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Prep Standard - Chemical Standard Summary

Order ID: P3596

Test: VOCMS Group6

Prepbatch ID:

Sequence ID/Qc Batch ID: VN081424,

Standard ID:

VP126666,VP128290,VP128298,VP128523,VP128632,VP128634,VP128762,VP128764,VP128765,VP128766,VP128768, VP128769,VP129196,VP129228,VP129230,VP129231,VP129232,VP129235,VP129236,VP129238,VP129517,VP129519, VP129520,VP129723,VP129724,VP129725,VP129726,VP129727,VP129728,VP129729,VP129730,VP129731,

Chemical ID:

V12794, V12798, V12966, V13390, V13444, V13448, V13462, V13463, V13539, V13581, V13707, V13708, V13800, V13801, V13812, V13952, V13953, V13959, V14016, V14017, V14093, V14103, V14104, V14123, V14141, V14142, V14143, V14147, V14148, V14169, V14170, V14177, V14202, V14207, V14219, V14288, V14411, V14412, V14413, V14414, V14415, W3112, V14413, V14414, V14415, W3112, V14414, W3114, W3114



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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
617	8260 Surrogate, 400PPM	<u>VP126666</u>	03/19/2024	09/19/2024	Semsettin	None	None	
					Yesilyurt			03/28/2024

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Recipe				Expiration	<u>Prepared</u>			Supervised By
<u>ID</u>	<u>NAME</u>	NO.	Prep Date	<u>Date</u>	<u>By</u>	<u>ScaleID</u>	<u>PipetteID</u>	Mahesh Dadoda
218	BFB, 25PPM	<u>VP128290</u>	06/10/2024	11/23/2024	Semsettin	None	None	
					Yesilyurt			06/12/2024

FROM 0.25000ml of V13390 + 24.75000ml of V14148 = 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
247	8260 Internal Standard, 250PPM	<u>VP128298</u>	06/10/2024	11/23/2024	Semsettin	None	None	
					Yesilyurt			06/12/2024

FROM	0.10000ml of V14288 + 9.90000ml of V14148 = Final Quantity: 10.000 ml

Recipe ID	<u>NAME</u>	NO.	Prep Date	Expiration Date	Prepared By	<u>ScaleID</u>	<u>PipetteID</u>	Supervised By Mahesh Dadoda
251	8260 Internal STD & Surrogate Mix, 250PPM	<u>VP128523</u>	06/10/2024	12/10/2024	Semsettin Yesilyurt	None	None	06/22/2024

FROM 0.25000ml of V13707 + 0.25000ml of V14288 + 24.50000ml of V14142 = Final Quantity: 25.000 ml



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VOC STANDARD PREPARATION LOG

Recipe ID	<u>NAME</u>	<u>NO.</u>	Prep Date	Expiration Date	<u>Prepared</u> <u>By</u>	<u>ScaleID</u>	<u>PipetteID</u>	Supervised By Mahesh Dadoda
1	8260 Working Std(2-CVE)-SS, 800ppm	<u>VP128632</u>	06/25/2024	12/11/2024	Semsettin Yesilyurt	None	None	07/02/2024

FROM	0.80000ml of V13581 + 9.20000ml of V14147 = 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
1818	8260 Working Std(2-CVE)-SS, 50ppm	<u>VP128634</u>	06/25/2024	12/11/2024	Semsettin Yesilyurt	None	None	07/02/2024

FROM 4.68750ml of V14147 + 0.31250ml of VP128632 = Final Quantity: 5.000 ml



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VOC STANDARD PREPARATION LOG

Recipe ID	NAME	<u>NO.</u>	Prep Date	Expiration Date	Prepared By	<u>ScaleID</u>	<u>PipetteID</u>	Supervised By Mahesh Dadoda
	8260 Working Std(2-CVE)-800ppm	<u>VP128762</u>	07/01/2024	12/11/2024	Semsettin Yesilyurt	None	None	07/02/2024

FROM	0.50000ml of V12798 +	1.50000ml of V12794	+ 23.0000ml of V14147	= Final Quantity: 25.000 ml

Recipe ID	NAME	<u>NO.</u>	Prep Date	Expiration Date	Prepared By	<u>ScaleID</u>	<u>PipetteID</u>	Supervised By Mahesh Dadoda
1812	8260 Working Std(2-CVE)-100ppm	<u>VP128764</u>	07/01/2024	12/11/2024	Semsettin Yesilyurt	None	None	07/02/2024

FROM 0.20000ml of V12798 + 19.08000ml of V14147 = Final Quantity: 20.000 ml





VOC STANDARD PREPARATION LOG

Recipe ID	<u>NAME</u>	<u>NO.</u>	Prep Date	Expiration Date	<u>Prepared</u> <u>By</u>	<u>ScaleID</u>	<u>PipetteID</u>	Supervised By Mahesh Dadoda
1813	8260 Working Std(2-CVE)-50ppm	<u>VP128765</u>	07/01/2024	12/11/2024	Semsettin Yesilyurt	None	None	07/02/2024

FROM	9.37500ml of V14147 + 0.62500ml of VP128762 = Final Quantity: 10.000 ml

Recipe ID	<u>NAME</u>	NO.	Prep Date	Expiration Date	Prepared By	<u>ScaleID</u>	<u>PipetteID</u>	Supervised By Mahesh Dadoda
719	8260 Working STD (BCM)-First source, 400PPM	<u>VP128766</u>	07/01/2024	12/11/2024	Semsettin Yesilyurt	None	None	07/02/2024

FROM 1.50000ml of V13462 + 1.50000ml of V13463 + 12.00000ml of V14147 = Final Quantity: 15.000 ml



VOC STANDARD PREPARATION LOG

Recipe ID 253	NAME 8260 Working STD (BCM)-First source, 20PPM	NO. VP128768	Prep Date 07/01/2024	Expiration Date 12/11/2024	Prepared By Semsettin Yesilyurt	<u>ScaleID</u> None	PipetteID None	Supervised By Mahesh Dadoda 07/02/2024
FROM	FROM 0.10000ml of V13463 + 9.90000ml of V14147 = Final Quantity: 10.000 ml							

ml

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
254	0200 110.11	<u>VP128769</u>	07/01/2024	12/11/2024	Semsettin	None	None	07/00/0004
	source, 10PPM				Yesilyurt			07/02/2024

0.05000ml of V13463 + 9.95000ml of V14147 = Final Quantity: 10.000 ml **FROM**





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
825	8260 Working STD (BCM)-Second source, 10PPM	<u>VP129196</u>	07/22/2024	01/22/2025	Semsettin Yesilyurt	None	None	07/26/2024

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>VP129228</u>	07/25/2024	08/24/2024	Semsettin Yesilyurt	None	None	07/30/2024

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





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
180	8260 Working STD (Acrolein)-First source, 100PPM	<u>VP129230</u>	07/25/2024	08/24/2024	Semsettin Yesilyurt	None	None	07/30/2024

FROM 17.50000ml of V14143 + 2.50000ml of VP	2129228 = Final Quantity: 20.000 ml
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Recipe ID	NAME_	NO.	Prep Date	Expiration Date	Prepared By	<u>ScaleID</u>	<u>PipetteID</u>	Supervised By Mahesh Dadoda
181	8260 Working STD (Acrolein)-First source, 50PPM	<u>VP129231</u>	07/25/2024	08/24/2024	Semsettin Yesilyurt	None	None	07/30/2024

FROM 9.37500ml of V14143 + 0.62500ml of VP129228 = Final Quantity: 10.000 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
263	8260 Working STD	<u>VP129232</u>	07/25/2024	08/23/2024	Semsettin	None	None	
	(Acrolein)-Second source,				Yesilyurt			07/30/2024
	800PPM							

FROM 0.60000ml of V14414 + 1.00000ml of V14415 + 8.40000ml of V14143 = Final Quantity: 10.000 ml

Recipe ID	NAME_	NO.	Prep Date	Expiration Date	Prepared By	<u>ScaleID</u>	<u>PipetteID</u>	Supervised By Mahesh Dadoda
826	8260 Working STD (Acrolein)-Second source, 50PPM	<u>VP129235</u>	07/25/2024	08/23/2024	Semsettin Yesilyurt	None	None	07/30/2024

FROM 4.68750ml of V14143 + 0.31250ml of VP129232 = Final Quantity: 5.000 ml



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VOC STANDARD PREPARATION LOG

			l	<u>By</u>	<u>ScaleID</u>	<u>PipetteID</u>	Mahesh Dadoda
tion Working STD source, 160PPM	<u>VP129236</u>	07/22/2024	08/31/2024	Semsettin Yesilyurt	None	None	07/30/2024

FROM 0.16000ml of V13448 + 0.80000ml of V13812 + 0.80000ml of V13959 + 0.80000ml of V14093 + 0.80000ml of V14123 + 0.80000ml of V14177 + 1.60000ml of V13539 + 4.24000ml of V14143 = Final Quantity: 10.000 ml

Recipe				Expiration	<u>Prepared</u>			Supervised By
<u>ID</u> 820	NAME 8260 Calibration Working STD	NO. VP129238	Prep Date 07/22/2024	<u>Date</u> 08/31/2024	<u>By</u> Semsettin	<u>ScaleID</u> None	PipetteID None	Mahesh Dadoda
020	Mix-Second source, 10PPM	<u> </u>	0172272021	00/01/2021	Yesilyurt	110110	110110	07/30/2024

FROM 4.68750ml of V14143 + 0.31250ml of VP129236 = 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
257	8260 Calibration Working STD Mix-First source, 160PPM	<u>VP129517</u>	08/05/2024	09/14/2024	Semsettin Yesilyurt	None	None	08/08/2024

FROM

 $0.40000ml\ of\ V13444+1.00000ml\ of\ V13800+1.00000ml\ of\ V13801+1.00000ml\ of\ V13952+1.00000ml\ of\ V13953+1.00000ml\ of\ V14016+1.00000ml\ of\ V14017+1.00000ml\ of\ V14103+1.00000ml\ of\ V14104+1.00000ml\ of\ V1410$

Recipe ID	NAME_	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>VP129519</u>	08/05/2024	09/14/2024	Semsettin Yesilyurt	None	None	08/08/2024

FROM 17.50000ml of V14143 + 2.50000ml of VP129517 = Final Quantity: 20.000 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
246	8260 Calibration Working STD Mix-First source, 10PPM	<u>VP129520</u>	08/05/2024	09/14/2024	Semsettin Yesilyurt	None	None	08/08/2024

FROM	9.37500ml of V14143 + 0.62500ml of VP129517	= Final Quantity: 10.000 ml
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Recipe				Expiration	Prepared			Supervised By
<u>ID</u>	<u>NAME</u>	<u>NO.</u>	Prep Date	<u>Date</u>	<u>By</u>	<u>ScaleID</u>	<u>PipetteID</u>	Mahesh Dadoda
589	BFB TUNE CHECK	<u>VP129723</u>	08/14/2024	08/15/2024	John Carlone	None	None	
								08/15/2024

FROM 39.98400ml of W3112 + 0.01600ml of VP128290 = Final Quantity: 40.000 ml





FROM

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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
620	50 PPB CCC, 8260-Water	<u>VP129724</u>	08/14/2024	08/15/2024	John Carlone	None	None	08/15/2024
								06/15/2024

39.94450ml of W3112 + 0.00500ml of VP126666 + 0.00500ml of VP128766 + 0.00800ml of VP128298 + 0.01250ml of VP128762 + 0.01250ml of VP129228 + 0.01250ml of VP129517 = Final Quantity: 40.000 ml

Recipe				Expiration	Prepared			Supervised By
<u>ID</u>	<u>NAME</u>	NO.	Prep Date	<u>Date</u>	<u>By</u>	<u>ScaleID</u>	<u>PipetteID</u>	Mahesh Dadoda
620	50 PPB CCC, 8260-Water	<u>VP129725</u>	08/14/2024	08/15/2024	John Carlone	None	None	
								08/15/2024

FROM 39.94450ml of W3112 + 0.00500ml of VP126666 + 0.00500ml of VP128766 + 0.00800ml of VP128298 + 0.01250ml of VP128762 + 0.01250ml of VP129228 + 0.01250ml of VP129517 = Final Quantity: 40.000 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
2390	0.2PPB LOD, 8260-Water	<u>VP129726</u>	08/14/2024	08/15/2024	John Carlone	None	None	08/15/2024
								00/10/2021

FROM 39.98840ml of W3112 + 0.00080ml of VP128634 + 0.00080ml of VP129196 + 0.00080ml of VP129235 + 0.00080ml of VP129238 + 0.00800ml of VP128523 = Final Quantity: 40.000 ml

Recipe				Expiration	Prepared			Supervised By
<u>ID</u>	<u>NAME</u>	NO.	Prep Date	<u>Date</u>	<u>By</u>	<u>ScaleID</u>	<u>PipetteID</u>	Mahesh Dadoda
2947	0.5 ppb MDL 8260 Water	<u>VP129727</u>	08/14/2024	08/15/2024	John Carlone	None	None	
								08/15/2024

FROM 39.98000ml of W3112 + 0.00100ml of VP128764 + 0.00100ml of VP128768 + 0.00100ml of VP129230 + 0.00100ml of VP129519 + 0.00500ml of VP126666 + 0.00800ml of VP128298 = Final Quantity: 40.000 ml





VOC STANDARD PREPARATION LOG

Recipe ID	<u>NAME</u>	NO.	Prep Date	Expiration Date	Prepared By	<u>ScaleID</u>	<u>PipetteID</u>	Supervised By Mahesh Dadoda		
3585	0.75 PPB MDL 8260 WATER	VP129728	08/14/2024	08/15/2024	John Carlone	None	None			
								08/15/2024		
FROM	FROM 39.97000ml of W3112 + 0.00300ml of VP128765 + 0.00300ml of VP128769 + 0.00300ml of VP129231 + 0.00300ml of									

39.97000ml of W3112 + 0.00300ml of VP128765 + 0.00300ml of VP128769 + 0.00300ml of VP129231 + 0.00300ml of VP129520 + 0.00500ml of VP126666 + 0.00800ml of VP128298 = Final Quantity: 40.000 ml

Recipe				Expiration	Prepared			Supervised By
<u>ID</u>	<u>NAME</u>	<u>NO.</u>	Prep Date	<u>Date</u>	<u>By</u>	<u>ScaleID</u>	<u>PipetteID</u>	Mahesh Dadoda
3786	2.5 PPB 8260 MDL-WATER	<u>VP129729</u>	08/14/2024	08/15/2024	John Carlone	None	None	
								08/15/2024

FROM 39.92000ml of W3112 + 0.00800ml of VP128523 + 0.01000ml of VP128765 + 0.01000ml of VP128769 + 0.01000ml of VP129231 + 0.01000ml of VP129520 = Final Quantity: 40.000 ml





VOC STANDARD PREPARATION LOG

Recipe ID	<u>NAME</u>	NO.	Prep Date	Expiration Date	Prepared By	<u>ScaleID</u>	<u>PipetteID</u>	Supervised By Mahesh Dadoda
3742	1.0 PPB LOQ 8260 Water	<u>VP129730</u>	08/14/2024	08/15/2024	John Carlone	None	None	08/15/2024

FROM 39.98000ml of W3112 + 0.00200ml of VP128764 + 0.00200ml of VP128768 + 0.00200ml of VP129230 + 0.00200ml of VP129519 + 0.00500ml of VP126666 + 0.00800ml of VP128298 = Final Quantity: 40.000 ml

Recipe				Expiration	Prepared			Supervised By
<u>ID</u>	<u>NAME</u>	<u>NO.</u>	Prep Date	<u>Date</u>	<u>By</u>	<u>ScaleID</u>	<u>PipetteID</u>	Mahesh Dadoda
3748	8260 5.0 PPB LOQ/WATER	<u>VP129731</u>	08/14/2024	08/15/2024	John Carlone	None	None	
								08/15/2024

FROM 39.94000ml of W3112 + 0.00500ml of VP126666 + 0.00800ml of VP128298 + 0.01000ml of VP128764 + 0.01000ml of VP128768 + 0.01000ml of VP129230 + 0.01000ml of VP129519 = Final Quantity: 40.000 ml



Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Absolute Standards, Inc.	95318 / 2-Chloroethyl Vinyl Ether (Min = 5)	121321	12/13/2024	06/25/2024 / SAM	03/30/2022 / SAM	V12794
Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Absolute Standards, Inc.	95318 / 2-Chloroethyl Vinyl Ether (Min = 5)	121321	12/13/2024	06/25/2024 / SAM	03/30/2022 / SAM	V12798
Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date /	Chemtech Lot #
Absolute Standards, Inc.	70046 / Bromochloromethane Std. sol/methanol 1000ppm	070122	01/22/2025	07/22/2024 / SAM	07/06/2022 / SAM	V12966
Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Restek	30067 / BFB tuneing solution	A0191805	12/08/2024	12/08/2023 / SAM	01/13/2023 / SAM	V13390
Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened /	Received Date /	Chemtech Lot #
Restek	30470 / VOA Stock Solution, tert-butanol std, 1mL, P&TM	A0181905	12/14/2024	06/14/2024 / SAM	01/23/2023 / SAM	V13444
Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Restek	30470 / VOA Stock Solution, tert-butanol std,	A0191703	12/03/2024	06/03/2024 / SAM	01/23/2023 / SAM	V13448



Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Restek	30225 / VOA Mix, bromochloromethane, 2000ug/mL, P&TM, 1mL/ampul	A0193071	01/01/2025	07/01/2024 / SAM	01/27/2023 / SAM	V13462
Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Restek	30225 / VOA Mix, bromochloromethane, 2000ug/mL, P&TM, 1mL/ampul	A0193071	01/01/2025	07/01/2024 / SAM	01/27/2023 / SAM	V13463
Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Restek	30006 / VOA Mix, CLP method Calibration Std #1 ketones 5000uq/ml, PTM, 1ml	A0186767	11/29/2024	05/29/2024 / SAM	01/27/2023 / SAM	V13539
Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Absolute Standards, Inc.	95318 / 2-Chloroethyl Vinyl Ether (Min = 5)	111722	12/25/2024	06/25/2024 / SAM	01/30/2023 / SAM	V13581
Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date /	Chemtech Lot #
Restek	555582 / Custom Mixture, 8260 A/B Surrogate Mix [CS 5179-2]	A0196865	06/10/2025	06/10/2024 / SAM	04/12/2023 / SAM	V13707
Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Restek	555582 / Custom Mixture, 8260 A/B Surrogate Mix [CS 5179-2]	A0196865	09/19/2024	03/19/2024 / SAM	04/12/2023 / SAM	V13708



Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Restek	30042 / VOA Mix,500 series method 502.2 Calibration Std #1 gases, 2000uq/ml, PTM, 1ml	A0194279	01/30/2025	07/30/2024 / SAM	05/31/2023 / SAM	V13800
Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Restek	30042 / VOA Mix,500 series method 502.2 Calibration Std #1 gases, 2000uq/ml, PTM, 1ml	A0194279	12/28/2024	06/28/2024 / SAM	05/31/2023 / SAM	V13801
Supplier	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	11/29/2024	05/29/2024 / SAM	05/31/2023 / SAM	V13812
Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Restek	30489 / VOA Mix, 8260B Acetates Mix, P&TM, 1mL	A0196115	09/30/2024	06/14/2024 / SAM	09/25/2023 / SAM	V13952
Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Restek	30489 / VOA Mix, 8260B Acetates Mix, P&TM, 1mL	A0196115	09/30/2024	06/14/2024 / SAM	09/25/2023 / SAM	V13953
Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Restek	30489 / VOA Mix, 8260B Acetates Mix, P&TM, 1mL	A0199224	12/31/2024	07/22/2024 / SAM	09/25/2023 / SAM	V13959



Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Absolute Standards, Inc.	95319 / Revised Additions Mix (Min = 5)	032922	12/14/2024	06/14/2024 / SAM	11/22/2023 / SAM	V14016
Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Absolute Standards, Inc.	95319 / Revised Additions Mix (Min = 5)	032922	12/14/2024	06/14/2024 / SAM	11/22/2023 / SAM	V14017
Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date /	Chemtech Lot #
Restek	555408 / Custom Standard, Vinyl Acetate Standard w/ Grav [CS 5066-6] TWO SEPARATE LOTS	A0205177	11/14/2024	05/14/2024 / SAM	12/22/2023 / SAM	V14093
Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Restek	555408 / Custom Standard, Vinyl Acetate Standard w/ Grav [CS 5066-6] TWO SEPARATE LOTS	A0205179	12/14/2024	06/14/2024 / SAM	12/22/2023 / SAM	V14103
Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Restek	555408 / Custom Standard, Vinyl Acetate Standard w/ Grav [CS 5066-6] TWO SEPARATE LOTS	A0205179	12/14/2024	06/14/2024 / SAM	12/22/2023 / SAM	V14104
Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Absolute Standards, Inc.	95319 / Revised Additions Mix (Min = 5)	011624	12/03/2024	06/03/2024 / SAM	01/17/2024 / SAM	V14123



Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Seidler Chemical	BA9077-02 / Methanol, Purge/Trap (cs=6x1L)	22L0562016	09/19/2024	03/19/2024 / SAM	02/06/2024 / SAM	V14141
Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date /	Chemtech Lot #
Seidler Chemical	BA9077-02 / Methanol, Purge/Trap (cs=6x1L)	22L0562016	12/10/2024	06/10/2024 / SAM	02/06/2024 / SAM	V14142
Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date /	Chemtech Lot #
Seidler Chemical	BA9077-02 / Methanol, Purge/Trap (cs=6x1L)	22L0562016	01/22/2025	07/22/2024 / SAM	02/06/2024 / SAM	V14143
Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date /	Chemtech Lot #
Seidler Chemical	BA9077-02 / Methanol, Purge/Trap (cs=6x1L)	22L0562016	12/11/2024	06/11/2024 / pedro	02/06/2024 / SAM	V14147
Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened /	Received Date /	Chemtech Lot #
Seidler Chemical	BA9077-02 / Methanol, Purge/Trap (cs=6x1L)	22L0562016	11/23/2024	05/23/2024 / pedro	02/06/2024 / SAM	V14148
Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date /	Chemtech Lot #
Absolute Standards, Inc.	95317 / Universal VOA Mega Mix (Min order = 5)	021624	12/14/2024	06/14/2024 / SAM	02/20/2024 / SAM	V14169



Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Absolute Standards, Inc.	95317 / Universal VOA Mega Mix (Min order = 5)	021624	12/14/2024	06/14/2024 / SAM	02/20/2024 / SAM	V14170
Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Absolute Standards, Inc.	95317 / Universal VOA Mega Mix (Min order = 5)	021524	12/03/2024	06/03/2024 / SAM	02/20/2024 / SAM	V14177
Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Restek	30006 / VOA Mix, CLP method Calibration Std #1 ketones 5000uq/ml, PTM, 1ml	A0200785	12/25/2024	06/25/2024 / SAM	02/28/2024 / SAM	V14202
Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date /	Chemtech Lot #
Restek	30006 / VOA Mix, CLP method Calibration Std #1 ketones 5000uq/ml, PTM, 1ml	A0200785	12/25/2024	06/25/2024 / SAM	02/28/2024 / SAM	V14207
Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Restek	30006 / VOA Mix, CLP method Calibration Std #1 ketones 5000uq/ml, PTM, 1ml	A0200785	12/25/2024	06/25/2024 / SAM	02/28/2024 / SAM	V14219
Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Restek	555581 / Custom Standard, 8260 Internal Std [CS 5179-1]	A0210184	06/10/2025	06/10/2024 / SAM	04/15/2024 / SAM	V14288



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

71 Certified Reference Material CRM



TIC: 95319.D

1511-885-008 Absolute Standards, Inc.

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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	101		
				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	Y/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	galvem0381 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	бу/бш0.46 ₇ бdб-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.

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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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MST Measurement	for Evaluating and Expressing the Uncertainty or							3	8 97			[0000001
	at and under appropriate laboratory conditions.		opule, should	ns gainego r	afte , abrabne.				Per			doorah	

Absolute Standards, Inc.

800-368-1131

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Certified Reference Material CRM



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

CERTIFIED WEIGHT REPORT

Part Number: 95317 Lot Number: 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
7h	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 020724	0.10	10.00	20001.8	2000	NA.	NA.	0.042	NA NA	NA.	1999.8	20.5	75-25-2	0.5 ppm (5mg/m3) (skin)	orl-ret 933mg/kg
23. 24.	Bromoferm Carbon tetrachloride	95321	020724	0.10	10.00	20003.2	2000	NA	NA	0.042	NA NA	NA	1909.B	20.4	56-23-6	2 ppm (12.6mg/m3/8H)	ori-rat 2350mg/kg
25.	Chloroform	95321	020724	0.10	10.00	20024.0	2000	NA	NA	0.042	NA	NA	2001.9	20.5	67-66-3	50 ppm (240mg/m3) (CL)	orl-ret 906mg/kg
26.	Dibromomethane	95321	020724	0.10	10.00	20002.9	2000	NA	NA	0.042	NA	NA	1990.8	20.5	74-95-3	N/A	orf-rat 108mg/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-rat 1947/mg/kg unr-mus 3600/mg/kg
35.	1,3-Dichloropropane	35161	112322	0.05	5.00	40005.9	2000	NA	NA	0.017	NA	NA	1999.8	22.9	142-28-9 583-58-6	N/A N/A	N/A
36.	1,1-Dichloropropene	35161	112322	0.05	5.00	40012.1	2000	NA	NA NA	0.017	NA NA	NA NA	2000.0	23.0	10061-01-6	N/A	N/A
	cis-1,3-Dichloropropene	35161	112322	0.05	5.00	40010.0	2000	NA	NA NA	0.017	NA NA	NA NA	2000.4	23.0	10061-02-6	N/A	N/A
38.	trane-1,3-Dichloropropene	35161	112322	0.05	5.00	40017.6	2000	NA NA	NA.	0.017	NA	NA NA	2000.4	29.7	87-68-3	0.02 ppm (0.24mg/m3/8H)	orl-rat 82mg/kg
39.	Hexachloro-1,3-butadiene	35161 35161	112322	0.05	5.00	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 40003.3	2000 2000 2000 2000 2000 2000 2000 200	NA NA NA NA NA NA	NA NA NA NA NA NA	0.017 0.017 0.017 0.017 0.017 0.017 0.017	NA NA NA NA NA	NA NA NA NA NA	1999.8 1999.6 1999.6 1999.7 1999.7 1999.7	22.9 22.9 22.9 22.9 22.9 22.9 22.9	108-38-3 98-08-6 135-98-8 108-90-7 95-49-8 106-43-4 95-50-1	N/A N/A 75 ppm (350mg/m3/8H) 50 ppm (250mg/m3/8H) N/A 50 ppm (300mg/m3) (CL)	NVA ort-rat 2240mg/kg ort-rat 2290mg/kg ort-rat 2900mg/kg ort-rat 2100mg/kg ort-rat 500mg/kg
55. 56. 57. 58. 59. 60. 61. 62. 63.	1,2,4-Trimethylbenzene 1,3,5-Trimethylbenzene m-Xylene tert-Buryl berzene sec-Buryl benzene Chlorobenzene 2-Chlorotoluene 4-Chlorotoluene	35162 35162 35162 35163 35163 35163 35163 35163 35163	050823 050823 101923 101923 101923 101923 101923 101923 101923	0.05 0.05 0.05 0.05 0.05 0.05 0.05 0.05	5.00 5.00 5.00 5.00 5.00 5.00 5.00 5.00	40006.7 40005.8 40001.2 40002.4 40003.8 40003.3 40003.3 40003.8	2000 2000 2000 2000 2000 2000 2000 200	NA NA NA NA NA NA	NA NA NA NA NA NA	0.017 0.017 0.017 0.017 0.017 0.017 0.017	NA NA NA NA NA NA	NA NA NA NA NA NA	1999.8 1999.6 1999.7 1999.7 1999.7 1999.7 1999.7	22.9 22.9 22.9 22.9 22.9 22.9 22.9 22.9	108-38-3 98-08-6 135-98-8 108-90-7 95-49-8 106-43-4 95-50-1 541-73-1	N/A N/A 75 ppm (350mg/m3/8H) 50 ppm (350mg/m3/8H) N/A 50 ppm (300mg/m3) (CL) N/A	NVA ort-rat 2240mg/kg ort-rat 2290mg/kg ort-rat 2100mg/kg ort-rat 2100mg/kg ort-rat 500mg/kg tpr-mus 1062mg/kg
55. 56. 57. 58. 59. 80. 61. 62. 63. 64.	1,2,4-Trimethylbenzene 1,3,5-Trimethylbenzene m-Xylene terl-Butyl benzene sec-Butyl benzene Chlorobenzene 2-Chlorotoluene 4-Chlorotoluene 1,2-Dichlorobenzene 1,4-Dichlorobenzene	35162 35162 35163 35163 35163 35163 35163 35163 35163 35163	050823 050823 101923 101923 101923 101923 101923 101923 101923 101923	0.05 0.05 0.05 0.05 0.05 0.05 0.05 0.05	5.00 5.00 5.00 5.00 5.00 5.00 5.00 5.00	40006.7 40005.8 40001.2 40002.4 40003.8 40000.3 40003.8 40003.8 40001.7 40001.8	2000 2000 2000 2000 2000 2000 2000 200	NA NA NA NA NA NA NA	NA NA NA NA NA NA NA	0.017 0.017 0.017 0.017 0.017 0.017 0.017 0.017 0.017	NA NA NA NA NA NA NA NA	NA NA NA NA NA NA NA	1999.8 1999.6 1999.7 1999.5 1999.7 1999.7 1999.7 1999.6	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

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

Part # 95317

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

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

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

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

*All Standards are prepared as a state of the state

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

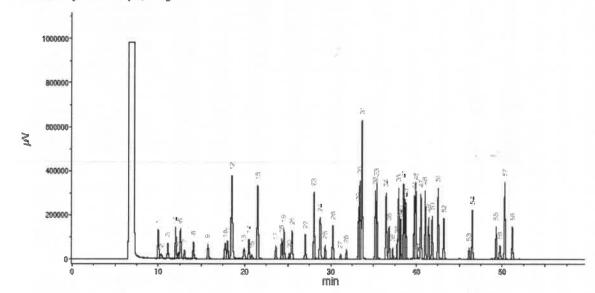
Run Length: 60.00 min, 35998 points at 10 points/second. Created: Sat, Feb 17, 2024 at 10:04:27 AM. Sampled: Sequence "021624-GC5M1", Method "GC5-M1". Analyzed using Method "GC5-M1".

Comments

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

Oven Profile: Temp. 1=35°C (Time 1=10 min.), Temp 2=200°C (Time 2=8.75 min.),
Rate = 4°C/min., Total run time=60 min. Injector temp.=200°C, FID Temp.=200°C.
FID Signal = Edaq Channel 1

Standard injection = 0.5µL, Range=3



	Manne	
Peak 2	Marrie	(min.)
3	Ether	9.97
32	1,1,2-Trichtoro-1,2,2-trilbuornethans	10.33
3	1,1-Dichloroethene	23.10
4	Acetonitrile	12.00
5	Iodomethane	12.31
6	Allyl shloride	12,56
7	Carbon disulfide/Mathylone chloride	13.04
.8.	frans-1,2-Dichloroethens	14.07
9	1,1-Dichloroethane	15.74
10	2,2-Dichlarograpane	17,74
11	cis-1,2-Dichloroethene	18.00
12	Methocrylonitrile/Methyl acrylate/Chloreform	18.49
13	IsobutanoV1.1.1-Trichloroethane	19.91
14	1,1-Dichibropropene	20.46
15	Carison tetrachloride	26.79
16	Benzene/1,2-Dichloroethane	21,48
17	Trichioroethene	23.58
18	1,2-Dichloropropaine	34.26
19	Mistryl methacrylate	24,52
20	Bromodichiorereathene	25.13
21	Dibromomethane/2-Nitropropage	25,46
22	cis-1.3-Dichipropropone	27.02
23	Totiene	28.05
24	Ethyl methecrylate/trans-1,3-Dichloropropage	28.73
23	1,1,2-Trichloroethane	29,34
25		30.24
- 27	Tetrachioraethene/1,3-Dichloropropene Dibromochioramethane	
28		31.16
	1,2-Dibromoethane	31,84
10	Chlorobenzene	33.26
30	Ethylbenzene/1,1.1.2-Ritrachloroethane	33.40
31	m-Hytene/p-Xylene	33.66
33	q-Xylene	33,22
33	Styrene	35.39
34	Isopropylbenesne/Bromeform	36.48
35	cis-1,4-Dichloro-2-butane	36.80
36	1,1,2,2-Tetrachioroethene	37.23
37	1,2,3-Trichloropropune	37,77
38	n-Propy/benzene	37.92
39	trans-1,4-Dichloro-2-butene	30.05
40	Bromobenzene	36.14
42	1,3,5-Trimethylbentene	39.50
42	2-Chlorotolyeng	30.62
43	4-Chlorotoluene	38.77
44	tert-Butylbenzene	39.76
45	1,2,4-Trimethylbenzene	39.91
46	Perstachioroethene	40,17
45	sec-Butylbenzens	40.52
48	p-faggropykoluene	41.02
49	1.3-Dichierobenzene	41.42
\$0	1,4-Dichiprobenzone	41.83
51	n-Butylbenzene	42.52
52	1,2-Dichlerobenzene	43,10
53	1,2-Sibramo+3-chloropropens	46.12
54	Nérobensuse	46.48
55	1,2.4-Trichtonsbenzeive	49.26
16/6	Hexactrorobutadiene	49.22
57	Naghthalene	50,26
58	1,2,3-Trichtoroberszene	51.16

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Certified Reference Material CRM

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

CERTIFIED WEIGHT REPORT

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

69 components

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

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

100.0 0.021 15-11-11

5E-05 Balance Uncertainty

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

Weight(s) shown below were combin	ed and dilute	ad to (mL):	100.0	0.021	1 Flank Uncertain	edw							Etter to trou	-1-	T GOTO E. I FORMAS	
Compound	(RMs)	Lot	Dir.	fritial	initial	Nominal Conc (µg/ml.)	Purity	Purity	Uncertainty	Target	Actual	Actual	Expanded Uncertainty		SDS information ent Safety info. On Atta	iched pg.)
The state of the s	T GHE PHINTING	R THATIANE	Pilitzeol	you (mu	.) Conc.(ug/ms.)	Conc (µg/mL)) (%)	Uncertainty	Pipette (mi.)	Weight(g)	Weight(g)	Canc (µg/mL)) (+/-) (µg/mL)	CAS#	OSHA PEL (TWA)	L050
Acetonitrile	(0324)	021644	NA	NA	NA.	2000	99.99	0.2	NA	0.20007	0.20020	2001.3	0.4	75-05-8	***	
Allyl chloride (3-Chloropropene)	(0325)	102396	NA		NA	2000	99	0.2	NA	0.20207	0.20221	2001.4	8.2	107-05-1	49 ppm (70mg/m3/6H)	orl-rat 2460
Carbon disulphide	(0060)	MKCR8581	1 NA	NA	NA	2000	99.99	0.2	NA	0.20007	0.20023	2001.6	8.1	75-15-0	1 ppm (3mg/m3/8H)	orl-ret 700r
cis-1,4-Dichloro-2-butene	(1198)	14718EF	NA	NA	NA	2000	95	0.2	NA	0.21058	0.21069	2001.1	8,5	1478-11-5	4 ppm (12mg/m3) (skin) N/A	ori-rat 1200 N/A
trans-1,4-Dichloro-2-butene	(0486)	MKBP8041\			NA	2000	96.5	0.2	NA.	0.20731	0.20748	2001.7	8.4	110-57-6	N/A	N/A
Diethyl ether	(0153)	1K18CAS000		NA	NA	2000	99.9	0.2	NA	0.20025	0.20040	2001.5	8.1	80-29-7	N/A	N/A
Ethyl methacrylate	(0381)	06126PX	NA	NA.	NA	2000	99	0.2	NA	0.20207	0.20230	2002.3	8.2	97-63-2	NA	orl-rat 14800
lodomethane	(0489)	SH8F8718\		NA	NA	2000	99.5	0.2	NA	0.20106	0.20121	2001.5	8.2	74-88-4	6 ppm(28mg/m3/8H)(sidn)	
2-Methyl-1-propanol	(0445)	15241EB	NA	NA	NA	2000	99.5	0.2	NA	0.20106	0.20120	2001.4	8.1	78-83-1	50 ppm (150mg/m3/8H)	Orl-rat 2480r
Methacrylonitrile Methyl acrylate	(0442)	00427ET	NA	NA	NA	2000	99	0.2	NA.	0.20207	0.20221	2001.4	8.2	126-98-7	1 ppm (3mg/m3/8H)(sldn)	orl-rat 120n
Methyl methacrylate	(1075)	SHBK0679 MKBW5137\		NA	NA.	2000	99.9	0.2	NA	0.20025	0.20040	2001.5	8.1	96-33-3	10 ppm(35mg/m3/8H)(sldn)	
Nitrobenzene	(0404)			NA NA	NA NA	2000	99.9	0.2	NA .	0.20025	0.20041	2001.6	8.1	80-62-6	100 ppm (410mg/m3/8H)	ori-rat 7872
2-Nitropropane	(0461)	01213TV 14002JX	NA NA	NA NA	NA NA	2000	99	0.2	NA NA	0.20207	0.20220	2001.3	8.2	98-95-3	1 ppm (5mg/m3/8H)(aldn)	orl-rat 780n
Pentachioroethane	(0450)	HGA01	NA	NA.	NA NA	2000	97.3	0.2	NA .	0.20560	0.20577	2001.6	6.3	79-46-9	10 ppm (35mg/m3/6H)	orl-ret 720n
1,1,2-Trichiorotrifluoroethane	(0474)	18930	NA	NA	NA NA	2000	98	0,2	NA NA	0.20413	0.20430	2001.6	8.3	76-01-7	N/A	N/A
Bromodichioromethane	35171	101623	0.05	5.00	40001.7	2000	NA NA	0.2 NA	NA.	0.20207	0.20225	2001.8	8,2	76-13-1	1000 ppm (7600mg/m3/8H)	
Dibromochioromethane	35171	101623	0.05	6.00	40002.1	2000	NA.		0.017	NA	NA	1999.6	22.9	75-27-4	N/A	ori-rat 916m
is-1,2-Dichloroethene	35171	101823	0.05	5.00	40003.1	2000	NA	NA	0.017	NA	NA	1999.6	23.0	124-48-1	NA	orl-rat 648n
rans-1,2-Dichloroethene	35171	101623	0.05	5.00	40003.1	2000	NA.	NA NA	0.017	NA NA	NA NA	1999.7	22.9	158-59-2	NA	N/A
Methylene chlorida	35171	101623	0.05	5.00	40002.8	2000	NA	NA.	0.017	NA NA	NA NA	1999.8	23.0	156-60-5	N/A	ort-rail 1235
,1-Dichloroethene	32251	102023	0,10	10,00	20001.6	2000	NA	NA	0.042	NA NA	NA NA	1999.6	22,9	75-09-2	500 ppm	ori-rat 820n
Bromaform	95321	020724	0.10	10.00	20003.2	2000	NA	NA.	0.042	NA NA	NA NA	1999.7	20,4	75-35-4	1 ppm (4mg/m3/8H)	orl-rat 200r
arbon tetrachloride	95321	020724	0.10	10.00	20003.4	2000	NA	NA	0.042	NA NA	NA NA	1999.8	20.5	75-25-2	0.5 ppm (5mg/m3) (sldn)	ori-rat 933r
Chloratorm	95321	020724	0.10	10.00	20024.0	2000	NA	NA	0.042	NA	NA NA	1999.8	20.4	58-23-5	2 ppm (12.6mg/m3/8H)	ori-rat 2350
Dibromomethane	95321	020724	0.10	10.00	20002.9	2000	NA	NA.	0.042	NA	NA NA	1999.8	20.5	67-68-3	50 ppm (240mg/m3) (CL)	orf-ret 908r
,1-Dichloroethane	95321	020724	0.10	10.00	20003.4	2000	NA	NA	0.042	NA.	NA.	1999.8	20.5	74-95-3 75-34-3	N/A	ori-ret 106r
,2-Dichloropropane	95321	020724	0.10	10.00	20003,4	2000	NA	NA.	0.042	NA	NA.	1999.8		594-20-7	100 ppm	orl-rat 725n
etrachloroethene	95321	020724	0.10	10.00	20201.1	2000	NA	NA	0.042	NA	NA	2019.6		127-18-4	N/A	NA
, f ,1-Trichloroethane	95321	020724	0.10	10.00	20003.0	2000	NA	NA	0.042	NA.	NA NA	1999.8	20.5	71-55-6	25 ppm (170mg/m3/8H)(final)	
,2-Dibromo-3-chioropropane	35161	112322	0.05	5.00	40016.5	2000	NA	NA	0.017	NA	NA NA	2000.3	22.9	96-12-8	350 ppm (1900mg/m3/8H) 0.001 ppm	orl-ret 10000
2-Dibromoethane	35161	112322	0.05	5.00	40024.8	2000	NA	NA	0.017	NA	NA	2000.7		108-93-4		orl-rad 170m
2-Dichloroethane	35161	112322	0.08	5.00	40018.0	2000	NA	NA	0.017	NA	NA	2000.4		107-08-2	20 ppm (8H) 50 ppm (8H)	ori-rat 108m
2-Dichloropropane	35161	112322	0.05	5.00	40051.0	2000	NA	NA	0.017	NA	NA	2002.0	22.9	78-87-5	75 ppm (350mg/m3/9H)	orl-rat 670m orl-rat 1947m
3-Dichloropropane	35161	112322	0.05	5.00	40005.9	2000	NA	NA	0.017	NA	NA	1999.8		142-28-9	N/A	Unr-mus 3600
1-Dichloropropene	35161	112322	0.05	5.00	40012.1	2000	NA	NA	0.017	NA	NA	2000.1		563-58-6	N/A	N/A
s-1,3-Dichloropropena	35161	112322	0.05	5.00	40010.0	2000	NA	NA.	0.017	NA	NA	2000.0		0081-01-5	N/A	N/A
ans-1,3-Dichloropropene	35161	112322	0.05	5.00	40017.6	2000	NA	NA	0.017	NA	NA	2000.4	23.0 1	0061-02-8	N/A	N/A
exachloro-1,3-butadiene	35161	112322	0.05	5.00	40021.9	2000	NA	NA	0.017	NA	NA	2000.6	29.7	87-68-3	0.02 ppm (0.24mg/m3/8H)	orl-rat 82mg
1,1,2-Tetrachloroethane	35161	112322	0.05	5.00	40011.9	2000	NA	NA	0.017	NA	NA	2000.1	22.9	630-20-6	N/A	orl-rad 670m
1,2,2-Tetrachloroethane	35161	112322	0.05	5.00	40007.5	2000	NA	NA	0.017	NA	NA	1999.9	22.9	79-34-5	5 ppm (35mg/m3/9H)(aldn)	orl-rat 800m
1,2-Trichloroethane ichloroethane	35161	112322	0.05	5.00	40006.6	2000	NA	NA	0.017	NA	NA	1999.8	23.0	79-00-5	10 ppm (46mg/m3/8H)(skin)	ori-rat 836m
2,3-Trichloropropane	35161 35161	112322	0.05	5.00	40029.0	2000	NA	NA	0.017	NA	NA NA	2000.9	22.9	79-01-6	50 ppm (270mg/m3/9H)	orl-mus 2402r
enzene	35162	112322 050823	0.05	5.00	40007.5	2000	NA	NA	0.017	NA	NA	1999.9		96-18-4	10 ppm (60mg/m3/8H)	ori-rat 149.6n
omobenzene	36162	050823	0.05		40005.0	2000	NA	NA	0.017	NA	NA	1999.7		71-43-2	1 ppm	orl-rat 4894n
Butyl benzene	35162	060823	0.05	5.00	40006.9	2000	NA	NA	0.017	NA	NA	1999.8		108-86-1	N/A	ort-rat 2699m
hyl benzene	35162	050823	0.05		40003.B 40004.8		NA	NA	0.017	NA	NA	1999.7		104-51-8	N/A	N/A
isopropyl toluene	35162	050823			40005.8		NA	NA	0.017	NA	NA	1999.7		100-41-4	100 ppm (435mg/m3/8H)	orl-rat >2000in
phthalene	35162	050823			40006.2	2000	NA NA	NA NA	0.017	NA .	NA	1999.8		99-87-6	N/A	orl-rat 4750m
yrene	35162	050823			40004.8		NA NA	NA NA	0.017	NA	NA.	1999.8		91-20-3	10 ppm (50mg/m3/8H)	orl-rad 490m
uene	35162	050823			40006.2		NA	NA	0.017	NA	NA	1999.7		00-42-5	100 ppm	orl-rat 5000m
,3-Trichlorobenzene	35162	050823			40003.1		NA	NA NA	0.017	NA	NA	1999.8		08-88-3	200 ppm	orl-rat 5000m
2,4-Trichlorobenzene		050823			40006.8		NA	NA NA	0.017	NA NA	NA NA	1999.7		87-61-6	N/A	lor-mus 1390r
,4-Trimethylbenzene					40001.8		NA	NA	0.017	NA NA	NA NA	1999.8		20-82-1	5 ppm (CL) (40mg/m3)	ori-rat 750mg
,5-Trimethylbenzene					40006.7		NA	NA.	0.017	NA	NA NA	1999.6		95-63-6	N/A	ort-rat 5g/
Cylene					40005.8		NA	NA.	0.017	NA	NA.			08-67-8	N/A	orl-rat 5000m
-Butyl benzene					40001.2		NA	NA NA	0.017	NA NA	NA NA	1999.6 1999.6		08-38-3	100 ppm (435mg/m3/8H)	orl-rat 5g/
-Butyl benzene					40002.4		NA	NA	0.017	NA.	NA NA	1999.6		98-06-6	N/A	N/A
ombenzene					40003.8		NA	NA	0.017	NA.	NA NA	1999.7		35-98-8	N/A	ori-rat 2240m
hiorotoluene					40000.3		NA		0.017	NA	NA NA	1999.7		08-90-7	75 ppm (350mg/m3/8H)	orl-rail 2290m
hicrotoluena					40003.3		NA		0.017	NA NA	NA NA	1999.7		95-49-8	50 ppm (250mg/m3/8H)	orl-rat 3900m
-Dichicrobenzene					40003.8		NA		0.017	NA NA	NA NA			06-43-4	N/A	orl-rat 2100m
Dichlorobenzene					40001.7		NA		0.017	NA NA	NA NA	1999.7 1999.6		95-50-1	50 ppm (300mg/m3) (CL)	orl-rat 500mg
-Dichlorobenzene					40001.B		NA		0.017	NA NA	NA NA	1999.6		41-73-1		lpr-mus 1062m
propylbenzene					40000.8		NA		0.017	NA NA	NA NA	1999.5		06-48-7	76 ppm (450mg/m3/8H)	orl-rat 500mg
ropylbenzene					40003.4		NA NA		0.017	NA NA	NA NA	1999.5		06-82-8	50 ppm (245mg/m3/8H)	orl-rat 1400mg
											רעניו		23.0 10	03-65-1	N/A	orl-rat 6040mg
ylene	35163	101923	0.05	5.00 4	40040.8	2000	NA	NA	0.017	NA	NA	2001.5	23.0 9	5-47-6	100 ppm (435mg/m3/8H)	Ipr-mus 1384m

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

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

* Standards are certified (<>) 2.67 of the stated value, sudow otherwise stated.

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

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

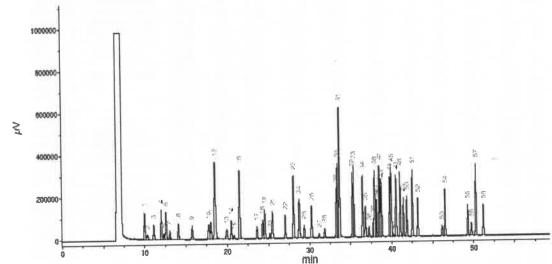
ANAB ISO 17034 Accredited AR-1539 Certificate Number https://Absolutestandards.com

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

Run Length: 60.00 min, 35998 points at 10 points/second. Created: Sat, Feb 17, 2024 at 8:56:46 AM. Sampled: Sequence "021624-GC5M1", Method "GC5-M1". Analyzed using Method "GC5-M1".

Comments

GC5-M1 Analysis by Candice Warren
Column ID SPB-Vocol 105 meter X 0.53mm X 3.0µm film thickness
Flow rates: Total flow=290mL/min., Helium (carrier)=10mL/min.,
Helium(make-up)=10mL/min., Hydogen(make-up)=40mL/min., Air(make-up)=230mL/min.
Oven Profile: Temp. 1=35°C (Time 1=10 min.), Temp 2=200°C (Time 2=8.75 min.),
Rate = 4°C/min., Total run time=60 min. Injector temp.=200°C, FID Temp.=200°C.
FID Signal = Edaq Channel 1
Standard injection = 0.5µL, Range=3



Penk #	Name	(min.)
1	Sther	9.97
2	1.1.2-Trichtoro-1,2,2-trifluoroetherm	10.33
3	1,1-Dichloroethene	11.10
4	Acetonitrile	12,00
5	Indomethane	12.31
6	Allyl chloride	12.55
9	Carbon disulide/Nathylene chloride	13,04
	trans-1,2-Dichlomethens	14.07
9	1.1-Dichloroethane	15.74
10	2,2-Dictrierograpane	17.70
3.3.	cis-1,2-Dichieroethene	19.60
52	Hethacrylonitrite/Methyl ecrylete/Chloroform	10.45
13	Isobutanol/1,1,1-Trichloroethane	19.91
14	1,1-Dichteropropené	20.46
15	Carbon tetrachloride	20.79
16	@enzene/1,2-Dicniproethane	21.49
17	Trichloroethene	21.58
10	1,2-Dichloropropene	24.28
19	Methyl methocrylate	24,52
20	Bromodichloromethank	25.13
21	Dibromomethane/2-Mitropropiese	25.46
22	els-1,3-Dichloropropens	27.02
23	Torusine	26.05
24	Ethyl methacryfets/trans-1,3-Dichloropropens	28.73
25	L,1,2-Trichloroet/Ans	29.34
26	figtrachloroethene/1,3-Dichloropropane	20.24
27	Dibramochiaromettune	31,16
28	1,2-Dilecompethene	32.84
28	Chlorobenzenik	33.26
30	Ethyphensene/1,1,1,2-fetractionoethave	23.40
31	m-Xytene/p-Xytene	33.86
32	a-Hylene	35.22
33	Styrene	35.30
34	Escarepyi benzane/Bremefank	36,48
35	crs-1,4-Dichlord-2-buttens	36.00
26	1,1,2,2-Tetrachieroethiene	37.23
37	1,2,3-Yrichipropane	37.77
211	п-Ризрубранавия	37.92
39	trans-1,n-Dichloro-3-busens	38.05
40	Beamabanzen4	38.14
-61	1,3,5-Trymethy/benzers	30.62
42	2-Chieroselvenik	38,77
43	4-Chlorotolueria	39.76
44	tert-Busylbenzene	39,91
45	1,2,4-Trimethylbenzene	40.17
46	Pertactionsettions	40.57
47	sec-Butyldenzena	41.02
48	p-Tsoprobykolukne 1.3-Drobioroberske#	41.42
49		45.83
50	1,4-Dictiorobenzene	42.52
52	n-Butylbenzene 1.2-Dichlorobenzene	43.38
52	1,2-Dibrama-3-chloropropane	46.12
54	Nitrobenzane	46,48
55	1,2,4-Trichtorobenzaris	49,26
56	Herachiprobutadina	49.72
52	Naphthatene	\$0.26
50	1_2_3-Trichlarobenzene	\$1.16
54	while a record of the annual contract	

PO Box 5585 Hamden, CT 06518-0585

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

Safety Data Sheet (SDS)

GHS/OSHA Compliant

Section I Product and Company Identification

IDENTITY ANALYTICAL STANDARD DISSOLVED IN METHANOL

Manufacturer's Name

ABSOLUTE STANDARDS INC.

Emergency Telephone USA & CANADA

1-800-535-5053

Address

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

1-352-323-3500 January 1, 2023

Section II - Hazards Identification

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

H225 H370 **Highly Flammable Liquid and Vapor**

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

P271

Cause damage to organs Use in ventilated area

H351 P280

Suspected of causing cancer

P302.332

If on skin, wash with soap and water

P305,351,338

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

Eye protection.





Signal Word: DANGER

Section III - Composition

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

METHYL ALCOHOL

CAS#: 67-56-1

% (optional) > 97

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

INTENDED USE: REFERENCE MATERIAL

Section IV. FIRST AID MEASURES

General advice

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

In case of skin contact

Wash with soap and water. Consult a physician.

In case of eye contact

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

If swallowed

If inhaled

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

Section V. FIREFIGHTING MEASURES

Flammability

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

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

Suitable extinguishing media

Protective equipment for fire

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

Section VI. ACCIDENTAL RELEASE MEASURES

Personal precautions

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

Environmental precautions

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

Clean up

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

Section VII. HANDLING AND STORAGE

Precautions for safe handling

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

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

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

Storage Conditions

TWA 200 ppm

Potential for skin absorption, ingestion and inhalation.

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

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

Section IX - Physical/Chemical Characteristics

Methanol-SDS.xls

Page 1 of 2

Printed: 2/19/24

Absolute Standards Inc.

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

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

Solubility in Water

COMPLETE

Appearance and Odor

CLEAR, COLORLESS LIQUID WITH CHARACTERISTIC PUNGENT ODOR.

Section X. STABILITY AND REACTIVITY

Chemical stability

Stable under recommended storage conditions.

Possibility of hazardous reactions

Vapours may form explosive mixture with air.

Conditions to avoid

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

Materials to avoid Hazardous decomposition products formed under fire conditions. - Carbon oxides

Section XI. TOXICOLOGICAL INFORMATION

LD50 Oral - rat - 5,628 mg/kg

LC50 Inhalation - rat - 4 h - 64000 ppm

LD50 Dermal - rabbit - 15,800 mg/kg

Toxic if absorbed through skin. Causes skin irritation.

Eye damage/eye irritation

Toxic if inhaled. Causes respiratory tract irritation.

Toxic if swallowed.

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

LC50

15,400 mg/l - 96 h

EC50

24,500.00 mg/l - 48 h

EC100

10,000.00 mg/l - 24 h

Section XIII. DISPOSAL CONSIDERATIONS

Dispose with normal Laboratory Solvent Waste.

Section XIV. TRANSPORT INFORMATION

IATA

Proper shipping name:

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

Proper shipping name:

UN number: 1230 Class: 3 Packing group: 11

Section XV. REGULATORY INFORMATION

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

Section XVI. Misc. INFORMATION

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

Absolute Standards, Inc.

800-368-1131 www.absolutestandards.com



Certified Reference Material CRM

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

CERTIFIED WEIGHT REPORT

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

69 components

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

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

100.0 0.021 15-11-11

5E-05 Balance Uncertainty

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

Weight(s) shown below were combin	ed and dilute	ad to (mL):	100.0	0.021	1 Flank Uncertain	edw							Etter to trou	-1-	T GOTO E. I FORMAS	
Compound	(RMs)	Lot	Dir.	fritial	initial	Nominal Conc (µg/ml.)	Purity	Purity	Uncertainty	Target	Actual	Actual	Expanded Uncertainty		SDS information ent Safety info. On Atta	iched pg.)
The state of the s	T GHE PHINTING	R THATIANE	Pilitzeol	you (mu	.) Conc.(ug/ms.)	Conc (µg/mL)) (%)	Uncertainty	Pipette (mi.)	Weight(g)	Weight(g)	Canc (µg/mL)) (+/-) (µg/mL)	CAS#	OSHA PEL (TWA)	L050
Acetonitrile	(0324)	021644	NA	NA	NA.	2000	99.99	0.2	NA	0.20007	0.20020	2001.3	0.4	75-05-8	***	
Allyl chloride (3-Chloropropene)	(0325)	102396	NA		NA	2000	99	0.2	NA	0.20207	0.20221	2001.4	8.2	107-05-1	49 ppm (70mg/m3/6H)	orl-rat 2460
Carbon disulphide	(0060)	MKCR8581	1 NA	NA	NA	2000	99.99	0.2	NA	0.20007	0.20023	2001.6	8.1	75-15-0	1 ppm (3mg/m3/8H)	orl-ret 700r
cis-1,4-Dichloro-2-butene	(1198)	14718EF	NA	NA	NA	2000	95	0.2	NA	0.21058	0.21069	2001.1	8,5	1478-11-5	4 ppm (12mg/m3) (skin) N/A	ori-rat 1200 N/A
trans-1,4-Dichloro-2-butene	(0486)	MKBP8041\			NA	2000	96.5	0.2	NA.	0.20731	0.20748	2001.7	8.4	110-57-6	N/A	N/A
Diethyl ether	(0153)	1K18CAS000		NA	NA	2000	99.9	0.2	NA	0.20025	0.20040	2001.5	8.1	80-29-7	N/A	N/A
Ethyl methacrylate	(0381)	06126PX	NA	NA.	NA	2000	99	0.2	NA	0.20207	0.20230	2002.3	8.2	97-63-2	NA	orl-rat 14800
lodomethane	(0489)	SH8F8718\		NA	NA	2000	99.5	0.2	NA	0.20106	0.20121	2001.5	8.2	74-88-4	6 ppm(28mg/m3/8H)(sidn)	
2-Methyl-1-propanol	(0445)	15241EB	NA	NA	NA	2000	99.5	0.2	NA	0.20106	0.20120	2001.4	8.1	78-83-1	50 ppm (150mg/m3/8H)	Orl-rat 2480r
Methacrylonitrile Methyl acrylate	(0442)	00427ET	NA	NA	NA	2000	99	0.2	NA.	0.20207	0.20221	2001.4	8.2	126-98-7	1 ppm (3mg/m3/8H)(sldn)	orl-rat 120n
Methyl methacrylate	(1075)	SHBK0679 MKBW5137\		NA	NA.	2000	99.9	0.2	NA	0.20025	0.20040	2001.5	8.1	96-33-3	10 ppm(35mg/m3/8H)(sldn)	
Nitrobenzene	(0404)			NA NA	NA NA	2000	99.9	0.2	NA .	0.20025	0.20041	2001.6	8.1	80-62-6	100 ppm (410mg/m3/8H)	ori-rat 7872
2-Nitropropane	(0461)	01213TV 14002JX	NA NA	NA NA	NA NA	2000	99	0.2	NA NA	0.20207	0.20220	2001.3	8.2	98-95-3	1 ppm (5mg/m3/8H)(aldn)	orl-rat 780n
Pentachioroethane	(0450)	HGA01	NA	NA.	NA NA	2000	97.3	0.2	NA .	0.20560	0.20577	2001.6	6.3	79-46-9	10 ppm (35mg/m3/6H)	orl-ret 720n
1,1,2-Trichiorotrifluoroethane	(0474)	18930	NA	NA	NA NA	2000	98	0,2	NA NA	0.20413	0.20430	2001.6	8.3	76-01-7	N/A	N/A
Bromodichioromethane	35171	101623	0.05	5.00	40001.7	2000	NA NA	0.2 NA	NA.	0.20207	0.20225	2001.8	8,2	76-13-1	1000 ppm (7600mg/m3/8H)	
Dibromochioromethane	35171	101623	0.05	6.00	40002.1	2000	NA.		0.017	NA	NA	1999.6	22.9	75-27-4	N/A	ori-rat 916m
is-1,2-Dichioroethene	35171	101823	0.05	5.00	40003.1	2000	NA	NA	0.017	NA	NA	1999.6	23.0	124-48-1	NA	orl-rat 648n
rans-1,2-Dichloroethene	35171	101623	0.05	5.00	40003.1	2000	NA.	NA NA	0.017	NA NA	NA NA	1999.7	22.9	158-59-2	NA	N/A
Methylene chlorida	35171	101623	0.05	5.00	40002.8	2000	NA	NA.	0.017	NA NA	NA NA	1999.8	23.0	156-60-5	N/A	ort-rail 1235
,1-Dichloroethene	32251	102023	0,10	10,00	20001.6	2000	NA	NA	0.042	NA NA	NA NA	1999.6	22,9	75-09-2	500 ppm	ori-rat 820n
Bromaform	95321	020724	0.10	10.00	20003.2	2000	NA	NA.	0.042	NA NA	NA NA	1999.7	20,4	75-35-4	1 ppm (4mg/m3/8H)	orl-rat 200r
arbon tetrachloride	95321	020724	0.10	10.00	20003.4	2000	NA	NA	0.042	NA NA	NA NA	1999.8	20.5	75-25-2	0.5 ppm (5mg/m3) (sldn)	ori-rat 933r
hioratom	95321	020724	0.10	10.00	20024.0	2000	NA	NA	0.042	NA	NA NA	1999.8	20.4	58-23-5	2 ppm (12.6mg/m3/8H)	ori-rat 2350
Dibromomethane	95321	020724	0.10	10.00	20002.9	2000	NA	NA.	0.042	NA	NA NA	1999.8	20.5	67-68-3	50 ppm (240mg/m3) (CL)	orf-ret 908r
,1-Dichloroethane	95321	020724	0.10	10.00	20003.4	2000	NA	NA	0.042	NA.	NA.	1999.8	20.5	74-95-3 75-34-3	N/A	ori-ret 106r
,2-Dichloropropane	95321	020724	0.10	10.00	20003,4	2000	NA	NA.	0.042	NA	NA.	1999.8		594-20-7	100 ppm	orl-rat 725n
etrachloroethene	95321	020724	0.10	10.00	20201.1	2000	NA	NA	0.042	NA	NA	2019.6		127-18-4	N/A	NA
, f ,1-Trichloroethane	95321	020724	0.10	10.00	20003.0	2000	NA	NA	0.042	NA.	NA NA	1999.8	20.5	71-55-6	25 ppm (170mg/m3/8H)(final)	
,2-Dibromo-3-chioropropane	35161	112322	0.05	5.00	40016.5	2000	NA	NA	0.017	NA	NA NA	2000.3	22.9	96-12-8	350 ppm (1900mg/m3/8H) 0.001 ppm	orl-ret 10000
2-Dibromoethane	35161	112322	0.05	5.00	40024.8	2000	NA	NA	0.017	NA	NA	2000.7		108-93-4		orl-rad 170m
2-Dichloroethane	35161	112322	0.08	5.00	40018.0	2000	NA	NA	0.017	NA	NA	2000.4		107-08-2	20 ppm (8H) 50 ppm (8H)	ori-rat 108m
2-Dichloropropane	35161	112322	0.05	5.00	40051.0	2000	NA	NA	0.017	NA	NA	2002.0	22.9	78-87-5	75 ppm (350mg/m3/9H)	orl-rat 670m orl-rat 1947m
3-Dichloropropane	35161	112322	0.05	5.00	40005.9	2000	NA	NA	0.017	NA	NA	1999.8		142-28-9	N/A	Unr-mus 3600
1-Dichloropropene	35161	112322	0.05	5.00	40012.1	2000	NA	NA	0.017	NA	NA	2000.1		563-58-6	N/A	N/A
s-1,3-Dichloropropena	35161	112322	0.05	5.00	40010.0	2000	NA	NA.	0.017	NA	NA	2000.0		0081-01-5	N/A	N/A
ans-1,3-Dichloropropene	35161	112322	0.05	5.00	40017.6	2000	NA	NA	0.017	NA	NA	2000.4	23.0 1	0061-02-8	N/A	N/A
exachloro-1,3-butadiene	35161	112322	0.05	5.00	40021.9	2000	NA	NA	0.017	NA	NA	2000.6	29.7	87-68-3	0.02 ppm (0.24mg/m3/8H)	orl-rat 82mg
1,1,2-Tetrachloroethane	35161	112322	0.05	5.00	40011.9	2000	NA	NA	0.017	NA	NA	2000.1	22.9	630-20-6	N/A	orl-rad 670m
1,2,2-Tetrachloroethane	35161	112322	0.05	5.00	40007.5	2000	NA	NA	0.017	NA	NA	1999.9	22.9	79-34-5	5 ppm (35mg/m3/9H)(aldn)	orl-rat 800m
1,2-Trichloroethane ichloroethane	35161	112322	0.05	5.00	40006.6	2000	NA	NA	0.017	NA	NA	1999.8	23.0	79-00-5	10 ppm (46mg/m3/8H)(skin)	ori-rat 836m
2,3-Trichloropropane	35161 35161	112322	0.05	5.00	40029.0	2000	NA	NA	0.017	NA	NA NA	2000.9	22.9	79-01-6	50 ppm (270mg/m3/9H)	orl-mus 2402r
enzene	35162	112322 050823	0.05	5.00	40007.5	2000	NA	NA	0.017	NA	NA	1999.9		96-18-4	10 ppm (60mg/m3/8H)	ori-rat 149.6n
omobenzene	36162	050823	0.05		40005.0	2000	NA	NA	0.017	NA	NA	1999.7		71-43-2	1 ppm	orl-rat 4894n
Butyl benzene	35162	060823	0.05	5.00	40006.9	2000	NA	NA	0.017	NA	NA	1999.8		108-86-1	N/A	ort-rat 2699m
hyl benzene	35162	050823	0.05		40003.B 40004.8		NA	NA	0.017	NA	NA	1999.7		104-51-8	N/A	N/A
isopropyl toluene	35162	050823			40005.8		NA	NA	0.017	NA	NA	1999.7		100-41-4	100 ppm (435mg/m3/8H)	orl-rat >2000in
phthalene	35162	050823			40006.2	2000	NA NA	NA NA	0.017	NA .	NA	1999.8		99-87-6	N/A	orl-rat 4750m
yrene	35162	050823			40004.8		NA NA	NA NA	0.017	NA	NA.	1999.8		91-20-3	10 ppm (50mg/m3/8H)	orl-rad 490m
uene	35162	050823			40006.2		NA	NA	0.017	NA	NA	1999.7		00-42-5	100 ppm	orl-rat 5000m
,3-Trichlorobenzene	35162	050823			40003.1		NA	NA NA	0.017	NA	NA	1999.8		08-88-3	200 ppm	orl-rat 5000m
2,4-Trichlorobenzene		050823			40006.8		NA	NA NA	0.017	NA NA	NA NA	1999.7		87-61-6	N/A	lor-mus 1390r
,4-Trimethylbenzene					40001.8		NA	NA	0.017	NA NA	NA NA	1999.8		20-82-1	5 ppm (CL) (40mg/m3)	ori-rat 750mg
,5-Trimethylbenzene					40006.7		NA	NA.	0.017	NA	NA NA	1999.6		95-63-6	N/A	ort-rat 5g/
Cylene					40005.8		NA	NA.	0.017	NA	NA.			08-67-8	N/A	orl-rat 5000m
-Butyl benzene					40001.2		NA	NA NA	0.017	NA NA	NA NA	1999.6 1999.6		08-38-3	100 ppm (435mg/m3/8H)	orl-rat 5g/
-Butyl benzene					40002.4		NA	NA	0.017	NA.	NA NA	1999.6		98-06-6	N/A	N/A
ombenzene					40003.8		NA	NA	0.017	NA.	NA NA	1999.7		35-98-8	N/A	ori-rat 2240m
hiorotoluene					40000.3		NA		0.017	NA	NA NA	1999.7		08-90-7	75 ppm (350mg/m3/8H)	orl-rail 2290m
hicrotoluena					40003.3		NA		0.017	NA NA	NA NA	1999.7		05-49-8	50 ppm (250mg/m3/8H)	orl-rat 3900m
-Dichicrobenzene					40003.8		NA		0.017	NA NA	NA NA			06-43-4	N/A	orl-rat 2100m
Dichlorobenzene					40001.7		NA		0.017	NA NA	NA NA	1999.7 1999.6		95-50-1	50 ppm (300mg/m3) (CL)	orl-rat 500mg
-Dichlorobenzene					40001.B		NA		0.017	NA NA	NA NA	1999.6		41-73-1		lpr-mus 1062m
propylbenzene					40000.8		NA		0.017	NA NA	NA NA	1999.5		06-48-7	76 ppm (450mg/m3/8H)	orl-rat 500mg
ropylbenzene					40003.4		NA NA		0.017	NA NA	NA NA	1999.5		06-82-8	50 ppm (245mg/m3/8H)	orl-rat 1400mg
											רעניו		23.0 10	03-65-1	N/A	orl-rat 6040mg
ylene	35163	101923	0.05	5.00 4	40040.8	2000	NA	NA	0.017	NA	NA	2001.5	23.0 9	5-47-6	100 ppm (435mg/m3/8H)	Ipr-mus 1384m

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

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

* Standards are certified (<>) 2.67 of the stated value, sudow otherwise stated.

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

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

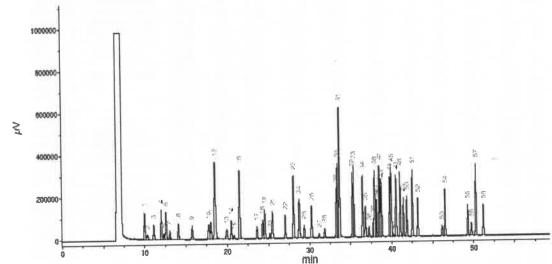
ANAB ISO 17034 Accredited AR-1539 Certificate Number https://Absolutestandards.com

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

Run Length: 60.00 min, 35998 points at 10 points/second. Created: Sat, Feb 17, 2024 at 8:56:46 AM. Sampled: Sequence "021624-GC5M1", Method "GC5-M1". Analyzed using Method "GC5-M1".

Comments

GC5-M1 Analysis by Candice Warren
Column ID SPB-Vocol 105 meter X 0.53mm X 3.0µm film thickness
Flow rates: Total flow=290mL/min., Helium (carrier)=10mL/min.,
Helium(make-up)=10mL/min., Hydogen(make-up)=40mL/min., Air(make-up)=230mL/min.
Oven Profile: Temp. 1=35°C (Time 1=10 min.), Temp 2=200°C (Time 2=8.75 min.),
Rate = 4°C/min., Total run time=60 min. Injector temp.=200°C, FID Temp.=200°C.
FID Signal = Edaq Channel 1
Standard injection = 0.5µL, Range=3



Penk #	Name	(min.)
1	Sther	9.97
2	1.1.2-Trichtoro-1,2,2-trifluoroetherm	10.33
3	1,1-Dichloroethene	11.10
4	Acetonitrile	12,00
5	Indomethane	12.31
6	Allyl chloride	12.55
9	Carbon disulide/Nathylene chloride	13,04
	trans-1,2-Dichlomethens	14.07
9	1.1-Dichloroethane	15.74
10	2,2-Dictrierograpane	17.70
3.3.	cis-1,2-Dichieroethene	19.60
52	Hethacrylonitrite/Methyl ecrylete/Chloroform	10.45
13	Isobutanol/1,1,1-Trichloroethane	19.91
14	1,1-Dichteropropené	20.46
15	Carbon tetrachloride	20.79
16	@enzene/1,2-Dicniproethane	21.49
17	Trichloroethene	21.58
10	1,2-Dichloropropene	24.28
19	Methyl methocrylate	24,52
20	Bromodichloromethank	25.13
21	Dibromomethane/2-Mitropropiese	25.46
22	els-1,3-Dichloropropens	27.02
23	Torusine	26.05
24	Ethyl methacryfets/trans-1,3-Dichloropropens	28.73
25	L,1,2-Trichloroet/Ans	29.34
26	figtrachloroethene/1,3-Dichloropropane	20.24
27	Dibramochiaromettune	31,16
28	1,2-Dilecompethene	32.84
28	Chlorobenzenik	33.26
30	Ethyphensene/1,1,1,2-fetractionoethave	23.40
31	m-Xytene/p-Xytene	33.86
32	a-Hylene	35.22
33	Styrene	35.30
34	Escarepyi benzane/Bremefank	36,48
35	crs-1,4-Dichlord-2-buttens	36.00
26	1,1,2,2-Tetrachieroethiene	37.23
37	1,2,3-Yrichipropane	37.77
211	п-Ризрубранавия	37.92
39	trans-1,n-Dichloro-3-busens	38.05
40	Beamabanzen4	38.14
-61	1,3,5-Trymethy/benzers	30.62
42	2-Chieroselvenik	38,77
43	4-Chlorotolueria	39.76
44	tert-Busylbenzene	39,91
45	1,2,4-Trimethylbenzene	40.17
46	Pertactionsettions	40.57
47	sec-Butyldenzena	41.02
48	p-Tsoprobykolukne 1.3-Drobioroberske#	41.42
49		45.83
50	1,4-Dictiorobenzene	42.52
52	n-Butylbenzene 1.2-Dichlorobenzene	43.38
52	1,2-Dibrama-3-chloropropane	46.12
54	Nitrobenzane	46,48
55	1,2,4-Trichtorobenzaris	49,26
56	Herachiprobutadina	49.72
52	Naphthatene	\$0.26
50	1_2_3-Trichlarobenzene	\$1.16
54	while a record of the annual control	

PO Box 5585 Hamden, CT 06518-0585

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

Safety Data Sheet (SDS)

GHS/OSHA Compliant

Section I Product and Company Identification

IDENTITY ANALYTICAL STANDARD DISSOLVED IN METHANOL

Manufacturer's Name

ABSOLUTE STANDARDS INC.

Emergency Telephone USA & CANADA

1-800-535-5053

Address

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

1-352-323-3500 January 1, 2023

Section II - Hazards Identification

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

H225 H370 **Highly Flammable Liquid and Vapor**

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

P271

Cause damage to organs Use in ventilated area

H351 P280

Suspected of causing cancer

P302.332

If on skin, wash with soap and water

P305,351,338

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

Eye protection.





Signal Word: DANGER

Section III - Composition

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

METHYL ALCOHOL

CAS#: 67-56-1

% (optional) > 97

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

INTENDED USE: REFERENCE MATERIAL

Section IV. FIRST AID MEASURES

General advice

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

In case of skin contact

Wash with soap and water. Consult a physician.

In case of eye contact

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

If swallowed

If inhaled

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

Section V. FIREFIGHTING MEASURES

Flammability

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

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

Suitable extinguishing media

Protective equipment for fire

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

Section VI. ACCIDENTAL RELEASE MEASURES

Personal precautions

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

Environmental precautions

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

Clean up

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

Section VII. HANDLING AND STORAGE

Precautions for safe handling

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

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

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

and kept upright to prevent leakage.

Section VIII. EXPOSURE CONTROLS/PERSONAL PROTECTION

Methanol

67-56-1 TWA 200 ppm

Skin notation

TWA 200 ppm

Potential for skin absorption, ingestion and inhalation.

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

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

Section IX - Physical/Chemical Characteristics

Methanol-SDS.xls

Page 1 of 2

Printed: 2/19/24

Absolute Standards Inc.

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

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

Solubility in Water

COMPLETE

Appearance and Odor

CLEAR, COLORLESS LIQUID WITH CHARACTERISTIC PUNGENT ODOR.

Section X. STABILITY AND REACTIVITY

Chemical stability

Stable under recommended storage conditions.

Possibility of hazardous reactions

Vapours may form explosive mixture with air.

Conditions to avoid

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

Materials to avoid Hazardous decomposition products formed under fire conditions. - Carbon oxides

Section XI. TOXICOLOGICAL INFORMATION

LD50 Oral - rat - 5,628 mg/kg

LC50 Inhalation - rat - 4 h - 64000 ppm

LD50 Dermal - rabbit - 15,800 mg/kg

Toxic if absorbed through skin. Causes skin irritation.

Eye damage/eye irritation

Toxic if inhaled. Causes respiratory tract irritation.

Toxic if swallowed.

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

LC50

15,400 mg/l - 96 h

EC50

24,500.00 mg/l - 48 h

EC100

10,000.00 mg/l - 24 h

Section XIII. DISPOSAL CONSIDERATIONS

Dispose with normal Laboratory Solvent Waste.

Section XIV. TRANSPORT INFORMATION

IATA

Proper shipping name:

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

Proper shipping name:

UN number: 1230 Class: 3 Packing group: 11

Section XV. REGULATORY INFORMATION

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

Section XVI. Misc. INFORMATION

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

Certified Reference Material CRM



Absolute Standards, Inc.

www.absolutestandards.com

800-368-1131



Part Number: CERTIFIED WEIGHT REPORT

Lots

EC592-US Solvent(s): Methanol 5E-05 Balance Uncertainty Revised Additions Mix Refrigerate (4 °C) 11 components 032925 032922 Varied **6UTB** Nominal Concentration (µg/mL): Lot Number: Description: **Expiration Date:** Recommended Storage: NIST Test ID#:

0.012 Flack Uncertainty

100.0

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

DATE DATE 032922 032922 Prashant Chauhan Pedro L. Rentas Smal Formulated By: 兪 Reviewed

									Expanded		SDS Information	
		Lot	Nominal	Purity	Uncertainty	Target	Actual	Actual	Uncertainty	(Solvent	(Solvent Safety Info. On Attached pg.)	led pg.)
Compound	RM#	Number	Conc (ug/mL)	(%)	Purity	Weight(g)	Weight(g)	Conc (µg/mL) (+/-) (µg/mL)	(+/-) (ng/mL)	CAS#	OSHA PEL (TWA)	1050
Acrylonitrile	7	4718CK	10000	66	0.2	1.01015	1.01030	10001.5	40.5	107-13-1	NA	orl-rat 78 marka
1-Chlorobutane	1072	MKCM5711	2000	99.99	0.2	0.20003	0.20020	2001.7	8.1 T.8	109-69-3	NA	orl-rat 2670ma/kg
Cyclohexane	1023	28930	2000	66	0.2	0.20203	0.20215	2001.2	8.2	110-82-7	300 ppm (1050mg/m3/8H)	ori-rat 12705ma/kg
Di-isopropyl ether (DIPE)	987	00412MX	2000	66	0.2	0.20203	0.20215	2001.2	8.2	108-20-3	500 ppm (2100mg/m3/8H)	orl-rat 8470mg/kg
1,4-Dioxane	373	03853KE	40000	66	0.2	4.04060	4.04100	40004.0	161.9	123-91-1	25 ppm (90ma/m3/8H)(skin) orl-mus 5700ma/ka	orl-mus 5700ma/kg
Hexachloroethane	199	12604HBV	2000	66	0.2	0.20203	0.20213	2001.0	8.2	67-72-1	1 ppm (10mg/m3/8H)(skin)	ort-apa 4970marka
Methylcyclohexane	1627	08046KN	2000	66	0.2	0.20203	0.20215	2001.2	8.2	108-87-2	NA	NA
Methyl tert-butyl ether (MTBE)	209	02197JJJ	2000	99.8	0.2	0.20041	0.20055	2001.4	9.1	1634-04-4	WA	orl-rat 49/kg
Propionitrile	349	1395468	20000	66	0.2	2.02030	2.02045	20001.5	81.0	107-12-0	NA	orl-rat 39mg/kg
Tetrahydrofuran	380	SHBH8330	10000	6.66	0.2	1.00105	1.00120	10001.5	40.1	109-99-9	20 ppm (590ma/m3/8H)	ort-rat 1650mo/kg
								Str. I				0

The certified value is the concentration calculated from gravimetric and volumetric measurements unless otherwise stated. Standards are prepared gravimetrically using balances that are calibrated with weights traceable to NIST (see above).
 Standards are certifed (+/-) 0.5% of the stated value, unless otherwise stated. TIC: 95319.D 4bundance

 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).

orl-rat 6408mg/kg

¥

488-23-3

8.7

2001.3

0.21520

0.21506

0.2

8

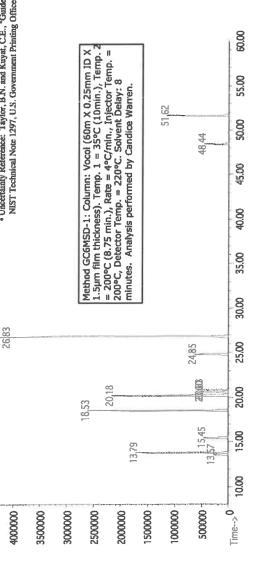
2000

AP01

491

11. 1,2,3,4-Tetramethylbenzene

9



	MSD RT
Name	(min.)
Methyl tert-butyl ether (MTBE)	13.56
Acrylonitrile	13.79
Di-isopropyl ether	15,44
Propionitrile	18.53
Tetrahydrofuran	20.17
Cyclohexane	20.58
1-Chlorobutane	20.83
Methylcyclohexane	24.84
1,4-Dioxane	26.84
Hexachioroethane	48.44
1,2,3,4-Tetramethylbenzene	51.62

200 ppm

OSHA PEL

66 <

(lenoitqo) %

Absolute Standards Inc.

GHS/OSHA Compliant

Safety Data Sheet (SDS)

ABSOLUTE STANDARDS INC

Section I Product and Company Identification

1-800-535-5053 ANALYTICAL STANDARD DISSOLVED IN METHANOL **IDENTITY**

Hamden CT, 06514 Date Prepared/Revised January 1, 2023 Emergency Telephone International 44 Rossotto Dr. 1-362-323-3500

Emergency Telephone USA & CANADA

Section II - Hazards Identification

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

If in eyes, remove contacts, rinse with water If on skin, wash with soap and water P302,332 P305,351,338 Use in ventilated area Use gloves, eye protection/face sheild P280 P271 Cause damage to organs Suspected of causing cancer 02EH H321 Highly Flammable Liquid and Vapor H301, 311, 331 Toxic if swallowed, skin contact, inhaled **H**225

Section III - Composition

2,769 mg/kg Methanol 1-99-79 Components: LD50 Oral - Rat CY2#:

Signal Word: DANGER

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

Section IV. FIRST AID MEASURES

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

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

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

Section V. FIREFIGHTING MEASURES

Protective equipment for fire

bewollswe if

General advice

lf inhaled

Address

Manufacturer's Name

In case of eye contact In case of skin contact

Suitable extinguishing media Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide. heat/sparks/open flame/hot surface. No smoking. Flammability Flammable in the presence of a source of ignition when the temperature is above the flash point. Keep away from

Wear self contained breathing apparatus for fire fighting if necessary.

Section VI. ACCIDENTAL RELEASE MEASURES

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

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

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

Section VII. HANDLING AND STORAGE

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

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

Section VIII. EXPOSURE CONTROLS/PERSONAL PROTECTION

mqq 00S AWT 1-88-78 Methanol

Potential for skin absorption, ingestion and inhalation. mqq 00S AWT Skin notation

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

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

Section IX - Physical/Chemical Characteristics

			COMPLETE	Solubility in Water
9.4	Evaporátion rate (Butyl Acetate = 1)	FF., F		Vapor Density (AIA = 1)
O∘86-	Melting Point	96		Vapor Pressure (mm Hg)
6L.0	Specific Gravity (H2O = 1)	O-99		Boiling Point

CLEAR, COLORLESS LIQUID WITH CHARACTERISTIC PUNGENT ODOR.

Section X. STABILITY AND REACTIVITY

Vapours may form explosive mixture with air. Possibility of hazardous reactions Chemical stability Stable under recommended storage conditions.

Acid chlorides, Acid anhydrides, Oxidizing agents, Alkali metals, Reducing agents, Acids Materials to avoid Heat, flames, sparks, extreme temperature and sunlight. Diovs of anoifibno

Hazardous decomposition products formed under fire conditions. - Carbon oxides

Section XI. TOXICOLOGICAL INFORMATION

LD50 Demal - rabbit - 15,800 mg/kg LC50 Inhalation - rat - 4 h - 64000 ppm LD50 Oral - rat - 5,628 mg/kg

Toxic if absorbed through skin. Causes skin irritation.

Eye damage/eye irritation

Toxic if inhaled. Causes respiratory tract irritation.

Appearance and Odor

Toxic if swallowed.

(SU) TOG

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

4 96 - Ngm 004,81 TC20

10,000.000 mg/l - 24 h EC100 24,500.00 mg/l - 48 h EC20

Section XIII. DISPOSAL CONSIDERATIONS

Dispose with normal Laboratory Solvent Waste.

Section XIV. TRANSPORT INFORMATION

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

Section XV. REGULATORY INFORMATION

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

Proper shipping name:

UN number: 1230 Class: 3 Packing group: II

Methanol

Section XVI. Misc. INFORMATION

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. handled or the known dangers of use are not heeded. READ ALL PRECAUTIONARY INFORMATION. As new documented general safety information becomes available, Absolute MERCHANAPBITITY OR ITS FITNESS FOR A PARTICULAR APPLICATION. The user should recognize that this product can cause severe injury or death, especially it improperly STANDARDS INC DISCLAIMS ANY OTHER WARRANTIES, EXPRESSED OR IMPLIED WITH REGARD TO THE PRODUCT SUPPLIED HEREUNDER, ITS usage, protective ciolibing including eye and face guards and respirators must be used to avoid contact with material or breathing including eye and face guards and respirators. 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 GRADARDS INC warrants that the chemical meets the specifications set forth on the label. ABSOLUTE subservised 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 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 910). 200 and Clobal Harmoniked System (GHS). This document is intended only as a guide to the appropriate presautionary handling of the material by frained personnel, or



Absolute Standards, Inc.

www.absolutestandards.com

800-368-1131



Part Number: CERTIFIED WEIGHT REPORT

Lots

EC592-US Solvent(s): Methanol 5E-05 Balance Uncertainty Revised Additions Mix Refrigerate (4 °C) 11 components 032925 032922 Varied **6UTB** Nominal Concentration (µg/mL): Lot Number: Description: **Expiration Date:** Recommended Storage: NIST Test ID#:

0.012 Flack Uncertainty

100.0

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

DATE DATE 032922 032922 Prashant Chauhan Pedro L. Rentas Smal Formulated By: 兪 Reviewed

									Expanded		SDS Information	
		Lot	Nominal	Purity	Uncertainty	Target	Actual	Actual	Uncertainty	(Solvent	(Solvent Safety Info. On Attached pg.)	led pg.)
Compound	RM#	Number	Conc (ug/mL)	(%)	Purity	Weight(g)	Weight(g)	Conc (µg/mL) (+/-) (µg/mL)	(+/-) (ng/mL)	CAS#	OSHA PEL (TWA)	1050
Acrylonitrile	7	4718CK	10000	66	0.2	1.01015	1.01030	10001.5	40.5	107-13-1	NA	orl-rat 78 marka
1-Chlorobutane	1072	MKCM5711	2000	99.99	0.2	0.20003	0.20020	2001.7	8.1 T.8	109-69-3	NA	orl-rat 2670ma/kg
Cyclohexane	1023	28930	2000	66	0.2	0.20203	0.20215	2001.2	8.2	110-82-7	300 ppm (1050mg/m3/8H)	ori-rat 12705ma/kg
Di-isopropyl ether (DIPE)	987	00412MX	2000	66	0.2	0.20203	0.20215	2001.2	8.2	108-20-3	500 ppm (2100mg/m3/8H)	orl-rat 8470mg/kg
1,4-Dioxane	373	03853KE	40000	66	0.2	4.04060	4.04100	40004.0	161.9	123-91-1	25 ppm (90ma/m3/8H)(skin) orl-mus 5700ma/ka	orl-mus 5700ma/kg
Hexachloroethane	199	12604HBV	2000	66	0.2	0.20203	0.20213	2001.0	8.2	67-72-1	1 ppm (10mg/m3/8H)(skin)	ort-apa 4970marka
Methylcyclohexane	1627	08046KN	2000	66	0.2	0.20203	0.20215	2001.2	8.2	108-87-2	NA	N/A
Methyl tert-butyl ether (MTBE)	209	02197JJJ	2000	99.8	0.2	0.20041	0.20055	2001.4	9.1	1634-04-4	WA	orl-rat 49/kg
Propionitrile	349	1395468	20000	66	0.2	2.02030	2.02045	20001.5	81.0	107-12-0	NA	orl-rat 39mg/kg
Tetrahydrofuran	380	SHBH8330	10000	6.66	0.2	1.00105	1.00120	10001.5	40.1	109-99-9	20 ppm (590ma/m3/8H)	ort-rat 1650mo/kg
								Str. I				0

The certified value is the concentration calculated from gravimetric and volumetric measurements unless otherwise stated. Standards are prepared gravimetrically using balances that are calibrated with weights traceable to NIST (see above).
 Standards are certifed (+/-) 0.5% of the stated value, unless otherwise stated. TIC: 95319.D 4bundance

 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).

orl-rat 6408mg/kg

¥

488-23-3

8.7

2001.3

0.21520

0.21506

0.2

8

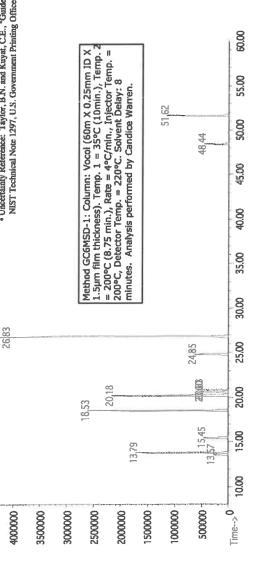
2000

AP01

491

11. 1,2,3,4-Tetramethylbenzene

9



	MSD RT
Name	(min.)
Methyl tert-butyl ether (MTBE)	13.56
Acrylonitrile	13.79
Di-isopropyl ether	15,44
Propionitrile	18,53
Tetrahydrofuran	20.17
Cyclohexane	20.58
1-Chlorobutane	20.83
Methylcyclohexane	24.84
1,4-Dioxane	26.84
Hexachioroethane	48.44
1,2,3,4-Tetramethylbenzene	51.62

200 ppm

OSHA PEL

66 <

(lenoitqo) %

Absolute Standards Inc.

GHS/OSHA Compliant

Safety Data Sheet (SDS)

ABSOLUTE STANDARDS INC

Section I Product and Company Identification

1-800-535-5053 ANALYTICAL STANDARD DISSOLVED IN METHANOL **IDENTITY**

Hamden CT, 06514 Date Prepared/Revised January 1, 2023 Emergency Telephone International 44 Rossotto Dr. 1-362-323-3500

Emergency Telephone USA & CANADA

Section II - Hazards Identification

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

If in eyes, remove contacts, rinse with water If on skin, wash with soap and water P302,332 P305,351,338 Use in ventilated area Use gloves, eye protection/face sheild P280 P271 Cause damage to organs Suspected of causing cancer 02EH H321 Highly Flammable Liquid and Vapor H301, 311, 331 Toxic if swallowed, skin contact, inhaled **H**225

Section III - Composition

2,769 mg/kg Methanol 1-99-79 Components: LD50 Oral - Rat CY2#:

Signal Word: DANGER

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

Section IV. FIRST AID MEASURES

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

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

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

Section V. FIREFIGHTING MEASURES

Protective equipment for fire

bewollswe if

General advice

lf inhaled

Address

Manufacturer's Name

In case of eye contact In case of skin contact

Suitable extinguishing media Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide. heat/sparks/open flame/hot surface. No smoking. Flammability Flammable in the presence of a source of ignition when the temperature is above the flash point. Keep away from

Wear self contained breathing apparatus for fire fighting if necessary.

Section VI. ACCIDENTAL RELEASE MEASURES

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

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

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

Section VII. HANDLING AND STORAGE

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

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

Section VIII. EXPOSURE CONTROLS/PERSONAL PROTECTION

mqq 00S AWT 1-88-78 Methanol

Potential for skin absorption, ingestion and inhalation. mqq 00S AWT Skin notation

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

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

Section IX - Physical/Chemical Characteristics

			COMPLETE	Solubility in Water
9.4	Evaporátion rate (Butyl Acetate = 1)	FF., F		Vapor Density (AIA = 1)
O∘86-	Melting Point	96		Vapor Pressure (mm Hg)
6L.0	Specific Gravity (H2O = 1)	O-99		Boiling Point

CLEAR, COLORLESS LIQUID WITH CHARACTERISTIC PUNGENT ODOR.

Section X. STABILITY AND REACTIVITY

Vapours may form explosive mixture with air. Possibility of hazardous reactions Chemical stability Stable under recommended storage conditions.

Acid chlorides, Acid anhydrides, Oxidizing agents, Alkali metals, Reducing agents, Acids Materials to avoid Heat, flames, sparks, extreme temperature and sunlight. Diovs of anoifibno

Hazardous decomposition products formed under fire conditions. - Carbon oxides

Section XI. TOXICOLOGICAL INFORMATION

LD50 Demal - rabbit - 15,800 mg/kg LC50 Inhalation - rat - 4 h - 64000 ppm LD50 Oral - rat - 5,628 mg/kg

Toxic if absorbed through skin. Causes skin irritation.

Eye damage/eye irritation

Toxic if inhaled. Causes respiratory tract irritation.

Appearance and Odor

Toxic if swallowed.

(SU) TOG

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

4 96 - Ngm 004,81 TC20

10,000.000 mg/l - 24 h EC100 24,500.00 mg/l - 48 h EC20

Section XIII. DISPOSAL CONSIDERATIONS

Dispose with normal Laboratory Solvent Waste.

Section XIV. TRANSPORT INFORMATION

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

Section XV. REGULATORY INFORMATION

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

Proper shipping name:

UN number: 1230 Class: 3 Packing group: II

Methanol

Section XVI. Misc. INFORMATION

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. handled or the known dangers of use are not heeded. READ ALL PRECAUTIONARY INFORMATION. As new documented general safety information becomes available, Absolute MERCHANAPBITITY OR ITS FITNESS FOR A PARTICULAR APPLICATION. The user should recognize that this product can cause severe injury or death, especially it improperly STANDARDS INC DISCLAIMS ANY OTHER WARRANTIES, EXPRESSED OR IMPLIED WITH REGARD TO THE PRODUCT SUPPLIED HEREUNDER, ITS usage, protective ciolibing including eye and face guards and respirators must be used to avoid contact with material or breathing including eye and face guards and respirators. 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 GRADARDS INC warrants that the chemical meets the specifications set forth on the label. ABSOLUTE subservised 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 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 910). 200 and Clobal Harmoniked System (GHS). This document is intended only as a guide to the appropriate presautionary handling of the material by frained personnel, or



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

CERTIFIED WEIGHT REPORT

Galriel Wilload 07;	ormulated By: Gabriel Helland	The state of the s	220	eviewed by: Pedro L. Hentas	Expanded SDS Information	Uncertainty (Solvent Safety Info. On Attached pg.)	Weight(g) Conc (µg/mL) (+/-) (µg/mL) CAS# OSHA PEL (TWA) LD50
	<u>[E]</u>		_[0			Actual	Conc (ug/mL) (+
Lot# 102422Q						Actual	Weight(g)
Solvent(s): Water	S Kenner		Ž	î -		Target	Weight(g)
	5		5E-05 Balance Uncertainty	0.001 Flask Uncertainty		Purity Uncertainty	Purity
			5E-05	0.001		Purity	(%)
		(4 °C)		10.0		Nominal	Conc (µg/mL) (%) Purity
91980 072423 Acrolein	082423	Refrigerate (4 °C)	6UTB	ted to (mL):	1		Number
Part Number: Lot Number: Description:	Expiration Date:	Recommended Storage: Nominal Concentration (µo/ml.):	NIST Test ID#:	Weight(s) shown below were combined and diluted to (mL):			Sonibound RM#
				W		ć	3

DATE

072423

DATE

072423

orl-rat 46mg/kg 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. NOTEs 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. 0.1 ppm 107-02-8 5009.2

52.5

0.05170

0.05160

0.5

97.1

5000

103755R09M

S

1. Acrolein

	Scan 232 (8.927 min): [BSB2]79005.D		56			
	76	ĩ				
larron:	Abundance	00009	20000	40000	30000	20000
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	Abundance	250000 8.93	200000	150000	00000	0000

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8

75

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37

10000

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 (#4) 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: 7/24/2023, 4:01:48 PM

May 1, 2022

1-325-323-3200

1-800-535-5053

Hamden, CT 06518-0585 PO Box 5585

Safety Data Sheet (SDS)

GHS/OSHA Compliant

Date Prepared/Revised

Emergency Telephone International

Emergency Telephone USA & CANADA

Section I Product and Company Identification

ANALYTICAL STANDARD DISSOLVED IN WATER **IDENTITY**

44 Rossotto Dr. ABSOLUTE STANDARDS INC

Hamden CT, 06514

Address

Section II - Hazards Identification

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

Use gloves, eye protection/face shelld **P280** Causes skin and eye irritation. H316

If in eyes, remove contacts, rinse with water

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

Manufacturer's Name

P302,332

172q

Section III - Composition

Signal Word: DANGER

Z6 < % (optional)

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

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

Section IV. FIRST AID MEASURES INTENDED USE: REFERENCE MATERIAL

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

CAS#: 7732-18-5

P305,351,338

Wash with sosp and water. Consult a physician.

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

Section V. FIREFIGHTING MEASURES

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

Suitable extinguishing media

Section VI. ACCIDENTAL RELEASE MEASURES

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

ignition. Vapours accumulate to form explosive concentrations.

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

Environmental precautions

Personal precautions

If swallowed

belsdni ii

General advice

In case of eye contact

In case of skin contact

Precautions for safe handling

Storage Conditions

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

Section VII. HANDLING AND STORAGE

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

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

mqq 008 :AWT CAS#: 7732-18-5 Water

Avoid contact with skin, eyes and clothing. Wash hands thoroughly after handling the product. Handle with gloves. Gloves must be inspected prior to use. Respiratory protection Personal protective equipment

S	CHARACTERISTIC	CHEMICAL	PHYSICAL	· XI	Section
				2	

Vapor Pressure (mm Hg)		Melfing Point	
boling Point	100°C	Specific Gravity (H2O = 1)	Į.

Eye protection.

ection XI. TOXICOLOGIC	NOITAMRO7NI JA			
azardous decomposition produc	eldaliava atab oM - at			
biovs of slanetal	AN			
ossibility of hazardous reactions onditions to avoid	AN AN			
hemical stability	Stable under recomm	epsiois bebne	conditions.	
GCtion X. STABILITY AND	YTIVITOABR			
ppearance and Odor	CLEAR, COLORLESS	IZIN MITH	SLIGHT CHEMICAL ODOR.	
olubility in Water	Completely miscible			
apor Density (AIR = 1)		ΑN	Evaporation rate (Butyl Acetate = 1)	ΑN
		ΑN		 0°C

Section XII. ECOLOGICAL INFORMATION

AN

AN

EC20 ΑN 0907 ΑN

> Eye imitation Causes skin imitation. LD50 Dermal - Guinea pig

LC50 Inhalation - Rat

LD50 Oral - Rat

Section XIII. DISPOSAL CONSIDERATIONS

Dispose with normal Laboratory Solvent Waste.

Section XIV. TRANSPORT INFORMATION

(SU) TOG

Proper shipping name: Water Not dangerous goods

Section XV. REGULATORY INFORMATION

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

Section XVI. Misc. INFORMATION

you have any questions, please call Technical Service at 1-203-281-2917 for assistance. APPLICATION. The user should recognize that this product can cause severe injury or death, especially if improperly handled or the known dangers of use are not heeded. READ ALL PRECAUTION. The user should recognize that this product can cause severe injury or death, especially if improperly handled or the known dangers of use are not heeded. READ ALL PRECAUTION. 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 This chemical may interact with other substances. Since the potential uses are so varied, ABSOLUTE STANDARDS INC. cannot warm of all the potential dangers of use or interaction with other chemical meets the specifications set forth on the label. ABSOLUTE STANDARDS INC. warrants that the chemical meets the specifications set forth on the label. ABSOLUTE STANDARDS INC. Warrants that the chemical meets the specifications set forth on the label. ABSOLUTE STANDARDS INC. Warrants that the chemical meets the specifications set forth on the label. ABSOLUTE STANDARDS INC. DISCLAMS ANY OTHER WARRANTIES, EXPRESSED OR IMPLIED WITH REGARD TO THE PRODUCT SUPPLIED HEREUNDER, ITS MERCHANTABILITY OR ITS FITURES FOR A PARTICULAR APPLIED. THE MARKANTIES, EXPRESSED OR IMPLIED WITH REGARD TO THE PRODUCT SUPPLIED HEREUNDER, ITS MERCHANTABILITY OR ITS FITURES FOR A PARTICULAR APPLIED. THE MARKANTIES, EXPRESSED OR IMPLIED WITH REGARD TO THE PRODUCT SUPPLIED HEREUNDER, ITS MERCHANTABILITY OR ITS FITURES FOR A PARTICULAR APPLIED. THE MEMORY OF THE PRODUCT SUPPLIED HEREUNDER, ITS MEMORY OF THE STANDARD TO THE PRODUCT SUPPLIED HEREUNDER, ITS MEMORY OF THE STANDARD TO THE PRODUCT SUPPLIED HEREUNDER, ITS MEMORY OF THE STANDARD TO THE PRODUCT SUPPLIED HEREUNDER, ITS MEMORY OF THE STANDARD TO THE PRODUCT SUPPLIED HEREUNDER, ITS MEMORY OF THE STANDARD TO THE PRODUCT SUPPLIED HEREUNDER, ITS MEMORY OF THE STANDARD TO THE PRODUCT SUPPLIED HEREUNDER, ITS MEMORY OF THE STANDARD TO TH 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. said Global Harmonized System (GHS). This document is infended 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 or her particular application. Depending on usage, protective clothing including eye and flose despinate must be used to avoid contact with material or breathing chemical wapors/tumes. Exposure to this product may have serious adverse health effects. This place of user of the production of the exposure of the expos

Proper shipping name: Water

Not dangerous goods

ATA!



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

CERTIFIED WEIGHT REPORT

Galriel Wilload 07;	ormulated By: Gabriel Helland	The state of the s	220	eviewed by: Pedro L. Hentas	Expanded SDS Information	Uncertainty (Solvent Safety Info. On Attached pg.)	Weight(g) Conc (µg/mL) (+/-) (µg/mL) CAS# OSHA PEL (TWA) LD50
	<u>[E]</u>		_[0			Actual	Conc (ug/mL) (+
Lot# 102422Q						Actual	Weight(g)
Solvent(s): Water	S Kenner		Ž	î -		Target	Weight(g)
	5		5E-05 Balance Uncertainty	0.001 Flask Uncertainty		Purity Uncertainty	Purity
			5E-05	0.001		Purity	(%)
		(4 °C)		10.0		Nominal	Conc (µg/mL) (%) Purity
91980 072423 Acrolein	082423	Refrigerate (4 °C)	6UTB	ted to (mL):	1		Number
Part Number: Lot Number: Description:	Expiration Date:	Recommended Storage: Nominal Concentration (µo/ml.):	NIST Test ID#:	Weight(s) shown below were combined and diluted to (mL):			Sonibound RM#
				W		ć	3

DATE

072423

DATE

072423

orl-rat 46mg/kg 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. NOTEs 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. 0.1 ppm 107-02-8 5009.2

52.5

0.05170

0.05160

0.5

97.1

5000

103755R09M

S

1. Acrolein

	Scan 232 (8.927 min): [BSB2]79005.D		56			
	76	ĩ				
larron:	Abundance	00009	20000	40000	30000	20000
TOTAL PART OF TRANSPORTED TO THE PART OF T	TIC: [BSB2]79005.D					
	Abundance	250000 8.93	200000	150000	00000	0000

90 100 110 120 130 140 150 160 170 8 9 20 40 8 8 0<--Z/III 10.00 15.00 20.00 25.00 30.00 35.00 40.00 45.00 50.00 55.00 60.00 Time-->0

8

75

92

4

37

10000

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 (#4) 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: 7/24/2023, 4:01:48 PM

May 1, 2022

1-325-323-3200

1-800-535-5053

Hamden, CT 06518-0585 PO Box 5585

Safety Data Sheet (SDS)

GHS/OSHA Compliant

Date Prepared/Revised

Emergency Telephone International

Emergency Telephone USA & CANADA

Section I Product and Company Identification

ANALYTICAL STANDARD DISSOLVED IN WATER **IDENTITY**

44 Rossotto Dr. ABSOLUTE STANDARDS INC

Hamden CT, 06514

Address

Section II - Hazards Identification

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

Use gloves, eye protection/face shelld **P280** Causes skin and eye irritation. H316

If in eyes, remove contacts, rinse with water

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

Manufacturer's Name

P302,332

172q

Section III - Composition

Signal Word: DANGER

Z6 < % (optional)

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

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

Section IV. FIRST AID MEASURES INTENDED USE: REFERENCE MATERIAL

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

CAS#: 7732-18-5

P305,351,338

Wash with sosp and water. Consult a physician.

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

Section V. FIREFIGHTING MEASURES

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

Suitable extinguishing media

Section VI. ACCIDENTAL RELEASE MEASURES

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

ignition. Vapours accumulate to form explosive concentrations.

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

Environmental precautions

Personal precautions

If swallowed

belsdni ii

General advice

In case of eye contact

In case of skin contact

Precautions for safe handling

Storage Conditions

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

Section VII. HANDLING AND STORAGE

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

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

mqq 008 :AWT CAS#: 7732-18-5 Water

Avoid contact with skin, eyes and clothing. Wash hands thoroughly after handling the product. Handle with gloves. Gloves must be inspected prior to use. Respiratory protection Personal protective equipment

S	CHARACTERISTIC	CHEMICAL	PHYSICAL	· XI	Section
				2	

Vapor Pressure (mm Hg)		Melfing Point	
boling Point	100°C	Specific Gravity (H2O = 1)	Į.

Eye protection.

ection XI. TOXICOLOGIC	NOITAMRO7NI JA			
azardous decomposition produc	eldaliava atab oM - at			
biovs of slanetal	AN			
ossibility of hazardous reactions onditions to avoid	AN AN			
hemical stability	Stable under recomm	epsiois bebne	conditions.	
GCtion X. STABILITY AND	YTIVITOABR			
ppearance and Odor	CLEAR, COLORLESS	IZIN MITH	SLIGHT CHEMICAL ODOR.	
olubility in Water	Completely miscible			
apor Density (AIR = 1)		ΑN	Evaporation rate (Butyl Acetate = 1)	ΑN
		ΑN		 0°C

Section XII. ECOLOGICAL INFORMATION

AN

AN

EC20 ΑN 0907 ΑN

> Eye imitation Causes skin imitation. LD50 Dermal - Guinea pig

LC50 Inhalation - Rat

LD50 Oral - Rat

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	<u>[E]</u>		_[0			Actual	Conc (ug/mL) (+
Lot# 102422Q						Actual	Weight(g)
Solvent(s): Water	S Kenner		Ž	î -		Target	Weight(g)
	5		5E-05 Balance Uncertainty	0.001 Flask Uncertainty		Purity Uncertainty	Purity
			5E-05	0.001		Purity	(%)
		(4 °C)		10.0		Nominal	Conc (µg/mL) (%) Purity
91980 072423 Acrolein	082423	Refrigerate (4 °C)	6UTB	ted to (mL):	1		Number
Part Number: Lot Number: Description:	Expiration Date:	Recommended Storage: Nominal Concentration (µo/ml.):	NIST Test ID#:	Weight(s) shown below were combined and diluted to (mL):			Sonibound RM#
				W		ć	3

DATE

072423

DATE

072423

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

Manufacturer's Name

P302,332

172q

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Signal Word: DANGER

Z6 < % (optional)

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

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CAS#: 7732-18-5

P305,351,338

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If swallowed

belsdni ii

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In case of skin contact

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mqq 008 :AWT CAS#: 7732-18-5 Water

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CHARACTERISTICS	TASIMEHD/JASISY!	14 - XI NOITOBS

Vapor Pressure (mm Hg)		Melting Point	
	100°C		Į.
Foling Point		Specific Gravity (H2O = 1)	

ection XI. TOXICOLOGIC	NOITAMRO7NI JA			
azardous decomposition produc	eldaliava atab oM - at			
biovs of slanetal	AN			
ossibility of hazardous reactions onditions to avoid	AN AN			
hemical stability	Stable under recomm	epsiois bebne	conditions.	
GCtion X. STABILITY AND	YTIVITOABR			
ppearance and Odor	CLEAR, COLORLESS	IZIN MITH	SLIGHT CHEMICAL ODOR.	
olubility in Water	Completely miscible			
apor Density (AIR = 1)		ΑN	Evaporation rate (Butyl Acetate = 1)	ΑN
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Section VII. HANDLING AND STORAGE

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

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

mqq 008 :AWT CAS#: 7732-18-5 Water

Avoid contact with skin, eyes and clothing. Wash hands thoroughly after handling the product. Handle with gloves. Gloves must be inspected prior to use. Eye protection. Respiratory protection Personal protective equipment

jaiog saltog	
Section IX - PHYSICAL/CHEMICAL CHARACTERI	

Melting Point Vapor Pressure (mm Hg) 100°C

Specific Gravity (H2O = 1)

ection XI. TOXICOLOGIC	NOITAMRO7NI JA			
azardous decomposition produc	eldaliava atab oM - at			
biovs of slanetal	AN			
ossibility of hazardous reactions onditions to avoid	AN AN			
hemical stability	Stable under recomm	epsiois bebne	conditions.	
GCtion X. STABILITY AND	YTIVITOABR			
ppearance and Odor	CLEAR, COLORLESS	IZIN MITH	SLIGHT CHEMICAL ODOR.	
olubility in Water	Completely miscible			
apor Density (AIR = 1)		ΑN	Evaporation rate (Butyl Acetate = 1)	ΑN
		ΑN		 0°C

Section XII. ECOLOGICAL INFORMATION

AN

AN

EC20 ΑN 0907 ΑN

> Eye imitation Causes skin imitation. LD50 Dermal - Guinea pig

LC50 Inhalation - Rat

LD50 Oral - Rat

Section XIII. DISPOSAL CONSIDERATIONS

Dispose with normal Laboratory Solvent Waste.

Section XIV. TRANSPORT INFORMATION

(SU) TOG

Proper shipping name: Water Not dangerous goods

Section XV. REGULATORY INFORMATION

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

Section XVI. Misc. INFORMATION

you have any questions, please call Technical Service at 1-203-281-2917 for assistance. APPLICATION. The user should recognize that this product can cause severe injury or death, especially if improperly handled or the known dangers of use are not heeded. READ ALL PRECAUTION. The user should recognize that this product can cause severe injury or death, especially if improperly handled or the known dangers of use are not heeded. READ ALL PRECAUTION. 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 This chemical may interact with other substances. Since the potential uses are so varied, ABSOLUTE STANDARDS INC. cannot warm of all the potential dangers of use or interaction with other chemical meets the specifications set forth on the label. ABSOLUTE STANDARDS INC. warrants that the chemical meets the specifications set forth on the label. ABSOLUTE STANDARDS INC. Warrants that the chemical meets the specifications set forth on the label. ABSOLUTE STANDARDS INC. Warrants that the chemical meets the specifications set forth on the label. ABSOLUTE STANDARDS INC. DISCLAMS ANY OTHER WARRANTIES, EXPRESSED OR IMPLIED WITH REGARD TO THE PRODUCT SUPPLIED HEREUNDER, ITS MERCHANTABILITY OR ITS FITURES FOR A PARTICULAR APPLIED. THE MARKANTIES, EXPRESSED OR IMPLIED WITH REGARD TO THE PRODUCT SUPPLIED HEREUNDER, ITS MERCHANTABILITY OR ITS FITURES FOR A PARTICULAR APPLIED. THE MARKANTIES, EXPRESSED OR IMPLIED WITH REGARD TO THE PRODUCT SUPPLIED HEREUNDER, ITS MERCHANTABILITY OR ITS FITURES FOR A PARTICULAR APPLIED. THE MEMORY OF THE PRODUCT SUPPLIED HEREUNDER, ITS MEMORY OF THE STANDARD TO THE PRODUCT SUPPLIED HEREUNDER, ITS MEMORY OF THE STANDARD TO THE PRODUCT SUPPLIED HEREUNDER, ITS MEMORY OF THE STANDARD TO THE PRODUCT SUPPLIED HEREUNDER, ITS MEMORY OF THE STANDARD TO THE PRODUCT SUPPLIED HEREUNDER, ITS MEMORY OF THE STANDARD TO THE PRODUCT SUPPLIED HEREUNDER, ITS MEMORY OF THE STANDARD TO THE PRODUCT SUPPLIED HEREUNDER, ITS MEMORY OF THE STANDARD TO TH 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. said Global Harmonized System (GHS). This document is infended 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 or her particular application. Depending on usage, protective clothing including eye and flose despinate must be used to avoid contact with material or breathing chemical wapors/tumes. Exposure to this product may have serious adverse health effects. This place of user of the production of the exposure of the expos

Proper shipping name: Water

Not dangerous goods

ATA!



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

CERTIFIED WEIGHT REPORT

Galriel Wilload 07;	ormulated By: Gabriel Helland	The state of the s	220	eviewed by: Pedro L. Hentas	Expanded SDS Information	Uncertainty (Solvent Safety Info. On Attached pg.)	Weight(g) Conc (µg/mL) (+/-) (µg/mL) CAS# OSHA PEL (TWA) LD50
	<u>[E]</u>		_[0			Actual	Conc (ug/mL) (+
Lot# 102422Q						Actual	Weight(g)
Solvent(s): Water	S Kenner		Ž	î -		Target	Weight(g)
	5		5E-05 Balance Uncertainty	0.001 Flask Uncertainty		Purity Uncertainty	Purity
			5E-05	0.001		Purity	(%)
		(4 °C)		10.0		Nominal	Conc (µg/mL) (%) Purity
91980 072423 Acrolein	082423	Refrigerate (4 °C)	6UTB	ted to (mL):	1		Number
Part Number: Lot Number: Description:	Expiration Date:	Recommended Storage: Nominal Concentration (µo/ml.):	NIST Test ID#:	Weight(s) shown below were combined and diluted to (mL):			Sonibound RM#
				W		ć	3

DATE

072423

DATE

072423

orl-rat 46mg/kg 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. NOTEs 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. 0.1 ppm 107-02-8 5009.2

52.5

0.05170

0.05160

0.5

97.1

5000

103755R09M

S

1. Acrolein

	Scan 232 (8.927 min): [BSB2]79005.D		56			
	76	ĩ				
larron:	Abundance	00009	20000	40000	30000	20000
TOTAL PART OF TRANSPORTED TO	TIC: [BSB2]79005.D					
	Abundance	250000 8.93	200000	150000	00000	0000

90 100 110 120 130 140 150 160 170 8 9 20 40 8 8 0<--Z/III 10.00 15.00 20.00 25.00 30.00 35.00 40.00 45.00 50.00 55.00 60.00 Time-->0

8

75

92

4

37

10000

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 (#4) 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: 7/24/2023, 4:01:48 PM

May 1, 2022

1-325-323-3200

1-800-535-5053

Hamden, CT 06518-0585 PO Box 5585

Safety Data Sheet (SDS)

GHS/OSHA Compliant

Date Prepared/Revised

Emergency Telephone International

Emergency Telephone USA & CANADA

Section I Product and Company Identification

ANALYTICAL STANDARD DISSOLVED IN WATER **IDENTITY**

44 Rossotto Dr. ABSOLUTE STANDARDS INC

Hamden CT, 06514

Address

Section II - Hazards Identification

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

Use gloves, eye protection/face shelld **P280** Causes skin and eye irritation. H316

If in eyes, remove contacts, rinse with water

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

Manufacturer's Name

P302,332

172q

Section III - Composition

Signal Word: DANGER

Z6 < % (optional)

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

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

Section IV. FIRST AID MEASURES INTENDED USE: REFERENCE MATERIAL

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

CAS#: 7732-18-5

P305,351,338

Wash with sosp and water. Consult a physician.

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

Section V. FIREFIGHTING MEASURES

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

Suitable extinguishing media

Section VI. ACCIDENTAL RELEASE MEASURES

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

ignition. Vapours accumulate to form explosive concentrations.

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

Environmental precautions

Personal precautions

If swallowed

belsdni ii

General advice

In case of eye contact

In case of skin contact

Precautions for safe handling

Storage Conditions

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

Section VII. HANDLING AND STORAGE

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

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and kept upright to prevent leakage.

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mqq 008 :AWT CAS#: 7732-18-5 Water

Avoid contact with skin, eyes and clothing. Wash hands thoroughly after handling the product. Handle with gloves. Gloves must be inspected prior to use. Eye protection. Respiratory protection Personal protective equipment

SOUSINELOANANO	Section IX - PHYSICAL/CHEMICAL	
SOLTSIGNTOAGAUS	Contion IV - DUVCICAL /CUEMICAL	ı

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

ection XI. TOXICOLOGIC	NOITAMRO7NI JA			
azardous decomposition produc	eldaliava atab oM - at			
biovs of slanetal	AN			
ossibility of hazardous reactions onditions to avoid	AN AN			
hemical stability	Stable under recomm	epsiois bebne	conditions.	
GCtion X. STABILITY AND	YTIVITOABR			
ppearance and Odor	CLEAR, COLORLESS	IZIN MITH	SLIGHT CHEMICAL ODOR.	
olubility in Water	Completely miscible			
apor Density (AIR = 1)		ΑN	Evaporation rate (Butyl Acetate = 1)	ΑN
		ΑN		 0°C

Section XII. ECOLOGICAL INFORMATION

AN

AN

EC20 ΑN 0907 ΑN

> Eye imitation Causes skin imitation. LD50 Dermal - Guinea pig

LC50 Inhalation - Rat

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Section XIII. DISPOSAL CONSIDERATIONS

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Section XIV. TRANSPORT INFORMATION

(SU) TOG

Proper shipping name: Water Not dangerous goods

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Proper shipping name: Water

Not dangerous goods

ATA!

Absolute Standards, Inc.

800-368-1131 www.absolutestandards.com



Certified Reference Material CRM

Solvent(s):

Methanol



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

CERTIFIED WEIGHT REPORT

Part Number: Lot Number:

95318

111722

2-Chloroethyl vinyl ether

Expiration Date:

Description:

111725

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

NIST Test ID#:

6UTB

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

50.0

10000

0.001 Flask Uncertainty

5E-05 Balance Uncertainty

99

0.50551

10001.9

40.5

110-75-8

Lot#

EB679-US

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

N/A

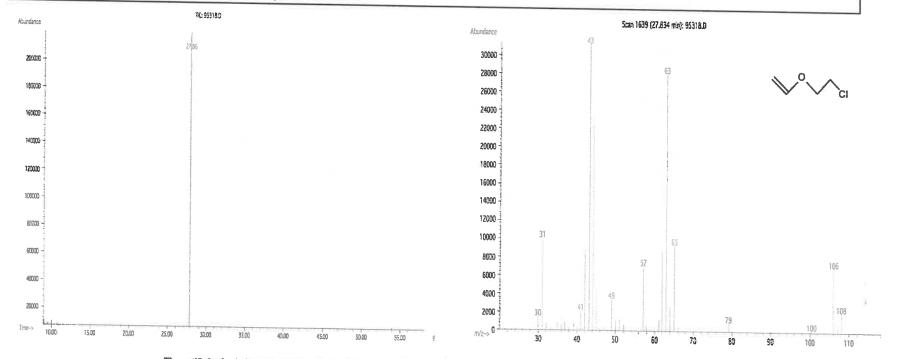
SDS Information Expanded Uncertainty

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

0.50541

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

0.2



- The certified value is the concentration calculated from gravimetric and volumetric measurements unless otherwise stated.
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800-368-1131 Absolute Standards, Inc.

www.absolutestandards.com

Certified Reference Material CRM



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

CERTIFIED WEIGHT REPORT

Part Number: Lot Number: Description: 95318 2-Chloroethyl vinyl ether 121321

Expiration Date: 121324

Weight(s) shown below were combined and diluted to (mL): Nominal Concentration (µg/mL): Recommended Storage: 10000 Refrigerate (4 °C)

30.0 0.0003 Flask Uncertainty 5E-05 Balance Uncertainty

11

121321

DATE

Solvent(s):

Lot#

Methanol

EA899-US

ormulated By: Benson Chan

Reviewed By: Pedro L. Rentas

121321 DATE

Uncertainty Expanded (Solvent Safety Info. On Attached pg.) SDS Information

2-Chloroethyl vinyl ether 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., 74 MKCD0033 Conc (µg/mL) 10000 99 3 Purity 0.2 Weight (g) 0.30320 0.30411 Weight (g) Conc(µg/mL) 10030.2 (+/-) (µg/mL 40.7 110-75-8 CAS# OSHA PEL (TWA) X orl-rat 250mg/kg 1050

Injector B Temp = 200°C, Detector B Temp. = 220°C. Analyst: Candice Warren.

RM#

Lot Number

Nominal

Purity

Uncertainty

Target

Actual

Actual

Topy

100

530

200

25.00

30.00

35.00

40,00

\$50

50.00

55.00

8

8

8

8

70

8

8

10

79 23

8

2000

2000

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Expiration Date: 121324

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30.0 0.0003 Flask Uncertainty 5E-05 Balance Uncertainty

11

121321

DATE

Solvent(s):

Lot#

Methanol

EA899-US

ormulated By: Benson Chan

Reviewed By: Pedro L. Rentas

121321 DATE

Uncertainty Expanded (Solvent Safety Info. On Attached pg.) SDS Information

2-Chloroethyl vinyl ether 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., 74 MKCD0033 Conc (µg/mL) 10000 99 3 Purity 0.2 Weight (g) 0.30320 0.30411 Weight (g) Conc(µg/mL) 10030.2 (+/-) (µg/mL 40.7 110-75-8 CAS# OSHA PEL (TWA) X orl-rat 250mg/kg 1050

Injector B Temp = 200°C, Detector B Temp. = 220°C. Analyst: Candice Warren.

RM#

Lot Number

Nominal

Purity

Uncertainty

Target

Actual

Actual

Topy

100

530

200

25.00

30.00

35.00

40,00

\$50

50.00

55.00

8

8

8

8

70

8

8

10

79 23

8

2000

2000

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CERTIFIED REFERENCE MATERIAL

ISO 17834 Accredited Reference Material Produce Certificate #3222.01

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

Certificate of Analysis





www.restek.com

FOR LABORATORY USE ONLY-READ SDS PRIOR TO USE.

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

Catalog No.:

30006

Lot No.: A0186767

Description:

VOA Calibration Mix #1

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

1mL/ampul

Container Size:

2 mL

Pkg Amt: > 1 mL

Expiration Date:

September 30, 2025

Storage:

0°C or colder

Ship:

Ambient

CERTIFIED VALUES

Elution Order	Compo	und	Grav. Conc. (weight/volumē)		Expanded l (95% C.L.; F		
1	Acetone CAS # 67-64-1 Purity 99%	(Lot MKCQ7914)	5,046.8 μg/mL	+/- +/- +/-	29.3427 304.4978 305.2207	μg/mL μg/mL μg/mL	Gravimetric Unstressed Stressed
2	2-Butanone (MEK) CAS # 78-93-3 Purity 99%	(Lot SHBN2844)	5,048.8 μg/mL	+/- +/- +/-	29.3544 304.6185 305.3417	μg/mL μg/mL μg/mL	Gravimetric Unstressed Stressed
3	4-Methyl-2-pentanone (MIBK) CAS # 108-10-1 Purity 99%	(Lot SHBN3601)	5,045.0 μg/mL	+/- +/- +/-	29.3321 304.3872 305.1099	μg/mL μg/mL μg/mL	Gravimetric Unstressed Stressed
4	2-Hexanone CAS # 591-78-6 Purity 99%	(Lot MKCQ6663)	5,045.3 μg/mL	+/- +/- +/-	29.3340 304.4073 305.1300	μg/mL μg/mL μg/mL	Gravimetric Unstressed Stressed

Solvent:

P&T Methanol/Water (90:10)

CAS#

67-56-1/7732-18-5

Purity

99%

Column:

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

Carrier Gas:

hydrogen-constant pressure 11.0 psi.

Temp. Program:

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

Inj. Temp:

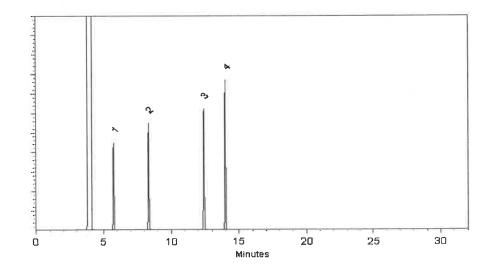
200°C

Det. Temp:

250°C

Det. Type:

FID



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

Bethany Lowery - Operations Tech I

Date Mixed:

28-Jun-2022

Balance: B251644995

Out The

Christie Mills - Operations Tech II - ARM QC

Date Passed:

30-Jun-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/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 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: (800)356-1688 Fax: (814)353-1309

Certificate of Analysis





www.restek.com

FOR LABORATORY USE ONLY-READ SDS PRIOR TO USE.

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

Catalog No.: 30470

Lot No.: A0181905

tert-Butanol Standard

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

Container Size: 2 mL Pkg Amt: > 1 mL

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

Ship: Ambient

CERTIFIED VALUES

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

Column:

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

Carrier Gas:

hydrogen-constant pressure 11.0 psi.

Temp. Program:

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

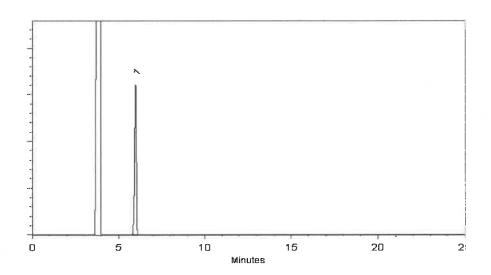
Inj. Temp:

200°C

Det. Temp:

250°C

Det. Type:



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

John Friedline - Operations Technician I

Date Mixed:

16-Feb-2022

Balance: B442140311

War lina Tossan Parlina Cowan - Operations Tech I

Date Passed: 21-Feb-2022

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

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.



ACCREDITED
ISO 17034 Accredited
Reference Material Producer
Certificate #322201

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

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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 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

Elution Order		Compound	Grav. Conc. (weight/volume)		Expanded U (95% C.L.; K		
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:

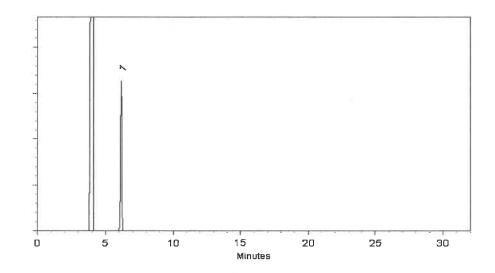
200°C

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

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

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uncertainty value (includes gravimetric uncertainty, homogeneity between-ampul uncertainty, storage stability
uncertainty and shipping stability uncertainty and were combined using the following formula:

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

- 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.
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0°C or colder (Freezer) -20°C or colder (Deep Freezer)	< 25°C	≥ 25°C up to 7 days

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- 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
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which includes complete instructions.











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chromatographic plus

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

Catalog No.: 30067 Lot No.: A0191805

Description: 4-Bromofluorobenzene Standard

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

1mL/ampul

Container Size: 2 mL Pkg Amt: > 1 mL

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

CERTIFIED VALUES

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

Ship:

Ambient

Solvent:

P&T Methanol

CAS # 67-56-1 Purity 99%

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

Quality Confirmation Test

Column:

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

Carrier Gas:

hydrogen-constant pressure 11.0 psi.

Temp. Program:

40°C (hold 2 min.) to 240°C

@ 8°C/min. (hold 5 min.)

Inj. Temp:

200°C

Det. Temp:

250°C

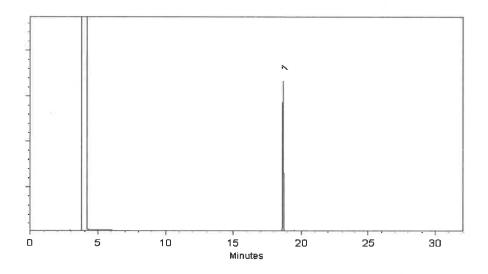
Det. Type:

FID

Split Vent:

40 ml/min

Inj. Vol 1µl



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Alicia Leathers - Operation Technician I

Date Mixed:

17-Nov-2022

Balance Serial #

B251644995

Jennifer Pollino - Operations Tech III - ARM QC

Date Passed:

21-Nov-2022

Expiration Notes:

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

Purity Notes:

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

Certified Uncertainty Value Notes:

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

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

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

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

Manufacturing Notes:

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

- Stability of the unopened product, when stored in compliance with the recommended conditions, is guaranteed through
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 information, with the knowledge/understanding that open product stability is subject to the specific handling and
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- If any undissolved material is visible inside the ampul, sonicate the unopened ampul until the material is completely dissolved.



8			











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Ambient

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

CERTIFIED VALUES

Elution Order	Compound	CAS#	Lot#	Purity	Grav. Conc. (weight/volume)	Expanded Uncertainty * (95% C.L.; K=2)
1	Bromochloromethane	74-97-5	00008541	99%	2,018.0 μg/mL	+/- 113.3890

Ship:

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

P&T Methanol

CAS# 67-56-1 Purity 99%

Solvent:

Quality Confirmation Test

Column:

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

Carrier Gas:

hydrogen-constant pressure 11.0 psi.

Temp. Program:

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

Inj. Temp: 200°C

Det. Temp:

250°C

Det. Type:

Split Vent:

40 ml/min

Inj. Vol

1μا



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

Date Mixed:

29-Dec-2022

Balance Serial #

B707717271

Out the

Christie Mills - Operations Tech II - ARM QC

Date Passed:

03-Jan-2023

Expiration Notes:

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

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Ambient

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

CERTIFIED VALUES

Elution Order	Compound ;	CAS#.	Lot#	Purity	Grav. Conc. (weight/volume)	Expanded Uncertainty * (95% C.L.; K=2)
1	Bromochloromethane	74-97-5	00008541	99%	2,018.0 μg/mL	+/- 113.3890

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

P&T Methanol

CAS# 67-56-1 Purity 99%



Solvent:

Quality Confirmation Test

Column:

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

Carrier Gas:

hydrogen-constant pressure 11.0 psi.

Temp. Program:

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

Inj. Temp: 200°C

Det. Temp:

250°C

Det. Type:

Split Vent:

40 ml/min

Inj. Vol

1μا



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Date Mixed:

29-Dec-2022

Balance Serial #

B707717271

Out the

Christie Mills - Operations Tech II - ARM QC

Date Passed:

03-Jan-2023

Expiration Notes:

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FOR LABORATORY USE ONLY-READ SDS PRIOR TO USE.

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Catalog No.:

30042

Lot No.: A0194279

Description:

502.2 Calibration Mix #1

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

Container Size: **Expiration Date:**

October 31, 2029

Pkg Amt:

> 1 mL

Storage:

0°C or colder

Ship: **Ambient**

CERTIFIED VALUES

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

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

Solvent:

P&T Methanol

CAS# 67-56-1 Purity 99%



Quality Confirmation Test

Column:

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

Carrier Gas:

helium-constant flow 2.0 mL/min.

Temp. Program:

40°C (hold 6 min.) to 100°C

@ 6°C/min.

Inj. Temp:

200°C

Det. Temp: 250°C

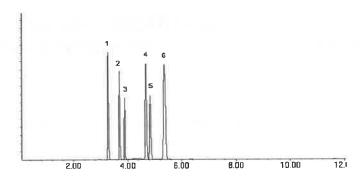
Det. Type: MSD

Split Vent:

Split ratio 10:1

Inj. Vol

1µl



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

Tom Suckar Mix Technician

Date Mixed:

03-Feb-2023

Balance Serial #

B707717271

Church 1966

Christie Mills - Operations Tech II - ARM QC

Date Passed:

07-Feb-2023



Expiration Notes:

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

30042

Lot No.: A0194279

Description:

502.2 Calibration Mix #1

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

Container Size: **Expiration Date:**

October 31, 2029

Pkg Amt:

> 1 mL

Storage:

0°C or colder

Ship: **Ambient**

CERTIFIED VALUES

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

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

Solvent:

P&T Methanol

CAS# 67-56-1 Purity 99%



Quality Confirmation Test

Column:

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

Carrier Gas:

helium-constant flow 2.0 mL/min.

Temp. Program:

40°C (hold 6 min.) to 100°C

@ 6°C/min.

Inj. Temp:

200°C

Det. Temp: 250°C

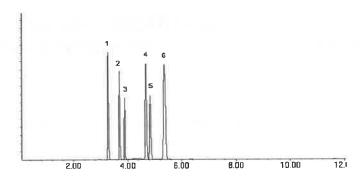
Det. Type: MSD

Split Vent:

Split ratio 10:1

Inj. Vol

1µl



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

Tom Suckar Mix Technician

Date Mixed:

03-Feb-2023

Balance Serial #

B707717271

Church 1966

Christie Mills - Operations Tech II - ARM QC

Date Passed:

07-Feb-2023



Expiration Notes:

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

Purity Notes:

- 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.













Tel: 1-814-353-1300 Fax: 1-814-353-1309

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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.:

30489

Lot No.: A0196115

Description:

8260B Acetates Mix

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

Container Size:

2 mL

Pkg Amt:

> 1 mL

Expiration Date:

September 30, 2024

Storage:

-20°C or colder

Handling:

This product is photosensitive.

Ship: On Ice

CERTIFIED VALUES

Elution Order		Compound	CAS#	Lot#	Purity	Grav. Conc. (weight/volume)	Expanded Uncertainty * (95% C.L.; K=2)
1	Methyl acetate		79-20-9	SHBP3100	99%	2,013.7 μg/mL	+/- 69.6015
2	Vinyl acetate		108-05-4	RD220630	99%	2,020.0 μg/mL	+/- 69.8205
3	Ethyl acetate		141-78-6	SHBP9289	99%	2,019.3 μg/mL	+/- 69.7974
4	Isopropyl acetate		108-21-4	BCCG7069	99%	2,014.0 μg/mL	+/- 69.6131
5	Propyl acetate		109-60-4	TFFKL	99%	2,014.7 μg/mL	+/- 69.6361
6	Butyl acetate		123-86-4	SHBP6314	99%	2,014.0 μg/mL	+/- 69.6131
7	Amyl acetate		628-63-7	41325/1	97%	2,016.3 μg/mL	+/- 69.6928

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

Solvent:

P&T Methanol

CAS# 67-56-1 Purity 99%

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



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

Quality Confirmation Test

Column:

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

Carrier Gas:

hydrogen-constant pressure 11.0 psi.

Temp. Program:

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

Inj. Temp:

200°C

Det. Temp:

250°C

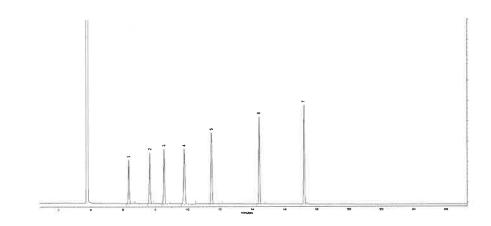
Det. Type:

FID

Split Vent:

40 ml/min Inj. Vol

1μΙ



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

Bethany Lowery - Operations Tech I

Date Mixed:

21-Mar-2023

Balance Serial #

B251644995

7

Date Passed:

29-Mar-2023

Expiration Notes:

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

Purity Notes:

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

Certified Uncertainty Value Notes:

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

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

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

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

Manufacturing Notes:

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

- Stability of the unopened product, when stored in compliance with the recommended conditions, is guaranteed through
 the expiration displayed on the product label and certificate. Contact Restek for additional opened product stability
 information, with the knowledge/understanding that open product stability is subject to the specific handling and
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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.













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110 Benner Circle Bellefonte, PA 16823-8812

www.restek.com

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

Catalog No.:

30489

Lot No.: A0196115

Description:

8260B Acetates Mix

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

Container Size:

2 mL

Pkg Amt:

> 1 mL

Expiration Date:

September 30, 2024

Storage:

-20°C or colder

Handling:

This product is photosensitive.

Ship: On Ice

CERTIFIED VALUES

Elution Order		Compound	CAS#	Lot#	Purity	Grav. Conc. (weight/volume)	Expanded Uncertainty * (95% C.L.; K=2)
1	Methyl acetate		79-20-9	SHBP3100	99%	2,013.7 μg/mL	+/- 69.6015
2	Vinyl acetate		108-05-4	RD220630	99%	2,020.0 μg/mL	+/- 69.8205
3	Ethyl acetate		141-78-6	SHBP9289	99%	2,019.3 μg/mL	+/- 69.7974
4	Isopropyl acetate		108-21-4	BCCG7069	99%	2,014.0 μg/mL	+/- 69.6131
5	Propyl acetate		109-60-4	TFFKL	99%	2,014.7 μg/mL	+/- 69.6361
6	Butyl acetate		123-86-4	SHBP6314	99%	2,014.0 μg/mL	+/- 69.6131
7	Amyl acetate		628-63-7	41325/1	97%	2,016.3 μg/mL	+/- 69.6928

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

Solvent:

P&T Methanol

CAS# 67-56-1 Purity 99%

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



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

Quality Confirmation Test

Column:

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

Carrier Gas:

hydrogen-constant pressure 11.0 psi.

Temp. Program:

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

Inj. Temp:

200°C

Det. Temp:

250°C

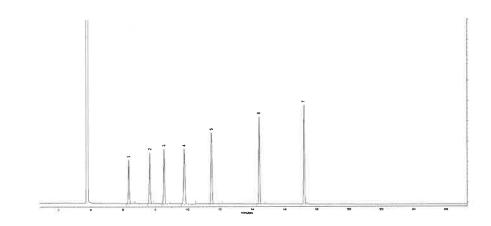
Det. Type:

FID

Split Vent:

40 ml/min Inj. Vol

1μΙ



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

Bethany Lowery - Operations Tech I

Date Mixed:

21-Mar-2023

Balance Serial #

B251644995

7

Date Passed:

29-Mar-2023

Expiration Notes:

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

Purity Notes:

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

Certified Uncertainty Value Notes:

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

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

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

Manufacturing Notes:

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

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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.













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Certificate of Analysis gravimetric

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FOR LABORATORY USE ONLY-READ SDS PRIOR TO USE.

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

Catalog No.:

555582

Lot No.: A0196865

Description:

Custom 8260A/B Surrogate Mix

Custom 8260A/B Surrogate Mix 25,000µg/mL, P&T Methanol,

1mL/ampul

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

April 30, 2026

Pkg Amt:

> 1 mL

Storage:

10°C or colder

Ship:

Ambient

CERTIFIED VALUES

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

Solvent:

P&T Methanol

CAS#

67-56-1

Purity

99%

Parker 7. Brown Russ Bookhamer - Operations Technician i

Date Mixed:

11-Apr-2023

Balance: 1127510105



Expiration Notes:

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

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uncertainty value includes gravimetric uncertainty, homogeneity between-ampul uncertainty, storage stability
uncertainty and shipping stability uncertainty and were combined using the following formula:

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

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

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

Manufacturing Notes:

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

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 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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 dissolved.



CERTIFIED REFERENCE MATERIAL









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Certificate of Analysis gravimetric

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FOR LABORATORY USE ONLY-READ SDS PRIOR TO USE.

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

Catalog No.:

555582

Lot No.: A0196865

Description:

Custom 8260A/B Surrogate Mix

Custom 8260A/B Surrogate Mix 25,000µg/mL, P&T Methanol,

1mL/ampul

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

April 30, 2026

Pkg Amt:

> 1 mL

Storage:

10°C or colder

Ship:

Ambient

CERTIFIED VALUES

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

Solvent:

P&T Methanol

CAS#

67-56-1

Purity

99%

Parker 7. Brown Russ Bookhamer - Operations Technician i

Date Mixed:

11-Apr-2023

Balance: 1127510105



Expiration Notes:

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 which includes complete instructions.
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 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°

ge: 0°C or colder

Ship: A

Ambient

CERTIFIED VALUES

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

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

Solvent:

P&T Methanol

CAS # 67-56-1 Purity 99%

Column:

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

Carrier Gas:

helium-constant flow 2.0 mL/min.

Temp. Program:

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

Inj. Temp:

200°C

Det. Temp:

250°C

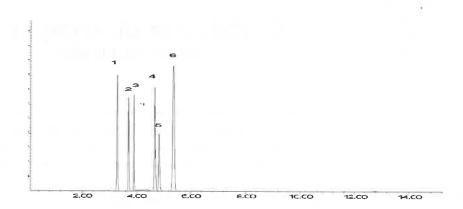
Det. Type: MSD

Split Vent:

Split ratio 10:1

Inj. Vol

1μΙ



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

Brittany Federinko - Operations Tech I

Date Mixed:

02-May-2023

Balance Serial #

B707717271

Jennifer Pollino - Operations Tech III - ARM QC

Date Passed:

08-May-2023



Expiration Notes:

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Purity Notes:

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Certified Uncertainty Value Notes:

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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

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.: A0199224

Description:

8260B Acetates Mix

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

Container Size:

2 mL

Pkg Amt: > 1 mL

Expiration Date:

December 31, 2024

-20°C or colder

Handling:

This product is photosensitive.

Storage:

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

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

Solvent:

P&T Methanol

CAS# 67-56-1

Purity 99%

Tech Tips:

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



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

Quality Confirmation Test

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

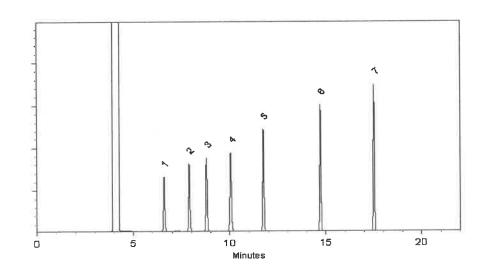
Det. Type:

Split Vent:

40 ml/min

Inj. Vol

 $1\mu l$



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.

Tom Suckar - Mix Technician

Date Mixed:

22-Jun-2023

Balance Serial #

B251644995

Jennifer Pollino - Operations Tech III - ARM QC

Date Passed:

26-Jun-2023

Expiration Notes:

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

Purity Notes:

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

Certified Uncertainty Value Notes:

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

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

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

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

Manufacturing Notes:

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

- Stability of the unopened product, when stored in compliance with the recommended conditions, is guaranteed through
 the expiration displayed on the product label and certificate. Contact Restek for additional opened product stability
 information, with the knowledge/understanding that open product stability is subject to the specific handling and
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 which includes complete instructions.
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 dissolved.





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FOR LABORATORY USE ONLY-READ SDS PRIOR TO USE.

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

Catalog No.:

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

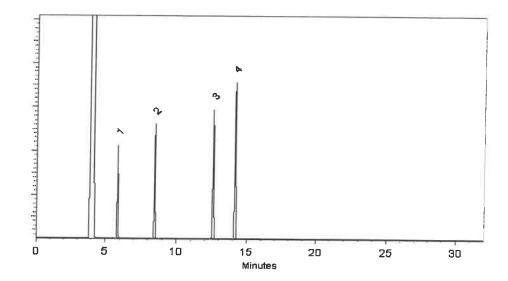
Det. Type:

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:

- 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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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

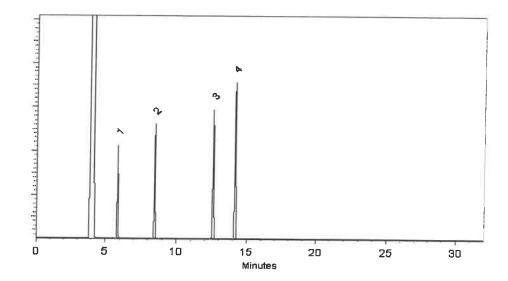
Det. Type:

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:

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

Certified Uncertainty Value Notes:

The uncertainties are determined in accordance with ISO 17034 and Guide 35. The certified expanded
uncertainty value includes gravimetric uncertainty, homogeneity between-ampul uncertainty, storage stability
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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.

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



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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

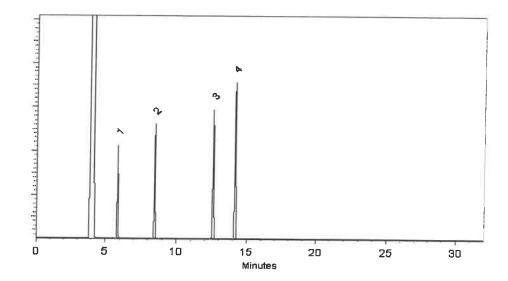
Det. Type:

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:

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

Certified Uncertainty Value Notes:

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

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

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

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

Manufacturing Notes:

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



CERTIFIED REFERENCE MATERIAL









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FOR LABORATORY USE ONLY-READ SDS PRIOR TO USE.

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

Catalog No.:

555408-FL

Lot No.: A0205177

Description:

Custom Vinyl Acetate Standard

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

Container Size:

2 mL

Pkg Amt: > 1 mL

Expiration Date:

June 30, 2025

Storage: -20°C or colder

Handling:

This product is photosensitive.

Ship: On Ice

CERTIFIED VALUES

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

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

Solvent:

P&T Methanol

CAS # 67-56-1 Purity 99%

Tech Tips:

Vinyl acetate is a volatile organic ester included in the target lists of several US EPA and other methods. Under acidic conditions, esters react with alcohols to form new esters (transesterification). Methanol-based mixes containing halogenated compounds are slightly acidic, so it is important to minimize exposure of vinyl acetate to mixes of halogenated compounds in methanol. For this reason, we offer vinyl acetate in individual solution, and suggest that it be introduced into the working level calibration solution immediately before use. This will minimize problems and ensure more consistent results.



Column:

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

Carrier Gas:

hydrogen-constant pressure 11.0 psi.

Temp. Program:

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

Inj. Temp:

200°C

Det. Temp:

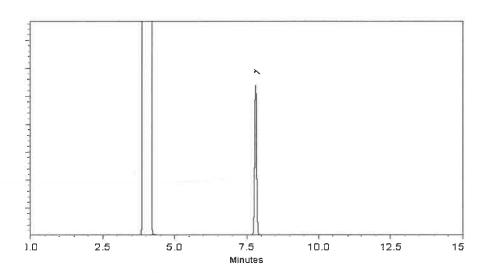
250°C

Det. Type:

Split Vent:

40 ml/min

Inj. Vol 1µl



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:

06-Dec-2023

Balance Serial #

1127510105

Jennifer Pollino - Operations Tech III - ARM QC

Date Passed:

11-Dec-2023

REAGNED Tyle bedan or Hellan by N. Net



Expiration Notes:

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

Purity Notes:

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

Certified Uncertainty Value Notes:

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

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

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

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

Manufacturing Notes:

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

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





CERTIFIED REFERENCE MATERIAL









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Certificate of Analysis

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FOR LABORATORY USE ONLY-READ SDS PRIOR TO USE.

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

Catalog No.:

555408-SL

Lot No.: A0205179

Description:

Custom Vinyl Acetate Standard

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

Container Size:

2 mL

2 111L

Pkg Amt:

> 1 mL

Expiration Date:

Handling:

June 30, 2025

Storage: -20°C or colder

This product is photosensitive.

Ship: On Ice

CERTIFIED VALUES

Elution Order	··· Compound	CAS#	Lot#	Purity	Grav. Conc. (weight/volume)	Expanded Uncertainty * (95% C.L.; K=2)
1	Vinyl acetate	108-05-4	RP231030CTH	98%	8,075.2 μg/mL	+/- 279.1159

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

Solvent:

P&T Methanol

CAS # 67-56-1 Purity 99%

Tech Tips:

Vinyl acetate is a volatile organic ester included in the target lists of several US EPA and other methods. Under acidic conditions, esters react with alcohols to form new esters (transesterification). Methanol-based mixes containing halogenated compounds are slightly acidic, so it is important to minimize exposure of vinyl acetate to mixes of halogenated compounds in methanol. For this reason, we offer vinyl acetate in individual solution, and suggest that it be introduced into the working level calibration solution immediately before use. This will minimize problems and ensure more consistent results.

Column:

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

Carrier Gas:

hydrogen-constant pressure 11.0 psi.

Temp. Program:

40°C (hold 2 min.) to 240°C

@ 8°C/min. (hold 5 min.)

Inj. Temp:

200°C

Det. Temp:

250°C

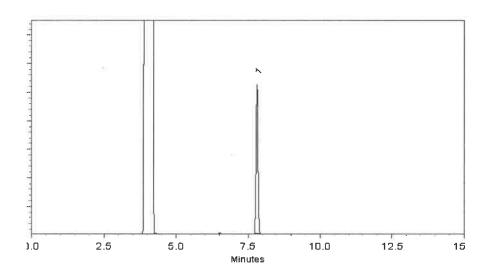
Det. Type:

FID

Split Vent:

40 ml/min

Inj. Vol 1µl



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

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Daniel Wasson - Operations Tech I

Date Mixed:

06-Dec-2023

Balance Serial #

1127510105

Jennifer Poliino - Operations Tech III - ARM QC

Date Passed:

11-Dec-2023

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Expiration Notes:

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

Purity Notes:

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

Certified Uncertainty Value Notes:

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

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

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

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

Manufacturing Notes:

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

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



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CERTIFIED REFERENCE MATERIAL









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

www.restek.com

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-SL

Lot No.: A0205179

Description:

Custom Vinyl Acetate Standard

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

Container Size:

2 mL

2 111L

Pkg Amt:

> 1 mL

Expiration Date:

Handling:

June 30, 2025

Storage: -20°C or colder

This product is photosensitive.

Ship: On Ice

CERTIFIED VALUES

Elution Order	··· Compound	CAS#	Lot#	Purity	Grav. Conc. (weight/volume)	Expanded Uncertainty * (95% C.L.; K=2)
1	Vinyl acetate	108-05-4	RP231030CTH	98%	8,075.2 μg/mL	+/- 279.1159

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

Solvent:

P&T Methanol

CAS # 67-56-1 Purity 99%

Tech Tips:

Vinyl acetate is a volatile organic ester included in the target lists of several US EPA and other methods. Under acidic conditions, esters react with alcohols to form new esters (transesterification). Methanol-based mixes containing halogenated compounds are slightly acidic, so it is important to minimize exposure of vinyl acetate to mixes of halogenated compounds in methanol. For this reason, we offer vinyl acetate in individual solution, and suggest that it be introduced into the working level calibration solution immediately before use. This will minimize problems and ensure more consistent results.

Column:

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

Carrier Gas:

hydrogen-constant pressure 11.0 psi.

Temp. Program:

40°C (hold 2 min.) to 240°C

@ 8°C/min. (hold 5 min.)

Inj. Temp:

200°C

Det. Temp:

250°C

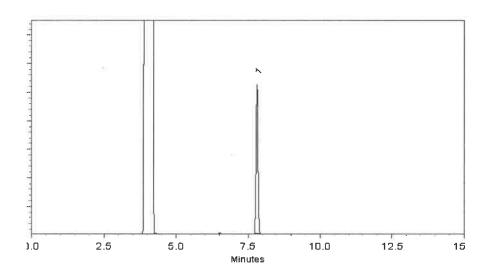
Det. Type:

FID

Split Vent:

40 ml/min

Inj. Vol 1µl



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

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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%.

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Manufacturing Notes:

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

www.restek.com

Certificate of Analysis

gravimetric

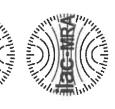


CERTIFIED REFERENCE MATERIAL



enence Material Prod Certificate #3222.01





FOR LABORATORY USE ONLY-READ SDS PRIOR TO USE.

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

Lot No.: A0210184 555581 Catalog No.:

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

1mL/ampul

> 1 mL Pkg Amt: 2 mL Container Size:

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

10°C or colder

Ambient

Ship:

VALUES CERTIFIED

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

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

67-56-1 %66 Purity

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

11-Apr-2024 Date Mixed:

Balance:

1127510105



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2 of 2



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:

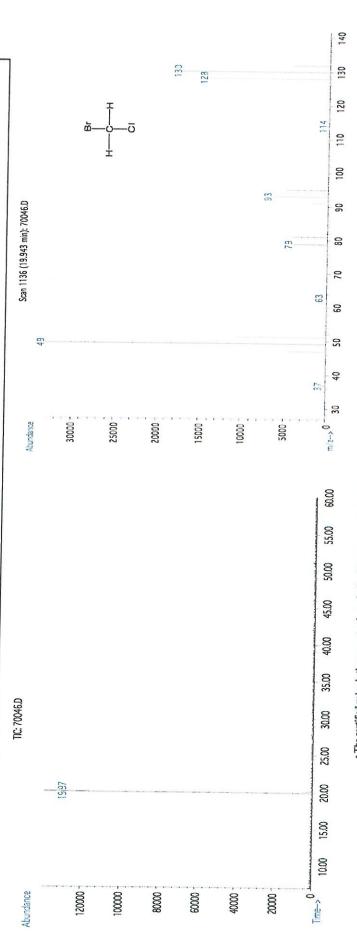
070122 DATE 070122 Pedro L. Rentas Reviewed By

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).

Lot # 070122





Material No.: 9077-02

Batch No.: 22L0562016

Manufactured Date: 2022-10-26 Expiration Date: 2025-10-25

Revision No.: 0

Certificate of Analysis

Test	Specification	Result
Assay (CH₃OH) (by GC, corrected for water)	≥ 99.9 %	
Residue after Evaporation	= 33.3 % ≤ 1.0 ppm	100.0 %
Titrable Acid (µeq/g)	≟ 1.0 pp.π ≤ 0.3	0.2 ppm
Titrable Base (µeq/g)	≤ 0.10	0.2
Water (by KF, coulometric)	= 0.08 % ≤ 0.08 %	0.03
Volatile Organic Trace Analysis – Below EPA 8260B CRQL	Conforms	< 0.01 % Conforms

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

Country of Origin: USA







Material No.: 9077-02

Batch No.: 22L0562016

Manufactured Date: 2022-10-26 Expiration Date: 2025-10-25

Revision No.: 0

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