

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

8900, Fax: 908 789 8922

Prep Standard - Chemical Standard Summary

Test: VOC-TCLVOA-10

Prepbatch ID:

Sequence ID/Qc Batch ID: VY032825,vy040125,

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VP131767,VP131783,VP132035,VP132036,VP132098,VP133175,VP133178,VP133179,VP133342,VP133343,VP1335 20,VP133521,VP133522,VP133544,VP133545,VP133555,VP133556,VP133557,

Chemical ID:

V13391,V13466,V13706,V14154,V14175,V14176,V14289,V14431,V14433,V14435,V14439,V14501,V14502,V14521,V14522,V14523,V14524,V14613,V14614,V14615,V14630,V14631,V14632,V14633,V14719,V14720,V14722,V14723,V14724,V14726,V14744,V14753,V14754,V14804,V14805,V14809,V14814,V14842,V14883,V14896,V14897,V14898,V14899,W3112,





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VOC STANDARD PREPARATION LOG

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

FROM	0.50000ml of V13391	+ 49.50000ml of V14154	= Final Quantity: 50.000 ml
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Recipe ID	NAME	<u>NO.</u>	Prep Date	Expiration Date	Prepared By	<u>ScaleID</u>	<u>PipetteID</u>	Supervised By Mahesh Dadoda
1917	8260 Internal standard 50 ppm	<u>VP131783</u>	11/22/2024	05/18/2025	Semsettin Yesilyurt	None	None	11/27/2024

FROM 0.02000ml of V14289 + 9.98000ml of V14154 = Final Quantity: 10.000 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
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
1811	8260 Working Std(2-CVE)-500ppm	<u>VP132036</u>	12/10/2024	06/10/2025	Semsettin Yesilyurt	None	None	12/12/2024

FROM 7.50000ml of V14614 + 12.50000ml of VP132035 = Final Quantity: 20.000 ml





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VOC STANDARD PREPARATION LOG

Recipe ID	NAME	<u>NO.</u>	Prep Date	Expiration Date	Prepared By	<u>ScaleID</u>	<u>PipetteID</u>	Supervised By Mahesh Dadoda
	8260 Working STD (BCM)-First source, 100PPM	<u>VP132098</u>	12/12/2024	06/10/2025	Semsettin Yesilyurt	None	None	12/19/2024

FROM	1.25000ml of V13466 + 23.75000ml of V14614	= Final Quantity: 25.000 ml
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Recipe ID	NAME	<u>NO.</u>	Prep Date	Expiration Date	Prepared By	<u>ScaleID</u>	<u>PipetteID</u>	Supervised By Mahesh Dadoda
249	8260 Surrogate, 100PPM	<u>VP133175</u>	02/27/2025	08/27/2025	Semsettin Yesilyurt	None	None	03/04/2025

FROM 0.10000ml of V13706 + 24.90000ml of V14613 = Final Quantity: 25.000 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>VP133178</u>	02/27/2025	03/31/2025	Semsettin Yesilyurt	None	None	03/04/2025

FROM

 $0.40000ml\ of\ V14842+1.00000ml\ of\ V14175+1.00000ml\ of\ V14176+1.00000ml\ of\ V14433+1.00000ml\ of\ V14439+1.00000ml\ of\ V14521+1.00000ml\ of\ V14522+1.00000ml\ of\ V14724+1.00000ml\ of\ V14744+1.00000ml\ of\ V14744+1.00000ml\ of\ V14754+1.00000ml\ of\ V14809+1.00000ml\ of\ V14814+1.50000ml\ of\ V14722+1.50000ml\ of\ V14723+10.60000ml\ of\ V14613\ =\ Final\ Quantity:\ 25.000\ ml$

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	<u>ScaleID</u>	<u>PipetteID</u>	Supervised By Mahesh Dadoda
244	8260 Calibration Working STD Mix-First source, 100PPM	<u>VP133179</u>	02/27/2025	03/31/2025	Semsettin Yesilyurt	None	None	03/04/2025

FROM 5.62500ml of V14613 + 9.37500ml of VP133178 = Final Quantity: 15.000 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
51	8260 Working STD (Acrolein) -first source, 800PPM	<u>VP133342</u>	03/18/2025	04/17/2025	Semsettin Yesilyurt	None	None	03/20/2025
FROM	1.00000ml of V14896 + 1.00000ml of	f V14897 +	1.00000ml of	V14898 + 1.000	000ml of V1489	9 + 21.00000ml	of V14883 =	Final

1.00000ml of V14896 + 1.00000ml of V14897 + 1.00000ml of V14898 + 1.00000ml of V14899 + 21.00000ml of V14883 = 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
56	8260 Working STD (Acrolein) -first source, 500PPM	<u>VP133343</u>	03/18/2025	04/17/2025	Semsettin Yesilyurt	None	None	03/20/2025

FROM $5.62500 \, \text{ml}$ of V14883 + $9.37500 \, \text{ml}$ of VP133342 = Final Quantity: $15.000 \, \, \text{ml}$





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VOC STANDARD PREPARATION LOG

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	<u>ScaleID</u>	<u>PipetteID</u>	Supervised By Mahesh Dadoda
773	50 PPB CCC, 8260-SOIL	<u>VP133520</u>	03/28/2025	03/29/2025	Amit Patel	None	None	00/04/0005
								03/31/2025

FROM

 $4.98000 ml \ of \ W3112 + 0.00250 ml \ of \ VP132036 + 0.00250 ml \ of \ VP132098 + 0.00250 ml \ of \ VP133175 + 0.00250 ml \ of \ VP133179 + 0.00250 ml \ of \ VP132098 + 0.00250 ml \ of \ VP133179 + 0.00250 ml \ of \ VP132098 + 0.00250 ml \ of \ VP133179 + 0.00250 ml \ of \$

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
773	50 PPB CCC, 8260-SOIL	<u>VP133521</u>	03/28/2025	03/29/2025	Amit Patel	None	None	
								03/31/2025

FROM

^{+ 0.00250}ml of VP133343 + 0.00500ml of VP131783 = Final Quantity: 5.000 ml

 $^{4.98000} ml \ of \ W3112 + 0.00250 ml \ of \ VP132036 + 0.00250 ml \ of \ VP132098 + 0.00250 ml \ of \ VP133175 + 0.00250 ml \ of \ VP133179 + 0.00250 ml \ of \ VP132098 + 0.00250 ml \ of \ VP133179 + 0.00250 ml \ of \ VP132098 + 0.00250 ml \ of \ VP133179 + 0.00250 ml \ of \$

^{+ 0.00250}ml of VP133343 + 0.00500ml of VP131783 = Final Quantity: 5.000 ml



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VOC STANDARD PREPARATION LOG

Recipe ID	NAME	<u>NO.</u>	Prep Date	Expiration Date	Prepared By	<u>ScaleID</u>	<u>PipetteID</u>	Supervised By Mahesh Dadoda
732	BFB TUNE CHECK - SOIL	<u>VP133522</u>	03/28/2025	03/29/2025	Amit Patel	None	None	02/24/2025
								03/31/2025

FROM 4.99800ml of W3112 + 0.00200ml of VP131767 = Final Quantity: 5.000 ml

Recipe ID	NAME.	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>VP133544</u>	04/01/2025	05/10/2025	Semsettin Yesilyurt	None	None	04/03/2025

FROM

 $0.40000ml\ of\ V14842\ +\ 1.00000ml\ of\ V14431\ +\ 1.00000ml\ of\ V14435\ +\ 1.00000ml\ of\ V14501\ +\ 1.00000ml\ of\ V14502\ +\ 0.00000ml\ of\ V14501\ +\ 0.000000ml\ of\ V14501\ +\ 0.00000ml\ of\ V14501\ +\ 0.000000ml\ of\ V14501\ +\ 0.00000ml\ of\$

1.00000ml of V14523 + 1.00000ml of V14524 + 1.00000ml of V14726 + 1.00000ml of V14744 + 1.00000ml of V14753 +

Quantity: 25.000 ml





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VOC STANDARD PREPARATION LOG

Recipe ID	NAME	<u>NO.</u>	Prep Date	Expiration Date	Prepared By	<u>ScaleID</u>	<u>PipetteID</u>	Supervised By Mahesh Dadoda
244	8260 Calibration Working STD Mix-First source, 100PPM	<u>VP133545</u>	04/01/2025	05/10/2025	Semsettin Yesilyurt	None	None	04/03/2025

FROM	5.62500ml of	V14615 +	9.37500ml of VP133544	= Final Quantity: 15.000 ml
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Recipe ID	NAME	<u>NO.</u>	Prep Date	Expiration Date	Prepared By	<u>ScaleID</u>	<u>PipetteID</u>	Supervised By Mahesh Dadoda
732	BFB TUNE CHECK - SOIL	<u>VP133555</u>	04/01/2025	04/02/2025	Amit Patel	None	None	04/03/2025

FROM 4.99800ml of W3112 + 0.00200ml of VP131767 = Final Quantity: 5.000 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
773	50 PPB CCC, 8260-SOIL	<u>VP133556</u>	04/01/2025	04/02/2025	Amit Patel	None	None	
								04/03/2025

FROM

 $4.98000 ml \ of \ W3112 + 0.00250 ml \ of \ VP132036 + 0.00250 ml \ of \ VP132098 + 0.00250 ml \ of \ VP133175 + 0.00250 ml \ of \ VP133343 + 0.00250 ml \ of \ VP132098 + 0.00250 ml \ of \ VP133175 + 0.00250 ml \ of \ VP133343 + 0.00250 ml \ of \ VP132098 + 0.00250 ml \ of \ VP133175 + 0.00250 ml \ of \ VP133343 + 0.00250 ml \ of \$

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
773	50 PPB CCC, 8260-SOIL	<u>VP133557</u>	04/01/2025	04/02/2025	Amit Patel	None	None	
								04/03/2025

FROM

^{+ 0.00250}ml of VP133545 + 0.00500ml of VP131783 = Final Quantity: 5.000 ml

 $^{4.98000} ml \ of \ W3112 + 0.00250 ml \ of \ VP132036 + 0.00250 ml \ of \ VP132098 + 0.00250 ml \ of \ VP133175 + 0.00250 ml \ of \ VP133343 + 0.00250 ml \ of \ VP132098 + 0.00250 ml \ of \ VP133175 + 0.00250 ml \ of \ VP133343 + 0.00250 ml \ of \$

^{+ 0.00250}ml of VP133545 + 0.00500ml of VP131783 = Final Quantity: 5.000 ml



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	30225 / VOA Mix, bromochloromethane, 2000ug/mL, P&TM, 1mL/ampul	A0193071	06/12/2025	12/12/2024 / SAM	01/27/2023 / SAM	V13466
Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Restek	555582 / Custom Mixture, 8260 A/B Surrogate Mix [CS 5179-2]	A0196865	02/27/2026	02/27/2025 / SAM	04/12/2023 / SAM	V13706
Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Seidler Chemical	BA9077-02 / Methanol, Purge/Trap (cs=6x1L)	22L0562016	05/18/2025	11/18/2024 / pedro	02/06/2024 / SAM	V14154
Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date /	Chemtech Lot #
Absolute Standards, Inc.	95317 / Universal VOA Mega Mix (Min order = 5)	021624	07/10/2025	01/10/2025 / SAM	02/20/2024 / SAM	V14175
Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Absolute Standards, Inc.	95317 / Universal VOA Mega Mix (Min order = 5)	021624	07/10/2025	01/10/2025 / SAM	02/20/2024 / SAM	V14176



Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #	
Restek	555581 / Custom Standard, 8260 Internal Std [CS 5179-1]	A0210184	11/22/2025	11/22/2024 / SAM	04/15/2024 / SAM	V14289	
Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #	
Restek 30489 / VOA Mix, 8260B Acetates Mix, P&TM, 1mL		A0209618	09/20/2025	03/20/2025 / SAM	08/15/2024 / SAM	V14431	
Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #	
Restek 30489 / VOA Mix, 8260B Acetates Mix, P&TM, 1mL		A0209618	07/10/2025	01/10/2025 / SAM	08/15/2024 / SAM	V14433	
Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #	
Restek	30489 / VOA Mix, 8260B Acetates Mix, P&TM, 1mL	A0209618	09/20/2025	03/20/2025 / SAM	08/15/2024 / SAM	V14435	
Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #	
Restek	30489 / VOA Mix, 8260B Acetates Mix, P&TM, 1mL	A0209618	07/10/2025	01/10/2025 / SAM	08/15/2024 / SAM	V14439	
Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #	
Absolute Standards, Inc. 95317 / Universal VOA Mega Mix (Min order = 5)		021624	09/20/2025	03/20/2025 / SAM	09/17/2024 / SAM	V14501	



Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot # V14502	
Absolute Standards, Inc.	95317 / Universal VOA Mega Mix (Min order = 5)	021624	09/20/2025	03/20/2025 / SAM	09/17/2024 / SAM		
Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #	
Absolute Standards, Inc.	95319 / Revised Additions Mix (Min = 5)	091724	07/10/2025	01/10/2025 / SAM	09/18/2024 / SAM	V14521	
Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #	
Absolute 95319 / Revised Additions Mix (Min = 5)		091724	07/10/2025	01/10/2025 / SAM	09/18/2024 / SAM	V14522	
Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date /	Chemtech Lot #	
Absolute Standards, Inc.	95319 / Revised Additions Mix (Min = 5)	091724	09/20/2025	03/20/2025 / SAM	09/18/2024 / SAM	V14523	
Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date /	Chemtech Lot #	
Absolute Standards, Inc.	95319 / Revised Additions Mix (Min = 5)	091724	09/20/2025	03/20/2025 / SAM	09/18/2024 / SAM	V14524	
Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date /	Chemtech Lot #	
Seidler Chemical BA9077-02 / Methanol, Purge/Trap (cs=6x1L)		22L0562016	08/27/2025	02/27/2025 / SAM	11/26/2024 / SAM	V14613	



Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot # V14614	
Seidler Chemical	BA9077-02 / Methanol, Purge/Trap (cs=6x1L)	22L0562016	06/10/2025	12/10/2024 / SAM	11/26/2024 / SAM		
Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #	
Seidler Chemical	BA9077-02 / Methanol, Purge/Trap (cs=6x1L)	22L0562016	09/19/2025	03/19/2025 / SAM	11/26/2024 / SAM	V14615	
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 /	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 # V14719 Chemtech Lot # V14720	
Restek	30006 / VOA Mix, CLP method Calibration Std #1 ketones 5000uq/ml, PTM, 1ml	A02110618	09/20/2025	03/20/2025 / SAM	12/17/2024 / SAM		
Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By		
Restek	30006 / VOA Mix, CLP method Calibration Std #1 ketones 5000uq/ml, PTM, 1ml	A02110618	09/20/2025	03/20/2025 / SAM	12/17/2024 / SAM		
Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #	
Restek	30006 / VOA Mix, CLP method Calibration Std #1 ketones 5000uq/ml, PTM, 1ml	A02110618	07/10/2025	01/10/2025 / SAM	12/17/2024 / SAM	V14722	
Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #	
Restek	30006 / VOA Mix, CLP method Calibration Std #1 ketones 5000uq/ml, PTM, 1ml	A02110618	07/10/2025	01/10/2025 / SAM	12/17/2024 / SAM	V14723	
Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date /	Chemtech Lot #	
Restek	30006 / VOA Mix, CLP method Calibration Std #1 ketones 5000uq/ml, PTM,	A02110618	07/10/2025	01/10/2025 / SAM	12/17/2024 / SAM	V14724	
	1ml			•	•	•	
Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #	



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Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #	
Restek	30042 / VOA Mix,500 series method 502.2 Calibration Std #1 gases, 2000uq/ml, PTM, 1ml	A0216826	08/27/2025	02/27/2025 / SAM	12/17/2024 / SAM	V14744	
Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #	
Restek	30042 / VOA Mix,500 series method 502.2 Calibration Std #1 gases, 2000uq/ml, PTM, 1ml	A0216826	07/30/2025	01/30/2025 / SAM	12/17/2024 / SAM	V14753	
Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #	
Restek	30042 / VOA Mix,500 series method 502.2 Calibration Std #1 gases, 2000uq/ml, PTM, 1ml	A0216826	05/31/2031	01/10/2025 / SAM	12/17/2024 / SAM	V14754	
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	A0220471	09/20/2025	03/20/2025 / SAM	01/08/2025 / SAM	V14804	
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	A0220471	09/20/2025	03/20/2025 / SAM	01/08/2025 / SAM	V14805	
	LOTS		Expiration	Date Opened /	Received Date /	Chemtech	
Supplier	ItemCode / ItemName	Lot #	Date	Opened By	Received By	Lot #	
Restek 555408 / Custom Standard, Vinyl Acetate Standard w/ Grav [CS 5066-6] TWO SEPARATE LOTS		A0220471	07/10/2025	01/10/2025 / SAM	01/08/2025 / SAM	V14809	



Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot # V14814 Chemtech Lot # V14842	
Restek	555408 / Custom Standard, Vinyl Acetate Standard w/ Grav [CS 5066-6] TWO SEPARATE LOTS	A0220471	07/10/2025	01/10/2025 / SAM	01/08/2025 / SAM		
Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By		
Restek	30470 / VOA Stock Solution, tert-butanol std, 1mL, P&TM	A0217535	08/27/2025	02/27/2025 / SAM	01/21/2025 / SAM		
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	10/25/2025	02/19/2025 / Jaswal	04/22/2024 / Jaswal	V14883	
Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date /	Chemtech Lot #	
Absolute Standards, Inc.	91980 / Acrolin Std (Min = 5)	031725	04/17/2025	03/18/2025 / SAM	03/18/2025 / SAM	V14896	
Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date /	Chemtech Lot #	
Absolute Standards, Inc.	91980 / Acrolin Std (Min = 5)	031725	04/17/2025	03/18/2025 / SAM	03/18/2025 / SAM	V14897	
Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #	
Absolute Standards, Inc.	91980 / Acrolin Std (Min = 5)	031725	04/17/2025	03/18/2025 / SAM	03/18/2025 / SAM	V14898	



Fax: 908 789 8922

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Absolute Standards, Inc.	91980 / Acrolin Std (Min = 5)	031725	04/17/2025	03/18/2025 / SAM	03/18/2025 / SAM	V14899

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

Methanol
ULTRA RESI-ANALYZED
For Purge and Trap Analysis





Material No.: 9077-02

Batch No.: 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



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

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Packaging Site: Phillipsburg Mfg Ctr & DC



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

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Certificate of Analysis

Test	Specification	Result
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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



Certified Reference Material CRM Ree 03/17/24



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

CERTIFIED WEIGHT REPORT

Parl Number: 95317 Lot Number: 021624 Description: Universal VOA Megamix 69 components

Solvent(s): Lot# Methanol EG359-USQ12

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

021624 DATE 021624 DATE Reviewed By

		NIST Test	ID#: BUTB			5E-	05 Balance Una	pertulery								jules		021624
		Weight(e) shown below were combi	ined and dilut	ed to (mL):	: 10		21 Flask Uncer								Reviewed	By:	Pedro L. Rentas	DATE
						0.0	- FARM DICCI	(BEERLA										
			(RM#)	Lot	D	il. Initi	al Initial	Nominal	Dente	0					Expanded		SDS information	
		Compound	Part Numb						Purity	Punity	Uncertainty	Target	Actual	Actual	Uncertainty	(Soli	ent Safety Info. On Atta	ched pa.)
		THE RESERVE OF THE PERSON NAMED IN COLUMN TWO IS NOT THE PERSON NAMED IN COLUMN TWO IS NAMED IN COLUMN TW	7 auro I Washing	ACI LACITACA	H PAG	acar ves. (i	mL) Gond.(ug/m	sl.) Conc (µg/ml	.) (%)	Uncertainty	Pipetra (mL)	Weight(g)	Weight(g)	Conc (ug/mL)	(+/-) (ug/mL)	CAS#	OSHA PEL (TWA)	LD50
	1. /	Acetonitrile	(0004)	00404	4												75.0.11 411 (1.11)	1000
		Allyl chloride (3-Chloropropene)	(0324)	02164				2000	99.99	0.2	NA	0.20007	0.20020	2001.3	8.1	75-05-8	40 man Cities to himse	
		Carbon disulphide	(0325)					2000	99	0.2	NA	0.20207	0.20221	2001.4	8.2	107-05-1	40 ppm (70mg/m3/8H)	ori-rat 2460mg/kg
			(0060)	MKCR8	561 N	A NA	NA NA	2000	99.99	0.2	NA	0.20007	0.20023	2001.6			1 ppm (3mg/m3/8H)	orl-rat 700mg/kg
		sis-1,4-Dichtoro-2-butene	(1196)	147188	F N	A NA	NA NA	2000	95	0.2	NA	0.21058	0.21069		8.1	75-15-0	4 ppm (12mg/m3) (skin)	orl-rat 1200mg/kg
		rans-1,4-Dichloro-2-butene	(0486)	MKBP60	41V N	A NA	NA NA	2000	96.5	0.2	NA.	0.20731		2001.1	8.5	1478-11-5	N/A	N/A
		Diethyl einer	(0153)	IK18CAS	000C NJ			2000	99.9	0.2	NA		0.20748	2001.7	8.4	110-57-6	N/A	N/A
	7. E	thyl methacrylate	(0381)	06126F				2000	99.0	0.2		0.20025	0.20040	2001.5	8.1	60-29-7	N/A	N/A
	B. 1	odomethane	(0489)	SHBF87				2000			NA	0.20207	0.20230	2002.3	8.2	97-63-2	N/A	orl-rat 14800mg/kg
	9. 2	-Methyl-1-propanol	(0445)	15241E					99.5	0.2	NA.	0.20106	0.20121	2001.5	8.2	74-88-4	5 ppm(28/ng/m3/6H)(skin)	orl-rat 76mg/kg
1		fethacrylonitrile	(0442)					2000	99.5	0.2	NA.	0.20106	0.20120	2001.4	8.1	78-83-1	50 ppm (150mg/m3/8H)	ori-rat 2460mg/kg
1		ethyl acrylate		00427E				2000	99	0.2	NA	0.20207	0.20221	2001,4	8.2	128-98-7	1 ppm (3mg/m3/8H)(skin)	
		fethyl methacrylate	(1075)	SHEKOS				2000	99.9	0.2	NA	0.20025	0.20040	2001.5	8.1	96-33-3		ori-rat 120mg/kg
			(0404)	MKBW51				5000	99.9	0.2	NA	0.20025	0.20041	2001.6	8.1	80-62-6	10 ppm(35mg/m3/8H)(skin)	
	_	Rtrobenzene	(0228)	012131		NA NA	NA	2000	99	0.2	NA	0.20207	0.20220	2001.3			100 ррт (410тр/т3/8Н)	ori-rat 7872mg/kg
	_	-Nitropropane	(0481)	14002J	X NA	NA.	NA.	2000	97.3	0.2	NA	0.20560	0.20577		8.2	98-95-3	1 ppm (δreg/π3/8H)(skin)	orl-rat 780mg/kg
		entachloroethane	(0450)	HGA01	I NA	NA NA	NA	2000	98	0.2	NA			2001.6	8.3	79-46-9	10 ppm (35mg/m3/8H)	orl-ret 720mg/kg
1	8. 1	1.2-Trichlorstriffuoroathane	(0474)	18930				2000	99	0.2		0.20413	0.20430	2001.6	8.3	78-01-7	N/A	N/A
- 1	7. <u>B</u>	romodichioromethane	35171	101623	0.0				NA		NA	0.20207	0.20225	2001.8	8.2	76-13-1	1000 ppm (7600mg/m3/8H)	ori-rat 43g/kg
1	8. D	bromochloromethane	35171	101623						NA .	0.017	NA	NA	1999.6	22.9	75-27-4	N/A	ori-rat 916mg/kg
15	9. ci	s-1,2-Dichloroethene	35171	101823				2000	NA	NA	0.017	NA	NA NA	1999.6	23.0	124-48-1	N/A	orl-rat 848mg/kg
20		ans-1,2-Dichloroethene	35171					2000	NA	NA	0.017	NA	NA.	1999.7	22.9	156-59-2	N/A	
2	_	ethylene chloride		101623				2000	NA	NA	0.017	NA	NA	1999.6	23.0	158-60-5	N/A	N/A
2		1-Dichloroethene	35171	101623				2000	NA	NA.	0.017	NA	NA	1999.6	22.9	75-09-2		orl-rat 1235mg/kg
23			32251	102023		10.00	20001.6	2000	NA	NA	0.042	NA	NA	1999.7	20.4		500 ppm	ori-rat 820mg/kg
		romotorm	95321	020724	0.10	10.00	20003.2	2000	NA	NA	0.042	NA	NA	1999.8		75-35-4	1 ppm (4mg/m3/8H)	orl-rat 200mg/kg
24	_	arbon tetrachioride	95321	020724	0.10	10.00	20003.4	2000	NA	NA	0.042	NA	NA		20.5	75-25-2	0.5 ppm (5mg/m3) (skin)	orl-rat 933mg/kg
25		hioroform	95321	020724	0.10	10.00		2000	NA	NA	0.042	NA NA		1999.8	20.4	56-23-5	2 ppm (12.6mg/m3/8H)	ori-rat 2350mg/kg
26	. DI	bromomethane	95321	020724	0.10			2000	NA	NA			NA NA	2001.9	20.5	67-68-3	60 ppm (240mg/m3) (CL)	orl-ret 908mg/kg
27	. 1.	1-Dichloroethane	95321	020724				2000			0.042	NA	NA NA	1999.8	20.5	74-95-3	N/A	orl-rat 108mg/kg
28	. 2:	2-Dichloropropane	95321	020724	0.10				NA	NA	0.042	NA	NA.	1999.8	20.5	75-34-3	100 ppm	ori-rat 725mg/kg
29		trachloroethene	95321	020724	0.10			2000	NA	NA	0.042	NA	NA	1999.8	20.4	594-20-7	N/A	NA
30	1.	1,1-Trichloroethane	95321					2000	NA	NA	0.042	NA	NA	2019.6	20.8	127-18-4	25 ppm (170mg/m3/8H)(final)	
31		2-Dibromo-3-chioropropane		020724	0.10			2000	NA	NA	0.042	NA	NA	1999.8	20.5	71-55-6		
32	_		35161	112322	0.05		40016.5	2000	NA	NA	0.017	NA	NA	2000.3	22.9	96-12-8	350 ppm (1900mg/m3/8H)	orl-rat 10300mg/kg
		- Dibromoethane	35161	112322	0.05	5.00	40024.8	2000	NA	NA	0.017	NA	NA	2000.7	22.9		0.001 ppm	orl-ras 179mg/kg
33		-Dichlorcethane	39161	112322	0.05	5.00	40018.0	2000	NA	NA	0.017	NA	NA NA	2000.4		108-93-4	20 ppm (8H)	orl-rat 108mg/kg
34		-Dichloropropane	35161	112322	0.05	5.00	40051,0	2000	NA	NA	0.017	NA	NA		22.9	107-08-2	50 ppm (8H)	orl-rat 670mg/kg
35	1,3	-Dichloropropane	35161	112322	0.05	5.00	40005.9	2000	NA	NA	0.017			2002.0	22.9	78-87-5	75 ppm (350mg/m3/8H)	orl-rat 1947mg/kg
36	1.1	-Dichtaropropene	35161	112322	0.05		40012.1	2000	NA			NA	NA	1999.8	22.9	142-28-9	N/A	илг-тив 3600то/ка
37	. cis	-1,3-Dichloropropene	35181	112322	0.05	5.00	40010.0	2000		NA	0.017	NA	NA	2000.1	29.7	563-58-6	N/A	N/A
		2s-1,3-Dichloropropene	36161	112322					NA	NA	0.017	NA	NA	2000.0	23.0 1	0081-01-5	N/A	NA
		rachloro-1,3-butadiene	35161		0.05	5.00	40017.6	2000	NA	NA	0.017	NA NA	NA	2000.4	23.0 1	0061-C2-6	NA	N/A
		1,2-Tetrachloroethane	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)	
		2.2-Tetrachloroethane		112322	0.05	5.00	40011.9	2000	NA	NA	0.017	NA	NA	2000.1		830-20-6		orl-rat 82mg/kg
		2-Trichloroethane	35161	112322	0.05	5.00	40007.5	2000	NA	NA	0.017	NA.	NA	1999.9	22.9	79-34-5	N/A	orl-rat 670mg/kg
40		2-11/chioroethane	35161	112322	0.05	5.00	40006.6	2000	NA	NA	0.017	NA	NA	1999.8	23.0		5 ppm (35mg/m3/9H)(elds)	ori-rat 800mg/kg
		thloroethene	35161	112322	0.05	5.00	40029.0	2000	NA	NA	0.017	NA	NA	2000.9		79-00-5	10 ppm (45mg/m3/8H)(skin)	ort-rat 836mg/kg
		3-Trichioropropane	35161	112322	0.05	5.00	40007.5	2000	NA	NA	0.017	NA			22,9	79-01-6	50 ppm (270mg/m3/8H)	orl-mus 2402mg/kg
		zens	35162	050823	0.05	5.00	40005.0	2000	NA	NA	0.017		NA	1999.9	22.9	96-18-4	10 ppm (60mg/m3/8H)	orl-ret 149.8mg/kg
46.	Bro	mobenzene	35162	050823	0.05	5.00	40006.9	2000	NA			NA	NA .	1999.7	22.9	71-43-2	1 ppm	orl-rat 4894mg/kg
		utyl benzene	35162	050823	0.05	5.00	40003.8	2000	NA NA	NA NA	0.017	NA	NA	1999.8		108-86-1	N/A	orl-rat 2009mg/kg
48.	Eth	yl benzene	35162	050823	0.05	5.00	40004.8	2000		NA	0.017	NA	NA	1999.7	22.9	104-51-8	N/A	N/A
		opropyl toluene	35162	050823	0.05	5.00			NA	NA	0.017	NA	NA	1999.7		100-41-4	100 ppm (435mg/m3/8H)	ori-rat >2000mg/kg
		hithalene	35162	050823			40005.8	2000	NA	NA	0.017	NA	NA	1999.8		99-87-8	NA	orl-rat 4750mg/kg
	Sty				0.05	5.00	40008.2	2000	NA	NA	0.017	NA	NA	1999.8		91-20-3	10 ppm (50mg/m3/8H)	
	Tol		35162	050823	0.05	5.00	40004.8	2000	NA	NA	0.017	NA	NA	1999.7		00-42-5		orl-rat 490mg/kg
			35162	050823	0.05	5.00	40006.2	2000	NA	NA	0.017	NA	NA	1999.8		08-88-3	100 ppm	orl-rat 5000mg/kg
		3-Trichlorobenzene	35162	050823	0.05	5.00	40003.1	2000	NA	NA	0.017	NA	NA	1999.7			200 ppm	orl-rat 5000mg/kg
		4-Trichtorobenzene	35162	050823	0.05	5.00	40006.8	2000	NA	NA	0.017	NA	NA NA			87-61-6	N/A	pr-mus 1390mg/kg
		4-Trimethylbenzene	35162	050823	0.05	5.00	40001.8	2000	NA	NA	0.017	NA.		1999.8		20-82-1	8 ppm (CL) (40mg/m3)	ori-rat 756mg/kg
		5-Tranethylbenzene	35162	050923	0.05	5.00	40006.7	2000	NA	NA			NA	1999.6		95-63-6	N/A	ori-rat 5g/kg
57.	m-)(ylene	35162	050023	0.05	5.00	40005.8	2000	NA NA		0.017	NA	NA	1999.8		08-87-8	N/A	orl-rat 5000mg/kg
58.	tert-	Butyl benzene	35163	101923	0.05	5.00				NA	0.017	NA	NA	1999.8	22.9 1	08-38-3	100 ppm (435mg/m3/8H)	orl-rat 5g/kg
		Butyl benzene	35163			0.00	40001.2	2000	NA	NA	0.017	NA	NA	1999.8		8-80-86	N/A	N/A
		robenzene		101323	0.05	5.00	40002.4	2000	NA	NA	0.017	NA	NA	1999.6		35-96-8	N/A	
		ilorotoluene	36163	101923	0.05	5.00	40003.B	2000	NA	NA	0.017	NA	NA	1999.7		08-90-7		orl-rat 2240mg/kg
			35163	101923	0.05	5.00	40000.3	2000	NA	NA	0.017	NA	NA	1999.5		95-49-8		orl-rat 2290mg/kg
		niorotoluene	35163	101923	0.05	5.00	40003.3	2000	NA	NA	0.017	NA	NA				60 ppm (250mg/m3/8H)	Orl-ret 3900mg/kg
		Dichlorobenzene	35163	101923	0.05	5.00	40003.8	2000	NA	NA	0.017	NA NA		1000.7		06-43-4		orl-rat 2100mg/kg
		Dichlorobenzene	35163	101923	0.05	5.00	40001.7		NA	NA	0.017		NA	1999.7		5-50-1	50 ppm (300mg/m3) (CL)	orl-rat 500mg/kg
		Dichlorobenzene	35163	101923	0.05	5.00	40001.8		NA	NA NA		NA NA		1999.6		41-73-1		pr-mus 1062mg/kg
66.	isop	ropybenzene		101923	0.05	5.00	40000.8				0.017	NA		1999.6		06-46-7	75 ppm (450mg/m3/8H)	ori-rat 500mg/kg
		pylbenzene		101923	0.05				NA	NA	0.017	NA		1999.5	22.9 9	8-82-8		orl-rat 1400mg/kg
68.						5.00	40003,4		NA	NA	0.017	NA	NA	1999.7		03-65-1		orl-rat 8040mg/kg
69.				101923	0.05	5.00	40040.8		NA	NA	0.017	NA		2001.5		5-47-6		
	2.01		35183	101923	0.05	5.00	40000.6	2000	NA	NA	0.017	NA				08-42-3	100 ppm (435mg/m3/8H)	pr-mus 1364mg/kg
					The court										IN		CONTRACTOR (MADE DESCRIPTION AND ADDRESS OF THE PARTY OF	orf-rat 5g/kg

^{*} The certified value is the constantation calculated from gravinetate and volumetric advantages at the constant side of the constant s

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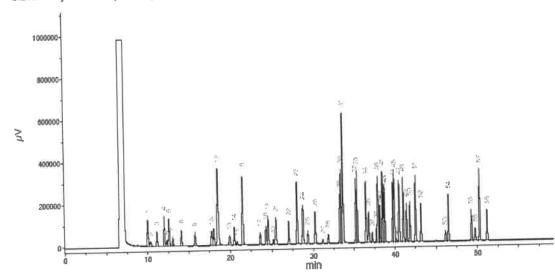
ANAB ISO 17034 Accredited AR-1539 Certificate Number https://Absolutestandards.com

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., Air(make-up)=230mL/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



Pagelt III	M person	FID RT (unin.)
1	Espar	9,97
2	1,1,2-THickstorp 1, Z, 3-thiff/concests-are	20.33
3	: LD chloroethere	11.10
a.	Acesportnia	17.00
9	Lodomethana	12,34
6	Altyl chloride	12.56
7	Carbon disuttida/Hethylene-chloride	13,04
	trans-1,2-Dichlordeshane	14.07
9	1.1-Dichterostnene	15.74
LD	2,2-Dichloropropede	12.74
12	cig-1,3-Gignlorostherid	18.00
12	Hennacrylonistic/Hennyl acrylate/Chloroform	10,49
13	Imputancy 1.1, 1-Trichiprocharie	19,91
14	3.1-Dichiometropisto	25.46
15	Carbon tetrachieride	30.79
16	Benzene/1,2-Diemorgetnene	21.49
19	Trichigepastiere	23,68
1.6	1,2-Dighierópropase	24.24
19	Mathyi medhaceylate	24.52
20	Brureagerstoremetrane	29.13
21	Diprorisorratherso/2-francopropersa	25,46
33	cse-1,3-Dienigraparapana	27.02
23	Toturbrid	36,03
24	Stoyl matherpress/frant-1, 2-Olone-parapana	29.73
25	1,1,2-Trichlorgethere	29.34
26	Tatraction patterney 1,3-Dichloroscopane	30.24
27	Cabeningchloromassene	35,16
.28	1.2 Discompeliana	35,384
20	Chlerobengina	33,25
30	Ethylbenzemer1,3,2,9 Tetraesterbethane	31.40
81	m-Xylene/p-/bylene	31.85
32	e-Kylana	35,22
33	53yrane	35,39
34	Inopropylperszene/Bremofoszt	35.48
35	cis-2,4-Zijehiora-2-butene	34,40
36	1, 1,2,2-Tearpenterset/himse	37.20
27	\$, 2, 3+Tyschineapropene	37.77
38	n-Propylpanierie	37,42
39	transat in-Dichloro-2-butens	30.05
46	Brisnobencens	36.14
45	t,3,5-Trymethy/bensene	10.50
42	2-Cisteroseivenk	38,62
43	4: Chiprotologna	38.27
44	cart Budylberizane	29.76
49	1,2,4-TrimminyInenxans	30,91
46	Persechiomed hans	40,17
47	sec-Buty/benzene	40.52
48	p Isoprapylaniuste	41.62
-69	1,3-Crichlorobeninhin	45,42
50	1,4-Excelorationsten	41.63
51	n-Bucybenzens	42,62
52	1,2-13-chtorobenzass	43.18
53	1,3-Othrome-3-phioreprepare	46.12
54		46,48
55		49.25
56		
8.2		50.76
\$11	1,2,3-Trichsonomensen4	01,34

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

Address

44 Rossotto Dr.

Emergency Telephone USA & CANADA Emergency Telephone International

1-800-535-5053

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 H370 **Highly Flammable Liquid and Vapor** Cause damage to organs

H351

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

P271 Use in ventilated area

P280

Use gloves, eye protection/face shelld

P302,332

If on skin, wash with soap and water

P305,351,338

If in eyes, remove contacts, rinse with water





Signal Word: DANGER

Section III - Composition

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

If inhaled

In case of skin contact

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

Section VII. HANDLING AND STORAGE

Precautions for safe handling

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

Storage Conditions

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

and kept upright to prevent leakage.

Section VIII. EXPOSURE CONTROLS/PERSONAL PROTECTION

Methanol

67-56-1 TWA 200 ppm

Skin notation

TWA 200 ppm

Potential for skin absorption, ingestion and inhalation.

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

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

Section IX - Physical/Chemical Characteristics

Absolute Standards Inc.

PO Box 5585 Hamden, CT 06518-0585

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

		Specific Gravity (H2O = 1)	0.70
Boiling Point	65°C		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. Vapours may form explosive mixture with air.

Possibility of hazardous reactions 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.

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

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 Methanol Proper shipping name:

Section XV. REGULATORY INFORMATION

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 supervised by a person trained in chemical nandling. The user is responsible for determining the precautions and dangers of this chemical for his or ner particular application. Depending one tisage, 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 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 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 usage as of varied, ABSOLUTE STANDARDS INC. Cannot warn of all the potential use are so varied, ABSOLUTE STANDARDS INC bis 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 Ree 03/17/24



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

CERTIFIED WEIGHT REPORT

Parl Number: 95317 Lot Number: 021624 Description: Universal VOA Megamix 69 components

Solvent(s): Lot# Methanol EG359-USQ12

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

021624 DATE 021624 DATE Reviewed By

		NIST Test	ID#: BUTB			5E-	05 Balance Una	pertulery							Primaria prenter		021624	
		Weight(e) shown below were combi	ined and dilut	ed to (mL):	: 10		21 Flask Uncer								Reviewed By: Pedro L. Rentas			DATE
						0.0	- FARM DICCI	(BEERLA										
			(RM#)	Lot	D	il. Initi	al Initial	Nominal	Dente	0					Expanded		SDS Information	
		Compound	Part Numb						Purity	Purity	Uncertainty	Target	Actual	Actual	Uncertainty	(Soli	ent Safety Info. On Atta	ched pa.)
		THE RESERVE OF THE PERSON NAMED IN COLUMN TWO IS NOT THE PERSON NAMED IN COLUMN TWO IS NAMED IN COLUMN TW	7 auro I Washing	ACI LACITACA	H PAG	acar ves. (i	mL) Gond.(ug/m	sl.) Conc (µg/ml	.) (%)	Uncertainty	Pipetra (mL)	Weight(g)	Weight(g)	Conc (ug/mL)	(+/-) (ug/mL)	CAS#	OSHA PEL (TWA)	LD50
	1. /	Acetonitrile	(0004)	00404	4												75.51.41.41.41	2000
		Allyl chloride (3-Chloropropene)	(0324)	02164				2000	99.99	0.2	NA	0.20007	0.20020	2001.3	8.1	75-05-8	40 man office a factorism	A CONTRACTOR OF THE PARTY OF TH
		Carbon disulphide	(0325)					2000	99	0.2	NA	0.20207	0.20221	2001.4	8.2	107-05-1	40 ppm (70mg/m3/8H)	ori-rat 2460mg/kg
			(0060)	MKCR8	561 N	A NA	NA NA	2000	99.99	0.2	NA	0.20007	0.20023	2001.6			1 ppm (3mg/m3/8H)	orl-ret 700mg/kg
		sis-1,4-Dichtoro-2-butene	(1196)	147188	F N	A NA	NA NA	2000	95	0.2	NA	0.21058	0.21069		8.1	75-15-0	4 ppm (12mg/m3) (skin)	ori-rat 1200mg/kg
		rans-1,4-Dichloro-2-butene	(0486)	MKBP60	41V N	A NA	NA NA	2000	96.5	0.2	NA NA	0.20731		2001.1	8.5	1478-11-5	N/A	N/A
		Diethyl einer	(0153)	IK18CAS	000C NJ			2000	99.9	0.2	NA		0.20748	2001.7	8.4	110-57-6	N/A	N/A
	7. E	thyl methacrylate	(0381)	06126F				2000	99.0	0.2		0.20025	0.20040	2001.5	8.1	60-29-7	WA	N/A
	B. 1	odomethane	(0489)	SHBF87				2000			NA	0.20207	0.20230	2002.3	8.2	97-63-2	N/A	orl-rat 14800mg/kg
	9. 2	-Methyl-1-propanol	(0445)	15241E					99.5	0.2	NA.	0.20106	0.20121	2001.5	8.2	74-88-4	5 ppm(28mg/m3/6H)(skin)	orl-rat 76mg/kg
1		fethacrylonitrile	(0442)					2000	99.5	0.2	NA.	0.20106	0.20120	2001.4	8.1	78-83-1	50 ppm (150mg/m3/8H)	orl-rat 2460mg/kg
1		ethyl acrylate		00427E				2000	99	0.2	NA	0.20207	0.20221	2001,4	8.2	128-98-7	1 ppm (3mg/m3/8H)(skin)	
		fethyl methacrylate	(1075)	SHEKOS				2000	99.9	0.2	NA	0.20025	0.20040	2001.5	8.1	96-33-3		orl-rat 120mg/kg
			(0404)	MKBW51				5000	99.9	0.2	NA	0.20025	0.20041	2001.6	8.1	80-62-6	10 ppm(35mg/m3/8H)(skin)	
	_	Rtrobenzene	(0228)	012131		NA NA	NA	2000	99	0.2	NA	0.20207	0.20220	2001.3			100 ррт (410тр/т3/ан)	orl-ret 7872mg/kg
	_	-Nitropropane	(0481)	14002J	X NA	NA.	NA.	2000	97.3	0.2	NA	0.20560	0.20577		8.2	98-95-3	1 ppm (5rng/m3/8H)(skin)	orl-rat 780mg/kg
		entachloroethane	(0450)	HGA01	I NA	NA NA	NA	2000	98	0.2	NA			2001.6	8.3	79-46-9	10 ppm (35mg/m3/8H)	orl-ret 720mg/kg
1	8. 1	1.2-Trichlorstriffuoroathane	(0474)	18930				2000	99	0.2		0.20413	0.20430	2001.6	8.3	78-01-7	N/A	N/A
- 1	7. <u>B</u>	romodichioromethane	35171	101623	0.0				NA		NA	0.20207	0.20225	2001.8	8.2	76-13-1	1000 ppm (7600mg/m3/8H)	ori-rat 43g/kg
1	8. D	bromochloromethane	35171	101623						NA.	0.017	NA	NA	1999.6	22.9	75-27-4	N/A	ori-rat 916mg/kg
15	9. ci	s-1,2-Dichloroethene	35171	101823				2000	NA	NA	0.017	NA	NA NA	1999.6	23.0	124-48-1	N/A	orl-rat 848mg/kg
20		ans-1,2-Dichloroethene	35171					2000	NA	NA	0.017	NA	NA.	1999.7	22.9	156-59-2	N/A	
2	_	ethylene chloride		101623				2000	NA	NA	0.017	NA	NA	1999.6	23.0	158-60-5	N/A	N/A
2		1-Dichloroethene	35171	101623				2000	NA	NA	0.017	NA	NA	1999.6	22.9	75-09-2		orl-rat 1235mg/kg
23			32251	102023		10.00	20001.6	2000	NA	NA	0.042	NA	NA	1999.7	20.4		500 ppm	orl-rat 820mg/kg
		romotorm	95321	020724	0.10	10.00	20003.2	2000	NA	NA	0.042	NA	NA	1999.8		75-35-4	1 ppm (4mg/m3/BH)	orl-rat 200mg/kg
24	_	arbon tetrachioride	95321	020724	0.10	10.00	20003.4	2000	NA	NA	0.042	NA	NA		20.5	75-25-2	0.5 ppm (5mg/m3) (skin)	orl-rat 933mg/kg
25		hioroform	95321	020724	0.10	10.00		2000	NA	NA	0.042	NA NA		1999.8	20.4	56-23-5	2 ppm (12.6mg/m3/8H)	ori-rat 2350mg/kg
26	. DI	bromomethane	95321	020724	0.10			2000	NA	NA.			NA NA	2001.9	20.5	67-68-3	60 ppm (240mg/m3) (CL)	ori-ret 908mg/kg
27	. 1.	1-Dichloroethane	95321	020724				2000			0.042	NA	NA NA	1999.8	20.5	74-95-3	N/A	orl-rat 108mg/kg
28	. 2;	2-Dichloropropane	95321	020724	0.10				NA	NA	0.042	NA	NA .	1999.8	20.5	75-34-3	100 ppm	ori-rat 725mg/kg
29		trachloroethene	95321	020724				2000	NA	NA	0.042	NA	NA	1999.8	20.4	594-20-7	NA	N/A
30	1.	1,1-Trichleroethane			0.10			2000	NA	NA	0.042	NA	NA	2019.6	20.8	127-18-4	25 ppm (170mg/m3/6H)(final)	
31		2-Dibromo-3-chioropropane	95321	020724	0.10			2000	NA	NA	0.042	NA	NA	1999.8	20.5	71-55-6		
	_		35161	112322	0.05	5.00	40016.5	2000	NA	NA	0.017	NA	NA	2000.3	22.9		350 ppm (1900mg/m3/8H)	orl-rat 10300mg/kg
32		2-Dibromoethane	35161	112322	0.05	5.00	40024.6	2000	NA	NA	0.017	NA	NA			96-12-8	0.001 ppm	orl-ras 179mg/kg
33		P-Dichlorcethane	38161	112322	0.05	5.00	40018.0	2000	NA	NA	0.017	NA	NA NA	2000.7	22.9	108-93-4	20 ppm (8H)	orl-rat 108mg/kg
34		2-Dichloropropane	35161	112322	0.05	5.00	40051,0	2000	NA	NA	0.017			2000.4	22.9	107-08-2	50 ppm (8H)	orl-rat 670mg/kg
35	1.3	-Dichloropropane	35161	112322	0.05		40005.9	2000	NA			NA	NA	2002.0	22.9	78-87-5	75 ppm (350mg/m3/8Fg)	orl-rat 1947mg/kg
36	1.1	-Dichtaropropene	35161	112322	0.05		40012.1	2000		NA	0.017	NA	NA	1999.8	22.9	142-28-9	N/A	1107-mua 3800mg/kg
37	. cis	-1,3-Dichloropropene	35181	112322	0.05	5.00			NA	NA	0.017	NA	NA	2000.1	29.7	563-58-6	N/A	N/A
		rs-1,3-Dichtoropropene	36161	112322			40010.0	2000	NA	NA	0.017	NA	NA	2000.0		0081-01-5	N/A	N/A
		rachloro-1,3-butadiene			0.05	5.00	40017.6	2000	NA	NA	0.017	NA	NA	2000.4		0061-02-6	NA	
		1,2-Tetrachicroethane	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/BH)	N/A
		2.2-Tetrachloroethane	35161	112322	0.05	5.00	40011.9	2000	NA	NA	0.017	NA	NA	2000.1		830-20-6		orl-rat 82mg/kg
			35161	112322	0.05	5.00	40007.5	2000	NA	NA	0.017	NA	NA	1999.9	22.9		N/A	orl-rat 670mg/kg
96.	1,1	2-Trichloroethane	35181	112322	0.05	5.00	40006.6	2000	NA	NA	0.017	NA	NA	1999.8	23.0	79-34-5	5 ppm (35mg/m3/9H)(eldn)	ori-rat 800mg/kg
		chloroethene	35161	112322	0.05	5.00	40029.0	2000	NA	NA	0.017	NA	NA			79-00-5	10 ppm (45mg/m3/8H)(skin)	orl-rat 836mg/kg
		3-Trichioropropane	35161	112322	0.05	5.00	40007.5	2000	NA	NA	0.017	NA		2000.9	22,9	79-01-6	50 ppm (270mg/m3/8i-t)	orl-mus 2402mg/kg
45.	Ber	izens	35162	050823	0.05	5.00	40005.0	2000	NA	NA	0.017		NA	1999.9	22.9	96-18-4	10 ppm (60mg/m3/8H)	orl-ret 149,8mg/kg
46.	Bro	mobenzene	35162	050823	0.05	5.00	40006.9	2000	NA	NA NA		NA	NA .	1999.7	22.9	71-43-2	1 ppm	orl-rat 4894mg/kg
47.	n-B	utyl benzene	35162	050823	0.05	5.00	40003.8				0.017	NA	NA	1999.8	22.9	108-86-1	N/A	Orl-rat 2009mg/kg
48.	Eth	yl 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	NA
		opropyl toluene	35162	050823				2000	NA	NA	0.017	NA	NA.	1999.7		100-41-4	100 ppm (435mg/m3/8H)	ori-rat >2000mg/kg
		phthalene	35162		0.05	5.00	40005.8	2000	NA	NA	0.017	NA	NA	1999.8		99-87-8	N/A	
	Sty			050823	0.05	5.00	40008.2	2000	NA	NA	0.017	NA	NA	1999.8		91-20-3	10 ppm (50mg/m3/8H)	orl-rat 4750mg/kg
	Tol		35162	050823	0.05	5.00	40004.8	2000	NA	NA	0.017	NA	NA	1999.7		00-42-5		orl-rat 490mg/kg
			35162	050823	0.05	5.00	40008.2	2000	NA	NA	0.017	NA	NA.	1999.8		08-88-3	100 ppm	ori-rat 5000mg/kg
		3-Trichlorobenzene	35162	050823	0.05	5.00	40003.1	2000	NA	NA	0.017	NA	NA	1999.7			200 ppm	orl-rat 5000mg/kg
		4-Trichlorobenzene	35162	050823	0.05	5.00	40006.8	2000	NA	NA	0.017	NA	NA NA			87-61-6	N/A	pr-mus 1390mg/kg
		4-Trimethylbenzene	35162	050823	0.05	5.00	40001.8	2000	NA	NA	0.017			1999.8		20-82-1	8 ppm (CL) (40mg/m3)	ori-rat 756mg/kg
56.	1,3,	5-Tranethylbenzene	35162	050923	0.05	5.00	40006.7	2000	NA	NA NA		NA	NA	1999.6		95-63-6	N/A	ori-rat 5g/kg
57.	m-)(ylene	35162	050023	0.05	5.00	40005.8	2000			0.017	NA	NA	1999.8		08-87-8	N/A	orl-rat 5000mg/kg
58.	tert-	Butyl benzene	35163	101923	0.05	5.00			NA	NA	0.017	NA	NA	1999.8	22.9 1	08-38-3	100 ppm (435mg/m3/8H)	orl-rat 5g/kg
		Butyl benzene	35163			0.00	40001.2	2000	NA	NA	0.017	NA	NA	1999.6	22.9	8-80-86	N/A	N/A
		robenzene		101323	0.05	5.00	40002.4	2000	NA	NA	0.017	NA	NA	1999.6		35-96-8	N/A	
		ilorotoluene	36163	101923	0.05	5.00	40003.B	2000	NA	NA	0.017	NA	NA	1999.7		08-90-7		orl-rat 2240mg/kg
			35163	101923	0.05	5.00	40000.3	2000	NA	NA	0.017	NA	NA	1999.5		95-49-8	75 ppm (350mg/m3/8H)	orl-rat 2290mg/kg
		niorotoluene	35163	101923	0.05	5.00	40003.3	2000	NA	NA	0.017	NA	NA				60 ppm (250mg/m3/8H)	orl-ret 3900mg/kg
		Dichlorobenzene	35163	101923	0.05	5.00	40003.8	2000	NA	NA	0.017	NA NA		1000.7		06-43-4	N/A	orl-rat 2100mg/kg
		Dichlorobenzene	35163	101923	0.05	5.00	40001.7		NA	NA	0.017		NA	1999.7		5-50-1	50 ppm (300mg/m3) (CL)	orl-rat 500mg/kg
		Dichlorobenzene	35163	101923	0.05	5.00	40001.8		NA	NA		NA NA		1999.6		41-73-1	N/A	ipr-mus 1062mg/kg
66.	isop	ropybenzene		101923	0.05	5.00	40000.8				0.017	NA		1999.6		06-46-7	75 ppm (450mg/m3/8H)	ori-rat 500mg/kg
		pylbenzene		101923	0.05				NA	NA	0.017	NA		1999.5	22.9 9	8-82-8		orl-rat 1400mg/kg
68.						5.00	40003,4		NA	NA	0.017	NA	NA	1999.7		03-65-1		orl-rat 6040mg/kg
69.				101923	0.05	5.00	40040.8		NA	NA	0.017	NA		2001.5		5-47-6		
	2.01		35183	101923	0.05	5.00	40000.6	2000	NA	NA	0.017	NA				08-42-3	100 ppm (435mg/m3/8H)	pr-mus 1364mg/kg
					The court										IN		CONTRACTOR (MADE DESCRIPTION OF THE PARTY OF	orl-rat 5g/kg

^{*} The certified value is the constantation calculated from gravinetate and volumetric advantages at the constant side of the constant s

Absolute Standards, Inc. 00-368-1131

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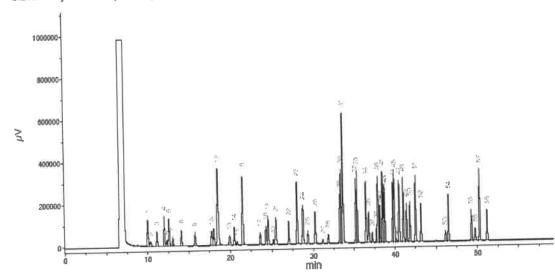
ANAB ISO 17034 Accredited AR-1539 Certificate Number https://Absolutestandards.com

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., Air(make-up)=230mL/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



Pagelt III	M person	FID RT (unin.)
1	Fener	9,97
2	1,1,2-THickstorp 1, Z, 3-thiff/concests-are	20.33
3	: LD chloroethere	11.10
a.	Acesportnia	17.00
9	Lodomethana	12,34
6	Altyl chloride	12.56
7	Carbon disuttida/Hethylene-chloride	13,04
	trans-1,2-Dichlordeshane	14.07
9	1.1-Dichterostnene	15.74
LD	2,2-Dichloropropede	12.74
12	cig-1,3-Gignlorostherid	18.00
12	Hennacrylonistic/Hennyl acrylate/Chloroform	10,49
13	Imputancy 1.1, 1-Trichiprocharie	19,91
14	3.1-Dichiometropisto	25.46
15	Carbon tetrachieride	30.79
16	Benzene/1,2-Diemorgetnene	21.49
19	Trichigepastiere	23,68
18	1,2-Dighierópropase	24.24
19	Mathyi medhaceylate	24.52
20	Brureagerstoremetrane	29.13
21	Diprorisorratherso/2-francopropersa	25,46
33	cse-1,3-Dienigraparapana	27.02
23	Toturbrid	36,03
24	Stoyl matherpress/frant-1, 2-Olone-parenene	29.73
25	1,1,2-Trichiorgethere	29.34
26	Tatraction patterney 1,3-Dichloroscopane	30.24
27	Cabeningchloromassene	35,16
.28	1.2 Discompeliana	35,384
20	Chlerobengina	33,25
30	Ethylbenzemer1,3,2,9 Tetraesterbethane	31.40
81	m-Xylene/p-/bylene	31.85
32	e-Kylana	35,22
33	53yrane	35,39
34	Inopropylperszene/Bremofoszt	35.48
35	cis-2,4-Zijehiora-2-butene	34,40
36	1, 1,2,2-Tearpenterset/himse	37.20
27	\$, 2, 3+Tyschineapropene	37.77
38	n-Propylpanierie	37,42
39	transat in-Dichloro-2-butens	30.05
46	Branchartens	36.14
45	t,3,5-Trymethy/bensene	10.50
42	2-Cisteroseivenk	38,62
43	4: Chiprotologna	38.27
44	cart Budylbericane	29.76
49	1,2,4-TrimminyInenxans	30,91
46	Persechiomed hans	40,17
47	sec-Buty/benzene	40.52
48	p Isoprapylaniuste	41.62
-69	1,3-Crichlorobeninhin	45,42
50	1,4-Excelorationsten	41.63
51	n-Bucybenzens	42,62
52	1,2-13-chtorobenzass	43.18
53	1,3-Othrome-3-phioreprepare	46.12
54		46,48
55		49.25
56		
8.2		50.76
\$11	1,2,3-Trichsonomensen4	01,34

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

Address

44 Rossotto Dr.

Emergency Telephone USA & CANADA Emergency Telephone International

1-800-535-5053

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 H370 **Highly Flammable Liquid and Vapor** Cause damage to organs

H351

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

P271 Use in ventilated area

P280

Use gloves, eye protection/face shelld

P302,332

If on skin, wash with soap and water

P305,351,338

If in eyes, remove contacts, rinse with water





Signal Word: DANGER

Section III - Composition

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

If inhaled

In case of skin contact

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

Section VII. HANDLING AND STORAGE

Precautions for safe handling

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

Storage Conditions

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

and kept upright to prevent leakage.

Section VIII. EXPOSURE CONTROLS/PERSONAL PROTECTION

Methanol

67-56-1 TWA 200 ppm

Skin notation

TWA 200 ppm

Potential for skin absorption, ingestion and inhalation.

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

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

Section IX - Physical/Chemical Characteristics

Absolute Standards Inc.

PO Box 5585 Hamden, CT 06518-0585

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

		Specific Gravity (H2O = 1)	0.70
Boiling Point	65°C		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. Vapours may form explosive mixture with air.

Possibility of hazardous reactions 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.

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

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 Methanol Proper shipping name:

Section XV. REGULATORY INFORMATION

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 supervised by a person trained in chemical nandling. The user is responsible for determining the precautions and dangers of this chemical for his or ner particular application. Depending one tisage, 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 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 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 usage as of varied, ABSOLUTE STANDARDS INC. Cannot warn of all the potential use are so varied, ABSOLUTE STANDARDS INC bis 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#: 6UTB

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

100.0 0.021 15-11-11

5E-05 Balance Uncertainty

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

Weight(s) shown below were combine	red and dilute	ad to (mL):	100.0	0.02	1 Flask Uncertain	etw								-1-	T GOTO E. I FORMAS	
Compound	(RM#)	Lat	Dit.	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	P det Petron	R TRAFFIRME	PARCEO	you (me		Conc (µg/mL)	(96)	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	(1196)	14718EF		NA	NA	2000	95	0.2	NA	0.21058	0.21069	2001.1	6,5	1478-11-5	4 ppm (12mg/m3) (skin) N/A	ori-rat 1200 N/A
trans-1,4-Dichloro-2-butene	(0486)	MKBP80411			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)	1K18CAS00		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	2000	88	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	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	2000	99.9	0.2	NA 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 NA	2000	97.3	0.2	NA NA	0.20560	0.20577	2001.6	6.3	79-46-9	10 ppm (35mg/m3/6H)	or!-ret 720n
1,1,2-Trichiorotriffuoroethane	(0474)	18930	NA	NA	NA.	2000	98	0.2	NA NA	0.20413	0.20430	2001.6	8.3	76-01-7	NVA	N/A
Bromodichloromethane	35171	101623	0.05	5.00	40001.7	2000	NA	NA	NA 0.017	0.20207	0.20225	2001.8	8,2	78-13-1	1000 ppm (7600mg/m3/8H)	
Dibromochloromethane	35171	101823	0.05	6.00	40002.1	2000	NA	NA	0.017	NA	NA NA	1999.6	22.9	75-27-4	N/A	ori-rat 916m
is-1,2-Dichloroethene	35171	101823	0.05	5.00	40003.1	2000	NA	NA		NA NA	NA	1999.6	23.0	124-48-1	NA	orl-rat 648n
rans-1,2-Dichloroethene	35171	101623	0.05	5.00	40002.4	2000	NA	NA NA	0.017	NA NA	NA NA	1999.7	22.9	158-59-2	N/A	IVA
Methylene chloride	35171	101623	0.05	5.00	40002.8	2000	NA	NA.	0.017	NA NA	NA NA	The second second	23.0	156-60-5	N/A	ort-rail 1235
,1-Dichloroethene	32251	102023	0,10	10,00	20001.6	2000	NA	NA	0.017	NA NA	NA NA	1999.6	22.9	75-09-2	500 ppm	ori-rat 820n
Bromaform	95321	020724	0.10	10.00	20003.2	2000	NA	NA.	0.042	NA NA	NA NA	1999.8	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	1999.8	20.4	75-25-2	0.5 ppm (5mg/m3) (sldn)	ori-rati 933r
hioroform	95321	020724	0.10	10.00	20024.0	2000	NA	NA	0.042	NA	NA.	2001.9	20.4	58-23-5 67-88-3	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	74-95-3	50 ppm (240mg/m3) (CL)	orf-ret 908n
,1-Dichloroethane	95321	020724	0.10	10.00	20003.4	2000	NA	NA	0.042	NA	NA	1999.8	20.5	75-34-3	N/A	orl-ret 106n
,2-Dichloropropane	95321	020724	0.10	10.00	20003,4	2000	NA	NA	0.042	NA	NA.	1999.8		594-20-7	100 ppm N/A	orl-rat 725n
elvachloroethene	95321	020724	0.10	10.00	20201.1	2000	NA	NA	0.042	NA	NA	2019.6		127-18-4		N/A
,1,1-Trichloroethane	95321	020724	0.10	10.00	20003.0	2000	NA	NA	0.042	NA.	NA NA	1999.8	20.5	71-55-6	26 ppm (170mg/m3/8H)(final) 350 ppm (1900mg/m3/8H)	
,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 10000 orl-rat 170m
2-Dibromoethane	35161	112322	0.05	5.00	40024.8	2000	NA	NA	0.017	NA	NA	2000.7	22.9	108-93-4	20 ppm (8H)	ori-rat 108m
2-Dichloroethane	35161	112322	0.08	5.00	40018.0	2000	NA	NA	0.017	NA	NA	2000.4		107-08-2	50 ppm (8H)	orl-rat 670m
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)	ori-rat 1947r
3-Dichloropropane	35161	112322	0.05	6.00	40005.9	2000	NA	NA	0.017	NA	NA	1999.8	22.9	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		563-56-6	NA	NA
s-1,3-Dichioropropena	35161	112322	0.05	5.00	40010.0	2000	NA	NA.	0.017	NA	NA	2000.0	23.0 1	0061-01-5	N/A	N/A
ans-1,3-Dichloropropene	35161	112322	0.05	5.00	40017.8	2000	NA	NA	0.017	NA	NA	2000.4	23.0 1	0061-02-8	N/A	N/A
exachloro-1,3-butadiene 1,1,2-Tetrachloroethane	35181	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/m3/6H)	ori-rat 62mg
1,2,2-Tetrachloroethane	35181	112322	0.05	5.00	40011.9	2000	NA	NA	0.017	NA	NA	2000.1	22.9	630-20-6	N/A	orl-rat 670m
1.2-Trichioroethane	35161 35161	112322	0.05	5.00	40007.5	5000	NA	NA	0.017	NA	NA	1999.9		79-34-5	5 ppm (35mg/m3/9H)(aldri)	orl-rat 800m
ichloroethene	35161	112322	0.05	5.00	40006.6	2000	NA	NA .	0.017	NA	NA	1999.8	23.0	79-00-6	10 ppm (46mg/m3/8H)(skin)	ori-rat 836m
2,3-Trichloropropane	35181	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 2402
enzene	35162	050823	0.05	5.00	40007.5	2000	NA NA	NA.	0.017	NA	NA	1999.9		96-18-4	10 ppm (60mg/m3/8H)	ori-rat 149.6r
omobenzene	36162	050823	0.05	5.00	40006.9			NA NA	0.017	NA	NA	1999.7		71-43-2	1 ppm	orl-rat 4894n
Butyl benzene	35162	060823	0.05	5.00	40003.B		NA NA	NA NA	0.017	NA	NA	1999.8		108-86-1	N/A	orl-rat 2699m
hyl benzene	35162	050823	0.05	5.00	40004.8		NA	NA	0.017	NA NA	NA	1999.7		104-51-8	N/A	N/A
isopropyl toluene	35162	050823		5.00	40005.8		NA	NA.	0.017	NA NA	NA NA	1999.7		100-41-4	100 ppm (435mg/m3/8H)	orl-rat>2000r
phthalene	35162	050823		5.00	40006.2		NA	NA.	0.017	NA NA	NA NA	1999.8		99-87-6	N/A	orl-rat 4750m
rene	35162	050823		5.00	40004.8		NA	NA	0.017	NA NA	NA NA	1999.8		91-20-3	10 ppm (50mg/m3/8H)	orl-rad 490m
uene	35162	050823		5.00	40006.2		NA	NA	0.017	NA	NA	1999.8		100-42-5	100 ppm	orl-rat 5000m
3-Trichlorobenzene	35162	050823			40003.1		NA	NA	0.017	NA NA	NA NA	1999.7		108-88-3	200 ppm	orl-rat 5000m
2,4-Trichlorobenzene	35162	050823			40006.8		NA	NA	0.017	NA	NA NA	1999.8		87-61-6 120-82-1	N/A	lor-mus 1390r
,4-Trimethylbenzene	35162	050823	0.05		40001.8		NA	NA	0.017	NA	NA	1999.6		95-63-6	5 ppm (CL) (40mg/m3)	ori-raz 750m
,5-Trimethylbenzene	35162	050823	0.05		40006.7		NA	NA	0.017	NA	NA	1999.6		08-67-8	N/A N/A	ori-rat 5g/
Cylene	35162	050823	0.05	5.00	40005.8	2000	NA	NA	0.017	NA	NA	1999.8		08-38-3		orl-rat 5000m
-Butyl benzene	35163	101923	0.05	5.00	40001.2	2000	NA	NA	0.017	NA	NA	1999.6		98-06-6	100 ppm (435mg/m3/8H) N/A	orl-rat 5g/
-Butyl benzene	35163	101923	0.05	5.00	40002.4	2000	NA	NA	0.017	NA	NA	1999.6		35-98-8	Arra	N/A
orobenzene	35163	101923	0.05	5.00	40003.8	2000	NA	NA	0.017	NA.	NA	1999.7		08-90-7	75 mm (350mm/m3/860	Orl-rat 2240m
hiorotoluene					40000.3		NA		0.017	NA	NA	1999.5		95-49-8	75 ppm (350mg/m3/8H) 50 ppm (250mg/m3/8H)	orl-rail 2290m
hicrotoluene	35163	101923			40003.3		NA		0.017	NA	NA	1999.7		06-43-4	N/A	orl-rat 3900m
-Dichicrobenzene					40003.8		NA		0.017	NA	NA	1999.7		95-50-1	The state of the s	orl-rat 2100m
-Dichlorobenzene					40001.7		AV		0.017	NA	NA	1999.6		41-73-1	50 ppm (300mg/m3) (CL) N/A	orl-rat 500mg
-Dichlorobenzene	35163	101923			40001.B		NA.		0.017	NA	NA NA	1999.6		06-48-7	76 ppm (450mg/m3/8H)	orland 600mg
propylbenzene	35163				40000.8		VA.		0.017	NA	NA NA	1999.5		98-82-8		ori-rat 500mg
ropylbenzene					40003.4		NA.		0.017	NA NA	NA NA	1999.7		03-65-1	50 ppm (245mg/m3/8H) N/A	orl-rat 1400mg
																orl-rat 6040mg
ykne ykne	35163	101923	0.05	0.00	TOUTO,O	2000 N	NA.	NA	0.017	NA	NA	2001,5	23.0 9	35-47-6	100 ppm (435mg/m3/8H)	Ipr-mus 1384m

^{*} 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 (<>) 2.67 of the stated value, sudow otherwise stated.

* All Standards, after opening anapule, should be stored with cape tight and under appropriate taboratory candillons.

* Uncertainty Reference: 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).

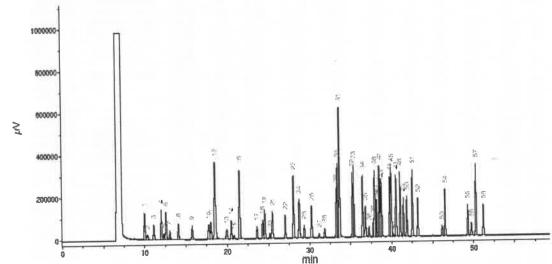
ANAB ISO 17034 Accredited AR-1539 Certificate Number https://Absolutestandards.com

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	10.45
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 methacrylets/trans-1,3-Dichleropropens	28.73
25	L,1,2-Trichloroet/Ans	29.34
26	figtrachloroethene/1,3-Dichloropropaise	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
45	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-Dibrama-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	\$1.16
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





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

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#: 6UTB

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

100.0 0.021 15-11-11

5E-05 Balance Uncertainty

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

Weight(s) shown below were combine	red and dilute	ad to (mL):	100.0	0.02	1 Flask Uncertain	etw								-1-	T GOTO E. I FORMAS	
Compound	(RM#)	Lat	Dit.	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	P det Petron	R TRAFFIRME	PARCEC	you (me		Conc (µg/mL)	(96)	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	(1196)	14718EF		NA	NA	2000	95	0.2	NA	0.21058	0.21069	2001.1	6,5	1478-11-5	4 ppm (12mg/m3) (skin) N/A	ori-rat 1200 N/A
trans-1,4-Dichloro-2-butene	(0486)	MKBP80411			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)	1K18CAS00		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	2000	88	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	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	2000	99.9	0.2	NA 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 NA	2000	97.3	0.2	NA NA	0.20560	0.20577	2001.6	6.3	79-46-9	10 ppm (35mg/m3/6H)	or!-ret 720n
1,1,2-Trichiorotriffuoroethane	(0474)	18930	NA	NA	NA.	2000	98	0.2	NA NA	0.20413	0.20430	2001.6	8.3	76-01-7	NVA	N/A
Bromodichloromethane	35171	101623	0.05	5.00	40001.7	2000	NA	NA	NA 0.017	0.20207	0.20225	2001.8	8,2	78-13-1	1000 ppm (7600mg/m3/8H)	
Dibromochloromethane	35171	101823	0.05	6.00	40002.1	2000	NA	NA	0.017	NA	NA NA	1999.6	22.9	75-27-4	N/A	ori-rat 916m
is-1,2-Dichloroethene	35171	101823	0.05	5.00	40003.1	2000	NA	NA		NA NA	NA	1999.6	23.0	124-48-1	NA	orl-rat 648n
rans-1,2-Dichloroethene	35171	101623	0.05	5.00	40002.4	2000	NA	NA NA	0.017	NA NA	NA NA	1999.7	22.9	158-59-2	N/A	IVA
Methylene chloride	35171	101623	0.05	5.00	40002.8	2000	NA	NA.	0.017	NA NA	NA NA	The second second	23.0	156-60-5	N/A	ort-rail 1235
,1-Dichloroethene	32251	102023	0,10	10,00	20001.6	2000	NA	NA	0.017	NA NA	NA NA	1999.6	22.9	75-09-2	500 ppm	ori-rat 820n
Bromaform	95321	020724	0.10	10.00	20003.2	2000	NA	NA.	0.042	NA NA	NA NA	1999.8	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	1999.8	20.4	75-25-2	0.5 ppm (5mg/m3) (sldn)	ori-rati 933r
hioroform	95321	020724	0.10	10.00	20024.0	2000	NA	NA	0.042	NA	NA.	2001.9	20.4	58-23-5 67-88-3	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	74-95-3	50 ppm (240mg/m3) (CL)	orf-ret 908n
,1-Dichloroethane	95321	020724	0.10	10.00	20003.4	2000	NA	NA	0.042	NA	NA	1999.8	20.5	75-34-3	N/A	orl-ret 106n
,2-Dichloropropane	95321	020724	0.10	10.00	20003,4	2000	NA	NA	0.042	NA	NA.	1999.8		594-20-7	100 ppm N/A	orl-rat 725n
elvachloroethene	95321	020724	0.10	10.00	20201.1	2000	NA	NA	0.042	NA	NA	2019.6		127-18-4		N/A
,1,1-Trichloroethane	95321	020724	0.10	10.00	20003.0	2000	NA	NA	0.042	NA.	NA NA	1999.8	20.5	71-55-6	26 ppm (170mg/m3/8H)(final) 350 ppm (1900mg/m3/8H)	
,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 10000 orl-rat 170m
2-Dibromoethane	35161	112322	0.05	5.00	40024.8	2000	NA	NA	0.017	NA	NA	2000.7	22.9	108-93-4	20 ppm (8H)	ori-rat 108m
2-Dichloroethane	35161	112322	0.08	5.00	40018.0	2000	NA	NA	0.017	NA	NA	2000.4		107-08-2	50 ppm (8H)	orl-rat 670m
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)	ori-rat 1947r
3-Dichloropropane	35161	112322	0.05	6.00	40005.9	2000	NA	NA	0.017	NA	NA	1999.8	22.9	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		563-56-6	NA	NA
s-1,3-Dichioropropena	35161	112322	0.05	5.00	40010.0	2000	NA	NA.	0.017	NA	NA	2000.0	23.0 1	0061-01-5	N/A	N/A
ans-1,3-Dichloropropene	35161	112322	0.05	5.00	40017.8	2000	NA	NA	0.017	NA	NA	2000.4	23.0 1	0061-02-8	N/A	N/A
exachloro-1,3-butadiene 1,1,2-Tetrachloroethane	35181	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/m3/6H)	ori-rat 62mg
1,2,2-Tetrachloroethane	35181	112322	0.05	5.00	40011.9	2000	NA	NA	0.017	NA	NA	2000.1	22.9	630-20-6	N/A	orl-rat 670m
1.2-Trichioroethane	35161 35161	112322	0.05	5.00	40007.5	5000	NA	NA	0.017	NA	NA	1999.9		79-34-5	5 ppm (35mg/m3/9H)(aldri)	orl-rat 800m
ichloroethene	35161	112322	0.05	5.00	40006.6	2000	NA	NA .	0.017	NA	NA	1999.8	23.0	79-00-6	10 ppm (46mg/m3/8H)(skin)	ori-rat 836m
2,3-Trichloropropane	35181	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 2402
enzene	35162	050823	0.05	5.00	40007.5	2000	NA NA	NA.	0.017	NA	NA	1999.9		96-18-4	10 ppm (60mg/m3/8H)	ori-rat 149.6r
omobenzene	36162	050823	0.05	5.00	40006.9			NA NA	0.017	NA	NA	1999.7		71-43-2	1 ppm	orl-rat 4894n
Butyl benzene	35162	060823	0.05	5.00	40003.B		NA NA	NA NA	0.017	NA	NA	1999.8		108-86-1	N/A	orl-rat 2699m
hyl benzene	35162	050823	0.05	5.00	40004.8		NA	NA	0.017	NA NA	NA	1999.7		104-51-8	N/A	N/A
isopropyl toluene	35162	050823		5.00	40005.8		NA	NA.	0.017	NA NA	NA NA	1999.7		100-41-4	100 ppm (435mg/m3/8H)	orl-rat>2000r
phthalene	35162	050823		5.00	40006.2		NA	NA.	0.017	NA NA	NA NA	1999,8		99-87-6	N/A	orl-rat 4750m
rene	35162	050823		5.00	40004.8		NA	NA	0.017	NA NA	NA NA	1999.8		91-20-3	10 ppm (50mg/m3/8H)	orl-rad 490m
uene	35162	050823		5.00	40006.2		NA	NA	0.017	NA	NA	1999.8		100-42-5	100 ppm	orl-rat 5000m
3-Trichlorobenzene	35162	050823			40003.1		NA	NA	0.017	NA NA	NA NA	1999.7		108-88-3	200 ppm	orl-rat 5000m
2,4-Trichlorobenzene	35162	050823			40006.8		NA	NA	0.017	NA	NA NA	1999.8		87-61-6 120-82-1	N/A	lor-mus 1390r
,4-Trimethylbenzene	35162	050823	0.05		40001.8		NA	NA	0.017	NA	NA	1999.6		95-63-6	5 ppm (CL) (40mg/m3)	ori-raz 750m
,5-Trimethylbenzene	35162	050823	0.05		40006.7		NA	NA	0.017	NA	NA	1999.6		08-67-8	N/A N/A	ori-rat 5g/
Cylene	35162	050823	0.05	5.00	40005.8	2000	NA	NA	0.017	NA	NA	1999.8		08-38-3		orl-rat 5000m
-Butyl benzene	35163	101923	0.05	5.00	40001.2	2000	NA	NA	0.017	NA	NA	1999.6		98-06-6	100 ppm (435mg/m3/8H) N/A	orl-rat 5g/
-Butyl benzene	35163	101923	0.05	5.00	40002.4	2000	NA	NA	0.017	NA	NA	1999.6		35-98-8	Arra	N/A
orobenzene	35163	101923	0.05	5.00	40003.8	2000	NA	NA	0.017	NA.	NA	1999.7		08-90-7	75 mm (350mm/m3/860	Orl-rat 2240m
hiorotoluene					40000.3		NA		0.017	NA	NA	1999.5		95-49-8	75 ppm (350mg/m3/8H) 50 ppm (250mg/m3/8H)	orl-rai 2290m
hicrotoluene	35163	101923			40003.3		NA		0.017	NA	NA NA	1999.7		06-43-4	N/A	orl-rat 3900m
-Dichicrobenzene					40003.8		NA		0.017	NA	NA	1999.7		95-50-1	The state of the s	orl-rat 2100m
-Diohlorobenzene					40001.7		AV		0.017	NA	NA	1999.6		41-73-1	50 ppm (300mg/m3) (CL) N/A	orl-rat 500mg
-Dichlorobenzene	35163	101923			40001.B		NA.		0.017	NA	NA NA	1999.6		06-48-7	76 ppm (450mg/m3/8H)	orland 600mg
propylbenzene	35163				40000.8		VA.		0.017	NA	NA NA	1999.5		98-82-8		ori-rat 500mg
ropylbenzene					40003.4		NA.		0.017	NA NA	NA NA	1999.7		03-65-1	50 ppm (245mg/m3/8H) N/A	orl-rat 1400mg
																orl-rat 6040mg
ykne ykne	35163	101923	0.05	0.00	TOUTO,O	2000 N	NA.	NA	0.017	NA	NA	2001,5	23.0 9	35-47-6	100 ppm (435mg/m3/8H)	Ipr-mus 1384m

^{*} 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 (<>) 2.67 of the stated value, sudow otherwise stated.

* All Standards, after opening anapule, should be stored with cape tight and under appropriate taboratory candillons.

* Uncertainty Reference: 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).

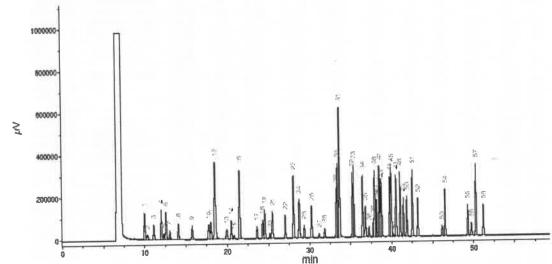
ANAB ISO 17034 Accredited AR-1539 Certificate Number https://Absolutestandards.com

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	10.45
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
45	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-Dibrama-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
24	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

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

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.

www.absolutestandards.com 800-368-1131



Certified Reference Material CRM

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

200-03(18/24

(Solvent Safety Info. On Attached pg.) SDS Information lend OSHA PEL (TWA) Pedro L. Rentas Lawrence Barry Genome CAS# Formulated By: Reviewed By: Conc (µg/mL) (+/-) (µg/mL) Uncertainty + 568617 072324Q Weight(g) Actual 25.2 Solvent(s): Water Weight(g) Target 5E-05 Balance Uncertainty 0.001 Flask Uncertainty Uncertainty Purity Purity 8 Conc (ug/mL) Nominal 10.0 Refrigerate (4 °C) Weight(s) shown below were combined and diluted to (mL): Number Acrolein 041725 031725 ž 91980 5000 RM# Description: Recommended Storage: Part Number: Lot Number: Expiration Date: Nominal Concentration (µg/mL): NIST Test ID#: CERTIFIED WEIGHT REPORT Compound

DATE DATE 031725 031725

orl-rat 46mg/kg LD50 0.1 ppm 107-02-8 52.5 5004.1 0.05170 0.05166 0.5 97 5000 103755V10F 40 1. Acrolein

Method: GCGMSD-1. Detector: Mass Selective Detector (Scan mode). Columns: Vocol (60m X 0.25mm ID X 1.5µm film thickness). Oven Profile: Temp. 1 = 35°C (Time 1 = 10min.), Temp. 2 = 200°C. (Time 2 = 8.75 min.)
Rate = 4°C/min., Injector Temp. = 200°C, Detector Temp. = 220°C. Analyst: Pedro Rentas. NOTE: Due to the instability of acrolein in solution, all solutions of acrolein, and any dilutions thereof, should be used immediately
Long term storage is not recommended. Please contact our technical department if further information is required.

8.93

250000

Abundance

200000

150000

100000

50000

2 60000

Abundance

TIC: [BSB2]79005.D

Scan 232 (8.927 min): [BSB2]79005.D

50000

40000

56

30000

20002

10000

8

10.00 15.00 20.00 25.00 30.00 35.00 40.00 45.00 50.00 55.00 60.00

Time-->0

The certified value is the concentration calculated from gravimetric and volumetric measurements unless otherwise stated.
 Standards are prepared gravimetrically using balances that are calibrated with weights traceable to NIST (see above).
 Standards are certified (+/, 0.5% of the stated value, misso otherwise stated.
 All Standards, after opening ampule, should be stored with cape light 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).

January 1, 2025

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(lsnoitqo) %

PO Box 5585

Absolute Standards Inc.

Section I Product and Company Identification

Hamden, CT 06518-0585

Safety Data Sheet (SDS)

GHS/OSHA Compliant

1-322-323-3200 Address 1-800-535-5053 Emergency Telephone USA & CANADA ABSOLUTE STANDARDS INC Manufacturer's Name ANALYTICAL STANDARD DISSOLVED IN WATER **IDENTITY**

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

Section II - Hazards Identification

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

It in eyes, remove contacts, rinse with water P305,351,338 Use gloves, eye protection/face shelld P280 Causes skin and eye irritation. H312

Signal Word: DANGER If on skin, wash with soap and water P302,332

Section III - Composition

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

INTENDED USE: REFERENCE MATERIAL See Certified Weight Report For Other Analytes Present At Trace Quantities.

Section IV. FIRST AID MEASURES

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

CAS#: 7732-18-5

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

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

Hazardous Decomposition products Protective equipment for fire

Suitable extinguishing media

Section VI. ACCIDENTAL RELEASE MEASURES

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

ignition. Vapours accumulate to form explosive concentrations.

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

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

Section VII. HANDLING AND STORAGE

Use ventilation Keep away from sources of ignition. No smoking. Prevent the build up of electrostatic charge. Avoid contact with skin and eyes. Avoid inhalation of vapour or mist. Precautions for safe handling

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.

Storage Conditions

Personal precautions

If swallowed

belsdri 11

General advice

in case of eye contact

In case of skin contact

Section VIII. EXPOSURE CONTROLS/PERSONAL PROTECTION

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

Handie with gloves. Gloves must be inspected prior to use. Eye protection. Respiratory protection Personal protective equipment mqq 008 :AWT CAS#: 7732-18-5 Water

Section IX - PHYSICAL/CHEMICAL CHARACTERISTICS

	Melting Point		Vapor Pressure (mm Hg)
ļ	Specific Gravity (H2O = 1)	100°C	Juio4 gaillea
			1.00

Section X. STABILITY ANI	D REACTIVITY			
Appearance and Odor	CLEAR, COLORLESS	HIM MITH	SLIGHT CHEMICAL ODOR.	
Solubility in Water	Completely miscible			
Vapor Density (AIA = 1)		ΑN	Evaporation rate (Butyl Acetate = 1)	ΑN
V		ΑN		0°C

Section XI. TOXICOLOGICAL INFORMATION

ΑN

ΑN

ΑN

Stable under recommended storage conditions.

AM LC50 Oral - Rat AM LC50 Inhalstion - Rat AM LC50 Inhalstion - Rat AM Big pig AM LD50 Dermal - Guinea pig

Possibility of hazardous reactions

Causes skin irritation. Eye irritation

biove of sleneteM

Conditions to avoid

Chemical stability

Section XII. ECOLOGICAL INFORMATION

Section XIII. DISPOSAL CONSIDERATIONS

Dispose with normal Laboratory Solvent Waste.

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Section XIV. TRANSPORT INFORMATION

(SU) TOO

Not dangerous goods Proper shipping name: Water

Section XV. REGULATORY INFORMATION

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

Section XVI. Misc. INFORMATION

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.)

This document is intended only as a guide to the appropriate precautionary handling of the material by trained personnel, or supervised by a person rained in chemical handling. The user is repensionable for determining the precautions and dangers of this chemical to his or her particular application. Depending on usage, protective clothing precautions and dangers of the special handling. The user is respirators must be used to avoid contact with material or breathing chemical to his or her particular application. Depending on usage, protective clothing cyce and face guards and respirators must be used to avoid contact with material or breathing chemical to the particular application. Depending on usage, protective clothing the chemical may interest 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 arbestness. Since the potential uses are so varied, ABSOLUTE STANDARDS INC. cannot warn of all the potential dangers of use or interaction with other arbestness. ABSOLUTE STANDARDS INC particular and the chemical may interest with other arbestness. Since the potential uses are so varied, ABSOLUTE STANDARDS INC. cannot warn of all the potential dangers of use or interaction with other particular applications of user are not heeded. READALDARDS INC DISCLAIMS ANY processes, ABSOLUTE STANDARDS INC warmants that the chemical mass interest and use are not breaded. READALDARDS INC DISCLAIMS ANY processes. The processes are so varied, ABSOLUTE STANDARDS INC of use or interaction with other arbeits of uses are not heeded. READALDARDS INC DISCLAIMS ANY processes. The processes are so varied, ABSOLUTE STANDARDS INC DISCLAIMS ANY processes. The processes are so varied, ABSOLUTE STANDARDS INC DISCLAIMS ANY processes. The processes a

Proper shipping name: Water

Not dangerous goods

ATAI

www.absolutestandards.com 800-368-1131



Certified Reference Material CRM

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

200-03(18/24

(Solvent Safety Info. On Attached pg.) SDS Information lend OSHA PEL (TWA) Pedro L. Rentas Lawrence Barry Genome CAS# Formulated By: Reviewed By: Conc (µg/mL) (+/-) (µg/mL) Uncertainty + 568617 072324Q Weight(g) Actual 25.2 Solvent(s): Water Weight(g) Target 5E-05 Balance Uncertainty 0.001 Flask Uncertainty Uncertainty Purity Purity 8 Conc (ug/mL) Nominal 10.0 Refrigerate (4 °C) Weight(s) shown below were combined and diluted to (mL): Number Acrolein 041725 031725 ž 91980 5000 RM# Description: Recommended Storage: Part Number: Lot Number: Expiration Date: Nominal Concentration (µg/mL): NIST Test ID#: CERTIFIED WEIGHT REPORT Compound

DATE DATE 031725 031725

orl-rat 46mg/kg LD50 0.1 ppm 107-02-8 52.5 5004.1 0.05170 0.05166 0.5 97 5000 103755V10F 40 1. Acrolein

Method: GCGMSD-1. Detector: Mass Selective Detector (Scan mode). Columns: Vocol (60m X 0.25mm ID X 1.5µm film thickness). Oven Profile: Temp. 1 = 35°C (Time 1 = 10min.), Temp. 2 = 200°C. (Time 2 = 8.75 min.)
Rate = 4°C/min., Injector Temp. = 200°C, Detector Temp. = 220°C. Analyst: Pedro Rentas. NOTE: Due to the instability of acrolein in solution, all solutions of acrolein, and any dilutions thereof, should be used immediately
Long term storage is not recommended. Please contact our technical department if further information is required.

8.93

250000

Abundance

200000

150000

100000

50000

2 60000

Abundance

TIC: [BSB2]79005.D

Scan 232 (8.927 min): [BSB2]79005.D

50000

40000

56

30000

20002

10000

8

10.00 15.00 20.00 25.00 30.00 35.00 40.00 45.00 50.00 55.00 60.00

Time-->0

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

January 1, 2025

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PO Box 5585

Absolute Standards Inc.

Section I Product and Company Identification

Hamden, CT 06518-0585

Safety Data Sheet (SDS)

GHS/OSHA Compliant

1-322-323-3200 Address 1-800-535-5053 Emergency Telephone USA & CANADA ABSOLUTE STANDARDS INC Manufacturer's Name ANALYTICAL STANDARD DISSOLVED IN WATER **IDENTITY**

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

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It in eyes, remove contacts, rinse with water P305,351,338 Use gloves, eye protection/face shelld P280 Causes skin and eye irritation. H312

Signal Word: DANGER If on skin, wash with soap and water P302,332

Section III - Composition

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

INTENDED USE: REFERENCE MATERIAL See Certified Weight Report For Other Analytes Present At Trace Quantities.

Section IV. FIRST AID MEASURES

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

CAS#: 7732-18-5

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

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

Hazardous Decomposition products Protective equipment for fire

Suitable extinguishing media

Section VI. ACCIDENTAL RELEASE MEASURES

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

ignition. Vapours accumulate to form explosive concentrations.

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

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

Section VII. HANDLING AND STORAGE

Use ventilation Keep away from sources of ignition. No smoking. Prevent the build up of electrostatic charge. Avoid contact with skin and eyes. Avoid inhalation of vapour or mist. Precautions for safe handling

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.

Storage Conditions

Personal precautions

If swallowed

belsdri 11

General advice

in case of eye contact

In case of skin contact

Section VIII. EXPOSURE CONTROLS/PERSONAL PROTECTION

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

Handie with gloves. Gloves must be inspected prior to use. Eye protection. Respiratory protection Personal protective equipment mqq 008 :AWT CAS#: 7732-18-5 Water

Section IX - PHYSICAL/CHEMICAL CHARACTERISTICS

	Melting Point		Vapor Pressure (mm Hg)
ļ	Specific Gravity (H2O = 1)	100°C	Juio4 gaillea
			1.00

Section X. STABILITY ANI	D REACTIVITY			
Appearance and Odor	CLEAR, COLORLESS	HIM MITH	SLIGHT CHEMICAL ODOR.	
Solubility in Water	Completely miscible			
Vapor Density (AIA = 1)		ΑN	Evaporation rate (Butyl Acetate = 1)	ΑN
V		ΑN		0°C

Section XI. TOXICOLOGICAL INFORMATION

ΑN

ΑN

ΑN

Stable under recommended storage conditions.

AM LC50 Oral - Rat AM LC50 Inhalstion - Rat AM LC50 Inhalstion - Rat AM Big pig AM LD50 Dermal - Guinea pig

Possibility of hazardous reactions

Causes skin irritation. Eye irritation

biove of sleneteM

Conditions to avoid

Chemical stability

Section XII. ECOLOGICAL INFORMATION

Section XIII. DISPOSAL CONSIDERATIONS

Dispose with normal Laboratory Solvent Waste.

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Section XIV. TRANSPORT INFORMATION

(SU) TOO

Not dangerous goods Proper shipping name: Water

Section XV. REGULATORY INFORMATION

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

Section XVI. Misc. INFORMATION

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.)

This document is intended only as a guide to the appropriate precautionary handling of the material by trained personnel, or supervised by a person rained in chemical handling. The user is repensionable for determining the precautions and dangers of this chemical to his or her particular application. Depending on usage, protective clothing precautions and dangers of the special handling. The user is respirators must be used to avoid contact with material or breathing chemical to his or her particular application. Depending on usage, protective clothing cyce and face guards and respirators must be used to avoid contact with material or breathing chemical to the particular application. Depending on usage, protective clothing the chemical may interest 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 arbestness. Since the potential uses are so varied, ABSOLUTE STANDARDS INC. cannot warn of all the potential dangers of use or interaction with other arbestness. ABSOLUTE STANDARDS INC particular and the chemical may interest with other arbestness. Since the potential uses are so varied, ABSOLUTE STANDARDS INC. cannot warn of all the potential dangers of use or interaction with other particular applications of user are not heeded. READALDARDS INC DISCLAIMS ANY processes, ABSOLUTE STANDARDS INC warmants that the chemical mass interest and use are not breaded. READALDARDS INC DISCLAIMS ANY processes. The processes are so varied, ABSOLUTE STANDARDS INC of use or interaction with other arbeits of uses are not heeded. READALDARDS INC DISCLAIMS ANY processes. The processes are so varied, ABSOLUTE STANDARDS INC DISCLAIMS ANY processes. The processes are so varied, ABSOLUTE STANDARDS INC DISCLAIMS ANY processes. The processes a

Proper shipping name: Water

Not dangerous goods

ATAI

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Certified Reference Material CRM

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

200-03(18/24

(Solvent Safety Info. On Attached pg.) SDS Information lend OSHA PEL (TWA) Pedro L. Rentas Lawrence Barry Genome CAS# Formulated By: Reviewed By: Conc (µg/mL) (+/-) (µg/mL) Uncertainty + 568617 072324Q Weight(g) Actual 25.2 Solvent(s): Water Weight(g) Target 5E-05 Balance Uncertainty 0.001 Flask Uncertainty Uncertainty Purity Purity 8 Conc (ug/mL) Nominal 10.0 Refrigerate (4 °C) Weight(s) shown below were combined and diluted to (mL): Number Acrolein 041725 031725 ž 91980 5000 RM# Description: Recommended Storage: Part Number: Lot Number: Expiration Date: Nominal Concentration (µg/mL): NIST Test ID#: CERTIFIED WEIGHT REPORT Compound

DATE DATE 031725 031725

orl-rat 46mg/kg LD50 0.1 ppm 107-02-8 52.5 5004.1 0.05170 0.05166 0.5 97 5000 103755V10F 40 1. Acrolein

Method: GCGMSD-1. Detector: Mass Selective Detector (Scan mode). Columns: Vocol (60m X 0.25mm ID X 1.5µm film thickness). Oven Profile: Temp. 1 = 35°C (Time 1 = 10min.), Temp. 2 = 200°C. (Time 2 = 8.75 min.)
Rate = 4°C/min., Injector Temp. = 200°C, Detector Temp. = 220°C. Analyst: Pedro Rentas. NOTE: Due to the instability of acrolein in solution, all solutions of acrolein, and any dilutions thereof, should be used immediately
Long term storage is not recommended. Please contact our technical department if further information is required.

8.93

250000

Abundance

200000

150000

100000

50000

2 60000

Abundance

TIC: [BSB2]79005.D

Scan 232 (8.927 min): [BSB2]79005.D

50000

40000

56

30000

20002

10000

8

10.00 15.00 20.00 25.00 30.00 35.00 40.00 45.00 50.00 55.00 60.00

Time-->0

The certified value is the concentration calculated from gravimetric and volumetric measurements unless otherwise stated.
 Standards are prepared gravimetrically using balances that are calibrated with weights traceable to NIST (see above).
 Standards are certified (+/, 0.5% of the stated value, misso otherwise stated.
 All Standards, after opening ampule, should be stored with cape light 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).

January 1, 2025

L6 <

(lsnoitqo) %

PO Box 5585

Absolute Standards Inc.

Section I Product and Company Identification

Hamden, CT 06518-0585

Safety Data Sheet (SDS)

GHS/OSHA Compliant

1-322-323-3200 Address 1-800-535-5053 Emergency Telephone USA & CANADA ABSOLUTE STANDARDS INC Manufacturer's Name ANALYTICAL STANDARD DISSOLVED IN WATER **IDENTITY**

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

Section II - Hazards Identification

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

It in eyes, remove contacts, rinse with water P305,351,338 Use gloves, eye protection/face shelld P280 Causes skin and eye irritation. H312

Signal Word: DANGER If on skin, wash with soap and water P302,332

Section III - Composition

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

INTENDED USE: REFERENCE MATERIAL See Certified Weight Report For Other Analytes Present At Trace Quantities.

Section IV. FIRST AID MEASURES

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

CAS#: 7732-18-5

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

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

Hazardous Decomposition products Protective equipment for fire

Suitable extinguishing media

Section VI. ACCIDENTAL RELEASE MEASURES

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

ignition. Vapours accumulate to form explosive concentrations.

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

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

Section VII. HANDLING AND STORAGE

Use ventilation Keep away from sources of ignition. No smoking. Prevent the build up of electrostatic charge. Avoid contact with skin and eyes. Avoid inhalation of vapour or mist. Precautions for safe handling

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.

Storage Conditions

Personal precautions

If swallowed

belsdri 11

General advice

in case of eye contact

In case of skin contact

Section VIII. EXPOSURE CONTROLS/PERSONAL PROTECTION

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

Handie with gloves. Gloves must be inspected prior to use. Eye protection. Respiratory protection Personal protective equipment mqq 008 :AWT CAS#: 7732-18-5 Water

Section IX - PHYSICAL/CHEMICAL CHARACTERISTICS

	Melting Point		Vapor Pressure (mm Hg)
ļ	Specific Gravity (H2O = 1)	100°C	Juio4 gaillea
			1.00

	I SLIGHT CHEMICAL ODOR.	CLEAR, COLORLESS LIQUID WITH SLIGHT CHEMICAL ODOR.		
***************************************			Completely miscible	Solubility in Water
ΑN	Evaporation rate (Butyl Acetate = 1)	ΑN		Vapor Density (AIA = 1)
O ₀ C		ΑN		A. Selver M. Francisco

Section X. STABILITY AND REACTIVITY

Chemical stability
Possibility of hazardous reactions
Conditions to avoid
Conditions to avoid

NA

NA

NA

Materials to avoid

Materials to avoid

An avoid decomposition products - No data available

Hazardous decomposition products - No data available

Section XI. TOXICOLOGICAL INFORMATION

LD50 Oral - Rat NA LC50 Inhalation - Rat NA LD50 Dermal - Guinea pig NA Causea skin irritation.

Section XII. ECOLOGICAL INFORMATION

EC20 NV CC20 NV

Section XIII. DISPOSAL CONSIDERATIONS

Dispose with normal Laboratory Solvent Waste.

Section XIV. TRAUSPORT INFORMATION

ATA Not dangerous goods Proper shipping name: Water DOT (US)

Not dangerous goods

Proper shipping name: Water

Section XV. REGULATORY INFORMATION

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

Section XVI. Misc. INFORMATION

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 CPR 1910.1200 et seq.) and dobal Harmonized System (CHS). This document is intended only as a guide to the appropriate precaultonary handling of the material by itained personnel, or supervised by a person incidence of the profit of determining the precautions and dangers of this chemical handling. The user is responsible for determining the precautions and dangers of this chemical handling eye and face guards and respirators must be used to savid contact with material or breaming a chemical vary interests 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 chemical may interest 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 substances. ABSOLUTE STANDARDS INC. cannot warn of all the potential dangers of use or interaction with other soften and precedence of use or interaction with other substances. Since the potential uses are severe injury or death, especially if improperly handled or the known dangers of use are not heeded. READ ALM PRISCATION. The user documented general safety information becomes available, Absolute Standards fine, will periodically revise this Material Safety Data L. Data and the safety of uses of uses are not heeded. READ ALM PRISCATION. The user should recognize that this product can cause severe injury or death, especially if improperly handled or the known dangers of uses are not heeded. READ ALM PRISCATION. The user documented general safety information becomes available, Absolute Standards fine, will periodically revise this Material Safety Data ALM PRISCATION. As new documented general safety information becomes available, Absolute Standards of use are not heeded. READ ALM PRISCATION. The use d

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Certified Reference Material CRM

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

200-03(18/24

(Solvent Safety Info. On Attached pg.) SDS Information lend OSHA PEL (TWA) Pedro L. Rentas Lawrence Barry Genome CAS# Formulated By: Reviewed By: Conc (µg/mL) (+/-) (µg/mL) Uncertainty + 568617 072324Q Weight(g) Actual 25.2 Solvent(s): Water Weight(g) Target 5E-05 Balance Uncertainty 0.001 Flask Uncertainty Uncertainty Purity Purity 8 Conc (ug/mL) Nominal 10.0 Refrigerate (4 °C) Weight(s) shown below were combined and diluted to (mL): Number Acrolein 041725 031725 ž 91980 5000 RM# Description: Recommended Storage: Part Number: Lot Number: Expiration Date: Nominal Concentration (µg/mL): NIST Test ID#: CERTIFIED WEIGHT REPORT Compound

DATE DATE 031725 031725

orl-rat 46mg/kg LD50 0.1 ppm 107-02-8 52.5 5004.1 0.05170 0.05166 0.5 97 5000 103755V10F 40 1. Acrolein

Method: GCGMSD-1. Detector: Mass Selective Detector (Scan mode). Columns: Vocol (60m X 0.25mm ID X 1.5µm film thickness). Oven Profile: Temp. 1 = 35°C (Time 1 = 10min.), Temp. 2 = 200°C. (Time 2 = 8.75 min.)
Rate = 4°C/min., Injector Temp. = 200°C, Detector Temp. = 220°C. Analyst: Pedro Rentas. NOTE: Due to the instability of acrolein in solution, all solutions of acrolein, and any dilutions thereof, should be used immediately
Long term storage is not recommended. Please contact our technical department if further information is required.

8.93

250000

Abundance

200000

150000

100000

50000

2 60000

Abundance

TIC: [BSB2]79005.D

Scan 232 (8.927 min): [BSB2]79005.D

50000

40000

56

30000

20002

10000

8

10.00 15.00 20.00 25.00 30.00 35.00 40.00 45.00 50.00 55.00 60.00

Time-->0

The certified value is the concentration calculated from gravimetric and volumetric measurements unless otherwise stated.
 Standards are prepared gravimetrically using balances that are calibrated with weights traceable to NIST (see above).
 Standards are certified (+/, 0.5% of the stated value, misso otherwise stated.
 All Standards, after opening ampule, should be stored with cape light 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).

January 1, 2025

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PO Box 5585

Absolute Standards Inc.

Section I Product and Company Identification

Hamden, CT 06518-0585

Safety Data Sheet (SDS)

GHS/OSHA Compliant

1-322-323-3200 Address 1-800-535-5053 Emergency Telephone USA & CANADA ABSOLUTE STANDARDS INC Manufacturer's Name ANALYTICAL STANDARD DISSOLVED IN WATER **IDENTITY**

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

Section II - Hazards Identification

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

It in eyes, remove contacts, rinse with water P305,351,338 Use gloves, eye protection/face shelld P280 Causes skin and eye irritation. H312

Signal Word: DANGER If on skin, wash with soap and water P302,332

Section III - Composition

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

INTENDED USE: REFERENCE MATERIAL See Certified Weight Report For Other Analytes Present At Trace Quantities.

Section IV. FIRST AID MEASURES

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

CAS#: 7732-18-5

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

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

Hazardous Decomposition products Protective equipment for fire

Suitable extinguishing media

Section VI. ACCIDENTAL RELEASE MEASURES

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

ignition. Vapours accumulate to form explosive concentrations.

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

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

Section VII. HANDLING AND STORAGE

Use ventilation Keep away from sources of ignition. No smoking. Prevent the build up of electrostatic charge. Avoid contact with skin and eyes. Avoid inhalation of vapour or mist. Precautions for safe handling

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.

Storage Conditions

Personal precautions

If swallowed

belsdri 11

General advice

in case of eye contact

In case of skin contact

Section VIII. EXPOSURE CONTROLS/PERSONAL PROTECTION

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

Handie with gloves. Gloves must be inspected prior to use. Eye protection. Respiratory protection Personal protective equipment mqq 008 :AWT CAS#: 7732-18-5 Water

Section IX - PHYSICAL/CHEMICAL CHARACTERISTICS

	Melting Point		Vapor Pressure (mm Hg)
ļ	Specific Gravity (H2O = 1)	100°C	Juio4 gaillea
			1.00

	I SLIGHT CHEMICAL ODOR.	LIQUID WITH	CLEAR, COLORLESS	Appearance and Odor
***************************************			Completely miscible	Solubility in Water
ΑN	Evaporation rate (Butyl Acetate = 1)	ΑN		Vapor Density (AIA = 1)
O ₀ C		ΑN		A. Selver M. Francisco

Section X. STABILITY AND REACTIVITY

Chemical stability
Possibility of hazardous reactions
Conditions to avoid
Conditions to avoid

NA

NA

NA

Materials to avoid

Materials to avoid

An avoid decomposition products - No data available

Hazardous decomposition products - No data available

Section XI. TOXICOLOGICAL INFORMATION

LD50 Oral - Rat NA LC50 Inhalation - Rat NA LD50 Dermal - Guinea pig NA Causea skin irritation.

Section XII. ECOLOGICAL INFORMATION

EC20 NV CC20 NV

Section XIII. DISPOSAL CONSIDERATIONS

Dispose with normal Laboratory Solvent Waste.

Section XIV. TRAUSPORT INFORMATION

ATA Not dangerous goods Proper shipping name: Water DOT (US)

Not dangerous goods

Proper shipping name: Water

Section XV. REGULATORY INFORMATION

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

Section XVI. Misc. INFORMATION

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 CPR 1910.1200 et seq.) and dobal Harmonized System (CHS). This document is intended only as a guide to the appropriate precaultonary handling of the material by itained personnel, or supervised by a person incidence of the profit of determining the precautions and dangers of this chemical handling. The user is responsible for determining the precautions and dangers of this chemical handling eye and face guards and respirators must be used to savid contact with material or breaming a chemical vary interests 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 chemical may interest 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 substances. ABSOLUTE STANDARDS INC. cannot warn of all the potential dangers of use or interaction with other soften and precedence of use or interaction with other substances. Since the potential uses are severe injury or death, especially if improperly handled or the known dangers of use are not heeded. READ ALM PRISCATION. The user documented general safety information becomes available, Absolute Standards fine, will periodically revise this Material Safety Data L. Data and the safety of uses of uses are not heeded. READ ALM PRISCATION. The user should recognize that this product can cause severe injury or death, especially if improperly handled or the known dangers of uses are not heeded. READ ALM PRISCATION. The user documented general safety information becomes available, Absolute Standards fine, will periodically revise this Material Safety Data ALM PRISCATION. As new documented general safety information becomes available, Absolute Standards of use are not heeded. READ ALM PRISCATION. The use d

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Certified Reference Material CRM

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CERTIFIED WEIGHT REPORT

Acrolein 091424 91980 Part Number: Lot Number: Description:

Refrigerate (4 °C) 101424 Recommended Storage: **Expiration Date:**

6UTB 5000 Nominal Concentration (µg/mL): NIST Test ID#;

5E-05 Balance Uncertainty 0.001 Flask Uncertainty 10.0 Weight(s) shown below were combined and diluted to (mL):

072324Q

Lot

Solvent(s): Water

DATE DATE 091424 091424 Pedro L. Rentas Justin Dippold of the Formulated By: Reviewed By

orl-rat 46mg/kg **D**50 (Solvent Safety Info. On Attached pg.) SDS Information OSHA PEL (TWA) 0.1 ppm 107-02-8 CAS# Uncertainty Conc (ug/mL) (+/-) (ug/mL) Expanded 52.5 5008.9 Actual Weight (g) 0.05175 Actual Weight(g) 0.05166 Target Uncertainty Purity 0.5 Purity 8 97 Conc (ug/mL) Nominal 5000 103755V10F Number þ EM# ഗ Compound

Method: GC6MSD-1. Detector: Mass Selective Detector (Scan mode). Column: Vocol (60m X 0.25mm ID X 1.5mm film thickness). Oven Profile: Temp. 1 = 35°C (Time 1 = 10min.), Temp. 2=200°C, Analyst: Pedro Rentas. NOTE: Due to the instability of acrolein in solution, all solutions of acrolein, and any dilutions thereof, should be used immediately Long term storage is not recommended. Please contact our technical department if further information is required.

TIC: [BSB2]79005,D

Abundance

1. Acrolein

8.93

250000

200002

150000

100000

50000

Scan 232 (8.927 min): [BSB2]79005.D Abundance

27

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Time-->0

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10.00 15.00 20.00 25.00 30.00 35.00 40.00 45.00 50.00 55.00 60.00

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

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Lot

Solvent(s): Water

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TIC: [BSB2]79005,D

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1. Acrolein

8.93

250000

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Scan 232 (8.927 min): [BSB2]79005.D Abundance

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65 75 85

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Certified Reference Material CRM

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

CERTIFIED WEIGHT REPORT

Acrolein 091424 91980 Part Number: Lot Number: Description:

Refrigerate (4 °C) 101424 Recommended Storage: **Expiration Date:**

6UTB 5000 Nominal Concentration (µg/mL): NIST Test ID#;

5E-05 Balance Uncertainty 0.001 Flask Uncertainty 10.0 Weight(s) shown below were combined and diluted to (mL):

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Lot

Solvent(s): Water

DATE DATE 091424 091424 Pedro L. Rentas Justin Dippold of the Formulated By: Reviewed By

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250000

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Scan 232 (8.927 min): [BSB2]79005.D Abundance

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37

Time-->0

65 75 85

10.00 15.00 20.00 25.00 30.00 35.00 40.00 45.00 50.00 55.00 60.00

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Solvent(s): Water

DATE DATE 091424 091424 Pedro L. Rentas Justin Dippold of the Formulated By: Reviewed By

orl-rat 46mg/kg **D**50 (Solvent Safety Info. On Attached pg.) SDS Information OSHA PEL (TWA) 0.1 ppm 107-02-8 CAS# Uncertainty Conc (ug/mL) (+/-) (ug/mL) Expanded 52.5 5008.9 Actual Weight (g) 0.05175 Actual Weight(g) 0.05166 Target Uncertainty Purity 0.5 Purity 8 97 Conc (ug/mL) Nominal 5000 103755V10F Number þ EM# ഗ Compound

Method: GC6MSD-1. Detector: Mass Selective Detector (Scan mode). Column: Vocol (60m X 0.25mm ID X 1.5mm film thickness). Oven Profile: Temp. 1 = 35°C (Time 1 = 10min.), Temp. 2=200°C, Analyst: Pedro Rentas. NOTE: Due to the instability of acrolein in solution, all solutions of acrolein, and any dilutions thereof, should be used immediately Long term storage is not recommended. Please contact our technical department if further information is required.

TIC: [BSB2]79005,D

Abundance

1. Acrolein

8.93

250000

200002

150000

100000

50000

Scan 232 (8.927 min): [BSB2]79005.D Abundance

27

00009

50000

28

40000

30000

20002

10000

37

Time-->0

65 75 85

10.00 15.00 20.00 25.00 30.00 35.00 40.00 45.00 50.00 55.00 60.00

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

Certified Reference Material CRM Dec

0

2-Chloroethyl vinyl ether

Description:

Lot Number:

Part Number:

CERTIFIED WEIGHT REPORT

20524

Refrigerate (4 °C)

Recommended Storage:

Nominal Concentration (µg/mL):

Expiration Date:

10000 **6UTB**

120527

nttps://Absolutestandards.com Lots Solvent(s):

SDS Information

Uncertainty Expanded

Actual

Actual

Uncertainty

Purity

Nominal

5E-05 0.001

50.0

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

NIST Test ID#:

Methanol EJ143-US	()	Short Cheuler	120524
1 00017	Formulated By:	Prashant Chauhan	DATE
649 710	H	In Horte	120524
Balance Uncertainty	Reviewed By:	Pedro L. Rentas	DATE
Flask Uncertainty			

orl-rat 250mg/kg (Solvent Safety Info. On Attached pg.) 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., OSHA PEL (TWA) M 110-75-8 CAS# (+/-) (ng/mL) 40.5 Conc(µg/mL) 10002.9 Weight (g) 0.50550 Weight (g) 0.50536 Target Purity 0.2 8 66 Injector B Temp = 200°C, Detector B Temp, = 220°C. Analyst: Candice Warren. Conc (vg/ml.) 10000 **MKCD0033** Lot Number 74 **8*** 2-Chloroethyl vinyl ether Compound

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- The certified value is the concentration calculated from gravimetric and volumetric measurements unless otherwise stated.
 - Standards are prepared gravimetrically using balances that are calibrated with weights traceable to NIST (see above).
 Standards are certified (++) 0.5% of the stated value, unless otherwise stated.
- All Standards, after opening ampule, should be stored with caps light 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).

Printed: 12/5/2024, 4:07:29 PM

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

H370 P271

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

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.

Certified Reference Material CRM Dec

0

2-Chloroethyl vinyl ether

Description:

Lot Number:

Part Number:

CERTIFIED WEIGHT REPORT

20524

Refrigerate (4 °C)

Recommended Storage:

Nominal Concentration (µg/mL):

Expiration Date:

10000 **6UTB**

120527

nttps://Absolutestandards.com Lots Solvent(s):

SDS Information

Uncertainty Expanded

Actual

Actual

Uncertainty

Purity

Nominal

5E-05 0.001

50.0

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

NIST Test ID#:

Methanol EJ143-US	()	Short Cheuler	120524
1 00017	Formulated By:	Prashant Chauhan	DATE
649 710	H	In Horte	120524
Balance Uncertainty	Reviewed By:	Pedro L. Rentas	DATE
Flask Uncertainty			

orl-rat 250mg/kg (Solvent Safety Info. On Attached pg.) 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., OSHA PEL (TWA) M 110-75-8 CAS# (+/-) (ng/mL) 40.5 Conc(µg/mL) 10002.9 Weight (g) 0.50550 Weight (g) 0.50536 Target Purity 0.2 8 66 Injector B Temp = 200°C, Detector B Temp, = 220°C. Analyst: Candice Warren. Conc (vg/ml.) 10000 **MKCD0033** Lot Number 74 **8*** 2-Chloroethyl vinyl ether Compound

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Abradance

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

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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

H370 P271

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

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.

Certified Reference Material CRM Dec

0

2-Chloroethyl vinyl ether

Description:

Lot Number:

Part Number:

CERTIFIED WEIGHT REPORT

20524

Refrigerate (4 °C)

Recommended Storage:

Nominal Concentration (µg/mL):

Expiration Date:

10000 **6UTB**

120527

nttps://Absolutestandards.com Lots Solvent(s):

SDS Information

Uncertainty Expanded

Actual

Actual

Uncertainty

Purity

Nominal

5E-05 0.001

50.0

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

NIST Test ID#:

Methanol EJ143-US	()	Short Cheuler	120524
1 00017	Formulated By:	Prashant Chauhan	DATE
649 710	H	In Horte	120524
Balance Uncertainty	Reviewed By:	Pedro L. Rentas	DATE
Flask Uncertainty			

orl-rat 250mg/kg (Solvent Safety Info. On Attached pg.) 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., OSHA PEL (TWA) M 110-75-8 CAS# (+/-) (ng/mL) 40.5 Conc(µg/mL) 10002.9 Weight (g) 0.50550 Weight (g) 0.50536 Target Purity 0.2 8 66 Injector B Temp = 200°C, Detector B Temp, = 220°C. Analyst: Candice Warren. Conc (vg/ml.) 10000 **MKCD0033** Lot Number 74 **8*** 2-Chloroethyl vinyl ether Compound

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- The certified value is the concentration calculated from gravimetric and volumetric measurements unless otherwise stated.
 - Standards are prepared gravimetrically using balances that are calibrated with weights traceable to NIST (see above).
 Standards are certified (++) 0.5% of the stated value, unless otherwise stated.
- All Standards, after opening ampule, should be stored with caps light and under appropriate laboratory conditions.
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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

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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

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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

H370 P271

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.

Certified Reference Material CRM Dec

0

2-Chloroethyl vinyl ether

Description:

Lot Number:

Part Number:

CERTIFIED WEIGHT REPORT

20524

Refrigerate (4 °C)

Recommended Storage:

Nominal Concentration (µg/mL):

Expiration Date:

10000 **6UTB**

120527

nttps://Absolutestandards.com Lots Solvent(s):

SDS Information

Uncertainty Expanded

Actual

Actual

Uncertainty

Purity

Nominal

5E-05 0.001

50.0

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

NIST Test ID#:

Methanol EJ143-US	()	Short Cheuler	120524
1 00017	Formulated By:	Prashant Chauhan	DATE
649 710	H	In Horte	120524
Balance Uncertainty	Reviewed By:	Pedro L. Rentas	DATE
Flask Uncertainty			

orl-rat 250mg/kg (Solvent Safety Info. On Attached pg.) 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., OSHA PEL (TWA) M 110-75-8 CAS# (+/-) (ng/mL) 40.5 Conc(µg/mL) 10002.9 Weight (g) 0.50550 Weight (g) 0.50536 Target Purity 0.2 8 66 Injector B Temp = 200°C, Detector B Temp, = 220°C. Analyst: Candice Warren. Conc (vg/ml.) 10000 **MKCD0033** Lot Number 74 **8*** 2-Chloroethyl vinyl ether Compound

14000

2002

0000

18000

20000

Abradance

160000

9000

90009

40000

9000

- The certified value is the concentration calculated from gravimetric and volumetric measurements unless otherwise stated.
 - Standards are prepared gravimetrically using balances that are calibrated with weights traceable to NIST (see above).
 Standards are certified (++) 0.5% of the stated value, unless otherwise stated.
- All Standards, after opening ampule, should be stored with caps light 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).

Printed: 12/5/2024, 4:07:29 PM

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 1-352-323-3500

Address

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

January 1, 2024

Section II - Hazards Identification

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

Highly Flammable Liquid and Vapor

Cause damage to organs Use in ventilated area

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

H351 Suspected of causing cancer

P271 P302.332 If on skin, wash with soap and water P280 P305,351,338

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



H225

H370





Signal Word: DANGER

Section III - Composition

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

METHYL ALCOHOL Methanol

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

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 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

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.

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

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.

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

Section IX - Physical/Chemical Characteristics

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

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

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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%

^{*} 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

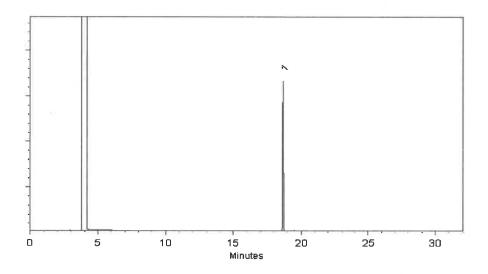
Det. Type:

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

Expiration Notes:

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

Purity Notes:

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

Certified Uncertainty Value Notes:

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

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

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

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

Manufacturing Notes:

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

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



8			











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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:

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

Ship:

* 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

Expiration Notes:

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

Purity Notes:

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

Certified Uncertainty Value Notes:

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

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

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

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

Manufacturing Notes:

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

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













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Certificate of Analysis gravimetric

www.restek.com

FOR LABORATORY USE ONLY-READ SDS PRIOR TO USE.

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

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.
- 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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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.:

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

^{*} 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:

- · 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.











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.:

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

^{*} 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:

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

Purity Notes:

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

Certified Uncertainty Value Notes:

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

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

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

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

Manufacturing Notes:

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

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











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Certificate of Analysis

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FOR LABORATORY USE ONLY-READ SDS PRIOR TO USE.

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

Catalog No.:

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

^{*} 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:

- · Expiration date valid for unopened ampul stored in compliance with the recommended conditions.
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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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 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
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k is a coverage factor of 2, which gives a level of confidence of approximately 95%.

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

Manufacturing Notes:

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

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











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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 - 9	SHBP3100	99%	2,019.3 μg/mL	+/- 69.7974
2	Vinyl acetate	108-05-4	RP231030CTH	98%	2,016.8 μg/mL	+/- 69.7112
3	Ethyl acetate	141-78-6	SHBQ9682	99%	2,010.7 μg/mL	+/- 69.4979
4	Isopropyl acetate	108-21-4	BCCG7069	99%	2,016.0 μg/mL	+/- 69.6822
5	Propyl acetate	109-60-4	P8XLN	99%	2,008.0 μg/mL	+/- 69.4057
6	Butyl acetate	123-86-4	SHBP6314	99%	2,007.3 μg/mL	+/- 69.3826
7	Amyl acetate	628-63-7	41325/1	97%	2,004.7 μg/mL	+/- 69.2905

^{*} Expanded Uncertainty displayed in same units as Grav. Conc.

Solvent:

P&T Methanol

CAS# 67-56-1

Purity 99%

Tech Tips:

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



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

Quality Confirmation Test

Column:

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

Carrier Gas:

hydrogen-constant pressure 11.0 psi.

Temp. Program:

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:

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

Purity Notes:

- Purity and/or chemical identity are determined by one or more of the following techniques: GC/FID, HPLC, GC/µECD, GC/MS, LC/MS, RI, and/or melting point.
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 correction factor is used to calculate the amount of compound necessary to achieve the desired concentration of the
 parent compound in solution.
- Purity of isomeric compounds is reported as the sum of the isomers.
- Purity values are rounded to the nearest whole number.

Certified Uncertainty Value Notes:

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

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

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

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

Manufacturing Notes:

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

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

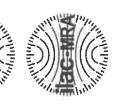


CERTIFIED REFERENCE MATERIAL



enence Material Prod Certificate #3222.01





FOR LABORATORY USE ONLY-READ SDS PRIOR TO USE.

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

Lot No.: A0210184 555581 Catalog No.:

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

1mL/ampul

> 1 mL Pkg Amt: 2 mL Container Size:

Storage: April 30, 2027 **Expiration Date:**

10°C or colder

Ambient

Ship:

VALUES CERTIFIED

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	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	PR-31132	99% 25,116.0 µg/mL	+/- 1,422.4487
4	Pentafluorobenzene	363-72-4	363-72-4 MKCR9383	99% 25,180.0 µg/mL	+/- 1,426.0734

P&T Methanol CAS# **Solvent:**

67-56-1 %66 Purity

John Friedline - Operations Technician I Mr. T. Hi.

11-Apr-2024 Date Mixed:

Balance:

1127510105



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

Certified Uncertainty Value Notes:

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

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

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

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

Manufacturing Notes:

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

Handling Notes

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



2 of 2



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

30019





Certificate of Analysis chromatographic plus

ISO/IEC 17025 Appredit

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V14697-to-147

FOR LABORATORY USE ONLY-READ SDS PRIOR TO USE.

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

Catalog No.:

30006

Lot No.: A0210618

Description:

VOA Calibration Mix #1

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

1mL/ampul

Container Size:

2 mL

Pkg Amt:

> 1 mL

Expiration Date:

July 31, 2027

Storage:

0°C or colder

Ship:

Ambient

CERTIFIED VALUES

Elution Order	Compound	CAS#	Lot#	Purity	Grav. Conc. (weight/volume)	Expanded Uncertainty (95% C.L.; K=2)
1	Acetone	67-64-1	SHBQ8504	99%	5,014.8 μg/mL	+/- 173.2883
2	2-Butanone (MEK)	78-93-3	SHBQ4704	99%	5,012.4 μg/mL	+/- 173.2054
3	4-Methyl-2-pentanone (MIBK)	108-10-1	SHBP9200	99%	5,011.6 μg/mL	+/- 173.1777
4	2-Hexanone	591-78-6	MKCQ6663	99%	5,013.0 μg/mL	+/- 173.2261

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

Solvent:

P&T Methanol/Water (90:10)

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

Purity 99%

Quality Confirmation Test

Column:

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

Carrier Gas:

hydrogen-constant pressure 11.0 psi.

Temp. Program:

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

Inj. Temp:

200°C

Det. Temp:

250°C

Det. Type:

FID

Split Vent:

40 ml/min

Inj. Vol

1μΙ



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

Dakota Parson - Operations Technician I

Date Mixed:

22-Apr-2024

Balance Serial #

B707717271

Jennifer Pollino - Operations Tech III - ARM QC

Date Passed:

24-Apr-2024

Expiration Notes:

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

Purity Notes:

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

Certified Uncertainty Value Notes:

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

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

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

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

Manufacturing Notes:

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

- Stability of the unopened product, when stored in compliance with the recommended conditions, is guaranteed through
 the expiration displayed on the product label and certificate. Contact Restek for additional opened product stability
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Dec 12/17/24 **CERTIFIED REFERENCE MATERIAL**

30019





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ISO/IEC 17025 Appredit

Fax: 1-814-353-1309 www.restek.com

V14697-to-147

FOR LABORATORY USE ONLY-READ SDS PRIOR TO USE.

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

Catalog No.:

30006

Lot No.: A0210618

Description:

VOA Calibration Mix #1

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

1mL/ampul

Container Size:

2 mL

Pkg Amt:

> 1 mL

Expiration Date:

July 31, 2027

Storage:

0°C or colder

Ship:

Ambient

CERTIFIED VALUES

Elution Order	Compound	CAS#	Lot#	Purity	Grav. Conc. (weight/volume)	Expanded Uncertainty (95% C.L.; K=2)
1	Acetone	67-64-1	SHBQ8504	99%	5,014.8 μg/mL	+/- 173.2883
2	2-Butanone (MEK)	78-93-3	SHBQ4704	99%	5,012.4 μg/mL	+/- 173.2054
3	4-Methyl-2-pentanone (MIBK)	108-10-1	SHBP9200	99%	5,011.6 μg/mL	+/- 173.1777
4	2-Hexanone	591-78-6	MKCQ6663	99%	5,013.0 μg/mL	+/- 173.2261

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

Solvent:

P&T Methanol/Water (90:10)

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

Purity 99%

Quality Confirmation Test

Column:

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

Carrier Gas:

hydrogen-constant pressure 11.0 psi.

Temp. Program:

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

Inj. Temp:

200°C

Det. Temp:

250°C

Det. Type:

FID

Split Vent:

40 ml/min

Inj. Vol

1μΙ



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

Dakota Parson - Operations Technician I

Date Mixed:

22-Apr-2024

Balance Serial #

B707717271

Jennifer Pollino - Operations Tech III - ARM QC

Date Passed:

24-Apr-2024

Expiration Notes:

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Certified Uncertainty Value Notes:

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 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.





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

30019





Certificate of Analysis chromatographic plus

ISO/IEC 17025 Appredit

Fax: 1-814-353-1309 www.restek.com

V14697-to-147

FOR LABORATORY USE ONLY-READ SDS PRIOR TO USE.

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

Catalog No.:

30006

Lot No.: A0210618

Description:

VOA Calibration Mix #1

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

1mL/ampul

Container Size:

2 mL

Pkg Amt:

> 1 mL

Expiration Date:

July 31, 2027

Storage:

0°C or colder

Ship:

Ambient

CERTIFIED VALUES

Elution Order	Compound	CAS#	Lot#	Purity	Grav. Conc. (weight/volume)	Expanded Uncertainty (95% C.L.; K=2)
1	Acetone	67-64-1	SHBQ8504	99%	5,014.8 μg/mL	+/- 173.2883
2	2-Butanone (MEK)	78-93-3	SHBQ4704	99%	5,012.4 μg/mL	+/- 173.2054
3	4-Methyl-2-pentanone (MIBK)	108-10-1	SHBP9200	99%	5,011.6 μg/mL	+/- 173.1777
4	2-Hexanone	591-78-6	MKCQ6663	99%	5,013.0 μg/mL	+/- 173.2261

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

Solvent:

P&T Methanol/Water (90:10)

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

Purity 99%

Quality Confirmation Test

Column:

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

Carrier Gas:

hydrogen-constant pressure 11.0 psi.

Temp. Program:

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

Inj. Temp:

200°C

Det. Temp:

250°C

Det. Type:

FID

Split Vent:

40 ml/min

Inj. Vol

1μΙ



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

Dakota Parson - Operations Technician I

Date Mixed:

22-Apr-2024

Balance Serial #

B707717271

Jennifer Pollino - Operations Tech III - ARM QC

Date Passed:

24-Apr-2024

Expiration Notes:

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

Purity Notes:

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

Certified Uncertainty Value Notes:

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

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

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

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

Manufacturing Notes:

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

- Stability of the unopened product, when stored in compliance with the recommended conditions, is guaranteed through
 the expiration displayed on the product label and certificate. Contact Restek for additional opened product stability
 information, with the knowledge/understanding that open product stability is subject to the specific handling and
 environmental conditions to which the product is exposed. For your convenience Restek supplies deactivated vials with
 most standards packed in 2mL ampuls. Larger volume deactivated vials are available through Restek as a custom
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Dec 12/17/24 **CERTIFIED REFERENCE MATERIAL**

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Certificate of Analysis chromatographic plus

ISO/IEC 17025 Appredit

Fax: 1-814-353-1309 www.restek.com

V14697-to-147

FOR LABORATORY USE ONLY-READ SDS PRIOR TO USE.

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

Catalog No.:

30006

Lot No.: A0210618

Description:

VOA Calibration Mix #1

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

1mL/ampul

Container Size:

2 mL

Pkg Amt:

> 1 mL

Expiration Date:

July 31, 2027

Storage:

0°C or colder

Ship:

Ambient

CERTIFIED VALUES

Elution Order	Compound	CAS#	Lot#	Purity	Grav. Conc. (weight/volume)	Expanded Uncertainty (95% C.L.; K=2)
1	Acetone	67-64-1	SHBQ8504	99%	5,014.8 μg/mL	+/- 173.2883
2	2-Butanone (MEK)	78-93-3	SHBQ4704	99%	5,012.4 μg/mL	+/- 173.2054
3	4-Methyl-2-pentanone (MIBK)	108-10-1	SHBP9200	99%	5,011.6 μg/mL	+/- 173.1777
4	2-Hexanone	591-78-6	MKCQ6663	99%	5,013.0 μg/mL	+/- 173.2261

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

Solvent:

P&T Methanol/Water (90:10)

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

Purity 99%

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:

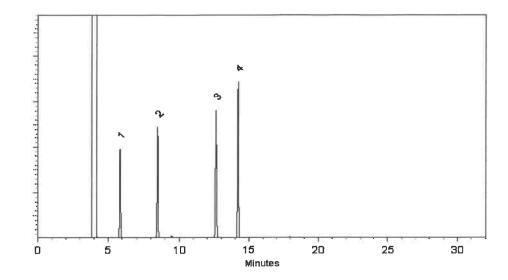
FID

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.

Dakota Parson - Operations Technician I

Date Mixed:

22-Apr-2024

Balance Serial #

B707717271

Jennifer Pollino - Operations Tech III - ARM QC

Date Passed:

24-Apr-2024

Expiration Notes:

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

Purity Notes:

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

Certified Uncertainty Value Notes:

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

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

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

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

Manufacturing Notes:

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

- Stability of the unopened product, when stored in compliance with the recommended conditions, is guaranteed through the expiration displayed on the product label and certificate. Contact Restek for additional opened product stability information, with the knowledge/understanding that open product stability is subject to the specific handling and environmental conditions to which the product is exposed. For your convenience Restek supplies deactivated vials with most standards packed in 2mL ampuls. Larger volume deactivated vials are available through Restek as a custom ordered item. Additionally, Restek sells DMDCS for the purpose of glassware deactivation as catalog number 31861, which includes complete instructions.
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Dec 12/17/24 **CERTIFIED REFERENCE MATERIAL**

30019





Certificate of Analysis chromatographic plus

ISO/IEC 17025 Appredit

Fax: 1-814-353-1309 www.restek.com

V14697-to-147

FOR LABORATORY USE ONLY-READ SDS PRIOR TO USE.

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

Catalog No.:

30006

Lot No.: A0210618

Description:

VOA Calibration Mix #1

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

1mL/ampul

Container Size:

2 mL

Pkg Amt:

> 1 mL

Expiration Date:

July 31, 2027

Storage:

0°C or colder

Ship:

Ambient

CERTIFIED VALUES

Elution Order	Compound	CAS#	Lot#	Purity	Grav. Conc. (weight/volume)	Expanded Uncertainty (95% C.L.; K=2)
1	Acetone	67-64-1	SHBQ8504	99%	5,014.8 μg/mL	+/- 173.2883
2	2-Butanone (MEK)	78-93-3	SHBQ4704	99%	5,012.4 μg/mL	+/- 173.2054
3	4-Methyl-2-pentanone (MIBK)	108-10-1	SHBP9200	99%	5,011.6 μg/mL	+/- 173.1777
4	2-Hexanone	591-78-6	MKCQ6663	99%	5,013.0 μg/mL	+/- 173.2261

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

Solvent:

P&T Methanol/Water (90:10)

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

Purity 99%

Column:

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

Carrier Gas:

hydrogen-constant pressure 11.0 psi.

Temp. Program:

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

Inj. Temp:

200°C

Det. Temp:

250°C

Det. Type:

FID

Split Vent:

40 ml/min

Inj. Vol

1μΙ



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

Dakota Parson - Operations Technician I

Date Mixed:

22-Apr-2024

Balance Serial #

B707717271

Jennifer Pollino - Operations Tech III - ARM QC

Date Passed:

24-Apr-2024

Expiration Notes:

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

Purity Notes:

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

Certified Uncertainty Value Notes:

The uncertainties are determined in accordance with ISO 17034 and Guide 35. The certified expanded
uncertainty value includes gravimetric uncertainty, homogeneity between-ampul uncertainty, storage stability
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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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Dec 12/17/24 **CERTIFIED REFERENCE MATERIAL**

30019





Certificate of Analysis chromatographic plus

ISO/IEC 17025 Appredit

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V14697-to-147

FOR LABORATORY USE ONLY-READ SDS PRIOR TO USE.

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

Catalog No.:

30006

Lot No.: A0210618

Description:

VOA Calibration Mix #1

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

1mL/ampul

Container Size:

2 mL

Pkg Amt:

> 1 mL

Expiration Date:

July 31, 2027

Storage:

0°C or colder

Ship:

Ambient

CERTIFIED VALUES

Elution Order	Compound	CAS#	Lot#	Purity	Grav. Conc. (weight/volume)	Expanded Uncertainty (95% C.L.; K=2)
1	Acetone	67-64-1	SHBQ8504	99%	5,014.8 μg/mL	+/- 173.2883
2	2-Butanone (MEK)	78-93-3	SHBQ4704	99%	5,012.4 μg/mL	+/- 173.2054
3	4-Methyl-2-pentanone (MIBK)	108-10-1	SHBP9200	99%	5,011.6 μg/mL	+/- 173.1777
4	2-Hexanone	591-78-6	MKCQ6663	99%	5,013.0 μg/mL	+/- 173.2261

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

Solvent:

P&T Methanol/Water (90:10)

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

Purity 99%

Column:

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

Carrier Gas:

hydrogen-constant pressure 11.0 psi.

Temp. Program:

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

Inj. Temp:

200°C

Det. Temp:

250°C

Det. Type:

FID

Split Vent:

40 ml/min

Inj. Vol

1μΙ



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

Dakota Parson - Operations Technician I

Date Mixed:

22-Apr-2024

Balance Serial #

B707717271

Jennifer Pollino - Operations Tech III - ARM QC

Date Passed:

24-Apr-2024

Expiration Notes:

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

Purity Notes:

- Purity and/or chemical identity are determined by one or more of the following techniques: GC/FID, HPLC, GC/μΕCD, GC/MS, LC/MS, RI, and/or melting point.
- Compounds with a listed purity of less than 99% have been weight corrected to compensate for impurities and/or salts. A
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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.
- If any undissolved material is visible inside the ampul, sonicate the unopened ampul until the material is completely dissolved.





CERTIFIED REFERENCE MATERIAL 30 mid











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Certificate of Analysis

chromatographic plus

V14727 to

FOR LABORATORY USE ONLY-READ SDS PRIOR TO USE.

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

Catalog No.:

30042

Lot No.: A0216826

Description:

502.2 Calibration Mix #1

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

Container Size:

2 mL

Pkg Amt: > 1 mL

Expiration Date:

May 31, 2031

Storage:

0°C or colder

Ship: **Ambient**

CERTIFIED VALUES

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

^{*} Expanded Uncertainty displayed in same units as Grav. Conc.

Solvent:

P&T Methanol

CAS# **Purity**

67-56-1 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:

23-Sep-2024

Balance Serial #

B707717271

Jennifer Pollino - Operations Tech III - ARM QC

Date Passed:

04-Oct-2024

Expiration Notes:

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

Purity Notes:

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

Certified Uncertainty Value Notes:

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

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

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

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

Manufacturing Notes:

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

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



CERTIFIED REFERENCE MATERIAL 30 mid











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Certificate of Analysis

chromatographic plus

V14727 to

FOR LABORATORY USE ONLY-READ SDS PRIOR TO USE.

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

Catalog No.:

30042

Lot No.: A0216826

Description:

502.2 Calibration Mix #1

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

Container Size:

2 mL

Pkg Amt: > 1 mL

Expiration Date:

May 31, 2031

Storage:

0°C or colder

Ship: **Ambient**

CERTIFIED VALUES

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

^{*} Expanded Uncertainty displayed in same units as Grav. Conc.

Solvent:

P&T Methanol

CAS# **Purity**

67-56-1 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:

23-Sep-2024

Balance Serial #

B707717271

Jennifer Pollino - Operations Tech III - ARM QC

Date Passed:

04-Oct-2024

Expiration Notes:

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

Purity Notes:

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

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

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



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CERTIFIED REFERENCE MATERIAL 30 mid









Certificate of Analysis

chromatographic plus

V14727 to

FOR LABORATORY USE ONLY-READ SDS PRIOR TO USE.

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

Catalog No.:

30042

Lot No.: A0216826

Description:

502.2 Calibration Mix #1

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

Container Size:

2 mL

Pkg Amt: > 1 mL

Expiration Date:

May 31, 2031

Storage:

0°C or colder

Ship: **Ambient**

CERTIFIED VALUES

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

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

Solvent:

P&T Methanol

CAS# **Purity**

67-56-1 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:

23-Sep-2024

Balance Serial #

B707717271

Jennifer Pollino - Operations Tech III - ARM QC

Date Passed:

04-Oct-2024

Expiration Notes:

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

Purity Notes:

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

Certified Uncertainty Value Notes:

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

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

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

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

Manufacturing Notes:

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

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



CERTIFIED REFERENCE MATERIAL









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Certificate of Analysis

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V14842 to 14846

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.: A0217535

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

Container Size: 2 mL Pkg Amt: > 1 mL

October 31, 2027

Storage: 0°C or colder
Ship: Ambient

CERTIFIED VALUES

Elution Order	Compound	CAS#	Lot#	Purity	Grav. Conc. (weight/volume)	Expanded Uncertainty * (95% C.L.; K=2)
1	tert-Butanol (TBA)	75-65-0	SHBQ8002-1	99%	50,007.5 μg/mL	+/- 717.6137

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

Solvent: P&T Methanol

Expiration Date:

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

Column:

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

Carrier Gas:

hydrogen-constant pressure 11.0 psi.

Temp. Program:

40°C (hold 2 min.) to 240°C

@ 8°C/min. (hold 5 min.)

Inj. Temp: 200°C

Det. Temp:

250°C

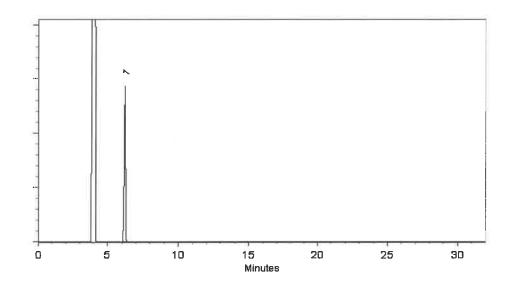
Det. Type:

FID

Split Vent: 40 ml/min

Inj. Vol

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.

Aaron Enyart - Operations Tech I

Date Mixed:

07-Oct-2024

Balance Serial #

B251644995

Brittany Federinko - Operations Tech I

Date Passed:

09-Oct-2024

Expiration Notes:

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

Purity Notes:

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

Certified Uncertainty Value Notes:

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

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

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

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

Manufacturing Notes:

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- 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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Certificate of Analysis

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V14803-V14822

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.: A0220471

Description:

Custom Vinyl Acetate Standard

Custom Vinyl Acetate Standard 8,000µg/mL, P&T Methanol, 1mL/ampul

Container Size:

Pkg Amt:

> 1 mL

Expiration Date:

June 30, 2026

Storage:

-20°C or colder

Handling:

This product is photosensitive.

Ship: On Ice

CERTIFIED VALUES

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

* Expanded 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 **1**µľ



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.

Stead Ethan Winiarski - Operations Tech I

Date Mixed:

24-Dec-2024

Balance Serial #

1127510105

Dillan Murphy - Operations Technician I

Date Passed:

02-Jan-2025

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

Expiration Notes:

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

Purity Notes:

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

Certified Uncertainty Value Notes:

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

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• 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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V14803-V14822

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.: A0220471

Description:

Custom Vinyl Acetate Standard

Custom Vinyl Acetate Standard 8,000µg/mL, P&T Methanol, 1mL/ampul

Container Size:

Pkg Amt:

> 1 mL

Expiration Date:

June 30, 2026

Storage:

-20°C or colder

Handling:

This product is photosensitive.

Ship: On Ice

CERTIFIED VALUES

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

* Expanded 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 **1**µľ



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Stead Ethan Winiarski - Operations Tech I

Date Mixed:

24-Dec-2024

Balance Serial #

1127510105

Dillan Murphy - Operations Technician I

Date Passed:

02-Jan-2025

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

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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Certified Uncertainty Value Notes:

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uncertainty value includes gravimetric uncertainty, homogeneity between-ampul uncertainty, storage stability
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Manufacturing Notes:

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CERTIFIED REFERENCE MATERIAL











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Certificate of Analysis

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V14803-V14822

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.: A0220471

Description:

Custom Vinyl Acetate Standard

Custom Vinyl Acetate Standard 8,000µg/mL, P&T Methanol, 1mL/ampul

Container Size:

Pkg Amt:

> 1 mL

Expiration Date:

June 30, 2026

Storage:

-20°C or colder

Handling:

This product is photosensitive.

Ship: On Ice

CERTIFIED VALUES

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

* Expanded 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 **1**µľ



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.

Stead Ethan Winiarski - Operations Tech I

Date Mixed:

24-Dec-2024

Balance Serial #

1127510105

Dillan Murphy - Operations Technician I

Date Passed:

02-Jan-2025

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

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.

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CERTIFIED REFERENCE MATERIAL











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Certificate of Analysis

chromatographic

V14803-V14822

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.: A0220471

Description:

Custom Vinyl Acetate Standard

Custom Vinyl Acetate Standard 8,000µg/mL, P&T Methanol, 1mL/ampul

Container Size:

Pkg Amt:

> 1 mL

Expiration Date:

June 30, 2026

Storage:

-20°C or colder

Handling:

This product is photosensitive.

Ship: On Ice

CERTIFIED VALUES

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

* Expanded 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 **1**µľ



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.

Stead Ethan Winiarski - Operations Tech I

Date Mixed:

24-Dec-2024

Balance Serial #

1127510105

Dillan Murphy - Operations Technician I

Date Passed:

02-Jan-2025

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

Expiration Notes:

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

Purity Notes:

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 correction factor is used to calculate the amount of compound necessary to achieve the desired concentration of the
 parent compound in solution.
- · Purity of isomeric compounds is reported as the sum of the isomers.
- Purity values are rounded to the nearest whole number.

Certified Uncertainty Value Notes:

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 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.

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 %	
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

Packaging Site: Phillipsburg Mfg Ctr & DC



Methanol
ULTRA RESI-ANALYZED
For Purge and Trap Analysis





V14883

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 (CH ₃ OH) (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

