaled, move person into fresh air. If no Wash with soap and water. Consult a phy Rinse thoroughly with plenty of water for a Do NOT induce vomiting. Rinse mouth wit	/sician. at least 15 minutes ar	d consult a physician.	
Section V. FIREFIGHTING	MEASURES			
Flammability Suitable extinguishing media Protective equipment for fire	Flammable in the presence of a sour heat/sparks/open flame/hot surface. Use water spray, alcohol-resistant for Wear self contained breathing appare	No smoking. am, dry chemical or c	arbon dioxide.	int. Keep away from
Section VI. ACCIDENTAL	RELEASE MEASURES			
Personal precautions Environmental precautions Clean up	Wear respiratory protection. Avoid breathin ignition. Vapours accumulate to form explo Prevent further leakage or spillage if safe Contain spillage, and then collect and place	osive concentrations. to do so. Do not let p	roduct enter drains.	
Section VII. HANDLING A	ND STORAGE			
Precautions for safe handling Storage Conditions	Avoid contact with skin and eyes. Ave Use ventilation Keep away from sour Keep container tightly closed in a dry and kept upright to prevent leakage.	ces of ignition. No si	noking. Prevent the build up of elec	
Section VIII. EXPOSURE (	CONTROLS/PERSONAL PROTECT	ION		
	m =		spected prior to use. Eye protect	ion.
Section IX - Physical/Che	mical Characteristics			

Boiling Point			Specific Gravity (H2O = 1)	
J. J		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 stabilityStable under recommended storage conditions.Possibility of hazardous reactionsVapours may form explosive mixture with air.Conditions to avoidHeat, flames, sparks, extreme temperature and sunlight.Materials to avoidAcid chlorides, Acid anhydrides, Oxidizing agents, Alkali metals, Reducing agents, AcidsHazardous 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.

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

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Dispose with normal Laboratory Solvent Waste.

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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.

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Flammability Suitable extinguishing media Protective equipment for fire	Flammable in the presence of a sour heat/sparks/open flame/hot surface. Use water spray, alcohol-resistant for Wear self contained breathing appare	No smoking. am, dry chemical or c	arbon dioxide.	int. Keep away from
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# **CERTIFIED REFERENCE MATERIAL**

# **Certificate of Analysis**



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

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. :	30470	Lot No.:	A0181905			
Description :	tert-Butanol Standard					
	tert-Butanol Std 50,000µg/mL, P&T Methanol, 1mL/ampul					
Container Size :	2 mL Pkg Amt: > 1 mL					
Expiration Date :	February 28, 2025	Storage:	0°C or colder			
		Ship:	Ambient			

# CERTIFIED VALUES

Elution Order		Compound	Grav. Conc. (weight/volume)		Expanded U (95% C.L.; K	second in the second second	
1	tert-Butanol (TBA) CAS # 75-65-0 Purity 99%	(Lot SHBM7694)	50,126.0 μg/mL	+/- +/- +/-	293.4988 1,073.7654 1,104.9494	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:

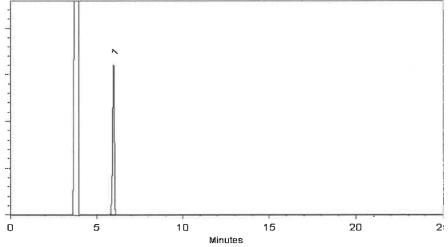
 200°C

 Det. Temp:

 250°C

 Det. Type:

 FID



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

offen Julli

John Friedline - Operations Technician I

Date Mixed: 16-Feb-2022

022 Balance: B442140311



Date Passed: 21-Feb-2022

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

### **General Certified Reference Material Notes**

## **Expiration Notes:**

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

# **Purity Notes:**

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

# **Certified Uncertainty Value Notes:**

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

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

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

- It is important to note that the shipping stability uncertainty was obtained under temperature extremes for specific time
  intervals; therefore, the certified combined stressed uncertainty value should only be applied to the product if it was
  stored at non-standard temperature conditions up to and including 7 days. Contact Restek Technical Service at
  www.restek.com/Contact-Us for use recommendations if your shipment was in-transit for more than 7 days at nonstandard 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 <u>www.restek.com/Contact-Us</u>.
- 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: 1-814-353-1300 Fax: 1-814-353-1309

www.restek.com

# **CERTIFIED REFERENCE MATERIAL**



# **Certificate of Analysis**

chromatographic plus



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, 1mL/ampul	500μg/mL, P&T Methanol,
Container Size :	2 mL	Pkg Amt: _ > 1 mL
Expiration Date :	November 30, 2027	Storage: 0°C or colder
		Ship: Ambient

#### CERTIFIED VALUES

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

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

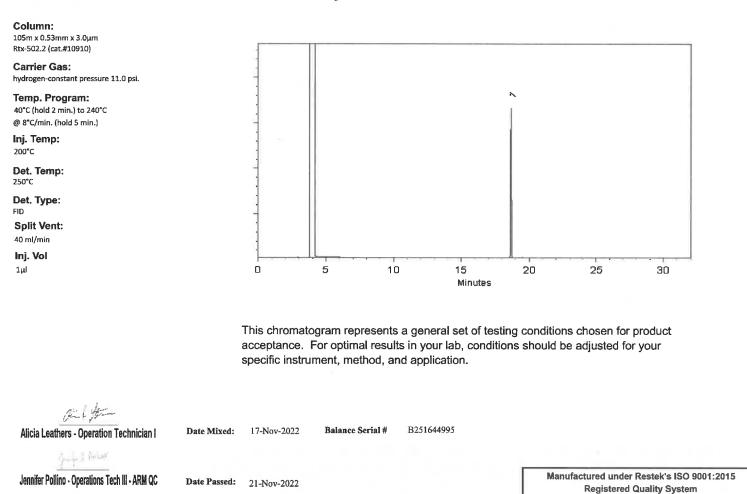
 Solvent:
 P&T Methanol

 CAS #
 67-56-1

 Purity
 99%



# **Quality Confirmation Test**





Certificate #FM 80397

# **General Certified Reference Material Notes**

# **Expiration Notes:**

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

# **Purity Notes:**

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

# **Certified Uncertainty Value Notes:**

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

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

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

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

# Manufacturing Notes:

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

# Handling Notes:

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





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www.restek.com

# **CERTIFIED REFERENCE MATERIAL**

# **Certificate of Analysis**

chromatographic plus



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

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

Catalog No. :	30225	Lot No.:	<u>A0193071</u>		
Description :	Bromochloromethane Standard				
	Bromochloromethane 2000µg/mL, P&T Methanol, 1mL/ampul				
Container Size :	2 mL	Pkg Amt:	> 1 mL		
Expiration Date :	December 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	Bromochloromethane	74-97-5	00008541	99%	2,018.0 µg/mL	+/- 113.3890

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

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



# **Quality Confirmation Test**





# **General Certified Reference Material Notes**

# **Expiration Notes:**

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

# **Purity Notes:**

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

# **Certified Uncertainty Value Notes:**

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

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$U_{combined uncertainty} = k$	$u^{4} + u^{2} + u^{2}$	
COMPONING CHECKING	gravimetric homogeneity "storage stability "shipping stability	
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k is a coverage factor of 2, which gives a level of confidence of approximately 95%.

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

# Manufacturing Notes:

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

# Handling Notes:

- 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** 



ISO/IEC 17 025 Acared Testing Laboratory Certificate #3222.02

# **Certificate of Analysis**

gravimetric

# 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. :	555582	Lot No.:	Lot No.: <u>A0196865</u>			
Description :	Custom 8260A/B Surrogate Mix Custom 8260A/B Surrogate Mix 25,000µg/mL, P&T Methanol, 1mL/ampul					
Container Size :	2 mL	Pkg Amt:	> 1 mL			
Expiration Date :	April 30, 2026	Storage:	10°C or colder			
		Ship:	Ambient			

# CERTIFIED VALUES

Componen t#	Compound	CAS #	Lot #	Purity	Grav. Conc. (weight/volume)	Expanded Uncertainty * (95% C.L.; K=2)
1	1,2-Dichloroethane-d4	17060-07-0	PR-32845	99% 2	25,036.0 μg/mL	+/- 1,417.9179
2	1-Bromo-4-fluorobenzene (BFB)	460-00-4	184975	99% 2	25,132.0 μg/mL	+/- 1,423.3549
3	Dibromofluoromethane	1868-53-7	022013	99% 2	25,040.0 μg/mL	+/- 1,418.1445
4	Toluene-d8	2037-26-5	PR-33397	99% 2	25,028.0 μg/mL	+/- 1,417.4648

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

Darker 7. Bu

Date Mixed:

Balance: 1127510105

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

Russ Bookhamer - Operations Technician I

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11-Apr-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.

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uncertainty and shipping stability uncertainty and were combined using the following formula:

```
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```

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

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### **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.
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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. :	30489	Lot No.:	A0209618	
Description :	8260B Acetates Mix			
	8260B Acetates Mix 2,000 µg/ml	L, P&T Methanol, 1mL	/ampul	
Container Size :	<u>2 mL</u>	Pkg Amt:	> 1 mL	
Expiration Date :	September 30, 2025	Storage:	-20°C or colder	
Handling:	This product is photosensitive.	Ship:	On Ice	_

### CERTIFIED VALUES

Elution Order	Compound	CAS #	Lot #	Purity	Grav. Conc. (weight/volume)	Expanded Uncertainty (95% C.L.; K=2)
1	Methyl acetate	79-20-9	SHBP3100	99%	2,019.3 μg/mL	+/- 69.7974
2	Vinyl acetate	108-05-4	RP231030CTH	98%	2,016.8 μg/mL	+/- 69.7112
3	Ethyl acetate	141-78-6	SHBQ9682	99%	2,010.7 μg/mL	+/- 69.4979
4	Isopropyl acetate	108-21-4	BCCG7069	99%	2,016.0 µg/mL	+/- 69.6822
5	Propyl acetate	109-60-4	P8XLN	99%	2,008.0 µg/mL	+/- 69.4057
6	Butyl acetate	123-86-4	SHBP6314	99%	2,007.3 µg/mL	+/- 69.3826
7	Amyl acetate	628-63-7	41325/1	97%	2,004.7 μg/mL	+/- 69.2905

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

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

Tech Tips:

Vinyl acetate is a volatile organic ester included in the target lists of several US EPA and other methods. Under acidic conditions, esters react with alcohols to form new esters (transesterification). Methanol-based mixes containing halogenated compounds are slightly acidic, so it is important to minimize exposure of vinyl acetate to mixes of halogenated compounds in methanol. For this

reason, we offer vinyl acetate in individual solution, and suggest that it be introduced into the working level calibration solution immediately before use. This will minimize problems and ensure more consistent results.

### **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: ٩ 40°C (hold 2 min.) to 240°C @ 8°C/min. (hold 5 min.) Ø Inj. Temp: ÷-200°C Det. Temp: 0 250°C Det. Type: FID **Split Vent:** 40 ml/min Inj. Vol ٥ **1**µl 5 10 15 20 Minutes 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. Soumuer Moodler Sam Moodler - Operations Tech I Date Mixed: 28-Mar-2024 **Balance Serial #** B707717271 Tiller Hurthy **Dillan Murphy - Operations Technician I** Manufactured under Restek's ISO 9001:2015 Date Passed: 01-Apr-2024 **Registered Quality System** 

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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:**

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  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:**

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

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

### **Manufacturing Notes:**

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

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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. :	30489	Lot No.:	A0209618	
Description :	8260B Acetates Mix			
	8260B Acetates Mix 2,000 µg/ml	L, P&T Methanol, 1mL	/ampul	
Container Size :	<u>2 mL</u>	Pkg Amt:	> 1 mL	
Expiration Date :	September 30, 2025	Storage:	-20°C or colder	
Handling:	This product is photosensitive.	Ship:	On Ice	_

### CERTIFIED VALUES

Elution Order	Compound	CAS #	Lot #	Purity	Grav. Conc. (weight/volume)	Expanded Uncertainty (95% C.L.; K=2)
1	Methyl acetate	79-20-9	SHBP3100	99%	2,019.3 μg/mL	+/- 69.7974
2	Vinyl acetate	108-05-4	RP231030CTH	98%	2,016.8 μg/mL	+/- 69.7112
3	Ethyl acetate	141-78-6	SHBQ9682	99%	2,010.7 μg/mL	+/- 69.4979
4	Isopropyl acetate	108-21-4	BCCG7069	99%	2,016.0 µg/mL	+/- 69.6822
5	Propyl acetate	109-60-4	P8XLN	99%	2,008.0 µg/mL	+/- 69.4057
6	Butyl acetate	123-86-4	SHBP6314	99%	2,007.3 µg/mL	+/- 69.3826
7	Amyl acetate	628-63-7	41325/1	97%	2,004.7 μg/mL	+/- 69.2905

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

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

Tech Tips:

Vinyl acetate is a volatile organic ester included in the target lists of several US EPA and other methods. Under acidic conditions, esters react with alcohols to form new esters (transesterification). Methanol-based mixes containing halogenated compounds are slightly acidic, so it is important to minimize exposure of vinyl acetate to mixes of halogenated compounds in methanol. For this

reason, we offer vinyl acetate in individual solution, and suggest that it be introduced into the working level calibration solution immediately before use. This will minimize problems and ensure more consistent results.

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Column: 105m x 0.53mm x 3.0µm Rtx-502.2 (cat.#10910) **Carrier Gas:** hydrogen-constant pressure 11.0 psi. Temp. Program: ٩ 40°C (hold 2 min.) to 240°C @ 8°C/min. (hold 5 min.) Ø Inj. Temp: ÷-200°C Det. Temp: 0 250°C Det. Type: FID **Split Vent:** 40 ml/min Inj. Vol ٥ **1**µl 5 10 15 20 Minutes 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. Soumuer Moodler Sam Moodler - Operations Tech I Date Mixed: 28-Mar-2024 **Balance Serial #** B707717271 Tiller Hurthy **Dillan Murphy - Operations Technician I** Manufactured under Restek's ISO 9001:2015 Date Passed: 01-Apr-2024 **Registered Quality System** 

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Certificate #FM 80397

### **Expiration Notes:**

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- Uncertainty, concentration, and expiration of the CRM are based on the unopened product being stored according to the recommended condition found in the storage field.

### **Purity Notes:**

- Purity and/or chemical identity are determined by one or more of the following techniques: GC/FID, HPLC, GC/µECD, GC/MS, LC/MS, RI, and/or melting point.
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  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.

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**CERTIFIED REFERENCE MATERIAL** 

**Certificate of Analysis** 

gravimetric





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.

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Catalog No. :	555581 Lot No.: A0210184	84
Description :	Custom 8260 Internal Standard Mix	
	Custom 8260 Internal Standard Mix 25,000µg/mL, P&T Methanol, 1mL/ampul	0,
<b>Container Size :</b>	2 mL Pkg Amt: > 1 mL	
Expiration Date :	April 30, 2027 Storage: 10°C or colder	r colder

VALUES CERTIFIED

Ship: Ambient

Componen t#	Compound	CAS #	Lot #	Purity	Grav. Conc. (weight/volume)	Expanded Uncertainty * (95% C.L.; K=2)	ty * K=2)
1	1,4-Dichlorobenzene-d4	3855-82-1 PR-30447	PR-30447	66%	99% 25,212.0 μg/mL	+/- 1,427.8857	.8857
2	1,4-Difluorobenzene	540-36-3	MKCS8657	%66	99% 25,220.0 μg/mL	+/- 1,428.3388	.3388
ε	Chlorobenzene-d5	3114-55-4 PR-31132	PR-31132	%66	99% 25,116.0 μg/mL	+/- 1,422.4487	.4487
4	Pentafluorobenzene	363-72-4	MKCR9383	666	99% 25,180.0 μg/mL	+/- 1,426.0734	.0734
Solvent:	P&T Methanol CAS # 67-56-1 Purity 99%						

Manufactured under Restek's ISO 9001:2015 Registered Quality System Certificate #FM 80397 HAR SA MY WART IN COMPANYING TO 1127510105 Balance: 11-Apr-2024 Date Mixed: John Friedline - Operations Technician I Mr. J. Ili



## 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. .
- 4 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: • The uncertainties are determined i

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  $=k \sqrt{u_{s}^2}$  unstric  $+ u_{homogeneity}^2 + u_{storage}^2$  stability  $+ u_{shipping}^2$  stability

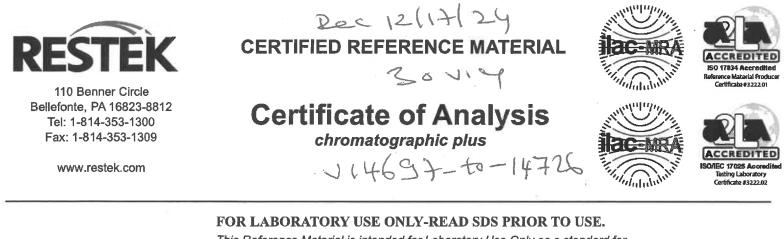
k is a coverage factor of 2, which gives a level of confidence of approximately 95%.

The ampuls are over-filled to ensure The packaged amount is the minimum sample size for which uncertainty is valid. 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, most standards packed in 2mL ampuls. Larger volume deactivated vials are available through Restek as a custom 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 which includes complete instructions. .
  - If any undissolved material is visible inside the ampul, sonicate the unopened ampul until the material is completely dissolved. .



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	
<b>Description</b> :	VOA Calibration Mix #1			
	VOA Calibration Mix #1 5,00 1mL/ampul	0µg/mL, P&T Methanol/W	/ater(90:10),	
Container Size :	2 mL	Pkg Amt:	> 1 mL	
Expiration Date :	July 31, 2027	Storage:	0°C or colder	
	3	Ship:	Ambient	

### CERTIFIED VALUES

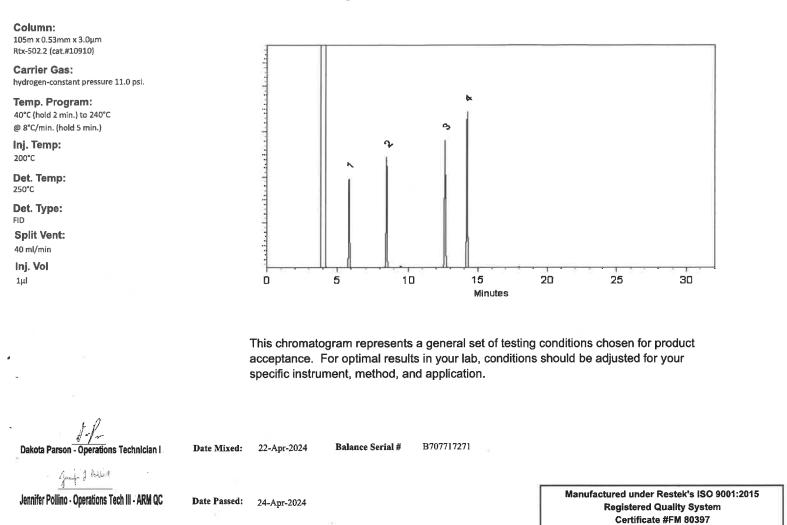
Elution Order	Compound	CAS #	Lot #	Purity	Grav. Conc. (weight/volume)	Expanded Uncertainty (95% C.L.; K=2)
1	Acetone	67-64-1	SHBQ8504	99%	5,014.8 μg/mL	+/- 173.2883
2	2-Butanone (MEK)	78-93-3	SHBQ4704	99%	5,012.4 μg/mL	+/- 173.2054
3	4-Methyl-2-pentanone (MIBK)	108-10-1	SHBP9200	99%	5,011.6 μg/mL	+/-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

-



### **Expiration Notes:**

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

### **Purity Notes:**

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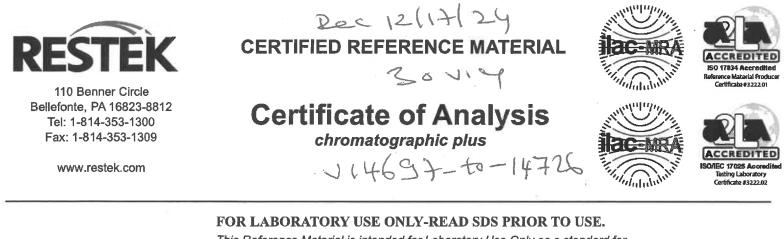
k is a coverage factor of 2, which gives a level of confidence of approximately 95%.

• 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.



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	
<b>Description</b> :	VOA Calibration Mix #1			
	VOA Calibration Mix #1 5,00 1mL/ampul	0µg/mL, P&T Methanol/W	/ater(90:10),	
Container Size :	2 mL	Pkg Amt:	> 1 mL	
Expiration Date :	July 31, 2027	Storage:	0°C or colder	
	3	Ship:	Ambient	

### CERTIFIED VALUES

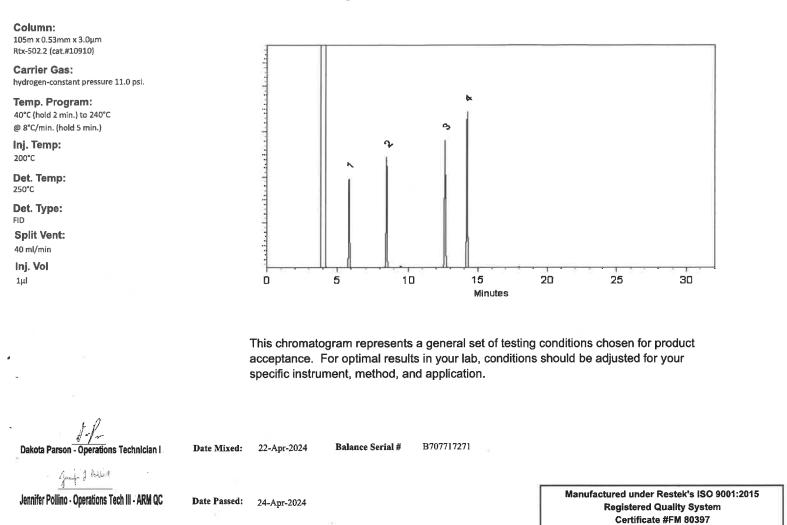
Elution Order	Compound	CAS #	Lot #	Purity	Grav. Conc. (weight/volume)	Expanded Uncertainty (95% C.L.; K=2)
1	Acetone	67-64-1	SHBQ8504	99%	5,014.8 μg/mL	+/- 173.2883
2	2-Butanone (MEK)	78-93-3	SHBQ4704	99%	5,012.4 μg/mL	+/- 173.2054
3	4-Methyl-2-pentanone (MIBK)	108-10-1	SHBP9200	99%	5,011.6 μg/mL	+/-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

-



### **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:

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

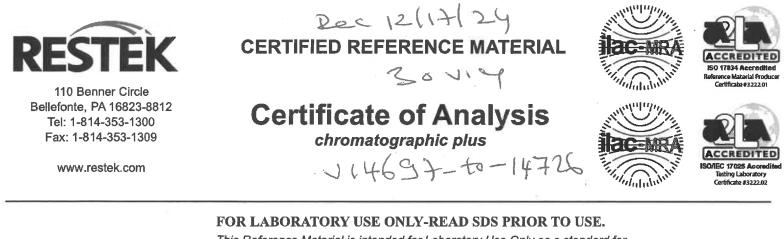
k is a coverage factor of 2, which gives a level of confidence of approximately 95%.

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

Catalog No. :	30006	Lot No.:	A0210618	
<b>Description</b> :	VOA Calibration Mix #1			
	VOA Calibration Mix #1 5,00 1mL/ampul	0µg/mL, P&T Methanol/W	/ater(90:10),	
Container Size :	2 mL	Pkg Amt:	> 1 mL	
Expiration Date :	July 31, 2027	Storage:	0°C or colder	
	3	Ship:	Ambient	

### CERTIFIED VALUES

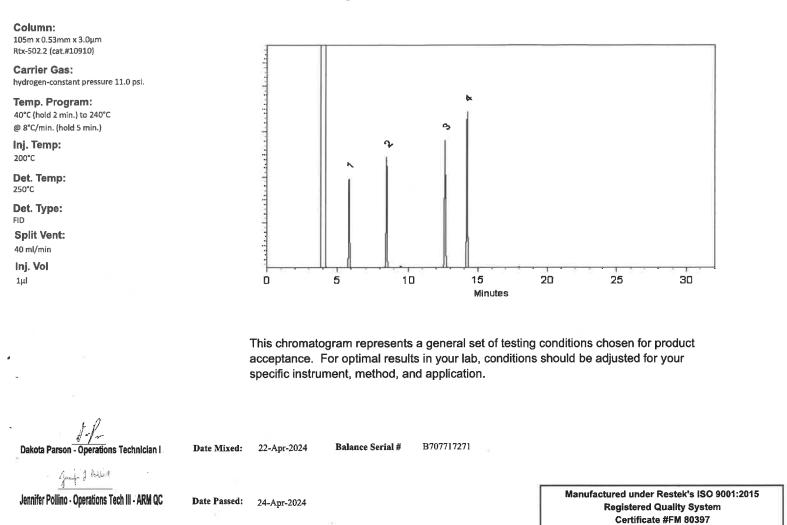
Elution Order	Compound	CAS #	Lot #	Purity	Grav. Conc. (weight/volume)	Expanded Uncertainty (95% C.L.; K=2)
1	Acetone	67-64-1	SHBQ8504	99%	5,014.8 μg/mL	+/- 173.2883
2	2-Butanone (MEK)	78-93-3	SHBQ4704	99%	5,012.4 μg/mL	+/- 173.2054
3	4-Methyl-2-pentanone (MIBK)	108-10-1	SHBP9200	99%	5,011.6 μg/mL	+/-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

-



### **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.

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  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.

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

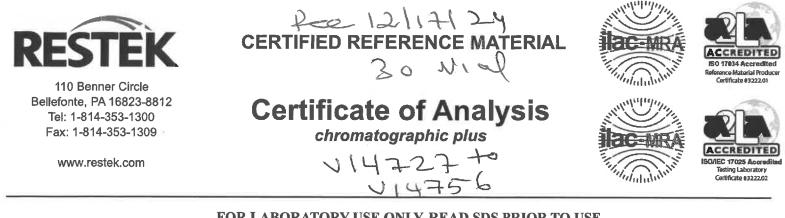
k is a coverage factor of 2, which gives a level of confidence of approximately 95%.

• 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.

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- If any undissolved material is visible inside the ampul, sonicate the unopened ampul until the material is completely dissolved.



### 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	
<b>Description</b> :	502.2 Calibration Mix #1			
	502.2 Calibration Mix #1 2,000	)µg/mL, P&T Methanol, 1	ImL/ampul	
Container Size :	2 mL	Pkg Amt:	> 1 mL	
Expiration Date :	May 31, 2031	Storage:	0°C or colder	
		Ship:	Ambient	

### CERTIFIED VALUES

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

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

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

Purity 99%

\_\_\_\_\_

**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

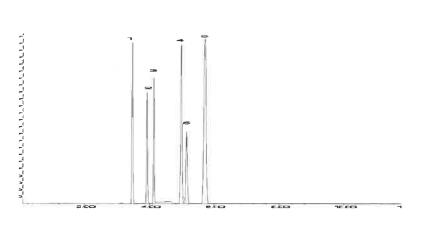
Det. Temp: 250°C

Det. Type:

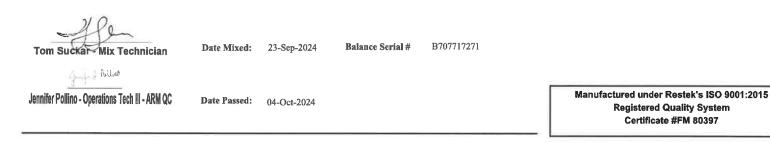
MSD Split Vent:

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.



### **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:

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

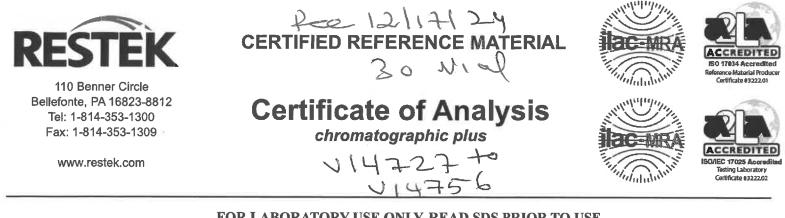
k is a coverage factor of 2, which gives a level of confidence of approximately 95%.

• 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.



### 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	
<b>Description</b> :	502.2 Calibration Mix #1			
	502.2 Calibration Mix #1 2,000	)µg/mL, P&T Methanol, 1	ImL/ampul	
Container Size :	2 mL	Pkg Amt:	> 1 mL	
Expiration Date :	May 31, 2031	Storage:	0°C or colder	
		Ship:	Ambient	

### CERTIFIED VALUES

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

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

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

Purity 99%

\_\_\_\_\_

**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

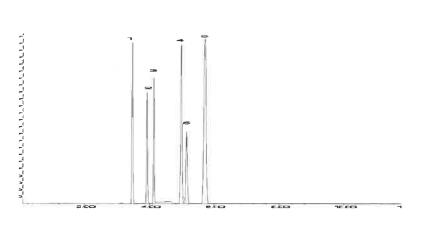
Det. Temp: 250°C

Det. Type:

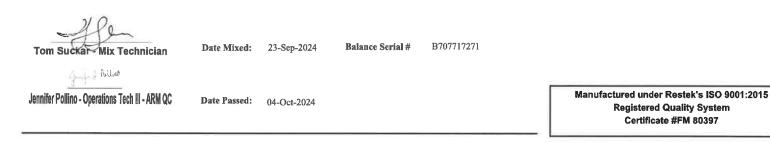
MSD Split Vent:

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.



### **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:

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

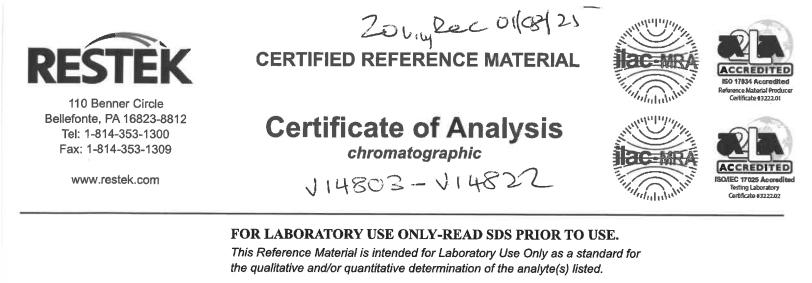
k is a coverage factor of 2, which gives a level of confidence of approximately 95%.

• 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.



Catalog No. :	555408-SL         Lot No.:         A0220471				
Description :	Custom Vinyl Acetate Standard				
	Custom Vinyl Acetate Standard 8	3,000µg/mL, P&T Meth	nanol, 1mL/ampul		
Container Size :	2 mL	Pkg Amt:	> 1 mL		
Expiration Date :	June 30, 2026	Storage:	-20°C or colder		
Handling:	This product is photosensitive.	Ship:	On Ice		

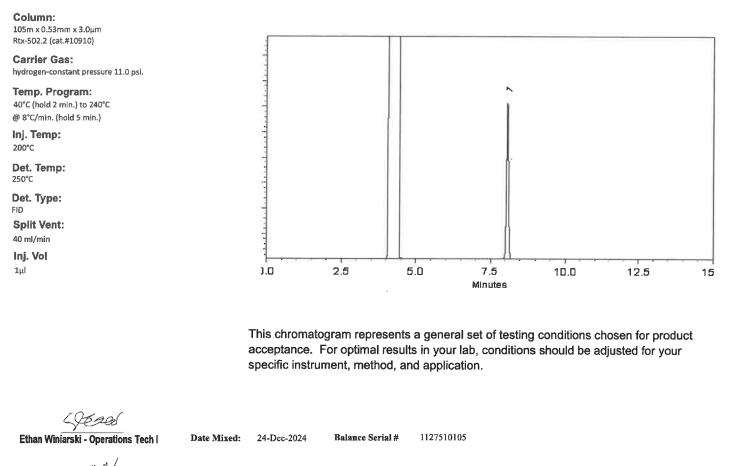
### CERTIFIED VALUES

Elution Order		Compound	CAS #	Lot #	Purity	Grav. Conc. (weight/volume)	Expanded Uncertainty * (95% C.L.; K=2)
1	Vinyl acetate		108-05-4	RD240423RSR	99%	8,066.0 μg/mL	+/- 278.7979
				* Expanded	Uncertaint	y displayed in same	units as Grav. Conc.

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

### Tech Tips:

Vinyl acetate is a volatile organic ester included in the target lists of several US EPA and other methods. Under acidic conditions, esters react with alcohols to form new esters (transesterification). Methanol-based mixes containing halogenated compounds are slightly acidic, so it is important to minimize exposure of vinyl acetate to mixes of halogenated compounds in methanol. For this reason, we offer vinyl acetate in individual solution, and suggest that it be introduced into the working level calibration solution immediately before use. This will minimize problems and ensure more consistent results.



<u>بنائیہ</u> Dillan Murphy - Operations Technician I

02-Jan-2025

Date Passed:

REVIEWED By Janviller Polition at 7:12 um, Jan 63, 2025

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:**

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- 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.
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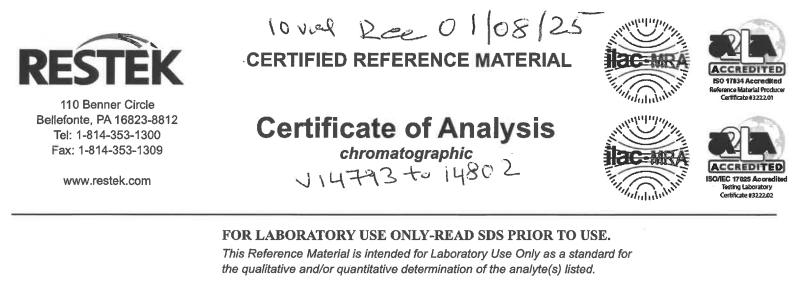
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Catalog No. :	<u>555408-FL</u> Lot No.: <u>A0220563</u>				
<b>Description</b> :	Custom Vinyl Acetate Standard				
	Custom Vinyl Acetate Standard 8,000µg/mL, P&T Methanol, 1mL/ampul				
Container Size :	2 mL	Pkg Amt:	> 1 mL		
Expiration Date :	June 30, 2026	Storage:	-20°C or colder		
Handling:	This product is photosensitive.	Ship:	On Ice		

### CERTIFIED VALUES

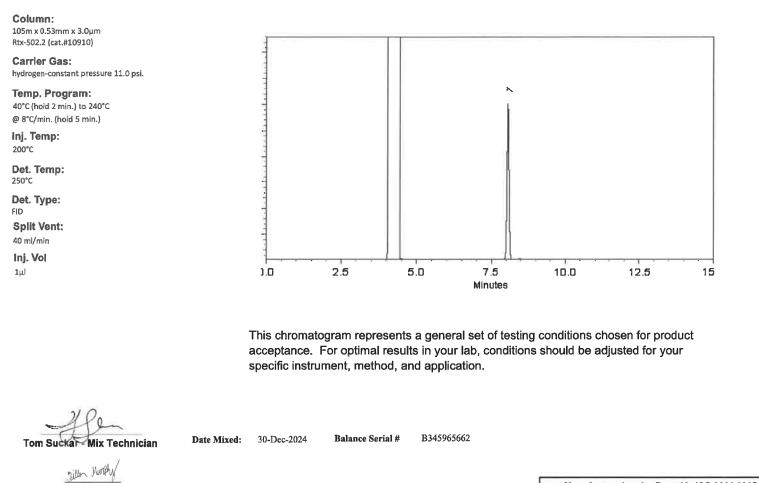
Elution Order	Compound	CAS #	Lot #	Purity	Grav. Conc. (weight/volume)	Expanded Uncertainty * (95% C.L.; K=2)
1 1	/inyl acetate	108-05-4	RD240423RSR	99%	8,060.0 μg/mL	+/- 278.5905

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

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

### Tech Tips:

Vinyl acetate is a volatile organic ester included in the target lists of several US EPA and other methods. Under acidic conditions, esters react with alcohols to form new esters (transesterification). Methanol-based mixes containing halogenated compounds are slightly acidic, so it is important to minimize exposure of vinyl acetate to mixes of halogenated compounds in methanol. For this reason, we offer vinyl acetate in individual solution, and suggest that it be introduced into the working level calibration solution immediately before use. This will minimize problems and ensure more consistent results.



Dillan Murphy - Operations Technician I

Date Passed: 02-Jan-2025

REVIEWED By Jamiller Publico at 7:11 are, Jan 00, 2025 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:**

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

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- If any undissolved material is visible inside the ampul, sonicate the unopened ampul until the material is completely dissolved.

Methanol ULTRA RESI-ANALYZED For Purge and Trap Analysis

Avantor



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	≤ 1.0 ppm	0.2 ppm
Titrable Acid (µeq/g)	≤ 0.3	0.2
Titrable Base (µeq/g)	≤ <b>0.</b> 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

James Techie

Jamie Ethier Vice President Global Quality

Methanol ULTRA RESI-ANALYZED For Purge and Trap Analysis

Avantor



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	≤ 1.0 ppm	0.2 ppm
Titrable Acid (µeq/g)	≤ 0.3	0.2
Titrable Base (µeq/g)	≤ <b>0.</b> 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

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