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Prep Standard - Chemical Standard Summary

Order ID: Q2639

Test: VOCMS Group3

Prepbatch ID:

Sequence ID/Qc Batch ID: VY071825,VY072125,

Standard ID:

VP133175,VP133176,VP133934,VP133953,VP134145,VP134147,VP134149,VP134150,VP134151,VP134263,VP134264,VP134478,VP134479,VP134480,VP134569,VP134569,VP134742,VP134810,VP134811,VP134812,VP134814,VP134815,VP134827,VP134828,VP134829,VP134830,VP134831,VP134832,VP134833,VP134834,VP134854,VP134855,VP134856,

Chemical ID:

V12968,V13391,V13450,V13583,V13584,V13706,V13826,V14128,V14181,V14199,V14290,V14438,V14440,V14505,V14506,V14527,V14528,V14613,V14626,V14629,V14636,V14637,V14638,V14639,V14673,V14675,V14708,V14712,V14713,V14748,V14752,V14795,V14808,V14822,V14843,V14921,V14929,V14977,V15050,V15051,V15052,V15055,V15056,W3112,





VOC STANDARD PREPARATION LOG

Recipe ID	NAME	NO.	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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Recipe ID	NAME	<u>NO.</u>	Prep Date	Expiration Date	Prepared By	<u>ScaleID</u>	<u>PipetteID</u>	Supervised By Mahesh Dadoda
1738	8260 surrogate 20 ppm	<u>VP133176</u>	02/27/2025	08/27/2025	Semsettin Yesilyurt	None	None	03/04/2025

FROM 0.02000ml of V13706 + 24.99000ml of V14613 = Final Quantity: 25.000 ml





VOC STANDARD PREPARATION LOG

1917 8260 Internal standard 50 ppm VP133934 05/16/2025 11/12/2025 Semsettin Yesilyurt None None 05/21/2025	<u>R</u>	ecipe ID	<u>NAME</u>	NO.	Prep Date	Expiration Date	Prepared By	<u>ScaleID</u>	<u>PipetteID</u>	Supervised By Mahesh Dadoda
	1	1917	8260 Internal standard 50 ppm	<u>VP133934</u>	05/16/2025	11/12/2025		None	None	05/21/2025

FROM	0.10000ml of V14290 + 49.90000ml of V14921	= 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
218	BFB, 25PPM	<u>VP133953</u>	05/19/2025	11/09/2025	Semsettin Yesilyurt	None	None	05/21/2025

FROM 0.25000ml of V13391 + 24.75000ml of V14626 = Final Quantity: 25.000 ml





VOC STANDARD PREPARATION LOG

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	<u>ScaleID</u>	<u>PipetteID</u>	Supervised By Mahesh Dadoda
253	8260 Working STD (BCM)-First source, 20PPM	<u>VP134145</u>	06/06/2025	12/06/2025	Semsettin Yesilyurt	None	None	06/10/2025

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	<u>ScaleID</u>	<u>PipettelD</u>	Supervised By Mahesh Dadoda
252	8260 Working STD (BCM)-First source, 100PPM	<u>VP134147</u>	06/06/2025	12/06/2025	Semsettin Yesilyurt	None	None	06/10/2025

FROM 1.00000ml of V14673 + 19.00000ml of V14929 = Final Quantity: 20.000 ml





VOC STANDARD PREPARATION LOG

1810 8260 Working VP134149 06/06/2025 12/06/2025 Semsettin None None Std(2-CVF)-800ppm	Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	<u>ScaleID</u>	<u>PipetteID</u>	Supervised By Mahesh Dadoda
Gla(2 o v 2) occupant	1810	8260 Working Std(2-CVE)-800ppm	<u>VP134149</u>	06/06/2025	12/06/2025	Semsettin Yesilyurt	None	None	06/10/2025

FROM 1.00000ml of V14636 + 1.00000ml of V14637 + 1.00000ml of V14638 + 1.00000ml of V14639 + 46.00000ml of V14929 = 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>VP134150</u>	06/06/2025	12/06/2025	Semsettin Yesilyurt	None	None	06/10/2025

FROM 7.50000ml of V14929 + 12.50000ml of VP134149 = Final Quantity: 20.000 ml





VOC STANDARD PREPARATION LOG

Recip	<u>NAME</u>	NO.	Prep Date	Expiration Date	Prepared By	<u>ScaleID</u>	<u>PipetteID</u>	Supervised By Mahesh Dadoda
1812	8260 Working Std(2-CVE)-100ppm	<u>VP134151</u>	06/06/2025	12/06/2025	Semsettin Yesilyurt	None	None	06/10/2025

FROM	0.25000ml of V14639 + 24.75000ml of V14929 = Final Quantity: 25.000 m
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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
1817	8260 Working Std(2-CVE)-SS, 800ppm	<u>VP134263</u>	06/11/2025	11/12/2025	Semsettin Yesilyurt	None	None	06/12/2025

FROM 0.60000ml of V13584 + 1.00000ml of V13583 + 18.40000ml of V14921 = Final Quantity: 20.000 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
1819	8260 Working Std(2-CVE)-SS, 500ppm	<u>VP134264</u>	06/11/2025	11/12/2025	Semsettin Yesilyurt	None	None	06/12/2025

FROM 1.87500ml of V14921 + 3.12500ml of VP134263 = Final Quantity: 5.000 ml

Recipe ID	<u>NAME</u>	<u>NO.</u>	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>VP134478</u>	06/24/2025	08/09/2025	Semsettin Yesilyurt	None	None	06/26/2025

FROM

1.00000ml of V14527 + 1.00000ml of V14528 + 1.00000ml of V14708 + 1.00000ml of V14748 + 1.00000ml of V14752 +

Quantity: 25.000 ml





VOC STANDARD PREPARATION LOG

Recipe ID	NAME	<u>NO.</u>	Prep Date	Expiration Date	Prepared By	<u>ScaleID</u>	<u>PipetteID</u>	Supervised By Mahesh Dadoda
244	8260 Calibration Working STD Mix-First source, 100PPM	<u>VP134479</u>	06/24/2025	08/09/2025	Semsettin Yesilyurt	None	None	06/26/2025

FROM	5.62500ml of V14929 + 9.37500)ml of VP134478 =	Final Quantity: 15.000 ml
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Recipe ID	<u>NAME</u>	NO.	Prep Date	Expiration Date	Prepared By	<u>ScaleID</u>	<u>PipetteID</u>	Supervised By Mahesh Dadoda
245	8260 Calibration Working STD Mix-First source, 20PPM	<u>VP134480</u>	06/24/2025	08/09/2025	Semsettin Yesilyurt	None	None	06/26/2025

FROM 17.50000ml of V14929 + 2.50000ml of VP134478 = 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
259	8260 Calibration Working STD Mix-Second source, 160PPM	<u>VP134568</u>	06/30/2025	08/16/2025	Semsettin Yesilyurt	None	None	07/15/2025

FROM 0.16000ml of V13450 + 0.80000ml of V13826 + 0.80000ml of V14128 + 0.80000ml of V14181 + 0.80000ml of V14795 + 0.80000ml of V14977 + 1.60000ml of V14199 + 4.24000ml of V14929 = Final Quantity: 10.000 ml

Recipe ID	NAME.	<u>NO.</u>	Prep Date	Expiration Date	Prepared By	<u>ScaleID</u>	<u>PipetteID</u>	Supervised By Mahesh Dadoda
260	8260 Calibration Working STD Mix-Second source, 100PPM	<u>VP134569</u>	06/30/2025	08/16/2025	Semsettin Yesilyurt	None	None	07/15/2025

FROM 1.87500ml of V14929 + 3.12500ml of VP134568 = Final Quantity: 5.000 ml





VOC STANDARD PREPARATION LOG

Recipe ID	<u>NAME</u>	NO.	Prep Date	Expiration Date	Prepared By	<u>ScaleID</u>	<u>PipetteID</u>	Supervised By Mahesh Dadoda
262	8260 Working STD (BCM)-Second source, 100PPM	<u>VP134742</u>	07/14/2025	01/07/2026	Semsettin Yesilyurt	None	None	07/23/2025

FROM	1.00000ml of V12968 + 9.00000ml of V14629 = Final Quantity: 10.000 ml	
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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>VP134810</u>	07/18/2025	08/16/2025	Semsettin Yesilyurt	None	None	07/23/2025

FROM 1.00000ml of V15052 + 1.50000ml of V15050 + 1.50000ml of V15051 + 21.00000ml of V14629 = Final Quantity: 25.000 ml





VOC STANDARD PREPARATION LOG

Recipe ID	<u>NAME</u>	<u>NO.</u>	Prep Date	Expiration Date	Prepared By	<u>ScaleID</u>	<u>PipetteID</u>	Supervised By Mahesh Dadoda
56	8260 Working STD (Acrolein) -first source, 500PPM	<u>VP134811</u>	07/18/2025	08/16/2025	Semsettin Yesilyurt	None	None	07/23/2025

FROM	5.62500ml of V14629 + 9.37500ml of VP134810	= Final Quantity: 15.000 ml
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Recipe ID	<u>NAME</u>	<u>NO.</u>	Prep Date	Expiration Date	Prepared By	<u>ScaleID</u>	<u>PipetteID</u>	Supervised By Mahesh Dadoda
180	8260 Working STD (Acrolein)-First source, 100PPM	<u>VP134812</u>	07/18/2025	08/16/2025	Semsettin Yesilyurt	None	None	07/23/2025

FROM 17.50000ml of V14629 + 2.50000ml of VP134810 = Final Quantity: 20.000 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
263	(Acrolein)-Second source,	<u>VP134814</u>	07/18/2025	08/15/2025	Semsettin Yesilyurt	None	None	07/23/2025
	800PPM				-			

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	<u>ScaleID</u>	<u>PipetteID</u>	Supervised By Mahesh Dadoda
264	8260 Working STD (Acrolein)-Second source,	<u>VP134815</u>	07/18/2025	08/15/2025	Semsettin Yesilyurt	None	None	07/23/2025

500PPM 1.87500ml of V14629 + 3.12500ml of VP134814 = Final Quantity: 5.000 ml





VOC STANDARD PREPARATION LOG

732 BFB TUNE CHECK - SOIL VP134827 07/18/2025 07/19/2025 Amit Patel None	Recipo ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	<u>ScaleID</u>	<u>PipetteID</u>	Supervised By Mahesh Dadoda
	732	BFB TUNE CHECK - SOIL	<u>VP134827</u>	07/18/2025	07/19/2025	Amit Patel	None	None	07/23/2025

Recipe ID	NAME	<u>NO.</u>	Prep Date	Expiration Date	Prepared By	<u>ScaleID</u>	<u>PipetteID</u>	Supervised By Mahesh Dadoda
267	5 PPB ICC, 8260-SOIL	<u>VP134828</u>	07/18/2025	07/19/2025	Amit Patel	None	None	07/23/2025

FROM 4.98800ml of W3112 + 0.00130ml of VP133176 + 0.00130ml of VP134145 + 0.00130ml of VP134151 + 0.00130ml of VP134480

^{+ 0.00130}ml of VP134812 + 0.00500ml of VP133934 = Final Quantity: 5.000 ml





VOC STANDARD PREPARATION LOG

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	<u>ScaleID</u>	<u>PipettelD</u>	Supervised By Mahesh Dadoda
269	10 PPB ICC, 8260-SOIL	<u>VP134829</u>	07/18/2025	07/19/2025	Amit Patel	None	None	07/23/2025

FROM

 $4.98000 ml \ of \ W3112 + 0.00250 ml \ of \ VP133176 + 0.00250 ml \ of \ VP134145 + 0.00250 ml \ of \ VP134151 + 0.00250 ml \ of \ VP134480 + 0.00250 ml \ of \ VP134151 + 0.00250 ml \ of \$

Recipe				Expiration	<u>Prepared</u>			Supervised By
<u>ID</u>	NAME	<u>NO.</u>	Prep Date	<u>Date</u>	<u>By</u>	<u>ScaleID</u>	<u>PipetteID</u>	Mahesh Dadoda
270	20 PPB ICC, 8260-SOIL	<u>VP134830</u>	07/18/2025	07/19/2025	Amit Patel	None	None	
								07/23/2025

FROM

 $4.96500 ml \ of \ W3112 + 0.00500 ml \ of \ VP133176 + 0.00500 ml \ of \ VP133934 + 0.00500 ml \ of \ VP134145 + 0.00500 ml \ of \ VP134151$

^{+ 0.00250}ml of VP134812 + 0.00500ml of VP133934 = Final Quantity: 5.000 ml

^{+ 0.00500}ml of VP134480 + 0.00500ml of VP134812 = Final Quantity: 5.000 ml





VOC STANDARD PREPARATION LOG

273 50 PPB ICC, 8260-SOIL VP134831 07/18/2025 07/19/2025 Amit Patel None None	Recipe <u>ID</u>	<u>NAME</u>	<u>NO.</u>	Prep Date	Expiration Date	Prepared By	<u>ScaleID</u>	<u>PipetteID</u>	Supervised By Mahesh Dadoda
	273	50 PPB ICC, 8260-SOIL	<u>VP134831</u>	07/18/2025	07/19/2025	Amit Patel	None	None	07/23/2025

FROM

 $4.98000 ml \ of \ W3112 + 0.00250 ml \ of \ VP133175 + 0.00250 ml \ of \ VP134147 + 0.00250 ml \ of \ VP134150 + 0.00250 ml \ of \ VP134479 + 0.00250 ml \ of \ VP134150 + 0.00250 ml \ of \ VP134179 + 0.00250 ml \ of \ VP134150 + 0.00250 ml \ of \ VP134179 + 0.00250 ml \ of \ VP134150 + 0.00250 ml \ of \ VP134179 + 0.00250 ml \ of \$

+ 0.00250ml of VP134811 + 0.00500ml of VP133934 = Final Quantity: 5.000 ml

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
280			07/18/2025		Amit Patel	None	None	Mahesh Dadoda
								07/23/2025

FROM

 $4.96500 ml \ of \ W3112 + 0.00500 ml \ of \ VP133175 + 0.00500 ml \ of \ VP133934 + 0.00500 ml \ of \ VP134147 + 0.00500 ml \ of \ VP134150 + 0.00500 ml \ of \ VP134150 + 0.00500 ml \ of \ VP134150 + 0.00500 ml \ of \ VP134147 + 0.00500 ml \ of \ VP134150 + 0.00500 ml \ of \$

+ 0.00500ml of VP134479 + 0.00500ml of VP134811 = Final Quantity: 5.000 ml





VOC STANDARD PREPARATION LOG

1653 150 PPB ICC,8260-SOIL <u>VP134833</u> 07/18/2025 07/19/2025 Amit Patel None None	Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	<u>ScaleID</u>	<u>PipetteID</u>	Supervised By Mahesh Dadoda
	1653	150 PPB ICC,8260-SOIL	<u>VP134833</u>	07/18/2025	07/19/2025	Amit Patel	None	None	07/23/2025

FROM 4.95000ml of W3112 + 0.00500ml of VP133934 + 0.00750ml of VP133175 + 0.00750ml of VP134147 + 0.00750ml of VP134150

4.000001111 01 VV0112 · 0.000001111 01 V1 100004 · 0.007001111 01 V1 100170 · 0.007001111 01 V1 104147 · 0.00700	1111 OI VI 10-1100
+ 0.00750ml of VP134479 + 0.00750ml of VP134811 = Final Quantity: 5.000 ml	

						<u>PipetteID</u>	Mahesh Dadoda
287 50 PPB ICV, 8260-SOIL	<u>VP134834</u>	07/18/2025	07/19/2025	Amit Patel	None	None	07/23/2025

FROM

^{4.98000} ml of W3112 + 0.00250 ml of VP133175 + 0.00250 ml of VP134264 + 0.00250 ml of VP134569 + 0.00250 ml of VP134742 + 0.00250 ml of VP134769 + 0.00250 ml of VP134760 + 0.00250 ml of VP134760

^{+ 0.00250}ml of VP134815 + 0.00500ml of VP133934 = Final Quantity: 5.000 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
732	BFB TUNE CHECK - SOIL	<u>VP134854</u>	07/21/2025	07/22/2025	Amit Patel	None	None	
								07/23/2025

FROM 4.99800ml of W3112 + 0.00200ml of VP133953 = Final Quantity: 5.000 ml

Recipe ID	NAME	<u>NO.</u>	Prep Date	Expiration Date	Prepared By	<u>ScaleID</u>	<u>PipetteID</u>	Supervised By Mahesh Dadoda
773	50 PPB CCC, 8260-SOIL	<u>VP134855</u>	07/21/2025	07/22/2025	Amit Patel	None	None	07/23/2025

FROM 4.98000ml of W3112 + 0.00250ml of VP133175 + 0.00250ml of VP134147 + 0.00250ml of VP134150 + 0.00250ml of VP134479

^{+ 0.00250}ml of VP134811 + 0.00500ml of VP133934 = 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>PipetteID</u>	Supervised By Mahesh Dadoda
773	50 PPB CCC, 8260-SOIL	<u>VP134856</u>	07/21/2025	07/22/2025	Amit Patel	None	None	07/23/2025

FROM

 $^{4.98000} ml \ of \ W3112 + 0.00250 ml \ of \ VP133175 + 0.00250 ml \ of \ VP134147 + 0.00250 ml \ of \ VP134150 + 0.00250 ml \ of \ VP134479 + 0.00250 ml \ of \ VP134150 + 0.00250 ml \ of \ VP134179 + 0.00250 ml \ of \ VP134150 + 0.00250 ml \ of \ VP134179 + 0.00250 ml \ of \ VP134150 + 0.00250 ml \ of \ VP134179 + 0.00250 ml \ of \$

^{+ 0.00250}ml of VP134811 + 0.00500ml of VP133934 = Final Quantity: 5.000 ml



Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Absolute Standards, Inc.	70046 / Bromochloromethane Std. sol/methanol 1000ppm	070122	01/14/2026	07/14/2025 / SAM	07/06/2022 / SAM	V12968
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 /	Chemtech Lot #
Restek	30470 / VOA Stock Solution, tert-butanol std, 1mL, P&TM	A0191703	11/15/2025	05/15/2025 / SAM	01/23/2023 / SAM	V13450
Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Absolute Standards, Inc.	95318 / 2-Chloroethyl Vinyl Ether (Min = 5)	111722	11/17/2025	06/11/2025 / SAM	01/30/2023 / SAM	V13583
Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Absolute Standards, Inc.	95318 / 2-Chloroethyl Vinyl Ether (Min = 5)	111722	11/17/2025	06/11/2025 / SAM	01/30/2023 / SAM	V13584
Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date /	Chemtech Lot #
Restek	555582 / Custom Mixture, 8260 A/B Surrogate Mix [CS 5179-2]	A0196865	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 #
Restek	30042 / VOA Mix,500 series method 502.2 Calibration Std #1 gases, 2000uq/ml, PTM, 1ml	A0197644	12/23/2025	06/23/2025 / SAM	05/31/2023 / SAM	V13826
Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Absolute Standards, Inc.	95319 / Revised Additions Mix (Min = 5)	011624	12/23/2025	06/23/2025 / SAM	01/17/2024 / SAM	V14128
Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Absolute Standards, Inc.	95317 / Universal VOA Mega Mix (Min order = 5)	021524	12/23/2025	06/23/2025 / SAM	02/20/2024 / SAM	V14181
Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Restek	30006 / VOA Mix, CLP method Calibration Std #1 ketones 5000uq/ml, PTM, 1ml	A0200785	11/07/2025	05/07/2025 / SAM	02/28/2024 / SAM	V14199
Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Restek	555581 / Custom Standard, 8260 Internal Std [CS 5179-1]	A0210184	12/12/2025	12/12/2024 / SAM	04/15/2024 / SAM	V14290
Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Restek	30489 / VOA Mix, 8260B Acetates Mix, P&TM, 1mL	A0209618	09/30/2025	06/23/2025 / SAM	08/15/2024 / SAM	V14438



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	09/30/2025	06/23/2025 / SAM	08/15/2024 / SAM	V14440
Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Absolute Standards, Inc.	95317 / Universal VOA Mega Mix (Min order = 5)	021624	12/23/2025	06/23/2025 / SAM	09/17/2024 / SAM	V14505
Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Absolute Standards, Inc.	95317 / Universal VOA Mega Mix (Min order = 5)	021624	12/23/2025	06/23/2025 / SAM	09/17/2024 / SAM	V14506
Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date /	Chemtech Lot #
Absolute Standards, Inc.	95319 / Revised Additions Mix (Min = 5)	091724	12/23/2025	06/23/2025 / SAM	09/18/2024 / SAM	V14527
Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date /	Chemtech Lot #
Absolute Standards, Inc.	95319 / Revised Additions Mix (Min = 5)	091724	12/23/2025	06/23/2025 / SAM	09/18/2024 / SAM	V14528
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 #
Seidler Chemical	BA9077-02 / Methanol, Purge/Trap (cs=6x1L)	2310762004	11/09/2025	05/09/2025 / SAM	11/26/2024 / SAM	V14626
Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Seidler Chemical	BA9077-02 / Methanol, Purge/Trap (cs=6x1L)	2310762004	01/09/2026	07/07/2025 / SAM	11/26/2024 / SAM	V14629
Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Absolute Standards, Inc.	/ 2-Chloroethyl vinyl ether	120524	12/06/2025	06/06/2025 / SAM	12/06/2024 / SAM	V14636
Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Absolute Standards, Inc.	/ 2-Chloroethyl vinyl ether	120524	12/06/2025	06/06/2025 / SAM	12/06/2024 / SAM	V14637
Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date /	Chemtech Lot #
Absolute Standards, Inc.	/ 2-Chloroethyl vinyl ether	120524	12/06/2025	06/06/2025 / SAM	12/06/2024 / SAM	V14638
Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date /	Chemtech Lot #
Absolute Standards, Inc.	/ 2-Chloroethyl vinyl ether	120524	12/06/2025	06/06/2025 / SAM	12/06/2024 / SAM	V14639



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	A0214960	12/06/2025	06/06/2025 / SAM	12/09/2024 / SAM	V14673
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	A0214960	12/06/2025	06/06/2025 / SAM	12/09/2024 / SAM	V14675
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	12/23/2025	06/23/2025 / SAM	12/17/2024 / SAM	V14708
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	12/23/2025	06/23/2025 / SAM	12/17/2024 / SAM	V14712
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	12/23/2025	06/23/2025 / SAM	12/17/2024 / SAM	V14713
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	12/23/2025	06/23/2025 / SAM	12/17/2024 / SAM	V14748



ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
30042 / VOA Mix,500 series method 502.2 Calibration Std #1 gases, 2000uq/ml, PTM, 1ml	A0216826	12/23/2025	06/23/2025 / SAM	12/17/2024 / SAM	V14752
ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
555408 / Custom Standard, Vinyl Acetate Standard w/ Grav [CS 5066-6] TWO SEPARATE LOTS	A0220563	12/23/2025	06/23/2025 / SAM	01/08/2025 / SAM	V14795
ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
555408 / Custom Standard, Vinyl Acetate Standard w/ Grav [CS 5066-6] TWO SEPARATE LOTS	A0220471	12/23/2025	06/23/2025 / SAM	01/08/2025 / SAM	V14808
ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
555408 / Custom Standard, Vinyl Acetate Standard w/ Grav [CS 5066-6] TWO SEPARATE	A0220471	12/23/2025	06/23/2025 / SAM	01/08/2025 / SAM	V14822
ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date /	Chemtech Lot #
30470 / VOA Stock Solution, tert-butanol std, 1mL, P&TM	A0217535	11/12/2025	05/12/2025 / SAM	01/21/2025 / SAM	V14843
ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
BA9077-02 / Methanol, Purge/Trap (cs=6x1L)	24G0262002	11/12/2025	05/12/2025 / SAM	05/09/2025 / SAM	V14921
	series method 502.2 Calibration Std #1 gases, 2000uq/ml, PTM, 1ml ItemCode / ItemName 555408 / Custom Standard, Vinyl Acetate Standard w/ Grav [CS 5066-6] TWO SEPARATE LOTS ItemCode / ItemName 555408 / Custom Standard, Vinyl Acetate Standard w/ Grav [CS 5066-6] TWO SEPARATE LOTS ItemCode / ItemName 555408 / Custom Standard, Vinyl Acetate Standard w/ Grav [CS 5066-6] TWO SEPARATE LOTS ItemCode / ItemName 30470 / VOA Stock Solution, tert-butanol std, 1mL, P&TM ItemCode / ItemName BA9077-02 / Methanol,	series method 502.2 Calibration Std #1 gases, 2000uq/ml, PTM, 1ml ItemCode / ItemName	Series method 502.2 Calibration Std #1 gases, 2000uq/ml, PTM, 1ml	Series method 502.2 Calibration Std #1 gases, 2000uq/ml, PTM, 1ml	Series method 502.2 Calibration Std #1 gases, 2000uq/ml, PTM, 1ml



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)	24G0262002	12/06/2025	06/06/2025 / SAM	05/09/2025 / SAM	V14929
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	A0220531	12/23/2025	06/23/2025 / SAM	05/19/2025 / SAM	V14977
Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Absolute Standards, Inc.			08/16/2025	07/17/2025 / SAM	07/17/2025 / SAM	V15050
Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Absolute Standards, Inc.	91980 / Acrolin Std (Min = 5)	071625	08/16/2025	07/17/2025 / SAM	07/17/2025 / SAM	V15051
Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date /	Chemtech Lot #
Absolute Standards, Inc.	91980 / Acrolin Std (Min = 5)	071625	08/16/2025	07/17/2025 / SAM	07/17/2025 / SAM	V15052
Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date /	Chemtech Lot #
Absolute Standards, Inc.	91980 / Acrolin Std (Min = 5)	071525	08/15/2025	07/17/2025 / SAM	07/17/2025 / SAM	V15055



Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Absolute Standards, Inc.	91980 / Acrolin Std (Min = 5)	071525	08/15/2025	07/17/2025 / SAM	07/17/2025 / SAM	V15056

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

Methanol
ULTRA RESI-ANALYZED
For Purge and Trap Analysis





Material No.: 9077-02

Batch No.: 2310762004

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

Revision No.: 0

Certificate of Analysis

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

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

Country of Origin: USA

Packaging Site: Phillipsburg Mfg Ctr & DC

Ken Koehnlein

Methanol
ULTRA RESI-ANALYZED
For Purge and Trap Analysis





Material No.: 9077-02

Batch No.: 2310762004

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

Revision No.: 0

Certificate of Analysis

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

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

Country of Origin: USA

Packaging Site: Phillipsburg Mfg Ctr & DC

Ken Koehnlein

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



71 Certified Reference Material CRM



TIC: 95319.D

1511-885-008 Absolute Standards, Inc.

www.absolutestandards.com

Abundance

T) CV2# O2HV bET (LNV) FD20	Conc (µg/mL) (++-) (µg/mL	Weight(g)	(g)trigisW	Purity	(%)	Conc (µg/mL)	Number	KM#	Compound
(Expanded Actual Discretainty	Actual	Target	Uncertainty	Purity	IsnimoM	וסן		
				Flask Uncertainty	150.0	100.0	ed to (mL):	tulib bas b	Weight(s) shown below were combined
Jedu Jean 10162	Reviewed		J	gmistroon[] sonslæff	90-39		738110 Refrigerate (beinsV BTU3	: (: e	Expiration Date (Expiration Date (Storage Mount) Expiration (Mg/mL) (Mg/mL) (Mg/mL) (Mg/mL)
ted By: Preshant Chauftan	## Talumo1	Lot#	Solvent(s): Methanol	3			95319 Revised Add	:1	Part Number Lot Number Description
									RTIFIED WEIGHT REPORT

111	aneznadiyhtemarteT-4,6,2,1	164	roqa	2000	26	2.0	0.21511	0.21522	0.1002	7.8	488-23-3	A/N	orl-rat 6408mg/kg
10.	Tetrahydrofuran	380	SHBH8330	10000	6'66	S.0	2S100.1	1.00200	3,70001	6.04	6-66-601	(H8/cm/gm062) mqq 0S	galvemozat ten-ho
·6	Propionitrile	348	1395468	20000	66	S.0	170S0.S	2,02150	8.7000S	8.18	107-12-0	Y/N	gs/gmec ter-ho
.8	Methyl tert-butyl ether (MTBE)	503	21880	2000	66	S.0	0.20207	0.20227	2002.0	2.8	1634-04-4	AW	gs/g4 tsr-no
·Z	Methylcyclohexane	1627	Veelopahs	2000	66	S.0	0.20207	0.20230	S.S00S.3	2.8	2-78-801	A/N	orl-mus 2250mg/kg
'9	Hexachloroethane	166	12604HBV	2000	66	S.0	0.20207	0.20221	4.100S	S.8	1-27-78	(nbis)(H8/Em/gm01) mqq t	бжбш0.46) бd6-µо
.6	-Ansxoid-4,1	EYE	03853KE	40000	66	S.0	4.04142	4.04213	0.70004	162.5	1-16-621	(nixis)(H8/Em/gm0e) mqq 3S	рАфт0072 гит-ho
4	Di-isopropyl ether (DIPE)	∠86	00412MX	2000	66	S.0	70202.0	0.20227	2002.0	2.8	108-20-3	500 ppm (2100mg/m3/8H)	gAlgm0748 ten-ho
3.	Cyclohexane	1053	28930	2000	66	S.0	0.20207	0.20222	S.100S	2.8	110-82-7	(H8/Em/gm0301) mqq 00E	phgm207S1 isi-ho
5.	1-Chlorobutane	1072	MKCM5711	2000	66'66	S.0	7000S.0	0.20035	8.2002	1.8	E-69-601	Y/N	orl-rat 2670mg/kg
4	Acrylonitrile	L	4718CK	10000	66	S.0	1.01035	1.01080	10004.4	9.04	1-61-701	AW	gx/gm 87 isi-ho

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

ent Result,"

		00.00	00.22	00.02	45.00	40.00	35.00	30.00	S2:00	20,00	15.00	10.00	o <amit< th=""></amit<>
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46.44	Hexachloroethane			844	· ·				ellebrane and and and and and and and and and and	SH OF	13,57	į	200000
₽8.9Z	enexoiG-₽,1			100					24,85	T			
24.84	Methylcyclohexane									4554544	80		10000001
20.83	1-Chlorobutane			29,12						THE STATE OF	950		
82.02	Cyclohexane								8550000			ì	1200000
20.17	nsruìorbyderdeT				50.				2010		13,79	į	
18.53	elitinoiqorq	- 1					utes. Anal	· •	200		OL O		- 0000002
12.44	Di-isopropyl ether	-					00°C (8.75 Detect		Section 2	81,02		1	
67.E1	Acrylonitrile						irts miss mu		110.00000			Î	2200000
13,56	Methyl tert-butyl ether (MTBE)	X	OI mm25.0	X m08) I	nmn: Voco	SD-1: Colu	Hod GC6M	Met	040040004	52,8	1	f	200000
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	at and under appropriate laboratory conditions.		opule, should	ns gninaqo r	afte , abrabne.				Per			doorah	

Absolute Standards, Inc.

800-368-1131

www.absolutestandards.com



Certified Reference Material CRM



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

CERTIFIED WEIGHT REPORT

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

Solvent(s): Lot# Methenol EG359-USQ12

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

5E-05 Balance Uncertalisty

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

	NIST Test ID	#: BUTB			5E-05	Balance Uncerta	listy							KEVIEWEG	ву.	FOUIO L. Norlias	DATE
	Weight(s) shown below were combine	d and dilute (RM#)	d to (mL):	100.0 Da.	0.021	Flask Uncertaint	y Nominal	Purity	Purity	Uncertainty	Target	Actual	Actual	Expanded Uncertainty		SDS information nt Safety Info. On Attach	
	Compound	Part Numbe	r Number	Factor	Vol. (mL)	Conc.(ug/mL)	Conc (µg/mL)	(%)	Uncertainty	Pipette (mL)	Weight(g)	Weight(g)	Conc (µg/mL)	(+/-) (µg/mL)	CAS#	OSHA PEL (TWA)	LD50
1	Acetonitrile	(0324)	021644	NA	NA	NA	2000	99.99	0.2	NA	0.20007	0.20022	2001.5	8.1	75-05-8	40 ppm (70mg/m3/8H)	orl-rat 2450mg/kg
2	Allyl chloride (3-Chloropropene)	(0325)	102396	NA	NA	NA	2000	99	0.2	NA	0.20207	0.20222	2001.5	8.2	107-05-1	1 ppm (3mg/m3/8H)	orl-ret 700mg/kg
3	Carbon disulphide	(0060)	MKCR8561	NA	NA	NA	2000	99.99	0.2	NA	0.20007	0.20020	2001.3	8.1	75-15-0	4 ppm (12mg/m3) (skin)	orl-rat 1200mg/kg
4.	cis-1,4-Dichloro-2-butene	(1196)	14718EF	NA	NA	NA	2000	95	0.2	NA	0.21058	0.21060	2000.2	8.5	1478-11-5	N/A	N/A N/A
5.	trans-1,4-Dichloro-2-butene	(0486)	MKBP6041V	NA	NA	NA	2000	96.5	0.2	NA	0.20731	0.20734	2000.3	8.4	110-57-6 80-29-7	N/A N/A	N/A
6.	Diethyl ether	(0153)	IK18CAS0000		NA	NA	2000	99.9	0.2	NA NA	0.20025	0.20042	2002.4	8.2	97-63-2	N/A	orl-rat 14800mg/kg
7.		(0381)	06126PX SHBF8718V	NA NA	NA NA	NA NA	2000	99.5	0.2	NA NA	0.20106	0.20118	2001.2	8.1	74-88-4	5 ppm(26mg/m3/6H)(skin)	orl-rat 75mg/kg
8.	lodomethane	(0489)	15241EB	NA	NA.	NA.	2000	99.5	0.2	NA.	0.20108	0.20120	2001.4	8.1	78-83-1	50 ppm (150mg/m3/8H)	orl-ret 2460mg/kg
10.	2-Methyl-1-propanol Methacrylonitrile	(0442)	00427ET	NA	NA.	NA	2000	99	0.2	NA	0.20207	0.20209	2000.2	8.2	126-96-7	1 ppm (3mg/m3/8H)(sldn)	orl-rat 120mg/kg
11.	Methyl acrylate	(1075)	SHBK0679	NA	NA	NA	2000	99.9	0.2	NA	0.20025	0.20042	2001.7	8.1	96-33-3	10 ppm(35mg/m3/8H)(skin)	orl-ret 277mg/kg
12.	Methyl methacrylate		MKBW5137V	NA	NA	NA	2000	99.9	0.2	NA	0.20025	0.20030	2000.5	8.1	80-62-6	100 ppm (410mg/m3/8H)	orl-rat 7872mg/kg
13.	Nitrobenzene	(0228)	01213TV	NA	NA	NA	2000	89	0.2	NA	0.20207	0.20230	2002.3	8.2	96-95-3	1 ppm (5mg/m3/8H)(skin)	orl-rat 780mg/kg
14.	2-Nitropropane	(0461)	14002JX	NA	NA	NA	2000	97.3	0.2	NA	0.20560	0.20670	2001.0	8.3	79-46-9	10 ppm (35mg/m3/8H)	orl-rat 720mg/kg
15.	Pentachtoroethans	(0450)	HGA01	NA	NA	NA	2000	98	0.2	NA	0.20413	0.20415	2000.2	8.3	76-01-7	N/A	N/A
16.	1,1,2-Trichlorotrifluoroethane	(0474)	18930	NA	NA	NA	2000	99	0.2	NA	0.20207	0.20210	2000.3	8.2	76-13-1	1000 ppm (7600mg/m3/6H) N/A	orl-rat 43g/kg orl-rat 916mg/kg
17.	Bromodichloromethane	35171	101623	0.05	6.00	40001.7	2000	NA	NA	0.017	NA NA	NA NA	1999.6	22.9	75-27-4	N/A	ori-rat 848mg/kg
18.	Dibromoch/oromethane	35171	101623	0.05	5.00	40002.1	2000	NA	NA NA	0.017	NA NA	NA NA	1999.6	22.9	156-59-2	N/A	N/A
19.	cis-1,2-Dichloroethene	35171	101823	0.05	5.00	40003.1	2000	NA	NA NA	0.017	NA NA	NA NA	1999.6	23.0	156-60-5	N/A	orl-rat 1235mg/kg
20.	trans-1,2-Dichloroethene	35171	101823	0.05	5.00	40002.4	2000	NA NA	NA NA	0.017	NA NA	NA NA	1999.6	22.9	75-09-2	500 ppm	orl-rat 820mg/kg
21.	Methylene chloride	35171	101823	0.05	5.00	40002.8 20001.6	2000	NA NA	NA NA	0.017	NA.	NA NA	1999.7	20.4	75-35-4	1 ppm (4mg/m3/8H)	orl-rat 200mg/kg
22,	1,1-Dichloroethene	32251 95321	102023	0.10	10.00	20001.8	2000	NA.	NA.	0.042	NA NA	NA.	1999.8	20.5	75-25-2	0.5 ppm (5mg/m3) (skin)	orl-ret 933mg/kg
23. 24.	Bromoferm Carbon tetrachloride	95321	020724	0.10	10.00	20003.2	2000	NA	NA	0.042	NA NA	NA	1909.B	20.4	56-23-6	2 ppm (12.6mg/m3/8H)	ori-rat 2350mg/kg
25.	Chloroform	95321	020724	0.10	10.00	20024.0	2000	NA	NA	0.042	NA	NA	2001.9	20.5	67-66-3	50 ppm (240mg/m3) (CL)	orl-ret 906mg/kg
26.	Dibromomethane	95321	020724	0.10	10.00	20002.9	2000	NA	NA	0.042	NA	NA	1990.8	20.5	74-95-3	N/A	orf-rat 106mg/kg
27.	1,1-Dichioroethane	95321	020724	0.10	10.00	20003.4	2000	NA	NA	0.042	NA	NA	1999.8	20.5	75-34-3	100 ppm	orl-rat 725mg/kg
28.	2,2-Dichloropropane	95321	020724	0.10	10.00	20003.4	2000	NA	NA	0.042	NA	NA	1999.8	20.4	594-20-7	N/A	NA
29.	Tetrachioroethene	95321	020724	0.10	10.00	20201.1	2000	NA	NA	0.042	NA	NA	2019.6	20.6	127-18-4	25 ppm (170mg/m3/6H)(final)	orl-rat 2629mg/kg
30.	1,1,1-Trichloroethane	95321	020724	0.10	10.00	20003.0	2000	NA	NA	0.042	NA	NA	1999.8	20.5	71-55-6	350 ppm (1900mg/m3/6H)	orl-ret 10300mg/kg
31.	1,2-Dibromo-3-chioropropane	35161	112322	0.05	5.00	40016.5	2000	NA	NA	0.017	NA	NA	2000.3	22.9	96-12-8	0.001 ppm	orl-rat 170mg/kg
32.	1,2-Dibromosthane	36161	112322	0.05	5.00	40024.8	2000	NA	NA	0.017	NA	NA.	2000.7	22.9	108-83-4	20 ppm (8H)	orf-rat 108mg/kg
33.	1,2-Dichloroethane	35161	112322	0.05	5.00	40018.0	2000	NA	NA	0.017	NA	NA	2000.4	22.9	107-08-2	50 ppm (8H)	ori-rat 670mg/kg
34.	1,2-Dichloropropane	35161	112322	0.05	5.00	40051.0	2000	NA	NA	0.017	NA	NA	2002.0	22.9	78-87-5	75 ppm (350mg/m3/8H)	ori-ral 1947/mg/kg unr-mus 3600/mg/kg
35.	1,3-Dichloropropane	35161	112322	0.05	5.00	40005.9	2000	NA	NA	0.017	NA	NA	1999.8	22.9	142-28-9 583-58-6	N/A N/A	N/A
36.	1,1-Dichloropropene	35161	112322	0.05	5.00	40012.1	2000	NA	NA NA	0.017	NA NA	NA NA	2000.0	23.0	10061-01-6	N/A	N/A
	cis-1,3-Dichloropropene	35161	112322	0.05	5.00	40010.0	2000	NA	NA NA	0.017	NA NA	NA NA	2000.4	23.0	10061-02-6	N/A	N/A
38.	trane-1,3-Dichloropropene	35161	112322	0.05	5.00	40017.6	2000	NA NA	NA.	0.017	NA	NA NA	2000.4	29.7	87-68-3	0.02 ppm (0.24mg/m3/8H)	orl-rat 82mg/kg
39.	Hexachloro-1,3-butadiene	35161 35161	112322	0.05	5.00	40021.9	2000	NA	NA NA	0.017	NA	NA.	2000.1	22.9	630-20-6	N/A	orl-ret 670mg/kg
41.	1,1,2-Tetrachioroethane 1,1,2-Tetrachioroethane	35161	112322	0.05	5.00	40007.5	2000	NA	NA	0.017	NA	NA	1999.9	22.9	79-34-5	5 ppm (35mg/m3/9H)(skin)	ori-rat 800mg/kg
42.	1,1,2-Trichloroethane	35161	112322	0.05	5.00	40006.8	2000	NA	NA	0.017	NA	NA	1999.8	23.0	79-00-5	10 ppm (45mg/m3/8H)(sldn)	orl-rat 836mg/kg
43.	Trichloroethene	35161	112322	0.05	5.00	40029.0	2000	NA	NA	0.017	NA	NA	2000.9	22.9	79-01-6	50 ppm (270mg/m3/8H)	orl-mus 2402mg/kg
44.	1,2,3-Trichloropropane	35161	112322	0.05	5.00	40007.5	2000	NA	NA	0.017	NA	NA	1999.9	22.9	96-18-4	10 ppm (60mg/m3/8H)	orl-rest 149.firmg/kg
45.	Benzene	35162	050823	0.05	5,00	40005.0	2000	NA	NA	0.017	NA	NA	1999.7	22.9	71-43-2	1 ppm	ort-rat 4894mg/kg
46.	Bromobenzene	35162	050823	0.05	5.00	40006.9	2000	NA	NA	0.017	NA	NA	1999.8	22.9	108-86-1	N/A	orl-rat 2999mg/kg
47.	n-Butyl benzene	35162	050823	0.05	5.00	40003.8	2000	NA	NA	0.017	NA	NA	1999.7	22.9	104-51-8	N/A	N/A
48.	Ethyl benzene	35162	050823	0.05	5.00	40004.8	2000	NA	NA NA	0.017	NA	NA NA	1999.7	22.9	100-41-4	100 ppm (435mg/m3/8H)	ori-rat 4750mg/kg
49.	p-isopropyl toluene	35162	050823	0.05	5.00	40005.8	2000	NA	NA NA	0.017	NA NA	NA NA	1999.8	22.9	99-87-6	NA 10 ppm (50mg/m3/8H)	on-rat 4/50mg/kg
50.	Naphthalene	35162	050823	0.05	5,00	40006.2	2000	NA	NA NA	0.017	NA NA	NA NA	1999.8	22.9	100-42-5	10 ppm (somgmisites)	ori-rat 5000mg/kg
51.	Styrene	35162	050823	0.05	5.00	40004.8	2000	NA NA	NA NA	0.017	NA NA	NA NA	1999.8	22.9	108-88-3	200 ppm	orl-rat 5000mg/kg
52.	Toluene	35162	050823	0.05	5.00	40006.2	2000	NA NA	NA NA	0.017	NA NA	NA NA	1999.7	22.9	87-61-6	N/A	ipr-mus £390mg/kg
53.	1,2,3-Trichlorobenzene	35162	050823 050823	0.05	5.00	40006.8	2000	NA	NA NA	0.017	NA NA	NA.	1999.8	22.9	120-82-1	5 ppm (CL) (40mg/m3)	ori-rat 756mg/kg
#4			UDUGED		5.00	40001.6	2000	NA	NA	0.017	NA.	NA	1999.6	23.0	95-63-6	N/A	ori-rat 5g/kg
54.	1,2,4-Trichiorobenzene	35162	050022	0.05						0.017	NA	NA	1929.8	22.9	108-67-8	NA	orl-rat 5000mg/kg
55.	1,2,4-Trimethylbenzene	35162	050823 050823	0.05	_		2000	NA.	NA	0.017							
55. 56.	1,2,4-Trimethylbenzene 1,3,5-Trimethylbenzene	35162 35162	050823	0.05	5.00	40006.7	2000	NA NA	NA NA	0.017	NA	NA	1999.8	22.9	108-38-3	100 ppm (435mg/m3/8H)	orl-rat fig/kg
55. 56. 57.	1,2,4-Trimethylbenzene 1,3,5-Trimethylbenzene m-Xylene	35162 35162 35162			_											100 ppm (435mg/m3/6H) N/A	N/A
55. 56. 57. 58.	1,2,4-Trimethylbenzene 1,3,5-Trimethylbenzene m-Xylene tert-Butyl benzene	35162 35162	050823 050823	0.05 0.05	5.00	40006.7 40005.8	2000	NA	NA	0.017	NA	NA NA NA	1999.8 1999.6 1999.6	22.9 22.9 22.9	108-38-3 98-06-6 135-98-8	N/A N/A	N/A ort-rat 2240mg/kg
55. 56. 57. 58. 59.	1,2,4-Trimethylbenzene 1,3,5-Trimethylbenzene m-Xylene tert-Burjt benzene sec-Butyl benzene	35162 35162 35162 35163	050823 050823 101923	0.05 0.05 0.05	5.00 5.00 5.00	40005.8 40001.2	2000 2000	NA NA	NA NA	0.017 0.017 0.017 0.017	NA NA NA	NA NA NA	1999.8 1999.6 1999.7	22.9 22.9 22.9 22.9	108-38-3 98-06-6 135-98-8 108-90-7	N/A N/A 75 ppm (350mg/m3/8H)	N/A ort-rat 2240mg/kg ort-rat 2290mg/kg
55. 56. 57. 58. 59.	1,2,4-Trimethylbenzene 1,3,5-Trimethylbenzene m-Xylene tert-Butyl benzene	35162 35162 35162 35163 35163	050823 050823 101923 101923	0.05 0.05 0.05 0.05	5.00 5.00 5.00 5.00	40006.7 40005.8 40001.2 40002.4 40003.8 40000.3	2000 2000 2000 2000 2000	NA NA NA NA	NA NA NA NA	0.017 0.017 0.017 0.017 0.017	NA NA NA NA	NA NA NA NA	1999.8 1999.6 1999.6 1999.7 1999.5	22.9 22.9 22.9 22.9 22.9	108-38-3 98-06-6 135-96-8 108-90-7 95-49-8	N/A N/A 75 ppm (350mg/m3/8H) 60 ppm (250mg/m3/8H)	N/A ort-rat 2240mg/kg ort-rat 2290mg/kg ort-rat 3900mg/kg
55. 56. 57. 58. 59. 80. 61.	1,2,4-Trimethylbenzene 1,3,5-Trimethylbenzene m-Xylene tert-Butyl benzene sec-Butyl benzene Chlorobenzene	35162 35162 35162 35163 35163 35163	050823 050823 101923 101923 101923	0.05 0.05 0.05 0.05 0.05	5.00 5.00 5.00 5.00 5.00	40006.7 40005.8 40001.2 40002.4 40003.8	2000 2000 2000 2000 2000 2000 2000	NA NA NA NA NA	NA NA NA NA NA	0.017 0.017 0.017 0.017 0.017 0.017	NA NA NA NA NA	NA NA NA NA NA	1999.8 1999.6 1999.6 1999.7 1999.5 1999.7	22.9 22.9 22.9 22.9 22.9 22.9	108-38-3 98-06-6 135-96-8 106-90-7 95-49-8 106-43-4	N/A N/A 75 ppm (350mg/m3/8H) 50 ppm (250mg/m3/8H) N/A	N/A ort-rat 2240mg/kg ort-rat 2290mg/kg ort-rat 2900mg/kg ort-rat 2100mg/kg
55. 56. 57. 58. 59. 60. 61. 62.	1,2,4-Trimethylbenzene 1,3,5-Trimethylbenzene m-Xylene terl-Butyl benzene sec-Butyl benzene Chlorobenzene 2-Chloroblusne	35162 35162 35162 35163 35163 35163 35163 35163	050823 050823 101923 101923 101923 101923 101923 101923	0.05 0.05 0.05 0.05 0.05 0.05 0.05	5.00 5.00 5.00 5.00 5.00 5.00 5.00 5.00	40006.7 40005.8 40001.2 40002.4 40003.8 40000.3 40003.8	2000 2000 2000 2000 2000 2000 2000 200	NA NA NA NA NA NA	NA NA NA NA NA NA	0.017 0.017 0.017 0.017 0.017 0.017 0.017	NA NA NA NA NA	NA NA NA NA NA	1999.8 1999.6 1999.6 1999.7 1999.7 1999.7	22.9 22.9 22.9 22.9 22.9 22.9 22.9	108-38-3 98-08-6 135-98-8 108-90-7 95-49-8 106-43-4 95-50-1	N/A N/A 75 ppm (350mg/m3/8H) 50 ppm (250mg/m3/8H) N/A 50 ppm (300mg/m3) (CL)	NVA ort-rat 2240mg/kg ort-rat 2290mg/kg ort-rat 2900mg/kg ort-rat 2100mg/kg ort-rat 500mg/kg
55. 56. 57. 58. 59. 60. 61. 62. 63.	1,2,4-Trimethylbenzene 1,3,5-Trimethylbenzene m-Xylene tert-Buryl berzene sec-Buryl benzene Chlorobenzene 2-Chlorotoluene 4-Chlorotoluene	35162 35162 35162 35163 35163 35163 35163 35163 35163	050823 050823 101923 101923 101923 101923 101923 101923 101923	0.05 0.05 0.05 0.05 0.05 0.05 0.05 0.05	5.00 5.00 5.00 5.00 5.00 5.00 5.00 5.00	40006.7 40005.8 40001.2 40002.4 40003.8 40003.3 40003.3 40003.8	2000 2000 2000 2000 2000 2000 2000 200	NA NA NA NA NA NA	NA NA NA NA NA NA	0.017 0.017 0.017 0.017 0.017 0.017 0.017	NA NA NA NA NA NA	NA NA NA NA NA NA	1999.8 1999.6 1999.7 1999.7 1999.7 1999.7 1999.7	22.9 22.9 22.9 22.9 22.9 22.9 22.9 22.9	108-38-3 98-08-6 135-98-8 108-90-7 95-49-8 106-43-4 95-50-1 541-73-1	N/A N/A 75 ppm (350mg/m3/8H) 50 ppm (350mg/m3/8H) N/A 50 ppm (300mg/m3) (CL) N/A	NVA ort-rat 2240mg/kg ort-rat 2290mg/kg ort-rat 2100mg/kg ort-rat 2100mg/kg ort-rat 500mg/kg tpr-mus 1062mg/kg
55. 56. 57. 58. 59. 80. 61. 62. 63. 64.	1,2,4-Trimethylbenzene 1,3,5-Trimethylbenzene m-Xylene terl-Butyl benzene sec-Butyl benzene Chlorobenzene 2-Chlorotoluene 4-Chlorotoluene 1,2-Dichlorobenzene 1,4-Dichlorobenzene	35162 35162 35163 35163 35163 35163 35163 35163 35163 35163	050823 050823 101923 101923 101923 101923 101923 101923 101923 101923	0.05 0.05 0.05 0.05 0.05 0.05 0.05 0.05	5.00 5.00 5.00 5.00 5.00 5.00 5.00 5.00	40006.7 40005.8 40001.2 40002.4 40003.8 40000.3 40003.8 40003.8 40001.7 40001.8	2000 2000 2000 2000 2000 2000 2000 200	NA NA NA NA NA NA NA	NA NA NA NA NA NA NA	0.017 0.017 0.017 0.017 0.017 0.017 0.017 0.017 0.017	NA NA NA NA NA NA NA NA	NA NA NA NA NA NA NA	1999.8 1999.6 1999.7 1999.5 1999.7 1999.7 1999.7 1999.6	22.9 22.9 22.9 22.9 22.9 22.9 22.9 23.0 22.9	108-36-3 98-06-6 135-96-8 108-90-7 95-49-8 106-43-4 95-50-1 541-73-1 106-48-7	N/A N/A 75 ppm (356mg/m3/8H) 80 ppm (256mg/m3/8H) N/A 50 ppm (300mg/m3) (CL) N/A 75 ppm (450mg/m3/8H)	NVA ort-rat 2240mg/kg ort-rat 2290mg/kg ort-rat 2300mg/kg ort-rat 2100mg/kg ort-rat 500mg/kg ort-rat 500mg/kg ort-rat 500mg/kg
55. 56. 57. 58. 59. 80. 61. 62. 63. 64. 65.	1,2,4-Trimethylbenzene 1,3,5-Trimethylbenzene m-Xylene tert-Buryl benzene sec-Buryl benzene sec-Buryl benzene Chlorobenzene 2-Chlorotoluene 4-Chlorotoluene 1,2-Dichlorobenzene 1,3-Dichlorobenzene 1,4-Dichlorobenzene 1,4-Dichlorobenzene	35162 35162 35163 35163 35163 35163 35163 35163 35163 35163 35163	050823 050823 101923 101923 101923 101923 101923 101923 101923 101923 101923 101923	0.05 0.05 0.06 0.05 0.05 0.05 0.05 0.05	5.00 5.00 5.00 5.00 5.00 5.00 5.00 5.00	40006.7 40005.8 40001.2 40002.4 40003.8 40000.3 40003.8 40003.8 40001.7 40001.8 40000.8	2000 2000 2000 2000 2000 2000 2000 200	NA NA NA NA NA NA NA NA	NA NA NA NA NA NA NA NA	0.017 0.017 0.017 0.017 0.017 0.017 0.017 0.017 0.017	NA NA NA NA NA NA NA NA	NA NA NA NA NA NA NA NA	1996.8 1999.6 1999.6 1999.7 1999.5 1999.7 1999.6 1999.6 1999.6	22.9 22.9 22.9 22.9 22.9 22.9 22.9 22.9	108-38-3 98-06-6 135-98-8 108-90-7 95-49-8 106-43-4 95-50-1 541-73-1 108-46-7 98-82-8	NVA NVA 75 ppm (350mg/m3/8H) 50 ppm (350mg/m3/8H) 50 ppm (300mg/m3/1H) 60 ppm (300mg/m3/1H) 75 ppm (3450mg/m3/8H) 50 ppm (245mg/m3/8H)	nVA ort-rat 2240mg/kg ort-rat 2290mg/kg ort-rat 3900mg/kg ort-rat 3900mg/kg ort-rat 500mg/kg ort-rat 500mg/kg ort-rat 500mg/kg ort-rat 1400mg/kg
55. 56. 57. 58. 59. 80. 61. 62. 63. 64. 65. 66.	1,2,4-Trimethylbenzene 1,3,5-Trimethylbenzene m-Xylene ten-Butyl benzene sec-Butyl benzene Chlorobenzene 2-Chlorotoluene 4-Chlorotoluene 1,3-Dichlorobenzene 1,3-Dichlorobenzene 1,4-Dichlorobenzene 1,4-Pichlorobenzene n-Propylbenzene	35162 35162 35163 35163 35163 35163 35163 35163 35163 35163 35163 35163 35163	050823 050823 101923 101923 101923 101923 101923 101923 101923 101923 101923 101923	0.05 0.05 0.06 0.05 0.05 0.05 0.05 0.05	5.00 5.00 5.00 5.00 5.00 5.00 5.00 5.00	40006.7 40005.8 40001.2 40002.4 40003.8 40003.3 40003.3 40003.8 40001.7 40001.8 40000.8 40000.8	2000 2000 2000 2000 2000 2000 2000 200	NA NA NA NA NA NA NA NA NA	NA N	0.017 0.017 0.017 0.017 0.017 0.017 0.017 0.017 0.017 0.017	NA	NA NA NA NA NA NA NA NA NA	1996.8 1999.6 1999.6 1999.7 1999.5 1999.7 1999.6 1999.6 1999.5 1999.5	22.9 22.9 22.9 22.9 22.9 22.9 22.9 23.0 22.9 23.0 22.9 23.0	108-38-3 98-06-6 135-98-8 108-90-7 95-49-8 106-43-4 85-50-1 541-73-1 108-48-7 98-82-8 103-65-1	NVA NVA 75 ppm (250mg/m3/8H) 50 ppm (250mg/m3/8H) NVA 50 ppm (350mg/m3/8H) NVA 75 ppm (450mg/m3/8H) 50 ppm (245mg/m3/8H) NVA	N/A ort-rat 2240mg/kg ort-rat 2290mg/kg ort-rat 2900mg/kg ort-rat 2900mg/kg ort-rat 500mg/kg ort-rat 500mg/kg ort-rat 600mg/kg ort-rat 6040mg/kg ort-rat 6040mg/kg
55. 56. 57. 58. 59. 80. 61. 62. 63. 64. 65. 66.	1,2,4-Trimethylbenzene 1,3,5-Trimethylbenzene m-Xylene tert-Buryl benzene sec-Buryl benzene sec-Buryl benzene Chlorobenzene 2-Chlorotoluene 4-Chlorotoluene 1,2-Dichlorobenzene 1,3-Dichlorobenzene 1,4-Dichlorobenzene 1,4-Dichlorobenzene	35162 35162 35163 35163 35163 35163 35163 35163 35163 35163 35163	050823 050823 101923 101923 101923 101923 101923 101923 101923 101923 101923 101923	0.05 0.05 0.06 0.05 0.05 0.05 0.05 0.05	5.00 5.00 5.00 5.00 5.00 5.00 5.00 5.00	40006.7 40005.8 40001.2 40002.4 40003.8 40000.3 40003.8 40003.8 40001.7 40001.8 40000.8	2000 2000 2000 2000 2000 2000 2000 200	NA NA NA NA NA NA NA NA	NA NA NA NA NA NA NA NA	0.017 0.017 0.017 0.017 0.017 0.017 0.017 0.017 0.017	NA NA NA NA NA NA NA NA	NA NA NA NA NA NA NA NA	1996.8 1999.6 1999.6 1999.7 1999.5 1999.7 1999.6 1999.6 1999.6	22.9 22.9 22.9 22.9 22.9 22.9 22.9 22.9	108-38-3 98-06-6 135-98-8 108-90-7 95-49-8 106-43-4 95-50-1 541-73-1 108-46-7 98-82-8	NVA NVA 75 ppm (350mg/m3/8H) 50 ppm (350mg/m3/8H) 50 ppm (300mg/m3/1H) 60 ppm (300mg/m3/1H) 75 ppm (3450mg/m3/8H) 50 ppm (245mg/m3/8H)	nVA ort-rat 2240mg/kg ort-rat 2290mg/kg ort-rat 3900mg/kg ort-rat 3900mg/kg ort-rat 500mg/kg ort-rat 500mg/kg ort-rat 500mg/kg ort-rat 1400mg/kg

1 of 2

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Part # 95317

^{*}The cardine value is the concentration calculated from gravimetric and volumetric measurements unless otherwise stated.

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

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

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

*All Standards are prepared as a state of the state

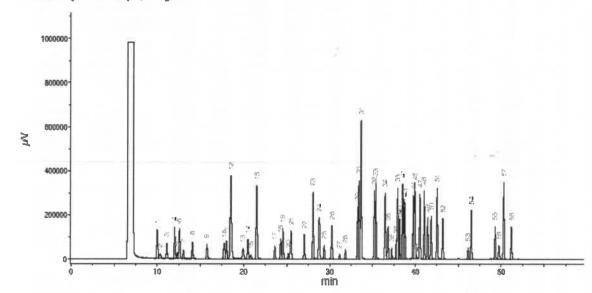


Run 17, "P95317 L021524 [2000µg/mL in MeOH]"

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

Comments

GC5-M1 Analysis by Candice Warren Column ID SP8-Vocol 105 meter X 0.53mm X 3.0µm film thickness
Flow rates: Total flow=290mL/min., Helium (carrier)=10mL/min., Air(make-up)=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 me=60 min. Injector temp.=200°C, FID Temp.=200°C. FID Signal = Edaq Channel 1 Standard injection = 0.5 µL, Range=3



		PER RE
Peak 2	Narre	(min.)
3	Ether	9.97
3.	1,1.2-Trickforo-1,2,2-triffbornething	10.33
3	1,1-Dichloroethene	23.10
4	Acetonitrile	33.00
5	Iodomethane	12.31
6	Allyl chloride	12,56
7	Carbon disulfide/Mathylone chloride	13.04
.8.	frans-1,2-Dichleroethene	14.07
9	1,1-Dichloroethane	15.74
10	2,2-Dichlarograpane	17,74
11	63-1,2-Dichloroethene	18.00
12	Hethecrylenitrile/Hethyl acrylete/Chioreform	18.49
13	Isobutanol/1,1,1-Trichloroethane	19.91
14	1,1-Dichibropropene	20.46
15	Carison tetrachloride	26.79
16	Benzene/1,2-Dichloroethane	21.48
17	Trichloroethene	23.58
18	1,2-Dichloropropaine	34.26
19	Msthyl methacrylate	24.52
20	Bromodichioreresthene	25.13
21	Dibromomethane/2-Nitropropane	25,46
22	cis-1,3-Dichioropropone	27.02
23	Totuene	28.05
24	Ethyl methecrylete/trans-1,3-Dichloropropens	28.73
25	1,1,2-Trichloroethane	29.34
26	Tetrachloraethene/1,3-Dichlorograpene	30.24
. 27	Dibromochioromethana	31.16
28	1,2-Dipromoethane	31.84
19	Chlorobenzene	33.26
30	Ethylbenzeine/1,1,1,2-Retrachlomethane	33.40
31	m-Xylene/p-Xylene	33.66
32	g-Xylene	35.22
33	Styrene	35.39
34	Isopropylbeneene/Bromeform	36.48
35	cis-1,4-Dichloro-2-butane	36.80
36	1,1,2,2-Yetrschloroethene	37.20
37	1,2,3-frichloropropane	37.77
38	n-Propy/benzene	37.92
39	trans-1,4-Dichloro-2-butene	30.05
40	Bromobenzene	30.14
42	1,3,5-Trimethyiteneene	39.50
42	2-Chlorotolyeng	30.62
43	4-Chlorotoluene	38.77
44	tert-Buty/benzene	39.76
45	1,2,4-Trimethylbenzene	39.91
46	Pentachioroethene	40,17
42	sec-Butylbenzene	40.52
48	p-faggropykoluene	41.02
49	1.3-Dichierobenzene	41.42
50	1,4-Dichiprobenzone	41.83
51	n-Butylbenzene	42.52
52	1,2-Dichlerobenzene	43,10
53	1,2-Sibrame+3-chloropropens	46.12
54	Nerobensene	46,48
55	1,2.4-Trichlorabenzeire	49.26
1516	некасмогоризамия	49.22
57	Naghthalene	50,24
58	1,2,3-Trichtorobersene	51.16

Part # 95317 Lot # 021524 2 of 2

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

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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#: 8UTB			5E-	5E-05 Balance Uncertainty											021624		
	Weight(s) shown below were combined and diluted to (mL): 100.													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 and 1 ventric	ACT LANGE	H PAG	acar ves. (i	mL) Gond.(ug/m	sil) 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												75.57.42.47.40.4	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)	10239				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.	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)	06128F				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)	01213T		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	0.20413		2001.6	8.3	79-46-9	10 ppm (35mg/m3/8H)	orl-ret 720mg/kg
	8. <u>1</u>	1.2-Trichlorotrifluoroethane	(0474)	18930	N.A	NA.		2000	99	0.2	NA		0.20430	2001.6	8.3	78-01-7	N/A	N/A
- 1	7. <u>B</u>	romodichioromethane	35171	101623	0.0				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	0.10			2000	NA	NA	0.042	NA	NA	1999.8	20.4	594-20-7	NA	N/A
30	1.	1,1-Trichloroethane	95321					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		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	1107-mua 3600mg/kg
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	0.05	5.00			NA	NA	0.017	NA	NA	2000.0	23.0 1	0081-01-5	N/A	NA
		rachloro-1,3-butadiene	35161	112322			40017.6	2000	NA	NA	0.017	NA NA	NA	2000.4	23.0 1	0061-C2-6	NA	N/A
		1,2-Tetrachicroethane	35161		0.05	5.00	40021.9	2000	NA	NA	0.017	NA	NA	2000.6	29.7	87-68-3	0.02 ppm (0.24mg/m3/8H)	orl-rat 82mg/kg
		2.2-Tetrachloroethane		112322	0.05	5.00	40011.9	2000	NA	NA	0.017	NA	NA	2000.1		830-20-6		
		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)(eldn)	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)	orl-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 2000mg/kg
48.	Eth	yl benzene	35162	050823	0.08	5.00				NA	0.017	NA	NA	1999.7	22.9	104-51-8	N/A	N/A
		opropyl toluene	35162	050823			40004.8	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	orl-rat 4750mg/kg
	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)	
	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	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	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	75 ppm (350mg/m3/8H)	orl-rat 2290mg/kg
		niorotoluene		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.		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		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

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Certified Reference Material CRM



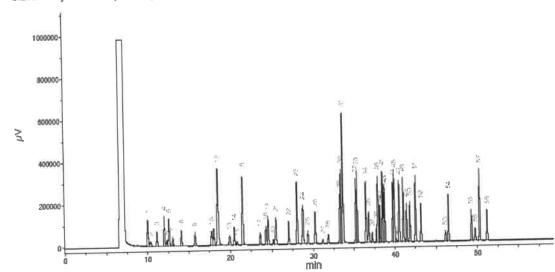
ANAB ISO 17034 Accredited AR-1539 Certificate Number https://Absolutestandards.com

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



		FED RY
Page III	Marria	(min.)
1	Bener	9,97
2	1.1,2-Trichlaro-1,Z,3-Influoroest-erre	20.33
3	: , t - Dichloroeshene	11.30
4	Acesportnia	17.00
8	Indomethana	12,34
6	Alivi chipride	12.56
7	Carbon disuttida/Hethylene-chloride	13,04
-	trans-1,2-Dichlordeshane	14.07
9	1.1-Dichlarostrans	15.74
LD.	2.2-Sichloropropeds	12.74
11	cia-1,3-Gichlorostherid	18.00
12	Hennerylonismin/Meshyl acrylete/Chloroform	10.49
13	Isopuranoly 1.1, 1-Trichiprochisini	19,91
13	7.1-Displainthicological and a second and a second and a second a	20.16
	Carbon strachloride	20.79
1.5	Benzene/1,2-(personene	21,48
16	Trichicapastidad	23,66
19	1.2-Dighterioron	24.24
18		24.57
7.9	pletky mediacrylate	29.13
50	Brompachioranathana	35.46
경호	Dipromomentaria/2-fravopropera	27.02
55	ese-1,%-Dientoropona	26.03
23	Solutions	
24	Etnyl matherymany, (- energymerymetern lynds	29.34
25	1,1,2-Trichlorgethers	30.24
26	Tetrachionettene/1,3-Dichloroprophene	31,35
27	Dependentelemente	35,384
28	1,2-Discompetions	33,25
20	Cnjeroběnalník	
36	Ethysbenzemers, 3, 2, 9. Tetraesterbethene	21.40
81	m-xytens/p-xytens	31.85
32	e-Hylana:	35,39
33	Styrene	
34	InopropylantererBremoform	35,48
35	cis-2,4-ZijeHiora-2-butene	3/5,40
36	1,1,2,2-Tetrachioroethere	37.20
37	an equivolence (\$1,5,6)	37.77
38	n-Propylpaniante	37,02
39	trans-1,4-Dichipro-2-butens	30.05
46	Brancadantana	38.14
45	1,3,5-Trimethy/bensene	10.50
42	2-Cisiaroseivenk	38,62
43	4: Chiprotolventi	38.27
44	tert Butytherizana	29.76
49	1,2,4-Trimminyinanzana	30,91
46	Persechlomethans	40,17
47	sec-muty/benzene	40.52
48	p Isoprapylaniustie	41.62
49	1,3-Crchiquakeniante	48,42
50	5,4-Bicelgrobenzene	41.63
91	n-Bucylbantera	42,62
52	1,2-13-chtorobensess	43.18
53	1,2-Othrome-3-phioreprepara	46,17
54	Natronenseme	46,58
55	1,2,4-9rightorobenizene	49.25
56	Heuschlorobusädiene	49.72
5.2	Naphitalene	50.76
510		61.16

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 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.

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

Methanol-SDS.xls Page 1 of 2 Printed: 9/16/24

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.

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								Till		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	Deutste	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 1	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		98-06-6	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.		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		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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Certified Reference Material CRM



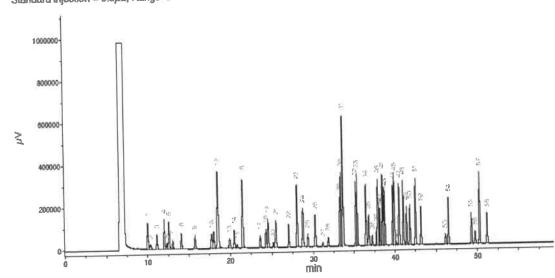
ANAB ISO 17034 Accredited AR-1539 Certificate Number https://Absolutestandards.com

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



		FED RY
Page III	Marria	(min.)
1	Bener	9,97
2	1.1,2-Trichlaro-1,Z,3-Influoroest-erre	20.33
3	: , t - Dichloroeshene	11.30
4	Acesportnia	17.00
8	Indomethana	12,34
6	Alivi chipride	12.56
7	Carbon disuttida/Hethylene-chloride	13,04
-	trans-1,2-Dichlordeshane	14.07
9	1.1-Dichlarostrans	15.74
LD.	2.2-Sichloropropeds	12.74
11	cia-1,3-Gichlorostherid	18.00
12	Hennerylonismin/Meshyl acrylete/Chloroform	10.49
13	Isopuranoly 1.1, 1-Trichiprochisini	19,91
13	7.1-Displainthicological and a second and a second and a second a	20.16
	Carbon strachloride	20.79
1.5	Benzene/1,2-(personene	21,48
16	Trichicapastidad	23,66
19	1.2-Dighterioron	24.24
18		24.57
7.9	pletky mediacrylate	29.13
50	Bronspachjoraniethane	35.46
경호	Dipromomentaria/2-fravopropera	27.02
55	ese-1,%-Dientoropona	26.03
23	Solution	
24	Etnyl matherymany, (- energymerymetern lynds	29.34
25	1,1,2-Trichlorgethers	30.24
26	Tetrachionettene/1,3-Dichloroprophene	31,35
27	Dependentelemente	35,384
28	1,2-Discompetions	33,25
20	Cnjeroběnalník	31,40
36	Ethysbenzemers, 3, 2, 9. Tetraesterbethene	
81	m-xytens/p-xytens	31.85
32	e-Hylana:	35,39
33	Styrene	
34	InopropylantererBremoform	35,48
35	cis-2,4-ZijeHiora-2-butene	3/5,40
36	1,1,2,2-Tetrachioroethere	37.20
37	an equivolence (\$1,5,6)	37.77
38	n-Propylpaniante	37,02
39	trans-1,4-Dichipro-2-butens	30.05
46	Brancadantana	38.14
45	1,3,5-Trimethy/bensene	10.50
42	2-Cisiaroseivenk	38,62
43	4: Chiprotoluenti	38.77
44	tert Butytherizana	29.76
49	1,2,4-Trimminyinanzana	30,91
46	Persechlomethans	40,17
47	sec-muty/benzene	40.52
48	p Isoprapylaniustie	41.62
49	1,3-Crchiquakenininie	48,42
50	5,4-Bicelgrobenzene	41.63
91	n-Butyibenzene	42,62
52	1,2-17:chtonobensess	43.18
53	1,2-Othromo-3-chioropropana	46.13
54	Nicroberzoknie	46,58
55	5,2,4-Prichlarobenizene	49.25
56	Heuschlorobusäidiene	49.72
5.2	Naphitalene	50.76
510		61.16

2 of 2

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

Methanol-SDS.xls Page 1 of 2 Printed: 9/16/24

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.

www.absolutestandards.com



Certified Reference Material CRM

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

CERTIFIED WEIGHT REPORT

Acrolein 091424 101424 91980 Part Number: Lot Number: Description: **Expiration Date:**

072324Q

Lot

Solvent(s): Water

> Refrigerate (4 °C) 5000 Recommended Storage: Nominal Concentration (µg/mL):

5E-05 Balance Uncertainty 0.001 Flask Uncertainty 10.0 Weight(s) shown below were combined and diluted to (mL): **6UTB** NIST Test ID#;

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

n tached pa.)	0201	100 - 100	orl-rat 46mg/kg
Expanded SDS Information Uncertainty (Solvent Safety Info. On Attached pg.)	-) CAS# OSHA PEL (TWA)	l	mdd L.o
(Solvent	CAS#	000	8-20-701 0:20
Expanded Uncertainty	(+/-) (ug/mL)	4	02.50
Actual	Conc (ug/mL)	0 8002	2000.0
Actual	Weight(g) Conc (µg/mL) (+/-) (µg/mL)	0.05175	
Target	Weight(g)	0.05166	
	Purity	97 0.5 0.05186 0.05175	The state of the s
Purity	(%)	97	
Nominal	Conc (ug/mL) (%) Purity	2000	1
Pot	Number	103755V10F	Defector (Congressed) Col
i	KINIH	ស	orive Dete
Compound		. Acrolein	Method: GC6MSD-1, Detector: Mass Sele

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

Abundance

1. Acrolein

8.93

250000

200002

150000

100000

50000

TIC: [BSB2]79005,D

Abundance

27

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

00009

50000

28

40000

30000

20002

0<--z/m

10.00 15.00 20.00 25.00 30.00 35.00 40.00 45.00 50.00 55.00 60.00

Time-->0

65 75 85

4

37

10000

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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www.absolutestandards.com



Certified Reference Material CRM

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

CERTIFIED WEIGHT REPORT

Acrolein 091424 101424 91980 Part Number: Lot Number: Description: **Expiration Date:**

072324Q

Lot

Solvent(s): Water

> Refrigerate (4 °C) 5000 Recommended Storage: Nominal Concentration (µg/mL):

5E-05 Balance Uncertainty 0.001 Flask Uncertainty 10.0 Weight(s) shown below were combined and diluted to (mL): **6UTB** NIST Test ID#;

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

n tached pa.)	0201	100 - 100	orl-rat 46mg/kg
Expanded SDS Information Uncertainty (Solvent Safety Info. On Attached pg.)	-) CAS# OSHA PEL (TWA)	l	mdd L.o
(Solvent	CAS#	000	8-20-701 0:20
Expanded Uncertainty	(+/-) (ug/mL)	4	02.50
Actual	Conc (ug/mL)	0 8002	2000.0
Actual	Weight(g) Conc (µg/mL) (+/-) (µg/mL)	0.05175	
Target	Weight(g)	0.05166	
	Purity	97 0.5 0.05186 0.05175	The state of the s
Purity	(%)	97	
Nominal	Conc (ug/mL) (%) Purity	2000	1
Pot	Number	103755V10F	Defector (Congressed) Col
i	KINIH	ស	orive Dete
Compound		. Acrolein	Method: GC6MSD-1, Detector: Mass Sele

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

Abundance

1. Acrolein

8.93

250000

200002

150000

100000

50000

TIC: [BSB2]79005,D

Abundance

27

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

00009

50000

28

40000

30000

20002

0<--z/m

10.00 15.00 20.00 25.00 30.00 35.00 40.00 45.00 50.00 55.00 60.00

Time-->0

65 75 85

4

37

10000

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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800-368-1131 www.absolutestandards.com



Certified Reference Material CRM

Solvent(s):

Methanol



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

CERTIFIED WEIGHT REPORT

Part Number: Lot Number:

95318

111722

2-Chloroethyl vinyl ether

Expiration Date:

Description:

111725

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

NIST Test ID#:

6UTB

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

50.0

10000

0.001 Flask Uncertainty

5E-05 Balance Uncertainty

99

0.50551

10001.9

40.5

110-75-8

Lot#

EB679-US

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

N/A

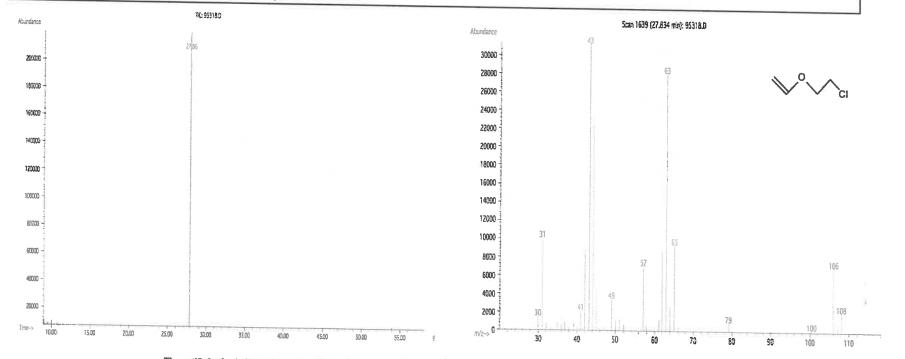
SDS Information Expanded Uncertainty

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

0.50541

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

0.2



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

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

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

800-368-1131 www.absolutestandards.com



Certified Reference Material CRM

Solvent(s):

Methanol



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

CERTIFIED WEIGHT REPORT

Part Number: Lot Number:

95318

111722

2-Chloroethyl vinyl ether

Expiration Date:

Description:

111725

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

NIST Test ID#:

6UTB

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

50.0

10000

0.001 Flask Uncertainty

5E-05 Balance Uncertainty

99

0.50551

10001.9

40.5

110-75-8

Lot#

EB679-US

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

N/A

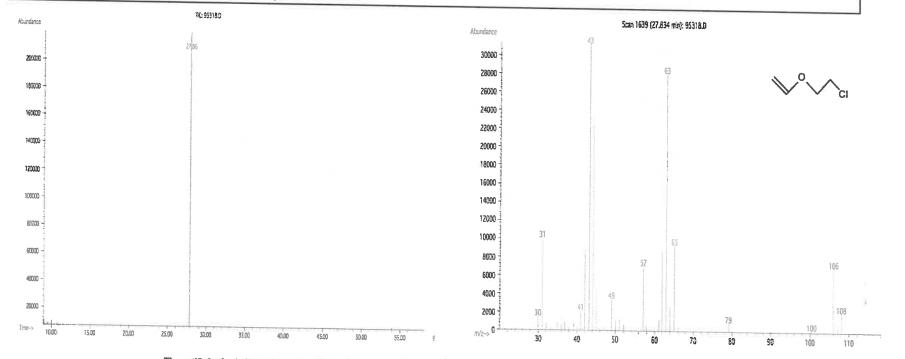
SDS Information Expanded Uncertainty

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

0.50541

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

0.2



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

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

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

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Certified Reference Material CRM Dee



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Lots Solvent(s):

95318

Part Number:

CERTIFIED WEIGHT REPORT

Methanol EJ143-US	7	Show Cheuler	120524
りゃ のいりオーフ	Formulated By:	Prashant Chauhan	DATE
014943	The	to Horto	120524
lance Uncertainty	Reviewed By:	Pedro L. Rentas	DATE
sk Uncertainty			

orl-rat 250mg/kg

M

110-75-8

40.5

10002.9

0.50550

0.50536

0.2

66

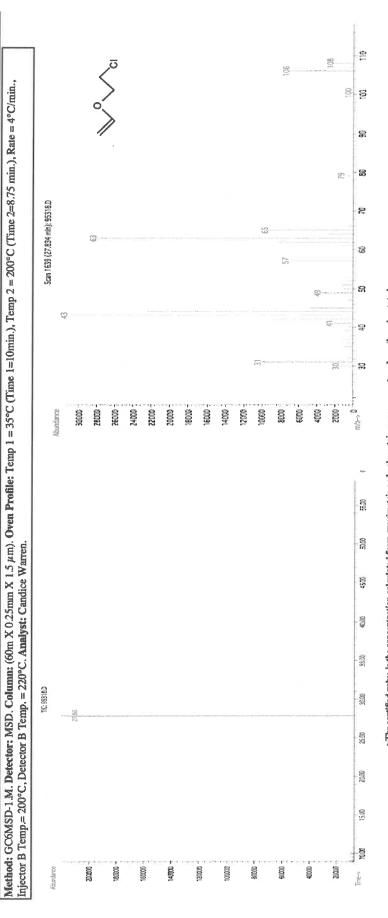
10000

MKCD0033

74

1. 2-Chloroethyl vinyl ether

	120524				Methanol EJ143-US	70	-		
낈	loroethy	2-Chloroethyl vinyl ether		-	(from Cheuler	120524
				7	りゃ のぶりオーフ	0	Formulated	By: Prashant Chauhan	DATE
120527	527							1	
Refr	Refrigerate (4 °C)	4°C)		C	でものナー			A	
10000	0						\	Redo Mento	120524
eUTB			5E-05	Balance Uncertainty			Reviewed By	/: Pedro L. Rentas	DATE
Weight(s) shown below were combined and diluted to (mL):	<u>.;</u>	50.0	0.001	0.001 Flask Uncertainty		•			
							Expanded	SDS Information	
		Nominal	Purity	Purity Uncertainty	Target Actual	Actual	Uncertainty	Uncertainty (Solvent Safety Info. On Attached pg.)	pg.)
Lot	nuper	RM# Lot Number Conc (ug/mil.)	(%)	Purity	Weight (g) Weight (g)	Conc(J/g/mL) (+/-) (J/g/mL)	(+/-) (mg/ml.)	CAS# OSHA PEL (TWA)	LDS0



- 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 (+/-1) 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).

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

Safety Data Sheet (SDS)

GHS/OSHA Compliant

Section I Product and Company Identification

IDENTITY ANALYTICAL STANDARD DISSOLVED IN METHANOL

Manufacturer's Name

ABSOLUTE STANDARDS INC

Emergency Telephone USA & CANADA

1-800-535-5053

Address

44 Rossotto Dr.

Emergency Telephone International Date Prepared/Revised

1-352-323-3500 January 1, 2024

Hamden CT, 06514 Section II - Hazards Identification

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

H225

Highly Flammable Liquid and Vapor

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

H370

Cause damage to organs

H351 P280 Suspected of causing cancer

P271 P302.332

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

P305,351,338

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



Methanol





Signal Word: DANGER

Section III - Composition

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

METHYL ALCOHOL

CAS#: 67-56-1

% (optional) > 97

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

INTENDED USE: REFERENCE MATERIAL

Section IV. FIRST AID MEASURES

General advice

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

If inhaled In case of skin contact

Wash with soap and water. Consult a physician.

In case of eye contact

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

Section V. FIREFIGHTING MEASURES

Flammability

If swallowed

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

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

Suitable extinguishing media Protective equipment for fire

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

Section VI. ACCIDENTAL RELEASE MEASURES

Personal precautions

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

ignition. Vapours accumulate to form explosive concentrations.

Environmental precautions

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

Clean up

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

Section VII. HANDLING AND STORAGE

Precautions for safe handling

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

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

Storage Conditions and kept upright to prevent leakage.

Section VIII. EXPOSURE CONTROLS/PERSONAL PROTECTION

Methanol

67-56-1 TWA 200 ppm

Skin notation TWA 200 ppm

Potential for skin absorption, ingestion and inhalation.

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

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

Section IX - Physical/Chemical Characteristics

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

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

COMPLETE

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

Section X. STABILITY AND REACTIVITY

Chemical stability Stable under recommended storage conditions.

Possibility of hazardous reactions

Vapours may form explosive mixture with air.

Conditions to avoid

Heat, flames, sparks, extreme temperature and sunlight.

Materials to avoid

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

Hazardous decomposition products formed under fire conditions. - Carbon oxides

Section XI. TOXICOLOGICAL INFORMATION

LD50 Oral - rat - 5,628 mg/kg

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

Toxic if absorbed through skin. Causes skin irritation.

Eye damage/eye irritation

Toxic if inhaled. Causes respiratory tract irritation.

Toxic if swallowed

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

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

Section XIII. DISPOSAL CONSIDERATIONS

Dispose with normal Laboratory Solvent Waste.

Section XIV. TRANSPORT INFORMATION

DOT (US)

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

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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 **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 Stable under recommended storage conditions.

Possibility of hazardous reactions

Vapours may form explosive mixture with air.

Conditions to avoid

Heat, flames, sparks, extreme temperature and sunlight.

Materials to avoid

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

Hazardous decomposition products formed under fire conditions. - Carbon oxides

Section XI. TOXICOLOGICAL INFORMATION

LD50 Oral - rat - 5,628 mg/kg

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

Toxic if absorbed through skin. Causes skin irritation.

Eye damage/eye irritation

Toxic if inhaled. Causes respiratory tract irritation.

Toxic if swallowed

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

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

Section XIII. DISPOSAL CONSIDERATIONS

Dispose with normal Laboratory Solvent Waste.

Section XIV. TRANSPORT INFORMATION

DOT (US)

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
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649 710	H	In Horte	120524
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Flask Uncertainty			

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14000

2002

0000

18000

20000

Abradance

160000

9000

90009

40000

9000

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 - 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.
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1-800-535-5053

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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 Stable under recommended storage conditions.

Possibility of hazardous reactions

Vapours may form explosive mixture with air.

Conditions to avoid

Heat, flames, sparks, extreme temperature and sunlight.

Materials to avoid

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

Hazardous decomposition products formed under fire conditions. - Carbon oxides

Section XI. TOXICOLOGICAL INFORMATION

LD50 Oral - rat - 5,628 mg/kg

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

Toxic if absorbed through skin. Causes skin irritation.

Eye damage/eye irritation

Toxic if inhaled. Causes respiratory tract irritation.

Toxic if swallowed

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

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

Section XIII. DISPOSAL CONSIDERATIONS

Dispose with normal Laboratory Solvent Waste.

Section XIV. TRANSPORT INFORMATION

DOT (US)

UN number: 1230 Class: 3 Packing group: II

Proper shipping name:

UN number: 1230 Class: 3 Packing group: II

Proper shipping name:

Methanol

Methanol

Section XV. REGULATORY INFORMATION

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

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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

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

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Flask Uncertainty			

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Cause damage to organs

H351 P280

Use gloves, eye protection/face shelld

P302.332

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

P305,351,338

If in eyes, remove contacts, rinse with water







Signal Word: DANGER

Section III - Composition

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

METHYL ALCOHOL

CAS#: 67-56-1

% (optional) > 97

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

INTENDED USE: REFERENCE MATERIAL

Section IV. FIRST AID MEASURES

General advice

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

If inhaled In case of skin contact

Wash with soap and water. Consult a physician.

In case of eye contact

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

If swallowed

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

Section V. FIREFIGHTING MEASURES

Flammability

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

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Precautions for safe handling

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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

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Possibility of hazardous reactions

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Conditions to avoid

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

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

Toxic if absorbed through skin. Causes skin irritation.

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

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Dispose with normal Laboratory Solvent Waste.

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:

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CERTIFIED REFERENCE MATERIAL

ACCREDITED
ISO 17034 Accredited
Reference Material Producer
Certificate #222201

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

www.restek.com

Certificate of Analysis





FOR LABORATORY USE ONLY-READ SDS PRIOR TO USE.

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

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

CERTIFIED VALUES

	OERTHIED VALUE							
Elution Order		Compound	Grav. Conc. (weight/volume)		Expanded U (95% C.L.; K	The Control of the Co		
1	tert-Butanol (TBA) CAS # 75-65-0 Purity 99%	(Lot 101619K21F-1)	50,122.0 μg/mL	+/- +/- +/-	293.4753 1,073.6797 1,104.8612	μg/mL μg/mL μg/mL	Gravimetric Unstressed Stressed	
Solvent:	P&T Methanol CAS # 67-56-1 Purity 99%							

Column:

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

Carrier Gas:

hydrogen-constant pressure 11.0 psi.

Temp. Program:

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

Inj. Temp:

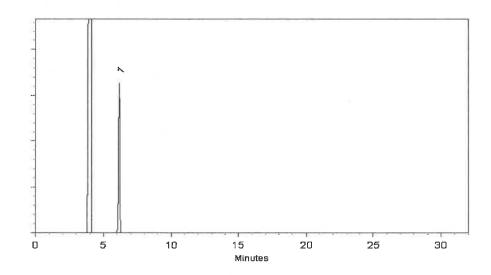
200°C

Det. Temp:

250°C

Det. Type:

FID



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

Alicia Leathers - Operation Technician I

Date Mixed:

15-Nov-2022

Balance: 1127510105

Jennifer Pollino - Operations Tech III - ARM QC

Date Passed:

17-Nov-2022

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

General Certified Reference Material Notes

Expiration Notes:

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

Purity Notes:

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

Certified Uncertainty Value Notes:

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

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

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

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

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

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

Manufacturing Notes:

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

Handling Notes:

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



CERTIFIED REFERENCE MATERIAL









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

www.restek.com

Certificate of Analysis

chromatographic plus

FOR LABORATORY USE ONLY-READ SDS PRIOR TO USE.

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

Catalog No.: 30067 Lot No.: A0191805

Description: 4-Bromofluorobenzene Standard

4-Bromofluorobenzene Standard 2,500µg/mL, P&T Methanol,

1mL/ampul

Container Size: 2 mL Pkg Amt: > 1 mL

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

CERTIFIED VALUES

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

Ship:

Ambient

Solvent:

P&T Methanol

CAS # 67-56-1 Purity 99%

^{*} 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:

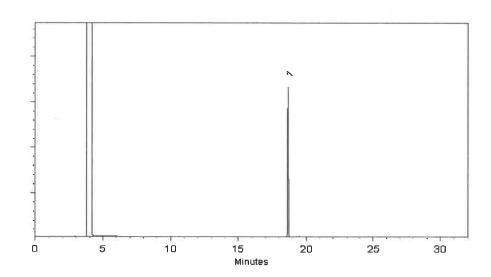
Det. Type:

Split Vent:

40 ml/min

Inj. Vol

 1μ l



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.

企大 Alicia Leathers - Operation Technician I

Date Mixed:

17-Nov-2022

Balance Serial #

B251644995

Jennifer Pollino - Operations Tech III - ARM QC

Date Passed:

21-Nov-2022

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



General Certified Reference Material Notes

Expiration Notes:

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

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

Certified Uncertainty Value Notes:

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

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

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

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

Manufacturing Notes:

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

Handling Notes:

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



8			



CERTIFIED REFERENCE MATERIAL









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

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:

2 mL

Pkg Amt:

> 1 mL

Expiration Date: April 30, 2026 Storage:

10°C or colder

Ship:

Ambient

CERTIFIED VALUES

Componen	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

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



General Certified Reference Material Notes

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

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

Manufacturing Notes:

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

Handling Notes:

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 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

chromatographic plus

FOR LABORATORY USE ONLY-READ SDS PRIOR TO USE.

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

Catalog No. :

30042

Lot No.: A0197644

Description:

502.2 Calibration Mix #1

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

Container Size:

2 mL

Pkg Amt:

> 1 mL

Expiration Date:

January 31, 2030

Storage: 0°

0°C or colder

Ship: Ambient

CERTIFIED VALUES

Elution Order	Compound	CAS#	Lot #	Purity	Grav. Conc. (weight/volume)	Expanded Uncertainty * (95% C.L.; K=2)
1	Dichlorodifluoromethane (CFC-12)	75-71-8	00012554	99%	2,001.6 μg/mL	+/- 112.7159
2	Chloromethane (methyl chloride)	74-87-3	SHBM9611	99%	2,002.0 μg/mL	+/- 112.7840
3	Vinyl chloride	75-01-4	00015559	99%	2,002.2 μg/mL	+/- 112.6713
4	Bromomethane (methyl bromide)	74-83-9	101604	99%	2,006.4 μg/mL	+/- 112.8861
5	Chloroethane (ethyl chloride)	75-00-3	107-401039114-1	99%	2,000.9 μg/mL	+/- 112.5990
6	Trichlorofluoromethane (CFC-11)	75-69-4	MKCL8411	99%	1,999.2 μg/mL	+/- 112.4861

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

Solvent:

P&T Methanol

CAS # 67-56-1 Purity 99%

Quality Confirmation Test

Column:

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

Carrier Gas:

helium-constant flow 2.0 mL/min.

Temp. Program:

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

Inj. Temp:

200°C

Det. Temp:

250°C

Det. Type:

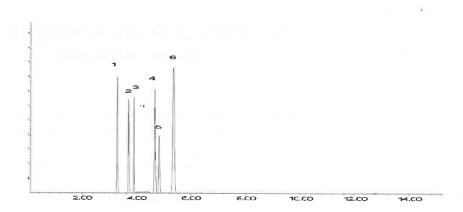
MSD

Split Vent:

Split ratio 10:1

Inj. Vol

1μΙ



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

Brittany Federinko - Operations Tech I

Date Mixed:

02-May-2023

Balance Serial #

B707717271

Jennifer Pollino - Operations Tech III - ARM QC

Date Passed:

08-May-2023

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



Expiration Notes:

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

Purity Notes:

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

Certified Uncertainty Value Notes:

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

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

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

Manufacturing Notes:

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

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 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

CERTIFIED REFERENCE MATERIAL

Certificate of Analysis chromatographic plus









FOR LABORATORY USE ONLY-READ SDS PRIOR TO USE.

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

Catalog No.:

30006

Lot No.: A0200785

Description:

VOA Calibration Mix #1

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

1mL/ampul

Container Size: Expiration Date: 2 mL

November 30, 2026

Pkg Amt:

> 1 mL

Storage: 0°C or colder Ship:

Ambient

CERTIFIED VALUES

Elution Order	Compound	CAS#	Lot#	Purity	Grav. Conc. (weight/volume)	Expanded Uncertainty * (95% C.L.; K=2)
1	Acetone	67-64-1	SHBP8774	99%	5,018.5 μg/mL	+/- 173.4162
2	2-Butanone (MEK)	78-93-3	SHBL5543	99%	5,016.0 μg/mL	+/- 173.3298
3	4-Methyl-2-pentanone (MIBK)	108-10-1	SHBP4724	99%	5,010.7 μg/mL	+/- 173.1455
4	2-Hexanone	591-78-6	MKCQ6663	99%	5,015.0 μg/mL	+/- 173.2952

Solvent:

P&T Methanol/Water (90:10)

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

Purity 99%

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

Column:

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

Carrier Gas:

hydrogen-constant pressure 11.0 psi.

Temp. Program:

40°C (hold 2 min.) to 240°C

@ 8°C/min. (hold 5 min.)

Inj. Temp:

200°C

Det. Temp:

250°C

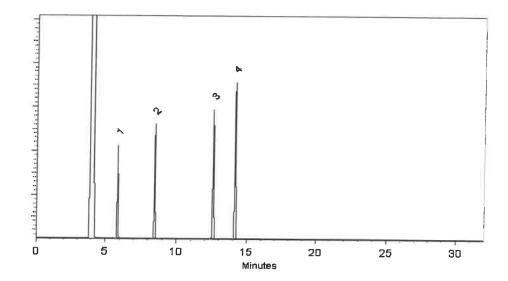
Det. Type:

Split Vent:

40 ml/min

Inj. Vol

1μΙ



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.

Laith Clemente - Operations Technician!

Date Mixed:

09-Aug-2023

Balance Serial #

B707717271

Marlina Cowan - Operations Tech II ARM QC

Date Passed:

16-Aug-2023

Expiration Notes:

- 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.
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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:

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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

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.)

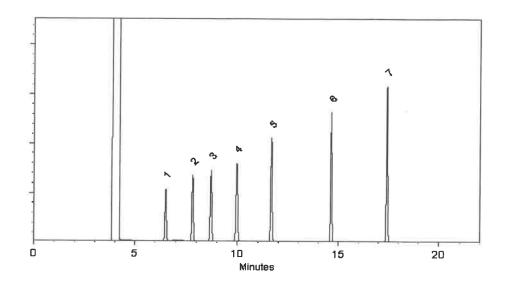
Inj. Temp: 200°C

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:

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CERTIFIED REFERENCE MATERIAL







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chromatographic plus

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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.)

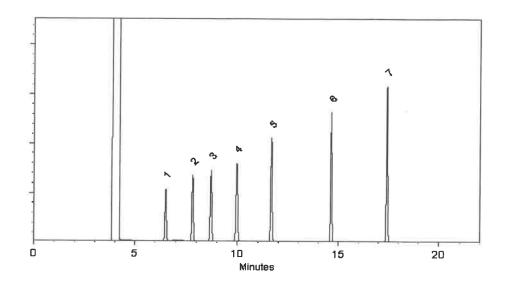
Inj. Temp: 200°C

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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Anthritish Anthritish

CERTIFIED REFERENCE MATERIAL







THE WHAT IN THE PARTY OF THE PA Certificate of Analysis

gravimetric

FOR LABORATORY USE ONLY-READ SDS PRIOR TO USE.

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

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

Pkg Amt: 2 mL Container Size:

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

10°C or colder

> 1 mL

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	L +/- 1,427.8857
2	1,4-Difluorobenzene	540-36-3	MKCS8657	99% 25,220.0 μg/mL	L +/- 1,428,3388
3	Chlorobenzene-d5	3114-55-4 PR-31132	PR-31132	99% 25,116.0 µg/mL	L +/- 1,422.4487
4	Pentafluorobenzene	363-72-4	363-72-4 MKCR9383	99% 25,180.0 µg/mL	L +/- 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:

1127510105 Balance:



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











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Certificate of Analysis

chromatographic plus

V14697-to-14726

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

July 31, 2027

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

Pkg Amt: > 1 mL

Storage:

0°C or colder

Ship:

Ambient

CERTIFIED VALUES

Elution Order	Compound	CAS#	Lot#	Purity	Grav. Conc. (weight/volume)	Expanded Uncertainty (95% C.L.; K=2)
1	Acetone	67-64-1	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

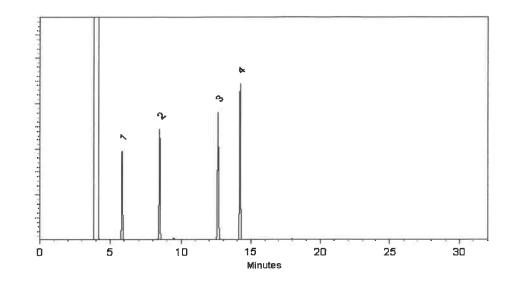
Det. Type:

Split Vent:

40 ml/min

Inj. Vol

 1μ l



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

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**

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V14697-to-14726

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

July 31, 2027

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

Pkg Amt: > 1 mL

Storage:

0°C or colder

Ship:

Ambient

CERTIFIED VALUES

Elution Order	Compound	CAS#	Lot#	Purity	Grav. Conc. (weight/volume)	Expanded Uncertainty (95% C.L.; K=2)
1	Acetone	67-64-1	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

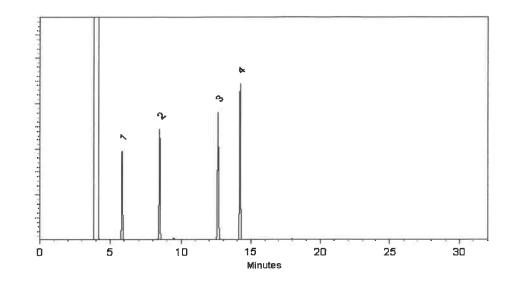
Det. Type:

Split Vent:

40 ml/min

Inj. Vol

 1μ l



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:

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

Certified Uncertainty Value Notes:

The uncertainties are determined in accordance with ISO 17034 and Guide 35. The certified expanded
uncertainty value includes gravimetric uncertainty, homogeneity between-ampul uncertainty, storage stability
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k is a coverage factor of 2, which gives a level of confidence of approximately 95%.

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

Manufacturing Notes:

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

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

30019











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FOR LABORATORY USE ONLY-READ SDS PRIOR TO USE.

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

Catalog No.:

30006

Lot No.: A0210618

Description:

VOA Calibration Mix #1

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

1mL/ampul

July 31, 2027

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

Pkg Amt: > 1 mL

Storage:

0°C or colder

Ship:

Ambient

CERTIFIED VALUES

Elution Order	Compound	CAS#	Lot#	Purity	Grav. Conc. (weight/volume)	Expanded Uncertainty (95% C.L.; K=2)
1	Acetone	67-64-1	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

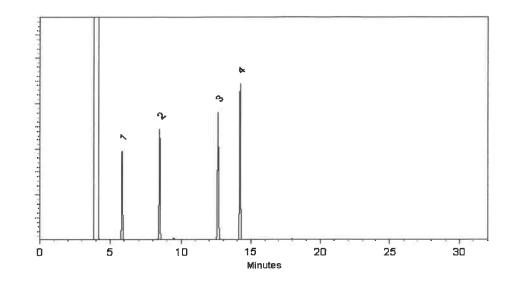
Det. Type:

Split Vent:

40 ml/min

Inj. Vol

 1μ l



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.



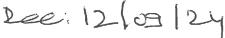


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10 vial. **CERTIFIED REFERENCE MATERIAL**



Certificate of Analysis

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

Catalog No.:

30225

Lot No.: A0214960

Description:

Bromochloromethane Standard

Bromochloromethane 2000µg/mL, P&T Methanol, 1mL/ampul

Container Size: Expiration Date: 2 mL

August 31, 2029

Pkg Amt:

> 1 mL

Storage:

0°C or colder

Ship: Ambient

CERTIFIED VALUES

Elution Order	Compound	CAS#	Lot#	Purity	Grav. Conc. (weight/volume)	Expanded Uncertainty * (95% C.L.; K=2)
1	Bromochloromethane	74-97-5	SYN240416CTH	99%	2,012.0 μg/mL	+/- 113.0519

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

Solvent:

P&T Methanol

CAS# 67-56-1 Purity 99%

Column:

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

Carrier Gas:

hydrogen-constant pressure 11.0 psi.

Temp. Program:

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

Inj. Temp:

200°C

Det. Temp:

250°C

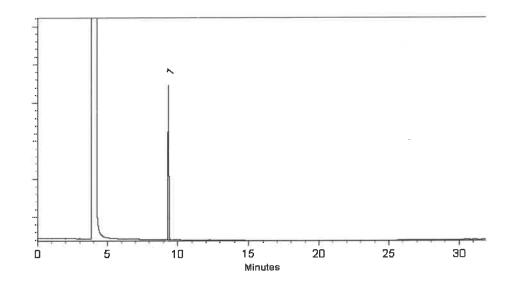
Det. Type:

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.

Stacy & Clam

Date Mixed:

08-Aug-2024

Balance Serial #

1127510105

Jennifer Pollino - Operations Tech III - ARM QC

Stacey Wanner - Operations Technician I

Date Passed:

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

Certified Uncertainty Value Notes:

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

Manufacturing Notes:

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

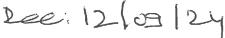


110 Benner Circle Bellefonte, PA 16823-8812 Tel: 1-814-353-1300

Fax: 1-814-353-1309

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10 vial. **CERTIFIED REFERENCE MATERIAL**



Certificate of Analysis

chromatographic plus









FOR LABORATORY USE ONLY-READ SDS PRIOR TO USE.

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

Catalog No.:

30225

Lot No.: A0214960

Description:

Bromochloromethane Standard

Bromochloromethane 2000µg/mL, P&T Methanol, 1mL/ampul

Container Size: Expiration Date: 2 mL

August 31, 2029

Pkg Amt:

> 1 mL

Storage:

0°C or colder

Ship: Ambient

CERTIFIED VALUES

Elution Order	Compound	CAS#	Lot#	Purity	Grav. Conc. (weight/volume)	Expanded Uncertainty * (95% C.L.; K=2)
1	Bromochloromethane	74-97-5	SYN240416CTH	99%	2,012.0 μg/mL	+/- 113.0519

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

Solvent:

P&T Methanol

CAS# 67-56-1 Purity 99%

Column:

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

Carrier Gas:

hydrogen-constant pressure 11.0 psi.

Temp. Program:

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

Inj. Temp:

200°C

Det. Temp:

250°C

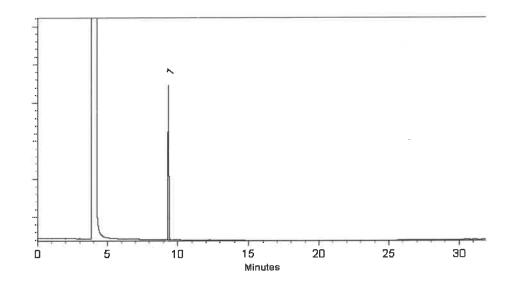
Det. Type:

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.

Stacy & Clam

Date Mixed:

08-Aug-2024

Balance Serial #

1127510105

Jennifer Pollino - Operations Tech III - ARM QC

Stacey Wanner - Operations Technician I

Date Passed:

14-Aug-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 30 Wid











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V14727 to

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

Catalog No.:

30042

Lot No.: 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#

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

Column:

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

Carrier Gas:

helium-constant flow 2.0 mL/min.

Temp. Program:

40°C (hold 6 min.) to 100°C

@ 6°C/min.

Inj. Temp:

200°C

Det. Temp:

250°C

Det. Type:

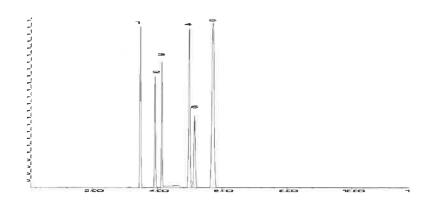
MSD

Split Vent:

Split ratio 10:1

Inj. Vol

1μl



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

Tom Suckar Mix Technician

Date Mixed:

23-Sep-2024

Balance Serial #

B707717271

Pollar

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 30 Wid











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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#

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

Column:

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

Carrier Gas:

helium-constant flow 2.0 mL/min.

Temp. Program:

40°C (hold 6 min.) to 100°C

@ 6°C/min.

Inj. Temp:

200°C

Det. Temp:

250°C

Det. Type:

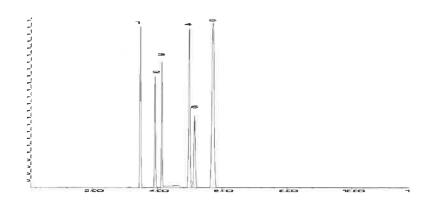
MSD

Split Vent:

Split ratio 10:1

Inj. Vol

1μl



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

Tom Suckar Mix Technician

Date Mixed:

23-Sep-2024

Balance Serial #

B707717271

Pollar

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

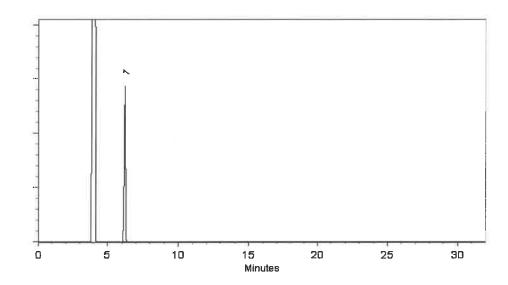
Det. Type:

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.
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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.



201, year 01/08/21 CERTIFIED REFERENCE MATERIAL













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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.

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:

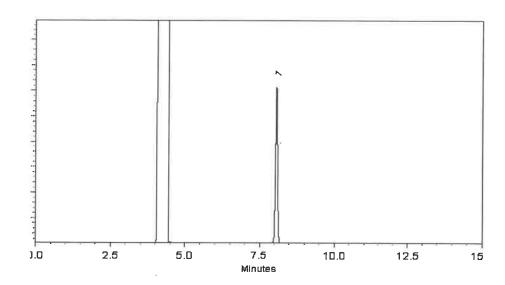
250°C

Det. Type:

Split Vent:

40 ml/min

Inj. Vol **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 Januariller Politics at 7:12 um, Jan 63, 2025

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

Expiration Notes:

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

Purity Notes:

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

Certified Uncertainty Value Notes:

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

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

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

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

Manufacturing Notes:

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

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



201, year 01/08/21 CERTIFIED REFERENCE MATERIAL













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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.

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:

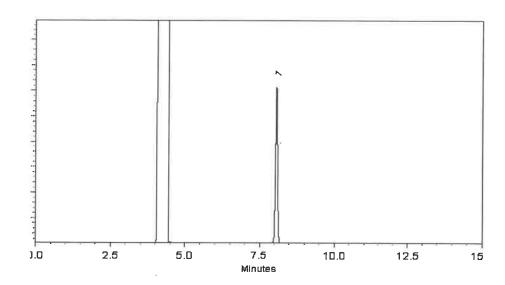
250°C

Det. Type:

Split Vent:

40 ml/min

Inj. Vol **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 Januariller Politics at 7:12 um, Jan 63, 2025

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

Expiration Notes:

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

Purity Notes:

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

10 val Dec 01/08/25

CERTIFIED REFERENCE MATERIAL













Certificate of Analysis

chromatographic

FOR LABORATORY USE ONLY-READ SDS PRIOR TO USE.

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

Catalog No.:

555408-FL

Lot No.: A0220563

Description:

Custom Vinyl Acetate Standard

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

Container Size:

2 mL

Pkg Amt: > 1 mL

Expiration Date:

June 30, 2026

Storage:

-20°C or colder

Handling:

This product is photosensitive.

Ship: On Ice

CERTIFIED VALUES

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

* 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:

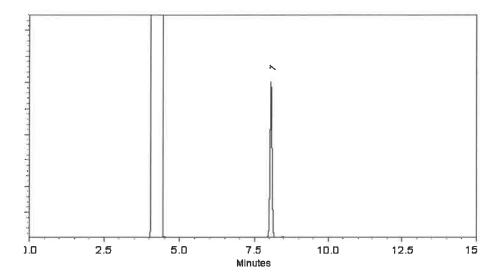
40 ml/min

1μ

Det. Type:

Split Vent:

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.

Date Mixed:

30-Dec-2024

Balance Serial #

B345965662

willow shortly Dillan Murphy - Operations Technician I

Date Passed:

02-Jan-2025

REVIEWED By Jernifler Politics at 7:11 are, Jan 60, 2005

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

Expiration Notes:

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

Purity Notes:

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

Certified Uncertainty Value Notes:

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

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

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

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

Manufacturing Notes:

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

- 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.



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

Part Number:

CERTIFIED WEIGHT REPORT

Lot Number:

Bromochloromethane 070122 Description:

Refrigerate (4 °C) 070127 1000 Recommended Storage: **Expiration Date:**

Weight(s) shown below were combined and diluted to (mL): Nominal Concentration (µg/mL): NIST Test ID#:

0.0002 5E-05 25.0

Balance Uncertainty Flask Uncertainty

EC592-US Solvent: Methanol

Lot#

Gabriel Helland Formulated By:

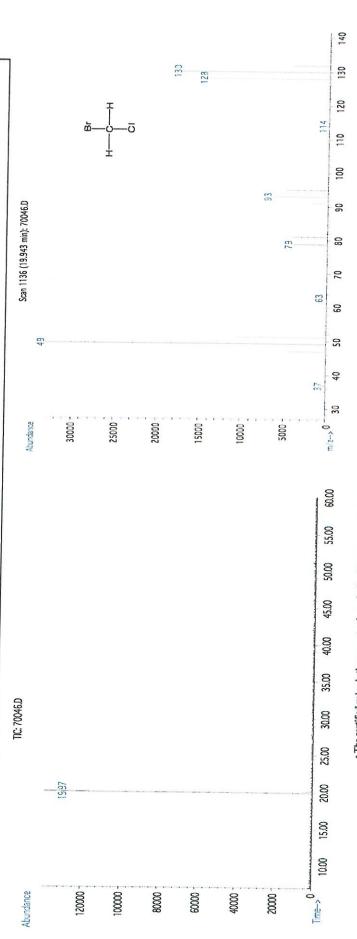
070122 DATE 070122 Pedro L. Rentas Reviewed By

DATE

(Solvent Safety Info. On Attached pg.) SDS Information OSHA PEL (TWA) CAS# Conc (ug/mL) (+/-) (ug/mL) Uncertainty Actual Weight(g) Actual Weight(g) Target Uncertainty Purity (%) Purity 8 Conc (µg/mL) Nominal Number AY01 ĕ RM# 46

Expanded

orl-rat 5000mg/kg Method GC6MSD-1.M: Column: (60m X 0.25mm X 1.5 μm) Temp 1 = 35°C (10min.), Temp 2 = 200°C (8.75 min.), Rate = 4°C/min., Injector B= 200°C, Detector B = 220°C. Analyst: 200 ppm (1050mg/m3/8H) 74-97-5 5.7 1004.1 0.02540 0.02530 0.2 66 1000 Bromochloromethane Compound



- 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 fight 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).





V14921 to V14938

Material No.: 9077-02
Batch No.: 24G0262002
Manufactured Date: 2024-05-14
Expiration Date: 2027-05-14

Revision No.: 0

Certificate of Analysis

Test	Specification	Result
Assay (CH3OH) (by CC, corrected for water)	≥ 99.9%	100 0 %
		100.0
kesidue after Evaporation	≤ 1.0 ppm	0.3 ppm
Titrable Acid (µeq/g)	≤ 0.3	0.3
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







V14921 to V14938

Material No.: 9077-02
Batch No.: 24G0262002
Manufactured Date: 2024-05-14
Expiration Date: 2027-05-14

Revision No.: 0

Certificate of Analysis

Test	Specification	Docul*
	pecification	Result
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Residue after Evaporation	™ 1.0 ppm	0 3 ppm
Titrable Acid (μeq/g)	≤ 0.3	0,3
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	-

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

Jamie Croak

Director Quality Operations, Bioscience Production



CERTIFIED REFERENCE MATERIAL 05/12/20

lo vial

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

www.restek.com





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chromatographic plus

Certificate of Analysis

OSBHIAM ItbhIA

FOR LABORATORY USE ONLY-READ SDS PRIOR TO USE.

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

Catalog No. : 30489 Lot No.: A0220531

Description: 8260B Acetates Mix

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

Expiration Date: Container Size: This product is photosensitive. June 30, 2026 Pkg Amt: Storage: Ship: > 1 mL On Ice -20°C or colder

Handling:

O ERTIFIED VALUES

	7	6	5	4	w	2	1	Elution Order
	Amyl acetate	Butyl acetate	Propyl acetate	Isopropyl acetate	Ethyl acetate	Vinyl acetate	Methyl acetate	
								Compound
	628-63-7	123-86-4	109-60-4	108-21-4	141-78-6	108-05-4	79-20-9	CAS#
* 7	BCBT7442	SHBR2024	P8XLN	BCCG7069	SHBR4534	RD240423RSR	SHBR1889	Lot#
	99%	99%	99%	99%	99%	99%	99%	Purity
	2,017.3		2,017.3				2,018.7	Grav (weight
- 1	2,017.3 µg/mL	2,010.7 μg/mL	2,017.3 μg/mL	2,010.7 µg/mL	2,010.7 µg/mL	2,014.7 µg/mL	2,018.7 µg/mL	Grav. Conc. weight/volume)
·	+/- 69.7283	+/- 69.4979	+/- 69.7283	+/- 69.4979	+/- 69.4979	+/- 69.6361	+/- 69.7744	Expanded Uncertainty (95% C.L.; K=2)

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

Solvent: P&T Methanol

99% 67-56-1

Purity CAS#

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

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5 21cd Certified Reference Material CRM いていまり かか

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

DATE 071625 071625 DATE orl-rat 46mg/kg LD50 (Solvent Safety Info. On Attached pg.) Nelland SDS Information OSHA PEL (TWA) Gabriel Heiland Pedro L. Rentas 0.1 ppm Ser. and the 107-02-8 CAS# Formulated By: Reviewed By: Uncertainty Conc (ug/ml.) (+/-) (µg/ml.) Expanded 52.6 WHERE IN 5014.7 Actual of asosin 041725Q Weight (g) 0.05181 10th Actual Solvent(s): Weight(g) 0.05166 Water Target Balance Uncertainty Flask Uncertainty Uncertainty Purity 0.5 5E-05 0.001 Purity Z 97 Conc (ug/mL) Refrigerate (2°C to 8°C) Nominal 10.0 5000 103755V10F Weight(s) shown below were combined and diluted to (mL): Number Acrolein ខ្ម 071625 081625 91980 5000 RM# LO) Part Number: Description: Expiration Date: Recommended Storage: Nominal Concentration (ug/mL): Lot Number: NIST Test ID#: CERTIFIED WEIGHT REPORT Compound 1. Acrolein

Method: GC6MSD-1. Detector: Mass Selective Detector (Scan mode). Column: Vocol (60m X 0.25mm ID X 1.5µm film thickness). Oven Profile: Temp. 1 = 35°C (Time 1 = 10min.). Temp. 2 = 200°C (Time 2 = 8.75 min.) 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.

Abundanoo	TIC: [BSB2]79005.D	4	Scan 232 (8.927 min): [BSB2]79005.D
⁷⁴		Abundance 27	
250000 8.93		00009	

50000

200000

150000

20

40000 30000

37

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 by an ISO 17625 certified organization with weights traceable through NIST to the SI kilogram (see above).
 Standards are certified (+/-) 0.5% of the stated value, unless otherwise stated.

All Standards, after opening ampule, should be stored with caps tight and under appropriate laboratory canditions.
 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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⁷⁴		Abundance 27	
250000 8.93		00009	

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DATE 071625 071625 DATE orl-rat 46mg/kg LD50 (Solvent Safety Info. On Attached pg.) Nelland SDS Information OSHA PEL (TWA) Gabriel Heiland Pedro L. Rentas 0.1 ppm Ser. and the 107-02-8 CAS# Formulated By: Reviewed By: Uncertainty Conc (ug/ml.) (+/-) (µg/ml.) Expanded 52.6 WHERE IN 5014.7 Actual of asosin 041725Q Weight (g) 0.05181 10th Actual Solvent(s): Weight(g) 0.05166 Water Target Balance Uncertainty Flask Uncertainty Uncertainty Purity 0.5 5E-05 0.001 Purity Z 97 Conc (ug/mL) Refrigerate (2°C to 8°C) Nominal 10.0 5000 103755V10F Weight(s) shown below were combined and diluted to (mL): Number Acrolein ខ្ម 071625 081625 91980 5000 RM# LO) Part Number: Description: Expiration Date: Recommended Storage: Nominal Concentration (ug/mL): Lot Number: NIST Test ID#: CERTIFIED WEIGHT REPORT Compound 1. Acrolein

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Abundanoo	TIC: [BSB2]79005.D	4	Scan 232 (8.927 min): [BSB2]79005.D
⁷⁴		Abundance 27	
250000 8.93		00009	

50000

200000

150000

20

40000 30000

37

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 by an ISO 17625 certified organization with weights traceable through NIST to the SI kilogram (see above).
 Standards are certified (+/-) 0.5% of the stated value, unless 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).
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CERTIFIED WEIGHT REPORT

Certified Reference Material CRM

24/4/140



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

Part Number:	91980			•	Solvent(s): Lot#				The specific and selections	
Lot Number: Description:	071525 Acrolein				Water 041725Q			A.	the comment of grant let	071525
Expiration Date:	081525			7	550517		Formulated By:	By:	Justin Dippold	DATE
Recommended Storage:	Refrigerate (2°C to 8°C)	2°C to 8°C)			Ple Visi			D	A SA	
Nominal Concentration (µg/mL): NIST Test ID#:	5000 6UTB		5E-05	5E-05 Balance Uncertainty			Reviewed By:	.X.	Pedro L. Rentas	071525 DATE
Weight(s) shown below were combined and diluted to (mL):	ind diluted to (mL):	10.0	0.001	Flask Uncertainty						
	P o	Nominal	Purity	Purity Uncertainty	Target Actual	Actual	Expanded Uncertainty	(Solvent	Expanded SDS Information Uncertainty (Solvent Safety Info. On Attached pg.)	hed og.)
Compound	RM# Number	Conc (ug/mt.)	(%)	Purity	(6)	Conc (µg/mL) (+/-) (µg/mL)	(+/-) (mg/mF)	CAS#	OSHA PEL (TWA)	LDS0
1. Acrolein	5 103755R02H	2000	97	0.5	0,05166 0,05175	5008.9	52.5	107-02-8	0.1 ppm	orl-rat 46mg/kg
Method: GC6MSD-1. Detector: Mass Selective Detector (Scan mode). Column: Vocol (60n X 0.25mm ID X 1.5µm film thickness). Oven Profile: Temp. 1 = 35°C (Time 1 = 10min.). Temp. 2 = 200°C, Detector Temp. = 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.	ctive Detector (Scan mode betector Temp. = 220°C. A ase contact our technical d). Column: Voco nalyst: Pedro Rer epartment if furth	(60m X (tas. NOT r informal	E: Due to the instion is required.	um film thickness). Oven Profi ability of acrolein in solution, a	le: Temp. 1 = 35°	C (Time 1 = 10) olein, and any d	nia.), Temp. 2 ilutions thereo	"200°C (Time 2 = 8.75 min. f, should be used immediate)	Ca

Abundance	TIC: [BSB2]79005.D	Abundance	. S	Scan 232 (8.927 min): [BSB2]79005.D	3SB2]79005.D	
250000 8.93		00009				
200000		20000		99		
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		30000				
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50000		10000	37			
Time>0 10.00 15.00	10.00 15.00 20.00 25.00 30.00 35.00 40.00 45.00 50.00 55.00 60.00	m/z> 20	30 40	0 44 65 75 85 119 158 169 m/z> 20 30 40 50 60 70 80 90 100 110 120 130 140 150 160 170	119	Ю

The certified value is the concentration calculated from gravimetric and volumetric measurements unless otherwise stated.
 Standards are prepared gravimetrically using balances that are calibrated by an ISO 17025 certified organization with weights traceable through NIST to the SI kilogram (see above).
 Standards are certified (+/-) 0.5% of the stated value, unless otherwise stated.
 SI STANDARDS are prepared any public, should be stored with caps tight and under appropriate laboratory conditions.
 Uncertainty Reference: Taylor, B.N. and Kuyat, C.E., "Guidelines for Evaluating and Expressing the Uncertainty of NIST Measurement Result,"
 Rovernment Printing Office, Washington, DC, (1994).

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CERTIFIED WEIGHT REPORT

Certified Reference Material CRM

24/4/140



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

Part Number:	91980			•	Solvent(s): Lot#				The specific and selections	
Lot Number: Description:	071525 Acrolein				Water 041725Q			A.	the comment of grant let	071525
Expiration Date:	081525			7	550517		Formulated By:	By:	Justin Dippold	DATE
Recommended Storage:	Refrigerate (2°C to 8°C)	2°C to 8°C)			Ple Visi			D	A SA	
Nominal Concentration (µg/mL): NIST Test ID#:	5000 6UTB		5E-05	5E-05 Balance Uncertainty			Reviewed By:	.X.	Pedro L. Rentas	071525 DATE
Weight(s) shown below were combined and diluted to (mL):	ind diluted to (mL):	10.0	0.001	Flask Uncertainty						
	P o	Nominal	Purity	Purity Uncertainty	Target Actual	Actual	Expanded Uncertainty	(Solvent	Expanded SDS Information Uncertainty (Solvent Safety Info. On Attached pg.)	hed og.)
Compound	RM# Number	Conc (ug/mt.)	(%)	Purity	(6)	Conc (µg/mL) (+/-) (µg/mL)	(+/-) (mg/mF)	CAS#	OSHA PEL (TWA)	LDS0
1. Acrolein	5 103755R02H	2000	97	0.5	0,05166 0,05175	5008.9	52.5	107-02-8	0.1 ppm	orl-rat 46mg/kg
Method: GC6MSD-1. Detector: Mass Selective Detector (Scan mode). Column: Vocol (60n X 0.25mm ID X 1.5µm film thickness). Oven Profile: Temp. 1 = 35°C (Time 1 = 10min.). Temp. 2 = 200°C, Detector Temp. = 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.	ctive Detector (Scan mode betector Temp. = 220°C. A ase contact our technical d). Column: Voco nalyst: Pedro Rer epartment if furth	(60m X (tas. NOT r informal	E: Due to the instion is required.	um film thickness). Oven Profi ability of acrolein in solution, a	le: Temp. 1 = 35°	C (Time 1 = 10) olein, and any d	nia.), Temp. 2 ilutions thereo	"200°C (Time 2 = 8.75 min. f, should be used immediate)	Ca

Abundance	TIC: [BSB2]79005.D	Abundance	8	Scan 232 (8.927 min): [BSB2]79005.D	BSB2]79005.D	
250000 8.93		00009				
200000	0/////	20000		99		
150000		40000				
		30000				
100000		20000				
20000		10000	37			
Time>0 10.00 15.00	10.00 15.00 20.00 25.00 30.00 35.00 40.00 45.00 50.00 55.00 60.00	m/z> 0	30 40	65 75 85	0 44 65 75 85 119 158 169 m/z> 20 30 40 50 60 70 80 90 100 110 120 130 140 150 160 170	FU

The certified value is the concentration calculated from gravimetric and volumetric measurements unless otherwise stated.
 Standards are prepared gravimetrically using balances that are calibrated by an ISO 17025 certified organization with weights traceable through NIST to the SI kilogram (see above).
 Standards are certified (+/-) 0.5% of the stated value, unless otherwise stated.
 SI STANDARDS are prepared any public, should be stored with caps tight and under appropriate laboratory conditions.
 Uncertainty Reference: Taylor, B.N. and Kuyat, C.E., "Guidelines for Evaluating and Expressing the Uncertainty of NIST Measurement Result,"
 Rovernment Printing Office, Washington, DC, (1994).