

Prep Standard - Chemical Standard Summary

Order ID: Q1352

Test : TCLP VOA

Prepbatch ID :

Sequence ID/Qc Batch ID: VX021425,

Standard ID :

VP130430,VP131746,VP131767,VP132035,VP132037,VP132038,VP132096,VP132097,VP132099,VP132100,VP132101,VP132103,VP132543,VP132545,VP132613,VP132615,VP132616,VP132679,VP133031,VP133034,VP133036,VP133038,VP133039,VP133040,VP133041,VP133042,VP133049,VP133050,VP133051,VP133052,

Chemical ID :

V12967,V13391,V13446,V13449,V13457,V13460,V13465,V13466,V13582,V13707,V13809,V13919,V14126,V14145,V 14154,V14175,V14176,V14179,V14289,V14290,V14425,V14433,V14439,V14521,V14522,V14614,V14624,V14630,V14 631,V14632,V14633,V14722,V14723,V14724,V14754,V14756,V14801,V14814,V14872,V14873,V14874,V14875,V1487 7,V14878,W3112,



Recipe ID 617	NAME 8260 Surrogate, 400PPM	<u>NO.</u> VP130430	Prep Date 09/20/2024	Expiration Date 02/28/2025	<u>Prepared</u> <u>By</u> Semsettin Yesilyurt	<u>ScaleID</u> None	<u>PipetteID</u> None	Supervised By Mahesh Dadoda 09/26/2024
FROM	0.40000ml of V13707 + 24.60000ml o	of V14145 =	Final Quanti	ty: 25.000 ml				

<u>Recipe</u> <u>ID</u> 247	NAME 8260 Internal Standard, 250PPM	<u>NO.</u> VP131746	<u>Prep Date</u> 11/22/2024	Expiration Date 05/18/2025	Prepared By Semsettin Yesilyurt	<u>ScaleID</u> None	<u>PipetteID</u> None	<u>Supervised By</u> Mahesh Dadoda 11/23/2024
<u>FROM</u>	0.50000ml of V14289 + 49.50000ml	I of V14154 :	= Final Quanti	ty: 50.000 ml	-			



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

Recipe					riepareu			Supervised by
<u>ID</u>	NAME	<u>NO.</u>	Prep Date	<u>Date</u>	<u>By</u>	<u>ScaleID</u>	PipetteID	Mahesh Dadoda
1810	5	<u>VP132035</u>	12/10/2024	06/10/2025	Semsettin	None	None	
	Std(2-CVE)-800ppm				Yesilyurt			12/12/2024
<u>FROM</u>	1.00000ml of V14630 + 1.00000ml of Quantity: 50.000 ml	f V14631 + 1	1.00000ml of \	V14632 + 1.000	00ml of V1463	3 + 46.00000ml	of V14614 =	Final



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Recipe ID 1812	NAME 8260 Working Std(2-CVE)-100ppm	<u>NO.</u> VP132037	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
<u>FROM</u>	0.25000ml of V14633 + 24.75000ml o	of V14614 =	= Final Quanti	ty: 25.000 ml				

Recipe				Expiration	Prepared			Supervised By
ID	NAME	<u>NO.</u>	Prep Date	<u>Date</u>	<u>By</u>	<u>ScaleID</u>	PipettelD	Mahesh Dadoda
1813	8260 Working Std(2-CVE)-50ppm	<u>VP132038</u>	12/10/2024	06/10/2025	Semsettin	None	None	
					Yesilyurt			12/12/2024
FROM	20.00000ml of V14614 + 1.25000ml	of VP13203	5 = Final Qua	antity: 20.000 n	nl			



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Recipe ID 719	NAME 8260 Working STD (BCM)-First source, 400PPM	<u>NO.</u> VP132096	Prep Date 12/12/2024	Expiration Date 06/10/2025	Prepared By Semsettin Yesilyurt	<u>ScaleID</u> None	<u>PipetteID</u> None	Supervised By Mahesh Dadoda 12/19/2024
FROM	1.00000ml of V13465 + 1.00000ml of Quantity: 25.000 ml	V13466 + ·	1.50000ml of	V13457 + 1.50(000ml of V1346	0 + 20.00000ml	of V14614 =	Final

<u>Recipe</u>				Expiration	Prepared			Supervised By
ID	NAME	<u>NO.</u>	Prep Date	<u>Date</u>	<u>By</u>	<u>ScaleID</u>	PipetteID	Mahesh Dadoda
253	8260 Working STD (BCM)-First	<u>VP132097</u>	12/12/2024	06/10/2025	Semsettin	None	None	
	source, 20PPM				Yesilyurt			12/19/2024
FROM	0.50000ml of V13466 + 49.50000ml	of V14614 =	= Final Quanti	ty: 50.000 ml				



Recipe ID 254	NAME 8260 Working STD (BCM)-First source, 10PPM	<u>NO.</u> VP132099	Prep Date 12/12/2024	Expiration Date 06/10/2025	<u>Prepared</u> <u>By</u> Semsettin Yesilyurt	<u>ScaleID</u> None	<u>PipetteID</u> None	Supervised By Mahesh Dadoda 12/19/2024
FROM	0.05000ml of V13465 + 9.95000ml of	f V14614 =	Final Quantity	r: 10.000 ml				

<u>Recipe</u> <u>ID</u> 251	NAME 8260 Internal STD & Surrogate Mix, 250PPM	<u>NO.</u> VP132100	Prep Date 12/12/2024	Expiration Date 06/10/2025	Prepared By Semsettin Yesilyurt	<u>ScaleID</u> None	PipetteID None	Supervised By Mahesh Dadoda 12/19/2024
FROM	0.25000ml of V13707 + 0.25000ml of	l f V14290 + 2	24.50000ml of	l f V14614 = Fin		000 ml		12/19/2024



<u>Recipe</u> <u>ID</u> 1817	NAME 8260 Working Std(2-CVE)-SS, 800ppm	<u>NO.</u> VP132101	Prep Date 12/12/2024	Expiration Date 06/10/2025	Prepared By Semsettin Yesilyurt	<u>ScaleID</u> None	<u>PipetteID</u> None	Supervised By Mahesh Dadoda 12/19/2024
<u>FROM</u>	0.80000ml of V13582 + 9.20000ml of	fV14614 =	Final Quantity	y: 10.000 ml				

<u>Recipe</u> <u>ID</u> 1818	NAME 8260 Working Std(2-CVE)-SS, 50ppm	<u>NO.</u> VP132103	Prep Date 12/10/2024	Expiration Date 06/10/2025	<u>Prepared</u> <u>By</u> Semsettin Yesilyurt	<u>ScaleID</u> None	<u>PipetteID</u> None	<u>Supervised By</u> Mahesh Dadoda 12/19/2024
FROM	4.68750ml of V14614 + 0.31250ml of	I f VP132101	I = Final Quar	ntity: 5.000 ml				12/10/2024



Recipe ID 259	NAME 8260 Calibration Working STD Mix-Second source, 160PPM	<u>NO.</u> VP132543	Prep Date 01/14/2025	Prepared By Semsettin Yesilyurt	<u>ScaleID</u> None	<u>PipetteID</u> None	Supervised By Mahesh Dadoda 01/17/2025
FROM	0.16000ml of V13449 + 0.80000ml o 0.80000ml of V14801 + 1.60000ml o					of V14425 +	

Recipe ID 820	NAME 8260 Calibration Working STD Mix-Second source, 10PPM	<u>NO.</u> VP132545	Prep Date 01/14/2025	Expiration Date 02/28/2025	Prepared By Semsettin Yesilyurt	<u>ScaleID</u> None	<u>PipetteID</u> None	Supervised By Mahesh Dadoda 01/17/2025
FROM	4.68750ml of V14624 + 0.31250ml o	f VP132543	= Final Quar	ntity: 5.000 ml				



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> <u>ID</u> 245	NAME 8260 Calibration Working STD Mix-First source, 20PPM	<u>NO.</u> VP132615	<u>Prep Date</u> 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	17.50000ml of V14624 + 2.50000ml o	of VP13261	3 = Final Qua	antity: 20.000 n	-			



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Recipe ID 246	NAME 8260 Calibration Working STD Mix-First source, 10PPM	<u>NO.</u> VP132616	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
<u>FROM</u>	9.37500ml of V14624 + 0.62500ml of	VP132613	= Final Quar	ntity: 10.000 ml				

<u>R</u>	<u>ecipe</u> ID	NAME	<u>NO.</u>	Prep Date	Expiration Date	<u>Prepared</u> <u>By</u>	<u>ScaleID</u>	<u>PipetteID</u>	<u>Supervised By</u>
									Mahesh Dadoda
	825	8260 Working STD (BCM)-Second source, 10PPM	<u>VP132679</u>	01/24/2025	07/13/2025	Semsettin Yesilyurt	None	None	01/29/2025
						reoliyurt			01/29/2025
E	ROM	0.10000ml of V12967 + 9.90000ml of	V14624 =	Final Quantity	/: 10.000 ml				



Recipe ID 263	(Acrolein)-Second source,	<u>NO.</u> VP133031	Prep Date 02/14/2025	Expiration Date 03/12/2025	Prepared By Semsettin Yesilyurt	<u>ScaleID</u> None	<u>PipetteID</u> None	Supervised By Mahesh Dadoda 02/17/2025
<u>FROM</u>	800PPM 0.60000ml of V14878 + 1.00000ml of	f V14877 + 8	3.40000ml of ^v	V14624 = Fina		00 ml		

Recipe ID 826	NAME 8260 Working STD (Acrolein)-Second source, 50PPM	<u>NO.</u> VP133034	Prep Date 02/14/2025	Expiration Date 03/12/2025	<u>Prepared</u> <u>By</u> Semsettin Yesilyurt	<u>ScaleID</u> None	<u>PipetteID</u> None	Supervised By Mahesh Dadoda 02/18/2025
FROM	4.68750ml of V14624 + 0.31250ml of	f VP133031	= Final Quar	ntity: 5.000 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 + ⁻	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
180		<u>VP133038</u>	02/14/2025	03/13/2025	Semsettin	None	None	
	source, 100PPM				Yesilyurt			02/18/2025
FROM	17.50000ml of V14624 + 2.50000ml	of VP13303	6 = Final Qua	antity: 20.000 n	nl			

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Recipe ID 181	NAME 8260 Working STD (Acrolein)-First source, 50PPM	<u>NO.</u> VP133039	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	9.37500ml of V14624 + 0.62500ml o	f VP133036	= Final Quar	ntity: 10.000 ml				

<u>Recipe</u> <u>ID</u> 589	NAME BFB TUNE CHECK	<u>NO.</u> VP133040	<u>Prep Date</u> 02/14/2025	Expiration Date 02/15/2025	Prepared By John Carlone	<u>ScaleID</u> None	PipetteID None	Semsettin Yesilyurt 02/17/2025
<u>FROM</u>	39.98400ml of W3112 + 0.01600ml o	f VP131767	⊂ = Final Qua	ntity: 40.000 m	l			



Recipe ID 620	NAME 50 PPB CCC, 8260-Water	<u>NO.</u> VP133041	Prep Date 02/14/2025	Prepared By John Carlone	<u>ScaleID</u> None	PipetteID None	Semsettin Yesilyurt
FROM	39.94450ml of W3112 + 0.00500ml o VP132035 + 0.01250ml of VP132613					1250ml of	

Recipe ID 620	NAME 50 PPB CCC, 8260-Water	<u>NO.</u> VP133042	Prep Date 02/14/2025	Expiration Date 02/15/2025	Prepared By John Carlone	<u>ScaleID</u> None	PipetteID None	Semsettin Yesilyurt 02/17/2025
FROM	39.94450ml of W3112 + 0.00500ml o VP132035 + 0.01250ml of VP132613						1250ml of	



	NAME 0.2PPB LOD, 8260-Water	<u>NO.</u> VP133049	Prep Date 02/14/2025	Prepared By John Carlone	<u>ScaleID</u> None	PipetteID None	Semsettin Yesilyurt 02/17/2025
FROM	39.98840ml of W3112 + 0.00080ml o VP133034 + 0.00800ml of VP132100			- 0.00080ml of \	/P132679 + 0.0	0080ml of	

<u>Recipe</u> <u>ID</u> 2947	NAME 0.5 ppb MDL 8260 Water	<u>NO.</u> VP133050	Prep Date 02/14/2025	Expiration Date 02/15/2025	Prepared By John Carlone	<u>ScaleID</u> None	PipetteID None	Semsettin Yesilyurt 02/17/2025
FROM	39.98000ml of W3112 + 0.00100ml o VP133038 + 0.00500ml of VP130430						0100ml of	



Recipe ID 3585	NAME 0.75 PPB MDL 8260 WATER	<u>NO.</u> VP133051	Prep Date 02/14/2025	Prepared By John Carlone	<u>ScaleID</u> None	<u>PipetteID</u> None	Semsettin Yesilyurt 02/17/2025
FROM	39.97000ml of W3112 + 0.00300ml o VP133039 + 0.00500ml of VP13043(0300ml of	

Recipe ID 3786	NAME 2.5 PPB 8260 MDL-WATER	<u>NO.</u> VP133052	Prep Date 02/14/2025	Expiration Date 02/15/2025	Prepared By John Carlone	<u>ScaleID</u> None	PipetteID None	Semsettin Yesilyurt 02/17/2025
FROM	39.92000ml of W3112 + 0.00800ml o VP132616 + 0.01000ml of VP133039				- 0.01000ml of \	/P132099 + 0.0	1000ml of	



Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Absolute Standards, Inc.	70046 / Bromochloromethane Std. sol/methanol 1000ppm	070122	07/24/2025	01/24/2025 / SAM	07/06/2022 / SAM	V12967
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	30470 / VOA Stock Solution, tert-butanol std, 1mL, P&TM	A0191703	06/02/2025	12/02/2024 / SAM	01/23/2023 / SAM	V13449
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	V13457
			Expiration	Date Opened /	Received Date /	Chemtech
Supplier	ItemCode / ItemName	Lot #	Date	Opened By	Received By	Lot #



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	V13465
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 #
Absolute Standards, Inc.	95318 / 2-Chloroethyl Vinyl Ether (Min = 5)	111722	11/17/2025	12/12/2024 / SAM	01/30/2023 / SAM	V13582
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 #
Restek	30042 / VOA Mix,500 series method 502.2 Calibration Std #1 gases, 2000uq/ml, PTM, 1ml	A0194279	10/31/2029	01/07/2025 / SAM	05/31/2023 / SAM	V13809
Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Restek	30006 / VOA Mix, CLP method Calibration Std #1 ketones 5000uq/ml, PTM, 1ml	A0193887	07/10/2025	01/10/2025 / SAM	07/24/2023 / SAM	V13919



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)	011624	07/10/2025	01/10/2025 / SAM	01/17/2024 / SAM	V14126
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
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 #
Absolute Standards, Inc.	95317 / Universal VOA	021524	07/10/2025	01/10/2025 /	02/20/2024 /	V14179



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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	555581 / Custom Standard, 8260 Internal Std [CS 5179-1]	A0210184	12/12/2025	12/12/2024 / SAM	04/15/2024 / SAM	V14290
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	A0205013	06/30/2025	01/10/2025 / SAM	08/15/2024 / SAM	V14425
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



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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



Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Absolute Standards, Inc.	91980 / Acrolin Std (Min = 5)	021225	03/12/2025	02/14/2025 / SAM	02/14/2025 / SAM	V14877
Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Absolute Standards, Inc.	91980 / Acrolin Std (Min = 5)	021225	03/12/2025	02/14/2025 / SAM	02/14/2025 / SAM	V14878
Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Seidler Chemical	DIW / DI Water	Daily Lab-Certified		07/03/2024 / 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)	≤ 0.10	0.01
Water (by KF, coulometric)	≤ 0.08 %	< 0.01 %
Volatile Organic Trace Analysis – Below EPA 8260B CRQL	Conforms	Conforms

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

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

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

		13.79 13.79 13.79 15.44		Acryloni		ar Temp. Z	ol (60m X 0.2 : 35°C (10mir Vmin., Injecto Solvent Dela	= Iqm9T(7∘1> = 916Я ,	ickness (.nim 27	1.5µm film ti 1.5µm film ti	ALCOLUMN IN ALL ALCONOLOGY	810	5200000 -	
	5	ТЯ Q2M (.nim) 37.51 (39714)	9msN	- Project		V GI wwas	COX 009710	oon adding	usr	Mothod CCE		:	- 0000005	
											00, where is a set		3200005	
	nement Result."	story conditions. g the Uncertainty of NIST Measu	guissong x3 but	de rabau bas tá gaitealev I tot	red with caps tig .E., "Guidelines	ule, should be sto	ter opening ampurents approximation, B	.B. Standards, al incertainty Refe	∩• ∀•		2683		- 000000+	
		s unless otherwise stated. a NIST (see above).		gisw ditw batan	ites that are calib		inconivers boseq	rand are sbrebuet	S *	0.6158	1C: 3i		ansbrudA	
	gx/gm80+8 ten-ho	¥/N	488-53-3	7.8	0.1002	0.21522	0.21511	2.0	63	5000	F09A	167	eneznedivntemarteT-4,6,2,1	តិ ១៧
	gylgm0281 ten-ho	(H8/Em/gm062) mqq 02	6-66-601	40'3	9.70001	1.00200	1.00125	5.0	6'66	10000	OEE8H8HS	380	[etrahydrofuran	10. 1
	ph/pmec ter-ho	V/N	107-12-0	6.18	8.70002	2.02150	17020.5	S.0	66	S0000	1395468	346	elininoiqor	J '6
	px/ph tsr-ho	AN	1634-04-4	5.8	2002.0	75205.0	0.20207	0.2	66	S000	21880	509	Methyl tert-butyl ether (MTBE)	8° V
	ort-mus 2250mg/kg	¥/N	108-87-2	8.2	2002.3	0.20230	0.20207	0.2	66	5000	A661058HS	1627	Methylcyclohexane	Ψ.Z
	6x/6w026+ 6d6-µo	(nbls)(H8/Em/gm01) mqq 1	1-27-78	S.8	4.100S	0.20221	0.20207	0.2	66	5000	12604HBV	661	-lexachioroethane	- '9
	phypm0072 sum-ho	(nbis)(H8/Em/gm09) mqq 85	1-16-621	162.5	0.70004	4.04213	4.04142	0.2	66	40000	O3863KE	ELE	ensxoiG-4,1	6. 1
	px/pm0748 ten-ho	(H8/Em/gm001S) mgg 008	108-50-3	S.8	\$005.0	0.20227	0.20207	0.2	66	5000	XMS1400	L 86	Di-isopropyl ether (DIPE)	J '*
	phoneorsi ten-ho	(H8/Em/gm0201) mgg 00E	110-85-7	S.8	2001.5	0.20222	0.20207	0.2	66	S000	58930	1053	Cyclohexane	
	orl-rat 2670mg/kg	A/N	E-69-601	1.8	8.200S	0.20035	0.20007	0.2	66'66	5000	MKCM5711	1072	1-Chlorobutane	5 1
	gx/gm 87 161-ho	A\N	1-61-701	40.6	⊅.≱0001	08010.1	36010.1	S. 0	66	10000	4718CK	۷	Acrylonitrile	
	CSC1	(AWT) LEY AH20	#SVO	(ˈjɯ/ð//) (-/+)	(Jm/gu) Jnoj	(g))trigieW	(g)trigieW	Purity	(96)	(Jm/gu) conc	Number	#WX	punodwog	5
	(-bd pət	SDS Information 5 Safety Info. On Attach	navlo2)	Expanded Uncertainty	Actual	Actual	J9Q16T	Uncertainty	Purity	Isnimol	Γοί			
	6				1			vraistread Uncertainty		0.001	:(Jm) of bet	nlip pu	Weight(s) shown below were combined a	¥
	429110 3TAQ	Pedro L. Rentas	:4:	Beviewed F			ελ	nianee Uncertain	9 6-9 9		beinsV 8TU3		Nominal Concentration (µg/mL): NIST Test ID#:	
		- A	n							(), (), (), (), (), (), (), (), (), (),	Retrigerate (4		Recommended Storage:	
											229110		Expiration Date:	
	DATE	Prashant Chauhan	EV:	Formulated							11 compone			
	429110	hav hunder	ert.							xiM anoit	ibbA besiveA		Description:	
		170	10			SU-174H3	Methanol				011624		Lot Number:	
	l					#107	Solvent(s):				61636		FIED WEIGHT REPORT	1112
							~ 1						TOADO TUQIDI M GEIDI	1193
	itheO 6£31-AA tps://Absolutes					00000000	15				~	2	absolutestandards.com	
	071 OSI 8ANA				พชว	l <mark>sireterial</mark>	Reference	haititha	/				1131	
JAJOOA PE													olute Standards, Inc.	

29'15

44.84

26.84

24.84

20.83

20.58

20.17

£S'8T

anaznadiyrtiamertaT-4,6,2,1

Hexachloroethane

Methylcydohexane

1-Chlorobutane

Tetrahydrofuran

Cydohexane

Sirtinoiqor

anexoid-4,1

0<--9mil

000005

1000000

1200000 L

2000000

00.02

29'15

49,84

42:00

minutes. Analysis performed by Candice Warren.

200°C, Detector Temp. = 220°C. Solvent Delay: 8

40.00

32.00

30.00

52'00

5¢¹82

20.00

andaz

12:00

29 EL 57 SI

13'26

10.00

22:00

00.09

Absolute Standards, Inc. 800-368-1131 www.absolutestandards.com	ndards, Inc. dards.com	A.	A			Certified	Certified Reference Material CRM こ い イ	nce Materia	I CRM				httr ∧	NAB ISO 1 NR-1539 Ce Ss://Absolu	ANAB ISO 17034 Accredited AR-1539 Certificate Number https://Absolutestandards.com
CERTIFIED WEIGHT REPORT	HEPORI Part Number: Lot Number: Description:		91980 021225 Acrolein				Solvent(s): Lots Water 072324(02 (1 0723240	- 78	Formulated By:	ed By:	Shent Chevel Prashant Chauhan	han	021225 DATE	
f Nominal Weight(s) showr	Expiration Date: 031225 Recommended Storage: Refrigerat Nominal Concentration (<i>ug/ml</i>): 5000 NIST Test ID#: 6UTB Weicht(s) shown below were combined and diluted to (mL):	d dilute	031225 Refrigerate (4 °C) 5000 6UTB ed to (mL):	1 °C) 10.0	5E-05 0.001	Balance Uncer Flask Uncertai	A A A A A A A A A A A A A A A A A A A	х -		Reviewed By	d By:	ke Nerza Pedro L. Rentas	A	021225 DATE	
Compound		RM#	i	Nominal Conc (µg/mL)			Target Weight(g)	Actual Weight(g)	Actual Conc (µg/m	Expanded Actual Uncertainty Conc (µg/mL) (H-) (µg/mL)		SDS Information (Solvent Safety Info. On Attached pg.) CAS# OSHA PEL (TWA) LDS	ation Attached (A)	pg.) LD50	
1. Acrolein Method: GC Rate = 4°Cri Long term st	bit 5 103755R02H 5000 97 0.5 0.05186 0.05180 5013.7 52.6 107-02-8 0.1 ppm 6 Method: GC6MSD-1. Detector: Mass Selective Detector (Scan mode). Column: Vocol (60m X 0.25mm ID X 1.5µm film thickness). Oven Profile: Temp.1 = 35°C (Time 1 = 10min.), Temp. 2=200°C (Time 2 = 8.75 min.) Content of the second of the second se	5 ctive Deter etector Te	103755R02H ctor (Scan mode). mp. = 220°C. An t our technical dep	5000 . Column: Vo salyst: Pedro F partment if fur	97 col (60m X Rentas. NO7 ther informs	0.5 0.25mm ID X 1 TE: Due to the ii ation is required	0.05166	0.05180 ess). Oven Prof	5013.7 lie: Temp. 1 = 3 all solutions of	52.6 35°C (Time 1 = acrolein, and an	107-02-8 10min.), Temp. ny dilutions there	$\frac{0.1 \text{ ppm}}{2200^{\circ} \text{C} (\text{Time } 2 \neq 0)}$	orl- 8.75 min.) imediately	orl-rat 46mg/kg	
Abundance	TIC: [B	ISB2]7	TIC: [BSB2]79005.D				Abundance	27 27	Scan	232 (8.927	min): [BSf	Scan 232 (8.927 min): [BSB2]79005.D]		
250000 8.93							6000								
20000			Ì	0///			5000	Q	56	6					
150000							40000	Q							
							30000	Q							
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Time> ⁰ 10.0	10.00 15.00 20.00 25.00	30.0(30.00 35.00 40.00 45.00	.00 45.00	50.00 55.00	55.00 60.0	0<~~ 10	0 20 30	44 40 50	65 75 85 60 70 80 9	85 0 90 100	5 119 158 169 90 100 110 120 130 140 150 160 170	140 150 1	158 169 160 170	
	• The cer • Standar • Standar • All Star • Uncerta NIST 7	rtified va urds are p urds are c undards, a ainty Ref Technical	The certified value is the concentration calculated from gravimetric and volumetric me Standards are prepared gravimetrically using balances that are calibrated with weight Standards are certified (H -) 0.5% of the stated value, unless otherwise stated. All Standards, after opening ampule should be stored with case tight and under appro Uncertainty Reference: Taylor, B.N. and Kuyat, C.E., "Guidetines for Evaluating and NIST Technical Note 1297, U.S. Government Printing Office, Washington, DC, (1994).	tration calcul etrically usin 6 of the state pule, should B.N. and Ku Government	ated from a balances t g balances t i value, uni t value, uni yat, C.E., "u	travimetric and hat are calibra ess otherwise s ith caps tight a Guidelines for 1 filee, Washing	 The certified value is the concentration calculated from gravimetric and volumetric measurements unless otherwise stated. Shandards are prepared gravinetrically using balances that are calibrated with weights traceable to NIST (see above). Shandards are certified (++) 0.5% of the stated value, unless otherwise stated. All Standards, after opening ampule, should be stored with capt tight and under appropriate laboratory conditions. 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). 	surrements und traceable to N Prfate laborator Expressing the	ess otherwise s IST (see above y conditions. Uncertainty of).). 'NIST Measur	ement Result,'				

Part # 91980 Lot # 021225

1 of 1

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Absolute Standards, Inc. 800-368-1131 www.absolutestandards.com	ndards, Inc. dards.com	A.	A			Certified	Certified Reference Material CRM こ い イ	nce Materia	I CRM				httr ∧	NAB ISO 1 NR-1539 Ce Ss://Absolu	ANAB ISO 17034 Accredited AR-1539 Certificate Number https://Absolutestandards.com
CERTIFIED WEIGHT REPORT	HEPORI Part Number: Lot Number: Description:		91980 021225 Acrolein				Solvent(s): Lots Water 072324(02 (1 0723240	- 78	Formulated By:	ed By:	Shent Chevel Prashant Chauhan	han	021225 DATE	
f Nominal Weight(s) showr	Expiration Date: 031225 Recommended Storage: Refrigerat Nominal Concentration (<i>ug/ml</i>): 5000 NIST Test ID#: 6UTB Weicht(s) shown below were combined and diluted to (mL):	d dilute	031225 Refrigerate (4 °C) 5000 6UTB ed to (mL):	1 °C) 10.0	5E-05 0.001	Balance Uncer Flask Uncertai	A A A A A A A A A A A A A A A A A A A	х -		Reviewed By	d By:	ke Nerza Pedro L. Rentas	A	021225 DATE	
Compound		RM#	i	Nominal Conc (µg/mL)			Target Weight(g)	Actual Weight(g)	Actual Conc (µg/m	Expanded Actual Uncertainty Conc (µg/mL) (H-) (µg/mL)		SDS Information (Solvent Safety Info. On Attached pg.) CAS# OSHA PEL (TWA) LDS	ation Attached (A)	pg.) LD50	
1. Acrolein Method: GC Rate = 4°Cri Long term st	bit 5 103755R02H 5000 97 0.5 0.05186 0.05180 5013.7 52.6 107-02-8 0.1 ppm 6 Method: GC6MSD-1. Detector: Mass Selective Detector (Scan mode). Column: Vocol (60m X 0.25mm ID X 1.5µm film thickness). Oven Profile: Temp.1 = 35°C (Time 1 = 10min.), Temp. 2=200°C (Time 2 = 8.75 min.) Content of the second of the second se	5 ctive Deter etector Te	103755R02H ctor (Scan mode). mp. = 220°C. An t our technical dep	5000 . Column: Vo salyst: Pedro F partment if fur	97 col (60m X Rentas. NO7 ther informs	0.5 0.25mm ID X 1 TE: Due to the ii ation is required	0.05166	0.05180 ess). Oven Prof	5013.7 lie: Temp. 1 = 3 all solutions of	52.6 35°C (Time 1 = acrolein, and an	107-02-8 10min.), Temp. ny dilutions there	$\frac{0.1 \text{ ppm}}{2200^{\circ} \text{C} (\text{Time } 2 \neq 0)}$	orl- 8.75 min.) imediately	orl-rat 46mg/kg	
Abundance	TIC: [B	ISB2]7	TIC: [BSB2]79005.D				Abundance	27 27	Scan	232 (8.927	min): [BSf	Scan 232 (8.927 min): [BSB2]79005.D]		
250000 8.93							6000								
20000			Ì	0///			5000	Q	56	6					
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							30000	Q							
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Time> ⁰ 10.0	10.00 15.00 20.00 25.00	30.0(30.00 35.00 40.00 45.00	.00 45.00	50.00 55.00	55.00 60.0	0<~~ 10	0 20 30	44 40 50	65 75 85 60 70 80 9	85 0 90 100	5 119 158 169 90 100 110 120 130 140 150 160 170	140 150 1	158 169 160 170	
	• The cer • Standar • Standar • All Star • Uncerta NIST 7	rtified va urds are p urds are c undards, a ainty Ref Technical	The certified value is the concentration calculated from gravimetric and volumetric me Standards are prepared gravimetrically using balances that are calibrated with weight Standards are certified (H -) 0.5% of the stated value, unless otherwise stated. All Standards, after opening ampule should be stored with case tight and under appro Uncertainty Reference: Taylor, B.N. and Kuyat, C.E., "Guidetines for Evaluating and NIST Technical Note 1297, U.S. Government Printing Office, Washington, DC, (1994).	tration calcul etrically usin 6 of the state pule, should B.N. and Ku Government	ated from a balances t g balances t i value, uni t value, uni yat, C.E., "u	travimetric and hat are calibra ess otherwise s ith caps tight a Guidelines for 1 filee, Washing	 The certified value is the concentration calculated from gravimetric and volumetric measurements unless otherwise stated. Shandards are prepared gravinetrically using balances that are calibrated with weights traceable to NIST (see above). Shandards are certified (++) 0.5% of the stated value, unless otherwise stated. All Standards, after opening ampule, should be stored with capt tight and under appropriate laboratory conditions. 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). 	surrements und traceable to N Prfate laborator Expressing the	ess otherwise s IST (see above y conditions. Uncertainty of).). 'NIST Measur	ement Result,'				

Part # 91980 Lot # 021225

1 of 1

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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 Compound Rw# Number	ID#: ned and dilu RM#	6U1B Jted to (mL): Lot Number	10.0 Nominal Conc (ug/mL)		 5E-05 Balance Uncertainty 0.001 Flask Uncertainty Purity Uncertainty (%) Purity 	ny Target Weight(g)	Actual Weight(g)	Actual Conc (µg/ml.	Expanded By Expanded Actual Uncertainty (Conc (ug/mt.) (+/-) (ug/mt.)	ଳା	 Pedro L. Herntas SDS information (Solvent Safety Info. On Attached pg.) CAS# OSHA PEL (TWA) LDE 		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.	increase in Annouse		Scan	332 (8.927	Scan 232 (8.927 min): [BSB2]79005.D	179005.D	Crons the	
Abundance						Abundance	27	3					
250000 ^{8.93}		1	2			6000	6						
200000		/	0//			50000	6	56	(0				
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						30000	6						
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	 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 	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 uidelines for E- ce, Washingto	 The certified value is the concentration calculated from gravimetric and volumetric measurements unless otherwise stated. Standards are prepared gravimetrically using balances that are calibrated with weights traceable to NIST (see above). Standards after openling annule, should be stored with caps tight and under appropriate laboratory conditions. 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). 	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.	W II CAL STANDARD DISSOLVED IN W 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	7102-183-203-2972 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

ΑN 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 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		トロナフ	T co	1.0		Je .	4 Rente	20	325
NIST Test ID#: 6UTB Weight(s) shown below were combined and diluted to (mL): Lot Compound Rw# Number	ID#: ned and dilu RM#	6U1B Jted to (mL): Lot Number	10.0 Nominal Conc (ug/mL)		 5E-05 Balance Uncertainty 0.001 Flask Uncertainty Purity Uncertainty (%) Purity 	ny Target Weight(g)	Actual Weight(g)	Actual Conc (µg/ml.	Expanded By Expanded Actual Uncertainty (Conc (ug/mt.) (+/-) (ug/mt.)	ଳା	 Pedro L. Herntas SDS information (Solvent Safety Info. On Attached pg.) CAS# OSHA PEL (TWA) LDE 		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.	increase in Annouse		Scan	332 (8.927	Scan 232 (8.927 min): [BSB2]79005.D	179005.D	Crons the	
Abundance						Abundance	27	3					
250000 ^{8.93}		1	2			6000	6						
200000		/	0//			50000	6	56	(0				
150000						40000	6						
						30000	6						
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	 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 	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	 The certified value is the concentration calculated from gravimetric and volumetric measurements unless otherwise stated. Standards are prepared gravimetrically using balances that are calibrated with weights traceable to NIST (see above). Standards after openling annule, should be stored with caps tight and under appropriate laboratory conditions. 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). 	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

ection VIII. EXPOSURE CON	CONTROLS/PERSONAL PROTECT	NO	
ecautions for safe handling Avoid contact with skin and eyes. Avoid inhalation. No smoking. Prevent the build up of ele Use ventilation Keep away from sources of ignition. No smoking. Prevent the build up of ele orage Conditions Keep container tightly closed in a dry and well-ventilated place. Containers which are opened and kept upright to prevent leakage.			
ection VII. HANDLING AND S	BDAROTS ON		
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 v case of eye contact Rin	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	(lsnoitqo) % 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	W ICAL STANDARD DISSOLVED IN W SBSOLUTE STANDARDS INC 44 Rossotto Dr. Hamden CT, 06514	ATER Emergency Telephone USA & CANAD Emergency Telephone International Date Prepared/Revised	1-352-535-5053 1-352-323-3500 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	(F = etate = 1)	ΨN		
	Evaporation rate			<pre>(t = AIA) (AIA rough of the state of th</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 This chemical may interact with other substances. Since the potential uses are so varied, ABSOLUTE STANDARDS INC. cannot warm of all the potential dangers of use or interaction with other chemical may interact with other substances. BBSOLUTE STANDARDS INC. warmants that the chemical meets the specifications set forth on the label. ABSOLUTE STANDARDS INC potential dangers of interaction with other chemical meets the specifications set forth on the label. ABSOLUTE STANDARDS INC potential dangers of use or interaction with other substances. BBSOLUTE STANDARDS INC warmants that the chemical meets the specifications set forth on the label. ABSOLUTE STANDARDS INC potential dangers of meets the specifications of the label. ABSOLUTE STANDARDS INC potential dangers of the potential dangers of meets and the chemical meets the specifications set forth on the label. ABSOLUTE STANDARDS INC potential dangers of the potent 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 appropriate precautions 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		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 Compound Rw# Number	ID#: ned and dilu RM#	6U1B Jted to (mL): Lot Number	10.0 Nominal Conc (ug/mL)		 5E-05 Balance Uncertainty 0.001 Flask Uncertainty Purity Uncertainty (%) Purity 	ny Target Weight(g)	Actual Weight(g)	Actual Conc (µg/ml.	Expanded By Expanded Actual Uncertainty (Conc (ug/mt.) (+/-) (ug/mt.)	ଳା	 Pedro L. Herntas SDS information (Solvent Safety Info. On Attached pg.) CAS# OSHA PEL (TWA) LDE 		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	(rooter top	
Abundance						Abundance	27	3					
250000 8.93		1	2			6000	6						
200000		/	0//			50000	6	56	(0				
150000						40000	6						
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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	 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 	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	 The certified value is the concentration calculated from gravimetric and volumetric measurements unless otherwise stated. Standards are prepared gravimetrically using balances that are calibrated with weights traceable to NIST (see above). Standards after openling annule, should be stored with caps tight and under appropriate laboratory conditions. 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). 	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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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 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.	W II CAL STANDARD DISSOLVED IN W 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 This chemical may interact with other substances. Since the potential uses are so varied, ABSOLUTE STANDARDS INC. cannot warm of all the potential dangers of use or interaction with other chemical may interact with other substances. BBSOLUTE STANDARDS INC. warmants that the chemical meets the specifications set forth on the label. ABSOLUTE STANDARDS INC potential dangers of interaction with other chemical meets the specifications set forth on the label. ABSOLUTE STANDARDS INC potential dangers of use or interaction with other substances. BBSOLUTE STANDARDS INC warmants that the chemical meets the specifications set forth on the label. ABSOLUTE STANDARDS INC potential dangers of meets the specifications of the label. ABSOLUTE STANDARDS INC potential dangers of the potential dangers of meets and the chemical meets the specifications set forth on the label. ABSOLUTE STANDARDS INC potential dangers of the potent 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 appropriate precautions 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 Compound Rw# Number	ID#: ned and dilu RM#	6U1B Jted to (mL): Lot Number	10.0 Nominal Conc (ug/mL)		 5E-05 Balance Uncertainty 0.001 Flask Uncertainty Purity Uncertainty (%) Purity 	ny Target Weight(g)	Actual Weight(g)	Actual Conc (µg/ml.	Expanded By Expanded Actual Uncertainty (Conc (ug/mt.) (+/-) (ug/mt.)	ଳା	 Pedro L. Herntas SDS information (Solvent Safety Info. On Attached pg.) CAS# OSHA PEL (TWA) LDE 		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	(rooter top	
Abundance						Abundance	27	3					
250000 8.93		1	2			6000	6						
200000		/	0//			50000	6	56	(0				
150000						40000	6						
						30000	<u> </u>						
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	 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 	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	 The certified value is the concentration calculated from gravimetric and volumetric measurements unless otherwise stated. Standards are prepared gravimetrically using balances that are calibrated with weights traceable to NIST (see above). Standards after openling annule, should be stored with caps tight and under appropriate laboratory conditions. All Standards, after openling annule, should be stored with caps tight and under appropriate laboratory conditions. 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). 	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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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 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.	W II CAL STANDARD DISSOLVED IN W 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 This chemical may interact with other substances. Since the potential uses are so varied, ABSOLUTE STANDARDS INC. cannot warm of all the potential dangers of use or interaction with other chemical may interact with other substances. BBSOLUTE STANDARDS INC. warmants that the chemical meets the specifications set forth on the label. ABSOLUTE STANDARDS INC potential dangers of interaction with other chemical meets the specifications set forth on the label. ABSOLUTE STANDARDS INC potential dangers of use or interaction with other substances. BBSOLUTE STANDARDS INC warmants that the chemical meets the specifications set forth on the label. ABSOLUTE STANDARDS INC potential dangers of meets the specifications of the label. ABSOLUTE STANDARDS INC potential dangers of the potential dangers of meets and the chemical meets the specifications set forth on the label. ABSOLUTE STANDARDS INC potential dangers of the potent 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 appropriate precautions of this chemical for his or her particular application. Depending on usage, protective clobing www.absolutestandards.com

Certified Reference Material CRM



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

CER	TIFIED WEIGHT REPORT									Øshussiteh.	8.45						
	Part Number: Lot Number:									Solvent(s): Methenol	Lolf EG359-USQ	12			and the second	in the hur	
			ai VOA Megami	20											. Jn		021524
			ponents											Formulate	ed By:	Mario Luis	DATE
	Expiration Date: Recommended Storage:		10 903												1		
	Nominal Concentration (ug/mL):		(0.0)												Jed.	to pleator	021524
	NIST Test ID#:				5E-05	Balance Uncertain	nty							Reviewed	By:	Pedro L. Rentas	DATE
	Weight(s) shown below were combined	and dilute	ed to (mL):	100.0	0.021	Flash Uncertainty	1									0100 Information	
					1-101-1	12221	Nominal	the side of	Purity	Uncertainty	Target	Actual	Actual	Expanded Uncertainty	(Solve	SDS Information Int Safety Info. On Attach	ed pg.)
	Compound	(RM#) Part Numb	Lot or Number	Dil. Factor	Initial Viol. (ml.)	Conc.(ug/mL)		Purity (%)	Uncertainty		Weight(g)	Weight(g)	Conc (ug/mL)			OSHA PEL (TWA)	L050
	Compound																
1.	Acetonitrie	(0324)	021644	NA	NA	NA	2000	99.99	0.2	NA	0.20007	0.20022	2001.5	8.1	75-05-8	40 ppm (70mg/m3/8H)	orf-rat 2450mg/kg
2,	Allyl chloride (3-Chloropropene)	(0325)	102396	NA	NA	NA	2000	99	0.2	NA	0.20207	0.20222	2001.5	8.2	107-05-1 75-15-0	1 ppm (3mg/m3/8H) 4 ppm (12mg/m3) (skin)	orl-ret 700mg/kg orl-ret 1200mg/kg
3.	Carbon disulphide	(0060) (1196)	MKCR8561 14718EF	NA	NA	NA	2000	99.99 95	0.2	NA	0.20007	0.21060	2001.3	8.5	1478-11-5	N/A	N/A
4.	cis-1,4-Dichloro-2-butene trans-1,4-Dichloro-2-butene	(0486)	MKBP6041V	NA	NA	NA	2000	96.5	0.2	NA	0.20731	0.20734	2000.3	8.4	110-57-6	NA	N/A
6.	Diethyl other	(0153)	IK1BCAS0000	NA	NA	NA	2000	99.9	0.2	NA	0.20025	0.20042	2001.7	8.1	80-29-7	NA	N/A
7.	Ethyl methacrylate	(0381)	06126PX	NA	NA	NA	2000	99	0.2	NA	0.20207	0.20231	2002.4	8.2	97-63-2	N/A	orl-rat 14800mg/kg
8.	lodomethane	(0489)	SHBF8718V	NA	NA	NA	2000	99.5	0.2	NA NA	0.20106	0.20118	2001.2 2001.4	8.1	74-88-4 78-83-1	5 ppm(26mg/m3/6H)(skin) 50 ppm (150mg/m3/6H)	orl-rat 75mg/kg orl-rat 2460mg/kg
9.	2-Methyl-1-propanol	(0445)	15241EB	NA	NA	NA	2000	99.5 99	0.2	NA	0.20108	0.20209	2000.2	8.2	126-98-7	1 ppm (3mg/m3/8H)(sidn)	orl-rat 120mg/kg
10. 11.	Methacrylonitrile Methyl acrylate	(0442) (1075)	00427ET SHBK0679	NA	NA	NA	2000	99.9	0.2	NA	0.20025	0.20042	2001.7	8.1	95-33-3	10 ppm(35mg/m3/8H)(sidn)	ord-net 277mg/kg
12.	Methyl methacrylate	(0404)	MKBW5137V	NA	NA	NA	2000	99.9	0.2	NA	0.20025	0.20030	2000.5	8.1	80-62-6	100 ppm (410mg/m3/8H)	orl-rat 7872mg/kg
13.	Nitrobenzene	(0228)	01213TV	NA	NA	NA	2000	89	0.2	NA	0.20207	0.20230	2002.3	8.2	98-95-3	1 ppm (Smg/m3/8H)(skin)	ori-tal 750mg/kg
14.	2-Nitropropane	(0461)	14002JX	NA	NA	NA	2000	97.3	0.2	NA	0.20560	0.20670	2001.0	8.3	79-46-9 76-01-7	10 ppm (35mg/m3/8H) N/A	orl-rat 720mg/kg N/A
15.	Pentachloroethane	(0450) (0474)	HGA01 18930	NA	NA	NA	2000	98	0.2	NA	0.20207	0.20210	2000.3	8.2	78-13-1	1000 ppm (7600mg/m3/6H)	orl-rat 43g/kg
16. 17.	1,1,2-Trichlorotrilluoroethane Bromodichloromethane	35171	101623	0.05	6.00	40001.7	2000	NA	NA	0.017	NA	NA	1999.6	22.9	75-27-4	NA	orl-rat 916mg/kg
18.	Dibromochloromethane	35171	101623	0.05	5.00	40002.1	2000	NA	NA	0.017	NA	NA	1999.6	23.0	124-48-1	N/A	orl-rat 648mg/kg
19.	cie-1,2-Dichloroethene	35171	101623	0.05	5.00	40003.1	2000	NA	NA	0.017	NA	NA	1999.7	22.9	156-59-2	N/A	N/A
20.	trans-1,2-Dichlorosthene	35171	101623	0.05	5.00	40002.4	2000	NA	NA	0.017	NA	NA	1999.6	23.0	156-60-5	N/A 500 mm	orl-rat 1235mg/kg orl-rat 820mg/kg
21.	Methylene chloride	35171	101823	0.05	5.00	40002.8	2000	NA NA	NA	0.017	NA	NA	1999.6	20.4	75-09-2 75-35-4	500 ppm 1 ppm (4mg/m3/8H)	ori-rat 200mg/kg
22. 23.	1,1-Dichloroethene Bromoferm	32251 95321	102023	0.10	10.00	20001.6 20003.2	2000	NA	NA	0.042	NA	NA	1999.8	20.5	75-25-2	0.5 ppm (5mg/m3) (skin)	orl-ret 933mg/kg
24.	Carbon tetrachloride	95321	020724	0.10	10.00	20003.4	2000	NA	NA	0.042	NA	NA	1909.B	20.4	56-23-6	2 ppm (12.6mg/m3/8H)	ori-rat 2350mg/kg
25.	Chloroform	95321	020724	0.10	10.00	20024.0	2000	NA	NA	0.042	NA	NA	2001.9	20.5	67-66-3	50 ppm (240mg/m3) (CL)	phpm809 tar-ho
26.	Dibromomethane	95321	020724	0.10	10.00	20002.9	2000	NA	NA	0.042	NA	NA	1990.8	20.5	74-95-3	N/A	orl-rat 106mg/kg
27.	1,1-Dichioroethane	95321	020724	0.10	10.00	20003.4	2000	NA NA	NA	0.042	NA	NA	1999.8	20.5	75-34-3	100 ppm N/A	orl-rat 725mg/kg N/A
	2,2-Dichloropropane	95321 95321	020724	0.10	10.00	20003.4	2000	NA	NA	0.042	NA	NA	2019.6	20.6	127-18-4	25 ppm (170mg/m3/8H)(final)	orl-tet 2629mg/kg
29. 30.	Tetrachloroethene 1,1,1-Trichloroethane	95321	020724	0.10	10.00	20003.0	2000	NA	NA	0.042	NA	NA	1999.8	20.5	71-55-6	360 ppm (1900mg/m3/6H)	orl-rat 10300mg/kg
	1,2-Dibromo-3-chiloropropane	35161	112322	0.05	5.00	40016.5	2000	NA	NA	0.017	NA	NA	2000.3	22.9	96-12-8	0.001 ppm	orl-rat 170mg/kg
32.	1,2-Dibromoethane	36161	112322	0.05	5.00	40024.8	2000	NA	NA	0.017	NA	NA	2000.7	22.9	108-83-4	20 ppm (8H)	orf-nit 108mg/kg
	1,2-Dichloroethane	35161	112322	0.05	5.00	40018.0	2000	NA NA	NA	0.017	NA	NA	2000.4 2002.0	22.9	107-08-2 78-87-5	50 ppm (8H) 75 ppm (350mg/m3/8H)	ori-rat 670mg/kg ori-rat 1947mg/kg
	1,2-Dichloropropane	35161 35161	112322	0.05	5.00	40051.0	2000	NA	NA	0.017	NA	NA	1999.8	22.9	142-28-9	N/A	Unr-mus 3600mg/kg
	1,3-Dichloropropane 1,1-Dichloropropene	35161	112322	0.05	5.00	40012.1	2000	NA	NA	0.017	NA	NA	2000.1	29.7	583-58-6	NA	NA
	cis-1,3-Dichloropropene	35161	112322	0.05	5.00	40010.0	2000	NA	NA	0.017	NA	NA	2000.0	23.0	10061-01-5	N/A	N/A
38.	trane-1,3-Dichloropropene	35161	112322	0.05	5.00	40017.6	2000	NA	NA	0.017	NA	NA	2000.4	23.0	10061-02-6	N/A	N/A orl-rat 82mg/kg
39.	Hexachloro-1,3-butadiene	35161	112322	0.05	5.00	40021.9	2000	NA	NA	0.017	NA	NA	2000.6	29.7 22.9	87-68-3 630-20-6	0.02 ppm (0.24mg/m3/8H) N/A	cri-rate70mg/kg
40.	1,1,2-Tetrachioroethane	35161 35161	112322	0.05	5.00	40011.9	2000	NA	NA	0.017	NA	NA	1999.9	22.9	79-34-5	5 ppm (35mg/m3/9H)(skin)	orl-rat 800mg/kg
	1.1.2-Trichloroethane	35161	112322	0.05	5.00	40008.6	2000	NA	NA	0.017	NA	NA	1999.8	23.0	79-00-5	10 ppm (45mg/m3/8H)(skin)	orl-rat 836mg/kg
43.	Trichlorosthene	35161	112322	0.05	5.00	40029.0	2000	NA	NA	0.017	NA	NA	2000.9	22.9	79-01-6	50 ppm (270mg/m3/8H)	orl-mus 2402mg/kg
44.	1,2,3-Trichloropropane	35161	112322	0.05	5.00	40007.5	2000	NA	NA	0.017	NA	NA	1999.9	22.9	96-18-4 71-43-2	10 ppm (60mg/m3/8H)	orl-rat 149.0mg/kg orl-rat 4894mg/kg
45.	Benzene	35162	050823	0.05	5.00	40005.0	2000	NA	NA	0.017	NA	NA	1999.7	22.9	108-86-1	1 ppm N/A	ori-rat 2009mg/kg
46.	Bromobenzene n-Butyl benzene	35162 35162	050823	0.05	5.00	40006.9	2000	NA	NA	0.017	NA	NA	1999.7	22.9	104-51-8	N/A	N/A
	Ethyl benzene	35162	050823	0.05	5.00	40004.8	2000	NA	NA	0.017	NA	NA	1999.7	22.9	100-41-4	100 ppm (435mg/m3/8H)	orl-rat>2000mg/kg
	p-isopropyl toluene	35162	050823	0.05	5.00	40005.8	2000	NA	NA	0.017	NA	NA	1999.8	22.9	99-87-8	NA	orl-rat 4750mg/kg
50.	Naphihalene	35162	050823	0.05	6,00	40006.2	2000	NA	NA	0.017	NA	NA NA	1999.8	22.9	91-20-3 100-42-5	10 ppm (50mg/m3/8H) 100 ppm	orl-rat 490mg/kg orl-rat 5000mg/kg
	Styrene	35162	050823	0.05	5.00	40004.8 40006.2	2000	NA	NA	0.017	NA	NA	1999.8	22.9	108-68-3	200 ppm	orl-rat 5000mg/kg
	Toluene 1,2,3-Trichlorobenzene	35162 35162	050823	0.05	5.00	40008.2	2000	NA	NA	0.017	NA	NA	1999.7	22.9	87-61-6	NA	ipr-mus 1390mg/kg
	1,2,4-Trichiorobenzene	35162	050823	0.05	5.00	40006.8	2000	NA	NA	0.017	NA	NA	1999.8	22.9	120-62-1	5 ppm (CL) (40mg/m3)	ori-nat 756mg/kg
1.2.4	1,2,4-Trimethylbenzene	35162	050823	0.05	5.00	40001.6	2000	NA	NA	0.017	NA	NA	1999.6	23.0	95-63-6	NA	ori-rat 5g/kg
	1,3,5-Trimethylbenzene	35162	050B23	0.05	5.00	40006.7	2000	NA	NA	0.017	NA	NA	1999.8 1999.8	22.9	108-67-8	N/A 100 ppm (435mg/m3/8H)	orl-rat 5000mg/kg orl-rat 5g/kg
	m-Xylene	35162	050823	0.05	5.00	40005.8 40001.2	2000	NA	NA	0.017	NA	NA	1999.6	22.9	98-06-6	N/A	N/A
	tert-Butyl benzene sec-Butyl benzene	35163 35163	101923	0.05	5.00	40001.2	2000	NA	NA	0.017	NA	NA	1999.6	22.9	135-98-8	N/A	ort-rat 2240mg/kg
	Chlorobanzene	35163	101923	0.05	5.00	40003.8	2000	NA	NA	0.017	NA	NA	1999.7	22.9	108-90-7	75 ppm (350mg/m3/8H)	ori-rat 2290mg/kg
	2-Chiorololuene	35163	101923	0.05	5.00	40000.3	2000	NA	NA	0.017	NA	NA	1999.5	22.9	95-49-8	60 ppm (250mg/m3/84-6)	ort-rat 3900mg/kg
	4-Chlorotoluene	35163	101923	0.05	5.00	40003.3	2000	NA	NA	0.017	NA	NA	1999.7	22.9	106-43-4 95-50-1	N/A 50 ppm (300mg/m3) (CL)	orl-rat 2100mg/kg orl-rat 500mg/kg
	1,2-Dichlorobenzene	35163	101923	0.05	5.00	40003.8	2000	NA	NA	0.017	NA	NA	1999.7 1999.6	22.9	541-78-1	SUppm (Scompma) (CL) N/A	ipr-mus 1062mg/kg
	1,3-Dichlorobenzene 1,4-Dichlorobenzene	35163 35163	101923	0.05	5.00	40001.8	2000	NA	NA	0.017	NA	NA	1999.6	22.9	106-46-7	75 ppm (450mg/m3/8H)	orl-rat 600mg/kg
	Isopropylbenzene	35163	101923	0.05	5.00	40000.8	2000	NA	NA	0.017	NA	NA	1999.5	22.9	98-82-8	50 ppm (245mg/m3/8H)	orl-rat 1400mg/kg
	n-Propylbenzene	35163	101923	0.05	5.00	40003.4	2000	NA	NA	0.017	NA	NA	1999.7	23.0	109-65-1	N/A	ort-rat 6040mg/kg
68.	o-Xylena	35163	101923	0.05	5.00	40040.8	2000	NA	NA	0.017	NA	NA	2001.5	23.0	95-47-6	100 ppm (435mg/m3/6H)	pr-mus 1384mg/kg orl-net 5g/kg
69.	p-Xylene	35163	101923	0.05	5.00	40000.8	2000	NA	NA	0.017	NA	NA	1999.5	22.9	108-42-3	100 ppm (435mg/m3/8H)	Million

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Run 17, "P95317 L021	i24 I2000µg/mL in MeOHI"	Peak 2	Name
HARIERS I ADDIE POPI	ma moodeline er endante	3	Ether 1,1,2-Trichloro-1,2,2-Inlibiorpethana
		3	1,1-Dichloroethene
Dum Longila: 00.00 min. 2	5000 nainte at 10 nainte canand	*	Acetonitrile
Hun Lengin. 60.00 min, 3	5998 points at 10 points/second. 44 at 10:04:27 AM.	5	Indomethane
Created: Sat. Feb 17, 20	4 at 10:04:27 AM.	6	Allyi shloride
Compled: Companes *02	624-GC5M1", Method "GC5-M1".	7	Carbon disulfide/Mathylone chloride
		8	trans-1,Z-Dichloroethens
Analyzed using Method "	GC5-M1".	9	1,1-Dichlorosthane
		10	2,2-Dichloropropane
		11	63-1,2-Dichloroethene
Comments		12	Hethecrylonitrile/Hethyl acrylate/Chloroft
		13	Isobutanol/1,1,1-Trichloroethane
GC5-M1 Analysis by Car	dice Warren	14	1,1-Dichisropropene
		15	Carison tetrachloride
CONTRACTO 260-A0001 IC	5 meter X 0.53mm X 3.0µm film thickness	16	Benzene/1,2-Dichloroethane
Flow rates Total flow=29	DmL/min., Helium (carrier)=10mL/min., nin., Hydogen(make-up)=40mL/min., Air(make-up)=230mL/min. *C (Time 1=10 min.), Temp 2=200°C (Time 2=8.75 min.),	17	Trictionoethene
Linking (makes and _ 16ml	the demonstration with Aland Imin Airfrantes with Oldent Imin	18	1,2-Dichloropropaite
rienum(make-up)=romu	ин., пуслден(таке-up)≔илт.лпп., Ан(таке-up)=∠элтслип.	19	Hsinyi methacrylate
Oven Profile: Termo 1=3	"C (Time 1=10 min) Termo 2=200"C (Time 2=8.75 min)	20	Bromodichioremethene
The Allerty Total		21	Dibromomethane/2-Nitropropane
Hate = 4 G/min., 10tal ru	time=60 min. Injector temp.=200°C, FID Temp.=200°C.	22	cis-1,3-Dichioropropone
FID Signal = Edaq Chanr		23	Toluane
		24	Ethyl methecrylete/trans-1,3-Dickloropro;
Standard injection = 0.5μ	_, Hange=3	25	1,1,2-Trichloroethane
		26	Tetrachioraethene/1,3-Dichloropropene
×		27	Dibromochionomethane
1		28	1,2-Dipromoethane
		19	Chiorobenzene
4000000		30	Ethylbonzene/1,1,1,2-Retrachlonoethane
1000000-		31	m-Nytene/p-Xylene
1		32	e-Xviene
		33	Styrene
1 1		34	isopropylbeneene/Bromoform
		35	cis-1,4-Dichloro-2-butene
800000-		36	1,1,2,2-Tetrachioroethene
over v		37	1,2,3-Intchloropropane
		38	n-Propy/benzene
		39	trans-1,4-Dichloro-2-butane
(I	in the second	-40	Breinobenzene
		-42	1,3,5-Trimethyibeneene
600000-		42	2-Chiorotoluene
		43	4-Childrotoluene
3		44	tert-Bodylbenzenie
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110/00/00	D	42	sec-Butylbenzens
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-**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	0.20040	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	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 756mg/kg
	2,4-Trimethylbenzene 3,5-Trimethylbenzene	35162 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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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 Bichmontethana/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 RELEASE MEASURES 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 RELEASE MEASURES 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 RELEASE MEASURES 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	re 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 RELEASE MEASURES 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 RELEASE MEASURES 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 ND STORAGE	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 (so	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 RELEASE MEASURES 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 ND STORAGE 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 RELEASE MEASURES 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 ND STORAGE 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 RELEASE MEASURES 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 ND STORAGE 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 RELEASE MEASURES 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 ND STORAGE 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 RELEASE MEASURES 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 ND STORAGE 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 RELEASE MEASURES 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 ND STORAGE 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. CONTROLS/PERSONAL PROTECTI	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.	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.



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	0.20040	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	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	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	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 756mg/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

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 Bichmontethana/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 RELEASE MEASURES 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 RELEASE MEASURES 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 RELEASE MEASURES 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 RELEASE MEASURES 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 RELEASE MEASURES 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 ND STORAGE	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 RELEASE MEASURES 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 ND STORAGE 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 RELEASE MEASURES 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 ND STORAGE 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 RELEASE MEASURES 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 ND STORAGE 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 RELEASE MEASURES 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 ND STORAGE 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 RELEASE MEASURES 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 ND STORAGE 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 RELEASE MEASURES 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 ND STORAGE 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. CONTROLS/PERSONAL PROTECTI	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 ^o 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.		
250000 8.93	33	·			6000	27 0						
200000		Ì	0////		5000	0	50					
15000					40000	0						
10000					30000	0						
					2000	0						
50000					10000	0 37	~					
Time>0 10	10.00 15.00 20.00 25.00 30.00 35.00	30.00 35.00 40.	00 45.00 50	40.00 45.00 50.00 55.00 60.00	0,000 m/z>0	20 30	44 65 7 40 50 60 70	80 80	119 100 110 120	130 140 150	158 169 160 170	
	 The certification Shandards: Shandards: All Shandards: Uncertainty NIST Tech 	 The certified value is the concentration calculated from gravimetric and volumetric measurements unless otherwise stated. Shandards are prepared gravimetrically using hadances that are calibrated with weights traceable to MIST (see above). Shandards are certified (++) 0.5% of the stated value, unless otherwise stated. All Shandards, after opening ampule, should be stored with eags tight stated. All Shandards, after opening ampule, should be stored with cass tight and under appropriate taboratory conditions. 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). 	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 ^a			

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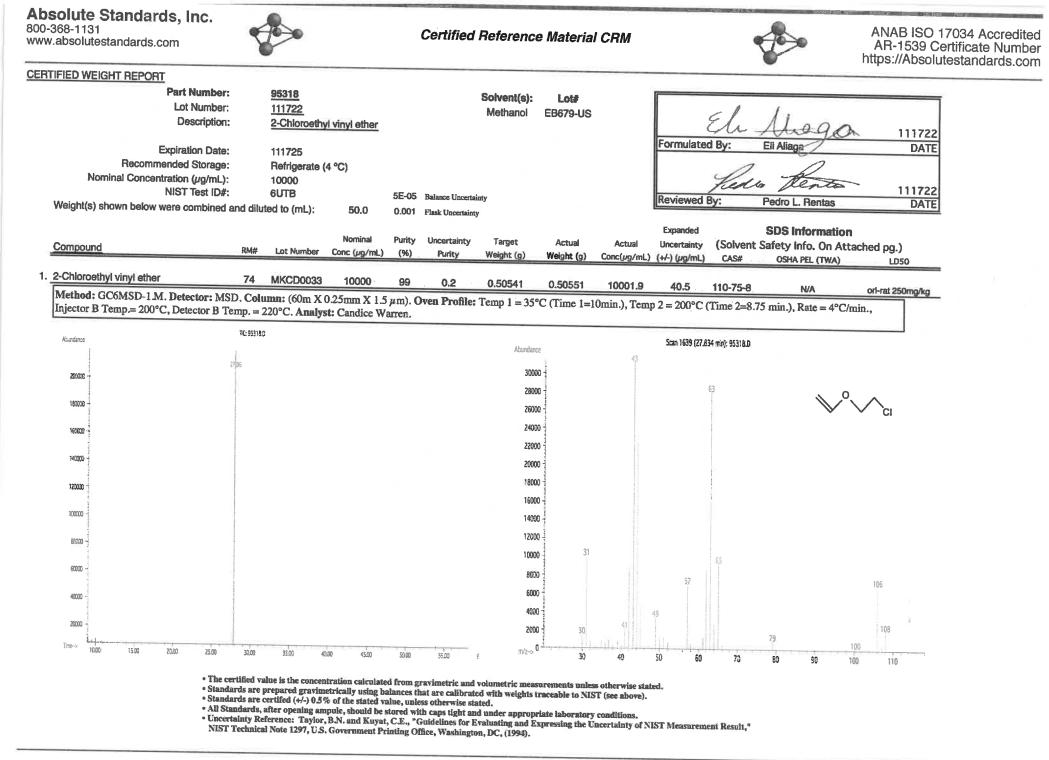
Lot # 091424 Part # 91980

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	
1. Acrolein Method: Rate = 4 ^o 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.		
250000 8.93	33	·			6000	27 0						
200000		Ì	0////		5000	0	50					
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Time>0 10	10.00 15.00 20.00 25.00 30.00 35.00	30.00 35.00 40.	00 45.00 50	40.00 45.00 50.00 55.00 60.00	0,000 m/z>0	20 30	44 65 7 40 50 60 70	80 80	119 100 110 120	130 140 150	158 169 160 170	
	 The certification Shandards: Shandards: All Shandards: Uncertainty NIST Tech 	 The certified value is the concentration calculated from gravimetric and volumetric measurements unless otherwise stated. Shandards are prepared gravimetrically using hadances that are calibrated with weights traceable to MIST (see above). Shandards are certified (++) 0.5% of the stated value, unless otherwise stated. All Shandards, after opening ampule, should be stored with eags tight stated. All Shandards, after opening ampule, should be stored with cass tight and under appropriate taboratory conditions. 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). 	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 ^a			

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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): Uted to (mL): Compound RM# Lot Number	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 $2.6Solvent(s): LotsMethanol EJ143-US1.14.520 t^{2}1.14.520 t^{2}1.14.5$	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 μ 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	
 The ce Stands Stands Stands All Sta Uncert NUST' 	 The certified value is the concentration calculated from gravimetria 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 	 The certified value is the concentration calculated from gravimetric and volumetric measurements unless otherwise stated. Standards are prepared gravimetrically using balances that are calibrated with weights traceable to NIST (see above). Standards are certified (+/-) 0.5% of the stated value, unless otherwise stated. All Standards are certified (+/-) 0.5% of the stated value, unless otherwise stated. All Standards, after opening ampule, should be stored with cass tight and under appropriate laboratory conditions. Uncertainty Reference: Taylor, B.N. and Kuyat, C.E., "Guidelines for Evaluating and Expressing the Uncertainty of NIST Measurement Result," NIST Technical Note 1297, U.S. Government Printing Office, Washington, DC, (1994). 	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.

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 μ 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	
 The ce Stands Stands Stands All Sta Uncert NUST' 	 The certified value is the concentration calculated from gravimetri standards are prepend gravinetrically using balances that are cal standards are recrifted (<i>H</i>.) 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 	 The certified value is the concentration calculated from gravimetric and volumetric measurements unless otherwise stated. Standards are prepared gravimetrically using balances that are calibrated with weights traceable to NIST (see above). Standards are certified (+/-) 0.5% of the stated value, unless otherwise stated. All Standards are certified (+/-) 0.5% of the stated value, unless otherwise stated. All Standards, after opening ampule, should be stored with cass tight and under appropriate taboratory conditions. Uncertainty Reference: Taylor, B.N. and Kuyat, C.E., "Guidelines for Evaluating and Expressing the Uncertainty of NIST Measurement Result," NIST Technical Note 1297, U.S. Government Printing Office, Washington, DC, (1994). 	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			4 000 505 5050
Manufacturer's Name	ABSOLUTE STANDARDS INC		phone USA & CANADA	1-800-535-5053
Address	44 Rossotto Dr. Hamden CT, 06514	Date Prepared/F	phone International Revised	1-352-323-3500 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

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.

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 Formulated By: Prashant Chaufuan DATE Reviewed By: Pedro L. Rentas DATE Expanded SS 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 μ 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 ori-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	
 The ce Shanda Shanda Shanda Shanda Uncert NLST 	 The certified value is the concentration calculated from gravimetri standards are prepend gravinetrically using balances that are cal estandards are prefited (<i>H</i>.) 0.5% of the stated value, unless otherwa . 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, Wasi 	 The certified value is the concentration calculated from gravimetric and volumetric measurements unless otherwise stated. Standards are prepared gravimetrically using balances that are calificated with weights traccable to NIST (see above). Standards are certified (++) 0.5% of the stated value, unless otherwise stated. All Standards, after opening ampule, should be stored with caps tight and under appropriate laboratory conditions. All Standards, after opening ampule, should be stored with caps tight and under appropriate laboratory conditions. Uncertainty Reference: Taylor, B.N. and Kuyat, C.E., "Guidelines for Evaluating and Expressing the Uncertainty of NIST Measurement Result," NIST Technical Note 1297, U.S. Government Printing Office, Washington, DC, (1994). 	asted. NIST Measurement Result,"

Constant Con

Safety Data Sheet (SDS)

GHS/OSHA Compliant

Section I Product and Co	mpany Identification			
	CAL STANDARD DISSOLVED IN ME			4 000 505 5050
Manufacturer's Name	ABSOLUTE STANDARDS INC		phone USA & CANADA	1-800-535-5053
Address	44 Rossotto Dr. Hamden CT, 06514	Date Prepared/F	phone International Revised	1-352-323-3500 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.

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 Formulated By: Prashant Chaufuan DATE Reviewed By: Pedro L. Rentas DATE Expanded SS 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 μ 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 ori-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	
 The ce Shanda Shanda Shanda Shanda Uncert NLST 	 The certified value is the concentration calculated from gravimetri standards are prepend gravinetrically using balances that are cal estandards are precrifted (<i>H</i>-1) 0.5% of the stated value, unless otherwa . All Standards, after opening ampule, should be stored with caps fig of the chainly Reference: Taylor, B.N. and Kuyat, C.B., "Guidelines NIST Technical Note 1297, U.S. Government Printing Office, Wasi 	 The certified value is the concentration calculated from gravimetric and volumetric measurements unless otherwise stated. Standards are prepared gravimetrically using balances that are calificated with weights traccable to NIST (see above). Standards are certified (++) 0.5% of the stated value, unless otherwise stated. All Standards, after opening ampule, should be stored with caps tight and under appropriate laboratory conditions. All Standards, after opening ampule, should be stored with caps tight and under appropriate laboratory conditions. Uncertainty Reference: Taylor, B.N. and Kuyat, C.E., "Guidelines for Evaluating and Expressing the Uncertainty of NIST Measurement Result," NIST Technical Note 1297, U.S. Government Printing Office, Washington, DC, (1994). 	asted. 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			
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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

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

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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

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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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.		Expanded U (95% C.L.; K		
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:

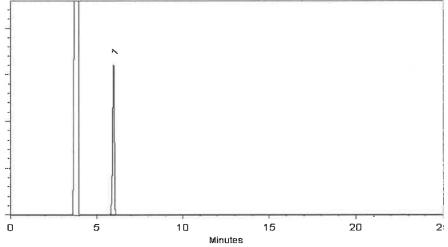
 200°C

 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

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	abel Conditions 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.



CERTIFIED REFERENCE MATERIAL

4 V

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.

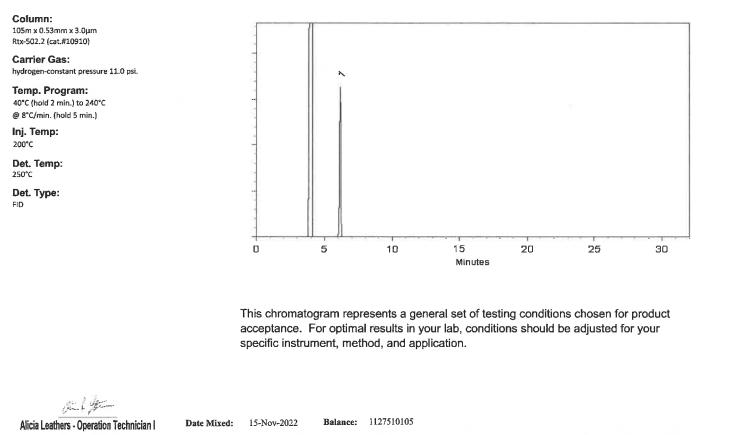
Catalog No. :	30470	Lot No.:	A0191703		
Description :	tert-Butanol Standard				
	tert-Butanol Std 50,000µg/mL, P&T Methanol, 1mL/ampul				
Container Size :	2 mL	Pkg Amt:	> 1 mL		
Expiration Date :	November 30, 2025	Storage:	0°C or colder		
		Ship:	Ambient		

CERTIFIED VALUES

Elution Order		Compound	Grav. Conc. (weight/volume)		Expanded U (95% C.L.; K	the second second second	
1	tert-Butanol (TBA) CAS # 75-65-0 Purity 99%	(Lot 101619K21F-1)	50,122.0 μg/mL	+/-	293.4753 1,073.6797 1,104.8612	μg/mL μg/mL μg/mL	Gravimetric Unstressed Stressed
Solvent:	P&T Methanol						

CAS# 67-56-1

Purity 99%



Spale & Barrisk

Jennifer Pollino - Operations Tech III - ARM QC

Date Passed: 17-Nov-2022

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

Expiration Notes:

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

Purity Notes:

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

Certified Uncertainty Value Notes:

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

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

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

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

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

- Separate (not combined) uncertainty values for gravimetric uncertainty are also displayed on the certificate, if needed, separate homogeneity between-ampul uncertainty, storage stability uncertainty and shipping stability uncertainty values are available by contacting Restek Technical Service at <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.



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

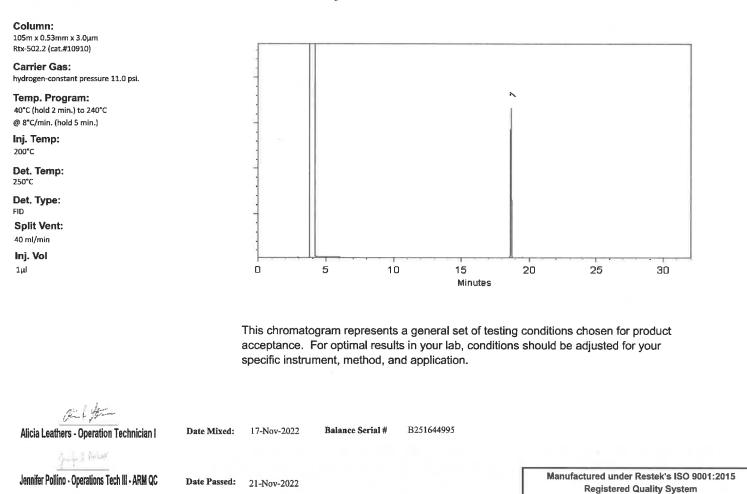
* Expanded Uncertainty displayed in same units as Grav. Conc.

 Solvent:
 P&T Methanol

 CAS #
 67-56-1

 Purity
 99%







Certificate #FM 80397

Expiration Notes:

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

Purity Notes:

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

Certified Uncertainty Value Notes:

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

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

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

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

Manufacturing Notes:

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

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





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. :	<u>30225</u> Lot No.: <u>A0193071</u>					
Description :	Bromochloromethane Standard					
	Bromochloromethane 2000µg/m	L, 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%







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:

	le 🖕 a Marinan Marina de La Constante Marina de La Constante de Constante de Carlos de Constante de C	
$U_{combined uncertainty} = k$	$u^4 + u^2 + u^2$	
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.

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

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

Catalog No. :	30225	Lot No.:	<u>A0193071</u>
Description :	Bromochloromethane Standard		
	Bromochloromethane 2000µg/m	L, 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%







Expiration Notes:

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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.
- Purity values are rounded to the nearest whole number.

Certified Uncertainty Value Notes:

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	le 🖕 a Marinan Marina de La Constante Marina de La Constante de Constante de Carlos de Constante de C	
$U_{combined uncertainty} = k$	$u^4 + u^2 + u^2$	
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:

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using NIST traceable weights, and/or dilutions with Class A glassware.

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Catalog No. :	30225	Lot No.:	<u>A0193071</u>
Description :	Bromochloromethane Standard		
	Bromochloromethane 2000µg/m	L, 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%







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 parent compound in solution.
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COMPONING CHECKING	gravimetric homogeneity "storage stability "shipping stability	
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Manufacturing Notes:

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Catalog No. :	30225	Lot No.:	<u>A0193071</u>
Description :	Bromochloromethane Standard		
	Bromochloromethane 2000µg/m	L, 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%







Expiration Notes:

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$U_{combined uncertainty} = k$	$u^4 + u^2 + u^2$	
COMPONING CHECKING	gravimetric homogeneity "storage stability "shipping stability	
o sen di an la Dimeni da dei ana las per	. 2011년 1월 19일 - 19일 - 19일 - 19g - 19	

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Manufacturing Notes:

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Catalog No. :	30006	_ Lot No.:	A0193887	
Description :	VOA Calibration Mix #1			
	VOA Calibration Mix #1 5,00 1mL/ampul	00µg/mL, P&T Methanol/W	ater(90:10),	
Container Size :	2 mL	Pkg Amt:	> 1 mL	
Expiration Date :	April 30, 2026	Storage:	0°C or colder	
		Ship:	Ambient	

CERTIFIED VALUES

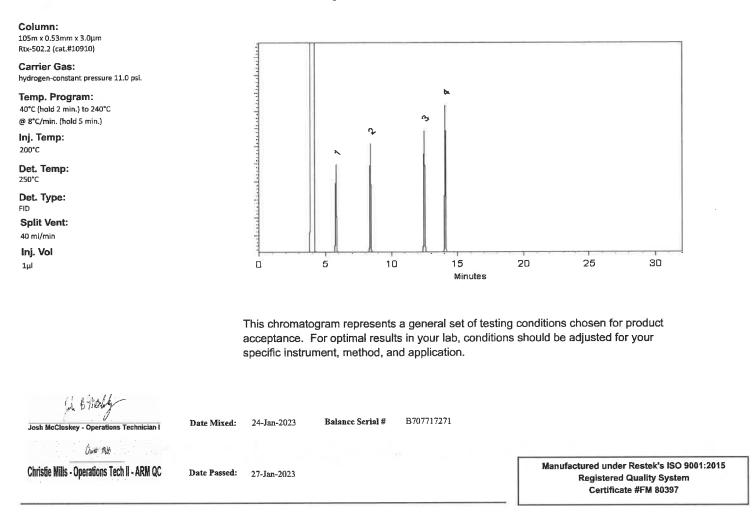
Elution Order	Compound	CAS #	Lot #	Purity	Grav. Conc. (weight/volume)	Expanded Uncertainty * (95% C.L.; K=2)
1	Acetone	67-64-1	SHBP8774	99%	5,006.5 μg/mL	+/- 173.0015
2	2-Butanone (MEK)	78-93-3	SHBN9536	99%	5,008.5 μg/mL	+/- 173.0706
3	4-Methyl-2-pentanone (MIBK)	108-10-1	SHBP4724	99%	5,000.3 µg/mL	+/- 172.7884
4	2-Hexanone	591-78-6	MKCQ6663	99%	5,001.7 μg/mL	+/- 172.8345

* 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:

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 recommended condition found in the storage field.

Purity Notes:

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

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Manufacturing Notes:

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Catalog No. :	30042	Lot No.:	<u>A0194279</u>					
Description :	502.2 Calibration Mix #1							
	502.2 Calibration Mix #1 2,000µg/mL, P&T Methanol, 1mL/ampul							
Container Size :	2 mL	Pkg Amt:	> 1 mL					
Expiration Date :	October 31, 2029	Storage:	0°C or colder					
		Ship:	Ambient					

CERTIFIED VALUES

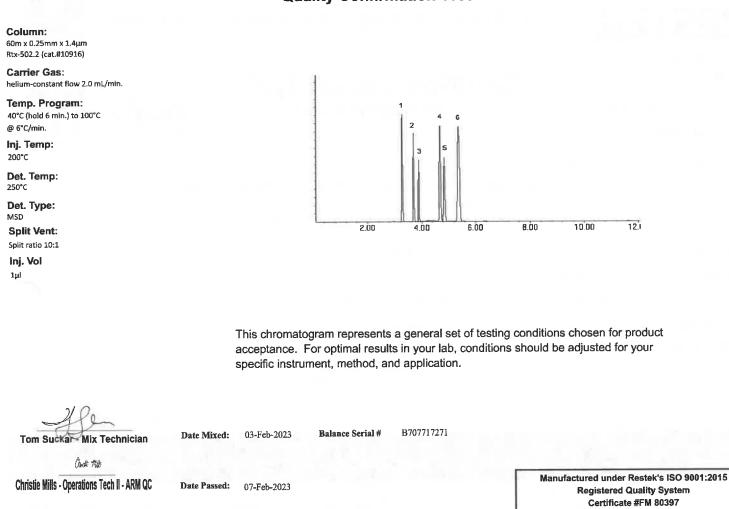
Elution Order	Compound	CAS #	Lot #	Purity	Grav. Conc. (weight/volume)	Expanded Uncertainty * (95% C.L.; K=2)
1	Dichlorodifluoromethane (CFC-12)	75-71-8	00012554	99%	2,001.5 µg/mL	+/- 112.7231
2	Chloromethane (methyl chloride)	74-87-3	SHBK6571	99%	2,001.2 μg/mL	+/- 112.5863
3	Vinyl chloride	75-01-4	00015559	99%	2,001.4 μg/mL	+/- 112.6561
4	Bromomethane (methyl bromide)	74-83-9	101604	99%	2,006.4 µg/mL	+/- 112.8262
5	Chloroethane (ethyl chloride)	75-00-3	107-401039114-1	99%	2,001.9 µg/mL	+/- 112.5897
6	Trichlorofluoromethane (CFC-11)	75-69-4	MKCL8411	99%	2,000.8 μg/mL	+/- 112.6473

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

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

Purity 99%





Expiration Notes:

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Manufacturing Notes:

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Certificate of Analysis

gravimetric

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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. :	555582	Lot No.:	<u>A0196865</u>
Description :	Custom 8260A/B Surrogate	Mix	
	Custom 8260A/B Surrogate I 1mL/ampul	Mix 25,000µg/mL, P&T M	ethanol,
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

11-Apr-2023



Expiration Notes:

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Catalog No. :	30489	Lot No.:	<u>A0205013</u>
Description :	8260B Acetates Mix		
	8260B Acetates Mix 2,000 µg/mL, P	&T Methanol, 1mL	/ampul
Container Size :	2 mL	Pkg Amt:	> 1 mL
Expiration Date :	June 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%	2,012.7 μg/mL	+/- 69.5670
2	Vinyl acetate	108-05-4	RP231030CTH	98%	2,017.5 μg/mL	+/- 69.7338
3	Ethyl acetate	141-78-6	SHBQ9682	99%	2,020.0 μg/mL	+/- 69.8205
4	Isopropyl acetate	108-21-4	BCCG7069	99%	2,018.7 μg/mL	+/- 69.7744
5	Propyl acetate	109-60-4	KLOBM	99%	2,012.0 μg/mL	+/- 69.5439
6	Butyl acetate	123-86-4	SHBP6314		2,020.0 μg/mL	+/- 69.8205
7	Amyl acetate	628-63-7	41325/1		2,019.5 μg/mL	+/- 69.8046

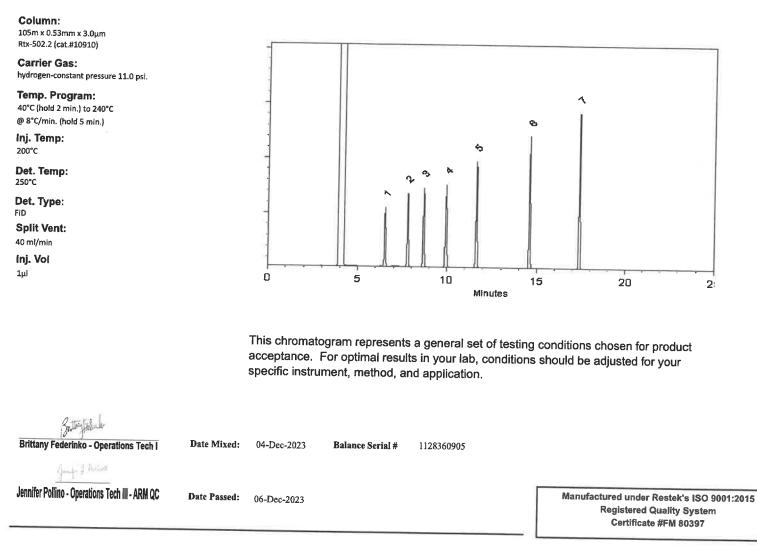
Solvent: P&T Methanol CAS # 67-56-1 Purity 99% * Expanded Uncertainty displayed in same units as Grav. Conc.

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.

Quality Confirmation Test



Expiration Notes:

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- 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.



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

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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**

Certificate #FM 80397

Expiration Notes:

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

Purity Notes:

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

Certified Uncertainty Value Notes:

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

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

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

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

Manufacturing Notes:

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

- Stability of the unopened product, when stored in compliance with the recommended conditions, is guaranteed through
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CERTIFIED REFERENCE MATERIAL

Certificate of Analysis

chromatographic plus





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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

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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**

Certificate #FM 80397

Expiration Notes:

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

Purity Notes:

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

Certified Uncertainty Value Notes:

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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:

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CERTIFIED REFERENCE MATERIAL

Certificate of Analysis

gravimetric





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FOR LABORATORY USE ONLY-READ SDS PRIOR TO USE.

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

	נוים להמוומואם מנותיחו להמונומואם הבובוווווומוחיו חו נוום מומואבו(א) וואפחי	ui ui iile ailaiyie(s) iisieu.
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,
Container Size :	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 $+ u_{s}^2$ hipping 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. .
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CERTIFIED REFERENCE MATERIAL

Certificate of Analysis

gravimetric





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	נוים להמוומואם מנותיחו להמונומואם הבובוווווומוחיו חו נוום מומואבו(א) וואפחי	ui ui iile ailaiyie(s) iisieu.
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,
Container Size :	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. .

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

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 - 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	
Description :	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%

-

Quality Confirmation Test



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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Catalog No. :	30006	Lot No.:	A0210618	
Description :	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%

-

Quality Confirmation Test



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.
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Catalog No. :	30006	Lot No.:	A0210618	
Description :	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%

-

Quality Confirmation Test



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:

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

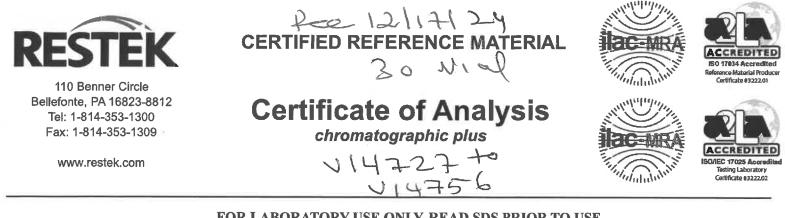
k is a coverage factor of 2, which gives a level of confidence of approximately 95%.

• 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	
Description :	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%

Quality Confirmation Test

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

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

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

@ 6°C/min. Inj. Temp: 200°C

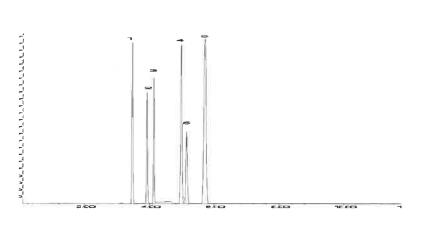
Det. Temp: 250°C

Det. Type:

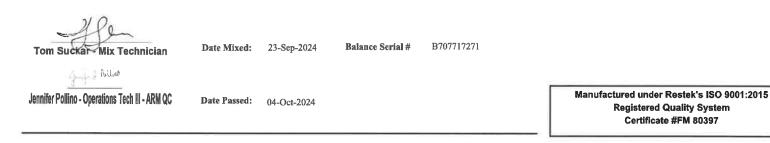
MSD Split Vent:

Split ratio 10:1 Inj. Vol

1µl



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



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:

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

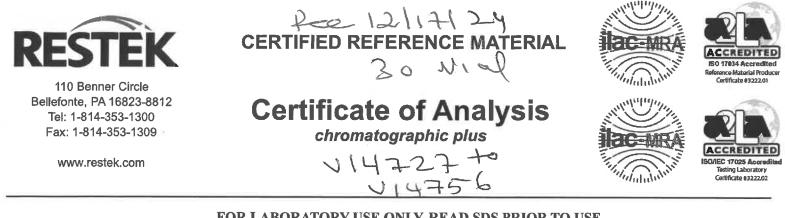
k is a coverage factor of 2, which gives a level of confidence of approximately 95%.

• 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	
Description :	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%

Quality Confirmation Test

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

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

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

@ 6°C/min. Inj. Temp: 200°C

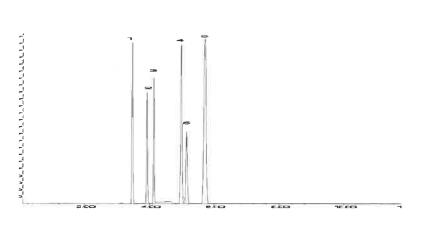
Det. Temp: 250°C

Det. Type:

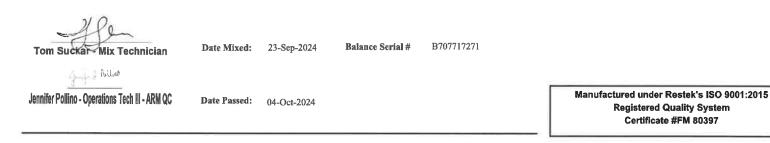
MSD Split Vent:

Split ratio 10:1 Inj. Vol

1µl



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



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:

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

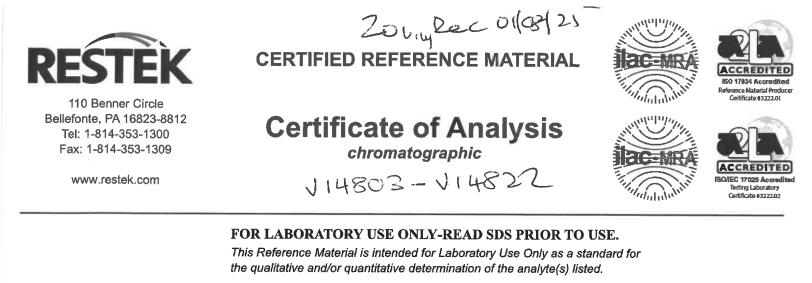
k is a coverage factor of 2, which gives a level of confidence of approximately 95%.

• 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.: <u>A0220471</u>				
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

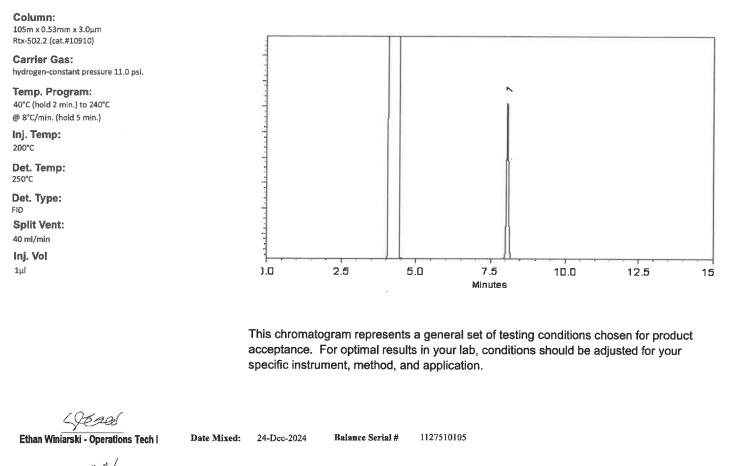
Elution Order		Compound	CAS #	Lot #	Purity	Grav. Conc. (weight/volume)	Expanded Uncertainty * (95% C.L.; K=2)
1	Vinyl acetate		108-05-4	RD240423RSR	99%	8,066.0 μg/mL	+/- 278.7979
				* Expanded	Uncertaint	y displayed in same	units as Grav. Conc.

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.

Quality Confirmation Test



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

02-Jan-2025

Date Passed:

REVIEWED By Janviller Polities 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:

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

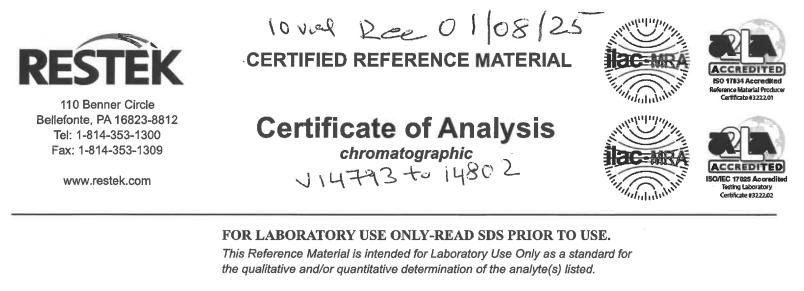
k is a coverage factor of 2, which gives a level of confidence of approximately 95%.

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Manufacturing Notes:

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



Catalog No. :	555408-FL	Lot No.:	A0220563
Description :	Custom Vinyl Acetate Standard		
	Custom Vinyl Acetate Standard 8,00	00µg/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%	8,060.0 μg/mL	+/- 278.5905

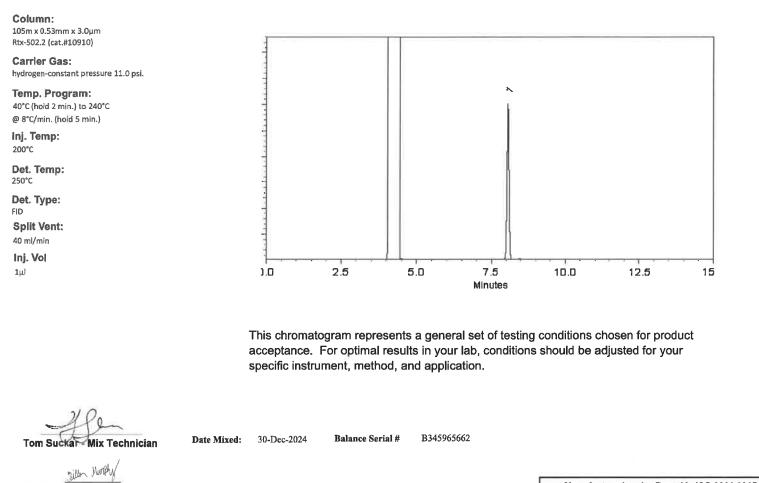
Solvent: P&T Methanol CAS # 67-56-1 Purity 99%

* 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.

Quality Confirmation Test



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:

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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.

Absolute 800-368-1131	Absolute Standards, Inc. 800-368-1131				Sertified	Referenc	Certified Reference Material CRM	CRM				ANAB ISC	ANAB ISO 17034 Accredited
											5	AH-1539 https://Absc	AH-1539 Certificate Number https://Absolutestandards.com
CEATIFIED	CERTIFIED WEIGHT REPORT Part Number: Lot Number: Description:	70046 070122 Bromochlor	70046 070122 Bromochloromethane			Solvent: Methanol	Lot# EC592-US			Habriel	R Hellon		
l Weigh	Constant of Constant Expiration Date: Refrigeration Recommended Storage: Refrigeration Nominal Concentration (µg/mL): 1000 NIST Test ID#: 6UTB Weight(s) shown below were combined and diluted to (mL):	070127 Refrigerate (4 °C) 1000 6UTB d diluted to (mL):	t (4 °C) 25.0	5E-05 0.0002	Balance Uncertainty Flask Uncertainty	artainty unty			Formulated By:	ten .	dro dro		DATE DATE 070122 DATE
Comp	Compound	Lot RM# Number	Nominal Conc (µg/mL)	Purity (%)	Uncertainty Purity (%)	Target Weight(g)	Actual Weight(g) (Actual Conc (µg/mL)	Expanded Uncertainty (+/-) (µg/mL)	CA	SDS Information (Solvent Safety Info. On Attached pg.) S# OSHA PEL (TWA)	on ttached pg.)	
1. Brome Meth Cand	Bromochloromethane 46 AY01 1000 99 0.2 0.02530 0.02540 1004.1 5.7 74-97-5 200 ppm (1050mg/m3/8H) Method GC6MSD-1.M: Column : (60m X 0.25mm X 1.5 µm) Temp 1 = 35°C (10min.), Temp 2 = 200°C (8.75 min.), Rate = 4°C/min., Injector B = 200°C, Detector B = 220°C, Analvst:	46 AY01 X 0.25mm X 1.5 µ	1000 um) Temp 1 = 3	99 5°C (10r	0.2 nin.), Temp	0.02530 2 = 200°C ()	0.02540 (8.75 min.), Rate	1004.1 : = 4°C/min.	5.7 ., Injector B=	74-97-5 = 200°C, Dete	200 ppm (1050mg/m3/8H) ector B = 220°C. Analys	orl-rat	By
Abundance		TIC: 70046.D				4	Abuniance		Scan 1136	Scan 1136 (19.943 min): 70046.D			
							30000 -	4					
100000							25000 -				<u>س</u> ا ت	H L	
80000							20000				0	_	
60000	-					-	15000 -					130	
40000						-	10000						
20000							5000 -			m Ns	8		
Time->0	10.00 15.00 20.00 25.00	30.00 35.00 4	40.00 45.00	50.00	55.00 60.00		m/z>0 - 37 30 40	20	63 60 70	80	100	114 120 130 140	
	• The Slan • Slan • All S • Jal S • Unc • Unc	 The certified value is the concentration calculated from gravimetric and volumetric measurements unless otherwise stated. Standards are prepared gravimetrically using balances that are calibrated with weights traceable to MIST (see above). Standards are certified (+/-) 0.5% of the stated value, unless otherwise stated. All Standards are certified (a) 0.5% of the stated value, unless otherwise stated. All Standards are certified (a) 0.5% of the stated value, unless otherwise stated. All Standards are certified (a) 0.5% of the stated value, unless otherwise stated. All Standards after opening ampule, should be stored with caps tight and under appropriate taboratory conditions. Uncertainty Reference: Taylor, B.N. and Kuyat, C.E., "Guidelines for Evaluating and Expressing the Uncertainty of NIST Measurement Result," NIST Technical Note 1297, U.S. Government Printing Office, Washington, DC, (1994). 	oncentration calcul avimetrically using 0.5% of the stated yearpule, should 1 year, B.N. and Kuy J.S. Government P	ated from t balances l value, un e stored v et, C.E., ' rinting Of	gravimetric a that are calib less otherwist rith caps tight 'Guidelines fo fice, Washing	und volumetric rated with wei stated. : and under apl r Evaluating a ton, DC, (1994)	measurements unl ghts traceable to N. propriate laborator nd Expressing the ').	ess otherwise : LST (see above 7 conditions, Uncertainty of	e). E). [NIST Measu	rement Result,"			

Printed: 7/1/2022, 3:42:22 PM

1 of 1

Part # 70046 Lot # 070122

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)	≤ 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

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)	≤ 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