

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

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

Order ID	):	Q1022

Test: VOCMS Group1

Prepbatch ID:

Sequence ID/Qc Batch ID: VX010725,

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Sta	nd	25	4	ın	

VP129195,VP130430,VP130434,VP131746,VP131767,VP131864,VP132005,VP132007,VP132035,VP132037,VP132096,VP132097,VP132101,VP132436,VP132437,VP132441,VP132442,VP132443,VP132444,VP132445,VP132446,VP132447,

#### Chemical ID:

V12966, V13391, V13445, V13449, V13457, V13460, V13465, V13466, V13582, V13707, V13806, V13820, V13918, V14020, V14021, V14096, V14105, V14106, V14125, V14143, V14145, V14152, V14154, V14173, V14174, V14178, V14192, V14194, V1





## **VOC STANDARD PREPARATION LOG**

Recipe ID	NAME	<u>NO.</u>	Prep Date	Expiration Date	Prepared By	<u>ScaleID</u>	<u>PipetteID</u>	Supervised By  Mahesh Dadoda
262	8260 Working STD (BCM)-Second source, 100PPM	<u>VP129195</u>	07/22/2024	01/22/2025	Semsettin Yesilyurt	None	None	07/26/2024

Recipe ID	NAME	<u>NO.</u>	Prep Date	Expiration Date	Prepared By	<u>ScaleID</u>	<u>PipetteID</u>	Supervised By  Mahesh Dadoda
617	8260 Surrogate, 400PPM	<u>VP130430</u>	09/20/2024	02/28/2025	Semsettin Yesilyurt	None	None	09/26/2024

**FROM** 0.40000ml of V13707 + 24.60000ml of V14145 = Final Quantity: 25.000 ml





## **VOC STANDARD PREPARATION LOG**

Recipe ID	<u>NAME</u>	NO.	Prep Date	Expiration Date	Prepared By	<u>ScaleID</u>	<u>PipetteID</u>	Supervised By  Mahesh Dadoda
1738	8260 surrogate 20 ppm	<u>VP130434</u>	09/20/2024	02/28/2025	Semsettin Yesilyurt	None	None	10/02/2024

Recipe ID	NAME	<u>NO.</u>	Prep Date	Expiration Date	Prepared By	<u>ScaleID</u>	<u>PipetteID</u>	Supervised By  Mahesh Dadoda
247	8260 Internal Standard, 250PPM	<u>VP131746</u>	11/22/2024	05/18/2025	Semsettin Yesilyurt	None	None	11/23/2024

**FROM** 0.50000ml of V14289 + 49.50000ml of V14154 = Final Quantity: 50.000 ml





## **VOC STANDARD PREPARATION LOG**

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

**FROM** 0.50000ml of V13391 + 49.50000ml of V14154 = Final Quantity: 50.000 ml

Recipe ID	NAME.	NO.	Prep Date	Expiration Date	Prepared By	<u>ScaleID</u>	<u>PipetteID</u>	Supervised By  Mahesh Dadoda
259	8260 Calibration Working STD Mix-Second source, 160PPM	<u>VP131864</u>	12/02/2024	01/11/2025	Semsettin Yesilyurt	None	None	12/03/2024

FROM 0.16000ml of V13449 + 0.80000ml of V13820 + 0.80000ml of V14096 + 0.80000ml of V14125 + 0.80000ml of V14178 + 0.80000ml of V14424 + 1.60000ml of V13918 + 4.24000ml of V14461 = Final Quantity: 10.000 ml



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## **VOC STANDARD PREPARATION LOG**

Recipe ID	<u>NAME</u>	NO.	Prep Date	Expiration Date	Prepared By	<u>ScaleID</u>	<u>PipetteID</u>	Supervised By  Mahesh Dadoda
257	8260 Calibration Working STD Mix-First source, 160PPM	<u>VP132005</u>	12/09/2024	01/18/2025	Semsettin Yesilyurt	None	None	12/12/2024

**FROM** 

 $0.40000 ml \ of \ V13445 + 1.00000 ml \ of \ V13806 + 1.00000 ml \ of \ V14020 + 1.00000 ml \ of \ V14021 + 1.00000 ml \ of \ V14105 + 1.00000 ml \ of \ V14106 + 1.00000 ml \ of \ V14173 + 1.00000 ml \ of \ V14174 + 1.00000 ml \ of \ V14194 + 1.00000 ml \ of \ V14437 + 1.50000 ml \ of \ V14192 + 1.50000 ml \ of \ V14201 + 10.60000 ml \ of \ V14152 = Final \ Quantity: 25.000 \ ml$ 

Recipe ID	NAME	NO.	Prep Date	Expiration Date	<u>Prepared</u> <u>By</u>	<u>ScaleID</u>	<u>PipetteID</u>	Supervised By  Mahesh Dadoda
245	8260 Calibration Working STD Mix-First source, 20PPM	<u>VP132007</u>	12/09/2024	01/18/2025	Semsettin Yesilyurt	None	None	12/12/2024

FROM 17.50000ml of V14152 + 2.50000ml of VP132005 = Final Quantity: 20.000 ml





VOC STANDARD PREPARATION LOG

Recipe ID	<u>NAME</u>	NO.	Prep Date	Expiration Date	Prepared By	<u>ScaleID</u>	<u>PipetteID</u>	Supervised By  Mahesh Dadoda
1810	8260 Working Std(2-CVE)-800ppm	<u>VP132035</u>	12/10/2024	06/10/2025	Semsettin Yesilyurt	None	None	12/12/2024

FROM 1.00000ml of V14630 + 1.00000ml of V14631 + 1.00000ml of V14632 + 1.00000ml of V14633 + 46.00000ml of V14614 = Final Quantity: 50.000 ml

Recipe ID	NAME.	<u>NO.</u>	Prep Date	Expiration Date	Prepared By	<u>ScaleID</u>	<u>PipetteID</u>	Supervised By  Mahesh Dadoda
1812	8260 Working Std(2-CVE)-100ppm	<u>VP132037</u>	12/10/2024	06/10/2025	Semsettin Yesilyurt	None	None	12/12/2024

**FROM** 0.25000ml of V14633 + 24.75000ml of V14614 = Final Quantity: 25.000 ml





## **VOC STANDARD PREPARATION LOG**

Recipe ID	NAME.	NO.	Prep Date	Expiration Date	Prepared By	<u>ScaleID</u>	<u>PipetteID</u>	Supervised By  Mahesh Dadoda			
719	8260 Working STD (BCM)-First source, 400PPM	<u>VP132096</u>	12/12/2024	06/10/2025	Semsettin Yesilyurt	None	None	12/19/2024			
FROM	FROM 1.00000ml of V13465 + 1.00000ml of V13466 + 1.50000ml of V13457 + 1.50000ml of V13460 + 20.00000ml of V14614 = Final										

 $1.00000ml\ of\ V13465+1.00000ml\ of\ V13466+1.50000ml\ of\ V13457+1.50000ml\ of\ V13460+20.00000ml\ of\ V14614\ =\ Final\ Fina$ Quantity: 25.000 ml

Recipe ID	NAME.	NO.	Prep Date	Expiration Date	Prepared By	<u>ScaleID</u>	<u>PipetteID</u>	Supervised By  Mahesh Dadoda
253	8260 Working STD (BCM)-First source, 20PPM	<u>VP132097</u>	12/12/2024	06/10/2025	Semsettin Yesilyurt	None	None	12/19/2024

**FROM** 0.50000ml of V13466 + 49.50000ml of V14614 = Final Quantity: 50.000 ml





## **VOC STANDARD PREPARATION LOG**

Recipe ID	NAME.	<u>NO.</u>	Prep Date	Expiration Date	Prepared By	<u>ScaleID</u>	<u>PipetteID</u>	Supervised By  Mahesh Dadoda
1817	8260 Working Std(2-CVE)-SS, 800ppm	<u>VP132101</u>	12/12/2024	06/10/2025	Semsettin Yesilyurt	None	None	12/19/2024

FROM 0.800	000ml of V13582	+ 9.20000ml of V146	14 = Final Quantity:	10.000 ml
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Recipe				Expiration	Prepared			Supervised By
<u>ID</u>	<u>NAME</u>	<u>NO.</u>	Prep Date	<u>Date</u>	<u>By</u>	<u>ScaleID</u>	<u>PipetteID</u>	Mahesh Dadoda
589	BFB TUNE CHECK	<u>VP132436</u>	01/07/2025	01/08/2025	John Carlone	None	None	
								01/09/2025

**FROM** 39.98400ml of W3112 + 0.01600ml of VP131767 = Final Quantity: 40.000 ml





## **VOC STANDARD PREPARATION LOG**

Recipe ID	NAME.	NO.	Prep Date	Expiration Date	Prepared By	<u>ScaleID</u>	<u>PipetteID</u>	Supervised By  Mahesh Dadoda
620	50 PPB CCC, 8260-Water	<u>VP132437</u>	01/07/2025	01/08/2025	John Carlone	None	None	04/00/0005
								01/09/2025

Recipe				Expiration	<u>Prepared</u>			Supervised By
<u>ID</u>	<u>NAME</u>	<u>NO.</u>	Prep Date	<u>Date</u>	<u>By</u>	<u>ScaleID</u>	<u>PipetteID</u>	Mahesh Dadoda
334	1 PPB ICC, 8260-Water	<u>VP132441</u>	01/07/2025	01/08/2025	John Carlone	None	None	
								01/09/2025

FROM 39.98200ml of W3112 + 0.00200ml of VP130434 + 0.00200ml of VP132007 + 0.00200ml of VP132037 + 0.00200ml of VP132097 + 0.00800ml of VP131746 = Final Quantity: 40.000 ml





**VOC STANDARD PREPARATION LOG** 

Recipe ID	<u>NAME</u>	NO.	Prep Date	Expiration Date	Prepared By	<u>ScaleID</u>	<u>PipetteID</u>	Supervised By  Mahesh Dadoda
335	5 PPB ICC, 8260-Water	<u>VP132442</u>	01/07/2025	01/08/2025	John Carlone	None	None	01/09/2025

FROM 39.94200ml of W3112 + 0.00800ml of VP131746 + 0.01000ml of VP130434 + 0.01000ml of VP132007 + 0.01000ml of VP132037 + 0.01000ml of VP132097 = Final Quantity: 40.000 ml

Recipe				Expiration	Prepared			Supervised By
<u>ID</u>	<u>NAME</u>	<u>NO.</u>	Prep Date	<u>Date</u>	<u>By</u>	<u>ScaleID</u>	<u>PipetteID</u>	Mahesh Dadoda
337	20 PPB ICC, 8260-Water	<u>VP132443</u>	01/07/2025	01/08/2025	John Carlone	None	None	
								01/09/2025

FROM 39.97000ml of W3112 + 0.00200ml of VP130430 + 0.00200ml of VP132096 + 0.00500ml of VP132005 + 0.00500ml of VP132035 + 0.00800ml of VP131746 = Final Quantity: 40.000 ml





VOC STANDARD PREPARATION LOG

Recipe ID	NAME	<u>NO.</u>	Prep Date	Expiration Date	Prepared By	<u>ScaleID</u>	<u>PipettelD</u>	Supervised By  Mahesh Dadoda
380	50 PPB ICC, 8260-Water	<u>VP132444</u>	01/07/2025	01/08/2025	John Carlone	None	None	
								01/09/2025

FROM 39.94450ml of W3112 + 0.00500ml of VP130430 + 0.00500ml of VP132096 + 0.00800ml of VP131746 + 0.01250ml of VP132005 + 0.01250ml of VP132035 = Final Quantity: 40.000 ml

Recipe				Expiration	Prepared			Supervised By
<u>ID</u>	<u>NAME</u>	NO.	Prep Date	<u>Date</u>	<u>By</u>	<u>ScaleID</u>	<u>PipetteID</u>	Mahesh Dadoda
381	100 PPB ICC, 8260-Water	<u>VP132445</u>	01/07/2025	01/08/2025	John Carlone	None	None	
								01/09/2025

FROM 39.89700ml of W3112 + 0.00800ml of VP131746 + 0.01000ml of VP130430 + 0.01000ml of VP132096 + 0.02500ml of VP132005 + 0.02500ml of VP132035 = Final Quantity: 40.000 ml





**FROM** 

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## **VOC STANDARD PREPARATION LOG**

382 150 PPB ICC, 8260-Water VP132446 01/07/2025 01/08/2025 John Carlone None None 01/09/2025	Recipe ID	NAME	<u>NO.</u>	Prep Date	Expiration Date	Prepared By	<u>ScaleID</u>	<u>PipetteID</u>	Supervised By Mahesh Dadoda
	382	150 PPB ICC, 8260-Water	<u>VP132446</u>	01/07/2025	01/08/2025	John Carlone	None	None	01/09/2025

39.84950ml of W3112 + 0.00800ml of VP131746 + 0.01500ml of VP130430 + 0.01500ml of VP132096 + 0.03750ml of VP132005 + 0.03750ml of VP132035 = Final Quantity: 40.000 ml

Recipe				Expiration	Prepared			Supervised By
<u>ID</u>	<u>NAME</u>	<u>NO.</u>	Prep Date	<u>Date</u>	<u>By</u>	<u>ScaleID</u>	<u>PipetteID</u>	Mahesh Dadoda
385	50 PPB ICV, 8260-Water	<u>VP132447</u>	01/07/2025	01/08/2025	John Carlone	None	None	
								01/09/2025

FROM 39.92950ml of W3112 + 0.00500ml of VP130430 + 0.00800ml of VP131746 + 0.01250ml of VP131864 + 0.01250ml of VP132101 + 0.02000ml of VP129195 = Final Quantity: 40.000 ml



Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Absolute Standards, Inc.	70046 / Bromochloromethane Std. sol/methanol 1000ppm	070122	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	11/22/2025	11/22/2024 / SAM	01/13/2023 / SAM	V13391
Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Restek	30470 / VOA Stock Solution, tert-butanol std, 1mL, P&TM	A0181905	02/28/2025	11/26/2024 / SAM	01/23/2023 / SAM	V13445
Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Restek	30470 / VOA Stock Solution, tert-butanol std, 1mL, P&TM	A0191703	06/02/2025	12/02/2024 / SAM	01/23/2023 / SAM	V13449
Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Restek	30225 / VOA Mix,	A0193071	06/12/2025	12/12/2024 /	01/27/2023 /	V13457
	bromochloromethane, 2000ug/mL, P&TM, 1mL/ampul			SAM	SAM	
Supplier	2000ug/mL, P&TM,	Lot #	Expiration Date	Date Opened / Opened By	Received Date /	Chemtech Lot #



Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Restek	30225 / VOA Mix, bromochloromethane, 2000ug/mL, P&TM, 1mL/ampul	A0193071	06/12/2025	12/12/2024 / SAM	01/27/2023 / SAM	V13465
Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Restek	30225 / VOA Mix, bromochloromethane, 2000ug/mL, P&TM, 1mL/ampul	A0193071	06/12/2025	12/12/2024 / SAM	01/27/2023 / SAM	V13466
Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Absolute Standards, Inc.	95318 / 2-Chloroethyl Vinyl Ether (Min = 5)	111722	11/17/2025	12/12/2024 / SAM	01/30/2023 / SAM	V13582
Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date /	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 /	Chemtech Lot #
Restek	30042 / VOA Mix,500 series method 502.2 Calibration Std #1 gases, 2000uq/ml, PTM, 1ml	A0194279	03/16/2025	09/16/2024 / SAM	05/31/2023 / SAM	V13806
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	A0197644	04/14/2025	10/14/2024 / SAM	05/31/2023 / SAM	V13820



Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Restek	30006 / VOA Mix, CLP method Calibration Std #1 ketones 5000uq/ml, PTM, 1ml	A0193887	04/17/2025	10/17/2024 / SAM	07/24/2023 / SAM	V13918
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	03/29/2025	11/26/2024 / SAM	11/22/2023 / SAM	V14020
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	03/29/2025	11/26/2024 / SAM	11/22/2023 / SAM	V14021
Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date /	Chemtech Lot #
Restek	555408 / Custom Standard, Vinyl Acetate Standard w/ Grav [CS 5066-6] TWO SEPARATE LOTS	A0205177	03/04/2025	09/04/2024 / SAM	12/22/2023 / SAM	V14096
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	05/26/2025	11/26/2024 / SAM	12/22/2023 / SAM	V14105
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	A0205179	05/26/2025	11/26/2024 / SAM	12/22/2023 / SAM	V14106



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	04/17/2025	10/17/2024 / SAM	01/17/2024 / SAM	V14125
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	02/28/2025	08/29/2024 / SAM	02/06/2024 / SAM	V14145
Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Seidler Chemical	BA9077-02 / Methanol, Purge/Trap (cs=6x1L)	22L0562016	04/14/2025	10/14/2024 / SAM	02/06/2024 / SAM	V14152
Seidler Chemical  Supplier	1	22L0562016 Lot #	04/14/2025  Expiration Date			V14152  Chemtech Lot #
	Purge/Trap (cs=6x1L)		Expiration	SAM  Date Opened /	SAM  Received Date /	Chemtech
Supplier	Purge/Trap (cs=6x1L)  ItemCode / ItemName  BA9077-02 / Methanol,	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By 02/06/2024 /	Chemtech Lot #



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	05/26/2025	11/26/2024 / SAM	02/20/2024 / SAM	V14174
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)	021524	04/17/2025	10/17/2024 / SAM	02/20/2024 / SAM	V14178
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	05/26/2025	11/26/2024 / SAM	02/28/2024 / SAM	V14192
Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Dootale		A0200785	05/26/2025	11/26/2024 /	02/28/2024 /	V/4.440.4
Restek	30006 / VOA Mix, CLP method Calibration Std #1 ketones 5000uq/ml, PTM, 1ml			SAM	SAM	V14194
Supplier	method Calibration Std #1 ketones 5000uq/ml, PTM,	Lot #	Expiration Date	Date Opened / Opened By	SAM  Received Date / Received By	Chemtech
	method Calibration Std #1 ketones 5000uq/ml, PTM, 1ml		· ·	Date Opened /	Received Date /	Chemtech
Supplier	method Calibration Std #1 ketones 5000uq/ml, PTM, 1ml  ItemCode / ItemName  30006 / VOA Mix, CLP method Calibration Std #1 ketones 5000uq/ml, PTM,	Lot #	Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #



Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Restek	30489 / VOA Mix, 8260B Acetates Mix, P&TM, 1mL	A0205013	06/02/2025	12/02/2024 / SAM	08/15/2024 / SAM	V14424
Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Restek	30489 / VOA Mix, 8260B Acetates Mix, P&TM, 1mL	A0209618	05/26/2025	11/26/2024 / SAM	08/15/2024 / SAM	V14434
Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Restek	30489 / VOA Mix, 8260B Acetates Mix, P&TM, 1mL	A0209618	05/26/2025	11/26/2024 / SAM	08/15/2024 / SAM	V14437
Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date /	Chemtech Lot #
Seidler Chemical	BA9077-02 / Methanol, Purge/Trap (cs=6x1L)	2310762004	05/26/2025	11/26/2024 / pedro	08/16/2024 / SAM	V14461
Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Seidler Chemical	BA9077-02 / Methanol, Purge/Trap (cs=6x1L)	22L0562016	06/10/2025	12/10/2024 / SAM	11/26/2024 / SAM	V14614
Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date /	Chemtech Lot #
Absolute Standards, Inc.	/ 2-Chloroethyl vinyl ether	120524	06/10/2025	12/10/2024 / SAM	12/06/2024 / SAM	V14630



Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Absolute Standards, Inc.	/ 2-Chloroethyl vinyl ether	120524	06/10/2025	12/10/2024 / SAM	12/06/2024 / SAM	V14631

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Absolute Standards, Inc.	/ 2-Chloroethyl vinyl ether	120524	06/10/2025	12/10/2024 / SAM	12/06/2024 / SAM	V14632

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Absolute Standards, Inc.	/ 2-Chloroethyl vinyl ether	120524	06/10/2025	12/10/2024 / SAM	12/06/2024 / SAM	V14633

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

Methanol
ULTRA RESI-ANALYZED
For Purge and Trap Analysis





Material No.: 9077-02

Batch No.: 22L0562016 Manufactured Date: 2022-10-26 Expiration Date: 2025-10-25

Revision No.: 0

# Certificate of Analysis

Test	Specification	Result
Assay (CH3OH) (by GC, corrected for water)	≥ 99.9 %	100.0 %
Residue after Evaporation	≤ 1.0 ppm	0.2 ppm
Titrable Acid (µeq/g)	≤ 0.3	0.2
Titrable Base (µeq/g)	≤ 0.10	0.03
Water (by KF, coulometric)	≤ 0.08 %	< 0.01 %
Volatile Organic Trace Analysis - Below EPA 8260B CRQL	Conforms	Conforms

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

Country of Origin: USA

Packaging Site: Phillipsburg Mfg Ctr & DC



# **Absolute Standards, Inc.** 800-368-1131

www.absolutestandards.com

Abundance



## Certified Reference Material CRM

Lot#

EH471-US

Solvent(s):

Methanol



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

#### **CERTIFIED WEIGHT REPORT**

Part Number: Lot Number:

95319

011624

Description:

**Revised Additions Mix** 

11 components

**Expiration Date:** 

011627

Recommended Storage:

Refrigerate (4 °C)

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

Varied **6UTB** 

5E-05 Balance Uncertainty

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

100.0

0.021 Flask Uncertainty

011624 Formulated By: DATE Prashant Chauhan 011624 DATE Reviewed By: Pedro L. Rentas

2.       1-Chlorobutane       1072       MKCM5711       2000       99.99       0.2       0.20007       0.20035       200.8       8.1       109-69-3       N/A       ori-         3.       Cyclohexane       1023       28930       2000       99       0.2       0.20207       0.20222       2001.5       8.2       110-82-7       300 ppm (1050mg/m3/8H) ori-       ori-         4.       Di-isopropyl ether (DIPE)       987       00412MX       2000       99       0.2       0.20207       0.20227       2002.0       8.2       108-20-3       500 ppm (2100mg/m3/8H) ori-         5.       1,4-Dioxane       373       03853KE       40000       99       0.2       4.04142       4.04213       40007.0       162.5       123-91-1       25 ppm (90mg/m3/8H)(skin) ori-         6.       Hexachloroethane       199       12604HBV       2000       99       0.2       0.20207       0.20221       2001.4       8.2       67-72-1       1 ppm (10mg/m3/8H)(skin) ori-	LD50 Lat 78 mg/kg rat 2670mg/kg rat 12705mg/kg rat 8470mg/kg
1. Acrylonitrile       7       4718CK       10000       99       0.2       1.01035       1.01080       10004.4       40.6       107-13-1       N/A       orterior orterior         2. 1-Chlorobutane       1072       MKCM5711       2000       99.99       0.2       0.20007       0.20035       2002.8       8.1       109-69-3       N/A       orterior orterior         3. Cyclohexane       1023       28930       2000       99       0.2       0.20207       0.20222       2001.5       8.2       110-82-7       300 ppm (1050mg/m3/8H) orterior         4. Di-isopropyl ether (DIPE)       987       00412MX       2000       99       0.2       0.20207       0.20227       2002.0       8.2       108-20-3       500 ppm (2100mg/m3/8H) orterior         5. 1,4-Dioxane       373       03853KE       40000       99       0.2       4.04142       4.04213       40007.0       162.5       123-91-1       25 ppm (90mg/m3/8H)(skin) orterior         6. Hexachloroethane       199       12604HBV       2000       99       0.2       0.20207       0.20221       2001.4       8.2       67-72-1       1 ppm (10mg/m3/8H)(skin) orterior	I-rat 78 mg/kg rat 2670mg/kg rat 12705mg/kg
2.       1-Chlorobutane       1072       MKCM5711       2000       99.99       0.2       0.20007       0.20035       2002.8       8.1       109-69-3       N/A       ort-         3.       Cyclohexane       1023       28930       2000       99       0.2       0.20207       0.20222       2001.5       8.2       110-82-7       300 ppm (1050mg/m3/8H) ort-         4.       Di-isopropyl ether (DIPE)       987       00412MX       2000       99       0.2       0.20207       0.20227       2002.0       8.2       108-20-3       500 ppm (2100mg/m3/8H) ort-         5.       1,4-Dioxane       373       03853KE       40000       99       0.2       4.04142       4.04213       40007.0       162.5       123-91-1       25 ppm (90mg/m3/8H)(skin) ort-         6.       Hexachloroethane       199       12604HBV       2000       99       0.2       0.20207       0.20221       2001.4       8.2       67-72-1       1 ppm (10mg/m3/8H)(skin) ort-	rat 2670mg/kg rat 12705mg/kg
2.       1-Chlorobutane       1072       MKCM5711       2000       99.99       0.2       0.20007       0.20035       2002.8       8.1       109-69-3       N/A       ort-         3.       Cyclohexane       1023       28930       2000       99       0.2       0.20207       0.20222       2001.5       8.2       110-82-7       300 ppm (1050mg/m3/8H) ort-         4.       Di-isopropyl ether (DIPE)       987       00412MX       2000       99       0.2       0.20207       0.20227       2002.0       8.2       108-20-3       500 ppm (2100mg/m3/8H) ort-         5.       1,4-Dioxane       373       03853KE       40000       99       0.2       4.04142       4.04213       40007.0       162.5       123-91-1       25 ppm (90mg/m3/8H)(skin) ort-         6.       Hexachloroethane       199       12604HBV       2000       99       0.2       0.20207       0.20221       2001.4       8.2       67-72-1       1 ppm (10mg/m3/8H)(skin) ort-	rat 2670mg/kg rat 12705mg/kg
3. Cyclohexane 1023 28930 2000 99 0.2 0.20207 0.20222 2001.5 8.2 110-82-7 300 ppm (1050mg/m3/8H) orl- 4. Di-isopropyl ether (DIPE) 987 00412MX 2000 99 0.2 0.20207 0.20227 2002.0 8.2 108-20-3 500 ppm (2100mg/m3/8H) orl- 5. 1,4-Dioxane 373 03853KE 40000 99 0.2 4.04142 4.04213 40007.0 162.5 123-91-1 25 ppm (90mg/m3/8H)(skin) orl- 6. Hexachloroethane 199 12604HBV 2000 99 0.2 0.20207 0.20221 2001.4 8.2 67-72-1 1 ppm (10mg/m3/8H)(skin) orl-	rat 12705mg/kg
4. Di-isopropyl ether (DIPE) 987 00412MX 2000 99 0.2 0.20207 0.20227 2002.0 8.2 108-20-3 500 ppm (2100mg/m3/8H) orl- 5. 1,4-Dioxane 373 03853KE 40000 99 0.2 4.04142 4.04213 40007.0 162.5 123-91-1 25 ppm (90mg/m3/8H)(skin) orl- 6. Hexachloroethane 199 12604HBV 2000 99 0.2 0.20207 0.20221 2001.4 8.2 67-72-1 1 ppm (10mg/m3/8H)(skin) orl-	
5. 1,4-Dioxane 373 03853KE 40000 99 0.2 4.04142 4.04213 40007.0 162.5 123-91-1 25 ppm (90mg/m3/8H)(skin) orl-n 6. Hexachloroethane 199 12604HBV 2000 99 0.2 0.20207 0.20221 2001.4 8.2 67-72-1 1 ppm (10mg/m3/8H)(skin) orl-n	rot 8470ma/ka
6. Hexachloroethane 199 12604HBV 2000 99 0.2 0.20207 0.20221 2001.4 8.2 67-72-1 1 ppm (10mg/m3/8H)(skin) orl-g	ter out outday
The state of the s	nus 5700mg/kg
7. Methylcyclohexane 1627 SHBG0199V 2000 99 0.2 0.20207 0.20230 2002.3 8.2 108-87-2 N/A ort-n	gpg 4970mg/kg
	nus 2250mg/kg
8. Methyl tert-butyl ether (MTBE) 209 21880 2000 99 0.2 0.20207 0.20227 2002.0 8.2 1634-04-4 N/A	ori-rat 4g/kg
9. Propionitrile 349 1395468 20000 99 0.2 2.02071 2.02150 20007.8 81.3 107-12-0 N/A or	l-rat 39mg/kg
10. Tetrahydrofuran 380 SHBH8330 10000 99.9 0.2 1.00125 1.00200 10007.5 40.3 109-99-9 20 ppm (590mg/m3/8H) ori-	rat 1650mg/kg
11. 1,2,3,4-Tetramethylbenzene 491 AP01 2000 93 0.2 0.21511 0.21522 2001.0 8.7 488-23-3 N/A orl-	rat 6408mg/kg

TIC: 95319.D

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

- d with caps tight and under appropriate laboratory conditions.

  ., "Guidelines for Evaluating and Expressing the Uncertainty of NIST Measurement Result," ng Office, Washington, DC, (1994).

4000000	the facility of the second of		26 8	Standards are certifed (47-) U.5% of the stated value, upon the stated value, upon the stated value, should be stored upon the stated value, B.N. and Kuyat, C.E., NIST Technical Note 1297, U.S. Government Printing
3500000	** The section of the confidence of the confiden		PRINCIPAL SECTION	
3000000	and the second s		000,000334, 315	
2500000	o-de-mander of management of m	18,53	MEManoscochine	Method GC6MSD-1: Column: Vocol (60m X 0.25mm ID X 1.5µm film thickness). Temp. 1 = 35°C (10min.), Temp. 2 = 200°C (8.75 min.), Rate = 4°C/min., Injector Temp. =
2000000	13,79	20,18	\$12942700000000000000000000000000000000000	200°C, Detector Temp. = 220°C. Solvent Delay: 8 minutes. Analysis performed by Candice Warren.
1500000	Copy of delignment	***************************************	The state of the s	C. C.
1000000		WWGCEGGGGGG		51,62
500000	15,45 13,57	2033	24.85	48,44
Time>0	10.00 15.00	20.00	25.00	30.00 35.00 40.00 45.00 50.00 55.00 60.00

	MSD RT
Name	(min.)
Methyl tert-butyl ether (MTBE)	13.56
Acrylonitrile	13.79
Di-isopropyl ether	15.44
Propionitrile	18.53
Tetrahydrofuran	20.17
Cyclohexane	20.58
1-Chlorobutane	20.83
Methylcyclohexane	24.84
1,4-Dioxane	26.84
Hexachloroethane	48.44
1,2,3,4-Tetramethylbenzene	51.62

## Absolute Standards, Inc.

800-368-1131

www.absolutestandards.com



### Certified Reference Material CRM



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

CERTIFIED WEIGHT REPORT

Part Number: 95317 Lot Number: 021524 Description: Universal VOA Megamix 69 components

Solvent(s): Lot# Methenol EG359-USQ12

Expiration Date: 021527 Recommended Storage: Freezer (0 °C)
iominal Concentration (ug/mL): 2000
NIST Test ID#: 8UTB

5E-05 Balance Uncertalisty

./	hui fo fui	021524
Formulated By:	Mario Luis	DATE
H	de tento	021524
Reviewed By:	Pedro L. Rentas	DATE

	NIST Test ID	#: BUTB			5E-05	Balance Uncerta	listy							KEVIEWEG	ву.	FOUIO L. Norlias	DATE
	Weight(s) shown below were combine	d and dilute (RM#)	d to (mL):	100.0 Da.	0.021	Flask Uncertaint	y Nominal	Purity	Purity	Uncertainty	Target	Actual	Actual	Expanded Uncertainty		SDS information nt Safety Info. On Attach	
	Compound	Part Numbe	r Number	Factor	Vol. (mL)	Conc.(ug/mL)	Conc (µg/mL)	(%)	Uncertainty	Pipette (mL)	Weight(g)	Weight(g)	Conc (µg/mL)	(+/-) (µg/mL)	CAS#	OSHA PEL (TWA)	LD50
1	Acetonitrile	(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)	orl-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	1 ppm (3mg/m3/8H)	orl-ret 700mg/kg
3	Carbon disulphide	(0060)	MKCR8561	NA	NA	NA	2000	99.99	0.2	NA	0.20007	0.20020	2001.3	8.1	75-15-0	4 ppm (12mg/m3) (skin)	orl-rat 1200mg/kg
4.	cis-1,4-Dichloro-2-butene	(1196)	14718EF	NA	NA	NA	2000	95	0.2	NA	0.21058	0.21060	2000.2	8.5	1478-11-5	N/A	N/A N/A
5.	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 80-29-7	N/A N/A	N/A
6.	Diethyl ether	(0153)	IK18CAS0000		NA	NA	2000	99.9	0.2	NA NA	0.20025	0.20042	2002.4	8.2	97-63-2	N/A	orl-rat 14800mg/kg
7.		(0381)	06126PX SHBF8718V	NA NA	NA NA	NA NA	2000	99.5	0.2	NA NA	0.20106	0.20118	2001.2	8.1	74-88-4	5 ppm(26mg/m3/6H)(skin)	orl-rat 75mg/kg
8.	lodomethane	(0489)	15241EB	NA	NA.	NA.	2000	99.5	0.2	NA.	0.20108	0.20120	2001.4	8.1	78-83-1	50 ppm (150mg/m3/8H)	orl-ret 2460mg/kg
10.	2-Methyl-1-propanol Methacrylonitrile	(0442)	00427ET	NA	NA.	NA	2000	99	0.2	NA	0.20207	0.20209	2000.2	8.2	126-96-7	1 ppm (3mg/m3/8H)(sldn)	orl-rat 120mg/kg
11.	Methyl acrylate	(1075)	SHBK0679	NA	NA	NA	2000	99.9	0.2	NA	0.20025	0.20042	2001.7	8.1	96-33-3	10 ppm(35mg/m3/8H)(sldn)	orl-ret 277mg/kg
12.	Methyl methacrylate		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	96-95-3	1 ppm (5mg/m3/8H)(skin)	orl-rat 780mg/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	10 ppm (35mg/m3/8H)	orl-rat 720mg/kg
15.	Pentachtoroethans	(0450)	HGA01	NA	NA	NA	2000	98	0.2	NA	0.20413	0.20415	2000.2	8.3	76-01-7	N/A	N/A
16.	1,1,2-Trichlorotrifluoroethane	(0474)	18930	NA	NA	NA	2000	99	0.2	NA	0.20207	0.20210	2000.3	8.2	76-13-1	1000 ppm (7600mg/m3/6H) N/A	orl-rat 43g/kg orl-rat 916mg/kg
17.	Bromodichloromethane	35171	101623	0.05	6.00	40001.7	2000	NA	NA	0.017	NA NA	NA NA	1999.6	22.9	75-27-4	N/A	ori-rat 848mg/kg
18.	Dibromoch/oromethane	35171	101623	0.05	5.00	40002.1	2000	NA	NA NA	0.017	NA NA	NA NA	1999.6	22.9	156-59-2	N/A	N/A
19.	cis-1,2-Dichloroethene	35171	101823	0.05	5.00	40003.1	2000	NA	NA NA	0.017	NA NA	NA NA	1999.6	23.0	156-60-5	N/A	orl-rat 1235mg/kg
20.	trans-1,2-Dichloroethene	35171	101823	0.05	5.00	40002.4	2000	NA NA	NA NA	0.017	NA NA	NA NA	1999.6	22.9	75-09-2	500 ppm	orl-rat 820mg/kg
21.	Methylene chloride	35171	101823	0.05	5.00	40002.8 20001.6	2000	NA NA	NA NA	0.017	NA.	NA NA	1999.7	20.4	75-35-4	1 ppm (4mg/m3/8H)	orl-rat 200mg/kg
22,	1,1-Dichloroethene	32251 95321	102023 020724	0.10	10.00	20001.8	2000	NA.	NA.	0.042	NA NA	NA.	1999.8	20.5	75-25-2	0.5 ppm (5mg/m3) (skin)	orl-ret 933mg/kg
23. 24.	Bromoferm Carbon tetrachloride	95321	020724	0.10	10.00	20003.2	2000	NA	NA	0.042	NA 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)	orl-ret 906mg/kg
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	orf-rat 106mg/kg
27.	1,1-Dichioroethane	95321	020724	0.10	10.00	20003.4	2000	NA	NA	0.042	NA	NA	1999.8	20.5	75-34-3	100 ppm	orl-rat 725mg/kg
28.	2,2-Dichloropropane	95321	020724	0.10	10.00	20003.4	2000	NA	NA	0.042	NA	NA	1999.8	20.4	594-20-7	N/A	NA
29.	Tetrachioroethene	95321	020724	0.10	10.00	20201.1	2000	NA	NA	0.042	NA	NA	2019.6	20.6	127-18-4	25 ppm (170mg/m3/6H)(final)	orl-rat 2629mg/kg
30.	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	350 ppm (1900mg/m3/6H)	orl-ret 10300mg/kg
31.	1,2-Dibromo-3-chioropropane	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-Dibromosthane	36161	112322	0.05	5.00	40024.8	2000	NA	NA	0.017	NA	NA.	2000.7	22.9	108-83-4	20 ppm (6H)	orf-rat 108mg/kg
33.	1,2-Dichloroethane	35161	112322	0.05	5.00	40018.0	2000	NA	NA	0.017	NA	NA	2000.4	22.9	107-08-2	50 ppm (8H)	ori-rat 670mg/kg
34.	1,2-Dichloropropane	35161	112322	0.05	5.00	40051.0	2000	NA	NA	0.017	NA	NA	2002.0	22.9	78-87-5	75 ppm (350mg/m3/8H)	ori-rat 1947/mg/kg unr-mus 3600/mg/kg
35.	1,3-Dichloropropane	35161	112322	0.05	5.00	40005.9	2000	NA	NA	0.017	NA	NA	1999.8	22.9	142-28-9 583-58-6	N/A N/A	N/A
36.	1,1-Dichloropropene	35161	112322	0.05	5.00	40012.1	2000	NA	NA NA	0.017	NA NA	NA NA	2000.0	23.0	10061-01-6	N/A	N/A
	cis-1,3-Dichloropropene	35161	112322	0.05	5.00	40010.0	2000	NA	NA NA	0.017	NA NA	NA NA	2000.4	23.0	10061-02-6	N/A	N/A
38.	trane-1,3-Dichloropropene	35161	112322	0.05	5.00	40017.6	2000	NA NA	NA.	0.017	NA	NA NA	2000.4	29.7	87-68-3	0.02 ppm (0.24mg/m3/8H)	orl-rat 82mg/kg
39.	Hexachloro-1,3-butadiene	35161 35161	112322	0.05	5.00	40011.9	2000	NA	NA NA	0.017	NA	NA.	2000.1	22.9	630-20-6	N/A	orl-ret 670mg/kg
41.	1,1,2-Tetrachioroethane 1,1,2-Tetrachioroethane	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)(skin)	ori-rat 800mg/kg
42.	1,1,2-Trichloroethane	35161	112322	0.05	5.00	40006.8	2000	NA	NA	0.017	NA	NA	1999.8	23.0	79-00-5	10 ppm (45mg/m3/8H)(sldn)	orl-rat 836mg/kg
43.	Trichloroethene	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	10 ppm (60mg/m3/8H)	orl-rest 149.firmg/kg
45.	Benzene	35162	050823	0.05	5,00	40005.0	2000	NA	NA	0.017	NA	NA	1999.7	22.9	71-43-2	1 ppm	ort-rat 4894mg/kg
46.	Bromobenzene	35162	050823	0.05	5.00	40006.9	2000	NA	NA	0.017	NA	NA	1999.8	22.9	108-86-1	N/A	orl-rat 2999mg/kg
47.	n-Butyl benzene	35162	050823	0.05	5.00	40003.8	2000	NA	NA	0.017	NA	NA	1999.7	22.9	104-51-8	N/A	N/A
48.	Ethyl benzene	35162	050823	0.05	5.00	40004.8	2000	NA	NA NA	0.017	NA	NA NA	1999.7	22.9	100-41-4	100 ppm (435mg/m3/8H)	ori-rat 4750mg/kg
49.	p-isopropyl toluene	35162	050823	0.05	5.00	40005.8	2000	NA	NA NA	0.017	NA NA	NA NA	1999.8	22.9	99-87-6	NA 10 ppm (50mg/m3/8H)	on-rat 4/50mg/kg
50.	Naphthalene	35162	050823	0.05	5,00	40006.2	2000	NA	NA NA	0.017	NA NA	NA NA	1999.8	22.9	100-42-5	10 ppm (somg/ma/ers)	ori-rat 5000mg/kg
51.	Styrene	35162	050823	0.05	5.00	40004.8	2000	NA NA	NA NA	0.017	NA NA	NA NA	1999.8	22.9	108-88-3	200 ppm	orl-rat 5000mg/kg
52.	Toluene	35162	050823	0.05	5.00	40006.2	2000	NA NA	NA NA	0.017	NA NA	NA.	1999.7	22.9	87-61-6	N/A	ipr-mus £390mg/kg
53.	1,2,3-Trichlorobenzene	35162	050823 050823	0.05	5.00	40006.8	2000	NA	NA NA	0.017	NA NA	NA.	1999.8	22.9	120-82-1	5 ppm (CL) (40mg/m3)	ori-rat 756mg/kg
#4			UDUGED		5.00	40001.6	2000	NA	NA	0.017	NA.	NA	1999.6	23.0	95-63-6	N/A	ori-rat 5g/kg
54.	1,2,4-Trichiorobenzene	35162	050022	0.05						0.017	NA	NA	1929.8	22.9	108-67-8	NA	orl-rat 5000mg/kg
55.	1,2,4-Trimethylbenzene	35162	050823 050823	0.05	_		2000	NA.	NA	0.017							
55. 56.	1,2,4-Trimethylbenzene 1,3,5-Trimethylbenzene	35162 35162	050823	0.05	5.00	40006.7	2000	NA NA	NA NA	0.017	NA	NA	1999.8	22.9	108-38-3	100 ppm (435mg/m3/8H)	orl-rat fig/kg
55. 56. 57.	1,2,4-Trimethylbenzene 1,3,5-Trimethylbenzene m-Xylene	35162 35162 35162			_											100 ppm (435mg/m3/6H) N/A	N/A
55. 56. 57. 58.	1,2,4-Trimethylbenzene 1,3,5-Trimethylbenzene m-Xylene tert-Butyl benzene	35162 35162	050823 050823	0.05 0.05	5.00	40006.7 40005.8	2000	NA	NA	0.017	NA	NA NA NA	1999.8 1999.6 1999.6	22.9 22.9 22.9	108-38-3 98-06-6 135-98-8	N/A N/A	N/A ort-rat 2240mg/kg
55. 56. 57. 58. 59.	1,2,4-Trimethylbenzene 1,3,5-Trimethylbenzene m-Xylene tert-Burjt benzene sec-Butyl benzene	35162 35162 35162 35163	050823 050823 101923	0.05 0.05 0.05	5.00 5.00 5.00	40005.8 40001.2	2000 2000	NA NA	NA NA	0.017 0.017 0.017 0.017	NA NA NA	NA NA NA	1999.8 1999.6 1999.7	22.9 22.9 22.9 22.9	108-38-3 98-06-6 135-98-8 108-90-7	N/A N/A 75 ppm (350mg/m3/8H)	N/A ort-rat 2240mg/kg ort-rat 2290mg/kg
55. 56. 57. 58. 59.	1,2,4-Trimethylbenzene 1,3,5-Trimethylbenzene m-Xylene tert-Butyl benzene	35162 35162 35162 35163 35163	050823 050823 101923 101923	0.05 0.05 0.05 0.05	5.00 5.00 5.00 5.00	40006.7 40005.8 40001.2 40002.4 40003.8 40000.3	2000 2000 2000 2000 2000	NA NA NA NA	NA NA NA NA	0.017 0.017 0.017 0.017 0.017	NA NA NA NA	NA NA NA NA	1999.8 1999.6 1999.6 1999.7 1999.5	22.9 22.9 22.9 22.9 22.9	108-38-3 98-06-6 135-96-8 108-90-7 95-49-8	N/A N/A 75 ppm (350mg/m3/8H) 60 ppm (250mg/m3/8H)	N/A ort-rat 2240mg/kg ort-rat 2290mg/kg ort-rat 3900mg/kg
55. 56. 57. 58. 59. 80. 61.	1,2,4-Trimethylbenzene 1,3,5-Trimethylbenzene m-Xylene tert-Butyl benzene sec-Butyl benzene Chlorobenzene	35162 35162 35162 35163 35163 35163	050823 050823 101923 101923 101923	0.05 0.05 0.05 0.05 0.05	5.00 5.00 5.00 5.00 5.00	40006.7 40005.8 40001.2 40002.4 40003.8	2000 2000 2000 2000 2000 2000 2000	NA NA NA NA NA	NA NA NA NA NA	0.017 0.017 0.017 0.017 0.017 0.017	NA NA NA NA NA	NA NA NA NA NA	1999.8 1999.6 1999.6 1999.7 1999.5 1999.7	22.9 22.9 22.9 22.9 22.9 22.9	108-38-3 98-06-6 135-96-8 106-90-7 95-49-8 106-43-4	N/A N/A 75 ppm (350mg/m3/8H) 50 ppm (250mg/m3/8H) N/A	N/A ort-rat 2240mg/kg ort-rat 2290mg/kg ort-rat 2900mg/kg ort-rat 2100mg/kg
55. 56. 57. 58. 59. 60. 61.	1,2,4-Trimethylbenzene 1,3,5-Trimethylbenzene m-Xylene terl-Butyl benzene sec-Butyl benzene Chlorobenzene 2-Chloroblusne	35162 35162 35162 35163 35163 35163 35163 35163	050823 050823 101923 101923 101923 101923 101923 101923	0.05 0.05 0.05 0.05 0.05 0.05 0.05	5.00 5.00 5.00 5.00 5.00 5.00 5.00 5.00	40006.7 40005.8 40001.2 40002.4 40003.8 40000.3 40003.3	2000 2000 2000 2000 2000 2000 2000 200	NA NA NA NA NA NA	NA NA NA NA NA NA	0.017 0.017 0.017 0.017 0.017 0.017 0.017	NA NA NA NA NA	NA NA NA NA NA	1999.8 1999.6 1999.6 1999.7 1999.7 1999.7	22.9 22.9 22.9 22.9 22.9 22.9 22.9	108-38-3 98-08-6 135-98-8 108-90-7 95-49-8 106-43-4 95-50-1	N/A N/A 75 ppm (350mg/m3/8H) 50 ppm (250mg/m3/8H) N/A 50 ppm (300mg/m3) (CL)	NVA ort-rat 2240mg/kg ort-rat 2290mg/kg ort-rat 2900mg/kg ort-rat 2100mg/kg ort-rat 500mg/kg
55. 56. 57. 58. 59. 60. 61. 62. 63.	1,2,4-Trimethylbenzene 1,3,5-Trimethylbenzene m-Xylene tert-Buryl berzene sec-Buryl benzene Chlorobenzene 2-Chlorotoluene 4-Chlorotoluene	35162 35162 35162 35163 35163 35163 35163 35163 35163	050823 050823 101923 101923 101923 101923 101923 101923 101923	0.05 0.05 0.05 0.05 0.05 0.05 0.05 0.05	5.00 5.00 5.00 5.00 5.00 5.00 5.00 5.00	40006.7 40005.8 40001.2 40002.4 40003.8 40003.3 40003.3 40003.8	2000 2000 2000 2000 2000 2000 2000 200	NA NA NA NA NA NA	NA NA NA NA NA NA	0.017 0.017 0.017 0.017 0.017 0.017 0.017	NA NA NA NA NA NA	NA NA NA NA NA NA	1999.8 1999.6 1999.7 1999.7 1999.7 1999.7 1999.7	22.9 22.9 22.9 22.9 22.9 22.9 22.9 22.9	108-38-3 98-08-6 135-98-8 108-90-7 95-49-8 106-43-4 95-50-1 541-73-1	N/A N/A 75 ppm (350mg/m3/8H) 50 ppm (350mg/m3/8H) N/A 50 ppm (300mg/m3) (CL) N/A	NVA ort-rat 2240mg/kg ort-rat 2290mg/kg ort-rat 2100mg/kg ort-rat 2100mg/kg ort-rat 500mg/kg tpr-mus 1062mg/kg
55. 56. 57. 58. 59. 80. 61. 62. 63. 64.	1,2,4-Trimethylbenzene 1,3,5-Trimethylbenzene m-Xylene terl-Butyl benzene sec-Butyl benzene Chlorobenzene 2-Chlorotoluene 4-Chlorotoluene 1,2-Dichlorobenzene 1,4-Dichlorobenzene	35162 35162 35163 35163 35163 35163 35163 35163 35163 35163	050823 050823 101923 101923 101923 101923 101923 101923 101923 101923	0.05 0.05 0.05 0.05 0.05 0.05 0.05 0.05	5.00 5.00 5.00 5.00 5.00 5.00 5.00 5.00	40006.7 40005.8 40001.2 40002.4 40003.8 40000.3 40003.8 40003.8 40001.7 40001.8	2000 2000 2000 2000 2000 2000 2000 200	NA NA NA NA NA NA NA	NA NA NA NA NA NA NA	0.017 0.017 0.017 0.017 0.017 0.017 0.017 0.017 0.017	NA NA NA NA NA NA NA NA	NA NA NA NA NA NA NA	1999.8 1999.6 1999.7 1999.5 1999.7 1999.7 1999.7 1999.6 1999.6	22.9 22.9 22.9 22.9 22.9 22.9 22.9 23.0 22.9	108-36-3 98-06-6 135-96-8 108-90-7 95-49-8 106-43-4 95-50-1 541-73-1 106-48-7	N/A N/A 75 ppm (356mg/m3/8H) 80 ppm (256mg/m3/8H) N/A 50 ppm (300mg/m3) (CL) N/A 75 ppm (450mg/m3/8H)	NVA ort-rat 2240mg/kg ort-rat 2290mg/kg ort-rat 2300mg/kg ort-rat 2100mg/kg ort-rat 500mg/kg ort-rat 500mg/kg ort-rat 500mg/kg
55. 56. 57. 58. 59. 80. 61. 62. 63. 64. 65.	1,2,4-Trimethylbenzene 1,3,5-Trimethylbenzene m-Xylene tert-Buryl benzene sec-Buryl benzene sec-Buryl benzene Chlorobenzene 2-Chlorotoluene 4-Chlorotoluene 1,2-Dichlorobenzene 1,3-Dichlorobenzene 1,4-Dichlorobenzene 1,4-Dichlorobenzene	35162 35162 35163 35163 35163 35163 35163 35163 35163 35163 35163	050823 050823 101923 101923 101923 101923 101923 101923 101923 101923 101923 101923	0.05 0.05 0.06 0.05 0.05 0.05 0.05 0.05	5.00 5.00 5.00 5.00 5.00 5.00 5.00 5.00	40006.7 40005.8 40001.2 40002.4 40003.8 40000.3 40003.8 40003.8 40001.7 40001.8 40000.8	2000 2000 2000 2000 2000 2000 2000 200	NA NA NA NA NA NA NA NA	NA NA NA NA NA NA NA NA	0.017 0.017 0.017 0.017 0.017 0.017 0.017 0.017 0.017	NA NA NA NA NA NA NA NA	NA NA NA NA NA NA NA NA	1996.8 1999.6 1999.6 1999.7 1999.5 1999.7 1999.6 1999.6 1999.6	22.9 22.9 22.9 22.9 22.9 22.9 22.9 22.9	108-38-3 98-06-6 135-98-8 108-90-7 95-49-8 106-43-4 95-50-1 541-73-1 108-46-7 98-82-8	NVA NVA 75 ppm (350mg/m3/8H) 50 ppm (350mg/m3/8H) 50 ppm (300mg/m3/1H) 60 ppm (300mg/m3/1H) 75 ppm (3450mg/m3/8H) 50 ppm (245mg/m3/8H)	nVA ort-rat 2240mg/kg ort-rat 2290mg/kg ort-rat 3900mg/kg ort-rat 3900mg/kg ort-rat 500mg/kg ort-rat 500mg/kg ort-rat 500mg/kg ort-rat 1400mg/kg
55. 56. 57. 58. 59. 80. 61. 62. 63. 64. 65. 66.	1,2,4-Trimethylbenzene 1,3,5-Trimethylbenzene m-Xylene ten-Butyl benzene sec-Butyl benzene Chlorobenzene 2-Chlorotoluene 4-Chlorotoluene 1,3-Dichlorobenzene 1,3-Dichlorobenzene 1,4-Dichlorobenzene 1,4-Pichlorobenzene n-Propylbenzene	35162 35162 35163 35163 35163 35163 35163 35163 35163 35163 35163 35163 35163	050823 050823 101923 101923 101923 101923 101923 101923 101923 101923 101923 101923	0.05 0.05 0.06 0.05 0.05 0.05 0.05 0.05	5.00 5.00 5.00 5.00 5.00 5.00 5.00 5.00	40006.7 40005.8 40001.2 40002.4 40003.8 40003.3 40003.3 40003.8 40001.7 40001.8 40000.8 40000.8	2000 2000 2000 2000 2000 2000 2000 200	NA NA NA NA NA NA NA NA NA	NA N	0.017 0.017 0.017 0.017 0.017 0.017 0.017 0.017 0.017 0.017	NA	NA NA NA NA NA NA NA NA NA	1996.8 1999.6 1999.6 1999.7 1999.5 1999.7 1999.6 1999.6 1999.6 1999.5	22.9 22.9 22.9 22.9 22.9 22.9 22.9 23.0 22.9 23.0 22.9 23.0	108-38-3 98-06-6 135-98-8 108-90-7 95-49-8 106-43-4 85-50-1 541-73-1 108-48-7 98-82-8 103-65-1	NVA NVA 75 ppm (250mg/m3/8H) 50 ppm (250mg/m3/8H) NVA 50 ppm (350mg/m3/8H) NVA 75 ppm (450mg/m3/8H) 50 ppm (245mg/m3/8H) NVA	N/A ort-rat 2240mg/kg ort-rat 2290mg/kg ort-rat 2900mg/kg ort-rat 2900mg/kg ort-rat 500mg/kg ort-rat 500mg/kg ort-rat 600mg/kg ort-rat 6040mg/kg ort-rat 6040mg/kg
55. 56. 57. 58. 59. 80. 61. 62. 63. 64. 65. 66.	1,2,4-Trimethylbenzene 1,3,5-Trimethylbenzene m-Xylene tert-Buryl benzene sec-Buryl benzene sec-Buryl benzene Chlorobenzene 2-Chlorotoluene 4-Chlorotoluene 1,2-Dichlorobenzene 1,3-Dichlorobenzene 1,4-Dichlorobenzene 1,4-Dichlorobenzene	35162 35162 35163 35163 35163 35163 35163 35163 35163 35163 35163	050823 050823 101923 101923 101923 101923 101923 101923 101923 101923 101923 101923	0.05 0.05 0.06 0.05 0.05 0.05 0.05 0.05	5.00 5.00 5.00 5.00 5.00 5.00 5.00 5.00	40006.7 40005.8 40001.2 40002.4 40003.8 40000.3 40003.8 40003.8 40001.7 40001.8 40000.8	2000 2000 2000 2000 2000 2000 2000 200	NA NA NA NA NA NA NA NA	NA NA NA NA NA NA NA NA	0.017 0.017 0.017 0.017 0.017 0.017 0.017 0.017 0.017	NA NA NA NA NA NA NA NA	NA NA NA NA NA NA NA NA	1996.8 1999.6 1999.6 1999.7 1999.5 1999.7 1999.6 1999.6 1999.6	22.9 22.9 22.9 22.9 22.9 22.9 22.9 22.9	108-38-3 98-06-6 135-98-8 108-90-7 95-49-8 106-43-4 95-50-1 541-73-1 108-46-7 98-82-8	NVA NVA 75 ppm (350mg/m3/8H) 50 ppm (350mg/m3/8H) 50 ppm (300mg/m3/1H) 60 ppm (300mg/m3/1H) 75 ppm (3450mg/m3/8H) 50 ppm (245mg/m3/8H)	nVA ort-rat 2240mg/kg ort-rat 2290mg/kg ort-rat 3900mg/kg ort-rat 3900mg/kg ort-rat 500mg/kg ort-rat 500mg/kg ort-rat 500mg/kg ort-rat 1400mg/kg

1 of 2

Printed: 2/19/2024, 2:35:59

Part # 95317

<sup>\*</sup>The cardine value is the concentration calculated from gravimetric and volumetric measurements unless otherwise stated.

\*Standards are prepared gravimetrically using butaness that are calibrated with weights tractable to NiST (one above).

\*Standards are prepared gravimetrically using butaness that are calibrated with weights tractable to NiST (one above).

\*All Standards are cardined (\*\*). 28\*\* of the stated when, entires effective stated.

\*All Standards are prepared as a state of the state

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### Run 17, "P95317 L021524 [2000µg/mL in MeOH]"

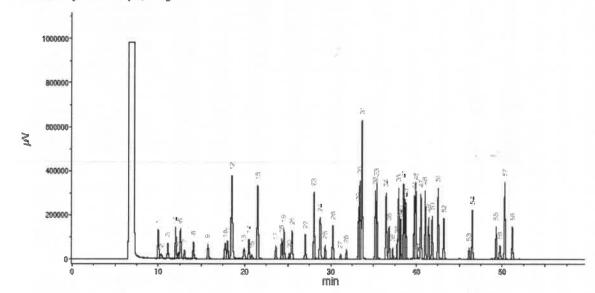
Run Length: 60.00 min, 35998 points at 10 points/second. Created: Sat, Feb 17, 2024 at 10:04:27 AM. Sampled: Sequence "021624-GC5M1", Method "GC5-M1". Analyzed using Method "GC5-M1".

#### Comments

GC5-M1 Analysis by Candice Warren
Column ID SP8-Vocol 105 meter X 0.53mm X 3.0µm film thickness
Flow rates: Total flow=290mL/min., Helium (carrier)=10mL/min., Air(make-up)=290mL/min., Helium(make-up)=10mL/min., Hydogen(make-up)=40mL/min., Air(make-up)=290mL/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.
FID Signal = Edaq Channel 1

Standard injection = 0.5µL, Range=3



	Manne	
Peak 2	Marrie	(min.)
3	Ether	9.97
32	1,1,2-Trichtoro-1,2,2-trilbuornethans	10.33
3	1,1-Dichloroethene	23.10
4	Acetonitrile	12.00
5	Iodomethane	12.31
6	Allyl shloride	12,56
7	Carbon disulfide/Mathylone chloride	13.04
.8.	frans-1,2-Dichloroethens	14.07
9	1,1-Dichloroethane	15.74
10	2,2-Dichlarograpane	17,74
11	cis-1,2-Dichloroethene	18.00
12	Methacrylanitrila/Methyl acrylata/Chloroform	18.49
13	IsobutanoV1.1.1-Trichloroethane	19.91
14	1,1-Dichibropropene	20.46
15	Carison tetrachloride	26.79
16	Benzene/1,2-Dichloroethane	21,48
17	Trichioroethene	23,58
18	1,2-Dichloropropaine	34.26
19	Mistryl methacrylate	24,52
20	Bromodichiorereathene	25.13
21	Dibromomethane/2-Nitropropage	25,46
22	cis-1.3-Dichipropropone	27.02
23	Totiene	28.05
24	Ethyl methecrylate/trans-1,3-Dichloropropage	28.73
23	1,1,2-Trichloroethane	29,34
25		30.24
- 27	Tetrachioraethene/1,3-Dichloropropene Dibromochioramethane	
28		31.16
	1,2-Dibromoethane	31,84
10	Chlorobenzene	33.26
30	Ethylbenzene/1,1.1.2-Ritrachloroethane	33.40
31	m-Hytene/p-Xylene	33.66
33	q-Xylene	33,22
33	Styrene	35.39
34	isopropylbenesne/Bromeform	36.48
35	cis-1,4-Dichloro-2-butene	36.80
36	1,1,2,2-Tetrachioroethene	37.23
37	1,2,3-Trichloropropune	37,77
38	n-Propy/benzene	37.92
39	trans-1,4-Dichloro-2-butene	30.05
40	Bromobenzene	36.14
42	1,3,5-Trimethyibentene	39.50
42	2-Chlorotolyeng	30.62
43	4-Chlorotoluene	38.77
44	tert-Butylbenzene	39.76
45	1,2,4-Trimethylbenzene	39.91
46	Perstachioroethene	40,17
45	sec-Butylbenzens	40.52
48	p-faggropykoluene	41.02
49	1.3-Dichierobenzene	41.42
\$0	1,4-Dichiprobenzone	41.83
51	n-Butylbenzene	42.52
52	1,2-Dichlerobenzene	43,10
53	1,2-Sibramo+3-chloropropens	46.12
54	Nérobensuse	46.48
55	1,2.4-Trichtonsbenzeive	49.26
16/6	Hexactrorobutadiene	49.22
57	Naghthalene	50,26
58	1,2,3-Trichtoroberszene	51.16

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## Certified Reference Material CRM

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

CERTIFIED WEIGHT REPORT

Part Number: 95317 Lot Number: 021624 Description; Universal VOA Megambs

69 components

Expiration Date: 021627 nended Storage: Freezer (0 °C) Nominal Concentration (µg/mL): 2000 NIST Test ID#: 8UTB

Weight(s) shows below were combined and diluted to (mt )-

100.0 0.021 15-11-11-11

5E-05 Balance Uncertainty

Solvent(s): Methenol EG359-USQ12 021624 DATE 021624 DATE

Weight(s) shown below were combin	ed and dilute	ad to (mL):	100.0	0.021	1 Flank Uncertain	edw							Etter to trou	-1-	T GOTO E. I FORMAS	
Compound	(RMW)	Lot	Dir.	fritial	initial	Nominal Conc (µg/ml.)	Purity	Purity	Uncertainty	Target	Actual	Actual	Expanded Uncertainty		SDS information ent Safety info. On Atta	iched pg.)
The state of the s	T Get Patricipa	R THATIANE	Pilitade	you (mu	.) Conc.(ug/ms.)	Conc (µg/mL)	(%)	Uncertainty	Pipette (mi.)	Weight(g)	Weight(g)	Canc (µg/mL)	) (+/-) (µg/mL)	CAS#	OSHA PEL (TWA)	L050
Acetonitrile	(0324)	021644	NA	NA	NA.	2000	99.99	0.2	NA	0.20007	0.20020	2001.3	0.4	75-05-8	***	
Allyl chloride (3-Chloropropene)	(0325)	102396	NA		NA	2000	99	0.2	NA	0.20207	0.20221	2001.4	8.2	107-05-1	49 ppm (70mg/m3/6H)	orl-rat 2460
Carbon disulphide	(0060)	MKCR8581	1 NA	NA	NA	2000	99.99	0.2	NA	0.20007	0.20023	2001.6	8.1	75-15-0	1 ppm (3mg/m3/8H)	orl-ret 700r
cis-1,4-Dichloro-2-butene	(1198)	14718EF	NA	NA	NA	2000	95	0.2	NA	0.21058	0.21069	2001.1	8,5	1478-11-5	4 ppm (12mg/m3) (skin) N/A	ori-rat 1200 N/A
trans-1,4-Dichloro-2-butene	(0486)	MKBP8041\			NA	2000	96.5	0.2	NA.	0.20731	0.20748	2001.7	8.4	110-57-6	N/A	N/A
Diethyl ether	(0153)	1K18CAS000		NA	NA	2000	99.9	0.2	NA	0.20025	0.20040	2001.5	8.1	80-29-7	N/A	N/A
Ethyl methacrylate	(0381)	06126PX	NA	NA.	NA	2000	99	0.2	NA	0.20207	0.20230	2002.3	8.2	97-63-2	NA	orl-rat 14800
lodomethane	(0489)	SH8F8718\		NA	NA	2000	99.5	0.2	NA	0.20106	0.20121	2001.5	8.2	74-88-4	6 ppm(28mg/m3/8H)(sidn)	
2-Methyl-1-propanol	(0445)	15241EB	NA	NA	NA	2000	99.5	0.2	NA	0.20106	0.20120	2001.4	8.1	78-83-1	50 ppm (150mg/m3/8H)	Orl-rat 2480r
Methacrylonitrile Methyl acrylate	(0442)	00427ET	NA	NA	NA	2000	99	0.2	NA.	0.20207	0.20221	2001.4	8.2	126-98-7	1 ppm (3mg/m3/8H)(sldn)	orl-rat 120n
Methyl methacrylate	(1075)	SHBK0679 MKBW5137\		NA	NA.	2000	99.9	0.2	NA	0.20025	0.20040	2001.5	8.1	96-33-3	10 ppm(35mg/m3/8H)(sldn)	
Nitrobenzene	(0404)			NA NA	NA NA	2000	99.9	0.2	NA .	0.20025	0.20041	2001.6	8.1	80-62-6	100 ppm (410mg/m3/8H)	ori-rat 7872
2-Nitropropane	(0461)	01213TV 14002JX	NA NA	NA NA	NA NA	2000	99	0.2	NA NA	0.20207	0.20220	2001.3	8.2	98-95-3	1 ppm (5mg/m3/8H)(aldn)	orl-rat 780n
Pentachioroethane	(0450)	HGA01	NA	NA.	NA NA	2000	97.3	0.2	NA .	0.20560	0.20577	2001.6	6.3	79-46-9	10 ppm (35mg/m3/6H)	orl-ret 720n
1,1,2-Trichiorotrifluoroethane	(0474)	18930	NA	NA	NA NA	2000	98	0,2	NA NA	0.20413	0.20430	2001.6	8.3	76-01-7	N/A	N/A
Bromodichioromethane	35171	101623	0.05	5.00	40001.7	2000	NA NA	0.2 NA	NA.	0.20207	0.20225	2001.8	8,2	76-13-1	1000 ppm (7600mg/m3/8H)	
Dibromochioromethane	35171	101623	0.05	6.00	40002.1	2000	NA.		0.017	NA	NA	1999.6	22.9	75-27-4	N/A	ori-rat 916m
is-1,2-Dichioroethene	35171	101823	0.05	5.00	40003.1	2000	NA	NA	0.017	NA	NA	1999.6	23.0	124-48-1	NA	orl-rat 648n
rans-1,2-Dichloroethene	35171	101623	0.05	5.00	40003.1	2000	NA.	NA NA	0.017	NA NA	NA NA	1999.7	22.9	158-59-2	NA	N/A
Methylene chlorida	35171	101623	0.05	5.00	40002.8	2000	NA	NA.	0.017	NA NA	NA NA	1999.8	23.0	156-60-5	N/A	ort-rail 1235
,1-Dichloroethene	32251	102023	0,10	10,00	20001.6	2000	NA	NA	0.042	NA NA	NA NA	1999.6	22,9	75-09-2	500 ppm	ori-rat 820n
Promoform	95321	020724	0.10	10.00	20003.2	2000	NA	NA.	0.042	NA NA	NA NA	1999.7	20,4	75-35-4	1 ppm (4mg/m3/8H)	orl-rat 200r
arbon tetrachloride	95321	020724	0.10	10.00	20003.4	2000	NA	NA	0.042	NA NA	NA NA	1999.8	20.5	75-25-2	0.5 ppm (5mg/m3) (sldn)	ori-rat 933r
Chloratorm	95321	020724	0.10	10.00	20024.0	2000	NA	NA	0.042	NA	NA NA	1999.8	20.4	58-23-5	2 ppm (12.6mg/m3/8H)	ori-rat 2350
Dibromomethane	95321	020724	0.10	10.00	20002.9	2000	NA	NA.	0.042	NA	NA NA	1999.8	20.5	67-68-3	50 ppm (240mg/m3) (CL)	orf-ret 908r
,1-Dichloroethane	95321	020724	0.10	10.00	20003.4	2000	NA	NA	0.042	NA.	NA.	1999.8	20.5	74-95-3 75-34-3	N/A	ori-ret 106r
,2-Dichloropropane	95321	020724	0.10	10.00	20003,4	2000	NA	NA.	0.042	NA	NA.	1999.8		594-20-7	100 ppm	orl-rat 725n
etrachloroethene	95321	020724	0.10	10.00	20201.1	2000	NA	NA	0.042	NA	NA	2019.6		127-18-4	N/A	NA
, f ,1-Trichloroethane	95321	020724	0.10	10.00	20003.0	2000	NA	NA	0.042	NA.	NA NA	1999.8	20.5	71-55-6	25 ppm (170mg/m3/8H)(final)	
,2-Dibromo-3-chioropropane	35161	112322	0.05	5.00	40016.5	2000	NA	NA	0.017	NA	NA NA	2000.3	22.9	96-12-8	350 ppm (1900mg/m3/8H) 0.001 ppm	orl-ret 10000
2-Dibromoethane	35161	112322	0.05	5.00	40024.8	2000	NA	NA	0.017	NA	NA	2000.7		108-93-4		orl-rad 170m
2-Dichloroethane	35161	112322	0.08	5.00	40018.0	2000	NA	NA	0.017	NA	NA	2000.4		107-08-2	20 ppm (8H) 50 ppm (8H)	ori-rat 108m
2-Dichloropropane	35161	112322	0.05	5.00	40051.0	2000	NA	NA	0.017	NA	NA	2002.0	22.9	78-87-5	75 ppm (350mg/m3/9H)	orl-rat 670m orl-rat 1947m
3-Dichloropropane	35161	112322	0.05	5.00	40005.9	2000	NA	NA	0.017	NA	NA	1999.8		142-28-9	N/A	Unr-mus 3600
1-Dichloropropene	35161	112322	0.05	5.00	40012.1	2000	NA	NA	0.017	NA	NA	2000.1		563-58-6	N/A	N/A
s-1,3-Dichloropropena	35161	112322	0.05	5.00	40010.0	2000	NA	NA.	0.017	NA	NA	2000.0		0081-01-5	N/A	N/A
ans-1,3-Dichloropropene	35161	112322	0.05	5.00	40017.6	2000	NA	NA	0.017	NA	NA	2000.4	23.0 1	0061-02-8	N/A	N/A
exachloro-1,3-butadiene	35161	112322	0.05	5.00	40021.9	2000	NA	NA	0.017	NA	NA	2000.6	29.7	87-68-3	0.02 ppm (0.24mg/m3/8H)	orl-rat 82mg
1,1,2-Tetrachloroethane	35161	112322	0.05	5.00	40011.9	2000	NA	NA	0.017	NA	NA	2000.1	22.9	630-20-6	N/A	orl-rad 670m
1,2,2-Tetrachloroethane	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)(aldn)	orl-rat 800m
1,2-Trichloroethane ichloroethane	35161	112322	0.05	5.00	40006.6	2000	NA	NA	0.017	NA	NA	1999.8	23.0	79-00-5	10 ppm (46mg/m3/8H)(skin)	ori-rat 836m
2,3-Trichloropropane	35161 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/m3/9H)	orl-mus 2402r
enzene	35162	112322 050823	0.05	5.00	40007.5	2000	NA	NA	0.017	NA	NA	1999.9		96-18-4	10 ppm (60mg/m3/8H)	ori-rat 149.6n
omobenzene	36162	050823	0.05		40005.0	2000	NA	NA	0.017	NA	NA	1999.7		71-43-2	1 ppm	orl-rat 4894n
Butyl benzene	35162	060823	0.05	5.00	40006.9	2000	NA	NA	0.017	NA	NA	1999.8		108-86-1	N/A	ort-rat 2699m
hyl benzene	35162	050823	0.05		40003.B 40004.8		NA	NA	0.017	NA	NA	1999.7		104-51-8	N/A	N/A
isopropyl toluene	35162	050823			40005.8		NA	NA	0.017	NA	NA	1999.7		100-41-4	100 ppm (435mg/m3/8H)	orl-rat >2000in
phthalene	35162	050823			40006.2	2000	NA NA	NA NA	0.017	NA .	NA	1999.8		99-87-6	N/A	orl-rat 4750m
yrene	35162	050823			40004.8		NA NA	NA NA	0.017	NA	NA.	1999.8		91-20-3	10 ppm (50mg/m3/8H)	orl-rad 490m
uene	35162	050823			40006.2		NA	NA	0.017	NA	NA	1999.7		00-42-5	100 ppm	orl-rat 5000m
,3-Trichlorobenzene	35162	050823			40003.1		NA	NA NA	0.017	NA	NA	1999.8		08-88-3	200 ppm	orl-rat 5000m
2,4-Trichlorobenzene		050823			40006.8		NA	NA NA	0.017	NA NA	NA NA	1999.7		87-61-6	N/A	lpr-mus 1390r
,4-Trimethylbenzene					40001.8		NA	NA	0.017	NA NA	NA NA	1999.8		20-82-1	5 ppm (CL) (40mg/m3)	ori-rat 750mg
,5-Trimethylbenzene					40006.7		NA	NA.	0.017	NA	NA NA	1999.6		95-63-6	N/A	ort-rat 5g/
Cylene					40005.8		NA	NA.	0.017	NA	NA.			08-67-8	N/A	orl-rat 5000m
-Butyl benzene					40001.2		NA	NA NA	0.017	NA NA	NA NA	1999.6 1999.6		08-38-3	100 ppm (435mg/m3/8H)	orl-rat 5g/
-Butyl benzene					40002.4		NA	NA	0.017	NA.	NA NA	1999.6		98-06-6	N/A	N/A
ombenzene					40003.8		NA	NA	0.017	NA.	NA NA	1999.7		35-98-8	N/A	ori-rat 2240m
hiorotoluene					40000.3		NA		0.017	NA	NA NA	1999.7		08-90-7	75 ppm (350mg/m3/8H)	orl-rail 2290m
hicrotoluena					40003.3		NA		0.017	NA NA	NA NA	1999.7		05-49-8	50 ppm (250mg/m3/8H)	orl-rat 3900m
-Dichicrobenzene					40003.8		NA		0.017	NA NA	NA NA			06-43-4	N/A	orl-rat 2100m
Dichlorobenzene					40001.7		NA		0.017	NA NA	NA NA	1999.7 1999.6		95-50-1	50 ppm (300mg/m3) (CL)	orl-rat 500mg
-Dichlorobenzene					40001.B		NA		0.017	NA NA	NA NA	1999.6		41-73-1		lpr-mus 1062m
propylbenzene					40000.8		NA		0.017	NA NA	NA NA	1999.5		06-48-7	76 ppm (450mg/m3/8H)	orl-rat 500mg
ropylbenzene					40003.4		NA NA		0.017	NA NA	NA NA	1999.5		06-82-8	50 ppm (245mg/m3/8H)	orl-rat 1400mg
											רעניו		23.0 10	03-65-1	N/A	orl-rat 6040mg
ylene	35163	101923	0.05	5.00 4	40040.8	2000	NA	NA	0.017	NA	NA	2001.5	23.0 9	5-47-6	100 ppm (435mg/m3/8H)	Ipr-mus 1384m

<sup>\*</sup> The certified value is the concentration calculated from gravimetric and volumetric measurements unless otherwise stated.

\* Standards are prepared gravimetrically using behances that are calibrated with weights truccable to NIST (one above).

\* Standards are certified (4/2) 2-35 of the stated value, susions otherwise stated.

\* All Standards, after opening anapule, should be stored with cape tight and under appropriate inhoratory candillone.

\* Linearisalty behavener: Taylor, RA, and Raylor, C.E., "Calcibrations for Evaluating and Expressing the Uncertainty of NIST Measurement Result, NIST Technical Note 1297, U.S. Government Printing Office, Washington, DC, (1994).

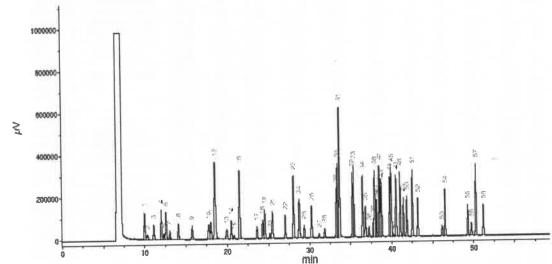
ANAB ISO 17034 Accredited AR-1539 Certificate Number https://Absolutestandards.com

## Run 16, "P95317 L021624 [2000µg/mL in MeOH]"

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". Analyzed using Method "GC5-M1".

### Comments

GC5-M1 Analysis by Candice Warren
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.
FID Signal = Edaq Channel 1
Standard injection = 0.5µL, Range=3



Penk #	Name	(min.)
1	Sther	9.97
2	1.1.2-Trichtoro-1,2,2-trifluoroetherm	10.33
3	1,1-Dichloroethene	11.10
4	Acetonitrile	12,00
5	Indomethane	12.31
6	Allyl chloride	12.55
9	Carbon disulide/Nathylene chloride	13,04
	trans-1,2-Dichlomethens	14.07
9	1.1-Dichloroethane	15.74
10	2,2-Dictrierograpane	17.70
3.3.	cis-1,2-Dichleroethene	19.60
52	Hethacrylonitrite/Methyl acrylete/Chloroform	10.45
13	Isobutanol/1,1,1-Trichloroethane	19.91
14	1,1-Dichteropropené	20.46
15	Carbon tetrachloride	20.79
16	@enzene/1,2-Dicniproethane	21.49
17	Trichloroethene	21.58
10	1,2-Dichloropropene	24.28
19	Methyl methocrylate	24,52
20	Bromodichloromethank	25.13
21	Dibromomethane/2-Mitropropiese	25.46
22	els-1,3-Dichloropropens	27.02
23	Torusine	26.05
24	Ethyl methacrylets/trans-1,3-Dichleropropens	28.73
25	L,1,2-Trichloroet/Ans	29.34
26	figtrachloroethene/1,3-Dichloropropane	20.24
27	Dibramochioromettune	31,16
28	1,2-Dilecompethene	32.84
28	Chlorobenzenik	33.26
30	Ethyphensene/1,1,1,2-fetractionoethave	23.40
31	m-Xytene/p-Xytene	33.86
32	a-Hylene	35.22
33	Styrene	35.30
34	Escarepyi benzane/Bremefank	36,48
35	crs-1,4-Dichlord-2-buttens	36.00
26	1,1,2,2-Tetrachieroethiene	37.23
37	1,2,3-Yrichipropane	37.77
211	п-Ризрубранавия	37.92
39	trans-1,n-Dichloro-3-busens	38.05
40	Beamabanzen4	38.14
-61	1,3,5-Trymethy/benzers	30.62
42	2-Chieroselvenik	38,77
43	4-Chlorotolueria	39.76
44	tert-Busylbenzene	39.91
45	1,2,4-Trimethylbenzene	40.17
46	Pertactionsettions	40.57
47	sec-Butyldenzena	41.02
48	p-Tsoprobykolukne 1.3-Drobioroberske#	41.42
49		45.83
50	1,4-Dictiorobenzene	42.52
52	n-Butylbenzene 1.2-Dichlorobenzene	43.38
52	1,2-Dibramo-3-chloropropane	46.12
54	Nitrobenzane	46,48
55	1,2,4-Trichtorobenzaris	49,26
56	Herachiprobutadina	49.72
52	Naphthatene	\$0.26
50	1_2_3-Trichlarobenzene	51.16
54	while a record of the annual control	

PO Box 5585 Hamden, CT 06518-0585

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

Safety Data Sheet (SDS)

GHS/OSHA Compliant

Section I Product and Company Identification

IDENTITY ANALYTICAL STANDARD DISSOLVED IN METHANOL

Manufacturer's Name

ABSOLUTE STANDARDS INC.

Emergency Telephone USA & CANADA

1-800-535-5053

Address

44 Rossotto Dr. Hamden CT, 06514 Emergency Telephone International Date Prepared/Revised

1-352-323-3500 January 1, 2023

Section II - Hazards Identification

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

H225 H370 **Highly Flammable Liquid and Vapor** 

H301, 311, 331 Toxic if swallowed, skin contact, inhaled

P271

Cause damage to organs Use in ventilated area

H351 P280

Suspected of causing cancer

P302.332

If on skin, wash with soap and water

P305,351,338

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

Eye protection.





Signal Word: DANGER

Section III - Composition

Components (Specific Chemical Identity; Common Name(s)) Methanol

METHYL ALCOHOL

CAS#: 67-56-1

% (optional) > 97

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

INTENDED USE: REFERENCE MATERIAL

Section IV. FIRST AID MEASURES

General advice

Consult a physician. Show this safety data sheet to the doctor in attendance. Move to safe area. If inhaled, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.

In case of skin contact

Wash with soap and water. Consult a physician.

In case of eye contact

Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician.

If swallowed

If inhaled

Do NOT induce vomiting. Rinse mouth with water. Consult a physician.

Section V. FIREFIGHTING MEASURES

Flammability

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

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

Suitable extinguishing media

Protective equipment for fire

Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide. Wear self contained breathing apparatus for fire fighting if necessary.

Section VI. ACCIDENTAL RELEASE MEASURES

Personal precautions

Wear respiratory protection. Avoid breathing vapors, mist or gas. Ensure adequate ventilation. Remove all sources of ignition. Vapours accumulate to form explosive concentrations.

Environmental precautions

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

Clean up

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

Section VII. HANDLING AND STORAGE

Precautions for safe handling

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

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

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

and kept upright to prevent leakage.

Section VIII. EXPOSURE CONTROLS/PERSONAL PROTECTION

Methanol

67-56-1 TWA 200 ppm

Skin notation

TWA 200 ppm

Potential for skin absorption, ingestion and inhalation.

Personal protective equipment Respiratory protection Handle with gloves. Gloves must be inspected prior to use.

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

Section IX - Physical/Chemical Characteristics

Methanol-SDS.xls

Page 1 of 2

Printed: 2/19/24

#### Absolute Standards Inc.

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

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

Solubility in Water

COMPLETE

Appearance and Odor

CLEAR, COLORLESS LIQUID WITH CHARACTERISTIC PUNGENT ODOR.

## Section X. STABILITY AND REACTIVITY

Chemical stability

Stable under recommended storage conditions.

Possibility of hazardous reactions

Vapours may form explosive mixture with air.

Conditions to avoid

Heat, flames, sparks, extreme temperature and sunlight. Acid chlorides, Acid anhydrides, Oxidizing agents, Alkali metals, Reducing agents, Acids

Materials to avoid 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

IATA

Proper shipping name:

UN number: 1230 Class: 3 Packing group: II Methanol

Proper shipping name:

UN number: 1230 Class: 3 Packing group: 11

## Section XV. REGULATORY INFORMATION

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

## Section XVI. Misc. INFORMATION

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

## Absolute Standards, Inc.

800-368-1131 www.absolutestandards.com



## Certified Reference Material CRM

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

CERTIFIED WEIGHT REPORT

Part Number: 95317 Lot Number: 021624 Description; Universal VOA Megambs

69 components

Expiration Date: 021627 nended Storage: Freezer (0 °C) Nominal Concentration (µg/mL): 2000 NIST Test ID#: 8UTB

Weight(s) shows below were combined and diluted to (mt )-

100.0 0.021 15-11-11-11

5E-05 Balance Uncertainty

Solvent(s): Methenol EG359-USQ12 021624 DATE 021624 DATE

Weight(s) shown below were combin	ed and dilute	ad to (mL):	100.0	0.021	1 Flank Uncertain	edw							Etter to trou	-1-	T GOTO E. I FORMAS	
Compound	(RMW)	Lot	Dir.	fritial	initial	Nominal Conc (µg/ml.)	Purity	Purity	Uncertainty	Target	Actual	Actual	Expanded Uncertainty		SDS information ent Safety info. On Atta	iched pg.)
The state of the s	T GHE PHINTING	R THATIANE	Pilitzeol	you (mu	.) Conc.(ug/ms.)	Conc (µg/mL)	(%)	Uncertainty	Pipette (mi.)	Weight(g)	Weight(g)	Canc (µg/mL)	) (+/-) (µg/mL)	CAS#	OSHA PEL (TWA)	L050
Acetonitrile	(0324)	021644	NA	NA	NA.	2000	99.99	0.2	NA	0.20007	0.20020	2001.3	0.4	75-05-8	***	
Allyl chloride (3-Chloropropene)	(0325)	102396	NA		NA	2000	99	0.2	NA	0.20207	0.20221	2001.4	8.2	107-05-1	49 ppm (70mg/m3/6H)	orl-rat 2460
Carbon disulphide	(0060)	MKCR8581	1 NA	NA	NA	2000	99.99	0.2	NA	0.20007	0.20023	2001.6	8.1	75-15-0	1 ppm (3mg/m3/8H)	orl-ret 700r
cis-1,4-Dichloro-2-butene	(1198)	14718EF	NA	NA	NA	2000	95	0.2	NA	0.21058	0.21069	2001.1	8,5	1478-11-5	4 ppm (12mg/m3) (skin) N/A	ori-rat 1200 N/A
trans-1,4-Dichloro-2-butene	(0486)	MKBP8041\			NA	2000	96.5	0.2	NA.	0.20731	0.20748	2001.7	8.4	110-57-6	N/A	N/A
Diethyl ether	(0153)	1K18CAS000		NA	NA	2000	99.9	0.2	NA	0.20025	0.20040	2001.5	8.1	80-29-7	N/A	N/A
Ethyl methacrylate	(0381)	06126PX	NA	NA.	NA	2000	99	0.2	NA	0.20207	0.20230	2002.3	8.2	97-63-2	NA	orl-rat 14800
lodomethane	(0489)	SH8F8718\		NA	NA	2000	99.5	0.2	NA	0.20106	0.20121	2001.5	8.2	74-88-4	6 ppm(28mg/m3/8H)(sidn)	
2-Methyl-1-propanol	(0445)	15241EB	NA	NA	NA	2000	99.5	0.2	NA	0.20106	0.20120	2001.4	8.1	78-83-1	50 ppm (150mg/m3/8H)	Orl-rat 2480r
Methacrylonitrile Methyl acrylate	(0442)	00427ET	NA	NA	NA	2000	99	0.2	NA.	0.20207	0.20221	2001.4	8.2	126-98-7	1 ppm (3mg/m3/8H)(sldn)	orl-rat 120n
Methyl methacrylate	(1075)	SHBK0679 MKBW5137\		NA	NA.	2000	99.9	0.2	NA	0.20025	0.20040	2001.5	8.1	96-33-3	10 ppm(35mg/m3/8H)(sldn)	
Nitrobenzene	(0404)			NA NA	NA NA	2000	99.9	0.2	NA .	0.20025	0.20041	2001.6	8.1	80-62-6	100 ppm (410mg/m3/8H)	ori-rat 7872
2-Nitropropane	(0461)	01213TV 14002JX	NA NA	NA NA	NA NA	2000	99	0.2	NA NA	0.20207	0.20220	2001.3	8.2	98-95-3	1 ppm (5mg/m3/8H)(aldn)	orl-rat 780n
Pentachioroethane	(0450)	HGA01	NA	NA.	NA NA	2000	97.3	0.2	NA .	0.20560	0.20577	2001.6	6.3	79-46-9	10 ppm (35mg/m3/6H)	orl-ret 720n
1,1,2-Trichiorotrifluoroethane	(0474)	18930	NA	NA	NA NA	2000	98	0,2	NA NA	0.20413	0.20430	2001.6	8.3	76-01-7	N/A	N/A
Bromodichioromethane	35171	101623	0.05	5.00	40001.7	2000	NA NA	0.2 NA	NA.	0.20207	0.20225	2001.8	8,2	76-13-1	1000 ppm (7600mg/m3/8H)	
Dibromochioromethane	35171	101623	0.05	6.00	40002.1	2000	NA.		0.017	NA	NA	1999.6	22.9	75-27-4	N/A	ori-rat 916m
is-1,2-Dichioroethene	35171	101823	0.05	5.00	40003.1	2000	NA	NA	0.017	NA	NA	1999.6	23.0	124-48-1	NA	orl-rat 648n
rans-1,2-Dichloroethene	35171	101623	0.05	5.00	40003.1	2000	NA.	NA NA	0.017	NA NA	NA NA	1999.7	22.9	158-59-2	NA	N/A
Methylene chlorida	35171	101623	0.05	5.00	40002.8	2000	NA	NA.	0.017	NA NA	NA NA	1999.8	23.0	156-60-5	N/A	ort-rail 1235
,1-Dichloroethene	32251	102023	0,10	10,00	20001.6	2000	NA	NA	0.042	NA NA	NA NA	1999.6	22,9	75-09-2	500 ppm	ori-rat 820n
Promoform	95321	020724	0.10	10.00	20003.2	2000	NA	NA.	0.042	NA NA	NA NA	1999.7	20,4	75-35-4	1 ppm (4mg/m3/8H)	orl-rat 200r
arbon tetrachloride	95321	020724	0.10	10.00	20003.4	2000	NA	NA	0.042	NA NA	NA NA	1999.8	20.5	75-25-2	0.5 ppm (5mg/m3) (sldn)	ori-rat 933r
Chloratorm	95321	020724	0.10	10.00	20024.0	2000	NA	NA	0.042	NA	NA NA	1999.8	20.4	58-23-5	2 ppm (12.6mg/m3/8H)	ori-rat 2350
Dibromomethane	95321	020724	0.10	10.00	20002.9	2000	NA	NA.	0.042	NA	NA NA	1999.8	20.5	67-68-3	50 ppm (240mg/m3) (CL)	orf-ret 908r
,1-Dichloroethane	95321	020724	0.10	10.00	20003.4	2000	NA	NA	0.042	NA.	NA.	1999.8	20.5	74-95-3 75-34-3	N/A	ori-ret 106r
,2-Dichloropropane	95321	020724	0.10	10.00	20003,4	2000	NA	NA.	0.042	NA	NA.	1999.8		594-20-7	100 ppm	orl-rat 725n
etrachloroethene	95321	020724	0.10	10.00	20201.1	2000	NA	NA	0.042	NA	NA	2019.6		127-18-4	N/A	NA
, f ,1-Trichloroethane	95321	020724	0.10	10.00	20003.0	2000	NA	NA	0.042	NA.	NA NA	1999.8	20.5	71-55-6	25 ppm (170mg/m3/8H)(final)	
,2-Dibromo-3-chioropropane	35161	112322	0.05	5.00	40016.5	2000	NA	NA	0.017	NA	NA NA	2000.3	22.9	96-12-8	350 ppm (1900mg/m3/8H) 0.001 ppm	orl-ret 10000
2-Dibromoethane	35161	112322	0.05	5.00	40024.8	2000	NA	NA	0.017	NA	NA	2000.7		108-93-4		orl-rad 170m
2-Dichloroethane	35161	112322	0.08	5.00	40018.0	2000	NA	NA	0.017	NA	NA	2000.4		107-08-2	20 ppm (8H) 50 ppm (8H)	ori-rat 108m
2-Dichloropropane	35161	112322	0.05	5.00	40051.0	2000	NA	NA	0.017	NA	NA	2002.0	22.9	78-87-5	75 ppm (350mg/m3/9H)	orl-rat 670m orl-rat 1947m
3-Dichloropropane	35161	112322	0.05	5.00	40005.9	2000	NA	NA	0.017	NA	NA	1999.8		142-28-9	N/A	Unr-mus 3600
1-Dichloropropene	35161	112322	0.05	5.00	40012.1	2000	NA	NA	0.017	NA	NA	2000.1		563-58-6	N/A	N/A
s-1,3-Dichloropropena	35161	112322	0.05	5.00	40010.0	2000	NA	NA.	0.017	NA	NA	2000.0		0081-01-5	N/A	N/A
ans-1,3-Dichloropropene	35161	112322	0.05	5.00	40017.6	2000	NA	NA	0.017	NA	NA	2000.4	23.0 1	0061-02-8	N/A	N/A
exachloro-1,3-butadiene	35161	112322	0.05	5.00	40021.9	2000	NA	NA	0.017	NA	NA	2000.6	29.7	87-68-3	0.02 ppm (0.24mg/m3/8H)	orl-rat 82mg
1,1,2-Tetrachloroethane	35161	112322	0.05	5.00	40011.9	2000	NA	NA	0.017	NA	NA	2000.1	22.9	630-20-6	N/A	orl-rad 670m
1,2,2-Tetrachloroethane	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)(aldn)	orl-rat 800m
1,2-Trichloroethane ichloroethane	35161	112322	0.05	5.00	40006.6	2000	NA	NA	0.017	NA	NA	1999.8	23.0	79-00-5	10 ppm (46mg/m3/8H)(skin)	ori-rat 836m
2,3-Trichloropropane	35161 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/m3/9H)	orl-mus 2402r
enzene	35162	112322 050823	0.05	5.00	40007.5	2000	NA	NA	0.017	NA	NA	1999.9		96-18-4	10 ppm (60mg/m3/8H)	ori-rat 149.6n
omobenzene	36162	050823	0.05		40005.0	2000	NA	NA	0.017	NA	NA	1999.7		71-43-2	1 ppm	orl-rat 4894n
Butyl benzene	35162	060823	0.05	5.00	40006.9	2000	NA	NA	0.017	NA	NA	1999.8		108-86-1	N/A	ort-rat 2699m
hyl benzene	35162	050823	0.05		40003.B 40004.8		NA	NA	0.017	NA	NA	1999.7		104-51-8	N/A	N/A
isopropyl toluene	35162	050823			40005.8		NA	NA	0.017	NA	NA	1999.7		100-41-4	100 ppm (435mg/m3/8H)	orl-rat >2000in
phthalene	35162	050823			40006.2	2000	NA NA	NA NA	0.017	NA .	NA	1999.8		99-87-6	N/A	orl-rat 4750m
yrene	35162	050823			40004.8		NA NA	NA NA	0.017	NA	NA.	1999.8		91-20-3	10 ppm (50mg/m3/8H)	orl-rad 490m
uene	35162	050823			40006.2		NA	NA	0.017	NA	NA	1999.7		00-42-5	100 ppm	orl-rat 5000m
,3-Trichlorobenzene	35162	050823			40003.1		NA	NA NA	0.017	NA	NA	1999.8		08-88-3	200 ppm	orl-rat 5000m
2,4-Trichlorobenzene		050823			40006.8		NA	NA NA	0.017	NA NA	NA NA	1999.7		87-61-6	N/A	lpr-mus 1390r
,4-Trimethylbenzene					40001.8		NA	NA	0.017	NA NA	NA NA	1999.8		20-82-1	5 ppm (CL) (40mg/m3)	ori-rat 750mg
,5-Trimethylbenzene					40006.7		NA	NA.	0.017	NA	NA NA	1999.6		95-63-6	N/A	ort-rat 5g/
Cylene					40005.8		NA	NA.	0.017	NA	NA.			08-67-8	N/A	orl-rat 5000m
-Butyl benzene					40001.2		NA	NA NA	0.017	NA NA	NA NA	1999.6 1999.6		08-38-3	100 ppm (435mg/m3/8H)	orl-rat 5g/
-Butyl benzene					40002.4		NA	NA	0.017	NA.	NA NA	1999.6		98-06-6	N/A	N/A
ombenzene					40003.8		NA	NA	0.017	NA.	NA NA	1999.7		35-98-8	N/A	ori-rat 2240m
hiorotoluene					40000.3		NA		0.017	NA	NA NA	1999.7		08-90-7	75 ppm (350mg/m3/8H)	orl-rail 2290m
hicrotoluena					40003.3		NA		0.017	NA NA	NA NA	1999.7		05-49-8	50 ppm (250mg/m3/8H)	orl-rat 3900m
-Dichicrobenzene					40003.8		NA		0.017	NA NA	NA NA			06-43-4	N/A	orl-rat 2100m
Dichlorobenzene					40001.7		NA		0.017	NA NA	NA NA	1999.7 1999.6		95-50-1	50 ppm (300mg/m3) (CL)	orl-rat 500mg
-Dichlorobenzene					40001.B		NA		0.017	NA NA	NA NA	1999.6		41-73-1		lpr-mus 1062m
propylbenzene					40000.8		NA		0.017	NA NA	NA NA	1999.5		06-48-7	76 ppm (450mg/m3/8H)	orl-rat 500mg
ropylbenzene					40003.4		NA NA		0.017	NA NA	NA NA	1999.5		06-82-8	50 ppm (245mg/m3/8H)	orl-rat 1400mg
											רעניו		23.0 10	03-65-1	N/A	orl-rat 6040mg
ylene	35163	101923	0.05	5.00 4	40040.8	2000	NA	NA	0.017	NA	NA	2001.5	23.0 9	5-47-6	100 ppm (435mg/m3/8H)	Ipr-mus 1384m

<sup>\*</sup> The certified value is the concentration calculated from gravimetric and volumetric measurements unless otherwise stated.

\* Standards are prepared gravimetrically using behances that are calibrated with weights truccable to NIST (one above).

\* Standards are certified (4/2) 2-35 of the stated value, susions otherwise stated.

\* All Standards, after opening anapule, should be stored with cape tight and under appropriate inhoratory candillone.

\* Linearisalty behavener: Taylor, RA, and Raylor, C.E., "Calcibrations for Evaluating and Expressing the Uncertainty of NIST Measurement Result, NIST Technical Note 1297, U.S. Government Printing Office, Washington, DC, (1994).

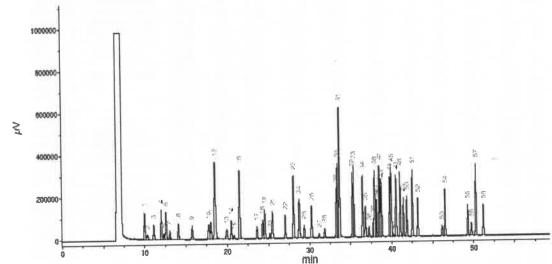
ANAB ISO 17034 Accredited AR-1539 Certificate Number https://Absolutestandards.com

## Run 16, "P95317 L021624 [2000µg/mL in MeOH]"

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". Analyzed using Method "GC5-M1".

### Comments

GC5-M1 Analysis by Candice Warren
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.
FID Signal = Edaq Channel 1
Standard injection = 0.5µL, Range=3



Penk #	Name	(min.)
1	Sther	9.97
2	1.1.2-Trichtoro-1,2,2-trifluoroetherm	10.33
3	1,1-Dichloroethene	11.10
4	Acetonitrile	12,00
5	Indomethane	12.31
6	Allyl chloride	12.55
9	Carbon disulide/Nathylene chloride	13,04
	trans-1,2-Dichlomethens	14.07
9	1.1-Dichloroethane	15.74
10	2,2-Dictrierograpane	17.70
3.3.	cis-1,2-Dichieroethene	19.60
52	Hethacrylonitrite/Methyl ecrylete/Chloroform	10.49
13	Isobutanol/1,1,1-Trichloroethane	19.91
14	1,1-Dichtoropropené	20.46
15	Carbon tetrachloride	20.79
16	@enzene/1,2-Dicniproethane	21.49
17	Trichloroethene	21.58
10	1,2-Dichloropropene	24.28
19	Methyl methocrylate	24,52
20	Bromodichloromethank	25.13
21	Dibromomethane/2-Mitropropiese	25.46
22	els-1,3-Dichloropropens	27.02
23	Torusine	26.05
24	Ethyl methacryfets/trans-1,3-Dichloropropens	28.73
25	L,1,2-Trichloroet/Ans	29.34
26	figtrachloroethene/1,3-Dichloropropane	20.24
27	Dibramochiaromettune	31,16
28	1,2-Dilecompethene	32.84
28	Chlorobenzenik	33.26
30	Ethyphensene/1,1,1,2-fetractionoethave	23.40
31	m-Xytene/p-Xytene	33.86
32	a-Hylene	35.22
33	Styrene	35.30
34	Escarepyi benzane/Bremefank	36,48
35	crs-1,4-Dichlord-2-buttens	36.00
26	1,1,2,2-Tetrachieroethiene	37.23
37	1,2,3-Yrichipropane	37.77
211	п-Ризрубранавия	37.92
39	trans-1,n-Dichloro-3-busens	38.05
40	Beamabanzen4	38.14
-61	1,3,5-Trymethy/benzers	30.62
42	2-Chieroselvenik	38,77
43	4-Chlorotolueria	39.76
44	tert-Busylbenzene	39.91
45	1,2,4-Trimethylbenzene	40.17
46	Pertactionsettions	40.57
47	sec-Butyldenzena	41.02
48	p-Tsoprobykolukne 1.3-Drobioroberske#	41.42
49		45.83
50	1,4-Dictiorobenzene	42.52
52	n-Butylbenzene 1.2-Dichlorobenzene	43.38
52	1,2-Dibramo-3-chloropropane	46.12
54	Nitrobenzane	46,48
55	1,2,4-Trichtorobenzaris	49,26
56	Herachiprobutadina	49.72
52	Naphthatene	\$0.26
50	1_2_3-Trichlarobenzene	51.16
54	while a record of the annual contract	

PO Box 5585 Hamden, CT 06518-0585

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

Safety Data Sheet (SDS)

GHS/OSHA Compliant

Section I Product and Company Identification

IDENTITY ANALYTICAL STANDARD DISSOLVED IN METHANOL

Manufacturer's Name

ABSOLUTE STANDARDS INC.

Emergency Telephone USA & CANADA

1-800-535-5053

Address

44 Rossotto Dr. Hamden CT, 06514 Emergency Telephone International Date Prepared/Revised

1-352-323-3500 January 1, 2023

Section II - Hazards Identification

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

H225 H370 **Highly Flammable Liquid and Vapor** 

H301, 311, 331 Toxic if swallowed, skin contact, inhaled

P271

Cause damage to organs Use in ventilated area

H351 P280

Suspected of causing cancer

P302.332

If on skin, wash with soap and water

P305,351,338

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





Signal Word: DANGER

Section III - Composition

Components (Specific Chemical Identity; Common Name(s)) Methanol

METHYL ALCOHOL

CAS#: 67-56-1

% (optional) > 97

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

INTENDED USE: REFERENCE MATERIAL

Section IV. FIRST AID MEASURES

General advice

Consult a physician. Show this safety data sheet to the doctor in attendance. Move to safe area. If inhaled, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.

In case of skin contact

Wash with soap and water. Consult a physician.

In case of eye contact

Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician.

If swallowed

If inhaled

Do NOT induce vomiting. Rinse mouth with water. Consult a physician.

Section V. FIREFIGHTING MEASURES

Flammability

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

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

Suitable extinguishing media

Protective equipment for fire

Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide. Wear self contained breathing apparatus for fire fighting if necessary.

Section VI. ACCIDENTAL RELEASE MEASURES

Personal precautions

Wear respiratory protection. Avoid breathing vapors, mist or gas. Ensure adequate ventilation. Remove all sources of ignition. Vapours accumulate to form explosive concentrations.

Environmental precautions

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

Clean up

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

Section VII. HANDLING AND STORAGE

Precautions for safe handling

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

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

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

and kept upright to prevent leakage.

Section VIII. EXPOSURE CONTROLS/PERSONAL PROTECTION

Methanol

67-56-1 TWA 200 ppm

Skin notation

TWA 200 ppm

Potential for skin absorption, ingestion and inhalation.

Personal protective equipment Respiratory protection Handle with gloves. Gloves must be inspected prior to use. Eye protection.

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

Section IX - Physical/Chemical Characteristics

Methanol-SDS.xls

Page 1 of 2

Printed: 2/19/24

#### Absolute Standards Inc.

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

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

Solubility in Water

COMPLETE

Appearance and Odor

CLEAR, COLORLESS LIQUID WITH CHARACTERISTIC PUNGENT ODOR.

## Section X. STABILITY AND REACTIVITY

Chemical stability

Stable under recommended storage conditions.

Possibility of hazardous reactions

Vapours may form explosive mixture with air.

Conditions to avoid

Heat, flames, sparks, extreme temperature and sunlight. Acid chlorides, Acid anhydrides, Oxidizing agents, Alkali metals, Reducing agents, Acids

Materials to avoid 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

IATA

Proper shipping name:

UN number: 1230 Class: 3 Packing group: II Methanol

Proper shipping name:

UN number: 1230 Class: 3 Packing group: 11

## Section XV. REGULATORY INFORMATION

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

## Section XVI. Misc. INFORMATION

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

## Absolute Standards, Inc.

800-368-1131 www.absolutestandards.com



#### Certified Reference Material CRM

Lot#

EC592-US

Solvent(s):

Methanol



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

#### **CERTIFIED WEIGHT REPORT**

Part Number: Lot Number: <u>95319</u>

032922

Description:

Revised Additions Mix

11 components

**Expiration Date:** 

032925

Recommended Storage:

Refrigerate (4 °C)

Nominal Concentration (µg/mL):

tration (µg/mL): Varied NIST Test ID#: 6UTB

ro ro

5E-05 Balance Uncertainty

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

Abundance

nL): 100.0

0.012 Flask Uncertainty

Formulated By: Prashant Chauhan DATE

Seriewed By: Pedro L. Rentas DATE

										Expanded		SDS Information	
			Lot	Nominal	Purity	Uncertainty	Target	Actual	Actual	Uncertainty	(Solven	t Safety Info. On Attach	ned pg.)
	Compound	RM#	Number	Conc (µg/mL)	(%)	Purity	Weight(g)	Weight(g)	Conc (µg/mL)	(+/-) (µg/mL)	CAS#	OSHA PEL (TWA)	LD50
1.,	Acrylonitrile	7	4718CK	10000	99	0.2	1.01015	1.01030	10001.5	40.5	107-13-1	N/A	orl-rat 78 mg/kg
2.	1-Chlorobutane	1072	MKCM5711	2000	99.99	0.2	0.20003	0.20020	2001.7	8.1	109-69-3	N/A	orl-rat 2670mg/kg
3.	Cyclohexane	1023	28930	2000	99	0.2	0.20203	0.20215	2001.2	8.2	110-82-7	300 ppm (1050mg/m3/8H)	orl-rat 12705mg/kg
4.	Di-isopropyl ether (DIPE)	987	00412MX	2000	99	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	99	0.2	4.04060	4.04100	40004.0	161.9	123-91-1	25 ppm (90mg/m3/8H)(skin)	
6.	Hexachioroethane	199	12604HBV	2000	99	0.2	0.20203	0.20213	2001.0	8.2	67-72-1	1 ppm (10mg/m3/8H)(skin)	orl-gpg 4970mg/kg
7.	Methylcyclohexane	1627	08046KN	2000	99	0.2	0.20203	0.20215	2001.2	8.2	108-87-2	N/A	N/A
8.	Methyl tert-butyl ether (MTBE)	209	02197JJ	2000	99.8	0.2	0.20041	0.20055	2001.4	8.1	1634-04-4	N/A	orl-rat 4g/kg
9.	Propionitrile	349	1395468	20000	99	0.2	2.02030	2.02045	20001.5	81.0	107-12-0	N/A	orl-rat 39mg/kg
10.	Tetrahydrofuran	380	SHBH8330	10000	99.9	0.2	1.00105	1.00120	10001.5	40.1	109-99-9	20 ppm (590mg/m3/8H)	ori-rat 1650mg/kg
11.	1,2,3,4-Tetramethylbenzene	491	AP01	2000	93	0.2	0.21506	0.21520	2001.3	8.7	488-23-3	N/A	orl-rat 6408mg/kg

TIC: 95319.D

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

4000000				26.83			<ul> <li>Uncer</li> </ul>	andards, after tainty Refere	r opening an ence: Taylor lote 1297, U.	pule, should , B.N. and K	be stored wuyat, C.E.,
3500000				and speed by door							
3000000											
2500000 -		1	8,53 20,18		1.5µ	n film thi	ckness). T	emp. 1 =	i (60m X ( 35°C (10r min., Inje	nin.), Ten	p. 2
2000000		13,79	20,10		200°	C, Detect	or Temp.	= 220°C.	Solvent De Candice Wa	elay: 8	-
1500000		***************************************	The second second								
1000000		CONTRACTOR CONTRACTOR	New Persons and Pe						51,62		
500000		15.45 13.57	20,63	24,85				4	8 44		
Time>0	10.00	15.00	20.00	25.00	30.00	35.00	40.00	45.00	50.00	55.00	60.00

	MSD RT
Name	(min.)
Methyl tert-butyl ether (MTBE)	13.56
Acrylonitrile	13.79
Di-isopropyl ether	15.44
Propionitrile	18.53
Tetrahydrofuran	20.17
Cyclohexane	20.58
1-Chlorobutane	20.83
Methylcyclohexane	24.84
1,4-Dioxane	26.84
Hexachioroethane	48.44
1,2,3,4-Tetramethylbenzene	51.62

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

Safety Data Sheet (SDS)

GHS/OSHA Compliant

### Section I Product and Company Identification

ANALYTICAL STANDARD DISSOLVED IN METHANOL IDENTITY

1-800-535-5053 ABSOLUTE STANDARDS INC Emergency Telephone USA & CANADA Manufacturer's Name 1-352-323-3500 Address 44 Rossotto Dr. **Emergency Telephone International** January 1, 2023

Hamden CT, 06514 Date Prepared/Revised

Section II - Hazards Identification

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

Highly Flammable Liquid and Vapor Toxic if swallowed, skin contact, inhaled H225 H301, 311, 331 Suspected of causing cancer H351

H370 Cause damage to organs Use in ventilated area P280 Use gloves, eye protection/face sheild P271

P305,351,338 If in eyes, remove contacts, rinse with water P302,332 If on skin, wash with soap and water





Signal Word: DANGER

#### Section III - Composition

CAS#: LD50 Oral - Rat OSHA PEL % (optional) Components:

67-56-1 2,769 mg/kg 200 ppm > 99 Methanol

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

INTENDED USE: REFERENCE MATERIAL

#### Section IV. FIRST AID MEASURES

Consult a physician. Show this safety data sheet to the doctor in attendance. Move to safe area. General advice If inhaled, move person into fresh air. If not breathing, give artificial respiration. Consult a physician. If inhaled

Wash with soap and water. Consult a physician. In case of skin contact

Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician. In case of eye contact

Do NOT induce vomiting. Rinse mouth with water. Consult a physician. If swallowed

#### Section V. FIREFIGHTING MEASURES

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

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

Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide. Suitable extinguishing media Protective equipment for fire Wear self contained breathing apparatus for fire fighting if necessary.

### Section VI. ACCIDENTAL RELEASE MEASURES

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

ignition. Vapours accumulate to form explosive concentrations.

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

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

### Section VII. HANDLING AND STORAGE

Avoid contact with skin and eyes. Avoid inhalation of vapour or mist. Precautions for safe handling

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

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

and kept upright to prevent leakage.

### Section VIII. EXPOSURE CONTROLS/PERSONAL PROTECTION

Methanol 67-56-1 TWA 200 ppm Skin notation TWA 200 ppm

Potential for skin absorption, ingestion and inhalation.

Personal protective equipment Respiratory protection Handle with gloves. Gloves must be inspected prior to use. Eye protection.

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

#### Section IX - Physical/Chemical Characteristics

Printed: 11/13/23 Page 1 of 2 Methanol-SDS copy.xls

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

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

Boiling Point		Specific Gravity (H2O = 1)	
Boung Fornt	65°C	7.8 . 5	0.79
Vapor Pressure (mm Hg)		Melting Point	
	96		-98°C
Vapor Density (AIR = 1)		Evaporation rate	
	1.11	(Butyl Acetate = 1)	4.6

Solubility in Water

COMPLETE

Appearance and Odor

CLEAR, COLORLESS LIQUID WITH CHARACTERISTIC PUNGENT ODOR.

#### Section X. STABILITY AND REACTIVITY

Chemical stability

Stable under recommended storage conditions.

Possibility of hazardous reactions

Vapours may form explosive mixture with air.

Conditions to avoid

Heat, flames, sparks, extreme temperature and sunlight.

Materials to avoid

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

Hazardous decomposition products formed under fire conditions. - Carbon oxides

#### Section XI. TOXICOLOGICAL INFORMATION

LD50 Oral - rat - 5,628 mg/kg

LC50 Inhalation - rat - 4 h - 64000 ppm

LD50 Dermal - rabbit - 15,800 mg/kg

Toxic if absorbed through skin. Causes skin irritation.

Eye damage/eye irritation

Toxic if inhaled. Causes respiratory tract irritation.

Toxic if swallowed.

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

LC50

15,400 mg/l - 96 h

EC50

24,500.00 mg/l - 48 h

EC100

10,000.00 mg/l - 24 h

#### Section XIII. DISPOSAL CONSIDERATIONS

Dispose with normal Laboratory Solvent Waste.

#### Section XIV. TRANSPORT INFORMATION

DOT (US)

IATA

UN number: 1230 Class: 3 Packing group: II

Proper shipping name:

Methanol

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

#### Section XV. REGULATORY INFORMATION

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

#### Section XVI. Misc. INFORMATION

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

## Absolute Standards, Inc.

800-368-1131 www.absolutestandards.com



#### Certified Reference Material CRM

Lot#

EC592-US

Solvent(s):

Methanol



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

#### **CERTIFIED WEIGHT REPORT**

Part Number: Lot Number: <u>95319</u>

032922

Description:

Revised Additions Mix

11 components

**Expiration Date:** 

032925

Recommended Storage:

Refrigerate (4 °C)

Nominal Concentration (µg/mL):

tration (µg/mL): Varied NIST Test ID#: 6UTB

ro ro

5E-05 Balance Uncertainty

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

Abundance

nL): 100.0

0.012 Flask Uncertainty

Formulated By: Prashant Chauhan DATE

Seriewed By: Pedro L. Rentas DATE

										Expanded		SDS Information	
			Lot	Nominal	Purity	Uncertainty	Target	Actual	Actual	Uncertainty	(Solven	t Safety Info. On Attach	ned pg.)
	Compound	RM#	Number	Conc (µg/mL)	(%)	Purity	Weight(g)	Weight(g)	Conc (µg/mL)	(+/-) (µg/mL)	CAS#	OSHA PEL (TWA)	LD50
1.,	Acrylonitrile	7	4718CK	10000	99	0.2	1.01015	1.01030	10001.5	40.5	107-13-1	N/A	orl-rat 78 mg/kg
2.	1-Chlorobutane	1072	MKCM5711	2000	99.99	0.2	0.20003	0.20020	2001.7	8.1	109-69-3	N/A	orl-rat 2670mg/kg
3.	Cyclohexane	1023	28930	2000	99	0.2	0.20203	0.20215	2001.2	8.2	110-82-7	300 ppm (1050mg/m3/8H)	orl-rat 12705mg/kg
4.	Di-isopropyl ether (DIPE)	987	00412MX	2000	99	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	99	0.2	4.04060	4.04100	40004.0	161.9	123-91-1	25 ppm (90mg/m3/8H)(skin)	
6.	Hexachioroethane	199	12604HBV	2000	99	0.2	0.20203	0.20213	2001.0	8.2	67-72-1	1 ppm (10mg/m3/8H)(skin)	orl-gpg 4970mg/kg
7.	Methylcyclohexane	1627	08046KN	2000	99	0.2	0.20203	0.20215	2001.2	8.2	108-87-2	N/A	N/A
8.	Methyl tert-butyl ether (MTBE)	209	02197JJ	2000	99.8	0.2	0.20041	0.20055	2001.4	8.1	1634-04-4	N/A	orl-rat 4g/kg
9.	Propionitrile	349	1395468	20000	99	0.2	2.02030	2.02045	20001.5	81.0	107-12-0	N/A	orl-rat 39mg/kg
10.	Tetrahydrofuran	380	SHBH8330	10000	99.9	0.2	1.00105	1.00120	10001.5	40.1	109-99-9	20 ppm (590mg/m3/8H)	orl-rat 1650mg/kg
11.	1,2,3,4-Tetramethylbenzene	491	AP01	2000	93	0.2	0.21506	0.21520	2001.3	8.7	488-23-3	N/A	orl-rat 6408mg/kg

TIC: 95319.D

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

4000000				26.83			<ul> <li>Uncer</li> </ul>	andards, after tainty Refere	r opening an ence: Taylor lote 1297, U.	pule, should , B.N. and K	be stored wuyat, C.E.,
3500000				and speed by door							
3000000											
2500000 -		1	8,53 20,18		1.5µ	n film thi	ckness). T	emp. 1 =	i (60m X ( 35°C (10r min., Inje	nin.), Ten	p. 2
2000000		13,79	20,10		200°	C, Detect	or Temp.	= 220°C.	Solvent De Candice Wa	elay: 8	-
1500000		***************************************	The second second								
1000000		CONTRACTOR CONTRACTOR	New Persons and Pe						51,62		
500000		15.45 13.57	20,63	24,85				4	8 44		
Time>0	10.00	15.00	20.00	25.00	30.00	35.00	40.00	45.00	50.00	55.00	60.00

	MSD RT
Name	(min.)
Methyl tert-butyl ether (MTBE)	13.56
Acrylonitrile	13.79
Di-isopropyl ether	15.44
Propionitrile	18.53
Tetrahydrofuran	20.17
Cyclohexane	20.58
1-Chlorobutane	20.83
Methylcyclohexane	24.84
1,4-Dioxane	26.84
Hexachioroethane	48.44
1,2,3,4-Tetramethylbenzene	51.62

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

Safety Data Sheet (SDS)

GHS/OSHA Compliant

### Section I Product and Company Identification

ANALYTICAL STANDARD DISSOLVED IN METHANOL IDENTITY

1-800-535-5053 ABSOLUTE STANDARDS INC Emergency Telephone USA & CANADA Manufacturer's Name 1-352-323-3500 Address 44 Rossotto Dr. **Emergency Telephone International** January 1, 2023

Hamden CT, 06514 Date Prepared/Revised

#### Section II - Hazards Identification

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

Highly Flammable Liquid and Vapor Toxic if swallowed, skin contact, inhaled H225 H301, 311, 331 Suspected of causing cancer H351 H370 Cause damage to organs

Use in ventilated area P280 Use gloves, eye protection/face sheild P271 P305,351,338 If in eyes, remove contacts, rinse with water P302,332 If on skin, wash with soap and water





Signal Word: DANGER

#### Section III - Composition

CAS#: LD50 Oral - Rat OSHA PEL % (optional) Components:

67-56-1 2,769 mg/kg 200 ppm > 99 Methanol

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

INTENDED USE: REFERENCE MATERIAL

#### Section IV. FIRST AID MEASURES

Consult a physician. Show this safety data sheet to the doctor in attendance. Move to safe area. General advice If inhaled, move person into fresh air. If not breathing, give artificial respiration. Consult a physician. If inhaled

Wash with soap and water. Consult a physician. In case of skin contact

Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician. In case of eye contact

Do NOT induce vomiting. Rinse mouth with water. Consult a physician. If swallowed

#### Section V. FIREFIGHTING MEASURES

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

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

Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide. Suitable extinguishing media Protective equipment for fire Wear self contained breathing apparatus for fire fighting if necessary.

### Section VI. ACCIDENTAL RELEASE MEASURES

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

ignition. Vapours accumulate to form explosive concentrations.

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

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

### Section VII. HANDLING AND STORAGE

Avoid contact with skin and eyes. Avoid inhalation of vapour or mist. Precautions for safe handling

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

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

and kept upright to prevent leakage.

### Section VIII. EXPOSURE CONTROLS/PERSONAL PROTECTION

Methanol 67-56-1 TWA 200 ppm Skin notation TWA 200 ppm

Storage Conditions

Potential for skin absorption, ingestion and inhalation.

Personal protective equipment Respiratory protection Handle with gloves. Gloves must be inspected prior to use. Eye protection.

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

#### Section IX - Physical/Chemical Characteristics

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

Boiling Point		Specific Gravity (H2O = 1)	
Bolling Fornt	65°C	7. S. S.	0.79
Vapor Pressure (mm Hg)		Melting Point	
	96		-98°C
Vapor Density (AIR = 1)		Evaporation rate	
	1.11	(Butyl Acetate = 1)	4.6

Solubility in Water

COMPLETE

Appearance and Odor

CLEAR, COLORLESS LIQUID WITH CHARACTERISTIC PUNGENT ODOR.

#### Section X. STABILITY AND REACTIVITY

Chemical stability

Stable under recommended storage conditions.

Possibility of hazardous reactions

Vapours may form explosive mixture with air.

Conditions to avoid

Heat, flames, sparks, extreme temperature and sunlight.

Materials to avoid

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

Hazardous decomposition products formed under fire conditions. - Carbon oxides

#### Section XI. TOXICOLOGICAL INFORMATION

LD50 Oral - rat - 5,628 mg/kg

LC50 Inhalation - rat - 4 h - 64000 ppm

LD50 Dermal - rabbit - 15,800 mg/kg

Toxic if absorbed through skin. Causes skin irritation.

Eye damage/eye irritation

Toxic if inhaled. Causes respiratory tract irritation.

Toxic if swallowed.

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

LC50

15,400 mg/l - 96 h

EC50

24,500.00 mg/l - 48 h

EC100

10,000.00 mg/l - 24 h

#### Section XIII. DISPOSAL CONSIDERATIONS

Dispose with normal Laboratory Solvent Waste.

#### Section XIV. TRANSPORT INFORMATION

DOT (US)

IATA

UN number: 1230 Class: 3 Packing group: II

Proper shipping name:

Methanol

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

#### Section XV. REGULATORY INFORMATION

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

## Section XVI. Misc. INFORMATION

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

# Absolute Standards, Inc.

800-368-1131 www.absolutestandards.com



# Certified Reference Material CRM

Solvent(s):

Methanol



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

CERTIFIED WEIGHT REPORT

**Part Number:** Lot Number:

95318

111722

2-Chloroethyl vinyl ether

**Expiration Date:** 

Description:

111725

Recommended Storage: Nominal Concentration (µg/mL): Refrigerate (4 °C) 10000

NIST Test ID#:

**6UTB** 

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

50.0

10000

0.001 Flask Uncertainty

5E-05 Balance Uncertainty

99

0.50551

10001.9

40.5

110-75-8

Lot#

EB679-US

111722 Formulated By: Eli Aliao DATE 111722 Reviewed By: Pedro L. Rentas DATE

N/A

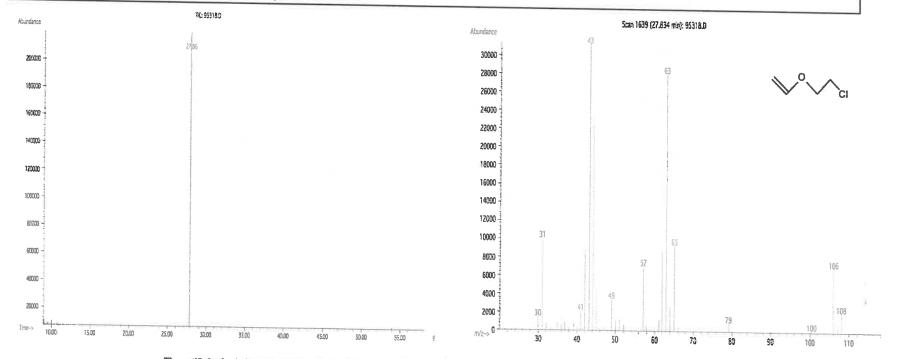
**SDS Information** Expanded Uncertainty

Nominal Purity Uncertainty Target Actual (Solvent Safety Info. On Attached pg.) Actual Compound Lot Number Conc (µg/mL) (%) Purity Weight (g) Weight (g) Conc(µg/mL) (+/-) (µg/mL) OSHA PEL (TWA) 2-Chloroethyl vinyl ether **MKCD0033** 

0.50541

orl-rat 250mg/kg Method: GC6MSD-1.M. Detector: MSD. Column: (60m X 0.25mm X 1.5 \mu m). Oven Profile: Temp 1 = 35°C (Time 1=10min.), Temp 2 = 200°C (Time 2=8.75 min.), Rate = 4°C/min., Injector B Temp. = 200°C, Detector B Temp. = 220°C. Analyst: Candice Warren.

0.2



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

• Standards are certifed (+/-) 0.5% of the stated value, unless otherwise stated.

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

# Absolute Standards, Inc.

800-368-1131 www.absolutestandards.com



# Certified Reference Material CRM

Dec 12/6/ 20 vial

Solvent(s):

Methanoi

V14630 to

U14649



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

**CERTIFIED WEIGHT REPORT** 

**Part Number:** 

95318 120524

Lot Number: Description:

2-Chloroethyl vinyl ether

**Expiration Date:** 

120527

Recommended Storage:

Refrigerate (4 °C)

Nominal Concentration (µg/mL): NIST Test ID#: 10000 **6UTB** 

5E-05 Balance Uncertainty

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

50.0

0.001 Flask Uncertainty

Expanded

Reviewed By:

Formulated By:

**SDS Information** 

**Prashant Chauhan** 

Pedro L. Rentas

(Solvent Safety Info. On Attached pg.) Nominal Purity Uncertainty Target Actual Actual Uncertainty Conc (µg/ml.) (%) Weight (g) Purity Weight (g) OSHA PEL (TWA) Conc(µg/mL) (+/-) (µg/mL) CAS#

1. 2-Chloroethyl vinyl ether

Compound

Lot Number

10000

99

0.50536

0.50550

Lot#

EJ143-US

110-75-8

LDS0

MKCD0033

0.2

10002.9

40.5

N/A

orl-rat 250mg/kg

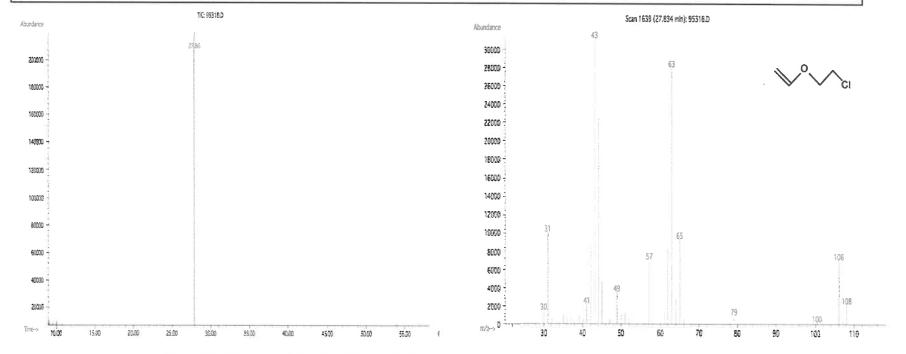
120524

120524

DATE

DATE

Method: GC6MSD-1 M. Detector: MSD. Column: (60m X 0.25mm X 1.5 μm). Oven Profile: Temp 1 = 35°C (Time 1=10min.), Temp 2 = 200°C (Time 2=8.75 min.), Rate = 4°C/min., Injector B Temp.= 200°C, Detector B Temp. = 220°C. Analyst: Candice Warren.



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

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

Safety Data Sheet (SDS)

GHS/OSHA Compliant

# Section I Product and Company Identification

IDENTITY ANALYTICAL STANDARD DISSOLVED IN METHANOL

Manufacturer's Name

ABSOLUTE STANDARDS INC

Emergency Telephone USA & CANADA

1-800-535-5053

Address

44 Rossotto Dr.

**Emergency Telephone International** Date Prepared/Revised

1-352-323-3500 January 1, 2024

Hamden CT, 06514 Section II - Hazards Identification

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

H225

**Highly Flammable Liquid and Vapor** 

H301, 311, 331 Toxic if swallowed, skin contact, inhaled

H370

Cause damage to organs

H351 P280 Suspected of causing cancer

P271 P302.332

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

P305,351,338

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



Methanol





Signal Word: DANGER

# Section III - Composition

Components (Specific Chemical Identity; Common Name(s))

METHYL ALCOHOL

CAS#: 67-56-1

% (optional) > 97

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

INTENDED USE: REFERENCE MATERIAL

#### Section IV. FIRST AID MEASURES

General advice

Consult a physician. Show this safety data sheet to the doctor in attendance. Move to safe area. If inhaled, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.

If inhaled In case of skin contact

Wash with soap and water. Consult a physician.

In case of eye contact

Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician. Do NOT induce vomiting. Rinse mouth with water. Consult a physician.

## Section V. FIREFIGHTING MEASURES

Flammability

If swallowed

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

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

Suitable extinguishing media Protective equipment for fire

Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide. Wear self contained breathing apparatus for fire fighting if necessary.

#### Section VI. ACCIDENTAL RELEASE MEASURES

Personal precautions

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

ignition. Vapours accumulate to form explosive concentrations.

Environmental precautions

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

Clean up

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

#### Section VII. HANDLING AND STORAGE

Precautions for safe handling

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

Use ventilation Keep away from sources of ignition. No smoking. Prevent the build up of electrostatic charge. Keep container tightly closed in a dry and well-ventilated place. Containers which are opened must be carefully resealed

Storage Conditions and kept upright to prevent leakage.

# Section VIII. EXPOSURE CONTROLS/PERSONAL PROTECTION

Methanol

67-56-1 TWA 200 ppm

Skin notation TWA 200 ppm

Potential for skin absorption, ingestion and inhalation.

Personal protective equipment Respiratory protection Handle with gloves. Gloves must be inspected prior to use.

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

#### Section IX - Physical/Chemical Characteristics

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

Boiling Point		Specific Gravity (H2O = 1)	
	65°C		0.79
Vapor Pressure (mm Hg)		Melting Point	
-	96		-98°C
Vapor Density (AIR = 1)		Evaporation rate	7
	1.11	(Butyl Acetate = 1)	4.6
Solubility in Water COMPLETE			^

COMPLETE

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

#### Section X. STABILITY AND REACTIVITY

Chemical stability Possibility of hazardous reactions

Stable under recommended storage conditions. Vapours may form explosive mixture with air.

Conditions to avoid

Heat, flames, sparks, extreme temperature and sunlight.

Materials to avoid

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

Hazardous decomposition products formed under fire conditions. - Carbon oxides

# Section XI. TOXICOLOGICAL INFORMATION

LD50 Oral - rat - 5,628 mg/kg

LC50 Inhalation - rat - 4 h - 64000 ppm LD50 Dermal - rabbit - 15,800 mg/kg

Toxic if absorbed through skin. Causes skin irritation.

Eye damage/eye irritation

Toxic if inhaled. Causes respiratory tract irritation.

Toxic if swallowed

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

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

#### Section XIII. DISPOSAL CONSIDERATIONS

Dispose with normal Laboratory Solvent Waste.

# Section XIV. TRANSPORT INFORMATION

DOT (US)

UN number: 1230 Class: 3 Packing group: II

Proper shipping name:

Methanol

UN number: 1230 Class: 3 Packing group: II

Proper shipping name:

Methanol

# Section XV. REGULATORY INFORMATION

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

# Section XVI. Misc. INFORMATION

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

# Absolute Standards, Inc.

800-368-1131 www.absolutestandards.com



# Certified Reference Material CRM

Dec 12/6/ 20 vial

Solvent(s):

Methanoi

V14630 to

U14649



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

**CERTIFIED WEIGHT REPORT** 

**Part Number:** 

95318 120524

Lot Number: Description:

2-Chloroethyl vinyl ether

**Expiration Date:** 

120527

Recommended Storage:

Refrigerate (4 °C)

Nominal Concentration (µg/mL): NIST Test ID#: 10000 **6UTB** 

5E-05 Balance Uncertainty

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

50.0

0.001 Flask Uncertainty

Expanded

Reviewed By:

Formulated By:

**SDS Information** 

**Prashant Chauhan** 

Pedro L. Rentas

(Solvent Safety Info. On Attached pg.) Nominal Purity Uncertainty Target Actual Actual Uncertainty Conc (µg/ml.) (%) Weight (g) Purity Weight (g) OSHA PEL (TWA) Conc(µg/mL) (+/-) (µg/mL) CAS#

1. 2-Chloroethyl vinyl ether

Compound

Lot Number

10000

99

0.50536

0.50550

Lot#

EJ143-US

110-75-8

LDS0

MKCD0033

0.2

10002.9

40.5

N/A

orl-rat 250mg/kg

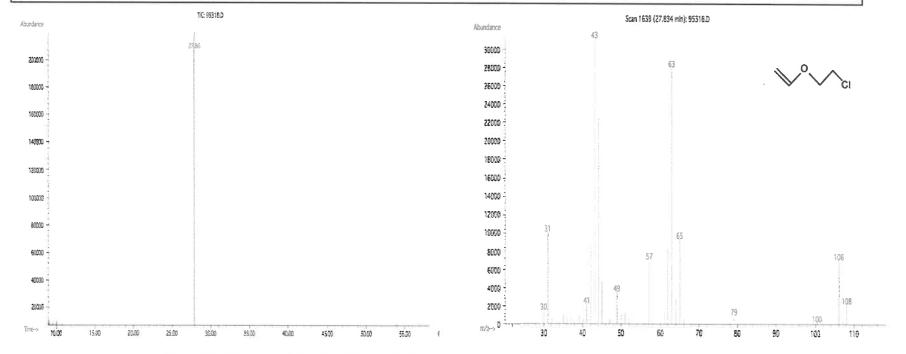
120524

120524

DATE

DATE

Method: GC6MSD-1 M. Detector: MSD. Column: (60m X 0.25mm X 1.5 μm). Oven Profile: Temp 1 = 35°C (Time 1=10min.), Temp 2 = 200°C (Time 2=8.75 min.), Rate = 4°C/min., Injector B Temp.= 200°C, Detector B Temp. = 220°C. Analyst: Candice Warren.



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

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

Safety Data Sheet (SDS)

GHS/OSHA Compliant

# Section I Product and Company Identification

IDENTITY ANALYTICAL STANDARD DISSOLVED IN METHANOL

Manufacturer's Name

ABSOLUTE STANDARDS INC

Emergency Telephone USA & CANADA

1-800-535-5053

Address

44 Rossotto Dr.

**Emergency Telephone International** Date Prepared/Revised

1-352-323-3500 January 1, 2024

Hamden CT, 06514 Section II - Hazards Identification

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

H225

**Highly Flammable Liquid and Vapor** 

H301, 311, 331 Toxic if swallowed, skin contact, inhaled

H370

Cause damage to organs

H351 P280 Suspected of causing cancer

P271 P302.332

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

P305,351,338

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



Methanol





Signal Word: DANGER

# Section III - Composition

Components (Specific Chemical Identity; Common Name(s))

METHYL ALCOHOL

CAS#: 67-56-1

% (optional) > 97

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

INTENDED USE: REFERENCE MATERIAL

#### Section IV. FIRST AID MEASURES

General advice

Consult a physician. Show this safety data sheet to the doctor in attendance. Move to safe area. If inhaled, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.

If inhaled In case of skin contact

Wash with soap and water. Consult a physician.

In case of eye contact

Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician. Do NOT induce vomiting. Rinse mouth with water. Consult a physician.

## Section V. FIREFIGHTING MEASURES

Flammability

If swallowed

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

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Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide. Wear self contained breathing apparatus for fire fighting if necessary.

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Personal precautions

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

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Environmental precautions

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

Clean up

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

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Precautions for safe handling

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

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Storage Conditions and kept upright to prevent leakage.

# Section VIII. EXPOSURE CONTROLS/PERSONAL PROTECTION

Methanol

67-56-1 TWA 200 ppm

Skin notation TWA 200 ppm

Potential for skin absorption, ingestion and inhalation.

Personal protective equipment Respiratory protection Handle with gloves. Gloves must be inspected prior to use.

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

#### Section IX - Physical/Chemical Characteristics

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

Boiling Point		Specific Gravity (H2O = 1)	
	65°C		0.79
Vapor Pressure (mm Hg)		Melting Point	
-	96		-98°C
Vapor Density (AIR = 1)		Evaporation rate	7
	1.11	(Butyl Acetate = 1)	4.6
Solubility in Water COMPLETE			^

COMPLETE

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

#### Section X. STABILITY AND REACTIVITY

Chemical stability Possibility of hazardous reactions

Stable under recommended storage conditions. Vapours may form explosive mixture with air.

Conditions to avoid

Heat, flames, sparks, extreme temperature and sunlight.

Materials to avoid

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

Hazardous decomposition products formed under fire conditions. - Carbon oxides

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LC50 Inhalation - rat - 4 h - 64000 ppm LD50 Dermal - rabbit - 15,800 mg/kg

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Toxic if inhaled. Causes respiratory tract irritation.

Toxic if swallowed

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

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

#### Section XIII. DISPOSAL CONSIDERATIONS

Dispose with normal Laboratory Solvent Waste.

# Section XIV. TRANSPORT INFORMATION

DOT (US)

UN number: 1230 Class: 3 Packing group: II

Proper shipping name:

Methanol

UN number: 1230 Class: 3 Packing group: II

Proper shipping name:

Methanol

# Section XV. REGULATORY INFORMATION

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

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# Absolute Standards, Inc.

800-368-1131 www.absolutestandards.com



# Certified Reference Material CRM

Dec 12/6/ 20 vial

Solvent(s):

Methanoi

V14630 to

U14649



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

**CERTIFIED WEIGHT REPORT** 

**Part Number:** 

95318 120524

Lot Number: Description:

2-Chloroethyl vinyl ether

**Expiration Date:** 

120527

Recommended Storage:

Refrigerate (4 °C)

Nominal Concentration (µg/mL): NIST Test ID#: 10000 **6UTB** 

5E-05 Balance Uncertainty

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

50.0

0.001 Flask Uncertainty

Expanded

Reviewed By:

Formulated By:

**SDS Information** 

**Prashant Chauhan** 

Pedro L. Rentas

(Solvent Safety Info. On Attached pg.) Nominal Purity Uncertainty Target Actual Actual Uncertainty Conc (µg/ml.) (%) Weight (g) Purity Weight (g) OSHA PEL (TWA) Conc(µg/mL) (+/-) (µg/mL) CAS#

1. 2-Chloroethyl vinyl ether

Compound

Lot Number

10000

99

0.50536

0.50550

Lot#

EJ143-US

110-75-8

LDS0

MKCD0033

0.2

10002.9

40.5

N/A

orl-rat 250mg/kg

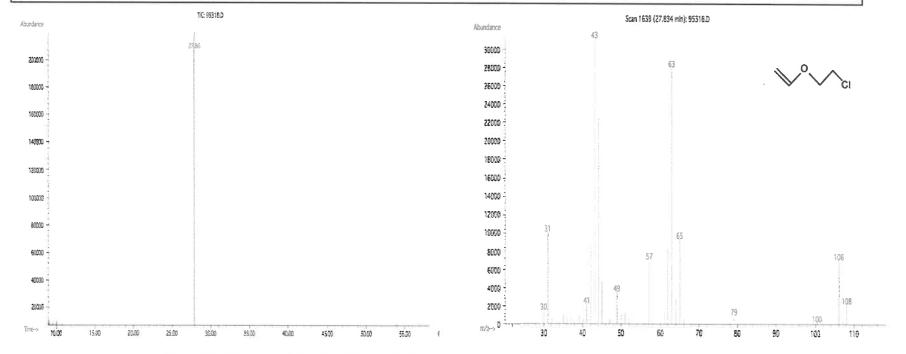
120524

120524

DATE

DATE

Method: GC6MSD-1 M. Detector: MSD. Column: (60m X 0.25mm X 1.5 μm). Oven Profile: Temp 1 = 35°C (Time 1=10min.), Temp 2 = 200°C (Time 2=8.75 min.), Rate = 4°C/min., Injector B Temp.= 200°C, Detector B Temp. = 220°C. Analyst: Candice Warren.



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

Safety Data Sheet (SDS)

GHS/OSHA Compliant

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1-352-323-3500 January 1, 2024

Hamden CT, 06514 Section II - Hazards Identification

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



Methanol





Signal Word: DANGER

# Section III - Composition

Components (Specific Chemical Identity; Common Name(s))

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CAS#: 67-56-1

% (optional) > 97

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INTENDED USE: REFERENCE MATERIAL

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

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Vapor Density (AIR = 1)		Evaporation rate	7
	1.11	(Butyl Acetate = 1)	4.6
Solubility in Water COMPLETE			^

COMPLETE

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

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Chemical stability Possibility of hazardous reactions

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Toxic if swallowed

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

#### Section XIII. DISPOSAL CONSIDERATIONS

Dispose with normal Laboratory Solvent Waste.

# Section XIV. TRANSPORT INFORMATION

DOT (US)

UN number: 1230 Class: 3 Packing group: II

Proper shipping name:

Methanol

UN number: 1230 Class: 3 Packing group: II

Proper shipping name:

Methanol

# Section XV. REGULATORY INFORMATION

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# Absolute Standards, Inc.

800-368-1131 www.absolutestandards.com



# Certified Reference Material CRM

Dec 12/6/ 20 vial

Solvent(s):

Methanoi

V14630 to

U14649



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

**CERTIFIED WEIGHT REPORT** 

**Part Number:** 

95318 120524

Lot Number: Description:

2-Chloroethyl vinyl ether

**Expiration Date:** 

120527

Recommended Storage:

Refrigerate (4 °C)

Nominal Concentration (µg/mL): NIST Test ID#: 10000 **6UTB** 

5E-05 Balance Uncertainty

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

50.0

0.001 Flask Uncertainty

Expanded

Reviewed By:

Formulated By:

**SDS Information** 

**Prashant Chauhan** 

Pedro L. Rentas

(Solvent Safety Info. On Attached pg.) Nominal Purity Uncertainty Target Actual Actual Uncertainty Conc (µg/ml.) (%) Weight (g) Purity Weight (g) OSHA PEL (TWA) Conc(µg/mL) (+/-) (µg/mL) CAS#

1. 2-Chloroethyl vinyl ether

Compound

Lot Number

10000

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0.50536

0.50550

Lot#

EJ143-US

110-75-8

LDS0

MKCD0033

0.2

10002.9

40.5

N/A

orl-rat 250mg/kg

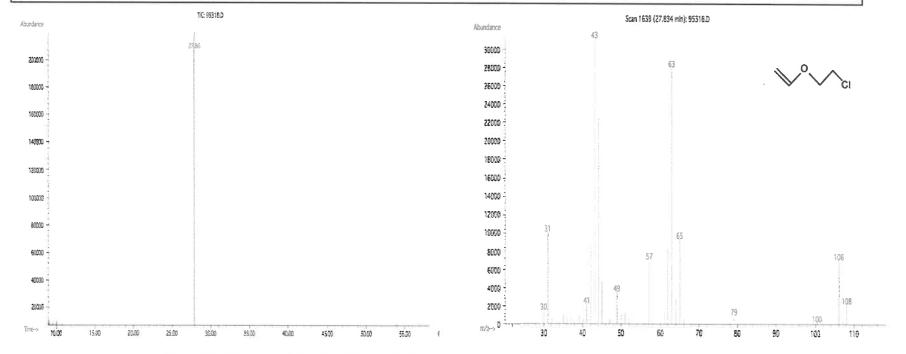
120524

120524

DATE

DATE

Method: GC6MSD-1 M. Detector: MSD. Column: (60m X 0.25mm X 1.5 μm). Oven Profile: Temp 1 = 35°C (Time 1=10min.), Temp 2 = 200°C (Time 2=8.75 min.), Rate = 4°C/min., Injector B Temp.= 200°C, Detector B Temp. = 220°C. Analyst: Candice Warren.



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

Safety Data Sheet (SDS)

GHS/OSHA Compliant

Section I Product and Company Identification

IDENTITY ANALYTICAL STANDARD DISSOLVED IN METHANOL

Manufacturer's Name

ABSOLUTE STANDARDS INC

Emergency Telephone USA & CANADA **Emergency Telephone International** 

1-800-535-5053

Address 44 Rossotto Dr. Hamden CT, 06514

Date Prepared/Revised

1-352-323-3500 January 1, 2024

Section II - Hazards Identification

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

H225

**Highly Flammable Liquid and Vapor** 

H301, 311, 331 Toxic if swallowed, skin contact, inhaled Suspected of causing cancer

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Cause damage to organs

H351 P280

Use gloves, eye protection/face shelld

P302.332

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

P305,351,338

If in eyes, remove contacts, rinse with water







Signal Word: DANGER

Section III - Composition

Components (Specific Chemical Identity; Common Name(s)) Methanol

METHYL ALCOHOL

CAS#: 67-56-1

% (optional) > 97

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

INTENDED USE: REFERENCE MATERIAL

Section IV. FIRST AID MEASURES

General advice

Consult a physician. Show this safety data sheet to the doctor in attendance. Move to safe area. If inhaled, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.

If inhaled In case of skin contact

Wash with soap and water. Consult a physician.

In case of eye contact

Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician.

If swallowed

Do NOT induce vomiting. Rinse mouth with water. Consult a physician.

Section V. FIREFIGHTING MEASURES

Flammability

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

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

Suitable extinguishing media Protective equipment for fire

Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide. Wear self contained breathing apparatus for fire fighting if necessary.

Section VI. ACCIDENTAL RELEASE MEASURES

Personal precautions

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

ignition. Vapours accumulate to form explosive concentrations.

Environmental precautions

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

Clean up

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

Section VII. HANDLING AND STORAGE

Precautions for safe handling

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

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

Storage Conditions

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

and kept upright to prevent leakage.

Section VIII. EXPOSURE CONTROLS/PERSONAL PROTECTION

Methanol

67-56-1 TWA 200 ppm

Skin notation TWA 200 ppm

Potential for skin absorption, ingestion and inhalation.

Personal protective equipment Respiratory protection Handle with gloves. Gloves must be inspected prior to use.

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

Section IX - Physical/Chemical Characteristics

Printed: 12/5/24 Page 1 of 2 Methanol-SDS.xls

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

Boiling Point		Specific Gravity (H2O = 1)	
	65°C		0.79
Vapor Pressure (mm Hg)		Melting Point	
-	96		-98°C
Vapor Density (AIR = 1)		Evaporation rate	7
	1.11	(Butyl Acetate = 1)	4.6
Solubility in Water COMPLETE			^

COMPLETE

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

#### Section X. STABILITY AND REACTIVITY

Chemical stability Possibility of hazardous reactions

Stable under recommended storage conditions. Vapours may form explosive mixture with air.

Conditions to avoid

Heat, flames, sparks, extreme temperature and sunlight.

Materials to avoid

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

Hazardous decomposition products formed under fire conditions. - Carbon oxides

# Section XI. TOXICOLOGICAL INFORMATION

LD50 Oral - rat - 5,628 mg/kg

LC50 Inhalation - rat - 4 h - 64000 ppm LD50 Dermal - rabbit - 15,800 mg/kg

Toxic if absorbed through skin. Causes skin irritation.

Eye damage/eye irritation

Toxic if inhaled. Causes respiratory tract irritation.

Toxic if swallowed

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

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

#### Section XIII. DISPOSAL CONSIDERATIONS

Dispose with normal Laboratory Solvent Waste.

# Section XIV. TRANSPORT INFORMATION

DOT (US)

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

Methanol

UN number: 1230 Class: 3 Packing group: II

Proper shipping name:

Methanol

# Section XV. REGULATORY INFORMATION

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

# Section XVI. Misc. INFORMATION

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





Material No.: 9077-02

Batch No.: 2310762004

Manufactured Date: 2023-08-11 Expiration Date: 2026-08-10

Revision No.: 0

# Certificate of Analysis

Test	Specification	Result
Assay (CH3OH) (by GC, corrected for water)	≥ 99.9 %	100.0 %
Residue after Evaporation	≤ 1.0 ppm	0.5 ppm
Titrable Acid (µeq/g)	≤ 0.3	0.2
Titrable Base (µeq/g)	≤ 0.10	0.01
Water (by KF, coulometric)	≤ 0.08 %	< 0.01 %
Volatile Organic Trace Analysis - Below EPA 8260B CRQL	Conforms	Conforms

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

Country of Origin: USA

Packaging Site: Phillipsburg Mfg Ctr & DC

Ken Koehnlein

Sr. Manager, Quality Assurance



# CERTIFIED REFERENCE MATERIAL



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

# **Certificate of Analysis**





www.restek.com

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

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

Catalog No.: 30470

Lot No.: A0181905

tert-Butanol Standard

tert-Butanol Std 50,000µg/mL, P&T Methanol, 1mL/ampul

Container Size: 2 mL Pkg Amt: > 1 mL

Expiration Date: February 28, 2025 Storage: 0°C or colder

Ship: Ambient

## CERTIFIED VALUES

Elution Order		Compound	Grav. Conc.	Expanded Uncertainty (95% C.L.; K=2)  +/- 293.4988 µg/mL Gravimetric +/- 1,073.7654 µg/mL Unstressed +/- 1,104.9494 µg/mL Stressed			
1	tert-Butanol (TBA) CAS # 75-65-0 Purity 99%	(Lot SHBM7694)	50,126.0 μg/mL	+/-			
Solvent:	P&T Methanol CAS # 67-56-1 Purity 99%						

#### Column:

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

## Carrier Gas:

hydrogen-constant pressure 11.0 psi.

## Temp. Program:

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

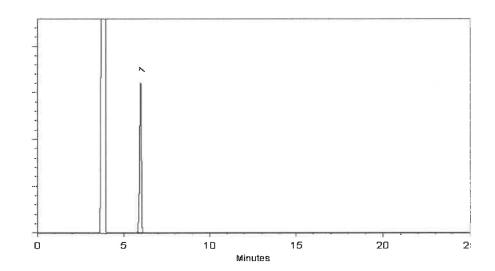
# Inj. Temp:

200°C

# Det. Temp:

250°C

# Det. Type:



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

John Friedline - Operations Technician I

Date Mixed:

16-Feb-2022

Balance: B442140311

War lina Tossan Parlina Cowan - Operations Tech I

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

# Manufacturing Notes:

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

#### **Handling Notes:**

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



# **CERTIFIED REFERENCE MATERIAL**

ACCREDITED
ISO 17034 Accredited
Reference Material Producer
Certificate #322201

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

110 Benner Circle

www.restek.com

# **Certificate of Analysis**





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

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

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

# CERTIFIED VALUES

Elution Order		Co	ompound	Grav. ( (weight/\			Expanded U (95% C.L.; K		
1		l (TBA) 75-65-0 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:		67-56-1							
	Purity 9	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:

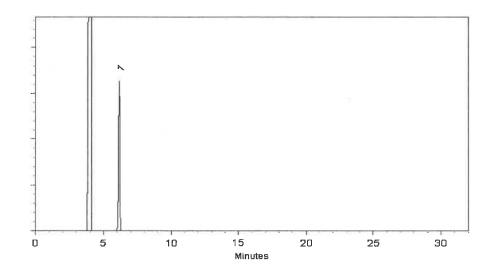
200°C

# 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.

Alicia Leathers - Operation Technician I

Date Mixed:

15-Nov-2022

Balance: 1127510105

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

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

# **Manufacturing Notes:**

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

# **Handling Notes:**

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



# **CERTIFIED REFERENCE MATERIAL**









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

www.restek.com

# Certificate of Analysis

chromatographic plus

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

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

Catalog No.: 30067 Lot No.: A0191805

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

Container Size: 2 mL Pkg Amt: > 1 mL

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

#### CERTIFIED VALUES

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

Ship:

**Ambient** 

Solvent:

P&T Methanol

CAS # 67-56-1 Purity 99%

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

# **Quality Confirmation Test**

Column:

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

Carrier Gas:

hydrogen-constant pressure 11.0 psi.

Temp. Program:

40°C (hold 2 min.) to 240°C

@ 8°C/min. (hold 5 min.)

Inj. Temp:

200°C

Det. Temp:

250°C

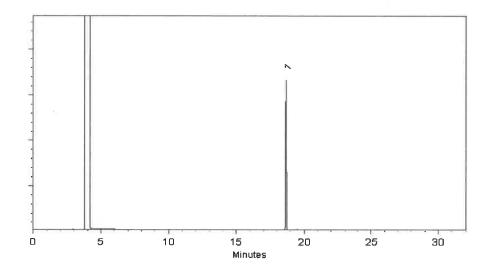
Det. Type:

FID

Split Vent:

40 ml/min

Inj. Vol 1µl



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

Alicia Leathers - Operation Technician I

Date Mixed:

17-Nov-2022

Balance Serial #

B251644995

Jennifer Pollino - Operations Tech III - ARM QC

Date Passed:

21-Nov-2022

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

# **General Certified Reference Material Notes**

#### **Expiration Notes:**

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

#### **Purity Notes:**

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

# **Certified Uncertainty Value Notes:**

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

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

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.





# **CERTIFIED REFERENCE MATERIAL**









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

www.restek.com

# **Certificate of Analysis** chromatographic plus

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

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

Ambient

30225 Catalog No.: Lot No.: A0193071 **Description:** Bromochloromethane Standard Bromochloromethane 2000µg/mL, P&T Methanol, 1mL/ampul Container Size: Pkg Amt: > 1 mL **Expiration Date:** December 31, 2027 0°C or colder Storage: Ship:

## 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.

P&T Methanol

CAS# 67-56-1 Purity 99%



Solvent:

# **Quality Confirmation Test**

Column:

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

Carrier Gas:

hydrogen-constant pressure 11.0 psi.

Temp. Program:

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

Inj. Temp: 200°C

Det. Temp:

250°C

Det. Type:

Split Vent:

40 ml/min

Inj. Vol

1μا



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.

Date Mixed:

29-Dec-2022

Balance Serial #

B707717271

Out the

Christie Mills - Operations Tech II - ARM QC

Date Passed:

03-Jan-2023

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

# **Certified Uncertainty Value Notes:**

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

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

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

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

# Manufacturing Notes:

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

# **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.





# **CERTIFIED REFERENCE MATERIAL**









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

www.restek.com

# **Certificate of Analysis** chromatographic plus

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

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

Ambient

30225 Catalog No.: Lot No.: A0193071 **Description:** Bromochloromethane Standard Bromochloromethane 2000µg/mL, P&T Methanol, 1mL/ampul Container Size: Pkg Amt: > 1 mL **Expiration Date:** December 31, 2027 0°C or colder Storage: Ship:

## 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.

P&T Methanol

CAS# 67-56-1 Purity 99%



Solvent:

# **Quality Confirmation Test**

Column:

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

Carrier Gas:

hydrogen-constant pressure 11.0 psi.

Temp. Program:

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

Inj. Temp: 200°C

Det. Temp:

250°C

Det. Type:

Split Vent:

40 ml/min

Inj. Vol

1μا



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.

Date Mixed:

29-Dec-2022

Balance Serial #

B707717271

Out the

Christie Mills - Operations Tech II - ARM QC

Date Passed:

03-Jan-2023

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

# **Certified Uncertainty Value Notes:**

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

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

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

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

# Manufacturing Notes:

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

# **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.





# **CERTIFIED REFERENCE MATERIAL**









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

www.restek.com

# **Certificate of Analysis** chromatographic plus

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

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

Ambient

30225 Catalog No.: Lot No.: A0193071 **Description:** Bromochloromethane Standard Bromochloromethane 2000µg/mL, P&T Methanol, 1mL/ampul Container Size: Pkg Amt: > 1 mL **Expiration Date:** December 31, 2027 0°C or colder Storage: Ship:

## 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.

P&T Methanol

CAS# 67-56-1 Purity 99%



Solvent:

# **Quality Confirmation Test**

Column:

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

Carrier Gas:

hydrogen-constant pressure 11.0 psi.

Temp. Program:

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

Inj. Temp: 200°C

Det. Temp:

250°C

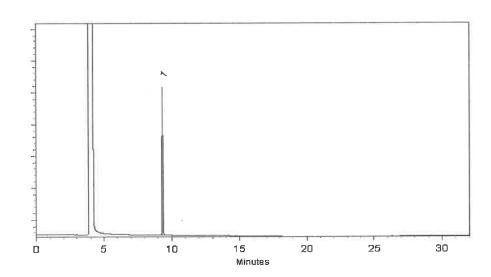
Det. Type:

Split Vent:

40 ml/min

Inj. Vol

1μا



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.

Date Mixed:

29-Dec-2022

Balance Serial #

B707717271

Out the

Christie Mills - Operations Tech II - ARM QC

Date Passed:

03-Jan-2023

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.
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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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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:**

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





# **CERTIFIED REFERENCE MATERIAL**









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www.restek.com

# **Certificate of Analysis** chromatographic plus

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

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

Ambient

30225 Catalog No.: Lot No.: A0193071 **Description:** Bromochloromethane Standard Bromochloromethane 2000µg/mL, P&T Methanol, 1mL/ampul Container Size: Pkg Amt: > 1 mL **Expiration Date:** December 31, 2027 0°C or colder Storage: Ship:

## 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.

P&T Methanol

CAS# 67-56-1 Purity 99%



Solvent:

# **Quality Confirmation Test**

Column:

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

Carrier Gas:

hydrogen-constant pressure 11.0 psi.

Temp. Program:

40°C (hold 2 min.) to 240°C

@ 8°C/min. (hold 5 min.)

Inj. Temp: 200°C

Det. Temp:

250°C

Det. Type:

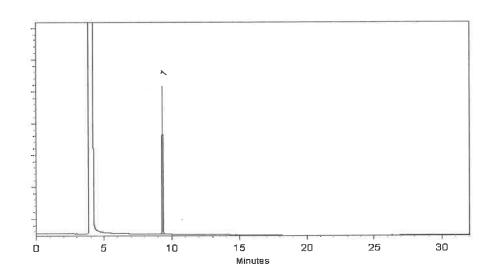
FID

Split Vent:

40 ml/min

Inj. Vol

1μl



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

om Suckar - Mix Technician

Date Mixed:

29-Dec-2022

Balance Serial #

B707717271

Chant 19th

Christie Mills - Operations Tech II - ARM QC

Date Passed:

03-Jan-2023

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

# **General Certified Reference Material Notes**

## **Expiration Notes:**

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

## **Purity Notes:**

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- Purity of isomeric compounds is reported as the sum of the isomers.
- · Purity values are rounded to the nearest whole number.

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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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  dissolved





Iac-MRA



ACCRED ISO 17034 Ac Reference Mater Certificate 4:





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# **Certificate of Analysis**

chromatographic plus

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

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

Catalog No.:

30006

Lot No.: A0193887

**Description:** 

VOA Calibration Mix #1

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

1mL/ampul

**Container Size:** 

2 mL

Pkg Amt:

nt: > 1 mL

Expiration Date:

April 30, 2026

Storage:

0°C or colder

Ship:

: Ambient

# CERTIFIED VALUES

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

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

Solvent:

P&T Methanol/Water (90:10)

CAS#

67-56-1/7732-18-5

Purity 99%

Column:

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

Carrier Gas:

hydrogen-constant pressure 11.0 psi.

Temp. Program:

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

Inj. Temp:

200°C

Det. Temp:

250°C

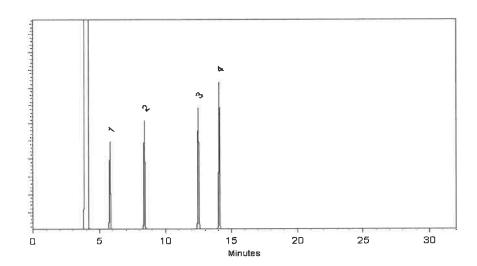
Det. Type:

FID

Split Vent:

40 ml/min

Inj. Vol 1µl



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

Josh McCloskey - Operations Technician I

Date Mixed:

24-Jan-2023

Balance Serial #

B707717271

Christie Mills - Operations Tech II - ARM QC

Date Passed:

27-Jan-2023



### **Expiration Notes:**

- Expiration date valid for unopened ampul stored in compliance with the recommended conditions.
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### **Purity 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:**

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

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

### **Manufacturing Notes:**

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

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  information, with the knowledge/understanding that open product stability is subject to the specific handling and
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  ordered item. Additionally, Restek sells DMDCS for the purpose of glassware deactivation as catalog number 31861,
  which includes complete instructions.
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www.restek.com

# **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

Description:

502.2 Calibration Mix #1

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

Container Size: **Expiration Date:** 

October 31, 2029

Pkg Amt:

> 1 mL

Storage:

0°C or colder

Ship: **Ambient** 

### CERTIFIED VALUES

Elution Order	Compound	CAS#	Lot#	Purity	Grav. Conc. (weight/volume)	Expanded Uncertainty * (95% C.L.; K=2)
1	Dichlorodifluoromethane (CFC-12)	75-71-8	00012554	99%	2,001.5 μg/mL	+/- 112.7231
2	Chloromethane (methyl chloride)	74-87-3	SHBK.6571	99%	2,001.2 μg/mL	+/- 112.5863
3	Vinyl chloride	75-01-4	00015559	99%	2,001.4 μg/mL	+/- 112.6561
4	Bromomethane (methyl bromide)	74-83-9	101604	99%	2,006.4 μg/mL	+/- 112.8262
5	Chloroethane (ethyl chloride)	75-00-3	107-401039114-1	99%	2,001.9 μg/mL	+/- 112.5897
6	Trichlorofluoromethane (CFC-11)	75-69-4	MKCL8411	99%	2,000.8 μg/mL	+/- 112.6473

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

Solvent:

P&T Methanol

CAS# 67-56-1 Purity 99%



Column:

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

Carrier Gas:

helium-constant flow 2.0 mL/min.

Temp. Program:

40°C (hold 6 min.) to 100°C

@ 6°C/min.

Inj. Temp:

200°C

Det. Temp: 250°C

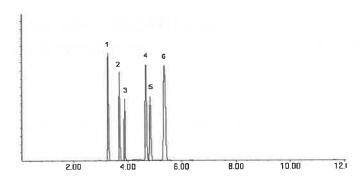
Det. Type: MSD

Split Vent:

Split ratio 10:1

Inj. Vol

1µl



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

Tom Suckar Mix Technician

Date Mixed:

03-Feb-2023

Balance Serial #

B707717271

Charle 1966

Christie Mills - Operations Tech II - ARM QC

Date Passed:

07-Feb-2023



# **Expiration Notes:**

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

# **Purity Notes:**

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

# **Certified Uncertainty Value Notes:**

The uncertainties are determined in accordance with ISO 17034 and Guide 35. The certified expanded
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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
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# **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.

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: **Expiration Date:**  2 mL

April 30, 2026

Pkg Amt:

> 1 mL

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%	25,036.0 μg/mL	+/- 1,417.9179
2	1-Bromo-4-fluorobenzene (BFB)	460-00-4	184975	99%	25,132.0 μg/mL	+/- 1,423.3549
3	Dibromofluoromethane	1868-53-7	022013	99%	25,040.0 μg/mL	+/- 1,418.1445
4	Toluene-d8	2037-26-5	PR-33397	99%	25,028.0 μg/mL	+/- 1,417.4648

Solvent:

P&T Methanol

CAS#

67-56-1

**Purity** 

99%

Parker 7. Brown Russ Bookhamer - Operations Technician i

Date Mixed:

11-Apr-2023

Balance: 1127510105



### **Expiration Notes:**

- Expiration date valid for unopened ampul stored in compliance with the recommended conditions.
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  dissolved.











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# **Certificate of Analysis**

chromatographic plus

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

Catalog No.:

30042

Lot No.: A0197644

Description:

502.2 Calibration Mix #1

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

Container Size:

2 mL

Pkg Amt:

> 1 mL

**Expiration Date:** 

January 31, 2030

Storage: 0°

ge: 0°C or colder

Ship: A

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

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

Solvent:

P&T Methanol

CAS # 67-56-1 Purity 99%

Column:

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

Carrier Gas:

helium-constant flow 2.0 mL/min.

Temp. Program:

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

Inj. Temp:

200°C

Det. Temp:

250°C

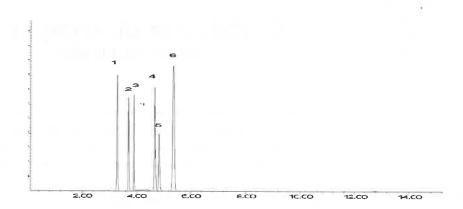
Det. Type: MSD

Split Vent:

Split ratio 10:1

Inj. Vol

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.

Brittany Federinko - Operations Tech I

Date Mixed:

02-May-2023

Balance Serial #

B707717271

Jennifer Pollino - Operations Tech III - ARM QC

Date Passed:

08-May-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.





**Certificate of Analysis** 

chromatographic plus

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

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

Catalog No.:

30006

Lot No.: A0200785

**Description:** 

VOA Calibration Mix #1

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

1mL/ampul

**Container Size: Expiration Date:**  2 mL

November 30, 2026

Pkg Amt:

> 1 mL

Storage: 0°C or colder

> Ship: **Ambient**

### CERTIFIED VALUES

Elution Order	Compound	CAS#	Lot#	Purity	Grav. Conc. (weight/volume)	Expanded Uncertainty * (95% C.L.; K=2)
1	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

Solvent:

P&T Methanol/Water (90:10)

CAS# 67-56-1/7732-18-5

**Purity** 99%

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

# Column:

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

### Carrier Gas:

hydrogen-constant pressure 11.0 psi.

# Temp. Program:

40°C (hold 2 min.) to 240°C

@ 8°C/min. (hold 5 min.)

# Inj. Temp:

200°C

# Det. Temp:

250°C

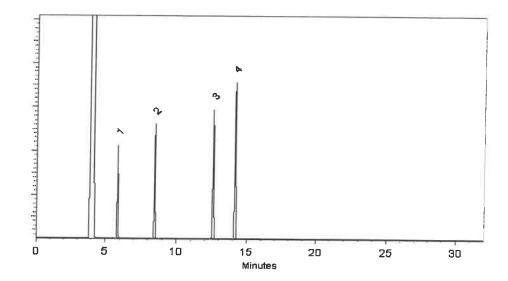
# Det. Type:

# Split Vent:

40 ml/min

### Inj. Vol

1μΙ



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Laith Clemente - Operations Technician!

Date Mixed:

09-Aug-2023

Balance Serial #

B707717271

Marlina Cowan - Operations Tech II ARM QC

Date Passed:

16-Aug-2023

# **Expiration Notes:**

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# **Purity Notes:**

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Catalog No.:

30006

Lot No.: A0200785

**Description:** 

VOA Calibration Mix #1

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

1mL/ampul

**Container Size: Expiration Date:**  2 mL

November 30, 2026

Pkg Amt:

> 1 mL

Storage:

0°C or colder

Ship:

**Ambient** 

### CERTIFIED VALUES

Elution Order	Compound	CAS#	Lot#	Purity	Grav. Conc. (weight/volume)	Expanded Uncertainty * (95% C.L.; K=2)
1	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

Solvent:

P&T Methanol/Water (90:10)

CAS# 67-56-1/7732-18-5

**Purity** 

99%

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

# Column:

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

### Carrier Gas:

hydrogen-constant pressure 11.0 psi.

# Temp. Program:

40°C (hold 2 min.) to 240°C

@ 8°C/min. (hold 5 min.)

# Inj. Temp:

200°C

# Det. Temp:

250°C

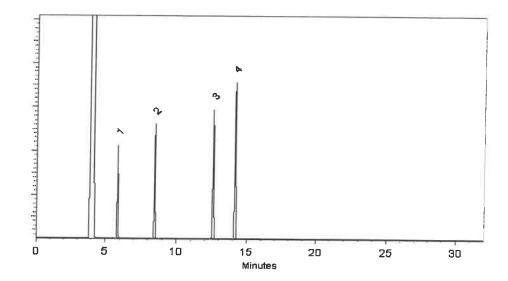
# Det. Type:

# Split Vent:

40 ml/min

### Inj. Vol

1μΙ



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Laith Clemente - Operations Technician!

Date Mixed:

09-Aug-2023

Balance Serial #

B707717271

Marlina Cowan - Operations Tech II ARM QC

Date Passed:

16-Aug-2023

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Catalog No.:

30006

Lot No.: A0200785

**Description:** 

VOA Calibration Mix #1

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

1mL/ampul

**Container Size: Expiration Date:**  2 mL

November 30, 2026

Pkg Amt:

> 1 mL

Storage:

0°C or colder

Ship:

**Ambient** 

### CERTIFIED VALUES

Elution Order	Compound	CAS#	Lot#	Purity	Grav. Conc. (weight/volume)	Expanded Uncertainty * (95% C.L.; K=2)
1	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

Solvent:

P&T Methanol/Water (90:10)

CAS# 67-56-1/7732-18-5

**Purity** 

99%

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

# Column:

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

### Carrier Gas:

hydrogen-constant pressure 11.0 psi.

# Temp. Program:

40°C (hold 2 min.) to 240°C

@ 8°C/min. (hold 5 min.)

# Inj. Temp:

200°C

# Det. Temp:

250°C

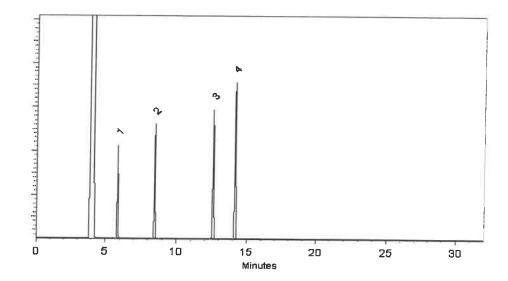
# Det. Type:

# Split Vent:

40 ml/min

### Inj. Vol

1μΙ



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Laith Clemente - Operations Technician!

Date Mixed:

09-Aug-2023

Balance Serial #

B707717271

Marlina Cowan - Operations Tech II ARM QC

Date Passed:

16-Aug-2023

# **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:**

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

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

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

# **Manufacturing Notes:**

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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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# **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.: A0205013

**Description:** 

8260B Acetates Mix

8260B Acetates Mix 2,000 µg/mL, P&T Methanol, 1mL/ampul

Container Size:

2 mL

Pkg Amt:

> 1 mL

**Expiration Date:** 

June 30, 2025

Storage:

-20°C or colder

Handling:

This product is photosensitive.

Ship: On Ice

CERTIFIED VALUES

Elution Order		Compound	CAS#	Lot#	Purity	Grav. Conc. (weight/volume)	Expanded Uncertainty * (95% C.L.; K=2)
1	Methyl acetate		79-20-9	SHBP3100	99%	2,012.7 μg/mL	+/- 69.5670
2	Vinyl acetate		108-05-4	RP231030CTH	98%	2,017.5 μg/mL	+/- 69.7338
3	Ethyl acetate		141-78-6	SHBQ9682	99%	2,020.0 μg/mL	+/- 69.8205
4	Isopropyl acetate		108-21-4	BCCG7069	99%	2,018.7 μg/mL	+/- 69.7744
5	Propyl acetate		109-60-4	KLOBM	99%	2,012.0 μg/mL	+/- 69.5439
6	Butyl acetate		123-86-4	SHBP6314		2,020.0 μg/mL	+/- 69.8205
7	Amyl acetate		628-63-7	41325/1		2,019.5 μg/mL	+/- 69.8046

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

Solvent:

P&T Methanol

CAS# Purity

67-56-1 99%

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.)

we cymin, (noid 5 min.

Inj. Temp: 200°C

Det. Temp:

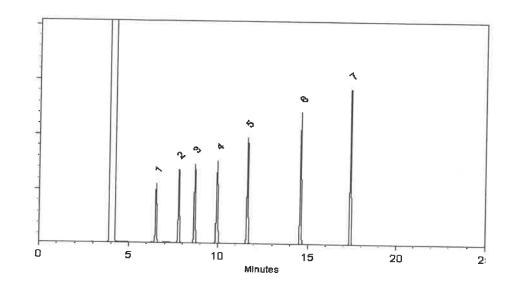
250°C

Det. Type:

Split Vent:

40 ml/min

inj. Voi



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.

Brittany Federinko - Operations Tech I

Date Mixed:

04-Dec-2023

Balance Serial #

\_\_\_\_\_

1128360905

Jennifer Pollino - Operations Tech III - ARM QC

Date Passed:

06-Dec-2023

# **Expiration Notes:**

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

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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:**

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# **Certificate of Analysis**

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

Catalog No.:

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

<sup>\*</sup> 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.



Column:

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

Carrier Gas:

hydrogen-constant pressure 11.0 psi.

Temp. Program:

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

Inj. Temp:

200°C

Det. Temp:

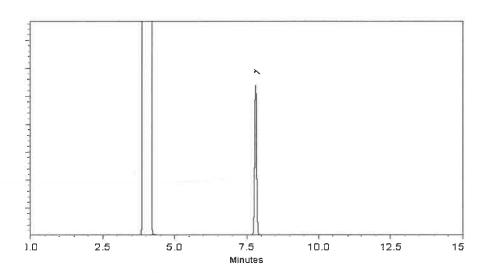
250°C

Det. Type:

Split Vent:

40 ml/min

Inj. Vol 1µl



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Tom Suckar - Mix Technician

Date Mixed:

06-Dec-2023

Balance Serial #

1127510105

Jennifer Pollino - Operations Tech III - ARM QC

Date Passed:

11-Dec-2023

REAGNED Tyle bedan or Hellan by N. Net



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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-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

2 111L

Pkg Amt:

> 1 mL

**Expiration Date:** 

Handling:

June 30, 2025

Storage: -20°C or colder

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.

Column:

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

Carrier Gas:

hydrogen-constant pressure 11.0 psi.

Temp. Program:

40°C (hold 2 min.) to 240°C

@ 8°C/min. (hold 5 min.)

Inj. Temp:

200°C

Det. Temp:

250°C

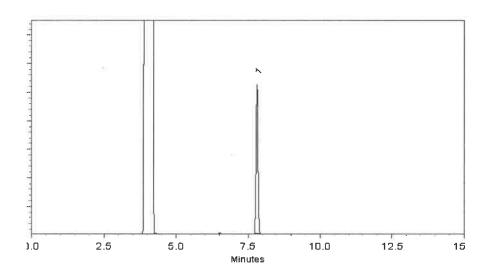
Det. Type:

FID

Split Vent:

40 ml/min

Inj. Vol 1µl



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

The state of the s

Daniel Wasson - Operations Tech I

Date Mixed:

06-Dec-2023

Balance Serial #

1127510105

Jennifer Poliino - Operations Tech III - ARM QC

Date Passed:

11-Dec-2023

できない ひろうちままから かれ ようから 気入性のはひ

### **Expiration Notes:**

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

# **Purity Notes:**

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

# **Certified Uncertainty Value Notes:**

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

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

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

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

### **Manufacturing Notes:**

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

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













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# Certificate of Analysis

chromatographic

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

Catalog No.:

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

2 111L

Pkg Amt:

> 1 mL

**Expiration Date:** 

Handling:

June 30, 2025

Storage: -20°C or colder

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.

Column:

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

Carrier Gas:

hydrogen-constant pressure 11.0 psi.

Temp. Program:

40°C (hold 2 min.) to 240°C

@ 8°C/min. (hold 5 min.)

Inj. Temp:

200°C

Det. Temp:

250°C

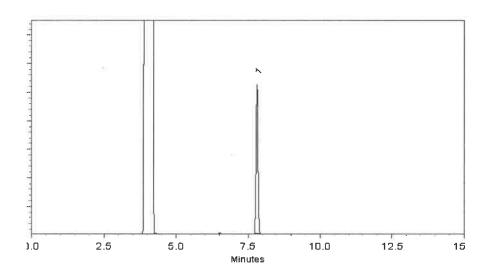
Det. Type:

FID

Split Vent:

40 ml/min

Inj. Vol 1µl



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

The state of the s

Daniel Wasson - Operations Tech I

Date Mixed:

06-Dec-2023

Balance Serial #

1127510105

Jennifer Poliino - Operations Tech III - ARM QC

Date Passed:

11-Dec-2023

できない ひろうちままから かれ ようから 気入性のはひ

### **Expiration Notes:**

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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:

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

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

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

### **Manufacturing Notes:**

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

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

chromatographic plus

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

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

Catalog No.:

30489

Lot No.: A0209618

**Description:** 

8260B Acetates Mix

8260B Acetates Mix 2,000 µg/mL, P&T Methanol, 1mL/ampul

**Container Size:** 

Pkg Amt:

> 1 mL

**Expiration Date:** 

September 30, 2025

Storage:

-20°C or colder

Handling:

This product is photosensitive.

Ship: On Ice

### CERTIFIED VALUES

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

<sup>\*</sup> 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:

Split Vent: 40 ml/min

Inj. Vol



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

Sam Moodler - Operations Tech I

Date Mixed:

28-Mar-2024

Balance Serial #

\_\_\_\_\_

B707717271

Dillan Murphy - Operations Technician I

Date Passed:

01-Apr-2024

# **Expiration Notes:**

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  parent compound in solution.
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# **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:**

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www.restek.com

# **Certificate of Analysis**

chromatographic plus

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

Catalog No.:

30489

Lot No.: A0209618

**Description:** 

8260B Acetates Mix

8260B Acetates Mix 2,000 µg/mL, P&T Methanol, 1mL/ampul

**Container Size:** 

Pkg Amt:

> 1 mL

**Expiration Date:** 

September 30, 2025

Storage:

-20°C or colder

Handling:

This product is photosensitive.

Ship: On Ice

### CERTIFIED VALUES

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

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

Solvent:

P&T Methanol

CAS# 67-56-1

Purity 99%

### Tech Tips:

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



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# **Quality Confirmation Test**

Column:

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

Carrier Gas:

hydrogen-constant pressure 11.0 psi.

Temp. Program:

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

Inj. Temp: 200°C

Det. Temp: 250°C

Det. Type:

Split Vent: 40 ml/min

Inj. Vol



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

Sam Moodler - Operations Tech I

Date Mixed:

28-Mar-2024

Balance Serial #

\_\_\_\_\_

B707717271

Dillan Murphy - Operations Technician I

Date Passed:

01-Apr-2024

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

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# **Manufacturing Notes:**

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# **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.:

555581

Lot No.: A0210184

**Description:** 

Custom 8260 Internal Standard Mix

Custom 8260 Internal Standard Mix 25,000µg/mL, P&T Methanol,

1mL/ampul

**Container Size:** 

2 mL

Pkg Amt:

> 1 mL

**Expiration Date:** 

April 30, 2027

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	1,4-Dichlorobenzene-d4	3855-82-1	PR-30447	99%	25,212.0 μg/mL	+/- 1,427.8857
2	1,4-Difluorobenzene	540-36-3	MKCS8657	99%	25,220.0 μg/mL	+/- 1,428.3388
3	Chlorobenzene-d5	3114-55-4	PR-31132	99%	25,116.0 μg/mL	+/- 1,422.4487
4	Pentafluorobenzene	363-72-4	MKCR9383	99%	25,180.0 μg/mL	+/- 1,426.0734

Solvent:

P&T Methanol

CAS# Purity

67-56-1 99%

Man Fulli John Friedline - Operations Technician I

Date Mixed:

11-Apr-2024

Balance: 1127510105

### **Expiration Notes:**

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# Absolute Standards, Inc.

800-368-1131 www.absolutestandards.com



# Certified Reference Material CRM



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

070122

070122

DATE

DATE

# **CERTIFIED WEIGHT REPORT**

Compound

1. Bromochloromethane

Part Number:

70046 070122

Solvent: Methanol

Target

Weight(g)

0.02530

Lot# EC592-US

Lot Number: Description:

Bromochloromethane

**Expiration Date:** 

070127

Recommended Storage:

Refrigerate (4 °C)

Nominal Concentration (µg/mL):

1000

**NIST Test ID#:** 

**6UTB** 

Lot

Number

AY01

46

5E-05 Balance Uncertainty

Uncertainty

Purity (%)

0.2

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

25.0

Nominal

Conc (µg/mL)

1000

0.0002 Flask Uncertainty

Purity

(%)

99

Expanded

5.7

74-97-5

Reviewed By:

Formulated By:

**SDS Information** 

(Solvent Safety Info. On Attached pg.)

0.02540

Actual Actual Uncertainty Weight(g) Conc (µg/mL) (+/-) (µg/mL)

1004.1

CAS# OSHA PEL (TWA)

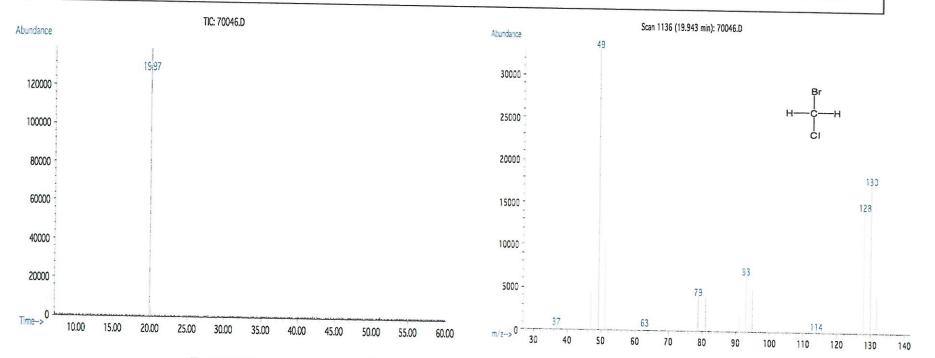
Gabriel Helland

Pedro L. Rentas

200 ppm (1050mg/m3/8H) orl-rat 5000mg/kg

LD50

Method GC6MSD-1.M: Column: (60m X 0.25mm X 1.5 μm) Temp 1 = 35°C (10min.), Temp 2 = 200°C (8.75 min.), Rate = 4°C/min., Injector B = 200°C, Detector B = 220°C. Analyst:



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

\* Standards are certifed (+/-) 0.5% of the stated value, unless otherwise stated.

· All Standards, after opening ampule, should be stored with caps tight and under appropriate laboratory conditions.

Uncertainty Reference: Taylor, B.N. and Kuyat, C.E., "Guidelines for Evaluating and Expressing the Uncertainty of NIST Measurement Result,"

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





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 %		
Residue after Evaporation	= 33.3 % ≤ 1.0 ppm	100.0 %	
Titrable Acid (µeq/g)	≟ 1.0 pp.π ≤ 0.3	0.2 ppm	
Titrable Base (µeq/g)	≤ 0.10	0.2	
Water (by KF, coulometric)	= 0.08 % ≤ 0.08 %	0.03	
Volatile Organic Trace Analysis – Below EPA 8260B CRQL	Conforms	< 0.01 % Conforms	

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

Country of Origin: USA







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 %		
Residue after Evaporation	= 33.3 % ≤ 1.0 ppm	100.0 %	
Titrable Acid (µeq/g)	≟ 1.0 pp.π ≤ 0.3	0.2 ppm	
Titrable Base (µeq/g)	≤ 0.10	0.2	
Water (by KF, coulometric)	= 0.08 % ≤ 0.08 %	0.03	
Volatile Organic Trace Analysis – Below EPA 8260B CRQL	Conforms	< 0.01 % Conforms	

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

Country of Origin: USA







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 %		
Residue after Evaporation	= 33.3 % ≤ 1.0 ppm	100.0 %	
Titrable Acid (µeq/g)	≟ 1.0 pp.π ≤ 0.3	0.2 ppm	
Titrable Base (µeq/g)	≤ 0.10	0.2	
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