

# **Prep Standard - Chemical Standard Summary**

Order ID : P3451

Test : VOCMS Group6

Prepbatch ID :

Sequence ID/Qc Batch ID: VN081324,

### Standard ID :

VP126666,VP128290,VP128298,VP128523,VP128632,VP128634,VP128762,VP128766,VP129196,VP129228,VP129232, VP129235,VP129236,VP129238,VP129517,VP129669,VP129670,VP129671,VP129701,VP129702,VP129703,VP129704, VP129708,VP129709,VP129710,

### Chemical ID :

V12794,V12798,V12966,V13390,V13444,V13448,V13462,V13463,V13539,V13581,V13707,V13708,V13800,V13801,V1381 2,V13952,V13953,V13959,V14016,V14017,V14093,V14103,V14104,V14123,V14141,V14142,V14143,V14147,V14148,V14 169,V14170,V14177,V14202,V14207,V14219,V14288,V14411,V14412,V14413,V14414,V14415,W3112,



Recipe ID 617	<u>NAME</u> 8260 Surrogate, 400PPM	<u>NO.</u> VP126666	Prep Date 03/19/2024	Expiration Date 09/19/2024	<u>Prepared</u> <u>By</u> Semsettin Yesilyurt	<u>ScaleID</u> None	<u>PipetteID</u> None	Supervised By Mahesh Dadoda 03/28/2024
FROM	0.80000ml of V13708 + 49.20000ml	⊔ of V14141 =	Final Quanti	ty: 50.000 ml				

<u>Recipe</u> <u>ID</u> 218	<u>NAME</u> BFB, 25PPM	<u>NO.</u> VP128290	<u>Prep Date</u> 06/10/2024	Expiration Date 11/23/2024	<u>Prepared</u> <u>By</u> Semsettin Yesilyurt	<u>ScaleID</u> None	PipettelD None	Supervised By Mahesh Dadoda 06/12/2024
FROM	0.25000ml of V13390 + 24.75000ml o	of V14148 =	= Final Quanti	ty: 25.000 ml	rearyurt			00/12/2024



Recipe ID 247	NAME 8260 Internal Standard, 250PPM	<u>NO.</u> VP128298	Prep Date 06/10/2024	Expiration Date 11/23/2024	<u>Prepared</u> <u>By</u> Semsettin Yesilyurt	<u>ScaleID</u> None	<u>PipetteID</u> None	Supervised By Mahesh Dadoda 06/12/2024
FROM	0.10000ml of V14288 + 9.90000ml of	I f V14148 =	Final Quantity	r: 10.000 ml				

<u>Recipe</u> <u>ID</u> 251	NAME 8260 Internal STD & Surrogate Mix, 250PPM	<u>NO.</u> VP128523	<u>Prep Date</u> 06/10/2024	Expiration Date 12/10/2024	<u>Prepared</u> <u>By</u> Semsettin Yesilyurt	<u>ScaleID</u> None	<u>PipetteID</u> None	Supervised By Mahesh Dadoda 06/22/2024
FROM	0.25000ml of V13707 + 0.25000ml of	 f V14288 + 2	24.50000ml of	f V14142 = Fin		000 ml		00/22/2024



<u>Recipe</u> <u>ID</u> 1817	NAME 8260 Working Std(2-CVE)-SS, 800ppm	<u>NO.</u> VP128632	Prep Date 06/25/2024	Expiration Date 12/11/2024	<u>Prepared</u> <u>By</u> Semsettin Yesilyurt	<u>ScaleID</u> None	<u>PipetteID</u> None	Supervised By Mahesh Dadoda 07/02/2024
FROM	0.80000ml of V13581 + 9.20000ml of	FV14147 =	Final Quantity	/: 10.000 ml				

<u>Recipe</u> <u>ID</u> 1818	NAME 8260 Working Std(2-CVE)-SS, 50ppm	<u>NO.</u> VP128634	<u>Prep Date</u> 06/25/2024	Expiration Date 12/11/2024	Prepared By Semsettin Yesilyurt	<u>ScaleID</u> None	PipetteID None	Supervised By Mahesh Dadoda 07/02/2024
FROM	4.68750ml of V14147 + 0.31250ml of	VP128632	I = Final Quar	ntity: 5.000 ml	rearyurt			01102/2024



<u>Recipe</u> <u>ID</u> 1810	NAME 8260 Working Std(2-CVE)-800ppm	<u>NO.</u> VP128762	Prep Date 07/01/2024	Expiration Date 12/11/2024	<u>Prepared</u> <u>By</u> Semsettin Yesilyurt	<u>ScaleID</u> None	<u>PipetteID</u> None	Supervised By Mahesh Dadoda 07/02/2024
FROM	0.50000ml of V12798 + 1.50000ml of	I f V12794 + 2	23.00000ml of	5 V14147 = Fin	-	000 ml		

<u>Recipe</u> <u>ID</u>	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
719	8260 Working STD (BCM)-First source, 400PPM	<u>VP128766</u>	07/01/2024	12/11/2024	Semsettin Yesilyurt	None	None	07/02/2024
<u>FROM</u>	1.50000ml of V13462 + 1.50000ml of	f V13463 + 1	12.00000ml of	f V14147 = Fin	al Quantity: 15.	000 ml		



Recipe ID 825 FROM	NAME 8260 Working STD (BCM)-Second source, 10PPM 0.10000ml of V12966 + 9.90000ml of	<u>NO.</u> <u>VP129196</u> f V14143 =	Prep Date 07/22/2024 Final Quantity	01/22/2025	Prepared By Semsettin Yesilyurt	<u>ScaleID</u> None	PipettelD None	Supervised By Mahesh Dadoda 07/26/2024
Recipe ID 51	NAME 8260 Working STD (Acrolein) -first source, 800PPM	<u>NO.</u> VP129228	Prep Date 07/25/2024	Expiration Date 08/24/2024	Prepared By Semsettin Yesilyurt	<u>ScaleID</u> None	PipetteID None	Supervised By Mahesh Dadoda 07/30/2024

**FROM** 1.00000ml of V14411 + 1.00000ml of V14412 + 1.00000ml of V14413 + 1.00000ml of V14414 + 21.00000ml of V14143 = Final Quantity: 25.000 ml



Recipe ID 263	(Acrolein)-Second source,	<u>NO.</u> VP129232	Prep Date 07/25/2024	08/23/2024	<u>Prepared</u> <u>By</u> Semsettin Yesilyurt	<u>ScaleID</u> None	<u>PipetteID</u> None	Supervised By Mahesh Dadoda 07/30/2024
FROM	800PPM 0.60000ml of V14414 + 1.00000ml of	5 V14415 + 8	3.40000ml of 1	V14143 = Fina		00 ml		

Recipe ID 826	NAME 8260 Working STD	<u>NO.</u> VP129235	<u>Prep Date</u> 07/25/2024	Expiration Date 08/23/2024	Prepared By Semsettin	<u>ScaleID</u> None	<u>PipetteID</u> None	Supervised By Mahesh Dadoda
EROM	(Acrolein)-Second source, 50PPM 4.68750ml of V14143 + 0.31250ml of	VP120232	= Final Quar	ntity: 5 000 ml	Yesilyurt			07/30/2024
<u>FROM</u>		129232		litty: 5.000 mi				



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Recipe ID 259	NAME 8260 Calibration Working STD Mix-Second source, 160PPM	<u>NO.</u> VP129236	Prep Date 07/22/2024	Expiration Date 08/31/2024	Prepared By Semsettin Yesilyurt	<u>ScaleID</u> None	<u>PipetteID</u> None	Supervised By Mahesh Dadoda 07/30/2024
FROM	0.16000ml of V13448 + 0.80000ml o 0.80000ml of V14177 + 1.60000ml o						of V14123 +	

<u>Recipe</u> <u>ID</u>	NAME	<u>NO.</u>	Prep Date	<u>Expiration</u> <u>Date</u>	<u>Prepared</u> <u>By</u>	<u>ScaleID</u>	<u>PipettelD</u>	Supervised By
820	8260 Calibration Working STD		07/22/2024	08/31/2024	Semsettin	None	None	Mahesh Dadoda
	Mix-Second source, 10PPM				Yesilyurt			07/30/2024
FROM	4.68750ml of V14143 + 0.31250ml of	VP129236	= Final Quar	ntity: 5.000 ml				
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Recipe ID 257	NAME 8260 Calibration Working STD Mix-First source, 160PPM	<u>NO.</u> VP129517	Prep Date 08/05/2024	Expiration Date 09/14/2024	Prepared By Semsettin Yesilyurt	<u>ScaleID</u> None	<u>PipetteID</u> None	Supervised By Mahesh Dadoda 08/08/2024
FROM	0.40000ml of V13444 + 1.00000ml of 1.00000ml of V14016 + 1.00000ml of 1.00000ml of V14170 + 1.00000ml of Final Quantity: 25.000 ml	f V14017 +	1.00000ml of	V14103 + 1.000	000ml of V1410	4 + 1.00000ml o	of V14169 +	

<u>Recipe</u> <u>ID</u>	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
589	BFB TUNE CHECK	<u>VP129669</u>	08/13/2024	08/14/2024	John Carlone	None	None	00/14/00004
								08/14/2024
FROM	39.98400ml of W3112 + 0.01600ml o	f VP128290	) = Final Qua	ntity: 40.000 m	h			



Recipe ID 620	NAME 50 PPB CCC, 8260-Water	<u>NO.</u> VP129670	Prep Date 08/13/2024	Prepared By John Carlone	<u>ScaleID</u> None	<u>PipetteID</u> None	Supervised By Mahesh Dadoda 08/14/2024
FROM	39.94450ml of W3112 + 0.00500ml o VP128762 + 0.01250ml of VP129228					1250ml of	

Recipe ID 620	NAME 50 PPB CCC, 8260-Water	<u>NO.</u> VP129671	Prep Date 08/13/2024	Prepared By John Carlone	<u>ScaleID</u> None	<u>PipetteID</u> None	<u>Supervised By</u> Mahesh Dadoda 08/14/2024
<u>FROM</u>	39.94450ml of W3112 + 0.00500ml o VP128762 + 0.01250ml of VP129228					1250ml of	



Recipe ID 2390	NAME 0.2PPB LOD, 8260-Water	<u>NO.</u> VP129701	Prep Date 08/13/2024	<u>Expiration</u> <u>Date</u> 08/14/2024	<u>Prepared</u> <u>By</u> John Carlone	<u>ScaleID</u> None	<u>PipetteID</u> None	Supervised By Mahesh Dadoda 08/14/2024
FROM	39.98840ml of W3112 + 0.00080ml o VP129238 + 0.00800ml of VP128523				- 0.00080ml of \	/P129235 + 0.0	0080ml of	

Recipe ID 834	NAME 0.5 PPB LOD, 8260-WATER	<u>NO.</u> VP129702	<u>Prep Date</u> 08/13/2024	Expiration Date 08/14/2024	Prepared By John Carlone	<u>ScaleID</u> None	PipettelD None	Supervised By Mahesh Dadoda 08/14/2024
FROM	39.98300ml of W3112 + 0.00200ml o VP129238 + 0.00800ml of VP128523				• 0.00200ml of \	/P129235 + 0.0	0200ml of	



Recipe ID 891	<b>NAME</b> 0.75 PPB LOD, 8260-WATER	<u>NO.</u> VP129703	Prep Date 08/13/2024	Prepared By John Carlone	<u>ScaleID</u> None	<u>PipetteID</u> None	Supervised By Mahesh Dadoda 08/14/2024
FROM	39.97000ml of W3112 + 0.00300ml o VP129238 + 0.00500ml of VP126666					0300ml of	

<u>Recipe</u> <u>ID</u> 837	NAME 2.5 PPB LOD, 8260-WATER	<u>NO.</u> VP129704	Prep Date 08/13/2024	Expiration Date 08/14/2024	Prepared By John Carlone	<u>ScaleID</u> None	<u>PipetteID</u> None	Supervised By Mahesh Dadoda 08/14/2024	
<u>FROM</u>	39.94200ml of W3112 + 0.00800ml o VP129235 + 0.01000ml of VP129238				⊦ 0.01000ml of \	/P129196 + 0.0	1000ml of		



<u>Recipe</u> <u>ID</u> 589	NAME BFB TUNE CHECK	<u>NO.</u> VP129708	Prep Date 08/13/2024	Expiration Date 08/14/2024	Prepared By John Carlone	<u>ScaleID</u> None	<u>PipetteID</u> None	Supervised By Mahesh Dadoda 08/15/2024
<u>FROM</u>	39.98400ml of W3112 + 0.01600ml o	f VP128290	= Final Quar	ntity: 40.000 m				

Recipe ID 620	NAME 50 PPB CCC, 8260-Water	<u>NO.</u> VP129709	<u>Prep Date</u> 08/13/2024	Expiration Date 08/14/2024	Prepared By John Carlone	<u>ScaleID</u> None	PipetteID None	Supervised By Mahesh Dadoda 08/15/2024
FROM	39.94450ml of W3112 + 0.00500ml o VP128762 + 0.01250ml of VP129228						1250ml of	



<u>Recipe</u> <u>ID</u> 620	NAME 50 PPB CCC, 8260-Water	<u>NO.</u> VP129710	Prep Date 08/13/2024	<u>Expiration</u> <u>Date</u> 08/14/2024	<u>Prepared</u> <u>By</u> John Carlone	<u>ScaleID</u> None	<u>PipetteID</u> None	Supervised By Mahesh Dadoda 08/15/2024
FROM	39.94450ml of W3112 + 0.00500ml o VP128762 + 0.01250ml of VP129228						1250ml of	



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# CHEMICAL RECEIPT LOG BOOK

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #	
Absolute Standards, Inc.	95318 / 2-Chloroethyl Vinyl Ether (Min = 5)	121321	12/13/2024	06/25/2024 / SAM	03/30/2022 / SAM	V12794	
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)	121321	12/13/2024	06/25/2024 / SAM	03/30/2022 / SAM	V12798	
Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #	
Absolute Standards, Inc.			01/22/2025	07/22/2024 / SAM	07/06/2022 / SAM	V12966	
Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #	
Restek	30067 / BFB tuneing solution	A0191805	12/08/2024	12/08/2023 / SAM	01/13/2023 / SAM	V13390	
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	12/14/2024	06/14/2024 / SAM	01/23/2023 / SAM	V13444	
Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #	
Restek			12/03/2024	06/03/2024 / SAM	01/23/2023 / SAM	V13448	



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	01/01/2025	07/01/2024 / SAM	01/27/2023 / SAM	V13462
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			01/27/2023 / SAM	V13463
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	A0186767	11/29/2024	05/29/2024 / SAM	01/27/2023 / SAM	V13539
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	12/25/2024	06/25/2024 / SAM	01/30/2023 / SAM	V13581
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	555582 / Custom Mixture, 8260 A/B Surrogate Mix [CS 5179-2]	A0196865	09/19/2024	03/19/2024 / SAM	04/12/2023 / SAM	V13708



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	01/30/2025	07/30/2024 / SAM	05/31/2023 / SAM	V13800
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	12/28/2024 06/28/2024 / SAM		05/31/2023 / SAM	V13801
Supplier	Supplier ItemCode / ItemName Lot # Expiration Date		Date Opened / Opened By	Received Date / Received By	Chemtech Lot #	
Restek	stek 30042 / VOA Mix,500 series method 502.2 Calibration Std #1 gases, 2000uq/ml, PTM, 1ml		11/29/2024	05/29/2024 / SAM	05/31/2023 / SAM	V13812
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	A0196115	09/30/2024	06/14/2024 / SAM	09/25/2023 / SAM	V13952
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	A0196115	09/30/2024	06/14/2024 / SAM	09/25/2023 / SAM	V13953
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	A0199224	12/31/2024	07/22/2024 / SAM	09/25/2023 / SAM	V13959



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)	032922	12/14/2024	06/14/2024 / SAM	11/22/2023 / SAM	V14016
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)	032922	12/14/2024	06/14/2024 / SAM	11/22/2023 / SAM	V14017
Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Restek	stek 555408 / Custom Standard, Vinyl Acetate Standard w/ Grav [CS 5066-6] TWO SEPARATE LOTS		11/14/2024	05/14/2024 / SAM	12/22/2023 / SAM	V14093
Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Restek	555408 / Custom Standard, A02051 Vinyl Acetate Standard w/ Grav [CS 5066-6] TWO SEPARATE LOTS		12/14/2024	06/14/2024 / SAM	12/22/2023 / SAM	V14103
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	A0205179	12/14/2024	06/14/2024 / SAM	12/22/2023 / SAM	V14104
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	12/03/2024	06/03/2024 / SAM	01/17/2024 / SAM	V14123



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	09/19/2024	03/19/2024 / SAM	02/06/2024 / SAM	V14141	
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	12/10/2024	06/10/2024 / SAM	02/06/2024 / SAM	V14142	
			Expiration		Bassived Date /	Chamtach	

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	01/22/2025	07/22/2024 / SAM	02/06/2024 / SAM	V14143

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	12/11/2024	06/11/2024 / pedro	02/06/2024 / SAM	V14147

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	11/23/2024	05/23/2024 / pedro	02/06/2024 / SAM	V14148

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	12/14/2024	06/14/2024 / SAM	02/20/2024 / SAM	V14169



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	12/14/2024	06/14/2024 / SAM	02/20/2024 / SAM	V14170	
Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #	
Absolute Standards, Inc.			06/03/2024 / SAM	02/20/2024 / SAM	V14177		
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	A0200785	12/25/2024	06/25/2024 / SAM	02/28/2024 / SAM	V14202	
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	A0200785	12/25/2024	06/25/2024 / SAM	02/28/2024 / SAM	V14207	
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	A0200785	12/25/2024	06/25/2024 / SAM	02/28/2024 / SAM	V14219	
Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #	
SupplierItemCode / ItemNameRestek555581 / Custom Standard, 8260 Internal Std [CS 5179-1]		A0210184	06/10/2025	06/10/2024 /	04/15/2024 /		



# CHEMICAL RECEIPT LOG BOOK

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Absolute Standards, Inc.	91980 / Acrolin Std (Min = 5)	072424	08/24/2024	07/25/2024 / SAM	07/25/2024 / SAM	V14411
Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Absolute Standards, Inc.	91980 / Acrolin Std (Min = 5)	072424	08/24/2024	07/25/2024 / SAM	07/25/2024 / SAM	V14412
Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Absolute Standards, Inc.	91980 / Acrolin Std (Min = 5)	072424	08/24/2024	07/25/2024 / SAM	07/25/2024 / SAM	V14413
Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Absolute Standards, Inc.	91980 / Acrolin Std (Min = 5)	072424	08/24/2024	07/25/2024 / SAM	07/25/2024 / SAM	V14414
Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Absolute Standards, Inc.	91980 / Acrolin Std (Min = 5)	072424	08/24/2024	07/25/2024 / SAM	07/25/2024 / SAM	V14415
Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Seidler Chemical	DIW / DI Water	Daily Lab-Certified	07/03/2029	07/03/2024 /	07/03/2024 /	W3112

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	5	ТЯ Q2M (.nim) 37.51 (39714)	9msN	- Project		V GI wwas	COX 009710	oon adding	usr	Mothod CCE		:	- 0000005	
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	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-4,6,5,1	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	348	elininoiqor	<b>J</b> '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
	orl-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		- '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
	gx/gm0748 ten-ho	(H8/Em/gm001S) mgg 008	108-50-3	S.8	\$005.0	0.20227	0.20207	0.2	66	5000	XMS1400	<b>L</b> 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	<b>MKCM5711</b>	1072	1-Chlorobutane	5 1
	gx/gm 87 161-ho	A\N	1-61-701	40.6	⊅.≱0001	08010.1	36010.1	<b>S.</b> 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	<b>SDS Information</b> 5 Safety Info. On Attach	navlo2)	Expanded Uncertainty	<b>Actual</b>	<b>Actual</b>	<b>J9Q16T</b>	Uncertainty	Purity	<b>Isnimol</b>	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 <b>6-9</b> 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	er 1							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	
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JAJOOA PE													olute Standards, Inc.	

29'15

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anaznadiyrtiamertaT-4,6,2,1

Hexachloroethane

Methylcydohexane

1-Chlorobutane

Tetrahydrofuran

Cydohexane

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anexoid-4,1

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29'15

49,84

42:00

minutes. Analysis performed by Candice Warren.

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

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**52'00** 

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29 EL 57 SI

13'26

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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	Bilance Uncertain	nty							Reviewed	By:	Pedro L. Rentas	DATE
	Weight(s) shown below were combined a	and dilute	ed to (mL):	100.0	0.021	Flash Uncertainty	1									0100 Information	
					1-101-1	1222	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-rat 700mg/kg orl-rat 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-rat 670mg/kg
40.	1,1,2-Tetrachioroethane	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-Chlorololuene	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 monolethicite second second	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. 4 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 (and a second former and a second for a second former and a second forme	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 = $0.5\mu$	_, 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-Bodylbenzene
		45	1,2,4-Trimethylbenzene
	2 77	46	Perstachioroethene
110/00/00	D	42	sec-Butylbenzens
400000-		48	p-laopropyko/uene
		49	1.3-Dichierobenzene
		\$0	L.4-Dichlorobenzone
1		51	n-Butylbenzene
		52	1,2-Dichlorobenzana
		53	1,2-Oloromo+3-chloropropens
200000-		54	Nitrobencene
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		rsiek.	Hexactivorobutaciana
1 1		57	Naphthalene
	N TRU, J & AU AFT AND TOUGHT IN A AND A AND A AND A AND A	58	1,2,3-michtonobenzene
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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	0.20240	2001.5	8.1	80-29-7 97-63-2	N/A N/A	NA
8. 9.	lodomethane	(0489)	SH8F8718		NA	NA	2000	99.5	0.2	NA	0.20106	0.20121	2001.5	8.2	74-88-4	5 ppm(28mp/m3/8H)(side	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	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-2-budene
 Eronobarrene
 foresen
 Artificiation-2-budene
 Eronobarrene 1000000 800000 600000 N 400000 Nitrobenzane 1,2,4-Trichkorobenzan Hexachiorobutadiima Naphchalena 1,2,3-Trichkorobenker \$2 200000 50 20 30 10 min

Absolute Standards Inc.

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

# Section I Product and Company Identification

Manufacturer's Name	ABSOLUTE STANDARDS INC		ephone USA & CANADA	1-800-535-5053
Address	44 Rossotto Dr. Hamden CT, 06514	Emergency Tele	phone International	1-352-323-3500
Section II - Hazards Ider		Date Prepared/	Hevised	January 1, 2023
	GHS Classification In accor			
H225 Highly Fi H370 Cause da	lammable Liquid and Vapor amage to organs	H301, 311, 331	Toxic if swallowed, skin con	tact, inhaled
P271 Use in ve	entilated area	H351 P280	Suspected of causing cance Use gloves, eye protection/	er er sheild
P302,332 If on skir	n, wash with soap and water	P305,351,338	If in eyes, remove contacts,	rinse with water
	Signal Word: DANGER			
Section III - Composition	1			
Components (Specific Che Methanol	emical Identity; Common Name(s))	010# 07 50 1		% (optional)
vietriarior	METHYL ALCOHOL	CAS#: 67-56-1		> 97
See Certified Weight	Report For Other Analytes Pre	esent At Trace	Quantities.	
NTENDED USE: REFER				
Section IV. FIRST AID ME	ASURES			
General advice	Consult a physician. Show this safety data	a sheet to the doctor i	n attendance Move to sefe area	
finhaled	If inhaled, move person into fresh air. If no	ot breathing, give artifi	cial respiration. Consult a physician.	
n case of skin contact	Wash with soap and water. Consult a phy	/sician.		
n case of eye contact f swallowed	Rinse thoroughly with plenty of water for a Do NOT induce vomiting. Rinse mouth with	at least 15 minutes and	d consult a physician.	
		in water. Consult a pri	ysiciali.	
Section V. FIREFIGHTING	MEASURES			
lammability	Flammable in the presence of a sour	ce of ignition when the No smoking.	e temperature is above the flash point	. Keep away from
lammability uitable extinguishing media	Flammable in the presence of a sour heat/sparks/open flame/hot surface. Use water spray, alcohol-resistant for	No smoking. am, dry chemical or ca	arbon dioxide.	. Keep away from
lammability	Flammable in the presence of a sour heat/sparks/open flame/hot surface.	No smoking. am, dry chemical or ca	arbon dioxide.	. Keep away from
lammability uitable extinguishing media	Flammable in the presence of a sour heat/sparks/open flame/hot surface. Use water spray, alcohol-resistant for Wear self contained breathing appara	No smoking. am, dry chemical or ca	arbon dioxide.	. Keep away from
lammability uitable extinguishing media rotective equipment for fire	Flammable in the presence of a sour heat/sparks/open flame/hot surface. Use water spray, alcohol-resistant for Wear self contained breathing appara <b>RELEASE MEASURES</b> Wear respiratory protection. Avoid breathing	No smoking. am, dry chemical or ca atus for fire fighting if r	arbon dioxide. necessary.	
lammability uitable extinguishing media rotective equipment for fire section VI. ACCIDENTAL ersonal precautions	Flammable in the presence of a sour heat/sparks/open flame/hot surface. Use water spray, alcohol-resistant for Wear self contained breathing appara <b>RELEASE MEASURES</b> Wear respiratory protection. Avoid breathin ignition. Vapours accumulate to form explo	No smoking. am, dry chemical or ca atus for fire fighting if r ng vapors, mist or gas sive concentrations.	arbon dioxide. necessary. . Ensure adequate ventilation. Remov	
lammability uitable extinguishing media rotective equipment for fire ection VI. ACCIDENTAL	Flammable in the presence of a sour heat/sparks/open flame/hot surface. Use water spray, alcohol-resistant for Wear self contained breathing appara <b>RELEASE MEASURES</b> Wear respiratory protection. Avoid breathing	No smoking. am, dry chemical or ca atus for fire fighting if r ng vapors, mist or gas usive concentrations. o do so. Do not let pro	arbon dioxide. hecessary. . Ensure adequate ventilation. Remov	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 <b>RELEASE MEASURES</b> Wear respiratory protection. Avoid breathin ignition. Vapours accumulate to form explo Prevent further leakage or spillage if safe t Contain spillage, and then collect and plac	No smoking. am, dry chemical or ca atus for fire fighting if r ng vapors, mist or gas usive concentrations. o do so. Do not let pro	arbon dioxide. hecessary. . Ensure adequate ventilation. Remov	re all sources of
lammability uitable extinguishing media rotective equipment for fire ection VI. ACCIDENTAL ersonal precautions nvironmental precautions lean up	Flammable in the presence of a sourn heat/sparks/open flame/hot surface. Use water spray, alcohol-resistant for Wear self contained breathing appare <b>RELEASE MEASURES</b> Wear respiratory protection. Avoid breathin ignition. Vapours accumulate to form explo Prevent further leakage or spillage if safe t Contain spillage, and then collect and plac <b>ND STORAGE</b>	No smoking. am, dry chemical or ca atus for fire fighting if r ng vapors, mist or gas usive concentrations. to do so. Do not let pro- te in container for disp	arbon dioxide. hecessary. . Ensure adequate ventilation. Remov oduct enter drains. osal according to local regulations (se	re all sources of
lammability uitable extinguishing media rotective equipment for fire ection VI. ACCIDENTAL ersonal precautions nvironmental precautions lean up ection VII. HANDLING AP recautions for safe handling	Flammable in the presence of a sourn heat/sparks/open flame/hot surface. Use water spray, alcohol-resistant for Wear self contained breathing appara <b>RELEASE MEASURES</b> Wear respiratory protection. Avoid breathin ignition. Vapours accumulate to form explo Prevent further leakage or spillage if safe t Contain spillage, and then collect and plac <b>ND STORAGE</b> Avoid contact with skin and eyes. Avo Use ventilation Keep away from source	No smoking. am, dry chemical or ca atus for fire fighting if r atus for fire fighting if r or vapors, mist or gas psive concentrations. to do so. Do not let pro- e in container for disp id inhalation of vapour ces of ignition. No smo	arbon dioxide. hecessary. . Ensure adequate ventilation. Remove oduct enter drains. osal according to local regulations (se or or mist.	re all sources of se section 13).
lammability uitable extinguishing media rotective equipment for fire ection VI. ACCIDENTAL ersonal precautions nvironmental precautions lean up ection VII. HANDLING A	Flammable in the presence of a sourn heat/sparks/open flame/hot surface. Use water spray, alcohol-resistant for Wear self contained breathing appare <b>RELEASE MEASURES</b> Wear respiratory protection. Avoid breathin ignition. Vapours accumulate to form explo Prevent further leakage or spillage if safe t Contain spillage, and then collect and plac <b>ND STORAGE</b> Avoid contact with skin and eyes. Avo	No smoking. am, dry chemical or ca atus for fire fighting if r atus for fire fighting if r or vapors, mist or gas psive concentrations. to do so. Do not let pro- e in container for disp id inhalation of vapour ces of ignition. No smo	arbon dioxide. hecessary. . Ensure adequate ventilation. Remove oduct enter drains. osal according to local regulations (se or or mist.	re all sources of se section 13).
lammability uitable extinguishing media rotective equipment for fire ection VI. ACCIDENTAL ersonal precautions nvironmental precautions lean up ection VII. HANDLING AI recautions for safe handling orage Conditions	Flammable in the presence of a sourn heat/sparks/open flame/hot surface. Use water spray, alcohol-resistant for Wear self contained breathing appara <b>RELEASE MEASURES</b> Wear respiratory protection. Avoid breathin ignition. Vapours accumulate to form explo Prevent further leakage or spillage if safe t Contain spillage, and then collect and plac <b>ND STORAGE</b> Avoid contact with skin and eyes. Avo Use ventilation Keep away from sourc Keep container tightly closed in a dry	No smoking. am, dry chemical or ca atus for fire fighting if r ng vapors, mist or gas usive concentrations. to do so. Do not let pro- e in container for disp id inhalation of vapour ces of ignition. No smo and well-ventilated pla	arbon dioxide. hecessary. . Ensure adequate ventilation. Remove oduct enter drains. osal according to local regulations (se or or mist.	re all sources of se section 13).
lammability uitable extinguishing media rotective equipment for fire eection VI. ACCIDENTAL ersonal precautions nvironmental precautions lean up ection VII. HANDLING AI recautions for safe handling orage Conditions ection VIII. EXPOSURE C	Flammable in the presence of a sourn heat/sparks/open flame/hot surface. Use water spray, alcohol-resistant for Wear self contained breathing appara <b>RELEASE MEASURES</b> Wear respiratory protection. Avoid breathin ignition. Vapours accumulate to form explo Prevent further leakage or spillage if safe to Contain spillage, and then collect and plac <b>ND STORAGE</b> Avoid contact with skin and eyes. Avo Use ventilation Keep away from source Keep container tightly closed in a dry and kept upright to prevent leakage.	No smoking. am, dry chemical or ca atus for fire fighting if r ng vapors, mist or gas usive concentrations. to do so. Do not let pro- e in container for disp id inhalation of vapour ces of ignition. No smo and well-ventilated pla	arbon dioxide. hecessary. . Ensure adequate ventilation. Remove oduct enter drains. osal according to local regulations (se or or mist.	re all sources of se section 13).
lammability uitable extinguishing media rotective equipment for fire eection VI. ACCIDENTAL ersonal precautions nvironmental precautions lean up ection VII. HANDLING AI recautions for safe handling orage Conditions ection VIII. EXPOSURE C	Flammable in the presence of a sourn heat/sparks/open flame/hot surface. Use water spray, alcohol-resistant for Wear self contained breathing appara <b>RELEASE MEASURES</b> Wear respiratory protection. Avoid breathin ignition. Vapours accumulate to form explo Prevent further leakage or spillage if safe t Contain spillage, and then collect and plac <b>ND STORAGE</b> Avoid contact with skin and eyes. Avo Use ventilation Keep away from sourc Keep container tightly closed in a dry and kept upright to prevent leakage.	No smoking. am, dry chemical or ca atus for fire fighting if r ng vapors, mist or gas usive concentrations. to do so. Do not let pro- e in container for disp id inhalation of vapour ces of ignition. No smo and well-ventilated pla	arbon dioxide. hecessary. . Ensure adequate ventilation. Remove oduct enter drains. osal according to local regulations (se or or mist.	re all sources of se section 13).
lammability uitable extinguishing media rotective equipment for fire ection 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 ppm tential for skin absorption , inge	Flammable in the presence of a sourn heat/sparks/open flame/hot surface. Use water spray, alcohol-resistant for Wear self contained breathing appara <b>RELEASE MEASURES</b> Wear respiratory protection. Avoid breathin ignition. Vapours accumulate to form explo Prevent further leakage or spillage if safe t Contain spillage, and then collect and plac <b>ND STORAGE</b> Avoid contact with skin and eyes. Avo Use ventilation Keep away from sourc Keep container tightly closed in a dry and kept upright to prevent leakage. <b>CONTROLS/PERSONAL PROTECTI</b>	No smoking. am, dry chemical or ca atus for fire fighting if r atus for fire fighting if r ng vapors, mist or gas usive concentrations. to do so. Do not let pro- e in container for disp id inhalation of vapour es of ignition. No smo and well-ventilated pla	arbon dioxide. hecessary.	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	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	67-66-3 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	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-2-budene
 Eronobarrene
 foresen
 Artificiation-2-budene
 Eronobarrene 1000000 800000 600000 N 400000 Nitrobenzane 1,2,4-Trichkorobenzan Hexachiorobutadiima Naphchalena 1,2,3-Trichkorobenker \$2 200000 50 20 30 10 min

Absolute Standards Inc.

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

# Section I Product and Company Identification

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

Section IX - Physical/Chemical Characteristics

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

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

Solubility in Water COMPLETE

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

### Section X. STABILITY AND REACTIVITY

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

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

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

Hazardous decomposition products formed under fire conditions. - Carbon oxides

### Section XI. TOXICOLOGICAL INFORMATION

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

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

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

### Section XIII. DISPOSAL CONSIDERATIONS

Dispose with normal Laboratory Solvent Waste.

### Section XIV. TRANSPORT INFORMATION

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

### Section XV. REGULATORY INFORMATION

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

### Section XVI. Misc. INFORMATION

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

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

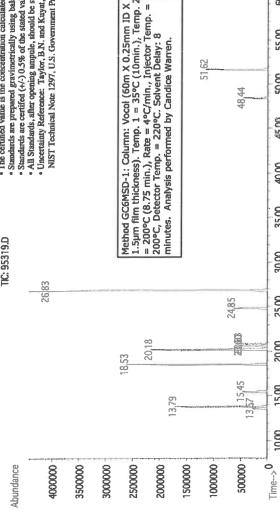
Certified Reference Material CRM



# MEIGUT DEDO CERTIFIED

RTIFIED WEIGHT REPORT								E				
Part Number:	91	95319			S	Solvent(s):	Lot			1		
Lot Number:		032922			_	Methanol	EC592-US			5	4	
Description:	1	<b>Revised Additions Mix</b>	ons Mix							the second	Smar heuler	032922
		11 components	lts						Formulated By:	ſ	Prashant Chauhan	DATE
Expiration Date:	0	032925									2	
Recommended Storage:	ula	Refrigerate (4 °C)	(C)							0	Jan Start	
Nominal Concentration (µg/mL):	-	Varied								Karl	a lente	032922
NIST Test ID#:	3	GUTB		5E-05	5E-05 Balance Uncertainty				Reviewed By:		Pedro L. Rentas	DATE
Weight(s) shown below were combined and diluted to (mL):	nd diluter	d to (mL):	100.0	0.012	0.012 Flask Uncertainty			9				
									Expanded		SDS Information	
		Lot	Nominal	Purity	Uncertainty	Target	Actual	Actual	Uncertainty	(Solvent	(Solvent Safety Info. On Attached pg.)	ed pg.)
Compound	RM#	Number	Conc (µg/mL)	(%)	Purity	Weight(g)	Weight(g)	Conc (µg/mL) (+/-) (µg/mL)	(++-) (hg/mL)	CAS#	OSHA PEL (TWA)	1.050
1. Acrylonitrile	7	4718CK	10000	66	0.2	1.01015	1.01030	10001.5	40.5	107-13-1	NA	orl-rat 78 ma/ka
2. 1-Chlorobutane	1072	1072 MKCM5711	2000	99.99	0.2	0.20003	0.20020	2001.7	8.1	109-69-3	NA	ori-rat 2670ma/kg
Cyclohexane	1023	28930	2000	66	0.2	0.20203	0.20215	2001.2	8.2	110-82-7	300 ppm (1050mg/m3/8H)	ort-rat 12705mg/kg
Di-isopropyl ether (DIPE)	987	00412MX	2000	66	0.2	0.20203	0.20215	2001.2	8.2	108-20-3		orl-rat 8470mg/kg
5. 1,4-Dioxane	373	03853KE	40000	66	0.2	4.04060	4.04100	40004.0	161.9	123-91-1	25 ppm (90mg/m3/8H)(skin) ort-mus 5700mg/kg	ort-mus 5700ma/kg
6. Hexachioroethane	199	12604HBV	2000	66	0.2	0.20203	0.20213	2001.0	8.2	67-72-1	67-72-1 t ppm (10mg/m3/8H)(skin)	ort-gpg 4970mg/kg
7. Methylcyclohexane	1627	08046KN	2000	66	0.2	0.20203	0.20215	2001.2	8.2	108-87-2		NIA
<ol><li>Methyl tert-butyl ether (MTBE)</li></ol>	209	02197JJ	2000	99.8	0.2	0.20041	0.20055	2001.4	8.1	1634-04-4	NA	orl-rat 49/kg

L' MUTUNI		-	4/ 10CN	mm	מת	7.N	CI0101	1.01030	C'INNI	40.5	1-51-701	NA	orl-rat 78 mg/kg
2. 1-Chlorobutane	Je Paralel Para	1072	MKCM5711	2000	99.99	0.2	0.20003	0.20020	2001.7	8.1	109-69-3	NA	ori-rat 2670mo/kg
3. Cyclohexane		1023	28930	2000	66	0.2	0.20203	0.20215	2001.2	8.2	110-82-7	300 ppm (1050ma/m3/8H)	ort-rat 12705mo/kg
4. Di-Isopropyl ether (DIPE)	ther (DIPE)	987	00412MX	2000	66	0.2	0.20203	0.20215	2001.2	8.2	108-20-3	500 ppm (2100mg/m3/8H)	orl-rat 8470mg/kg
5. 1,4-Dioxane		373	03853KE	40000	66	0.2	4.04060	4.04100	40004.0	161.9	123-91-1		ort-mus 5700mg/kg
6. Hexachioroethane	hane	199	12604HBV	2000	66	0.2	0.20203	0.20213	2001.0	8.2	67-72-1	t ppm (10mg/m3/8H)(skin)	ort-spg 4970mg/kg
7. Methylcyclohexane	exane	1627	08046KN	2000	66	0.2	0.20203	0.20215	2001.2	8.2	108-87-2	NA	VN
8. Methyl tert-bu	Methyl tert-butyl ether (MTBE)	209	02197JJ	2000	<b>99.8</b>	0.2	0.20041	0.20055	2001.4	8.1	1634-04-4	NA	orl-rat 49/kg
9. Propionitrile		349	1395468	20000	66	0.2	2.02030	2.02045	20001.5	81.0	107-12-0	NA	ort-rat 39ma/ka
10. Tetrahydrofurar	an	380	SHBH8330	10000	99.9	0.2	1.00105	1.00120	10001.5	40.1	109-99-9	20 ppm (590mg/m3/8H)	ort-rat 1650mo/ko
11. 1,2,3,4-Tetrai	,2,3,4-Tetramethylbenzene	491	AP01	2000	93	0.2	0.21506	0.21520	2001.3	8.7	488-23-3	NA	ort-rat 6408mp/kg
			TIC. 05310 D	0.010		he certified v	alue is the concen	tration calculated	from pravimetric	and volumed	ric measuremen	• The certified value is the concentration calculated from oravimetric and volumetric measurements unless otherwise stated	



In the prepared gravimetrically using balances that are calibrated with weights traceable to NIST (see above).
 Standards are carified (+/-) 0.5% of the stated value, unless offerwise stated with weights traceable to NIST (see above).
 All Standards after opening annuels, 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).

MSD RT (min.) 13.79

13.56 15.44 18.53

Methyl tert-butyl ether (MTBE)

Di-isopropyl ether Tetrahydrofuran 1-Chlorobutane Cyclohexane

Propionitrile Acrylonitrile

Name

20.17 20.58 20.83 24.84

26.84 48.44 51.62

Methylcyclohexane

1,4-Dioxane

1,2,3,4-Tetramethylbenzene

60.09

55.00

50.00

45.00

40.00

35.00

30.00

25.00

20.00

15.00

10.00

Hexachioroethane

1 of 1

Part # 95319

Lot # 032922

Complian	VH50/5H0	

InsildmoO AHSO/2HD

Safety Data Sheet (SDS)

S to I age9

Avoid contact with skin and eyes. Avoid inhalation of vapour or mist.

Prevent further leakage or spillage if safe to do so. Do not let product enter drains.

Wear self contained breathing apparatus for fire fighting if necessary.

Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

ignition. Vapours accumulate to form explosive concentrations.

heat/sparks/open flame/hot surface. No smoking.

Keep container tightly closed in a dry and well-ventilated place. Containers which are opened must be carefully reseated

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

Contain spillage, and then collect and place in container for disposal according to local regulations (see section 13).

Wear respiratory protection. Avoid breathing vapors, mist or gas. Ensure adequate ventilation. Remove all sources of

Flammable in the presence of a source of ignition when the temperature is above the flash point. Keep away from

Printed: 11/13/23

. . νA Eye protection. ed prior to use. Ρеι юд SK!

Section IX - Physical/Chemical Characteristics

Avoid contact with	skin, eves and clothing. Wash hands th	oroughly after handli	ng the product.	
Personal protective	e equipment Respiratory protection	Handle with gloves.	eqeni ed izum sevolo	apecte
Potential for skin a	noiteledni bne noitsegni , noitqnozdi			
Skin notation	mqq 00S AWT			
Methanol	mqq 00S AWT 1-88-78			

and kept upright to prevent leakage.

Section VIII. EXPOSURE CONTROLS/PERSONAL PROTECTION

Aethanol-SDS copy.xls

Storage Conditions

Clean up

Precautions for safe handling

Environmental precautions

Protective equipment for fire Suitable extinguishing media

Personal precautions

**Flammability** 

Section VII. HANDLING AND STORAGE

Section VI. ACCIDENTAL RELEASE MEASURES

	ion V. FIREFIGHTING MEASURES					
	ial respiration. Consult a physician. I consult a physician.	ot breathing, give artific ysician. at least 15 minutes and	SORES Consult a physician. Show this safety dat If inhaled, move person into fresh air. If n Wash with soap and water. Consult a ph Rinse thoroughly with plenty of water for a Rinse thoroughly with plenty of water for a Rinse mouth w	lf inhaled In case of skin contact In case of eye contact		
				INTENDED USE: REFERE		
	bee Certified Weight Report For Other Analytes Present At Trace Quantifies.					
66 <	mqq 002	2,769 mg/kg	L-95-29	lonsriaM		
(lenoitqo) %	OSHA PEL	LD50 Oral - Rat	:#SAO	Components:		
				Section III - Composition		
			Signal Word: DAVGER	۰ کې کې		
P305,351, 331 Toxic if swallowed, skin contact, inhaled P361 Suspected of causing cancer P280 Use gloves, eye protectionface sheild P305,351,338 If in eyes, remove contacts, rinse with water		H225 Highly Flammable Liquid and Vapor H370 Cause damage to organs P271 Use in ventilated area 11 on skin, wash with soap and water				
(SOH AHSO) 0161 AFO 29 Ordance with 29 CFR AFO (OSHA HCS)						
			ication	Section II - Hazards Identif		
<b>362-323-3500</b>			44 Rossotto Dr. Hamden CT, 06514	Address		
-800-232-2023	r AGANAD & ASU enorth	Emergency Teler	ONI SORADNATS ETULOSBA	Manufacturer's Name		
		JONAHTA	M NI DIVIOSSID DIAGNATS JA	IDENTITY ANA YTITNEDI		
			npany Identification	Section I Product and Con		

The information in this Material Safety Data Sheet needs for requirements of the United States Occupational Safety and Health Act and regulations promulgated theraunder (29 CFR supervised by a person trained in characterial state of the analyses as guide to the appropriate precautionary handling of the material by trained personnel, or usego, pand Global Harmoricked System (GHS). This document is intended only as a guide to the appropriate precautionary handling of the material by trained personnel, or usego, pand Global Harmoricked System (GHS). This document is intended only as a guide to the approximation in this chemical handling. The user is responsible for determining the precaution and hangers of this chemical for handling of the material by trained personnel, or usego, protective coloring including eye and face guards and respiratores must be used to onis of any the material or breathing chemical paperside of the potential uses are so varied, ABSOLUTE STANDARDS INC. cannot warm of all the potential ascepts protective clother on the label. ABSOLUTE STANDARDS INC. Cannot warm of all the potential ascepts of use or interaction with other demicals or substances. AbsOLUTE STANDARDS INC, warmants that the chemical reports of the potential assets or or interaction with other demicals or substances. AbsOLUTE STANDARDS INC, warmants that the chemical apportunes. Exposure to fails product may have a cannet effects. This chemical handling of the material or preating the material or breating the preating the preaterial applications are non tware of help pr

### Section XVI. Misc. INFORMATION

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

### Section XV. REGULATORY INFORMATION

DOT (US) Proper shipping name: Methanol Proper shipping name: Methanol

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

### Section XIV. TRANSPORT INFORMATION

Dispose with normal Laboratory Solvent Waste.

### Section XIII. DISPOSAL CONSIDERATIONS

EC100 10'000'0 mg/l - 36 h EC20 54'200'00 mg/l - 54 h FC20 10'000'00 mg/l - 54 h

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

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

### Section XI. TOXICOLOGICAL INFORMATION

not stoubord notitisogmooeb suobisiseh	ed under fire conditions Carbon oxides
Materials to avoid	sid chlorides, Acid anhydrides, Oxidizing agents, Alkali metals, Reducing agents, Acids
biovs of anoitibnoC	aat, flames, sparks, extreme temperature and sunlight.
ossibility of hazardous reactions	ipours may form explosive mixture with air.
Chemical stability	able under recommended storage conditions.

### Section X. STABILITY AND REACTIVITY

Appearance and (
Solubility in Water
IA) viizned roqsv
Vapor Pressure (r
triog Poiling

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

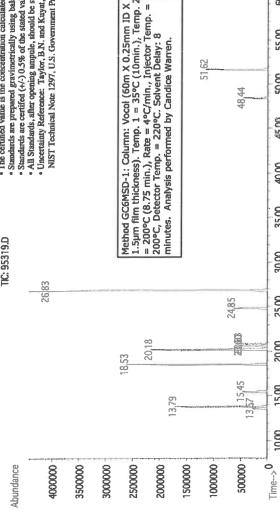
Certified Reference Material CRM



# MEIGUT DEDO CERTIFIED

RTIFIED WEIGHT REPORT								E				
Part Number:	91	95319			S	Solvent(s):	Lot			1		
Lot Number:		032922				Methanol	EC592-US			5	4	
Description:	1	<b>Revised Additions Mix</b>	ons Mix							the second	Smaller Viewler	032922
		11 components	lts						Formulated By:	ſ	Prashant Chauhan	DATE
Expiration Date:	0	032925									2	
Recommended Storage:	ula	Refrigerate (4 °C)	(C)							0	Jan Start	
Nominal Concentration (µg/mL):	-	Varied								Karl	a lente	032922
NIST Test ID#:	3	GUTB		5E-05	5E-05 Balance Uncertainty				Reviewed By:		Pedro L. Rentas	DATE
Weight(s) shown below were combined and diluted to (mL):	nd diluter	d to (mL):	100.0	0.012	0.012 Flask Uncertainty			9				
									Expanded		SDS Information	
		Lot	Nominal	Purity	Uncertainty	Target	Actual	Actual	Uncertainty	(Solvent	(Solvent Safety Info. On Attached pg.)	ed pg.)
Compound	RM#	Number	Conc (µg/mL)	(%)	Purity	Weight(g)	Weight(g)	Conc (µg/mL) (+/-) (µg/mL)	(++-) (hg/mL)	CAS#	OSHA PEL (TWA)	1.050
1. Acrylonitrile	7	4718CK	10000	66	0.2	1.01015	1.01030	10001.5	40.5	107-13-1	NA	orl-rat 78 ma/ka
2. 1-Chlorobutane	1072	1072 MKCM5711	2000	99.99	0.2	0.20003	0.20020	2001.7	8.1	109-69-3	NA	ori-rat 2670ma/kg
Cyclohexane	1023	28930	2000	66	0.2	0.20203	0.20215	2001.2	8.2	110-82-7	300 ppm (1050mg/m3/8H)	ort-rat 12705mg/kg
Di-isopropyl ether (DIPE)	987	00412MX	2000	66	0.2	0.20203	0.20215	2001.2	8.2	108-20-3		orl-rat 8470mg/kg
5. 1,4-Dioxane	373	03853KE	40000	66	0.2	4.04060	4.04100	40004.0	161.9	123-91-1	25 ppm (90mg/m3/8H)(skin) ort-mus 5700mg/kg	ort-mus 5700ma/kg
6. Hexachioroethane	199	12604HBV	2000	66	0.2	0.20203	0.20213	2001.0	8.2	67-72-1	67-72-1 t ppm (10mg/m3/8H)(skin)	ort-gpg 4970mg/kg
7. Methylcyclohexane	1627	08046KN	2000	66	0.2	0.20203	0.20215	2001.2	8.2	108-87-2		NIA
<ol><li>Methyl tert-butyl ether (MTBE)</li></ol>	209	02197JJ	2000	99.8	0.2	0.20041	0.20055	2001.4	8.1	1634-04-4	NA	orl-rat 49/kg

L' MUTUNI		-	4/ 10CN	mm	מת	7.N	CI0101	1.01030	C'INNI	40.5	1-51-701	NA	orl-rat 78 mg/kg
2. 1-Chlorobutane	Je Paralel Para	1072	MKCM5711	2000	99.99	0.2	0.20003	0.20020	2001.7	8.1	109-69-3	NA	ori-rat 2670mo/kg
3. Cyclohexane		1023	28930	2000	66	0.2	0.20203	0.20215	2001.2	8.2	110-82-7	300 ppm (1050ma/m3/8H)	ort-rat 12705mo/kg
4. Di-Isopropyl ether (DIPE)	ther (DIPE)	987	00412MX	2000	66	0.2	0.20203	0.20215	2001.2	8.2	108-20-3	500 ppm (2100mg/m3/8H)	orl-rat 8470mg/kg
5. 1,4-Dioxane		373	03853KE	40000	66	0.2	4.04060	4.04100	40004.0	161.9	123-91-1		ort-mus 5700mg/kg
6. Hexachloroethane	hane	199	12604HBV	2000	66	0.2	0.20203	0.20213	2001.0	8.2	67-72-1	t ppm (10mg/m3/8H)(skin)	ort-spg 4970mg/kg
7. Methylcyclohexane	exane	1627	08046KN	2000	66	0.2	0.20203	0.20215	2001.2	8.2	108-87-2	NA	VN
8. Methyl tert-bu	Methyl tert-butyl ether (MTBE)	209	02197JJ	2000	<b>99.8</b>	0.2	0.20041	0.20055	2001.4	8.1	1634-04-4	NA	orl-rat 49/kg
9. Propionitrile		349	1395468	20000	66	0.2	2.02030	2.02045	20001.5	81.0	107-12-0	NA	ort-rat 39ma/ka
10. Tetrahydrofurar	an	380	SHBH8330	10000	99.9	0.2	1.00105	1.00120	10001.5	40.1	109-99-9	20 ppm (590mg/m3/8H)	ort-rat 1650mo/kg
11. 1,2,3,4-Tetrai	,2,3,4-Tetramethylbenzene	491	AP01	2000	93	0.2	0.21506	0.21520	2001.3	8.7	488-23-3	NA	ort-rat 6408mp/kg
			TIC. 05310 D	0.010		he certified v	alue is the concen	tration calculated	from pravimetric	and volumed	ric measuremen	• The certified value is the concentration calculated from oravimetric and volumetric measurements unless otherwise stated	



In the prepared gravimetrically using balances that are calibrated with weights traceable to NIST (see above).
 Standards are carified (+/-) 0.5% of the stated value, unless offerwise stated with weights traceable to NIST (see above).
 All Standards after opening annuels, 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).

MSD RT (min.) 13.79

13.56 15.44 18.53

Methyl tert-butyl ether (MTBE)

Di-isopropyl ether Tetrahydrofuran 1-Chlorobutane Cyclohexane

Propionitrile Acrylonitrile

Name

20.17 20.58 20.83 24.84

26.84 48.44 51.62

Methylcyclohexane

1,4-Dioxane

1,2,3,4-Tetramethylbenzene

60.09

55.00

50.00

45.00

40.00

35.00

30.00

25.00

20.00

15.00

10.00

Hexachioroethane

1 of 1

Part # 95319

Lot # 032922

Complian	VH50/5H0	

InsildmoO AHSO/2HD

Safety Data Sheet (SDS)

S to I age9

Avoid contact with skin and eyes. Avoid inhalation of vapour or mist.

Prevent further leakage or spillage if safe to do so. Do not let product enter drains.

Wear self contained breathing apparatus for fire fighting if necessary.

Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

ignition. Vapours accumulate to form explosive concentrations.

heat/sparks/open flame/hot surface. No smoking.

Keep container tightly closed in a dry and well-ventilated place. Containers which are opened must be carefully reseated

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

Contain spillage, and then collect and place in container for disposal according to local regulations (see section 13).

Wear respiratory protection. Avoid breathing vapors, mist or gas. Ensure adequate ventilation. Remove all sources of

Flammable in the presence of a source of ignition when the temperature is above the flash point. Keep away from

Printed: 11/13/23

. . νA Eye protection. ed prior to use. Ρеι юд SK!

Section IX - Physical/Chemical Characteristics

Avoid contact with	skin, eves and clothing. Wash hands th	oroughly after handli	ng the product.	
Personal protective	e equipment Respiratory protection	Handle with gloves.	eqeni ed izum sevolo	apecte
Potential for skin a	noiteledni bne noitsegni , noitqnozdi			
Skin notation	mqq 00S AWT			
Methanol	mqq 00S AWT 1-88-78			

and kept upright to prevent leakage.

Section VIII. EXPOSURE CONTROLS/PERSONAL PROTECTION

Aethanol-SDS copy.xls

Storage Conditions

Clean up

Precautions for safe handling

Environmental precautions

Protective equipment for fire Suitable extinguishing media

Personal precautions

**Flammability** 

Section VII. HANDLING AND STORAGE

Section VI. ACCIDENTAL RELEASE MEASURES

			SEASURES	Section V. FIREFIGHTING
	ial respiration. Consult a physician. I consult a physician.	ot breathing, give artific ysician. at least 15 minutes and	SORES Consult a physician. Show this safety dat If inhaled, move person into fresh air. If n Wash with soap and water. Consult a ph Rinse thoroughly with plenty of water for a Rinse thoroughly with plenty of water for a Rinse mouth w	lf inhaled In case of skin contact In case of eye contact
				INTENDED USE: REFERE
	.səititnsu	) esent tA trace	sport For Other Analytes Pre	
66 <	mqq 002	2,769 mg/kg	L-95-29	lonsriaM
(lenoitqo) %	OSHA PEL	LD50 Oral - Rat	:#SAO	Components:
				Section III - Composition
			Signal Word: DAVGER	۰ 😓 🔇
pli	Toxic if swallowed, skin contact, inl Suspected of causing cancer Use gloves, eye protectionvface she if in eyes, remove contacts, rinse wi	6306,351,338 9280 H361 H301, 311, 331	nasble Liquid and Vapor age to organs illated area vash with soap and water	H370 Cause dam P271 Use in vent
	(SOH AHSO) OFER 8	dance with 29 CFF	GHS Classification in accord	
			ication	Section II - Hazards Identif
<b>362-323-3500</b>		Emergency Telep Date Prepared/R	44 Rossotto Dr. Hamden CT, 06514	Address
-800-232-2023	r AGANAD & ASU enorth	Emergency Teler	ONI SORADNATS ETULOSBA	Manufacturer's Name
		JONAHTA	M NI DIVIOSSID DIAGNATS JA	IDENTITY ANA YTITNEDI
			npany Identification	Section I Product and Con

The information in this Material Safety Data Sheet needs for requirements of the United States Occupational Safety and Health Act and regulations promulgated theraunder (29 CFR supervised by a person trained in characterial state of the analyses as guide to the appropriate precautionary handling of the material by trained personnel, or usego, pand Global Harmoricked System (GHS). This document is intended only as a guide to the appropriate precautionary handling of the material by trained personnel, or usego, pand Global Harmoricked System (GHS). This document is intended only as a guide to the approximation in this chemical handling. The user is responsible for determining the precaution and hangers of this chemical for handling of the material by trained personnel, or usego, protective coloring including eye and face guards and respiratores must be used to onis of any the material or breathing chemical papersited personnel, or setting a protective clother on the photon fermical may interact with other substances. Since the potential uses are so varied, ABSOLUTE STANDARDS INC, cannot warm of all the potential ascepts of use or interaction with other demicals or abstances. ABSOLUTE STANDARDS INC, warmants that the chemical reports or not all the potential angrets of use or interaction with other demicals or abstances. Since the potential uses are so varied, ABSOLUTE STANDARDS INC, cannot warm of all the potential ascepts of use or interaction with other demicals or abstances. ABSOLUTE STANDARDS INC, warmants that the chemical approxuments of the material or breathing data for or interaction with other demicals or abstances. ABSOLUTE STANDARDS INC, warmants that the chemical approxume to this protective to the protective clouper or with other demicals or abstances. ABSOLUTE STANDARDS INC, warmants that the chemical approxume to an or all the potential angrets of use or interaction with other demicals or abstances. ABSOLUTE STANDARDS INC, warmants that the chemetal approxume to action warmater that the chemical m

#### Section XVI. Misc. INFORMATION

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

#### Section XV. REGULATORY INFORMATION

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

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

#### Section XIV. TRANSPORT INFORMATION

Dispose with normal Laboratory Solvent Waste.

#### Section XIII. DISPOSAL CONSIDERATIONS

EC100 10'000'0 mg/l - 36 h EC20 54'200'00 mg/l - 54 h FC20 10'000'00 mg/l - 54 h

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

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

#### Section XI. TOXICOLOGICAL INFORMATION

not stoubord notitioor products for	ed under fire conditions Carbon oxides
Materials to avoid	sid chlorides, Acid anhydrides, Oxidizing agents, Alkali metals, Reducing agents, Acids
biovs of anoitibnoC	aat, flames, sparks, extreme temperature and sunlight.
ossibility of hazardous reactions	ipours may form explosive mixture with air.
Chemical stability	able under recommended storage conditions.

#### Section X. STABILITY AND REACTIVITY

Appearance and
Solubility in Water
Vapor Density (AI
Vapor Pressure (r
triog Poiling

				10 C C									
Absolute (800-368-1131 www.absolute	Absolute Standards, Inc. 800-368-1131 www.absolutestandards.com			v	Certified	Certified Reference Material CRM	Material	CRM				ANAB ISO 1 AR-1539 Ce https://Absolut	ANAB ISO 17034 Accredited AR-1539 Certificate Number https://Absolutestandards.com
CERTIFIED W	CERTIFIED WEIGHT REPORT Part Number: Lot Number: Description:	91980 072423 Acrolein				Solvent(s): Water	<b>Lot#</b> 102422Q			Hebriel	Nellond		
	Expiration Date: Recommended Storage: Nominal Concentration (µg/mL);	082423 Refrigerate (4 °C) 5000	4 °C)		5	Zem			Formulated By:	1 Dr	Gabriel Helland	0/2423 DATE 072423	
Weight(	Nis! lest ID#: 6UTB Weight(s) shown below were combined and diluted to (mL): Lot	6UTB diluted to (mL): Lot	10.0 Nominal	5E-05 0.001 Purity	Balance Uncertainly Flask Uncertainty Uncertainty	uy Target	Actual	Actual	Expanded Expanded	By: F	Colivent Safetive Info. On Attracted and	DATE	
1. Acrolein		RM# Number 5 103755R09M	Conc (µg/mL) 5000	(%)	Purity 0.5	Weight(g) 0.05160	Weight(g)	Conc (Jg/mL)			OSHA PEL (TWA)	LD50	
<u>r</u> rr	Method: GC6MSD-1. Detector: Muss 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.) Rate = 4°C/min., Injector Temp. = 200°C. Detector Temp. = 220°C. Analyst: Pedro Rentas. NOTB: Due to the instability of acrolein in solutions of acrolein, and any dilutions thereof, about the test immediately Long term storage is not recommended. Please contact our technical department if further information is required.	ve Detector (Scan mode, ector Temp. = 220°C. Al	). Column: Voc nalyst: Pedro Re partment if furth	ol (60m X ( :ntas. NOT ver informat	Context (Context), 25mm ID X 1. E: Due to the in ion is required.	5µm film thickness tability of acrole	ss). Oven Profile in in solution, all	:: Temp. 1 = 35	C (Time 1 = 1 rolein, and any	Omin.), Temp. 2-	200°C (Time 2 = 8.75 mir should be used immediate	on-rat 46mg/kg	
Abundance	TIC: [B(	TIC: [BSB2]79005.D				Abundance	31	Scan 2:	32 (8.927 r	Scan 232 (8.927 min): [BSB2]79005.D	79005.D	٦	
250000	8.93					60000							
20000		1	0////			5000	0	20					
15000						4000	~						
10000						30000	6						
						2000	0						
00000						10000	37	~					
Time>0	10.00 15.00 20.00 25.00 30.00 35.00 40.00 45.00 50.00 55.00	30.00 35.00 40	.00 45.00	50.00 {	55.00 60.00	0 <z )<="" ll="" td=""><td>20 30</td><td>44 (40 50 60</td><td>65 75 85 <b>70 80 9</b></td><td>85 90 100 1</td><td>119         158         169           90         100         110         120         130         140         150         170</td><td>158 169 50 160 170</td><td></td></z>	20 30	44 (40 50 60	65 75 85 <b>70 80 9</b>	85 90 100 1	119         158         169           90         100         110         120         130         140         150         170	158 169 50 160 170	
	<ul> <li>The cert</li> <li>Standart</li> <li>Standart</li> <li>Standart</li> <li>Standart</li> <li>Uncertai</li> <li>NIST Te</li> </ul>	<ul> <li>The certified value is the concentration calculated from gravimetric and volumetric measurements unless otherwise stated.</li> <li>Standards are prepared gravimetrically using balances that are calibrated with weights traceable to NIST (see above).</li> <li>Shandards are certified (<i>A</i><sup>1</sup>) 0.5% of the stated value, unless otherwise stated.</li> <li>All Standards, after opening anyoule, should be stored with caps tight and under appropriate laboratory conditions.</li> <li>Uncertainty Reference: Taylor, B.N. and Kuyat, C.E., "Guidelines for Evaluating and Expressing the Uncertainty of NIST Measurement Result," NIST Technical Note 1297, U.S. Government Printing Office, Washington, DC, (1994).</li> </ul>	tration calcula etrically using 1 % of the stated 1 pule, should be .B.N. and Kuya .Government P	ted from gr balances th value, unte stored wit t, C.E., "G	avimetric and at are calibrato ss otherwise stu h caps tight an uidelines for E hce, Washingto	and volumetric measurements unless otherwise stated. Inrated with weights traceable to NIST (see above), se stated. In and under appropriate laboratory conditions. for Evaluating and Expressing the Uncertainty of NIST ington, DC, (1994).	arrements unles rraceable to NIS riate laboratory kpressing the Ui	s otherwise star T (see above). conditions. ncertainty of N	led. IST Measurer	nent Result,"			

Printed: 7/24/2023, 4:01:48 PM

1 of 1

Lot # 072423 Part # 91980

Phone: 203-281-2917

FAX: 203-281-2922

torade Conditions	Nuos mon year quanta nonstructo desa	es of ignition. No smoking. Prevent the build up of electrosts	c cuside.
recautions for safe handling	Avoid contact with skin and eyes. Av		
Section VII. HANDLING AND	3DAROTS		
dn uzəj;	Contain spillage, and then collect and place	r container for disposal according to local regulations (see se	(SF noi).
invironmental precautions	revent further leakage or spillage if safe to	o so. Do not let product enter drains.	
ersonal precautions	Wear respiratory protection. Avoid breathing gnition. Vapours accumulate to form explosi	vapors, mist or gas. Ensure adequate ventilation. Remove all e concentrations.	sources of
Section VI. ACCIDENTAL R	SERURASM SEASURES		
Azardous Decomposition produ	cets Carbon oxides		
suitable extinguishing media rotective equipment for fire	Use water spray, alcohol-resistant fo Wear self contained breathing appar	m, dry chemical or carbon dioxide. tus for fire ກິghting if necessary.	
Section V. FIREFIGHTING N	SARUSAA		
bewollswe †	Do NOT induce vomiting. Rinse mouth with		
n case of eye contact	Rinse thoroughly with plenty of water for at I		
f inhaled n case of skin contact	It inhaled, move person into fresh air. If not l Wash with soap and water. Consult a physi	reathing, give artificial respiration. Consult a physician.	
General advice	Consult a physician. Show this safety data s	neet to the doctor in attendance. Move to safe area.	
Section IV. FIRST AID MEA	SERUS		
INTENDED USE: REFEREI	CE MATERIAL		
See Certified Weight R	port For Other Analytes Prese	nt At Trace Quantities.	
Vater		CAS#: 7732-18-5	26 <
Components (Specific Chem	cal Identity; Common Name(s))		(optional) %
Section III - Composition			
oW Isngila	ЯЭрида:b		
	GHS Classification in accor tilated area wash with soap and water	ance with 29 CFR 1910 (OSHA HCS) H315 Causes skin and eye irritation P280 Use gloves, eye protection/fac P305,351,338 If in eyes, remove contacts, rii	s sheild Se with water
Section II - Hazards Identif			
			May 1, 2022
00010017	Hamden CT, 06514	Emergency Telephone International Date Prepared/Revised	1-362-323-3600
Address	44 Rossotto Dr.	Emergency Telephone USA & CANADA	1-362-333-3600
IDENTITY ANALYTIC Manufacturer's Name	AW NI DEVLOSEID DISOLVED IN WE AND SUPADNATE STOLOSAA ABSOLUTE STOLOSAA		1-800-525-008-1
Section I Product and Con	pany identification		
	Safety Data Sheet (SDS)	InsilqmoD AH2O/2HD	

and kept upright to prevent leakage.

100°C

mqq 008 :AWT

Section IX - PHYSICAL/CHEMICAL CHARACTERISTICS

Avoid contact with skin, eyes and clothing. Wash hands thoroughly after handling the product.

Respiratory protection

CAS#: 7732-18-5

Section VIII. EXPOSURE CONTROLS/PERSONAL PROTECTION

Vapor Pressure (mm Hg)

Personal protective equipment

find Poind

Vater

Storage Conditions

Melting Point

Specific Gravity (H2O = 1)

Keep container tightly closed in a dry and well-ventilated place. Containers which are opened must be carefully resealed

Handle with gloves. Gloves must be inspected prior to use.

L

Eye protection.

ΨN

Completely miscible Solubility in Water (Butyl Acetate = 1) AΝ ΑN (I = AIA) (AIR = 1) Evaporation rate

0°C

Hazardous decomposition products - No data available biove of sleneteM ΑN biove of anoitiono. AN Possibility of hazardous reactions ΑN Stable under recommended storage conditions. Chemical stability Section X. STABILITY AND REACTIVITY CLEAR, COLORLESS LIQUID WITH SLIGHT CHEMICAL ODOR. Appearance and Odor

ΑN Section XI. TOXICOLOGICAL INFORMATION

Causes skin initation. LD50 Dermal - Guinea pig ΨN LC50 Inhalation - Rat ΨN LD50 Oral - Rat

Rev imitation

Section XII. ECOLOGICAL INFORMATION

Dispose with normal Laboratory Solvent Waste. Section XIII. DISPOSAL CONSIDERATIONS

Proper shipping name: Water spooß snolegnep toN (SU) TOO

Section XIV. TRANSPORT INFORMATION

ΨN

ΨN

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0907

Section XV. REGULATORY INFORMATION

SARA 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 PRECAUTION, As new documented general safety information becomes available, Absolute Standards Inc. will periodically revise this Material Safety Data Sheet. If PRECAUTION RRY INFORMATION. As new documented general safety information becomes available, Absolute Standards Inc. will periodically revise this Material Safety Data Sheet. If The intomation 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. equ); 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 flobal 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 flobal Harmonized System (GHS). This document is intended only as a guide to the appropriate precautionary handling. The user is responsible for determining the precautions and dangers of this chemical flobal floration for the precautions and context of the theorem of the appropriate personnel, or supervised by a person floration of the appropriate including cye and florate of this protective sections and context with material application. Depending on usage, protective colohing give and face and the precautions and dangers of this chemical to print application. Depending on usage, protective colohing cye and face grant and a respirations must be eased to avoid contact with material applications. Exposure to this protecting or the precautions and contact with material applications and contact material applications and contact material applications and contact material applications and and applications and applications and applications and applications approximates applications and applications and applications and applications and applications and applications approximates applications and applications and applications and applications and applications approximates applications and applications and applications applications and applications and applications and applications applications and applications applications and applications and applications and applications applications and applications applications and applicatio

Proper shipping name: Water

Not dangerous goods

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Absolute (800-368-1131 www.absolute	Absolute Standards, Inc. 800-368-1131 www.absolutestandards.com			v	Certified	Certified Reference Material CRM	Material	CRM				ANAB ISO 1 AR-1539 Ce https://Absolut	ANAB ISO 17034 Accredited AR-1539 Certificate Number https://Absolutestandards.com
CERTIFIED W	CERTIFIED WEIGHT REPORT Part Number: Lot Number: Description:	91980 072423 Acrolein				Solvent(s): Water	<b>Lot#</b> 102422Q			Hebriel	Nellond		
	Expiration Date: Recommended Storage: Nominal Concentration (µg/mL);	082423 Refrigerate (4 °C) 5000	4 °C)		5	Zem			Formulated By:	1 Dr	Gabriel Helland	0/2423 DATE 072423	
Weight(	Nis! lest ID#: 6UTB Weight(s) shown below were combined and diluted to (mL): Lot	6UTB diluted to (mL): Lot	10.0 Nominal	5E-05 0.001 Purity	Balance Uncertainly Flask Uncertainty Uncertainty	uy Target	Actual	Actual	Expanded Expanded	By: F	Colivent Safetive Info. On Attracted and	DATE	
1. Acrolein		RM# Number 5 103755R09M	Conc (µg/mL) 5000	(%)	Purity 0.5	Weight(g) 0.05160	Weight(g)	Conc (Jg/mL)			OSHA PEL (TWA)	LD50	
<u>r</u> rr	Method: GC6MSD-1. Detector: Muss 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.) Rate = 4°C/min., Injector Temp. = 200°C. Detector Temp. = 220°C. Analyst: Pedro Rentas. NOTB: Due to the instability of acrolein in solutions of acrolein, and any dilutions thereof, about the test immediately Long term storage is not recommended. Please contact our technical department if further information is required.	ve Detector (Scan mode, ector Temp. = 220°C. Al	). Column: Voc nalyst: Pedro Re partment if furth	ol (60m X ( ntas. NOT) ver informat	Context (1), 25mm ID X 1, E: Due to the in ion is required.	5µm film thickness tability of acrole	ss). Oven Profile in in solution, all	:: Temp. 1 = 35	C (Time 1 = 1 rolein, and any	Omin.), Temp. 2-	200°C ( Time 2 = 8.75 mir should be used immediate	on-rat 46mg/kg	
Abundance	TIC: [B(	TIC: [BSB2]79005.D				Abundance	31	Scan 2:	32 (8.927 r	Scan 232 (8.927 min): [BSB2]79005.D	79005.D	٦	
250000	8.93					60000							
20000		1	0////			5000	0	20					
15000						4000	~						
10000						30000	6						
						2000	0						
00000						10000	37	~					
Time>0	10.00 15.00 20.00 25.00 30.00 35.00 40.00 45.00 50.00 55.00	30.00 35.00 40	.00 45.00	50.00 {	55.00 60.00	0 <z )<="" ll="" td=""><td>20 30</td><td>44 (40 50 60</td><td>65 75 85 <b>70 80 9</b></td><td>85 90 100 1</td><td>119         158         169           90         100         110         120         130         140         150         170</td><td>158 169 50 160 170</td><td></td></z>	20 30	44 (40 50 60	65 75 85 <b>70 80 9</b>	85 90 100 1	119         158         169           90         100         110         120         130         140         150         170	158 169 50 160 170	
	<ul> <li>The cert</li> <li>Standart</li> <li>Standart</li> <li>Standart</li> <li>Standart</li> <li>Uncertai</li> <li>NIST Te</li> </ul>	<ul> <li>The certified value is the concentration calculated from gravimetric and volumetric measurements unless otherwise stated.</li> <li>Standards are prepared gravimetrically using balances that are calibrated with weights traceable to NIST (see above).</li> <li>Shandards are certified (<i>A</i><sup>1</sup>) 0.5% of the stated value, unless otherwise stated.</li> <li>All Standards, after opening anyoule, should be stored with caps tight and under appropriate laboratory conditions.</li> <li>Uncertainty Reference: Taylor, B.N. and Kuyat, C.E., "Guidelines for Evaluating and Expressing the Uncertainty of NIST Measurement Result," NIST Technical Note 1297, U.S. Government Printing Office, Washington, DC, (1994).</li> </ul>	tration calcula etrically using 1 & of the stated 1 pule, should be . B.N. and Kuya . Government P	ted from gr balances th value, unte stored wit t, C.E., "G	avimetric and at are calibrato ss otherwise stu h caps tight an uidelines for E hce, Washingto	and volumetric measurements unless otherwise stated. Inrated with weights traceable to NIST (see above), se stated. In and under appropriate laboratory conditions. for Evaluating and Expressing the Uncertainty of NIST ington, DC, (1994).	arrements unles rraceable to NIS riate laboratory kpressing the Ui	s otherwise star T (see above). conditions. ncertainty of N	led. IST Measurer	nent Result,"			

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1 of 1

Lot # 072423 Part # 91980

Phone: 203-281-2917

FAX: 203-281-2922

torade Conditions	Nuos mon year quanta manistruo aso	es of ignition. No smoking. Prevent the build up of electrosts	c cuside.
recautions for safe handling	Avoid contact with skin and eyes. Av		
Section VII. HANDLING AND	3DAROTS		
dn uzəj;	Contain spillage, and then collect and place	r container for disposal according to local regulations (see se	(SF noi).
invironmental precautions	revent further leakage or spillage if safe to	o so. Do not let product enter drains.	
ersonal precautions	Wear respiratory protection. Avoid breathing gnition. Vapours accumulate to form explosi	vapors, mist or gas. Ensure adequate ventilation. Remove all e concentrations.	sources of
Section VI. ACCIDENTAL R	SERURASM SEASURES		
Azardous Decomposition produ	cets Carbon oxides		
suitable extinguishing media rotective equipment for fire	Use water spray, alcohol-resistant fo Wear self contained breathing appar	m, dry chemical or carbon dioxide. tus for fire ກິghting if necessary.	
Section V. FIREFIGHTING N	SARUSAA		
bewollswe †	Do NOT induce vomiting. Rinse mouth with		
n case of eye contact	Rinse thoroughly with plenty of water for at I		
f inhaled n case of skin contact	It inhaled, move person into fresh air. If not l Wash with soap and water. Consult a physi	reathing, give artificial respiration. Consult a physician.	
General advice	Consult a physician. Show this safety data s	neet to the doctor in attendance. Move to safe area.	
Section IV. FIRST AID MEA	SERUS		
INTENDED USE: REFEREI	CE MATERIAL		
See Certified Weight R	port For Other Analytes Prese	nt At Trace Quantities.	
Vater		CAS#: 7732-18-5	26 <
Components (Specific Chem	cal Identity; Common Name(s))		(optional) %
Section III - Composition			
oW Isngila	ЯЭрида:b		
	GHS Classification in accor tilated area wash with soap and water	ance with 29 CFR 1910 (OSHA HCS) H315 Causes skin and eye irritation P280 Use gloves, eye protection/fac P305,351,338 If in eyes, remove contacts, rii	s sheild Se with water
Section II - Hazards Identif			
			May 1, 2022
00010017	Hamden CT, 06514	Emergency Telephone International Date Prepared/Revised	1-362-323-3600
Address	44 Rossotto Dr.	Emergency Telephone USA & CANADA	1-362-333-3600
IDENTITY ANALYTIC Manufacturer's Name	AW NI DEVLOSEID DISOLVED IN WE AND SUPADNATE STOLOSAA ABSOLUTE STOLOSAA		1-800-525-008-1
Section I Product and Con	pany identification		
	Safety Data Sheet (SDS)	InsilqmoD AH2O/2HD	

and kept upright to prevent leakage.

100°C

mqq 008 :AWT

Section IX - PHYSICAL/CHEMICAL CHARACTERISTICS

Avoid contact with skin, eyes and clothing. Wash hands thoroughly after handling the product.

Respiratory protection

CAS#: 7732-18-5

Section VIII. EXPOSURE CONTROLS/PERSONAL PROTECTION

Vapor Pressure (mm Hg)

Personal protective equipment

find Poind

Vater

Storage Conditions

Melting Point

Specific Gravity (H2O = 1)

Keep container tightly closed in a dry and well-ventilated place. Containers which are opened must be carefully resealed

Handle with gloves. Gloves must be inspected prior to use.

L

Eye protection.

ΨN

Completely miscible Solubility in Water (Butyl Acetate = 1) AΝ ΑN (I = AIA) (AIR = 1) Evaporation rate

0°C

Hazardous decomposition products - No data available biove of sleneteM ΑN biove of anoitiono. AN Possibility of hazardous reactions ΑN Stable under recommended storage conditions. Chemical stability Section X. STABILITY AND REACTIVITY CLEAR, COLORLESS LIQUID WITH SLIGHT CHEMICAL ODOR. Appearance and Odor

ΑN Section XI. TOXICOLOGICAL INFORMATION

Causes skin initation. LD50 Dermal - Guinea pig ΨN LC50 Inhalation - Rat ΨN LD50 Oral - Rat

Rev imitation

Section XII. ECOLOGICAL INFORMATION

Dispose with normal Laboratory Solvent Waste. Section XIII. DISPOSAL CONSIDERATIONS

Proper shipping name: Water spooß snolegnep toN (SU) TOO

Section XIV. TRANSPORT INFORMATION

ΨN

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Section XV. REGULATORY INFORMATION

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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Proper shipping name: Water

Not dangerous goods

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Absolute (800-368-1131 www.absolute	Absolute Standards, Inc. 800-368-1131 www.absolutestandards.com			v	Certified	Certified Reference Material CRM	Material	CRM				ANAB ISO 1 AR-1539 Ce https://Absolut	ANAB ISO 17034 Accredited AR-1539 Certificate Number https://Absolutestandards.com
CERTIFIED W	CERTIFIED WEIGHT REPORT Part Number: Lot Number: Description:	91980 072423 Acrolein				Solvent(s): Water	<b>Lot#</b> 102422Q			Hebriel	Nellond		
	Expiration Date: Recommended Storage: Nominal Concentration (µg/mL);	082423 Refrigerate (4 °C) 5000	4 °C)		5	Zem			Formulated By:	1 Dr	Gabriel Helland	0/2423 DATE 072423	
Weight(	NIS! Lest ID#: 6UTB Weight(s) shown below were combined and diluted to (mL): Lot	6UTB diluted to (mL): Lot	10.0 Nominal	5E-05 0.001 Purity	Balance Uncertainly Flask Uncertainty Uncertainty	uy Target	Actual	Actual	Expanded Expanded	By: F	Colivent Safetive Info. On Attracted and	DATE	
1. Acrolein		RM# Number 5 103755R09M	Conc (µg/mL) 5000	(%)	Purity 0.5	Weight(g) 0.05160	Weight(g)	Conc (Jg/mL)			OSHA PEL (TWA)	LD50	
<u>r</u> rr	Method: GC6MSD-1. Detector: Muss 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.) Rate = 4°C/min., Injector Temp. = 200°C. Detector Temp. = 220°C. Analyst: Pedro Rentas. NOTB: Due to the instability of acrolein in solutions of acrolein, and any dilutions thereof, about the test immediately Long term storage is not recommended. Please contact our technical department if further information is required.	ve Detector (Scan mode, ector Temp. = 220°C. Al	). Column: Voo nalyst: Pedro Re partment if furth	ol (60m X ( ntas. NOT) ver informat	Context (Context), 25mm ID X 1. E: Due to the in ion is required.	5µm film thickness tability of acrole	ss). Oven Profile in in solution, all	:: Temp. 1 = 35	C (Time 1 = 1 rolein, and any	Omin.), Temp. 2-	200°C ( Time 2 = 8.75 mir should be used immediate	on-rat 46mg/kg	
Abundance	TIC: [B(	TIC: [BSB2]79005.D				Abundance	31	Scan 2:	32 (8.927 r	Scan 232 (8.927 min): [BSB2]79005.D	79005.D	٦	
250000	8.93					60000							
20000		İ	0////			5000	0	20					
15000						4000	~						
10000						30000	6						
						2000	0						
00000						10000	37	~					
Time>0	10.00 15.00 20.00 25.00 30.00 35.00 40.00 45.00 50.00 55.00	30.00 35.00 40	.00 45.00	50.00 {	55.00 60.00	0 <z )<="" ll="" td=""><td>20 30</td><td>44 (40 50 60</td><td>65 75 85 <b>70 80 9</b></td><td>85 90 100 1</td><td>119         158         169           90         100         110         120         130         140         150         170</td><td>158 169 50 160 170</td><td></td></z>	20 30	44 (40 50 60	65 75 85 <b>70 80 9</b>	85 90 100 1	119         158         169           90         100         110         120         130         140         150         170	158 169 50 160 170	
	<ul> <li>The cert</li> <li>Standart</li> <li>Standart</li> <li>Standart</li> <li>Standart</li> <li>Uncertai</li> <li>NIST Te</li> </ul>	<ul> <li>The certified value is the concentration calculated from gravimetric and volumetric measurements unless otherwise stated.</li> <li>Standards are prepared gravimetrically using balances that are calibrated with weights traceable to NIST (see above).</li> <li>Shandards are certified (<i>A</i><sup>1</sup>) 0.5% of the stated value, unless otherwise stated.</li> <li>All Standards, after opening anyoule, should be stored with caps tight and under appropriate laboratory conditions.</li> <li>Uncertainty Reference: Taylor, B.N. and Kuyat, C.E., "Guidelines for Evaluating and Expressing the Uncertainty of NIST Measurement Result," NIST Technical Note 1297, U.S. Government Printing Office, Washington, DC, (1994).</li> </ul>	tration calcula etrically using 1 & of the stated 1 pule, should be . B.N. and Kuya . Government P	ted from gr balances th value, unte stored wit t, C.E., "G	avimetric and at are calibrato ss otherwise stu h caps tight an uidelines for E hce, Washingto	and volumetric measurements unless otherwise stated. Inrated with weights traceable to NIST (see above), se stated. In and under appropriate laboratory conditions. for Evaluating and Expressing the Uncertainty of NIST ington, DC, (1994).	arrements unles rraceable to NIS riate laboratory kpressing the Ui	s otherwise star T (see above). conditions. ncertainty of N	led. IST Measurer	nent Result,"			

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1 of 1

Lot # 072423 Part # 91980

Phone: 203-281-2917

FAX: 203-281-2922

torade Conditions	Nuos mon year quanta manistruo aso	es of ignition. No smoking. Prevent the build up of electrosts	c cuside.
recautions for safe handling	Avoid contact with skin and eyes. Av		
Section VII. HANDLING AND	3DAROTS		
dn uzəj;	Contain spillage, and then collect and place	r container for disposal according to local regulations (see se	(SF noi).
invironmental precautions	revent further leakage or spillage if safe to	o so. Do not let product enter drains.	
ersonal precautions	Wear respiratory protection. Avoid breathing gnition. Vapours accumulate to form explosi	vapors, mist or gas. Ensure adequate ventilation. Remove all e concentrations.	sources of
Section VI. ACCIDENTAL R	SERURASM SEASURES		
Azardous Decomposition produ	cets Carbon oxides		
suitable extinguishing media rotective equipment for fire	Use water spray, alcohol-resistant fo Wear self contained breathing appar	m, dry chemical or carbon dioxide. tus for fire ກິghling if necessary.	
Section V. FIREFIGHTING N	SARUSAA		
bewollswe †	Do NOT induce vomiting. Rinse mouth with		
n case of eye contact	Rinse thoroughly with plenty of water for at I		
f inhaled n case of skin contact	It inhaled, move person into fresh air. If not l Wash with soap and water. Consult a physi	reathing, give artificial respiration. Consult a physician.	
General advice	Consult a physician. Show this safety data s	neet to the doctor in attendance. Move to safe area.	
Section IV. FIRST AID MEA	SERUS		
INTENDED USE: REFEREI	CE MATERIAL		
See Certified Weight R	port For Other Analytes Prese	nt At Trace Quantities.	
Vater		CAS#: 7732-18-5	26 <
Components (Specific Chem	cal Identity; Common Name(s))		(optional) %
Section III - Composition			
oW Isngila	ЯЭрида:b		
	GHS Classification in accor tilated area wash with soap and water	ance with 29 CFR 1910 (OSHA HCS) H315 Causes skin and eye irritation P280 Use gloves, eye protection/fac P305,351,338 If in eyes, remove contacts, rii	s sheild Se with water
Section II - Hazards Identif			
			May 1, 2022
00010017	Hamden CT, 06514	Emergency Telephone International Date Prepared/Revised	1-362-323-3600
Address	44 Rossotto Dr.	Emergency Telephone USA & CANADA	1-362-333-3600
IDENTITY ANALYTIC Manufacturer's Name	AW NI DEVLOSEID DISOLVED IN WE AND SUPADNATE STOLOSAA ABSOLUTE STOLOSAA		1-800-525-008-1
Section I Product and Con	pany identification		
	Safety Data Sheet (SDS)	InsilqmoD AH2O/2HD	

and kept upright to prevent leakage.

100°C

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Section IX - PHYSICAL/CHEMICAL CHARACTERISTICS

Avoid contact with skin, eyes and clothing. Wash hands thoroughly after handling the product.

Respiratory protection

CAS#: 7732-18-5

Section VIII. EXPOSURE CONTROLS/PERSONAL PROTECTION

Vapor Pressure (mm Hg)

Personal protective equipment

find Poind

Vater

Storage Conditions

Melting Point

Specific Gravity (H2O = 1)

Keep container tightly closed in a dry and well-ventilated place. Containers which are opened must be carefully resealed

Handle with gloves. Gloves must be inspected prior to use.

L

Eye protection.

ΨN

Completely miscible Solubility in Water (Butyl Acetate = 1) AΝ ΑN (I = AIA) (AIR = 1) Evaporation rate

0°C

Hazardous decomposition products - No data available biove of sleneteM ΑN biove of anoitiono. AN Possibility of hazardous reactions ΑN Stable under recommended storage conditions. Chemical stability Section X. STABILITY AND REACTIVITY CLEAR, COLORLESS LIQUID WITH SLIGHT CHEMICAL ODOR. Appearance and Odor

ΑN Section XI. TOXICOLOGICAL INFORMATION

Causes skin initation. LD50 Dermal - Guinea pig ΨN LC50 Inhalation - Rat ΨN LD50 Oral - Rat

Rev imitation

Section XII. ECOLOGICAL INFORMATION

Dispose with normal Laboratory Solvent Waste. Section XIII. DISPOSAL CONSIDERATIONS

Proper shipping name: Water spooß snolegnep toN (SU) TOO

Section XIV. TRANSPORT INFORMATION

ΨN

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Section XV. REGULATORY INFORMATION

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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Proper shipping name: Water

Not dangerous goods

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Absolute (800-368-1131 www.absolute	Absolute Standards, Inc. 800-368-1131 www.absolutestandards.com			v	Certified	Certified Reference Material CRM	Material	CRM				ANAB ISO 1 AR-1539 Ce https://Absolut	ANAB ISO 17034 Accredited AR-1539 Certificate Number https://Absolutestandards.com
CERTIFIED W	CERTIFIED WEIGHT REPORT Part Number: Lot Number: Description:	91980 072423 Acrolein				Solvent(s): Water	<b>Lot#</b> 102422Q			Hebriel	Nellond		
	Expiration Date: Recommended Storage: Nominal Concentration (µg/mL);	082423 Refrigerate (4 °C) 5000	4 °C)		5	Zem			Formulated By:	1 Dr	Gabriel Helland	0/2423 DATE 072423	
Weight(	Nis! lest ID#: 6UTB Weight(s) shown below were combined and diluted to (mL): Lot	6UTB diluted to (mL): Lot	10.0 Nominal	5E-05 0.001 Purity	Balance Uncertainly Flask Uncertainty Uncertainty	uy Target	Actual	Actual	Expanded Expanded	By: F	Colivent Safetive Info. On Attracted and	DATE	
1. Acrolein		RM# Number 5 103755R09M	Conc (µg/mL) 5000	(%)	Purity 0.5	Weight(g) 0.05160	Weight(g)	Conc (Jg/mL)			OSHA PEL (TWA)	LD50	
<u>r</u> rr	Method: GC6MSD-1. Detector: Muss 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.) Rate = 4°C/min., Injector Temp. = 200°C. Detector Temp. = 220°C. Analyst: Pedro Rentas. NOTB: Due to the instability of acrolein in solutions of acrolein, and any dilutions thereof, about the test immediately Long term storage is not recommended. Please contact our technical department if further information is required.	ve Detector (Scan mode, ector Temp. = 220°C. Al	). Column: Voc nalyst: Pedro Re partment if furth	ol (60m X ( :ntas. NOT ver informat	Context (1), 25mm ID X 1, E: Due to the in ion is required.	5µm film thickness tability of acrole	ss). Oven Profile in in solution, all	:: Temp. 1 = 35	C (Time 1 = 1 rolein, and any	Omin.), Temp. 2-	200°C ( Time 2 = 8.75 mir should be used immediate	on-rat 46mg/kg	
Abundance	TIC: [B(	TIC: [BSB2]79005.D				Abundance	31	Scan 2:	32 (8.927 r	Scan 232 (8.927 min): [BSB2]79005.D	79005.D	٦	
250000	8.93					60000							
20000		1	0////			5000	0	20					
15000						4000	~						
10000						30000	6						
						2000	0						
00000						10000	37	~					
Time>0	10.00 15.00 20.00 25.00 30.00 35.00 40.00 45.00 50.00 55.00	30.00 35.00 40	.00 45.00	50.00 {	55.00 60.00	0 <z )<="" ll="" td=""><td>20 30</td><td>44 (40 50 60</td><td>65 75 85 <b>70 80 9</b></td><td>85 90 100 1</td><td>119         158         169           90         100         110         120         130         140         150         170</td><td>158 169 50 160 170</td><td></td></z>	20 30	44 (40 50 60	65 75 85 <b>70 80 9</b>	85 90 100 1	119         158         169           90         100         110         120         130         140         150         170	158 169 50 160 170	
	<ul> <li>The cert</li> <li>Standart</li> <li>Standart</li> <li>Standart</li> <li>Standart</li> <li>Uncertai</li> <li>NIST Te</li> </ul>	<ul> <li>The certified value is the concentration calculated from gravimetric and volumetric measurements unless otherwise stated.</li> <li>Standards are prepared gravimetrically using balances that are calibrated with weights traceable to NIST (see above).</li> <li>Shandards are certified (<i>A</i><sup>1</sup>) 0.5% of the stated value, unless otherwise stated.</li> <li>All Standards, after opening anyoule, should be stored with caps tight and under appropriate laboratory conditions.</li> <li>Uncertainty Reference: Taylor, B.N. and Kuyat, C.E., "Guidelines for Evaluating and Expressing the Uncertainty of NIST Measurement Result," NIST Technical Note 1297, U.S. Government Printing Office, Washington, DC, (1994).</li> </ul>	tration calcula etrically using 1 % of the stated 1 pule, should be .B.N. and Kuya .Government P	ted from gr balances th value, unte stored wit t, C.E., "G	avimetric and at are calibrato ss otherwise stu h caps tight an uidelines for E hce, Washingto	and volumetric measurements unless otherwise stated. Inrated with weights traceable to NIST (see above), se stated. In and under appropriate laboratory conditions. for Evaluating and Expressing the Uncertainty of NIST ington, DC, (1994).	arrements unles rraceable to NIS riate laboratory kpressing the Ui	s otherwise star T (see above). conditions. ncertainty of N	led. IST Measurer	nent Result,"			

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1 of 1

Lot # 072423 Part # 91980

Phone: 203-281-2917

FAX: 203-281-2922

torade Conditions	Nuos mon year quanta manistruo aso	es of ignition. No smoking. Prevent the build up of electrosts	c cuside.
recautions for safe handling	Avoid contact with skin and eyes. Av		
Section VII. HANDLING AND	3DAROTS		
dn uzəj;	Contain spillage, and then collect and place	r container for disposal according to local regulations (see se	(SF noi).
invironmental precautions	revent further leakage or spillage if safe to	o so. Do not let product enter drains.	
ersonal precautions	Wear respiratory protection. Avoid breathing gnition. Vapours accumulate to form explosi	vapors, mist or gas. Ensure adequate ventilation. Remove all e concentrations.	sources of
Section VI. ACCIDENTAL R	SERURASM SEASURES		
Azardous Decomposition produ	cets Carbon oxides		
suitable extinguishing media rotective equipment for fire	Use water spray, alcohol-resistant fo Wear self contained breathing appar	m, dry chemical or carbon dioxide. tus for fire ກິghting if necessary.	
Section V. FIREFIGHTING N	SARUSAA		
bewollswe †	Do NOT induce vomiting. Rinse mouth with		
n case of eye contact	Rinse thoroughly with plenty of water for at I		
f inhaled n case of skin contact	It inhaled, move person into fresh air. If not l Wash with soap and water. Consult a physi	reathing, give artificial respiration. Consult a physician.	
General advice	Consult a physician. Show this safety data s	neet to the doctor in attendance. Move to safe area.	
Section IV. FIRST AID MEA	SERUS		
INTENDED USE: REFEREI	CE MATERIAL		
See Certified Weight R	port For Other Analytes Prese	nt At Trace Quantities.	
Vater		CAS#: 7732-18-5	26 <
Components (Specific Chem	cal Identity; Common Name(s))		(optional) %
Section III - Composition			
oW Isngila	ЯЭрида:b		
	GHS Classification in accor tilated area wash with soap and water	ance with 29 CFR 1910 (OSHA HCS) H315 Causes skin and eye irritation P280 Use gloves, eye protection/fac P305,351,338 If in eyes, remove contacts, rii	s sheild Se with water
Section II - Hazards Identif			
			May 1, 2022
00010017	Hamden CT, 06514	Emergency Telephone International Date Prepared/Revised	1-362-323-3600
Address	44 Rossotto Dr.	Emergency Telephone USA & CANADA	1-362-333-3600
IDENTITY ANALYTIC Manufacturer's Name	AW NI DEVLOSEID DISOLVED IN WE AND SUPADNATE STOLOSAA ABSOLUTE STOLOSAA		1-800-525-008-1
Section I Product and Con	pany identification		
	Safety Data Sheet (SDS)	InsilqmoD AH2O/2HD	

and kept upright to prevent leakage.

100°C

mqq 008 :AWT

Section IX - PHYSICAL/CHEMICAL CHARACTERISTICS

Avoid contact with skin, eyes and clothing. Wash hands thoroughly after handling the product.

Respiratory protection

CAS#: 7732-18-5

Section VIII. EXPOSURE CONTROLS/PERSONAL PROTECTION

Vapor Pressure (mm Hg)

Personal protective equipment

find Poind

Vater

Storage Conditions

Melting Point

Specific Gravity (H2O = 1)

Keep container tightly closed in a dry and well-ventilated place. Containers which are opened must be carefully resealed

Handle with gloves. Gloves must be inspected prior to use.

L

Eye protection.

ΨN

Completely miscible Solubility in Water (Butyl Acetate = 1) AΝ ΑN (I = AIA) (AIR = 1) Evaporation rate

0°C

Hazardous decomposition products - No data available biove of sleneteM ΑN biove of anoitiono. AN Possibility of hazardous reactions ΑN Stable under recommended storage conditions. Chemical stability Section X. STABILITY AND REACTIVITY CLEAR, COLORLESS LIQUID WITH SLIGHT CHEMICAL ODOR. Appearance and Odor

ΑN Section XI. TOXICOLOGICAL INFORMATION

Causes skin initation. LD50 Dermal - Guinea pig ΨN LC50 Inhalation - Rat ΨN LD50 Oral - Rat

Rev imitation

Section XII. ECOLOGICAL INFORMATION

Dispose with normal Laboratory Solvent Waste. Section XIII. DISPOSAL CONSIDERATIONS

Proper shipping name: Water spooß snolegnep toN (SU) TOO

Section XIV. TRANSPORT INFORMATION

ΨN

ΨN

EC<sub>20</sub>

0907

Section XV. REGULATORY INFORMATION

SARA 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 PRECAUTION, As new documented general safety information becomes available, Absolute Standards Inc. will periodically revise this Material Safety Data Sheet. If PRECAUTION RRY INFORMATION. As new documented general safety information becomes available, Absolute Standards Inc. will periodically revise this Material Safety Data Sheet. If The intomation 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. equ); 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 flobal 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 flobal Harmonized System (GHS). This document is intended only as a guide to the appropriate precautionary handling. The user is responsible for determining the precautions and dangers of this chemical flobal floration for the precautions and context of the theorem of the appropriate personnel, or supervised by a person floration of the appropriate including cye and florate of this protective sections and context with material application. Depending on usage, protective colohing give and face and the precautions and dangers of this chemical to print application. Depending on usage, protective colohing cye and face grant and a respirations must be eased to avoid contact with material applications. Exposure to this protecting or the precautions and contact with material applications and contact material applications and contact material applications and contact material applications and and applications and applications and applications and applications approximates applications and applications and applications and applications and applications and applications approximates applications and applications and applications and applications and applications approximates applications and applications and applications applications and applications and applications and applications applications and applications applications and applications and applications and applications applications and applications applications and applicatio

Proper shipping name: Water

Not dangerous goods

ATAI

				10 C C									
Absolute (800-368-1131 www.absolute	Absolute Standards, Inc. 800-368-1131 www.absolutestandards.com			v	Certified	Certified Reference Material CRM	Material	CRM				ANAB ISO 1 AR-1539 Ce https://Absolut	ANAB ISO 17034 Accredited AR-1539 Certificate Number https://Absolutestandards.com
CERTIFIED W	CERTIFIED WEIGHT REPORT Part Number: Lot Number: Description:	91980 072423 Acrolein				Solvent(s): Water	<b>Lot#</b> 102422Q			Hebriel	Nellond		
	Expiration Date: Recommended Storage: Nominal Concentration (µg/mL);	082423 Refrigerate (4 °C) 5000	4 °C)		5	Zem			Formulated By:	1 Dr	Gabriel Helland	0/2423 DATE 072423	
Weight(	Nis! lest ID#: 6UTB Weight(s) shown below were combined and diluted to (mL): Lot	6UTB diluted to (mL): Lot	10.0 Nominal	5E-05 0.001 Purity	Balance Uncertainly Flask Uncertainty Uncertainty	uy Target	Actual	Actual	Expanded Expanded	By: F	Colvent Safetv Info. On Attached and	DATE	
1. Acrolein		RM# Number 5 103755R09M	Conc (µg/mL) 5000	(%)	Purity 0.5	Weight(g) 0.05160	Weight(g)	Conc (Jg/mL)			OSHA PEL (TWA)	LD50	
<u>r</u> rr	Method: GC6MSD-1. Detector: Muss 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.) Rate = 4°C/min., Injector Temp. = 200°C. Detector Temp. = 220°C. Analyst: Pedro Rentas. NOTB: Due to the instability of acrolein in solutions of acrolein, and any dilutions thereof, about the test immediately Long term storage is not recommended. Please contact our technical department if further information is required.	ve Detector (Scan mode, ector Temp. = 220°C. Al	). Column: Voo nalyst: Pedro Re partment if furth	ol (60m X ( :ntas. NOT ver informat	Context (Context), 25mm ID X 1. E: Due to the in ion is required.	5µm film thickness tability of acrole	ss). Oven Profile in in solution, all	:: Temp. 1 = 35	C (Time 1 = 1 rolein, and any	Omin.), Temp. 2-	200°C (Time 2 = 8.75 mir should be used immediate	on-rat 46mg/kg	
Abundance	TIC: [B(	TIC: [BSB2]79005.D				Abundance	31	Scan 2:	32 (8.927 r	Scan 232 (8.927 min): [BSB2]79005.D	79005.D	٦	
250000	8.93					60000							
20000		1	0////			5000	0	20					
15000						4000	~						
10000						30000	6						
						2000	0						
00000						10000	37	~					
Time>0	10.00 15.00 20.00 25.00 30.00 35.00 40.00 45.00 50.00 55.00	30.00 35.00 40	.00 45.00	50.00 {	55.00 60.00	0 <z )<="" ll="" td=""><td>20 30</td><td>44 (40 50 60</td><td>65 75 85 <b>70 80 9</b></td><td>85 90 100 1</td><td>119         158         169           90         100         110         120         130         140         150         170</td><td>158 169 50 160 170</td><td></td></z>	20 30	44 (40 50 60	65 75 85 <b>70 80 9</b>	85 90 100 1	119         158         169           90         100         110         120         130         140         150         170	158 169 50 160 170	
	<ul> <li>The cert</li> <li>Standart</li> <li>Standart</li> <li>Standart</li> <li>Standart</li> <li>Uncertai</li> <li>NIST Te</li> </ul>	<ul> <li>The certified value is the concentration calculated from gravimetric and volumetric measurements unless otherwise stated.</li> <li>Standards are prepared gravimetrically using balances that are calibrated with weights traceable to NIST (see above).</li> <li>Slandbards are certified (<i>A</i><sup>1,</sup>) 0.5% of the stated value, unless otherwise stated.</li> <li>All Standards, after opening anyoule, should be stored with caps tight and under appropriate laboratory conditions.</li> <li>Uncertainty Reference: Taylor, B.N. and Kuyat, C.E., "Guidelines for Evaluating and Expressing the Uncertainty of NIST Measurement Result," NIST Technical Note 1297, U.S. Government Printing Office, Washington, DC, (1994).</li> </ul>	tration calcula etrically using 1 % of the stated 1 pule, should be .B.N. and Kuya .Government P	ted from gr balances th value, unte stored wit t, C.E., "G	avimetric and at are calibrato ss otherwise stu h caps tight an uidelines for E hce, Washingto	and volumetric measurements unless otherwise stated. Inrated with weights traceable to NIST (see above), se stated. In and under appropriate laboratory conditions. In and under appropriate laboratory conditions. In Evaluating and Expressing the Uncertainty of NIST ington, DC, (1994).	arrements unles rraceable to NIS riate laboratory kpressing the Ui	s otherwise star T (see above). conditions. ncertainty of N	led. IST Measurer	nent Result,"			

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1 of 1

Lot # 072423 Part # 91980

Phone: 203-281-2917

FAX: 203-281-2922

torade Conditions	Nuos mon year quanta manistruo aso	es of ignition. No smoking. Prevent the build up of electrosts	c cuside.
recautions for safe handling	Avoid contact with skin and eyes. Av		
Section VII. HANDLING AND	3DAROTS		
dn uzəj;	Contain spillage, and then collect and place	r container for disposal according to local regulations (see se	(SF noi).
invironmental precautions	revent further leakage or spillage if safe to	o so. Do not let product enter drains.	
ersonal precautions	Wear respiratory protection. Avoid breathing gnition. Vapours accumulate to form explosi	vapors, mist or gas. Ensure adequate ventilation. Remove all e concentrations.	sources of
Section VI. ACCIDENTAL R	SERURASM SEASURES		
Azardous Decomposition produ	cets Carbon oxides		
suitable extinguishing media rotective equipment for fire	Use water spray, alcohol-resistant fo Wear self contained breathing appar	m, dry chemical or carbon dioxide. tus for fire ກິghting if necessary.	
Section V. FIREFIGHTING N	SARUSAA		
bewollswe †	Do NOT induce vomiting. Rinse mouth with		
n case of eye contact	Rinse thoroughly with plenty of water for at I		
f inhaled n case of skin contact	It inhaled, move person into fresh air. If not l Wash with soap and water. Consult a physi	reathing, give artificial respiration. Consult a physician.	
General advice	Consult a physician. Show this safety data s	neet to the doctor in attendance. Move to safe area.	
Section IV. FIRST AID MEA	SERUS		
INTENDED USE: REFEREI	CE MATERIAL		
See Certified Weight R	port For Other Analytes Prese	nt At Trace Quantities.	
Vater		CAS#: 7732-18-5	26 <
Components (Specific Chem	cal Identity; Common Name(s))		(optional) %
Section III - Composition			
oW Isngila	ЯЭрида:b		
	GHS Classification in accor tilated area wash with soap and water	ance with 29 CFR 1910 (OSHA HCS) H315 Causes skin and eye irritation P280 Use gloves, eye protection/fac P305,351,338 If in eyes, remove contacts, rii	s sheild Se with water
Section II - Hazards Identif			
			May 1, 2022
00010017	Hamden CT, 06514	Emergency Telephone International Date Prepared/Revised	1-362-323-3600
Address	44 Rossotto Dr.	Emergency Telephone USA & CANADA	1-362-333-3600
IDENTITY ANALYTIC Manufacturer's Name	AW NI DEVLOSEID DISOLVED IN WE AND SUPADNATE STOLOSAA ABSOLUTE STOLOSAA		1-800-525-008-1
Section I Product and Con	pany identification		
	Safety Data Sheet (SDS)	InsilqmoD AH2O/2HD	

and kept upright to prevent leakage.

100°C

mqq 008 :AWT

Section IX - PHYSICAL/CHEMICAL CHARACTERISTICS

Avoid contact with skin, eyes and clothing. Wash hands thoroughly after handling the product.

Respiratory protection

CAS#: 7732-18-5

Section VIII. EXPOSURE CONTROLS/PERSONAL PROTECTION

Vapor Pressure (mm Hg)

Personal protective equipment

find Poind

Vater

Storage Conditions

Melting Point

Specific Gravity (H2O = 1)

Keep container tightly closed in a dry and well-ventilated place. Containers which are opened must be carefully resealed

Handle with gloves. Gloves must be inspected prior to use.

L

Eye protection.

ΨN

Completely miscible Solubility in Water (Butyl Acetate = 1) AΝ ΑN (I = AIA) (AIR = 1) Evaporation rate

0°C

Hazardous decomposition products - No data available biove of sleneteM ΑN biove of anoitiono. AN Possibility of hazardous reactions ΑN Stable under recommended storage conditions. Chemical stability Section X. STABILITY AND REACTIVITY CLEAR, COLORLESS LIQUID WITH SLIGHT CHEMICAL ODOR. Appearance and Odor

ΑN Section XI. TOXICOLOGICAL INFORMATION

Causes skin initation. LD50 Dermal - Guinea pig ΨN LC50 Inhalation - Rat ΨN LD50 Oral - Rat

Rev imitation

Section XII. ECOLOGICAL INFORMATION

Dispose with normal Laboratory Solvent Waste. Section XIII. DISPOSAL CONSIDERATIONS

Proper shipping name: Water spooß snolegnep toN (SU) TOO

Section XIV. TRANSPORT INFORMATION

ΨN

ΨN

EC<sub>20</sub>

0907

Section XV. REGULATORY INFORMATION

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

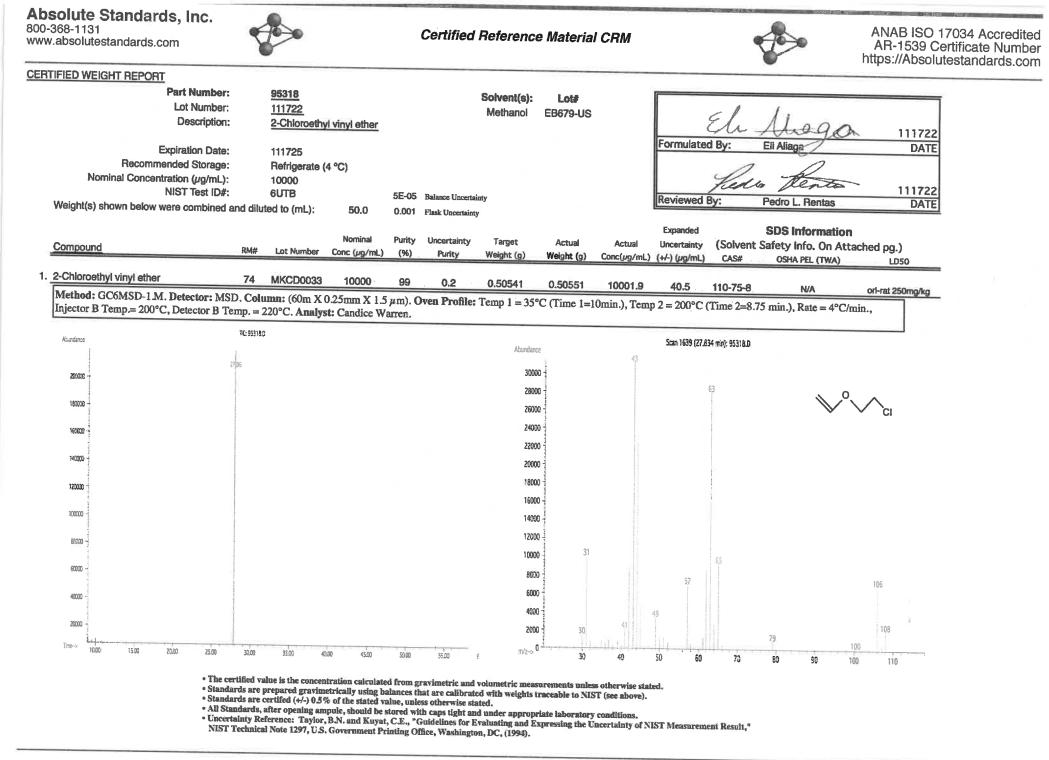
#### Section XVI. Misc. INFORMATION

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 PRECAUTION, As new documented general safety information becomes available, Absolute Standards Inc. will periodically revise this Material Safety Data Sheet. If PRECAUTION RRY INFORMATION. As new documented general safety information becomes available, Absolute Standards Inc. will periodically revise this Material Safety Data Sheet. If The intomation 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. equ); 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 flobal 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 flobal Harmonized System (GHS). This document is intended only as a guide to the appropriate precautionary handling. The user is responsible for determining the precautions and dangers of this chemical flobal floration for the precautions and context of the theorem of the appropriate personnel, or supervised by a person floration of the appropriate including cye and florate of this protective sections and context with material application. Depending on usage, protective colohing give and face and the precautions and dangers of this chemical to print application. Depending on usage, protective colohing cye and face grant and a respirations must be eased to avoid contact with material applications. Exposure to this protecting or the precautions and contact with material applications and contact material applications and contact material applications and contact material applications and and applications and applications and applications and applications approximates applications and applications and applications and applications and applications and applications approximates applications and applications and applications and applications and applications approximates applications and applications and applications applications and applications and applications and applications applications and applications applications and applications and applications and applications applications and applications applications and applicatio

Proper shipping name: Water

Not dangerous goods

ATAI



• The ce • Standa • Standa • All Sta • Uncert NIST	1002 022 021 001	192000 -	Abordance	1. 2-Chloroethyl vinyl ether     74     MKCD0033     10000     99       Method:     GC6MSD-1 M. Detector:     MSD. Column: (60m X 0.25mm X 1.5 μm).       Injector B Temp.=     200°C, Detector B Temp.=     220°C. Analyst: Candice Warren.	Compound       Contrology         Expiration Date:       121324         Recommended Storage:       Refrigeration         Nominal Concentration (µg/mL):       10000         NIST Test ID#:       6UTB         Weight(s) shown below were combined and diluted to (mL):         Compound       RM#	CERTIFIED WEIGHT REPORT Part Number: Lot Number: Description	Absolute Standards, Inc. 800-368-1131 www.absolutestandards.com
tified value is the concentration calcula rds are prepared gravimetrically using l rds are certified (+/-) 0.5% of the stated indards, after opening ampule, should anards, after opening ampule, should anards, after opening angule, should anards, after opening angule, and Kuya lichnical Note 1297, U.S. Government I	30.00 40.00 4500	20	Caltas	74         MKCD0033         10000           0. Column: (60m X 0.25mm X 1.         1.           mp. = 220°C. Analyst: Candice W	2-chioroenry vinyi emer 121324 Refrigerate (4 °C) 10000 6UTB nd diluted to (mL): 30.0 Nominal RM# Lot Number Conc (vg/mL)	95318 121321	*
<ul> <li>The certified value is the concentration calculated from gravimetric and volumetric measurements unless otherwise stated.</li> <li>Standards are prepared gravimetrically using balances that are calibrated with weights traceable to NIST (see above).</li> <li>Standards are certified (+) 0.5% of the stated value, unless otherwise stated.</li> <li>All Standards, after opening annpule, should be stored with caps tight and under appropriate laboratory conditions.</li> <li>Uncertainty Reference: Taylor, B.N. and Kuyat, C.E., "Guidelines for Evaluating and Expressing the Uncertainty of NIST Measurement Result," NIST Technical Note 1297, U.S. Government Printing Office, Washington, DC, (1994).</li> </ul>	24000 22000 22000 18000 16000 100000 100000 10000 10000 10000 10000 10000 10000 10000	30000 - 28000 -	Abundance	99 0.2 0.30320 0.30411 5 μm). Oven Profile: Temp 1 = 35°C (Time 1: Varren.	5E-05 Balance Uncertainty 0.0003 Flask Uncertainty Purity Uncertainty Target Actual ) (%) Purity Weight (g) Weight (g)	<b>Solvent(s): Lot</b> # Methanol EA899-US	Certified Reference Material
less otherwise stated. NST (see above). Pry conditions. 2 Uncertainty of NIST Measurement Result,"	10       10         10       10	3	Szan 1639 (27,834 mm): 95318.0 43	10030.2 40.7 110-75-8 =10min.), Temp 2 = 200°C (Time 2=8.75 m	Formulated By: Benson C Formulated By: Pedro L. F Reviewed By: Pedro L. F Expanded SDS Info Actual Uncertainty (Solvent Safety Inf Conc(ug/mL) (++) (ug/mL) CAS# 05HA P	S.	al CRM
				n-ra	121321       han     DATE       han     DATE       121321       Instantion       o. On Attached pg.)       LICTWA)     LDS0		ANAB ISO 17034 Accredited AR-1539 Certificate Number https://Absolutestandards.com

1 of 1

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• The ce • Standa • Standa • All Sta • Uncert NIST	1002 022 021 001	192000 -	Appdarce	1. 2-Chloroethyl vinyl ether     74     MKCD0033     10000     99       Method:     GC6MSD-1 M. Detector:     MSD. Column: (60m X 0.25mm X 1.5 μm).       Injector B Temp.=     200°C, Detector B Temp.=     220°C. Analyst: Candice Warren.	Compound       2-Onloree         Expiration Date:       121324         Recommended Storage:       Refrigeration         Nominal Concentration (µg/mL):       10000         NIST Test ID#:       6UTB         Weight(s) shown below were combined and diluted to (mL):         Compound       RM#	CERTIFIED WEIGHT REPORT Part Number: Lot Number: Description	Absolute Standards, Inc. 800-368-1131 www.absolutestandards.com
tified value is the concentration calcula rds are prepared gravimetrically using l rds are certified (+/-) 0.5% of the stated indards, after opening ampule, should anards, after opening ampule, should anards, after opening angule, should anards, after opening angule, and Kuya lichnical Note 1297, U.S. Government I	30.00 40.00 4500	20	Caltas	74         MKCD0033         10000           0. Column: (60m X 0.25mm X 1.         1.           mp. = 220°C. Analyst: Candice W	2-chioroenry vinyi emer 121324 Refrigerate (4 °C) 10000 6UTB nd diluted to (mL): 30.0 Nominal RM# Lot Number Conc (vg/mL)	95318 121321	*
<ul> <li>The certified value is the concentration calculated from gravimetric and volumetric measurements unless otherwise stated.</li> <li>Standards are prepared gravimetrically using balances that are calibrated with weights traceable to NIST (see above).</li> <li>Standards are certified (+1) 0.5% of the stated value, unless otherwise stated.</li> <li>All Standards, after opening annpule, should be stored with caps tight and under appropriate laboratory conditions.</li> <li>Uncertainty Reference: Taylor, B.N. and Kuyat, C.E., "Guidelines for Evaluating and Expressing the Uncertainty of NIST Measurement Result," NIST Technical Note 1297, U.S. Government Printing Office, Washington, DC, (1994).</li> </ul>	24000 22000 22000 18000 16000 100000 100000 10000 10000 10000 10000 10000 10000 10000	30000 - 28000 -	Abundance	99 0.2 0.30320 0.30411 5 μm). Oven Profile: Temp 1 = 35°C (Time 1: Varren.	5E-05 Balance Uncertainty 0.0003 Flask Uncertainty Purity Uncertainty Target Actual ) (%) Purity Weight (g) Weight (g)	<b>Solvent(s): Lot</b> # Methanol EA899-US	Certified Reference Material
less otherwise stated. NST (see above). Pry conditions. 2 Uncertainty of NIST Measurement Result,"	10       10         10       10	3	Szan 1639 (27,834 mm): 95318.0 43	10030.2 40.7 110-75-8 =10min.), Temp 2 = 200°C (Time 2=8.75 m	Formulated By: Benson C Formulated By: Pedro L. F Reviewed By: Pedro L. F Expanded SDS Info Actual Uncertainty (Solvent Safety Inf Conc(ug/mL) (++) (ug/mL) CAS# 05HA P	S.	al CRM
				n-ra	121321       han     DATE       han     DATE       121321       Instantion       o. On Attached pg.)       LICTWA)     LDS0		ANAB ISO 17034 Accredited AR-1539 Certificate Number https://Absolutestandards.com

1 of 1

Printed: 3/28/2022, 4:16:41 PM



**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.

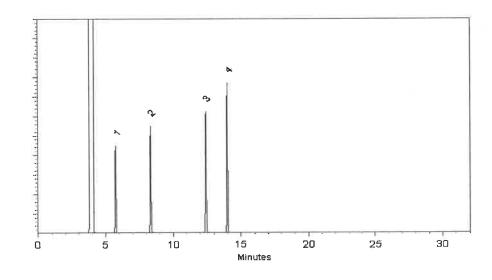
Catalog No. :	30006	Lot No.:	A0186767	
Description :	VOA Calibration Mix #1			
	VOA Calibration Mix #1 5,000 1mL/ampul	)µg/mL, P&T Methanol/W	/ater(90:10),	
Container Size :	2 mL	Pkg Amt:	> 1 mL	
Expiration Date :	September 30, 2025	Storage:	0°C or colder	
_		Ship:	Ambient	

#### CERTIFIED VALUES

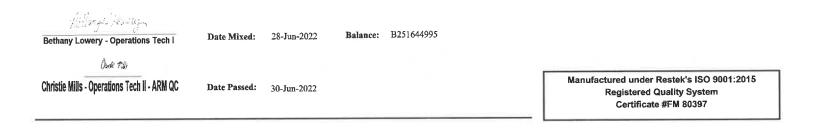
Elution Order		Сотро	und-	Grav. (weight/			Expanded (95% C.L.;	Uncertainty K=2)	
1	Acetone CAS # Purity	67-64-1 99%	(Lot MKCQ7914)	5,046.8	µg/mL	+/- +/- +/-	29.3427 304.4978 305.2207	μg/mL μg/mL μg/mL	Gravimetric Unstressed Stressed
2	2-Butano CAS # Purity	one (MEK) 78-93-3 99%	(Lot SHBN2844)	5,048.8	µg/mL	+/- +/- +/-	29.3544 304.6185 305.3417	μg/mL μg/mL μg/mL	Gravimetric Unstressed Stressed
3	4-Methy CAS # Purity	1-2-pentanone (MIBK) 108-10-1 99%	(Lot SHBN3601)	5,045.0	µg/mL	+/- +/- +/-	29.3321 304.3872 305.1099	μg/mL μg/mL μg/mL	Gravimetric Unstressed Stressed
4	2-Hexan CAS # Purity	one 591-78-6 99%	(Lot MKCQ6663)	5,045.3	µg/mL	+/- +/- +/-	29.3340 304.4073 305.1300	μg/mL μg/mL μg/mL	Gravimetric Unstressed Stressed
Solvent:	D&TMO	thanol/Water (90.10)							

Solvent: P&T Methanol/Water (90:10) CAS # 67-56-1/7732-18-5 Purity 99% Column: 105m x 0.53mm x 3.0µm Rtx-502.2 (cat.#10910) Carrier Gas: hydrogen-constant pressure 11.0 psi. Temp. Program: 40°C (hold 2 min.) to 240°C @ 8°C/min. (hold 5 min.) Inj. Temp: 200°C Det. Temp: 250°C Det. Type:

FID



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.



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

#### Expiration Notes:

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

#### Purity Notes:

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

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

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

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

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

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

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

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

#### Manufacturing Notes:

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

#### Handling Notes:

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



## **CERTIFIED REFERENCE MATERIAL**

## **Certificate of Analysis**



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

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

#### CERTIFIED VALUES

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

CAS # 67-56-1 Purity 99% 

 Column:

 105m x 0.53mm x 3.0µm

 Rtx-502.2 (cat.#10910)

 Carrier Gas:

 hydrogen-constant pressure 11.0 psi.

 Temp. Program:

 40°C (hold 2 min.) to 240°C

 @ 8°C/min. (hold 5 min.)

 Inj. Temp:

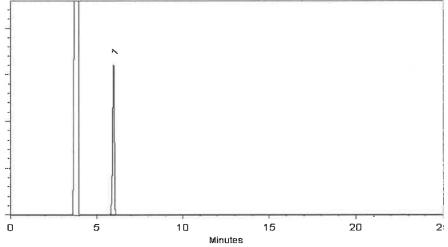
 200°C

 Det. Temp:

 250°C

 Det. Type:

 FID



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

Mr Julli

John Friedline - Operations Technician I

Date Mixed: 16-Feb-2022

022 Balance: B442140311



Date Passed: 21-Feb-2022

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

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

#### **Expiration Notes:**

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

#### **Purity Notes:**

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

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

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

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

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

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

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

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

#### Manufacturing Notes:

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

#### Handling Notes:

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



**CERTIFIED REFERENCE MATERIAL** 

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## **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.

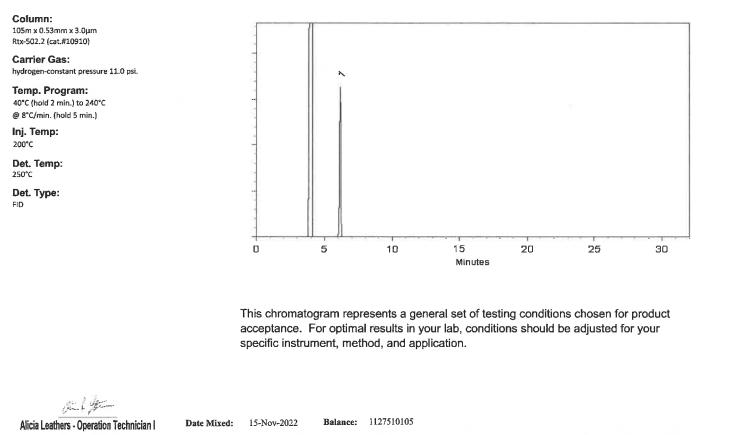
Catalog No. :	30470	Lot No.: <u>A0191703</u>					
Description :	tert-Butanol Standard						
	tert-Butanol Std 50,000µg/mL, P&T Methanol, 1mL/ampul						
Container Size :	2 mL	Pkg Amt:	> 1 mL				
Expiration Date :	November 30, 2025	Storage:	0°C or colder				
		Ship:	Ambient				

#### CERTIFIED VALUES

Elution Order	Compound		Grav. Conc. (weight/volume)		Expanded Uncertainty (95% C.L.; K=2)		
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 <a href="http://www.restek.com/Contact-Us">www.restek.com/Contact-Us</a> for use recommendations if your shipment was in-transit for more than 7 days at non-standard temperature conditions.
- Apply the certified combined unstressed uncertainty value if the product was received under standard shipping conditions. Apply the certified combined stressed uncertainty value if the product was received under non-standard conditions as specified below.

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

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



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## **CERTIFIED REFERENCE MATERIAL**



## **Certificate of Analysis**

chromatographic plus



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

Catalog No. :	30067	Lot No.: A0191805
Description :	4-Bromofluorobenzene Standard	
	4-Bromofluorobenzene Standard 2, 1mL/ampul	500μg/mL, P&T Methanol,
Container Size :	2 mL	Pkg Amt: _ > 1 mL
Expiration Date :	November 30, 2027	Storage: 0°C or colder
		Ship: Ambient

#### CERTIFIED VALUES

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

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

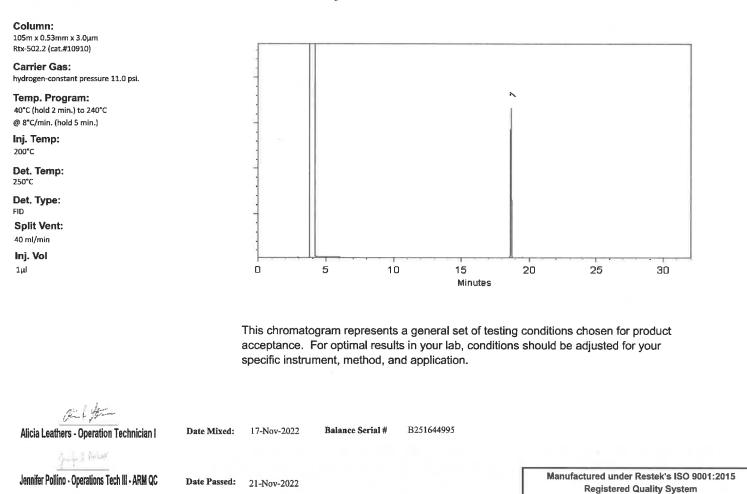
 Solvent:
 P&T Methanol

 CAS #
 67-56-1

 Purity
 99%



### **Quality Confirmation Test**





Certificate #FM 80397

#### **Expiration Notes:**

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

#### **Purity Notes:**

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

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

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

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

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

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

#### Manufacturing Notes:

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

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





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## **CERTIFIED REFERENCE MATERIAL**

## **Certificate of Analysis**

chromatographic plus



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

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

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



## **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:

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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	

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

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

#### Manufacturing Notes:

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

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





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## **CERTIFIED REFERENCE MATERIAL**

## **Certificate of Analysis**

chromatographic plus



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

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

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



## **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:

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

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

#### Manufacturing Notes:

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

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





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## **CERTIFIED REFERENCE MATERIAL**

## **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. :	30042	Lot No.:	A0194279	
<b>Description</b> :	502.2 Calibration Mix #1			
	502.2 Calibration Mix #1 2,000µ	g/mL, P&T Methanol,	ImL/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

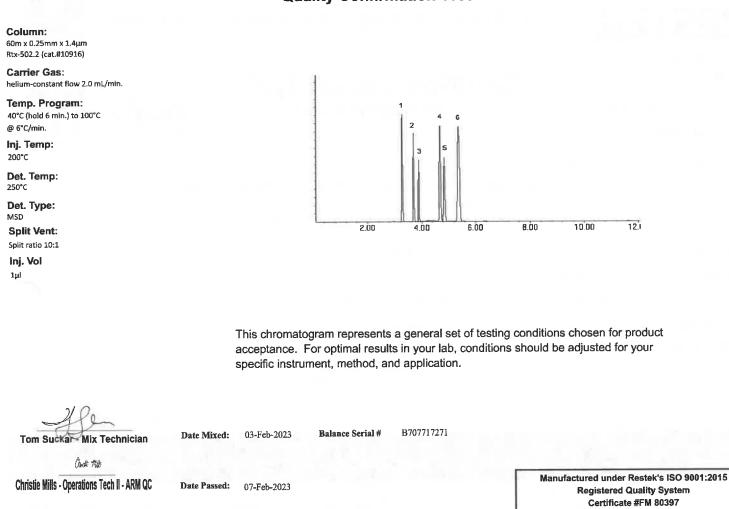
\* Expanded Uncertainty displayed in same units as Grav. Conc.

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

Purity 99%



## **Quality Confirmation Test**



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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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www.restek.com

## **CERTIFIED REFERENCE MATERIAL**

## **Certificate of Analysis**

chromatographic plus



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

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Catalog No. :	30042	Lot No.:	A0194279	
<b>Description</b> :	502.2 Calibration Mix #1			
	502.2 Calibration Mix #1 2,000µ	g/mL, P&T Methanol,	ImL/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
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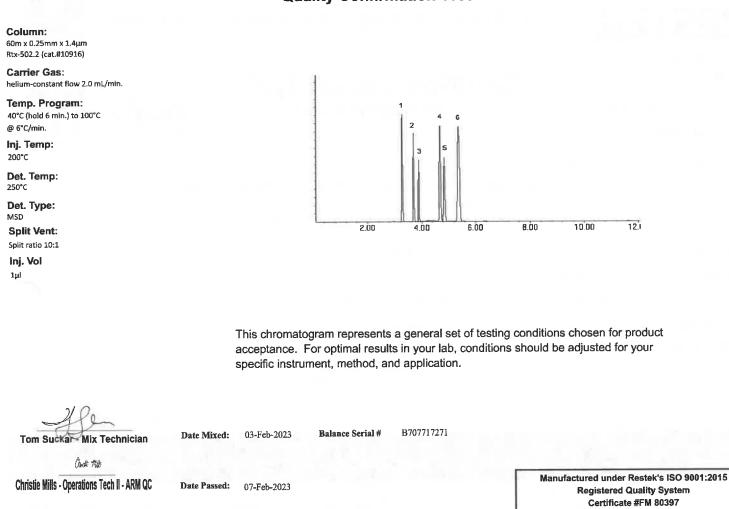
\* Expanded Uncertainty displayed in same units as Grav. Conc.

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

Purity 99%



## **Quality Confirmation Test**



### Expiration Notes:

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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.:	A0196115
Description :	8260B Acetates Mix		
	8260B Acetates Mix 2,000 µg/mL, Pa	&T Methanol, 1mL	/ampul
Container Size :	2 mL	Pkg Amt:	> 1 mL
Expiration Date :	September 30, 2024	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%	2,013.7 μg/mL	+/- 69.6015
2	Vinyl acetate	108-05-4	RD220630	99%	2,020.0 μg/mL	+/- 69.8205
3	Ethyl acetate	141-78-6	SHBP9289	99%	2,019.3 µg/mL	+/- 69.7974
4	Isopropyl acetate	108-21-4	BCCG7069	99%	2,014.0 μg/mL	+/- 69.6131
5	Propyl acetate	109-60-4	TFFKL	99%	2,014.7 μg/mL	+/- 69.6361
6	Butyl acetate	123-86-4	SHBP6314	99%	2,014.0 µg/mL	+/- 69.6131
7	Amyl acetate	628-63-7	41325/1	97%	2,016.3 μg/mL	+/- 69.6928

\* 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**

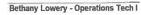
Column: 105m x 0.53mm x 3.0µm Rtx-502.2 (cat.#10910) Carrier Gas: hydrogen-constant pressure 11.0 psi. Temp. Program: 40°C (hold 2 min.) to 240°C @ 8°C/min. (hold 5 min.) Inj. Temp: 200°C Det. Temp: 250°C Det. Type: FID Split Vent: 40 ml/min Inj. Vol 1μΙ This chromatogram represents a general set of testing conditions chosen for product acceptance. For optimal results in your lab, conditions should be adjusted for your

specific instrument, method, and application.

Balance Serial #

B251644995

Belling Hours



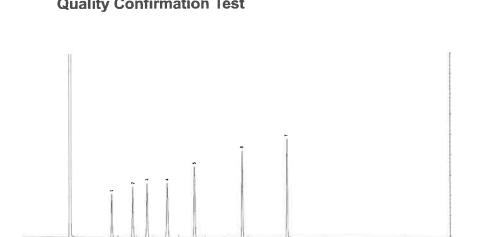
John Jidgett John Lidgett - AD Chemist

Date Passed: 29-Mar-2023

21-Mar-2023

Date Mixed:

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





#### Expiration Notes:

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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.:	A0196115
Description :	8260B Acetates Mix		
	8260B Acetates Mix 2,000 µg/mL, Pa	&T Methanol, 1mL	/ampul
Container Size :	2 mL	Pkg Amt:	> 1 mL
Expiration Date :	September 30, 2024	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%	2,013.7 μg/mL	+/- 69.6015
2	Vinyl acetate	108-05-4	RD220630	99%	2,020.0 μg/mL	+/- 69.8205
3	Ethyl acetate	141-78-6	SHBP9289	99%	2,019.3 µg/mL	+/- 69.7974
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7	Amyl acetate	628-63-7	41325/1	97%	2,016.3 μg/mL	+/- 69.6928

\* 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**

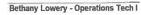
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Balance Serial #

B251644995

Belling Hours



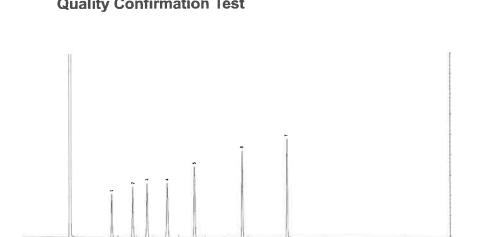
John Jidgett John Lidgett - AD Chemist

Date Passed: 29-Mar-2023

21-Mar-2023

Date Mixed:

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





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**CERTIFIED REFERENCE MATERIAL** 



ISO/IEC 17 025 Acared Testing Laboratory Certificate #3222.02

## **Certificate of Analysis**

gravimetric

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

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

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

#### CERTIFIED VALUES

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

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

Darker 7. Bu

Date Mixed:

Balance: 1127510105

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

Russ Bookhamer - Operations Technician I

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11-Apr-2023



#### **Expiration Notes:**

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**CERTIFIED REFERENCE MATERIAL** 



ISO/IEC 17 025 Acared Testing Laboratory Certificate #3222.02

## **Certificate of Analysis**

gravimetric

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

#### CERTIFIED VALUES

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

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

Darker 7. Bu

Date Mixed:

Balance: 1127510105

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

Russ Bookhamer - Operations Technician I

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11-Apr-2023



#### **Expiration Notes:**

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

#### **Purity Notes:**

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

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

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

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

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

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

### **Manufacturing Notes:**

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

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





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## **CERTIFIED REFERENCE MATERIAL**

# **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. :	30042	Lot No.:	A0197644	
Description :	502.2 Calibration Mix #1			
	502.2 Calibration Mix #1 2,0	00µg/mL, P&T Methanol,	1mL/ampul	
Container Size :	2 mL	- Pkg Amt:	> 1 mL	
Expiration Date :	January 31, 2030	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%	2,001.6 µg/mL	+/- 112.7159
2	Chloromethane (methyl chloride)	74-87-3	SHBM9611	99%	2,002.0 µg/mL	+/- 112.7840
3	Vinyl chloride	75-01-4	00015559	99%	2,002.2 µg/mL	+/- 112.6713
4	Bromomethane (methyl bromide)	74-83-9	101604	99%	2,006.4 µg/mL	+/- 112.8861
5	Chloroethane (ethyl chloride)	75-00-3	107-401039114-1	99%	2,000.9 µg/mL	+/- 112.5990
6	Trichlorofluoromethane (CFC-11)	75-69-4	MKCL8411	99%	1,999.2 μg/mL	+/- 112.4861

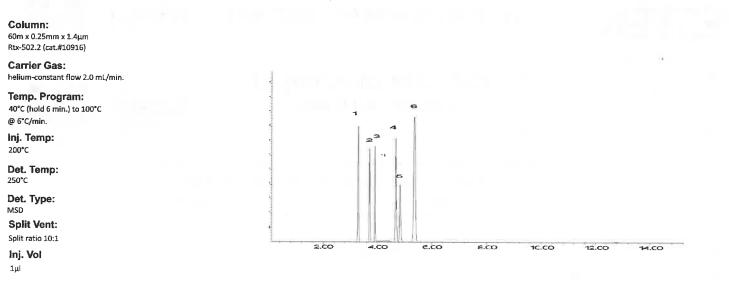
\* Expanded Uncertainty displayed in same units as Grav. Conc.

Solvent: P&T Methanol

> CAS # 67-56-1

Purity 99%





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.



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



#### **Expiration Notes:**

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

#### **Purity Notes:**

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

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

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

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

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

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

#### Manufacturing Notes:

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

#### Handling Notes:

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

## **Certificate of Analysis**

chromatographic plus





MEC 17025 Accredited Testing Laboratory Certificate #3222.02

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

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

Catalog No. :	30489	Lot No.:	A0199224
Description :	8260B Acetates Mix		
	8260B Acetates Mix 2,000 µg/mL, Pa	&T Methanol, 1mL	/ampul
Container Size :	2 mL	Pkg Amt:	> 1 mL
Expiration Date :	December 31, 2024	Storage:	-20°C or colder

#### 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%	2,015.0 μg/mL	+/- 69.6476
2	Vinyl acetate	108-05-4	RD220630	99%	2,014.3 µg/mL	+/- 69.6246
3	Ethyl acetate	141-78-6	SHBP9289	99%	2,012.7 μg/mL	+/- 69.5670
4	Isopropyl acetate	108-21-4	BCCG7069	99%	2,017.0 μg/mL	+/- 69.7168
5	Propyl acetate	109-60-4	KLOBM	99%	2,007.7 μg/mL	+/- 69.3942
6	Butyl acetate	123-86-4	SHBP6314	99%	2,014.3 μg/mL	+/- 69.6246
7	Amyl acetate	628-63-7	41325/1	97%	2,012.1 μg/mL	+/- 69.5475

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

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

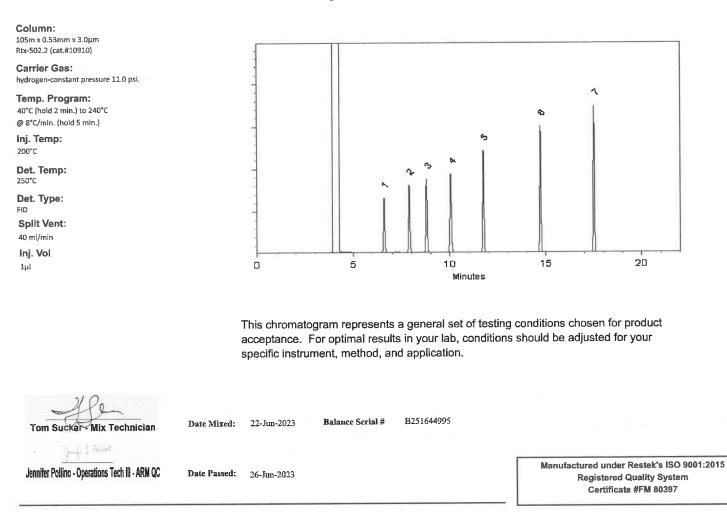
Tech Tips:

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**





#### Expiration Notes:

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

#### Purity Notes:

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

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

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

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

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

#### **Manufacturing Notes:**

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

#### Handling Notes:

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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. :	<u>30006</u> Lot No.: <u>A0200785</u>					
<b>Description</b> :	VOA Calibration Mix #1					
	VOA Calibration Mix #1 5,000µg 1mL/ampul	/mL, P&T Methanol/W	ater(90:10),			
Container Size :	2 mL	Pkg Amt:	> 1 mL			
Expiration Date :	November 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%	5,018.5 μg/mL	+/- 173.4162
2	2-Butanone (MEK)	78-93-3	SHBL5543	99%	5,016.0 μg/mL	+/- 173.3298
3	4-Methyl-2-pentanone (MIBK)	108-10-1	SHBP4724	99%	5,010.7 μg/mL	+/- 173.1455
4	2-Hexanone	591-78-6	MKCQ6663	99%	5,015.0 µg/mL	+/- 173.2952

\* 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%



Carrier Gas: hydrogen-constant pressure 11.0 psi.

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

Inj. Temp: 200°C

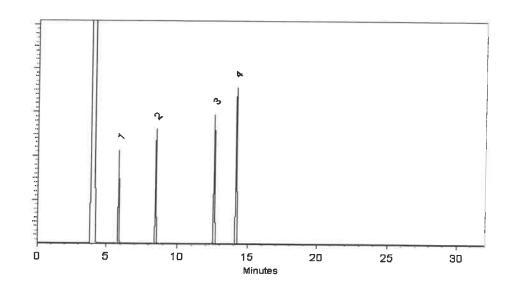
Det. Temp: 250°C

Det. Type: FID

Split Vent: 40 ml/min

lnj. Vol

1µ!



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.

the in

Laith Clemente - Operations Technician I

Date Mixed: 09-Aug-2023

Balance Serial # B707717271

Mandatas

Marlina Cowan - Operations Tech II ARM QC

Date Passed: 16-Aug-2023

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.
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  parent compound in solution.
- Purity of isomeric compounds is reported as the sum of the isomers.
- Purity values are rounded to the nearest whole number.

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

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

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

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

#### Manufacturing Notes:

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

#### Handling Notes:

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

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#### **CERTIFIED REFERENCE MATERIAL**

# **Certificate of Analysis**

chromatographic plus





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

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

Catalog No. :	<u>30006</u> Lot No.: <u>A0200785</u>					
<b>Description</b> :	VOA Calibration Mix #1					
	VOA Calibration Mix #1 5,000µg 1mL/ampul	/mL, P&T Methanol/W	ater(90:10),			
Container Size :	2 mL	Pkg Amt:	> 1 mL			
Expiration Date :	November 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%	5,018.5 μg/mL	+/- 173.4162
2	2-Butanone (MEK)	78-93-3	SHBL5543	99%	5,016.0 μg/mL	+/- 173.3298
3	4-Methyl-2-pentanone (MIBK)	108-10-1	SHBP4724	99%	5,010.7 μg/mL	+/- 173.1455
4	2-Hexanone	591-78-6	MKCQ6663	99%	5,015.0 µg/mL	+/- 173.2952

\* 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%



Carrier Gas: hydrogen-constant pressure 11.0 psi.

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

Inj. Temp: 200°C

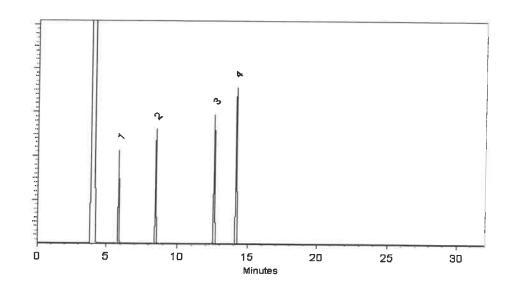
Det. Temp: 250°C

Det. Type: FID

Split Vent: 40 ml/min

lnj. Vol

1µ!



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the in

Laith Clemente - Operations Technician I

Date Mixed: 09-Aug-2023

Balance Serial # B707717271

Mandatas

Marlina Cowan - Operations Tech II ARM QC

Date Passed: 16-Aug-2023

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
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  parent compound in solution.
- Purity of isomeric compounds is reported as the sum of the isomers.
- Purity values are rounded to the nearest whole number.

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

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

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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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#### Handling Notes:

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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. :	<u>30006</u> Lot No.: <u>A0200785</u>					
<b>Description</b> :	VOA Calibration Mix #1					
	VOA Calibration Mix #1 5,000µg 1mL/ampul	/mL, P&T Methanol/W	ater(90:10),			
Container Size :	2 mL	Pkg Amt:	> 1 mL			
Expiration Date :	November 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%	5,018.5 μg/mL	+/- 173.4162
2	2-Butanone (MEK)	78-93-3	SHBL5543	99%	5,016.0 μg/mL	+/- 173.3298
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4	2-Hexanone	591-78-6	MKCQ6663	99%	5,015.0 µg/mL	+/- 173.2952

\* 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%



Carrier Gas: hydrogen-constant pressure 11.0 psi.

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

Inj. Temp: 200°C

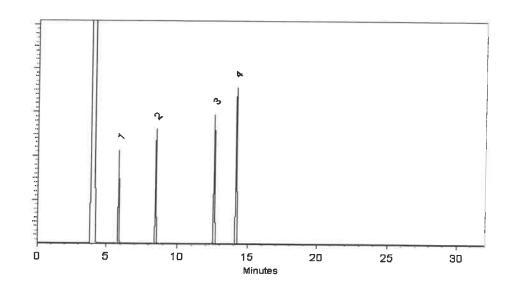
Det. Temp: 250°C

Det. Type: FID

Split Vent: 40 ml/min

lnj. Vol

1µ!



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.

the in

Laith Clemente - Operations Technician I

Date Mixed: 09-Aug-2023

Balance Serial # B707717271

Mandatas

Marlina Cowan - Operations Tech II ARM QC

Date Passed: 16-Aug-2023

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

#### **Expiration Notes:**

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- 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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#### Handling Notes:

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

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#### **CERTIFIED REFERENCE MATERIAL**

## **Certificate of Analysis**

chromatographic



#### 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. :	555408-FL         Lot No.: A0205177					
Description :	Custom Vinyl Acetate Standard					
	Custom Vinyl Acetate Standard 8,000µg/mL, P&T Methanol, 1mL/ampul					
Container Size :	2 mL	Pkg Amt:	> 1 mL			
Expiration Date :	June 30, 2025	Storage:	-20°C or colder			
Handling:	This product is photosensitive.	Ship:	On Ice			

#### CERTIFIED VALUES

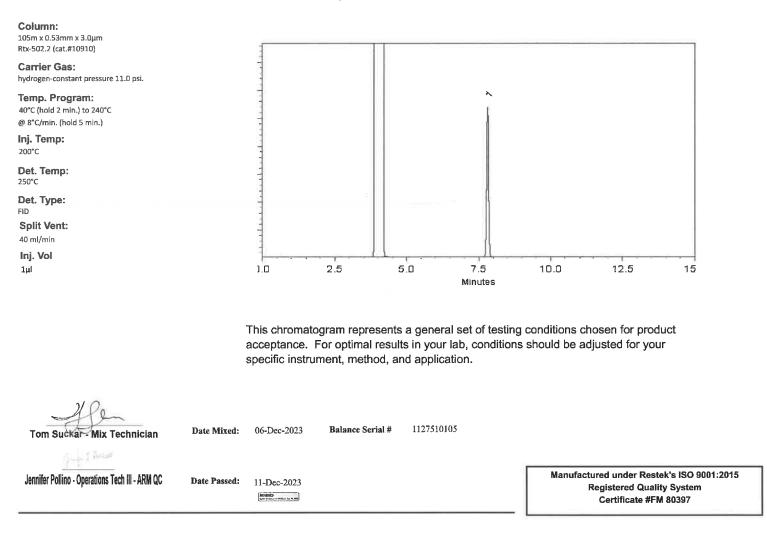
Elution Order	Compound	CAS #	Lot #	Purity	Grav. Conc. (weight/volume)	Expanded Uncertainty * (95% C.L.; K=2)
1	Vinyl acetate	108-05-4	RP231030CTH	98%	8,047.8 μg/mL	+/- 278.1675
			* Expanded Ur	ncertaint	y displayed in same	units as Grav. Conc.

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.







#### **Expiration Notes:**

- Expiration date valid for unopened ampul stored in compliance with the recommended conditions.
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- Purity of isomeric compounds is reported as the sum of the isomers.
- Purity values are rounded to the nearest whole number.

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

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

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

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

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

#### Manufacturing Notes:

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

#### Handling Notes:

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





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#### **CERTIFIED REFERENCE MATERIAL**

12



chromatographic



CEMRA ISOM



#### 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. :	555408-SL         Lot No.:         A0205179				
Description :	Custom Vinyl Acetate Standard Custom Vinyl Acetate Standard 8,000µg/mL, P&T Methanol, 1mL/ampul				
Container Size :	2 mL	Pkg Amt:	> 1 mL		
Expiration Date :	June 30, 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	Vinyl acetate	108-05-4	RP231030CTH	98%	8,075.2 μg/mL	+/- 279.1159

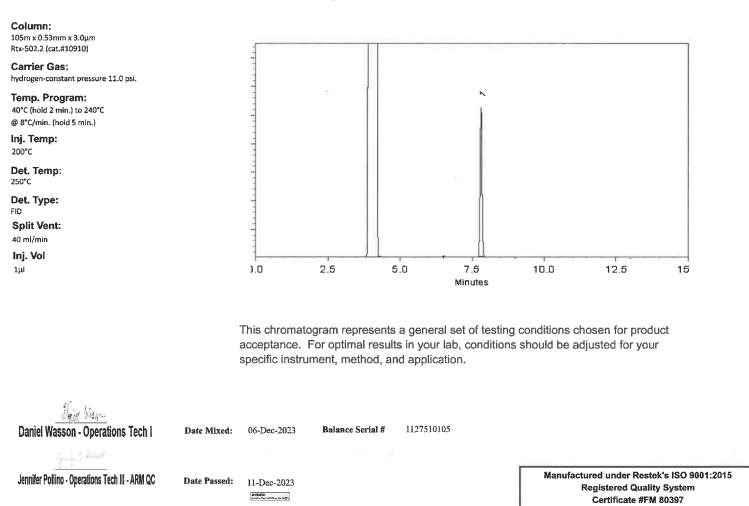
\* Expanded Uncertainty displayed in same units as Grav. Conc.

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.







#### **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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• 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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chromatographic



CEMRA ISOM



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	Custom Vinyl Acetate Standard 8	,000µg/mL, P&T Meth	aanol, 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)
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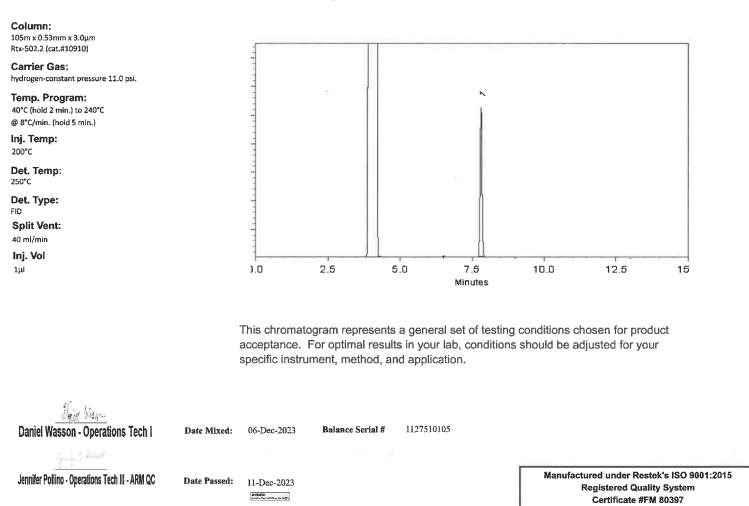
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  parent compound in solution.
- Purity of isomeric compounds is reported as the sum of the isomers.
- Purity values are rounded to the nearest whole number.

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

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• 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
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#### Handling Notes:

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





**CERTIFIED REFERENCE MATERIAL** 

**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,
<b>Container Size :</b>	2 mL Pkg Amt: > 1 mL	
Expiration Date :	April 30, 2027 Storage: 10°C or colder	r colder

VALUES CERTIFIED

Ship: Ambient

Componen t#	Compound	CAS #	Lot #	Purity	Grav. Conc. (weight/volume)		Expanded Uncertainty * (95% C.L.; K=2)	led nty * ; K=2)
1	1,4-Dichlorobenzene-d4	3855-82-1 PR-30447	PR-30447	66%	99% 25,212.0 μg/mL		+/- 1,427.8857	7.8857
2	1,4-Difluorobenzene	540-36-3	MKCS8657	%66	99% 25,220.0 μg/mL		+/- 1,428.3388	8,3388
m	Chlorobenzene-d5	3114-55-4 PR-31132	PR-31132	%66	99% 25,116.0 μg/mL	L	+/- 1,422.4487	2.4487
4	Pentafluorobenzene	363-72-4	MKCR9383	666	99% 25,180.0 μg/mL	5	+/- 1,426.0734	6.0734
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. Mi



# 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 .

# Handling Notes:

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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	4			ertified 1	Referenc	Certified Reference Material CDM	NO.				ANAB IS	ANAB ISO 17034 Accredited
www.absoli	www.absolutestandards.com	5		,								AR-1539 https://Abs	AR-1539 Certificate Number https://Absolutestandards.com
CERTIFIED V	CERTIFIED WEIGHT REPORT Part Number: Lot Number: Description:	70046 070122 Bromochloromethane	omethane			Solvent: Methanol	Lot# EC592-US			Hebriel	& Hellow	Y	
Nr Weight(	Constant of Constant         Expiration Date:       070127         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):	(4 °C) 25.0	5E-05 0.0002	Balance Uncertainty Flask Uncertainty	tainty			Formulated By:	d By:	dro		DATE DATE 070122 DATE
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 PEI (TWA)	ion Attached pg.)	
1. Bromoc Metho Candic	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 $\mu$ m) Temp 1 = 35°C (10min.), Temp 2 = 200°C (8.75 min.), Rate = 4°C/min., Injector B = 200°C, Detector B = 220°C, Analyst:	46 AY01 X 0.25mm X 1.5 μ	1000 tm) Temp 1 = 3	99 5°C (10r	0.2 ain.), Temp 2	0.02530 2 = 200°C (8	0.02540 8.75 min.), Rate	1004.1 c = 4°C/min	5.7 ., Injector B	74-97-5 = 200°C, Dete	200 ppm (1050mg/m3/8H) ector B = 220°C. Analys	ort-rat	бууви
Abundance		TIC: 70046.D				Abun	dbundance		Scan 1136	Scan 1136 (19.943 min): 70046.D	9		
	1992					ñ	30000 -	0 7					
000001						2	25000 -					H H	
80000						2(	20000 -	- X			-0	-	
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40000						01	10000	and beau in					
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Time->0 +	1000 15.00 20.00 25.00	30.00 35.00 4	40.00 45.00	50.00	55.00 60.00		m/2>0 - 37 30 40	20	63 60 70	80	90 100 110	114 120 130	140
	<ul> <li>The c</li> <li>Stand</li> <li>Stand</li> <li>Stand</li> <li>All St</li> <li>Unset</li> <li>NIST T</li> </ul>	<ul> <li>The certified value is the concentration calculated from gravimetric and volumetric measurements unless otherwise stated.</li> <li>Standards are prepared gravimetrically using balances that are calibrated with weights traceable to NIST (see above).</li> <li>Standards are retrifted (4+) 0.5% of the stated value, unless otherwise stated.</li> <li>All standards are retrifted (2+).</li> <li>All standards are retrifted (2+).</li> <li>O and state opening ampule, should be stored with exps fight and under appropriate taboratory conditions.</li> <li>Uncertainty Reference: Taylor, B.N. and Kuyat, C.E., "Guidelines for Evaluating and Expressing the Uncertainty of NIST Measurement Result," NIST Technical Note 1297, U.S. Government Printing Office, Washington, DC, (1994).</li> </ul>	arcentration calcula avimetrically using angule, should b g ampule, should b ylor, B.N. and Kuy S.S. Government P.	tted from balances value, un e stored v at, C.E., '	gravimetric an that are calibrz less otherwise s tith caps tight a Guidelines for fice, Washingto	d volumetric n tted with weigh itated. und under app Evaluating an n, DC, (1994).	neasurements unl hts traceable to N ropriate laborator d Expressing the	ess otherwise : IST (see above ry conditions, Uncertainty o	e). E). f NIST Measu	rement Result,"			

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1 of 1

Part # 70046 Lot # 070122

Avantor



Material No.: 9077-02 Batch No.: 22L0562016 Manufactured Date: 2022-10-26 Expiration Date: 2025-10-25 Revision No.: 0

# Certificate of Analysis

Test	Specification	Result
Assay (CH3OH) (by GC, corrected for water)	≥ 99.9 %	100.0 %
Residue after Evaporation	≤ 1.0 ppm	0.2 ppm
Titrable Acid (µeq/g)	≤ 0.3	0.2
Titrable Base (µeq/g)	≤ <b>0.</b> 10	0.03
Water (by KF, coulometric)	≤ 0.08 %	< 0.01 %
Volatile Organic Trace Analysis – Below EPA 8260B CRQL	Conforms	Conforms

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

James Techie

Jamie Ethier Vice President Global Quality

Avantor



Material No.: 9077-02 Batch No.: 22L0562016 Manufactured Date: 2022-10-26 Expiration Date: 2025-10-25 Revision No.: 0

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Jamie Ethier Vice President Global Quality

Avantor



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