

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

Order ID: O3631

Test: VOCMS Group1

Prepbatch ID:

Sequence ID/Qc Batch ID: vn071423,vy071723,

#### Standard ID:

VP118161,VP118162,VP118164,VP119199,VP119200,VP120190,VP120390,VP120540,VP120947,VP121045,VP121396,VP121535,VP121536,VP121538,VP121576,VP121691,VP121759,VP121760,VP121761,VP121779,VP121785,VP121786,VP121788,VP121791,VP121792,VP121798,

#### Chemical ID:

 $\label{eq:mol-vp121797,V10601,V12060,V12012,V12081,V12082,V12226,V12761,V12764,V12765,V12767,V12768,V12783,V12784,V12785,V12786,V12787,V12788,V12789,V12885,V13086,V13087,V13088,V13089,V13196,V13197,V13198,V13199,V13217,V13222,V13341,V13342,V13343,V13344,V13491,V13494,V13495,V13497,V13518,V13519,V13520,V13521,V13523,V13524,V13557,V13558,V13559,V13641,V13644,V13655,V13657,V13658,V13870,V13871,V13872,W2606,$ 

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### **VOC STANDARD PREPARATION LOG**

Recipe ID	<u>NAME</u>	NO.	Prep Date	Expiration Date	Prepared By	<u>ScaleID</u>	<u>PipetteID</u>	Supervised By  Mahesh Dadoda
1810	8260 Working Std(2-CVE)-800ppm	<u>VP118161</u>	01/24/2023	07/24/2023	Semsettin Yesilyurt	None	None	01/25/2023

FROM 1.00000ml of V12783 + 1.00000ml of V12784 + 1.00000ml of V12785 + 1.00000ml of V12786 = Final Quantity: 50.000 ml

Recipe ID	<u>NAME</u>	NO.	Prep Date	Expiration Date	Prepared By	<u>ScaleID</u>	<u>PipetteID</u>	Supervised By  Mahesh Dadoda
1811	8260 Working Std(2-CVE)-500ppm	<u>VP118162</u>	01/24/2023	07/24/2023	Semsettin Yesilyurt	None	None	01/25/2023

FROM 7.50000ml of V13217 + 12.50000ml of VP118161 = Final Quantity: 20.000 ml

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### **VOC STANDARD PREPARATION LOG**

<b>Recipe ID</b> 1813	NAME 8260 Working Std(2-CVE)-50ppm	NO. VP118164	Prep Date 01/24/2023	Expiration Date 07/24/2023	Prepared By Semsettin Yesilyurt	ScaleID None	PipetteID None	Supervised By Mahesh Dadoda 01/25/2023
FROM	9.37500ml of V13217 + 0.62500ml of	I f VP118161	= Final Quan	l itity: 10.000 ml	,			0112012020

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	<u>ScaleID</u>	<u>PipetteID</u>	Supervised By  Mahesh Dadoda
252	8260 Working STD (BCM)-First source, 100PPM	<u>VP119199</u>	03/15/2023	09/10/2023	Semsettin Yesilyurt	None	None	03/17/2023

FROM 0.25000ml of V12765 + 1.00000ml of V12761 + 23.75000ml of V13222 = Final Quantity: 25.000 ml

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### **VOC STANDARD PREPARATION LOG**

Recipe ID	<u>NAME</u>	NO.	Prep Date	Expiration Date	Prepared By	<u>ScaleID</u>	<u>PipetteID</u>	Supervised By  Mahesh Dadoda
254	8260 Working STD (BCM)-First source, 10PPM	<u>VP119200</u>	03/15/2023	09/10/2023	Semsettin Yesilyurt	None	None	03/17/2023
FROM	0.05000ml of V12765 + 9.95000ml of	f V13222 =	Final Quantity	y: 10.000 ml				

<b>FROM</b>	0.05000ml of V12765 + 9.95000ml of V13222 = Final Quantity: 10.000 ml
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Recipe ID	NAME	<u>NO.</u>	Prep Date	Expiration Date	Prepared By	<u>ScaleID</u>	<u>PipetteID</u>	Supervised By  Mahesh Dadoda
249	8260 Surrogate, 100PPM	<u>VP120190</u>	04/28/2023	09/15/2023	Semsettin Yesilyurt	None	None	05/02/2023

**FROM** 0.10000ml of V12006 + 24.90000ml of V13657 = Final Quantity: 25.000 ml

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### **VOC STANDARD PREPARATION LOG**

Recipe ID 1917	NAME 8260 Internal standard 50 ppm	NO. VP120390	Prep Date 05/05/2023	Expiration Date 10/27/2023	Prepared By Semsettin Yesilyurt	<u>ScaleID</u> None	PipetteID None	Supervised By Mahesh Dadoda 05/09/2023
FROM	0.05000ml of V12081 + 24.95000ml	of V13657	= Final Quanti	ty: 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
719	8260 Working STD (BCM)-First source, 400PPM	<u>VP120540</u>	05/16/2023	11/16/2023	Semsettin Yesilyurt	None	None	05/17/2023

FROM 1.00000ml of V12768 + 1.50000ml of V12764 + 1.50000ml of V12767 + 16.00000ml of V13658 = Final Quantity: 20.000 ml

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### **VOC STANDARD PREPARATION LOG**

Recipe ID 257	NAME 8260 Calibration Working STD Mix-First source, 160PPM	<u>NO.</u> VP120947	Prep Date 06/05/2023		Prepared By Semsettin Yesilyurt	<u>ScaleID</u> None	PipetteID None	Supervised By Mahesh Dadoda 06/08/2023
FROM	0.40000ml of V12226 + 1.00000ml of	f V12885 +	1.00000ml of	V13086 + 1.000	000ml of V1308	7 + 1.00000ml d	of V13197 +	

 $0.40000 ml \ of \ V12226 + 1.00000 ml \ of \ V12885 + 1.00000 ml \ of \ V13086 + 1.00000 ml \ of \ V13087 + 1.00000 ml \ of \ V13197 + 1.00000 ml \ of \ V13341 + 1.00000 ml \ of \ V13342 + 1.00000 ml \ of \ V13491 + 1.00000 ml \ of \ V13497 + 1.00000 ml \ of \ V13524 + 1.00000 ml \ of \ V13557 + 1.50000 ml \ of \ V13518 + 1.50000 ml \ of \ V13519 + 10.60000 ml \ of \ V13658 = Final \ Quantity: 25.000 \ ml$ 

Recipe ID	NAME.	<u>NO.</u>	Prep Date	Expiration Date	Prepared By	<u>ScaleID</u>	<u>PipetteID</u>	Supervised By  Mahesh Dadoda
218	BFB, 25PPM	<u>VP121045</u>	06/08/2023	12/08/2023	Semsettin Yesilyurt	None	None	06/09/2023

FROM 0.50000ml of V10601 + 49.50000ml of V13655 = Final Quantity: 50.000 ml

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### **VOC STANDARD PREPARATION LOG**

Recipe ID 617	NAME 8260 Surrogate, 400PPM	NO. VP121396	Prep Date 06/26/2023	Expiration Date 12/26/2023	Prepared By Semsettin Yesilyurt	<u>ScaleID</u> None	PipetteID None	Supervised By Mahesh Dadoda 06/28/2023
FROM	0.80000ml of V12012 + 49.20000ml of	of V13641 =	= Final Quanti	ty: 50.000 ml				

Recipe ID	NAME	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>VP121535</u>	07/05/2023	07/28/2023	Semsettin Yesilyurt	None	None	07/07/2023

FROM 1.00000ml of V13872 + 1.50000ml of V13870 + 1.50000ml of V13871 + 21.00000ml of V13641 = Final Quantity: 25.000 ml

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### **VOC STANDARD PREPARATION LOG**

Recipe ID	<u>NAME</u>	NO.	Prep Date	Expiration Date	Prepared By	<u>ScaleID</u>	<u>PipetteID</u>	Supervised By  Mahesh Dadoda
56	8260 Working STD (Acrolein) -first source, 500PPM	<u>VP121536</u>	07/05/2023	07/28/2023	Semsettin Yesilyurt	None	None	07/07/2023

FROM 7.50000ml of V13641 + 12.50000ml of VP121535 = Final Quantity: 20.000 ml

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>VP121538</u>	07/05/2023	07/28/2023	Semsettin Yesilyurt	None	None	07/07/2023

**FROM** 9.87500ml of V13641 + 0.62500ml of VP121535 = Final Quantity: 10.000 ml

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### **VOC STANDARD PREPARATION LOG**

Recipe ID 247	NAME 8260 Internal Standard, 250PPM	<u>NO.</u> VP121576	Prep Date 07/07/2023	Expiration Date 12/26/2023	Prepared By Semsettin Yesilyurt	<u>ScaleID</u> None	PipetteID None	Supervised By Mahesh Dadoda 07/07/2023
FROM	0.25000ml of V12082 + 24.75000ml	of V13644 =	= Final Quanti	ty: 25.000 ml				

Recipe ID	<u>NAME</u>	NO.	Prep Date	Expiration Date	Prepared By	<u>ScaleID</u>	<u>PipetteID</u>	Supervised By  John Carlone
1810	8260 Working Std(2-CVE)-800ppm	<u>VP121691</u>	07/13/2023	01/05/2024	Semsettin Yesilyurt	None	None	07/17/2023

FROM 0.20000ml of V12784 + 1.00000ml of V12787 + 1.00000ml of V12788 + 1.00000ml of V12789 + 36.80000ml of V13644 = Final Quantity: 40.000 ml

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### **VOC STANDARD PREPARATION LOG**

Recipe ID 589	NAME BFB TUNE CHECK	<u>NO.</u> VP121759	Prep Date 07/14/2023	Expiration Date 07/15/2023	Prepared By  John Carlone	<u>ScaleID</u> None	PipetteID None	Supervised By Mahesh Dadoda 07/17/2023
FROM	39.98400ml of W2606 + 0.01600ml o	of VP121045	= Final Qua	ntity: 40.000 m	nl			

Recipe ID	NAME	<u>NO.</u>	Prep Date	Expiration Date	Prepared By	<u>ScaleID</u>	<u>PipetteID</u>	Supervised By  Mahesh Dadoda
620	50 PPB CCC, 8260-Water	<u>VP121760</u>	07/14/2023	07/15/2023	John Carlone	None	None	07/17/2023

FROM 39.94450ml of W2606 + 0.00500ml of VP120540 + 0.00500ml of VP121396 + 0.00800ml of VP121576 + 0.01250ml of VP120947 + 0.01250ml of VP121535 + 0.01250ml of VP121691 = Final Quantity: 40.000 ml

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### **VOC STANDARD PREPARATION LOG**

Recipe ID 620	NAME 50 PPB CCC, 8260-Water	<u>NO.</u> VP121761	Prep Date 07/14/2023		Prepared By  John Carlone	<u>ScaleID</u> None	PipetteID None	Supervised By Mahesh Dadoda 07/17/2023	
FROM	FROM 39.94450ml of W2606 + 0.00500ml of VP120540 + 0.00500ml of VP121396 + 0.00800ml of VP121576 + 0.01250ml of								

39.94450ml of W2606 + 0.00500ml of VP120540 + 0.00500ml of VP121396 + 0.00800ml of VP121576 + 0.01250ml of VP121576 + 0.01250ml of VP121576 + 0.0080ml of VP VP120947 + 0.01250ml of VP121535 + 0.01250ml of VP121691 = Final Quantity: 40.000 ml

Recipe	NAME	NO	Prep Date	Expiration	<u>Prepared</u>	ScaleID	PipettelD	Supervised By
<u>ID</u> 732	<del></del>	NO. VP121779	07/17/2023	<u>Date</u> 07/18/2023	<u>By</u> Mahesh	None None	None	John Carlone
					Dadoda			07/20/2023

4.99800ml of W2606 + 0.00200ml of VP121045 = Final Quantity: 5.000 ml **FROM** 

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#### **VOC STANDARD PREPARATION LOG**

Recipe ID	<u>NAME</u>	NO.	Prep Date	Expiration Date	Prepared By	<u>ScaleID</u>	<u>PipetteID</u>	Supervised By  Mahesh Dadoda
257	8260 Calibration Working STD Mix-First source, 160PPM	<u>VP121785</u>	07/17/2023	08/26/2023	Semsettin Yesilyurt	None	None	07/20/2023
		•	•					

**FROM** 

 $0.40000ml\ of\ V12226+0.50000ml\ of\ V13089+0.50000ml\ of\ V13199+0.50000ml\ of\ V13344+0.50000ml\ of\ V13495+0.50000ml\ of\ V13559+1.00000ml\ of\ V13523+1.50000ml\ of\ V13088+1.50000ml\ of\ V13196+1.50000ml\ of\ V13343+1.50000ml\ of\ V13494+1.50000ml\ of\ V13520+1.50000ml\ of\ V13521+1.50000ml\ of\ V13558+10.60000ml\ of\ V13644=Final\ Quantity:\ 25.000\ ml$ 

Recipe ID	NAME_	NO.	Prep Date	Expiration Date	Prepared By	<u>ScaleID</u>	<u>PipetteID</u>	Supervised By  Mahesh Dadoda
244	8260 Calibration Working STD Mix-First source, 100PPM	<u>VP121786</u>	07/17/2023	08/26/2023	Semsettin Yesilyurt	None	None	07/20/2023

**FROM** 5.62500ml of V13644 + 9.37500ml of VP121785 = Final Quantity: 15.000 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
246	8260 Calibration Working STD Mix-First source, 10PPM	<u>VP121788</u>	07/17/2023	08/26/2023	Semsettin Yesilyurt	None	None	07/20/2023

**FROM** 9.37500ml of V13644 + 0.62500ml of VP121785 = 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  John Carlone
773	50 PPB CCC, 8260-SOIL	<u>VP121791</u>	07/17/2023	07/18/2023	Mahesh Dadoda	None	None	07/20/2023

**FROM** 4.98000ml of W2606 + 0.00250ml of VP118162 + 0.00250ml of VP119199 + 0.00250ml of VP120190 + 0.00250ml of VP121536 + 0.00250ml of VP121786 + 0.00500ml of VP120390 = Final Quantity: 5.000 ml

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### **VOC STANDARD PREPARATION LOG**

Recipe ID 773	NAME 50 PPB CCC, 8260-SOIL	NO. VP121792	Prep Date 07/17/2023		Prepared By  Mahesh	ScaleID None	PipetteID None	Supervised By John Carlone
					Dadoda			07/20/2023
FROM	FROM 4.98000ml of W2606 + 0.00250ml of VP118162 + 0.00250ml of VP119199 + 0.00250ml of VP120190 + 0.00250ml of							

1	4.98000ml of W2606 + 0.00250ml of VP118162 + 0.00250ml of VP119199 + 0.00250ml of VP120190 + 0.00250ml of
-	VP121536 + 0.00250ml of VP121786 + 0.00500ml of VP120390 = Final Quantity: 5.000 ml

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	<u>ScaleID</u>	<u>PipetteID</u>	Supervised By  John Carlone
3763	4.0 PPB 8260 SOIL MDL	<u>VP121798</u>	07/17/2023	07/18/2023	Mahesh Dadoda	None	None	07/20/2023

4.98000ml of W2606 + 0.00200ml of VP118164 + 0.00200ml of VP119200 + 0.00200ml of VP121538 + 0.00200ml of **FROM** VP121788 + 0.00250ml of VP120190 + 0.00500ml of VP120390 = Final Quantity: 5.000 ml



Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Restek	30067 / BFB tuneing solution	A0147670	12/12/2023	12/12/2022 / SAM	01/09/2020 / sam	V10601
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]	A0173020	09/15/2023	03/15/2023 / SAM	06/04/2021 / SAM	V12006
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]	A0173020	12/26/2023	06/26/2023 / SAM	06/04/2021 / SAM	V12012
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]	A0173600	11/04/2023	05/04/2023 / SAM	06/22/2021 / SAM	V12081
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]	A0173600	12/26/2023	06/26/2023 / SAM	06/22/2021 / SAM	V12082
Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Restek	30470 / VOA Stock Solution, tert-butanol std, 1mL, P&TM	A0168291	09/27/2023	03/27/2023 / SAM	10/15/2021 / SAM	V12226



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	A0176219	09/15/2023	03/15/2023 / SAM	03/25/2022 / SAM	V12761
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	A0176219	11/16/2023	05/16/2023 / SAM	03/25/2022 / SAM	V12764
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	A0176219	09/15/2023	03/15/2023 / SAM	03/25/2022 / SAM	V12765
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	A0176219	11/16/2023	05/16/2023 / SAM	03/25/2022 / SAM	V12767
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	A0176219	11/16/2023	05/16/2023 / SAM	03/25/2022 / SAM	V12768
Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Absolute	95318 / 2-Chloroethyl Vinyl Ether (Min = 5)	121321	07/24/2023	01/24/2023 / SAM	03/30/2022 / SAM	V12783



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	01/24/2023 / SAM	03/30/2022 / SAM	V12784
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	07/24/2023	01/24/2023 / SAM	03/30/2022 / SAM	V12785
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	07/24/2023	01/24/2023 / SAM	03/30/2022 / SAM	V12786
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	01/13/2024	07/13/2023 / SAM	03/30/2022 / SAM	V12787
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	01/13/2024	07/13/2023 / SAM	03/30/2022 / SAM	V12788
Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date /	Chemtech Lot #
			01/13/2024	07/13/2023 /	03/30/2022 /	



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)	042921	11/18/2023	05/18/2023 / SAM	04/26/2022 / SAM	V12885
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	A0187424	11/18/2023	05/18/2023 / SAM	08/12/2022 / SAM	V13086
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	A0187424	11/18/2023	05/18/2023 / SAM	08/12/2022 / SAM	V13087
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	A0187424	12/26/2023	06/26/2023 / SAM	08/12/2022 / SAM	V13088
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	A0187424	12/26/2023	06/26/2023 / SAM	08/12/2022 / SAM	V13089
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	A0186868	12/26/2023	06/26/2023 / SAM	09/01/2022 / SAM	V13196



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	A0186868	11/18/2023	05/18/2023 / SAM	09/01/2022 / SAM	V13197
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	A0186868	11/18/2023	05/18/2023 / SAM	09/01/2022 / SAM	V13198
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	A0186868	12/26/2023	06/26/2023 / SAM	09/01/2022 / SAM	V13199
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)	22C2362001	07/24/2023	01/24/2023 / SAM	09/13/2022 / SAM	V13217
Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date /	Chemtech Lot #
Seidler Chemical	BA9077-02 / Methanol, Purge/Trap (cs=6x1L)	22C2362001	09/10/2023	03/10/2023 / SAM	09/13/2022 / SAM	V13222
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	11/18/2023	05/18/2023 / SAM	11/18/2022 / SAM	V13341



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	11/18/2023	05/18/2023 / SAM	11/18/2022 / SAM	V13342
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	12/26/2023	06/26/2023 / SAM	11/18/2022 / SAM	V13343
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	12/26/2023	06/26/2023 / SAM	11/18/2022 / SAM	V13344
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	A0188819	11/18/2023	05/18/2023 / SAM	01/27/2023 / SAM	V13491
Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date /	Chemtech Lot #
Restek	30042 / VOA Mix,500 series method 502.2 Calibration Std #1 gases, 2000uq/ml, PTM, 1ml	A0188819	12/26/2023	06/26/2023 / SAM	01/27/2023 / SAM	V13494
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, 2000ug/ml, PTM, 1ml	A0188819	12/26/2023	06/26/2023 / SAM	01/27/2023 / SAM	V13495



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	A0188819	12/05/2023	06/05/2023 / SAM	01/27/2023 / SAM	V13497
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	A0190554	11/18/2023	05/18/2023 / SAM	01/27/2023 / SAM	V13518
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	A0190554	11/18/2023	05/18/2023 / SAM	01/27/2023 / SAM	V13519
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	A0190554	12/26/2023	06/26/2023 / SAM	01/27/2023 / SAM	V13520
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	A0190554	12/26/2023	06/26/2023 / SAM	01/27/2023 / SAM	V13521
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	A0190554	12/26/2023	06/26/2023 / SAM	01/27/2023 / SAM	V13523



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	A0190554	11/18/2023	05/18/2023 / SAM	01/27/2023 / SAM	V13524	
Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #	
Absolute Standards, Inc.	absolute 95317 / Universal VOA		11/18/2023	05/18/2023 / SAM	01/30/2023 / SAM	V13557	
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)	042921	12/26/2023	06/26/2023 / SAM	01/30/2023 / SAM	V13558	
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)	042921	12/26/2023	06/26/2023 / SAM	01/30/2023 / SAM	V13559	
Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date /	Chemtech Lot #	
Seidler Chemical	BA9077-02 / Methanol, Purge/Trap (cs=6x1L)	22C2862010	12/26/2023	06/26/2023 / SAM	02/23/2023 / SAM	V13641	
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)	22C2862010	01/05/2024	07/05/2023 / SAM	02/23/2023 / SAM	V13644	



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)  Supplier  ItemCode / ItemName  BA9077-02 / Methanol, Purge/Trap (cs=6x1L)		12/08/2023	06/08/2023 / SAM	02/23/2023 / SAM	V13655
Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Seidler Chemical	,	22C2862010	10/27/2023	04/27/2023 / SAM	02/23/2023 / SAM	V13657
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)	22C2862010	11/16/2023	05/16/2023 / SAM	02/23/2023 / SAM	V13658
Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Absolute Standards, Inc.	91980 / Acrolin Std (Min = 5)	062823	07/28/2023	07/05/2023 / SAM	06/29/2023 / SAM	V13870
Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Absolute Standards, Inc.	91980 / Acrolin Std (Min = 5)	062823	07/28/2023	07/05/2023 / SAM	06/29/2023 / SAM	V13871
Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Absolute Standards, Inc.	91980 / Acrolin Std (Min = 5)	062823	07/28/2023	07/05/2023 / SAM	06/29/2023 / SAM	V13872



Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Seidler Chemical	DIW / DI Water	Daily Lab-Certified	10/24/2024	10/24/2019 / apatel	10/24/2019 / apatel	W2606





Material No.: 9077-02

Batch No.: 22C2862010

Manufactured Date: 2022-02-15 Expiration Date: 2025-02-14

Revision No.: 0

# Certificate of Analysis

Test	Specification	Result
Assay (CH3OH) (by GC, corrected for water)	≥ 99.9 %	100.0 %
Residue after Evaporation	≤ 1.0 ppm	0.2 ppm
Titrable Acid (µeq/g)	≤ 0.3	0.3
Titrable Base (µeq/g)	≤ 0.10	< 0.02
Water (by KF, coulometric)	≤ 0.08 %	< 0.01 %
Volatile Organic Trace Analysis – Below EPA 8260B CRQL	Conforms	Conforms

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

Country of Origin: USA







Material No.: 9077-02

Batch No.: 22C2862010

Manufactured Date: 2022-02-15 Expiration Date: 2025-02-14

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Material No.: 9077-02

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Manufactured Date: 2022-02-15 Expiration Date: 2025-02-14

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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



#### 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: 042921

Description: Universal VOA Megamix 69 components

Expiration Date: 042924 Recommended Storage: Freezer (0 °C) Nominal Concentration (µg/mL): 2000 NIST Test ID#: 6UTB

5E-05 Balance Uncertainty

Solvent(s): Lot# Methanol DY186-USQ8 042921 DATE 042921 DATE

Weight(s) shown below were	combined and dilut	ed to (mL):	100	.0 0.01	2 Flask Uncertain	ntv							THE THE PARTY OF	-71	T DOI D' LL TIDITION	
Compound	(RM#) Part Nureb	Lat	Di.	Initie	al fritted	Nominal Conc (µg/mL)	Purity (%)	Purity Uncertainty	Uncertainty Pipette (ml.)	Target Weight(g)	Actual Weight(g)	Actual Cone (un/mt)	Expanded Uncertainty (+/-) (µg/mL)	(Solv	SDS information ent Safety Info. On Atta GSHA PEL (TWA)	ched pg.)
						,,	()		· paces (max)	rrespire(g)	ermilleref (B)	Court (High Inc.)	(44) (pgp//ac.)	CAS#	USIN PEL (TRM)	LUSU
Acetonitrile	(0324)	060812				2000	99.9	0.2	NA	0.20021	0.20041	2002.0	8.1	75-05-8	40 ppm (70mg/m3/8H)	orl-rat 2460n
Allyl chloride (3-Chloroproper		102396				2000	99	0.2	NA	0.20203	0.20233	2003.0	8.2	107-05-1	1 ppm (3/mg/m3/8H)	ori-rat 700m
Carbon disulphide	(0060)					2000	100	0.2	NA	0.20001	0.20015	2001.4	8.1	75-15-0	4 ppm (12mg/m3) (skin)	orl-rat 1200m
cis-1,4-Dichloro-2-butene	(1196)	14718E				2000	95	0.2	NA	0.21054	0.21060	2000.6	8.5	1476-11-5	N/A	N/A
trans-1,4-Dichloro-2-butene	(0488)	MKBP804				2000	96.5	0.2	NA	0.20726	0.20751	2002.4	8.4	110-57-6	NA	NA
Diethyl ether (Elhyl ether)	(0153)	SHBK19				2000	99.9	0.2	NA	0.20023	0.20048	2002.3	8.1	60-29-7	400ppm (1200mg/m3/8H)	orl-rat 1215m
Ethyl methacrylate	(0381)	06126P				2000	99	0.2	NA	0.20203	0.20230	2002.7	8.2	97-63-2	N/A	orl-rat 14800r
lodomethane	(0489)					2000	99.5	0.2	NA	0.20101	0.20130	2002.8	8.1	74-88-4	5 ppm(28mg/m3/6H)(skin)	on-rat 76mg
2-Methyl-1-propanol Methacrylonitrile	(0445)	15241E			NA NA	2000	99.5	0.2	NA	0.20101	0.20123	2002.1	8.1	78-83-1	60 ppm (150mg/m3/8H)	orl-ret 2460m
	(0442)	00427E			NA NA	2000	99	0.2	NA	0.20203	0.20220	2001.7	8.2	126-98-7	1 ppm (3mg/m3/8H)(eldn)	ori-rat 120m
Methyl acrylate Methyl methacrylate	(1075)	SHBK067 MKBW513			NA NA	2000	99.9	0.2	NA	0.20021	0.20046	2002.5	8.1	96-33-3	10 ppm(35mg/m3/6H)(skin)	
Nitrobenzene	(0404)				NA.	2000	99.9	0,2	NA	0.20021	0.20048	2002.7	6.1	80-62-6	100 ppm (410mg/m3/8H)	orl-rat 7872m
2-Nitropropane	(0228)	01213T\ 14002J)		NA	NA.	2000	99	0.2	NA	0.20203	0.20216	2001.5	8.2	96-95-3	1 ppm (5mg/m3/8H)(skin)	orl-rat 780mg
Pentachloroethane	(0450)	HGA01		NA	NA NA	2000	97.3	0.2	NA	0.20556	0.20588	2001.0	8.3	79-46-9	10 ppm (35mg/m3/8H)	orl-rat 720mg
1,1,2-Trichlorotriffuoroethane	(0474)	18930	NA NA	NA	NA NA	2000	98	0.2	NA .	0.20409	0.20418	2000.9	8.2	76-01-7	NVA	N/A
Bromodichloromethane	35171	100220		NA E 00	NA 40040 0	2000	99	0.2	NA	0.20203	0.20221	2001.8	8.2	76-13-1	1000 ppm (7600mg/m3/8H)	ori-rat 43g/
Dibromochioromethane	35171					2000	NA	NA	0.017	NA	NA	2000.8	18.4	75-27-4	N/A	ori-rat 916mg
cls-1,2-Dichloroethene	35171	100220			40007.7	2000	NA	NA NA	0.017	NA	NA	2000.3	18.4	124-48-1	N/A	orl-rat 848mg
trans-1,2-Dichloroethene	35171		0.05		40012.4	2000	NA	NA.	0.017	NA	NA	2000.5	18.4	158-59-2	N/A	N/A
Methylene chlonde	35171	100220	0.05		40005.6	2000	NA	NA.	0.017	NA	NA	2000.2	18.4	156-60-5	N/A	orl-rail 1235m
1,1-Dichloroethene	32251	031821			40013.9	2000	NA	NA NA	0.017	NA	NA	2000.6	18.4	75-09-2	500 ppm	orl-ret 820mg
Bromoform	95321		0.10			2000	NA	NA.	0.042	NA	NA NA	2000.8	19.3	75-35-4	1 ppm (4mg/m3/8H)	ori-rat 200mg
Carbon letrachloride	95321 95321	010419	0.10			2000	NA	NA	0.042	NA	NA.	2000.1	19.3	75-25-2	Q.5 ppm (5mg/m3) (skin)	orl-rat 933mg
Chloroform				10.00		2000	NA	NA	0.042	NA	NA	2000.0	19.2	56-23-5	2 ppm (12.6mg/m3/8H)	ori-rat 2350m
Dibromomethane	95321	010419	0.10	10.00		2000	NA	NA	0.042	NA	NA	2000.1	19.2	67-66-3	60 ppm (240mg/m3) (CL)	orl-ret 906mg
1,1-Dichloroethane	95321	010419	0.10			2000	NA	NA	0.042	NA	NA	2000.1	19.3	74-95-3	N/A	orl-rat 108mg
2,2-Dichloropropane	95321	010419	0.10	10.00		2000	NA	NA .	0.042	NA	NA	2000.0	19.3	75-34-3	100 ppm	orl-rat 725mg
	95321	010419	0.10	10.00		2000	NA	NA .	0.042	NA	NA .	2000.1	19.3	594-20-7	N/A	N/A
Tetrachloroethene	95321	010419	0.10	10.00		2000	NA	NA	0.042	NA NA	NA NA	2000.1	19.3	127-18-4	25 ppm (170mg/m3/8H)(final)	orl-rat 2629m
1,1-Trichloroethane	95321	010419	0.10	10.00		2000	NA	NA	0.042	NA	NA	2000.1	19.3	71-55-6	350 ppm (1900mg/m3/8H)	orl-rat 10300m
	35161	011421	0.05	5.00	40001.2	2000	NA	NA	0.017	NA .	NA	2000.0	18.4	96-12-8	0.001 ppm	ori-rat 170mg
,2-Dibromoethane	35161	011421	0.05	5.00	40003.9	2000	NA	NA	0.017	NA	NA	2000.1	18.4	108-93-4	20 ppm (6H)	orf-rat 108mg
,2-Dichloropropane	35161	011421	0.05	5.00	40004.9	2000	NA	NA.	0.017	NA NA	NA	2000.1	18.4	107-08-2	SO ppm (8H)	orl-rat 670mg
,3-Dichloropropane	35161 35161	011421	0.05	5.00	40002.2	2000	NA	NA	0.017	NA	NA	2000.0	18.4	78-87-5	75 ppm (350mg/m3/8H)	orl-rat 1947m
,1-Dichloropropene	35161	011421	0.05	5.00	40013.9	2000	NA	NA	0.017	NA	NA	2000.6	18.4	142-28-9	N/A	Unr-mus 3600r
is-1,3-Dichloropropene	35161	011421	0.05	5.00	40015.0	2000	NA	NA	0.017	NA	NA NA	2000.7	26.1	563-58-6	N/A	NA
rans-1,3-Dichloropropene	35161	011421	0.05	5.00		2000	NA	NA	0.017	NA	NA	2000.1		0061-01-5	N/A	N/A
lexachloro-1,3-butadiene	35161				40009.1	2000	NA	NA	0.017	NA	NA	2000.4		0061-02-6	N/A	N/A
1,1,2-Tetrachloroethane	35161	011421	0.05	5.00	40003.5	2000	NA	NA.	0.017	NA	NA	2000.1	26.4	87-68-3	0.02 ppm (0.24mg/m3/8H)	orl-rat 82mg
,1,2,2-Tetrachioroethane	35181	011421	0.05	5.00	40011.9	2000	NA	NA .	0.017	· NA	NA	2000.5	18.4	630-20-6	NA	orl-rat 670mg
1,2-Trichlomethane	35161	011421	0.05	5.00	40011.0	2000	NA	NA NA	0.017	NA	NA	2000.5	18.4	79-34-5	5 ppm (35mg/m3/9H)(aldn)	orf-rat 800mg
richloroethene	35161		0.05	5.00	40000.8	2000	NA	NA.	0.017	NA	NA	1999.9	18.4	79-00-5	10 ppm (45mg/m3/8H)(sldn)	orl-rat 836mg
2,3-Trichtoropropane	35161	011421	0.05	5.00	40003.2	2000	NA	NA NA	0.017	NA	NA	2000.1	18.4	79-01-6	50 ppm (270mg/m3/8H)	orl-mus 2402m
enzene	35162	011421	0.05	5.00	40015.2	2000	NA	NA	0.017	NA ·	NA ·	2000.7	18.4	96-18-4	10 ppm (60mg/m3/8H)	ori-rat 149.6m
romobenzene	35162			5.00	40008.9	2000	NA	NA	0.017	NA	NA	2000.3	18.4	71-43-2	1 ppm	ori-rat 4894m
-Butyl benzene	35162	020821	0.05	5.00	40019.0	2000	NA	NA	0.017	NA	NA	2000.9	18.4	108-86-1	N/A	orl-ret 2599mg
thyl benzene	35162		0.05	5.00	40019.8		NA	NA NA	0.017	NA	NA	2000.9	18.4	104-51-8	N/A	N/A
-Isopropyl toluene	35162	020821	0.05	5.00	40000.9		NA	NA	0.017	NA .	NA	1999.9		100-41-4	100 ppm (435mg/m3/8H)	orl-rat >2000n
aphthalene	35162	020821	0.05	5.00	40056.4		NA	NA	0.017	NA	NA	2002.7	18.4	99-87-6	N/A	ori-rat 4750m
tyrene	35162			5.00	40005.1		NA	NA	0.017	NA	NA NA	2000.2	18.3	91-20-3	10 ppm (50mg/m3/8H)	orl-rat 490mg
olusne	35162	020821	0.05	5.00	40022.8		NA	NA NA	0.017	NA	NA	2001.0		100-42-5	100 ppm	orl-rat 5000m
2,3-Trichlorobenzene	35162	020821	0.05	5.00	40008.9		NA	NA	0.017	NA	NA	2000.3		108-88-3	200 ppm	ori-rat 5000m
2,4-Trichiorobenzene	35162	020821	0.05	5.00	40002.0		NA	NA NA	0.017	NA	NA	2000.0	18.4	87-61-6	N/A	ipr-mus 1390m
2.4-Trimethylbenzene	35162	020821	0.05	5.00			NA	NA	0.017	NA.	NA	2001.3		120-82-1	5 ppm (CL) (40mg/m3)	orl-rat 756mg
3,5-Trimethylbenzene	35162	020821	0.05	5.00	40012.4		NA NA	NA NA	0.017	NA.	NA	2000.5	18.4	95-63-6	N/A	orl-me 5g/kg
-Xylene	35182	020821	0.05	5.00	40021.8		NA NA	NA NA	0.017	NA	NA NA	2000.5		108-67-8	N/A	ori-rat 5000m
rt-Butyl benzene	35163	022521	0.05	5.00	40021.8			NA NA	0.017	NA NA	NA NA	2001.0		108-38-3	100 ppm (435mg/m3/8H)	ori-rat 5g/k
c-Butyl benzene	35163	022521	0.05	5.00	40011.7		NA NA	NA NA	0.017	NA	NA NA	2000.2	18.4	98-06-6	N/A	N/A
Horobenzene	35163	022521					W 1	NA NA	0.017	NA.	NA NA	2000.5		35-98-8	N/A	orl-rat 2240mg
Chlorotoluene	35163	022521	0.05	5.00	40009.0		NA	NA NA	0.017	NA	NA NA	2000.4		08-90-7	75 ppm (350mg/m3/8H)	orl-rat 2290mg
Chlorotoluene	35183	022521	0.05	5.00	40002.0		NA.	NA	0.017	NA NA	NA NA	2000.0		95-49-8	50 ppm (250mg/m3/8H)	orl-rat 3900mg
2-Dichlorobanzene			0.05	5.00	40000,4		NA	NA NA	0.017	NA	NA .	1999.9		06-43-4	N/A	orl-rat 2100mg
3-Dichlorobenzene	35163	022521	0.05	5.00	40004.0		NA.	NA	0.017	NA .	NA	2000.1		95-50-1	50 ppm (300mg/m3) (CL)	orl-rat 500mg
	35163	022521	0.05	5.00	40003.6		NA .	NA NA	0.017	NA	NA ·	2000.1		41-73-1	N/A	pr-mus 1062m
	35163 35163	022521	0.05	5.00	40005.0		AA	NA .	0.017	NA	NA ·	2000.2		08-48-7	76 ppm (450mg/m3/8H)	ori-ret 600mg/
I-Dichlcrobenzene		022521	0.05	5.00	40007.4		NA.	NA	0.017	NA:	NA	2000.3		98-82-8	50 ppm (245mg/m3/8H)	orl-rat 1400mg
propylbenzene											614	0000 4	400 4 4			1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
propylbenzene Propylbenzene	35163	022521	0.05	5.00	40004.8		NA .	NA	0.017	NA ·	NA	2000.1		03-65-1	'N/A	orl-rat 6040mg
propylbenzene			0.05 0.05 0.05	5.00 5.00	40004.8 40003.0 40005.0	2000	NA NA	NA NA	0.017 0.017	NA NA	NA NA	2000.1		95-47-6		ipr-mus 1364r

Part # 95317

Lot # 042921

1 of 2

Printed: 1/27/2023, 1:46:44

<sup>•</sup> The certified value is the concentration calculated fives gravimetric and volumetric measurements union otherwise stated.

• Standards are proposed gravimetrically using bulances that are calibrated with weights truccable to NIST (see above).

• Standards are proposed gravimetrically using bulances that are calibrated with weights truccable to NIST (see above).

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

• Uncertainty Reference Taytor, RA, and Knyst, C.E., "Guidelines for Evaluating and Expressing the Uncertainty of NIST bits NIST Technical Nove 1297, U.S. Government Printing Office, Washington, DC. (1994).

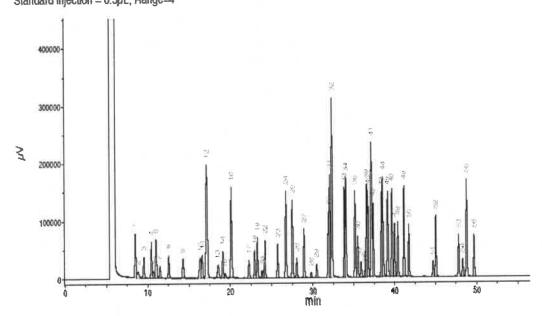
www.absolutestandards.com

#### Run 22, "P95317 L042921 [2000µg/mL in MeOH]"

Run Length: 60.00 min, 35999 points at 10 points/second. Created: Thu, Apr 29, 2021 at 3:49:30 PM. Sampled: Sequence "042521-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 3.0 $\mu$ m film thickness Flow rates: Total flow=290mL/min., Helium (carrier)=10mL/min., Air(make-up)=230mL/min. Helium(make-up)=10mL/min., Hydogen(make-up)=40mL/min., Air(make-up)=230mL/min. Oven Profile: Temp. 1=35°C (Time 1=10 min.), Temp 2=200°C (Time 2=8.75 min.), Rate = 4°C/min., Total run time=60 min. Injector temp.=200°C, FID Temp.=200°C. FID Signal = Edaq Channel 1 Standard injection = 0.5 $\mu$ L, Range=4



		FED RT
Polit #	Analyte	(coles)
-	Ether	8.48
2	1.1.2-Trichloro-1.2.2-trifluoroethase	8.90
3	1,1-Dict-igroethene	9.51
4	Acetonanie	10.44
- 5	Jadomethane	10.71
6	Alhyl choonda	11.92
7	Carbon disulfide/Nethylena chieride	11.51
8	trans-1,2-Dichloroethene	12.55
9	1.1-OidNorsethane	14.23
03	2,2-Dichioroprosime	16.33
13	cig-1, 2-Dictiornethene	16:59
12	Nethacrylanitrile/Hethyl scrylate/Chieroform	17-14
13	Instrument/1,1,1-Trichlereethane	18.32
14	1,1-Dichloropropere	19.06
1.0	Carton tetrachturide	19.39
15	Esergene/1,2-Dichloroethane	20.10
17	Dictionshipene	22,23
18	1.2-Dichlorogropane	22.92
19	Magnyé mathachylasa	23.26
30	Bromedichloremethere	73.79
21	Dibromomethane	23,94
22	2-Nersprogane	24.18
23	ds-1,3-Dichloropropene	25.71
24	Toluene	26.71
25	Stivi custingrafate/trans-1,3-Dichloropropone	27.50
26	1.1.2-Trichlargethane	26.04
27	Tetrachiereethens / 1.7-Dichierepropose	25.92
29	Dipromochioromethane	29,79
29	1.2-Dibromoetnane	30.45
36	Chlorobenzene	31.89
31	Ethylbenzane/1,1,1,2-Tetrachlorosthane	32,07
32	pr-Xylana/p-Xylana	32.33
33	o-Xyriana	33.87
34	Styrese	34.04
23	Isogropythanzenn/Sramoform	33.14
36	cis-1, 4-Dichloro-2-butene	35.49
37	1.1.2.2-febrackin/ostrians	33.90
38	1,2,1-Trichtarugrapane	38.34
39	H-Propylemetes	36.58
60	trans-1,4-Dichlero-2-bubana/Bromebergene	38.73
41	1.2.5-Trianethylbensone/2-Citioratoleens	37.17
42	4-Chlorotoluene	37.38
43	terr-Bucylbensene	38.41
40	1,2,4-Yrlesethylbensens/Pentachleresthane	38.55
43	sec-Sulty/Ibenzene	39,16
46	p-isopropylitotwene	39.68
47	1,3-Dichloroberzane	40.01
45	1,4-Dichlarabenzene	40.42
49	e-Buty/beazene	41.16
90	1,3-Dichlorobenzene	41.74
51	1,2-Orbromo-3-chioroprepane	44.68
52	Kitrosenzena	45.84
53	1.2.4-Tr-craorobenzene	47.80
53 54	1,4,4-17/cyatrosercene Henachiorobytadiene	48.29
50	Naphhaissa	43.76
70.4	Late Brown and Late Cong	

PO Box 5585 Hamden, CT 06518-0585

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

Safety Data Sheet (SDS)

GHS/OSHA Compliant

Section I Product and Company Identification

ANALYTICAL STANDARD DISSOLVED IN METHANOL IDENTITY

Manufacturer's Name

ABSOLUTE STANDARDS INC

44 Rossotto Dr.

Emergency Telephone USA & CANADA

1-800-535-5053

Hamden CT, 06514

**Emergency Telephone International** Date Prepared/Revised

1-352-323-3500 January 1, 2022

Section II - Hazards Identification

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

H225 H370 P271

Address

Highly Flammable Liquid and Vapor

Cause damage to organs

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

H351 P280

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

Suspected of causing cancer Use gloves, eye protection/face shelld

P305.351.338

If in eyes, remove contacts, rinse with water



P302,332





Signal Word: DANGER

Section III - Composition

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

Methanol

METHYL ALCOHOL

CAS#: 67-56-1

% (optional) > 97

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

INTENDED USE: REFERENCE MATERIAL

Section IV. FIRST AID MEASURES

General advice

If inhaled In case of skin contact

In case of eye contact If swallowed

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

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

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

Section V. FIREFIGHTING MEASURES

Flammability

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

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

Suitable extinguishing media Protective equipment for fire

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

Section VI. ACCIDENTAL RELEASE MEASURES

Personal precautions

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

ignition. Vapours accumulate to form explosive concentrations.

Environmental precautions

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

Clean up

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

Section VII. HANDLING AND STORAGE

Precautions for safe handling

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

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

Storage Conditions and kept upright to prevent leakage.

Section VIII. EXPOSURE CONTROLS/PERSONAL PROTECTION

Methanol

67-56-1 TWA 200 ppm

Skin notation

TWA 200 ppm

Potential for skin absorption, ingestion and inhalation.

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

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

Section IX - Physical/Chemical Characteristics

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

Boiling Point	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 Conditions to avoid

Vapours may form explosive mixture with air. Heat, flames, sparks, extreme temperature and sunlight.

Materials to avoid

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

Hazardous decomposition products formed under fire conditions. - Carbon oxides

#### Section XI. TOXICOLOGICAL INFORMATION

LD50 Oral - rat - 5,628 mg/kg

LC50 Inhalation - rat - 4 h - 64000 ppm

LD50 Dermal - rabbit - 15,800 mg/kg

Toxic if absorbed through skin. Causes skin irritation.

Eye damage/eye irritation

Toxic if inhaled. Causes respiratory tract irritation.

Toxic if swallowed.

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

LC50

15,400 mg/l - 96 h

EC50

24,500.00 mg/l - 48 h

EC100

10,000.00 mg/l - 24 h

#### Section XIII. DISPOSAL CONSIDERATIONS

Dispose with normal Laboratory Solvent Waste.

#### Section XIV. TRANSPORT INFORMATION

UN number: 1230 Class: 3 Packing group: II

UN number: 1230 Class: 3 Packing group: II

Proper shipping name:

Methanol

Proper shipping name:

#### Section XV. REGULATORY INFORMATION

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

#### Section XVI. Misc. INFORMATION

The information in this Material Safety Data Sheet meets the requirements of the United States Occupational Safety and Health Act and regulations promulgated thereunder (29 CFR 1910.1200 et. seq.) and Global Harmonized System (GHS). This document is intended only as a guide to the appropriate precautionary handling of the material by trained personnel, or supervised by a person trained in chemical handling. The user is responsible for determining the precautions and dangers of this chemical for his or her particular application. Depending on 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: 042921

Description: Universal VOA Megamix 69 components

Expiration Date: 042924 Recommended Storage: Freezer (0 °C) Nominal Concentration (µg/mL): 2000 NIST Test ID#: 6UTB

5E-05 Balance Uncertainty

Solvent(s): Lot# Methanol DY186-USQ8 042921 DATE 042921 DATE

Weight(s) shown below were	combined and dilut	ed to (mL):	100	.0 0.01	2 Flask Uncertain	ntv							THE THE PARTY OF	-71	T DOI D' LL TIDITION	
Compound	(RM#) Part Nureb	Lat	Di.	Initie	al fritted	Nominal Conc (µg/mL)	Purity (%)	Purity Uncertainty	Uncertainty Pipette (ml.)	Target Weight(g)	Actual Weight(g)	Actual Cone (un/mt)	Expanded Uncertainty (+/-) (µg/mL)	(Solv	SDS information ent Safety Info. On Atta GSHA PEL (TWA)	ched pg.)
						,,	()		· paces (max)	vreight(g)	ermilleref (B)	Court (High Inc.)	(44) (pgp//ac.)	CAS#	USIN PEL (TRM)	LUSU
Acetonitrile	(0324)	060812				2000	99.9	0.2	NA	0.20021	0.20041	2002.0	8.1	75-05-8	40 ppm (70mg/m3/8H)	orl-rat 2460n
Allyl chloride (3-Chloroproper		102396				2000	99	0.2	NA	0.20203	0.20233	2003.0	8.2	107-05-1	1 ppm (3/mg/m3/8H)	ori-rat 700m
Carbon disulphide	(0060)					2000	100	0.2	NA	0.20001	0.20015	2001.4	8.1	75-15-0	4 ppm (12mg/m3) (skin)	orl-rat 1200m
cis-1,4-Dichloro-2-butene	(1196)	14718E				2000	95	0.2	NA	0.21054	0.21060	2000.6	8.5	1476-11-5	N/A	N/A
trans-1,4-Dichloro-2-butene	(0488)	MKBP804				2000	96.5	0.2	NA	0.20726	0.20751	2002.4	8.4	110-57-6	NA	NA
Diethyl ether (Elhyl ether)	(0153)	SHBK19				2000	99.9	0.2	NA	0.20023	0.20048	2002.3	8.1	60-29-7	400ppm (1200mg/m3/8H)	orl-rat 1215m
Ethyl methacrylate	(0381)	06126P				2000	99	0.2	NA	0.20203	0.20230	2002.7	8.2	97-63-2	N/A	orl-rat 14800r
lodomethane	(0489)					2000	99.5	0.2	NA	0.20101	0.20130	2002.8	8.1	74-88-4	5 ppm(28mg/m3/6H)(skin)	on-rat 76mg
2-Methyl-1-propanol Methacrylonitrile	(0445)	15241E			NA NA	2000	99.5	0.2	NA	0.20101	0.20123	2002.1	8.1	78-83-1	60 ppm (150mg/m3/8H)	orl-ret 2460m
	(0442)	00427E			NA NA	2000	99	0.2	NA	0.20203	0.20220	2001.7	8.2	126-98-7	1 ppm (3mg/m3/8H)(eldn)	ori-rat 120m
Methyl acrylate Methyl methacrylate	(1075)	SHBK067 MKBW513			NA NA	2000	99.9	0.2	NA	0.20021	0.20046	2002.5	8.1	96-33-3	10 ppm(35mg/m3/6H)(skin)	
Nitrobenzene	(0404)				NA.	2000	99.9	0,2	NA	0.20021	0.20048	2002.7	6.1	80-62-6	100 ppm (410mg/m3/8H)	orl-rat 7872m
2-Nitropropane	(0228)	01213T\ 14002J)		NA	NA.	2000	99	0.2	NA	0.20203	0.20216	2001.5	8.2	96-95-3	1 ppm (5mg/m3/8H)(skin)	orl-rat 780mg
Pentachloroethane	(0450)	HGA01		NA	NA NA	2000	97.3	0.2	NA	0.20556	0.20588	2001.0	8.3	79-46-9	10 ppm (35mg/m3/8H)	orl-rat 720mg
1,1,2-Trichlorotriffuoroethane	(0474)	18930	NA NA	NA	NA NA	2000	98	0.2	NA .	0.20409	0.20418	2000.9	8.2	76-01-7	NVA	N/A
Bromodichloromethane	35171	100220		NA E 00	NA 40040 0	2000	99	0.2	NA.	0.20203	0.20221	2001.8	8.2	76-13-1	1000 ppm (7600mg/m3/8H)	ori-rat 43g/
Dibromochioromethane	35171					2000	NA	NA	0.017	NA	NA	2000.8	18.4	75-27-4	N/A	ori-rat 916mg
cls-1,2-Dichloroethene	35171	100220			40007.7	2000	NA	NA NA	0.017	NA	NA	2000.3	18.4	124-48-1	N/A	orl-rat 848mg
trans-1,2-Dichloroethene	35171		0.05		40012.4	2000	NA	NA.	0.017	NA	NA	2000.5	18.4	158-59-2	N/A	N/A
Methylene chlonde	35171	100220	0.05		40005.6	2000	NA	NA.	0.017	NA	NA	2000.2	18.4	156-60-5	N/A	orl-rail 1235m
1,1-Dichloroethene	32251	031821			40013.9	2000	NA	NA NA	0.017	NA	NA	2000.6	18.4	75-09-2	500 ppm	orl-ret 820mg
Bromoform	95321		0.10			2000	NA	NA.	0.042	NA	NA NA	2000.8	19.3	75-35-4	1 ppm (4mg/m3/9H)	ori-rat 200mg
Carbon letrachloride	95321 95321	010419	0.10			2000	NA	NA	0.042	NA	NA.	2000.1	19.3	75-25-2	Q.5 ppm (5mg/m3) (skin)	orl-rat 933mg
Chloroform				10.00		2000	NA	NA	0.042	NA	NA	2000.0	19.2	56-23-5	2 ppm (12.6mg/m3/8H)	ori-rat 2350m
Dibromomethane	95321	010419	0.10	10.00		2000	NA	NA	0.042	NA	NA	2000.1	19.2	67-66-3	60 ppm (240mg/m3) (CL)	orl-ret 906mg
1,1-Dichloroethane	95321	010419	0.10			2000	NA	NA	0.042	NA	NA	2000.1	19.3	74-95-3	N/A	orl-rat 108mg
2,2-Dichloropropane	95321	010419	0.10	10.00		2000	NA	NA .	0.042	NA	NA	2000.0	19.3	75-34-3	100 ppm	orl-rat 725mg
	95321	010419	0.10	10.00		2000	NA	NA .	0.042	NA	NA .	2000.1	19.3	594-20-7	N/A	N/A
Tetrachloroethene	95321	010419	0.10	10.00		2000	NA	NA	0.042	NA NA	NA NA	2000.1	19.3	127-18-4	25 ppm (170mg/m3/8H)(final)	orl-rat 2629m
1,1-Trichloroethane	95321	010419	0.10	10.00		2000	NA	NA	0.042	NA	NA	2000.1	19.3	71-55-6	350 ppm (1900mg/m3/8H)	orl-rat 10300m
	35161	011421	0.05	5.00	40001.2	2000	NA	NA	0.017	NA.	NA	2000.0	18.4	96-12-8	0.001 ppm	ori-rat 170mg
,2-Dibromoethane	35161	011421	0.05	5.00	40003.9	2000	NA	NA	0.017	NA	NA	2000.1	18.4	108-93-4	20 ppm (6H)	orl-rat 108mg
,2-Dichloropropane	35161	011421	0.05	5.00	40004.9	2000	NA	NA.	0.017	NA NA	NA	2000.1	18.4	107-08-2	SO ppm (8H)	orl-rat 670mg
,3-Dichloropropane	35161 35161	011421	0.05	5.00	40002.2	2000	NA	NA	0.017	NA	NA	2000.0	18.4	78-87-5	75 ppm (350mg/m3/8H)	orl-rat 1947m
,1-Dichloropropene	35161	011421	0.05	5.00	40013.9	2000	NA	NA	0.017	NA	NA	2000.6	18.4	142-28-9	N/A	Unr-mus 3600r
is-1,3-Dichloropropene	35161	011421	0.05	5.00	40015.0	2000	NA	NA	0.017	NA	NA NA	2000.7	26.1	563-58-6	N/A	NA
rans-1,3-Dichloropropene	35161	011421	0.05	5.00		2000	NA	NA	0.017	NA	NA	2000.1		0061-01-5	N/A	N/A
lexachloro-1,3-butadiene	35161				40009.1	2000	NA	NA	0.017	NA	NA	2000.4		0061-02-6	N/A	N/A
1,1,2-Tetrachloroethane	35161	011421	0.05	5.00	40003.5	2000	NA	NA.	0.017	NA	NA	2000.1	26.4	87-68-3	0.02 ppm (0.24mg/m3/8H)	orl-rat 82mg
,1,2,2-Tetrachioroethane	35181	011421	0.05	5.00	40011.9	2000	NA	NA .	0.017	· NA	NA	2000.5	18.4	630-20-6	NA	orl-rat 670mg
1,2-Trichlomethane	35161	011421	0.05	5.00	40011.0	2000	NA	NA NA	0.017	NA	NA	2000.5	18.4	79-34-5	5 ppm (35mg/m3/9H)(aldn)	orf-rat 800mg
richloroethene	35161		0.05	5.00	40000.8	2000	NA	NA.	0.017	NA	NA	1999.9	18.4	79-00-5	10 ppm (45mg/m3/8H)(sldn)	orl-rat 836mg
2,3-Trichtoropropane	35161	011421	0.05	5.00	40003.2	2000	NA	NA NA	0.017	NA	NA	2000.1	18.4	79-01-6	50 ppm (270mg/m3/8H)	orl-mus 2402m
enzene	35162	011421	0.05	5.00	40015.2	2000	NA	NA	0.017	NA ·	NA ·	2000.7	18.4	96-18-4	10 ppm (60mg/m3/8H)	ori-rat 149.6m
romobenzene	35162			5.00	40008.9	2000	NA	NA	0.017	NA	NA	2000.3	18.4	71-43-2	1 ppm	ori-rat 4894m
-Butyl benzene	35162	020821	0.05	5.00	40019.0	2000	NA	NA	0.017	NA	NA	2000.9	18.4	108-86-1	N/A	orl-ret 2599mg
thyl benzene	35162		0.05	5.00	40019.8		NA	NA NA	0.017	NA	NA	2000.9	18.4	104-51-8	N/A	N/A
-Isopropyl toluene	35162	020821	0.05	5.00	40000.9		NA	NA	0.017	NA .	NA	1999.9		100-41-4	100 ppm (435mg/m3/8H)	orl-rat >2000n
aphthalene	35162	020821	0.05	5.00	40056.4		NA	NA	0.017	NA	NA	2002.7	18.4	99-87-6	N/A	ori-rat 4750m
tyrene	35162			5.00	40005.1		NA	NA	0.017	NA	NA NA	2000.2	18.3	91-20-3	10 ppm (50mg/m3/8H)	orl-rat 490mg
olusne	35162	020821	0.05	5.00	40022.8		NA	NA NA	0.017	NA	NA	2001.0		100-42-5	100 ppm	orl-rat 5000m
2,3-Trichlorobenzene	35162	020821	0.05	5.00	40008.9		NA	NA	0.017	NA	NA	2000.3		108-88-3	200 ppm	ori-rat 5000m
2,4-Trichiorobenzene	35162	020821	0.05	5.00	40002.0		NA	NA NA	0.017	NA	NA	2000.0	18.4	87-61-6	N/A	ipr-mus 1390m
2.4-Trimethylbenzene	35162	020821	0.05	5.00			NA	NA	0.017	NA.	NA	2001.3		120-82-1	5 ppm (CL) (40mg/m3)	orl-rat 756mg
3,5-Trimethylbenzene	35162	020821	0.05	5.00	40012.4		NA NA	NA NA	0.017	NA .	NA	2000.5	18.4	95-63-6	N/A	orl-me 5g/kg
-Xylene	35182	020821	0.05	5.00	40021.8		NA NA	NA NA	0.017	NA	NA NA	2000.5		108-67-8	N/A	ori-rat 5000m
rt-Butyl benzene	35163	022521	0.05	5.00	40021.8			NA NA	0.017	NA NA	NA NA	2001.0		108-38-3	100 ppm (435mg/m3/8H)	ori-rat 5g/k
c-Butyl benzene	35163	022521	0.05	5.00	40011.7		NA NA	NA NA	0.017	NA	NA NA	2000.2	18.4	98-06-6	N/A	N/A
Horobenzene	35163	022521					W 1	NA NA	0.017	NA.	NA NA	2000.5		35-98-8	N/A	orl-rat 2240mg
Chlorotoluene	35163	022521	0.05	5.00	40009.0		NA	NA NA	0.017	NA	NA NA	2000.4		08-90-7	75 ppm (350mg/m3/8H)	orl-rat 2290mg
Chlorotoluene	35183	022521	0.05	5.00	40002.0		NA.	NA	0.017	NA NA	NA NA	2000.0		95-49-8	50 ppm (250mg/m3/8H)	orl-rat 3900mg
2-Dichlorobanzene			0.05	5.00	40000,4		NA	NA NA	0.017	NA	NA	1999.9		06-43-4	N/A	orl-rat 2100mg
3-Dichlorobenzene	35163	022521	0.05	5.00	40004.0		NA.	NA	0.017	NA .	NA	2000.1		95-50-1	50 ppm (300mg/m3) (CL)	orl-rat 500mg
	35163	022521	0.05	5.00	40003.6		NA .	NA NA	0.017	NA	NA ·	2000.1		41-73-1	N/A	pr-mus 1062m
	35163 35163	022521	0.05	5.00	40005.0		AA	NA .	0.017	NA	NA ·	2000.2		08-48-7	76 ppm (450mg/m3/8H)	ori-ret 600mg/
I-Dichlcrobenzene		022521	0.05	5.00	40007.4		NA.	NA	0.017	NA:	NA	2000.3		98-82-8	50 ppm (245mg/m3/8H)	orl-rat 1400mg
propylbenzene											614	0000 4	400 4 4			1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
propylbenzene Propylbenzene	35163	022521	0.05	5.00	40004.8		NA .	NA	0.017	NA ·	NA	2000.1		03-65-1	'N/A	orl-rat 6040mg
propylbenzene			0.05 0.05 0.05	5.00 5.00	40004.8 40003.0 40005.0	2000	NA NA	NA NA	0.017 0.017	NA NA	NA NA	2000.1		95-47-6		ipr-mus 1364r

Part # 95317

Lot # 042921

1 of 2

Printed: 1/27/2023, 1:46:44

<sup>•</sup> The certified value is the concentration calculated fives gravimetric and volumetric measurements union otherwise stated.

• Standards are proposed gravimetrically using bulances that are calibrated with weights truccable to NIST (see above).

• Standards are proposed gravimetrically using bulances that are calibrated with weights truccable to NIST (see above).

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

• Uncertainty Reference Taytor, RA, and Knyst, C.E., "Guidelines for Evaluating and Expressing the Uncertainty of NIST bits NIST Technical Nove 1297, U.S. Government Printing Office, Washington, DC. (1994).

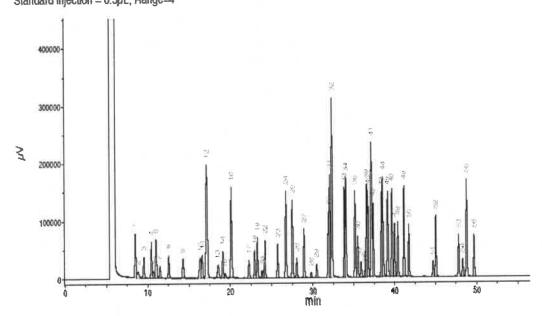
www.absolutestandards.com

#### Run 22, "P95317 L042921 [2000µg/mL in MeOH]"

Run Length: 60.00 min, 35999 points at 10 points/second. Created: Thu, Apr 29, 2021 at 3:49:30 PM. Sampled: Sequence "042521-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 3.0 $\mu$ m film thickness Flow rates: Total flow=290mL/min., Helium (carrier)=10mL/min., Air(make-up)=230mL/min. Helium(make-up)=10mL/min., Hydogen(make-up)=40mL/min., Air(make-up)=230mL/min. Oven Profile: Temp. 1=35°C (Time 1=10 min.), Temp 2=200°C (Time 2=8.75 min.), Rate = 4°C/min., Total run time=60 min. Injector temp.=200°C, FID Temp.=200°C. FID Signal = Edaq Channel 1 Standard injection = 0.5 $\mu$ L, Range=4



		FED RT
Polit #	Analyte	(coles)
-	Ether	8.48
2	1.1.2-Trichloro-1.2.2-trifluoroethase	8.90
3	1,1-Dict-igroethene	9.51
4	Acetonanie	10.44
- 5	Jadomethane	10.71
6	Alhyl choonda	11.92
7	Carbon disulfide/Nethylena chieride	11.51
8	trans-1,2-Dichloroethene	12.55
9	1.1-OidNorsethane	14.23
03	2,2-Dichioroprosime	16.33
13	cig-1, 2-Dictiornethene	16:59
12	Nethacrylanitrile/Hethyl scrylate/Chieroform	17-14
13	Instrument/1,1,1-Trichlereethane	18.32
14	1,1-Dichloropropere	19.06
1.0	Carton tetrachturide	19.39
15	Esergene/1,2-Dichloroethane	20.10
17	Dictionshipene	22.23
18	1.2-Dichlorogropane	22.92
19	Megnyé mathachylasa	23.26
30	Bromedichloremethere	73.79
21	Dibromomethane	23,94
22	2-Nersprogane	24.18
23	ds-1,3-Dichloropropene	25.71
24	Toluene	26.71
25	Stivi custingrafate/trans-1,3-Dichloropropone	27.50
26	1.1.2-Trichlargethane	26.04
27	Tetrachiereethens / 1.7-Dichierepropose	25.92
29	Dipromochioromethane	29,79
29	1.2-Dibromoetnane	30.45
30	Chlorobenzene	31.89
31	Ethylbenzane/1,1,1,2-Tetrachlorosthane	32,07
32	pr-Xylana/p-Xylana	32.33
33	o-Xyliene	33.87
34	Styrese	34.04
25	Isogropythanzenn/Sramoform	33.14
36	cis-1, 4-Dichloro-2-butene	35.49
37	1.1.2.2-febrackin/ordinans	33.90
38	1,2,1-Trichlarugrapane	38.34
39	H-Propylematers	36.58
40	trans-1,4-Dichlero-2-bubana/Browebersens	38.73
41	1.2.5-Trianelbylbansane/2-Citiaratoleene	37.17
42	4-Chlorotokuene	37.38
43	terr-Butylbensene	38.41
42	1,2,4-Trimathylbensens/Pertachlervechane	38.55
43	sec-Bulty/Denzenie	39,16
46	p-isopropylitoraene	39.68
47	1,3-Dichloroberzane	40.01
45	1.4-Dichlorobenzene	40.42
49	n-Buty/benzene	41.16
90	1,3-Dichlorobenzene	41.75
51	1,2-Orbromo-3-chioroprepane	44.68
52	Kitropensene	45.84
53	1.2.4-Yr-chlorobenzene	47.83
54 54	Herachlorohutadiene	48.29
50	Naphrains	43.76
56	1,2,5-Trichtoropenzene	49.66

PO Box 5585 Hamden, CT 06518-0585

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

Safety Data Sheet (SDS)

GHS/OSHA Compliant

Section I Product and Company Identification

ANALYTICAL STANDARD DISSOLVED IN METHANOL IDENTITY

Manufacturer's Name

ABSOLUTE STANDARDS INC

44 Rossotto Dr.

Emergency Telephone USA & CANADA

1-800-535-5053

Hamden CT, 06514

**Emergency Telephone International** Date Prepared/Revised

1-352-323-3500 January 1, 2022

Section II - Hazards Identification

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

H225 H370 P271

Address

Highly Flammable Liquid and Vapor

Cause damage to organs

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

H351 P280

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

Suspected of causing cancer Use gloves, eye protection/face shelld

P305.351.338

If in eyes, remove contacts, rinse with water



P302,332





Signal Word: DANGER

Section III - Composition

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

Methanol

METHYL ALCOHOL

CAS#: 67-56-1

% (optional) > 97

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

INTENDED USE: REFERENCE MATERIAL

Section IV. FIRST AID MEASURES

General advice

If inhaled In case of skin contact

In case of eye contact If swallowed

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

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

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

Section V. FIREFIGHTING MEASURES

Flammability

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

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

Suitable extinguishing media Protective equipment for fire

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

Section VI. ACCIDENTAL RELEASE MEASURES

Personal precautions

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

ignition. Vapours accumulate to form explosive concentrations.

Environmental precautions

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

Clean up

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

Section VII. HANDLING AND STORAGE

Precautions for safe handling

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

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

Storage Conditions and kept upright to prevent leakage.

Section VIII. EXPOSURE CONTROLS/PERSONAL PROTECTION

Methanol

67-56-1 TWA 200 ppm

Skin notation

TWA 200 ppm

Potential for skin absorption, ingestion and inhalation.

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

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

Section IX - Physical/Chemical Characteristics

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

Boiling Point	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 Conditions to avoid

Vapours may form explosive mixture with air. Heat, flames, sparks, extreme temperature and sunlight.

Materials to avoid

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

Hazardous decomposition products formed under fire conditions. - Carbon oxides

## Section XI. TOXICOLOGICAL INFORMATION

LD50 Oral - rat - 5,628 mg/kg

LC50 Inhalation - rat - 4 h - 64000 ppm

LD50 Dermal - rabbit - 15,800 mg/kg

Toxic if absorbed through skin. Causes skin irritation.

Eye damage/eye irritation

Toxic if inhaled. Causes respiratory tract irritation.

Toxic if swallowed.

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

LC50

15,400 mg/l - 96 h

EC50

24,500.00 mg/l - 48 h

EC100

10,000.00 mg/l - 24 h

## Section XIII. DISPOSAL CONSIDERATIONS

Dispose with normal Laboratory Solvent Waste.

## Section XIV. TRANSPORT INFORMATION

UN number: 1230 Class: 3 Packing group: II

UN number: 1230 Class: 3 Packing group: II

Proper shipping name:

Methanol

Proper shipping name:

## Section XV. REGULATORY INFORMATION

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

## Section XVI. Misc. INFORMATION

The information in this Material Safety Data Sheet meets the requirements of the United States Occupational Safety and Health Act and regulations promulgated thereunder (29 CFR 1910.1200 et. seq.) and Global Harmonized System (GHS). This document is intended only as a guide to the appropriate precautionary handling of the material by trained personnel, or supervised by a person trained in chemical handling. The user is responsible for determining the precautions and dangers of this chemical for his or her particular application. Depending on 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: 042921

Description: Universal VOA Megamix 69 components

Expiration Date: 042924 Recommended Storage: Freezer (0 °C) Nominal Concentration (µg/mL): 2000 NIST Test ID#: 6UTB

5E-05 Balance Uncertainty

Solvent(s): Lot# Methanol DY186-USQ8 042921 DATE 042921 DATE

Weight(s) shown below were	combined and dilut	ed to (mL):	100	.0 0.01	2 Flask Uncertain	ntv							THE THE PARTY OF	-71	T Dail o LL TIDITION	
Compound	(RM#) Part Nureb	Lat	Di.	Initie	al fritted	Nominal Conc (µg/mL)	Purity (%)	Purity Uncertainty	Uncertainty Pipette (ml.)	Target Weight(g)	Actual Weight(g)	Actual Cone (un/mt)	Expanded Uncertainty (+/-) (µg/mL)	(Solv	SDS information ent Safety Info. On Atta GSHA PEL (TWA)	ched pg.)
						,,	()		· paces (max)	rrespire(g)	ermilleref (B)	Court (High Inc.)	(44) (pgp//ac.)	CAS#	USIN PEL (TRM)	LUSU
Acetonitrile	(0324)	060812				2000	99.9	0.2	NA	0.20021	0.20041	2002.0	8.1	75-05-8	40 ppm (70mg/m3/8H)	orl-rat 2460n
Allyl chloride (3-Chloroproper		102396				2000	99	0.2	NA	0.20203	0.20233	2003.0	8.2	107-05-1	1 ppm (3/mg/m3/8H)	ori-rat 700m
Carbon disulphide	(0060)					2000	100	0.2	NA	0.20001	0.20015	2001.4	8.1	75-15-0	4 ppm (12mg/m3) (skin)	orl-rat 1200m
cis-1,4-Dichloro-2-butene	(1196)	14718E				2000	95	0.2	NA	0.21054	0.21060	2000.6	8.5	1476-11-5	N/A	N/A
trans-1,4-Dichloro-2-butene	(0488)	MKBP804				2000	96.5	0.2	NA	0.20726	0.20751	2002.4	8.4	110-57-6	NA	NA
Diethyl ether (Elhyl ether)	(0153)	SHBK19				2000	99.9	0.2	NA	0.20023	0.20048	2002.3	8.1	60-29-7	400ppm (1200mg/m3/8H)	orl-rat 1215m
Ethyl methacrylate	(0381)	06126P				2000	99	0.2	NA	0.20203	0.20230	2002.7	8.2	97-63-2	N/A	orl-rat 14800r
lodomethane	(0489)					2000	99.5	0.2	NA	0.20101	0.20130	2002.8	8.1	74-88-4	5 ppm(28mg/m3/6H)(skin)	on-rat 76mg
2-Methyl-1-propanol Methacrylonitrile	(0445)	15241E			NA NA	2000	99.5	0.2	NA	0.20101	0.20123	2002.1	8.1	78-83-1	60 ppm (150mg/m3/8H)	orl-ret 2460m
	(0442)	00427E			NA NA	2000	99	0.2	NA	0.20203	0.20220	2001.7	8.2	126-98-7	1 ppm (3mg/m3/8H)(eldn)	ori-rat 120m
Methyl acrylate Methyl methacrylate	(1075)	SHBK067 MKBW513			NA NA	2000	99.9	0.2	NA	0.20021	0.20046	2002.5	8.1	96-33-3	10 ppm(35mg/m3/6H)(skin)	
Nitrobenzene	(0404)				NA.	2000	99.9	0,2	NA	0.20021	0.20048	2002.7	6.1	80-62-6	100 ppm (410mg/m3/8H)	orl-rat 7872m
2-Nitropropane	(0228)	01213T\ 14002J)		NA	NA.	2000	99	0.2	NA.	0.20203	0.20216	2001.5	8.2	96-95-3	1 ppm (5mg/m3/8H)(skin)	orl-rat 780mg
Pentachloroethane	(0450)	HGA01		NA	NA NA	2000	97.3	0.2	NA	0.20556	0.20588	2001.0	8.3	79-46-9	10 ppm (35mg/m3/8H)	orl-rat 720mg
1,1,2-Trichlorotriffuoroethane	(0474)	18930	NA NA	NA	NA NA	2000	98	0.2	NA .	0.20409	0.20418	2000.9	8.2	76-01-7	NVA	N/A
Bromodichloromethane	35171	100220		NA E 00	NA 40040 0	2000	99	0.2	NA.	0.20203	0.20221	2001.8	8.2	76-13-1	1000 ppm (7600mg/m3/8H)	ori-rat 43g/
Dibromochioromethane	35171					2000	NA	NA	0.017	NA	NA	2000.8	18.4	75-27-4	N/A	ori-rat 916mg
cls-1,2-Dichloroethene	35171	100220			40007.7	2000	NA	NA NA	0.017	NA	NA	2000.3	18.4	124-48-1	N/A	orl-rat 848mg
trans-1,2-Dichloroethene	35171		0.05		40012.4	2000	NA	NA.	0.017	NA	NA	2000.5	18.4	158-59-2	N/A	N/A
Methylene chlonde	35171	100220	0.05		40005.6	2000	NA	NA.	0.017	NA	NA	2000.2	18.4	156-60-5	N/A	orl-rail 1235m
1,1-Dichloroethene	32251	031821			40013.9	2000	NA	NA NA	0.017	NA	NA	2000.6	18.4	75-09-2	500 ppm	orl-ret 820mg
Bromoform	95321		0.10			2000	NA	NA.	0.042	NA	NA NA	2000.8	19.3	75-35-4	1 ppm (4mg/m3/9H)	ori-rat 200mg
Carbon letrachloride	95321 95321	010419	0.10			2000	NA	NA	0.042	NA	NA.	2000.1	19.3	75-25-2	Q.5 ppm (5mg/m3) (skin)	orl-rat 933mg
Chloroform				10.00		2000	NA	NA	0.042	NA	NA	2000.0	19.2	56-23-5	2 ppm (12.6mg/m3/8H)	ori-rat 2350m
Dibromomethane	95321	010419	0.10	10.00		2000	NA	NA	0.042	NA	NA	2000.1	19.2	67-66-3	60 ppm (240mg/m3) (CL)	orl-ret 906mg
1,1-Dichloroethane	95321	010419	0.10			2000	NA	NA	0.042	NA	NA	2000.1	19.3	74-95-3	N/A	orl-rat 108mg
2,2-Dichloropropane	95321	010419	0.10	10.00		2000	NA	NA .	0.042	NA	NA	2000.0	19.3	75-34-3	100 ppm	orl-rat 725mg
	95321	010419	0.10	10.00		2000	NA	NA .	0.042	NA	NA .	2000.1	19.3	594-20-7	N/A	N/A
Tetrachloroethene	95321	010419	0.10	10.00		2000	NA	NA	0.042	NA NA	NA NA	2000.1	19.3	127-18-4	25 ppm (170mg/m3/8H)(final)	orl-rat 2629m
1,1-Trichloroethane	95321	010419	0.10	10.00		2000	NA	NA	0.042	NA	NA	2000.1	19.3	71-55-6	350 ppm (1900mg/m3/8H)	orl-rat 10300m
	35161	011421	0.05	5.00	40001.2	2000	NA	NA	0.017	NA.	NA	2000.0	18.4	96-12-8	0.001 ppm	ori-rat 170mg
,2-Dibromoethane	35161	011421	0.05	5.00	40003.9	2000	NA	NA	0.017	NA	NA	2000.1	18.4	108-93-4	20 ppm (6H)	orl-rat 108mg
,2-Dichloropropane	35161	011421	0.05	5.00	40004.9	2000	NA	NA.	0.017	NA NA	NA	2000.1	18.4	107-08-2	SO ppm (8H)	orl-rat 670mg
,3-Dichloropropane	35161 35161	011421	0.05	5.00	40002.2	2000	NA	NA	0.017	NA	NA	2000.0	18.4	78-87-5	75 ppm (350mg/m3/8H)	orl-rat 1947m
,1-Dichloropropene	35161	011421	0.05	5.00	40013.9	2000	NA	NA	0.017	NA	NA	2000.6	18.4	142-28-9	N/A	Unr-mus 3600r
is-1,3-Dichloropropene	35161	011421	0.05	5.00	40015.0	2000	NA	NA	0.017	NA	NA NA	2000.7	26.1	563-58-6	N/A	NA
rans-1,3-Dichloropropene	35161	011421	0.05	5.00		2000	NA	NA	0.017	NA	NA	2000.1		0061-01-5	N/A	N/A
lexachloro-1,3-butadiene	35161				40009.1	2000	NA	NA	0.017	NA	NA	2000.4		0061-02-6	N/A	N/A
1,1,2-Tetrachloroethane	35161	011421	0.05	5.00	40003.5	2000	NA	NA	0.017	NA	NA	2000.1	26.4	87-68-3	0.02 ppm (0.24mg/m3/8H)	orl-rat 82mg
,1,2,2-Tetrachioroethane	35181	011421	0.05	5.00	40011.9	2000	NA	NA .	0.017	· NA	NA	2000.5	18.4	630-20-6	NA	orl-rat 670mg
1,2-Trichlomethane	35161	011421	0.05	5.00	40011.0	2000	NA	NA NA	0.017	NA	NA	2000.5	18.4	79-34-5	5 ppm (35mg/m3/9H)(aldn)	orf-rat 800mg
richloroethene	35161		0.05	5.00	40000.8	2000	NA	NA.	0.017	NA	NA	1999.9	18.4	79-00-5	10 ppm (45mg/m3/8H)(sldn)	orl-rat 836mg
2,3-Trichtoropropane	35161	011421	0.05	5.00	40003.2	2000	NA	NA NA	0.017	NA	NA	2000.1	18.4	79-01-6	50 ppm (270mg/m3/8H)	orl-mus 2402m
enzene	35162	011421	0.05	5.00	40015.2	2000	NA	NA	0.017	NA ·	NA ·	2000.7	18.4	96-18-4	10 ppm (60mg/m3/8H)	ori-rat 149.6m
romobenzene	35162			5.00	40008.9	2000	NA	NA	0.017	NA	NA	2000.3	18.4	71-43-2	1 ppm	ori-rat 4894m
-Butyl benzene	35162	020821	0.05	5.00	40019.0	2000	NA	NA	0.017	NA	NA	2000.9	18.4	108-86-1	N/A	orl-ret 2599mg
thyl benzene	35162		0.05	5.00	40019.8		NA	NA NA	0.017	NA	NA	2000.9	18.4	104-51-8	N/A	N/A
-Isopropyl toluene	35162	020821	0.05	5.00	40000.9		NA	NA	0.017	NA .	NA	1999.9		100-41-4	100 ppm (435mg/m3/8H)	orl-rat >2000n
aphthalene	35162	020821	0.05	5.00	40056.4		NA	NA	0.017	NA	NA	2002.7	18.4	99-87-6	N/A	ori-rat 4750m
tyrene	35162			5.00	40005.1		NA	NA	0.017	NA	NA NA	2000.2	18.3	91-20-3	10 ppm (50mg/m3/8H)	orl-rat 490mg
olusne	35162	020821	0.05	5.00	40022.8		NA	NA NA	0.017	NA	NA	2001.0		100-42-5	100 ppm	orl-rat 5000m
2,3-Trichlorobenzene	35162	020821	0.05	5.00	40008.9		NA	NA	0.017	NA	NA	2000.3		108-88-3	200 ppm	orl-rat 5000m
2,4-Trichiorobenzene	35162	020821	0.05	5.00	40002.0		NA	NA NA	0.017	NA	NA	2000.0	18.4	87-61-6	N/A	ipr-mus 1390m
2.4-Trimethylbenzene	35162	020821	0.05	5.00			NA	NA	0.017	NA.	NA	2001.3		120-82-1	5 ppm (CL) (40mg/m3)	orl-rat 756mg
3,5-Trimethylbenzene	35162	020821	0.05	5.00	40012.4		NA NA	NA NA	0.017	NA .	NA	2000.5	18.4	95-63-6	N/A	orl-me 5g/kg
-Xylene	35182	020821	0.05	5.00	40021.8		NA NA	NA NA	0.017	NA	NA NA	2000.5		108-67-8	N/A	ori-rat 5000m
rt-Butyl benzene	35163	022521	0.05	5.00	40021.8			NA NA	0.017	NA NA	NA NA	2001.0		108-38-3	100 ppm (435mg/m3/8H)	ori-rat 5g/k
c-Butyl benzene	35163	022521	0.05	5.00	40011.7		NA NA	NA NA	0.017	NA	NA NA	2000.2	18.4	98-06-6	N/A	N/A
Horobenzene	35163	022521					W 1	NA NA	0.017	NA.	NA NA	2000.5		35-98-8	N/A	orl-rat 2240mg
Chlorotoluene	35163	022521	0.05	5.00	40009.0		NA	NA NA	0.017	NA	NA NA	2000.4		08-90-7	75 ppm (350mg/m3/8H)	orl-rat 2290mg
Chlorotoluene	35183	022521	0.05	5.00	40002.0		NA.	NA	0.017	NA NA	NA NA	2000.0		95-49-8	50 ppm (250mg/m3/8H)	orl-rat 3900mg
2-Dichlorobanzene			0.05	5.00	40000,4		NA	NA NA	0.017	NA	NA .	1999.9		06-43-4	N/A	orl-rat 2100mg
3-Dichlorobenzene	35163	022521	0.05	5.00	40004.0		NA.	NA	0.017	NA .	NA	2000.1		95-50-1	50 ppm (300mg/m3) (CL)	orl-rat 500mg
	35163	022521	0.05	5.00	40003.6		NA .	NA NA	0.017	NA	NA ·	2000.1		41-73-1	N/A	pr-mus 1062m
	35163 35163	022521	0.05	5.00	40005.0		AA	NA .	0.017	NA	NA ·	2000.2		08-48-7	76 ppm (450mg/m3/8H)	ori-ret 600mg/
I-Dichlcrobenzene		022521	0.05	5.00	40007.4		AV	NA	0.017	NA:	NA	2000.3		98-82-8	50 ppm (245mg/m3/8H)	orl-rat 1400mg
propylbenzene											614	0000 4	400 4 4			1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
propylbenzene Propylbenzene	35163	022521	0.05	5.00	40004.8		VA .	NA	0.017	NA ·	NA	2000.1		03-65-1	'N/A	orl-rat 6040mg
propylbenzene			0.05 0.05 0.05	5.00 5.00	40004.8 40003.0 40005.0	2000	NA NA	NA NA	0.017 0.017	NA NA	NA NA	2000.1		95-47-6		ipr-mus 1364r

Part # 95317

Lot # 042921

1 of 2

Printed: 1/27/2023, 1:46:44

<sup>•</sup> The certified value is the concentration calculated fives gravimetric and volumetric measurements union otherwise stated.

• Standards are proposed gravimetrically using bulances that are calibrated with weights truccable to NIST (see above).

• Standards are proposed gravimetrically using bulances that are calibrated with weights truccable to NIST (see above).

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

• Uncertainty Reference Taytor, RA, and Knyst, C.E., "Guidelines for Evaluating and Expressing the Uncertainty of NIST bits NIST Technical Nove 1297, U.S. Government Printing Office, Washington, DC. (1994).

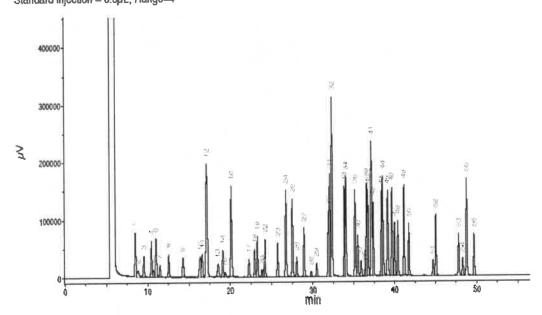
www.absolutestandards.com

## Run 22, "P95317 L042921 [2000µg/mL in MeOH]"

Run Length: 60.00 min, 35999 points at 10 points/second. Created: Thu, Apr 29, 2021 at 3:49:30 PM. Sampled: Sequence "042521-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 3.0 $\mu$ m film thickness Flow rates: Total flow=290mL/min., Helium (carrier)=10mL/min., Air(make-up)=230mL/min. Helium(make-up)=10mL/min., Hydogen(make-up)=40mL/min., Air(make-up)=230mL/min. Oven Profile: Temp. 1=35°C (Time 1=10 min.), Temp 2=200°C (Time 2=8.75 min.), Rate = 4°C/min., Total run time=60 min. Injector temp.=200°C, FID Temp.=200°C. FID Signal = Edaq Channel 1 Standard injection = 0.5 $\mu$ L, Range=4



	200	FED RT
Pulk #	Analyte	(min.)
1	Ether	8.48
2	1,1,2-Trichloro-1,2,2-triflicoroethiase	9.51
3	1.1-Didrioroethene	10.44
4	Acetonitrie	10.71
5	3odomethane	11.92
- 6 - 7	Allyl chands	15.51
	Carbon disutfide/Nethylens chierlife trans-1,2-Dichlargethens	12.55
8	1.1-Oighforgethane	14.23
80	2.2-Dichipropropins	16.33
13	cig-1, 2-Dichioroethorit	16:59
12	Nothern/indicite/Nethyl scrylets/Chloroform	17-14
13	Institutional / 1, 1, 1-Trichleroethane	18.32
1.0	1,1-Dichorpropre	19.08
10	Carbon tetrachlorida	19.39
	Eastene/1,2-Oichieroethane	20.10
15		22.23
17	Bichiocethene 1.2-Dichiompropane	22.92
18	Helinyi mathachyiata	23,26
-	Brosnedichlorphistisine	73.79
30		23.94
-	Dibronsomethane	24.18
22	Z-Nitropropane ds-1,3-Dichloropropene	25.71
24	Toluene	26.71
25	Sthyl restherylabs/tracs-1,3-Dichloropropers	27.50
25	1.1.2-Problement	26.04
22	Tearschiereethene/1.7-Dichlerepropose	25.92
26	Disconnection of the process of the	29,79
29	1.2-Olbremoetrare	30.45
	Chlorobenzane	31.89
30 31	Ethylbenzane/1,1,1,2-Tetrachloresthane	32.07
32	er-Kylana / p-Kylana	32.33
33	o-Xviene	33.87
30	Styrese	34.04
35	Isograpy than zero / Bramofurm	33.14
36	cis-1,4-Dichloro-2-butiene	35.49
37	1.1.2.2-Spendidg/options	33.90
38	1.2.3-Tricklaragrapane	38.34
39	H-Probylanassa	36.58
40	trans-1,4-Dichlere-2-Indons/Bromebergent	38,73
41	1.2.5-Trisselbribensone/2-Chloratoleene	37.17
42	4-Distritutione	37.38
43	terr-Bucylbensene	38.41
42	1.2.4-Triggtingbensons/Pentachlervethane	38.55
43	sec-Sulty/Ibenzene	39,16
46	p-isopropylitotwene	39.68
47	1,3-Dichloroberzane	40.01
45	1,4-Dichlorobenzene	40.42
49	n-Buty/benzene	41.16
90	1,3-Dichlorobenzene	41.74
51	1,2-Orbromo-3-chioropreparte	44.68
52	National and the share	45.84
53	1.2.4-Yr-chlorobenzene	41.83
54	Heyachlorohutadiene	48.29
50	Nephralese	43.76
56	1.2.3-Techhopsensens	49.66
**		

PO Box 5585 Hamden, CT 06518-0585

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

Safety Data Sheet (SDS)

GHS/OSHA Compliant

Section I Product and Company Identification

ANALYTICAL STANDARD DISSOLVED IN METHANOL IDENTITY

Manufacturer's Name

ABSOLUTE STANDARDS INC

44 Rossotto Dr.

Emergency Telephone USA & CANADA

1-800-535-5053

Hamden CT, 06514

**Emergency Telephone International** Date Prepared/Revised

1-352-323-3500 January 1, 2022

Section II - Hazards Identification

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

H225 H370 P271

Address

Highly Flammable Liquid and Vapor

Cause damage to organs

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

H351 P280

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

Suspected of causing cancer Use gloves, eye protection/face shelld

P305.351.338

If in eyes, remove contacts, rinse with water



P302,332





Signal Word: DANGER

Section III - Composition

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

Methanol

METHYL ALCOHOL

CAS#: 67-56-1

% (optional) > 97

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

INTENDED USE: REFERENCE MATERIAL

Section IV. FIRST AID MEASURES

General advice

If inhaled In case of skin contact

In case of eye contact If swallowed

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

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

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

Section V. FIREFIGHTING MEASURES

Flammability

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

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

Suitable extinguishing media Protective equipment for fire

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

Section VI. ACCIDENTAL RELEASE MEASURES

Personal precautions

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

ignition. Vapours accumulate to form explosive concentrations.

Environmental precautions

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

Clean up

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

Section VII. HANDLING AND STORAGE

Precautions for safe handling

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

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

Storage Conditions and kept upright to prevent leakage.

Section VIII. EXPOSURE CONTROLS/PERSONAL PROTECTION

Methanol

67-56-1 TWA 200 ppm

Skin notation

TWA 200 ppm

Potential for skin absorption, ingestion and inhalation.

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

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

Section IX - Physical/Chemical Characteristics

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

Boiling Point	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 Conditions to avoid

Vapours may form explosive mixture with air. Heat, flames, sparks, extreme temperature and sunlight.

Materials to avoid

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

Hazardous decomposition products formed under fire conditions. - Carbon oxides

## Section XI. TOXICOLOGICAL INFORMATION

LD50 Oral - rat - 5,628 mg/kg

LC50 Inhalation - rat - 4 h - 64000 ppm

LD50 Dermal - rabbit - 15,800 mg/kg

Toxic if absorbed through skin. Causes skin irritation.

Eye damage/eye irritation

Toxic if inhaled. Causes respiratory tract irritation.

Toxic if swallowed.

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

LC50

15,400 mg/l - 96 h

EC50

24,500.00 mg/l - 48 h

EC100

10,000.00 mg/l - 24 h

## Section XIII. DISPOSAL CONSIDERATIONS

Dispose with normal Laboratory Solvent Waste.

## Section XIV. TRANSPORT INFORMATION

UN number: 1230 Class: 3 Packing group: II

UN number: 1230 Class: 3 Packing group: II

Proper shipping name:

Methanol

Proper shipping name:

## Section XV. REGULATORY INFORMATION

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

## Section XVI. Misc. INFORMATION

The information in this Material Safety Data Sheet meets the requirements of the United States Occupational Safety and Health Act and regulations promulgated thereunder (29 CFR 1910.1200 et. seq.) and Global Harmonized System (GHS). This document is intended only as a guide to the appropriate precautionary handling of the material by trained personnel, or supervised by a person trained in chemical handling. The user is responsible for determining the precautions and dangers of this chemical for his or her particular application. Depending on 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



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

SDS Information 73/25 Formulated By: Reviewed By Expanded 102422Q Lot# Solvent(s): 5E-05 Balance Uncertainty Flask Uncertainty 0.001 10.0 Refrigerate (4 °C) Weight(s) shown below were combined and diluted to (mL): 062823 Acrolein 072823 **6UTB** 91980 5000 Nominal Concentration (µg/mL): Description: **Expiration Date:** Recommended Storage: Part Number: Lot Number: NIST Test ID#: CERTIFIED WEIGHT REPORT

062823 DATE DATE 062823 Pedro L. Rentas Gabriel Helland

(Solvent Safety Info. On Attached pg.)

Uncertainty

Actual

Actual

Target

Uncertainty

Purity

Nominal

ĕ

ori-rat 46mg/kg LD50 OSHA PEL (TWA) 0.1 ppm 107-02-8 **CAS**# Conc (ug/mL) (++-) (ug/mL) 52.5 5004.4 Weight(g) 0.05165 Weight(g) 0.05160 Purity 0.5 97.1 8 Conc (ug/ml.) 2000 103755R09M Number RM# S Compound 1. Acrolein

Method: GCGMSD-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=20°C (Time 2 = 8.75 min.)

Rate = 4°C/min., Injector Temp. = 20°C., Detector Temp. = 220°C. Analyst: Pedro Rennas. NOTE: Due to the instability of acrolein in solution, all solutions of acrolein, and any dilutions thereof, should be used immediately Long term storage is not recommended. Please contact our technical department if further information is required.

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

8.93

250000

Abundance

2 50000 90009

Abundance

TIC: [BSB2]79005.D

40000

150000

200000

100000

50000

20

30000

20000

10000

37

4 20 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

85

75

65

158 169

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 other wise stated.
   All Standards, after opening ampule, should be stored with caps tight and under appropriate laboratory conditions.
   Uncertainty Reference: Tayfor, 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).

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

Safety Data Sheet (SDS)

GHS/OSHA Compliant

Section | Product and Company Identification

IDENTITY **ANALYTICAL STANDARD DISSOLVED IN WATER** 

ABSOLUTE STANDARDS INC Manufacturer's Name

Emergency Telephone USA & CANADA 44 Rossotto Dr.

Hamden CT, 06514

**Emergency Telephone International** Date Prepared/Revised

1-800-535-5053 1-352-323-3500

May 1, 2022

Section II - Hazards Identification

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

P302,332

P271

Address

Use in ventilated area

If on skin, wash with soap and water

H315 Causes skin and eye irritation. P280

Use gloves, eye protection/face shelld

P305,351,338

If in eyes, remove contacts, rinse with water



Signal Word: DANGER

Section III - Composition

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

Water

CAS#: 7732-18-5

% (optional)

> 97

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

INTENDED USE: REFERENCE MATERIAL

Section IV. FIRST AID MEASURES

General advice

If inhaled

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

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

Section V. FIREFIGHTING MEASURES

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.

**Hazardous Decomposition products** 

Carbon oxides

Section VI. ACCIDENTAL RELEASE MEASURES

Personal precautions

Storage Conditions

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

Water

CAS#: 7732-18-5

TWA: 500 ppm

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

Specific Gravity (H2O = 1) **Boiling Point** 100°C Vapor Pressure (mm Hg) Melting Point

## Absolute Standards Inc.

## PO Box 5585 Hamden, CT 06518-0585

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

0°C NA Evaporation rate Vapor Density (AIR = 1) NΑ NA (Butyl Acetate = 1)

Solubility in Water Completely miscible

Appearance and Odor CLEAR, COLORLESS LIQUID WITH SLIGHT CHEMICAL ODOR.

NΑ

## Section X. STABILITY AND REACTIVITY

Stable under recommended storage conditions. Chemical stability

Possibility of hazardous reactions Conditions to avoid

NA NA Materials to avoid Hazardous decomposition products - No data available

## Section XI. TOXICOLOGICAL INFORMATION

LD50 Oral - Rat

NΑ

LC50 Inhalation - Rat LD50 Dermal - Guinea pig NΑ NA

Causes skin irritation.

Eye irritation

## Section XII. ECOLOGICAL INFORMATION

LC50

EC50

## Section XIII. DISPOSAL CONSIDERATIONS

Dispose with normal Laboratory Solvent Waste.

## Section XIV. TRANSPORT INFORMATION

DOT (US)

Not dangerous goods

Proper shipping name: Water

Not dangerous goods

Proper shipping name: Water

## Section XV. REGULATORY INFORMATION

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

## Section XVI. Misc. INFORMATION

The information in this Material Safety Data Sheet meets the requirements of the United States Occupational Safety and Health Act and regulations promulgated thereunder (29 CFR 1910.1200 et. 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 MERCHANT ABILITY 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 Material Safety Data Sheet. If you have any questions, please call Technical Service at 1-203-281-2917 for assistance.

# Certified Reference Material CRM



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

SDS Information 73/25 Formulated By: Reviewed By Expanded 102422Q Lot# Solvent(s): 5E-05 Balance Uncertainty Flask Uncertainty 0.001 10.0 Refrigerate (4 °C) Weight(s) shown below were combined and diluted to (mL): 062823 Acrolein 072823 **6UTB** 91980 5000 Nominal Concentration (µg/mL): Description: **Expiration Date:** Recommended Storage: Part Number: Lot Number: NIST Test ID#: CERTIFIED WEIGHT REPORT

062823 DATE DATE 062823 Pedro L. Rentas Gabriel Helland

(Solvent Safety Info. On Attached pg.)

Uncertainty

Actual

Actual

Target

Uncertainty

Purity

Nominal

ĕ

ori-rat 46mg/kg LD50 OSHA PEL (TWA) 0.1 ppm 107-02-8 **CAS**# Conc (ug/mL) (++-) (ug/mL) 52.5 5004.4 Weight(g) 0.05165 Weight(g) 0.05160 Purity 0.5 97.1 8 Conc (ug/ml.) 2000 103755R09M Number RM# S Compound 1. Acrolein

Method: GCGMSD-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=20°C (Time 2 = 8.75 min.)

Rate = 4°C/min., Injector Temp. = 20°C., Detector Temp. = 220°C. Analyst: Pedro Rennas. NOTE: Due to the instability of acrolein in solution, all solutions of acrolein, and any dilutions thereof, should be used immediately Long term storage is not recommended. Please contact our technical department if further information is required.

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

8.93

250000

Abundance

2 50000 90009

Abundance

TIC: [BSB2]79005.D

40000

150000

200000

100000

50000

20

30000

20000

10000

37

4 20 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

85

75

65

158 169

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 other wise stated.
   All Standards, after opening ampule, should be stored with caps tight and under appropriate laboratory conditions.
   Uncertainty Reference: Tayfor, 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).

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

Safety Data Sheet (SDS)

GHS/OSHA Compliant

Section | Product and Company Identification

IDENTITY **ANALYTICAL STANDARD DISSOLVED IN WATER** 

ABSOLUTE STANDARDS INC Manufacturer's Name

Emergency Telephone USA & CANADA 44 Rossotto Dr.

Hamden CT, 06514

**Emergency Telephone International** Date Prepared/Revised

1-800-535-5053 1-352-323-3500

May 1, 2022

Section II - Hazards Identification

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

P302,332

P271

Address

Use in ventilated area

If on skin, wash with soap and water

H315 Causes skin and eye irritation. P280

Use gloves, eye protection/face shelld

P305,351,338

If in eyes, remove contacts, rinse with water



Signal Word: DANGER

Section III - Composition

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

Water

CAS#: 7732-18-5

% (optional)

> 97

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

INTENDED USE: REFERENCE MATERIAL

Section IV. FIRST AID MEASURES

General advice

If inhaled

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

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

Section V. FIREFIGHTING MEASURES

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.

**Hazardous Decomposition products** 

Carbon oxides

Section VI. ACCIDENTAL RELEASE MEASURES

Personal precautions

Storage Conditions

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

Water

CAS#: 7732-18-5

TWA: 500 ppm

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

Specific Gravity (H2O = 1) **Boiling Point** 100°C Vapor Pressure (mm Hg) Melting Point

## Absolute Standards Inc.

## PO Box 5585 Hamden, CT 06518-0585

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

0°C NA Evaporation rate Vapor Density (AIR = 1) NΑ NA (Butyl Acetate = 1)

Solubility in Water Completely miscible

Appearance and Odor CLEAR, COLORLESS LIQUID WITH SLIGHT CHEMICAL ODOR.

NΑ

## Section X. STABILITY AND REACTIVITY

Stable under recommended storage conditions. Chemical stability

Possibility of hazardous reactions Conditions to avoid

NA NA Materials to avoid Hazardous decomposition products - No data available

## Section XI. TOXICOLOGICAL INFORMATION

LD50 Oral - Rat

NΑ

LC50 Inhalation - Rat LD50 Dermal - Guinea pig NΑ NA

Causes skin irritation.

Eye irritation

## Section XII. ECOLOGICAL INFORMATION

LC50

EC50

## Section XIII. DISPOSAL CONSIDERATIONS

Dispose with normal Laboratory Solvent Waste.

## Section XIV. TRANSPORT INFORMATION

DOT (US)

Not dangerous goods

Proper shipping name: Water

Not dangerous goods

Proper shipping name: Water

## Section XV. REGULATORY INFORMATION

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

## Section XVI. Misc. INFORMATION

The information in this Material Safety Data Sheet meets the requirements of the United States Occupational Safety and Health Act and regulations promulgated thereunder (29 CFR 1910.1200 et. 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 MERCHANT ABILITY 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 Material Safety Data Sheet. If you have any questions, please call Technical Service at 1-203-281-2917 for assistance.

www.absolutestandards.com 800-368-1131

# Certified Reference Material CRM



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

062823 062823 ori-rat 46mg/kg LD50 (Solvent Safety Info. On Attached pg.) SDS Information OSHA PEL (TWA) Pedro L. Rentas Gabriel Helland 73/25 **CAS**# Formulated By: Reviewed By Uncertainty Conc (ug/mL) (++-) (ug/mL) Expanded Actual 102422Q Weight(g) Lot# Actual Solvent(s): Weight(g) 0.05160 Target 5E-05 Balance Uncertainty Flask Uncertainty Uncertainty Purity 0.5 0.001 Purity 97.1 8 Conc (ug/ml.) Nominal 10.0 2000 Refrigerate (4 °C) 103755R09M Weight(s) shown below were combined and diluted to (mL): Number 062823 Acrolein ĕ 072823 **6UTB** 91980 5000 RM# S Nominal Concentration (µg/mL): Description: **Expiration Date:** Recommended Storage: Part Number: Lot Number: NIST Test ID#: CERTIFIED WEIGHT REPORT Compound 1. Acrolein

DATE

DATE

Method: GCGMSD-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=20°C (Time 2 = 8.75 min.)

Rate = 4°C/min., Injector Temp. = 20°C., Detector Temp. = 220°C. Analyst: Pedro Rennas. NOTE: Due to the instability of acrolein in solution, all solutions of acrolein, and any dilutions thereof, should be used immediately Long term storage is not recommended. Please contact our technical department if further information is required. 0.1 ppm 107-02-8 52.5 5004.4 0.05165

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

8.93

250000

Abundance

50000 90009

2

Abundance

TIC: [BSB2]79005.D

20

40000

150000

200000

100000

50000

30000

20000

10000

37

20

10.00 15.00 20.00 25.00 30.00 35.00 40.00 45.00 50.00 55.00 60.00

Time-->0

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

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 Standards are certified (+/-) 0.5% of the stated value, unless other wise stated.
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**Emergency Telephone International** Date Prepared/Revised

1-800-535-5053 1-352-323-3500

May 1, 2022

Section II - Hazards Identification

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

P302,332

P271

Address

Use in ventilated area

If on skin, wash with soap and water

H315 Causes skin and eye irritation. P280

Use gloves, eye protection/face shelld

P305,351,338

If in eyes, remove contacts, rinse with water



Signal Word: DANGER

Section III - Composition

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

Water

CAS#: 7732-18-5

% (optional)

> 97

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

INTENDED USE: REFERENCE MATERIAL

Section IV. FIRST AID MEASURES

General advice

If inhaled

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

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

Section V. FIREFIGHTING MEASURES

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.

**Hazardous Decomposition products** 

Carbon oxides

Section VI. ACCIDENTAL RELEASE MEASURES

Personal precautions

Storage Conditions

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

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Environmental precautions

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

Clean up

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

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

Water

CAS#: 7732-18-5

TWA: 500 ppm

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

Specific Gravity (H2O = 1) **Boiling Point** 100°C Vapor Pressure (mm Hg) Melting Point

Page 1 of 2 Printed: 6/26/23 Water-SDS.xls

## Absolute Standards Inc.

## PO Box 5585 Hamden, CT 06518-0585

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

0°C NA Evaporation rate Vapor Density (AIR = 1) NΑ NA (Butyl Acetate = 1)

Solubility in Water Completely miscible

Appearance and Odor CLEAR, COLORLESS LIQUID WITH SLIGHT CHEMICAL ODOR.

NΑ

## Section X. STABILITY AND REACTIVITY

Stable under recommended storage conditions. Chemical stability

Possibility of hazardous reactions Conditions to avoid

NA NA Materials to avoid Hazardous decomposition products - No data available

## Section XI. TOXICOLOGICAL INFORMATION

LD50 Oral - Rat

NΑ

LC50 Inhalation - Rat LD50 Dermal - Guinea pig NΑ NA

Causes skin irritation.

Eye irritation

## Section XII. ECOLOGICAL INFORMATION

LC50

EC50

## Section XIII. DISPOSAL CONSIDERATIONS

Dispose with normal Laboratory Solvent Waste.

## Section XIV. TRANSPORT INFORMATION

DOT (US)

Not dangerous goods

Proper shipping name: Water

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Proper shipping name: Water

## Section XV. REGULATORY INFORMATION

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

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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) K 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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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) K 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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11

121321

DATE

Solvent(s):

Lot#

Methanol

**EA899-US** 

ormulated By: Benson Chan

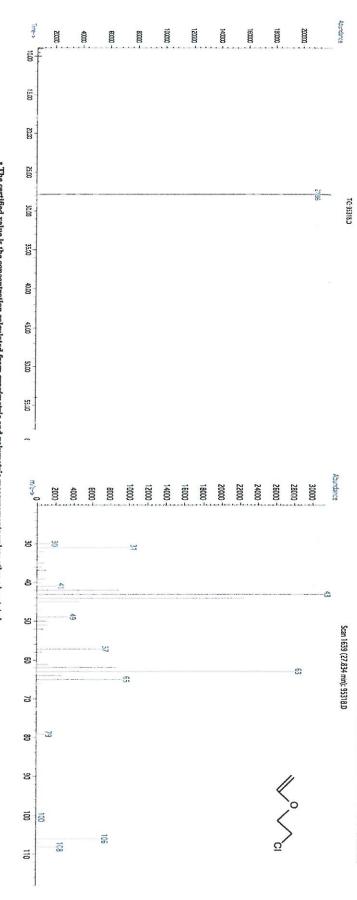
Reviewed By: Pedro L. Rentas

121321 DATE

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2-Chloroethyl vinyl ether 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) K orl-rat 250mg/kg 1050

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



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Solvent(s):

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**EA899-US** 

ormulated By: Benson Chan

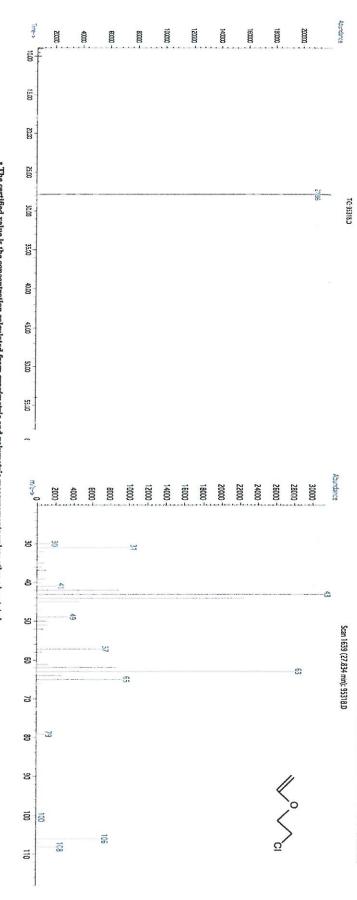
Reviewed By: Pedro L. Rentas

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121321

DATE

Solvent(s):

Lot#

Methanol

**EA899-US** 

ormulated By: Benson Chan

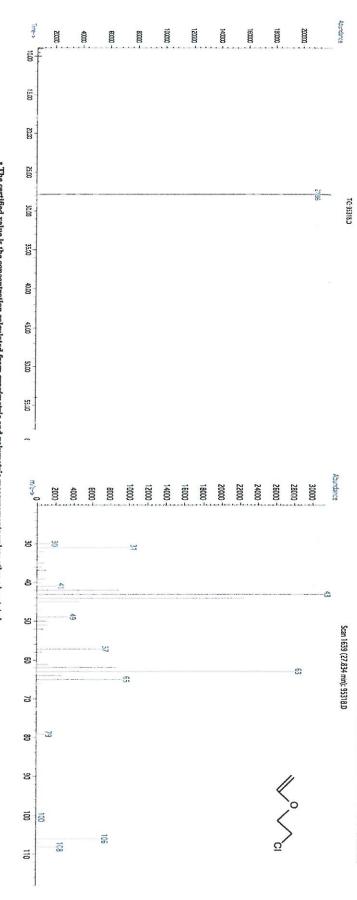
Reviewed By: Pedro L. Rentas

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Actual

Actual

30.0 0.0003 Flask Uncertainty 5E-05 Balance Uncertainty

11

121321

DATE

Solvent(s):

Lot#

Methanol

**EA899-US** 

ormulated By: Benson Chan

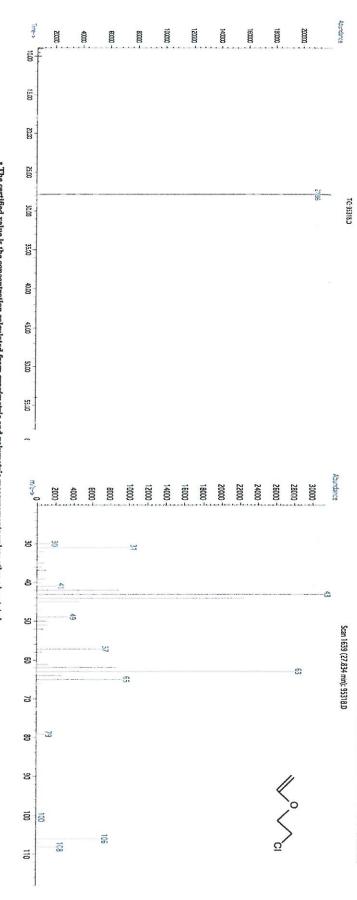
Reviewed By: Pedro L. Rentas

121321 DATE

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

2-Chloroethyl vinyl ether 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) K orl-rat 250mg/kg 1050

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



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

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

Weight(s) shown below were combined and diluted to (mL): 30.0 0.0003 Flask Uncertainty

Nominal

5E-05 Balance Uncertainty

Solvent(s):

Lot#

Methanol

**EA899-US** 

ormulated By: 11 Benson Chan

121321

DATE

Expanded SDS Information

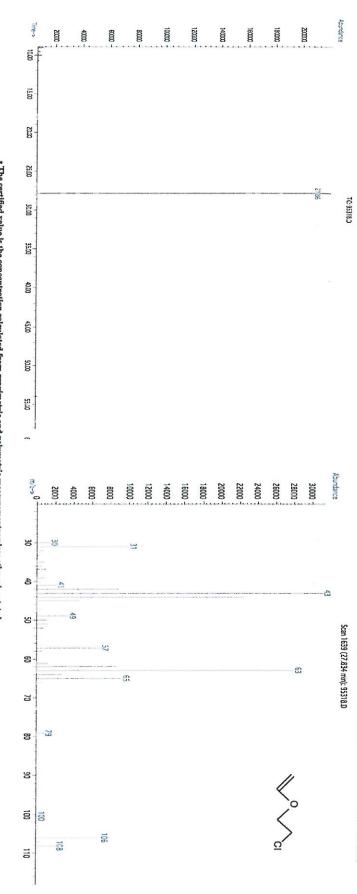
Reviewed By:

Pedro L. Rentas

121321 DATE

2-Chloroethyl vinyl ether RM# 74 MKCD0033 Lot Number Conc (µg/mL) 10000 Purity 99 3 Uncertainty Purity 0.2 Weight (g) 0.30320 Target 0.30411 Weight (g) Actual Conc(µg/mL) 10030.2 Actual (+/-) (µg/mL Uncertainty 40.7 110-75-8 (Solvent Safety Info. On Attached pg.) CAS# OSHA PEL (TWA) K orl-rat 250mg/kg 1050

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



- 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 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).



## CERTIFIED REFERENCE MATERIAL



Tel: (800)356-1688
Fax: (814)353-1309

**Gravimetric Certificate** 





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.

Lot No.: A0173020 555582 Catalog No.: Description: Custom 8260A/B Surrogate Mix Custom 8260A/B Surrogate Mix 25,000µg/mL, P&T Methanol, 1mL/ampul Pkg Amt: > 1 mL Container Size: 2 mL 10°C or colder **Expiration Date:** June 30, 2024 Storage: Ship: Ambient

## CERTIFIED VALUES

Component #		Compour	nd	Grav. ( (weight/\			Expanded U (95% C.L.; K		
1	1,2-Dich CAS # Purity	loroethane-d4 17060-07-0 99%	(Lot PR-29377)	25,060.0	μg/mL	+/- +/- +/-	231.9100 1,416.6261 1,449.2417	μg/mL μg/mL μg/mL	Gravimetric Unstressed Stressed
2	1-Bromo CAS # Purity	-4-fluorobenzene (BFB) 460-00-4 99%	(Lot 20401KO)	25,188.0	μg/mL	+/- +/- +/-	233.0945 1,423.8618 1,456.6441	μg/mL μg/mL μg/mL	Gravimetric Unstressed Stressed
3	Dibromo CAS # Purity	fluoromethane 1868-53-7 99%	(Lot 012021)	25,212.0	μg/mL	+/- +/- +/-	233.3166 1,425.2185 1,458.0320	μg/mL μg/mL μg/mL	Gravimetric Unstressed Stressed
4	Toluene- CAS # Purity	d8 2037-26-5 99%	(Lot PR-31750)	25,104.0	μg/mL	+/- +/- +/-	232.3171 1,419.1134 1,451.7863	μg/mL μg/mL μg/mL	Gravimetric Unstressed Stressed

Solvent:

P&T Methanol

CAS#

67-56-1

Purity

99%

Lane Kibe - Mix Technician

Date Mixed: 03-Jun-2021

Balance: B251644995

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

## General Certified Reference Material Notes

### **Expiration Notes:**

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

### **Purity Notes:**

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

## Certified Uncertainty Value Notes:

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

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

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

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

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

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

## Manufacturing Notes:

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

## **Handling Notes:**

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

01-Aug-2020 rev. 3 of 3



## Safety Data Sheet

Revision Date: 05/24/21

www.restek.com

2 Letter ISO country code/language code: US/EN

## 1. IDENTIFICATION

Catalog Number / Product Name: 555582 / Custom 8260A/B Surrogate Mix

Company: Address: Restek Corporation 110 Benner Circle Bellefonte, Pa. 16823

Phone#: Fax#: 814-353-1300 814-353-1309 800-424-9300 (CH

Emergency#: 800-424-9300 (CHEMTREC) 703-527-3887 (Outside the US) Email: www.restek.com

Revision Number:

Intended use:

7

For Laboratory use only

## 2. HAZARD(S)IDENTIFICATION

## **Emergency Overview:**







GHS Hazard Symbols:

Specific Target Organ Systemic Toxicity (STOT) - Single Exposure Category 1

Classification: Flammable Liquid Category 2

Acute Toxicity - Dermal Category 3
Acute Toxicity - Oral Category 3

**GHS Signal** 

Word:

Danger

GHS Hazard:

Highly flammable liquid and vapour. Toxic if swallowed or in contact with skin.

Causes damage to organs.

GHS

**GHS** 

Precautions:

Safety

Keep away from heat/sparks/open flames/hot surfaces. - No smoking.

Precautions: Keep container tightly closed.

Ground/bond container and receiving equipment.

Use explosion-proof electrical/ventilation and lighting equipment.

Use only non-sparking tools.

Take precautionary measures against static discharge. Do not breathe dust/fume/gas/mist/vapours/spray. Wash hands and skin thoroughly after handling. Do not eat, drink or smoke when using this product.

Wear protective gloves/protective clothing/eye protection/face protection.

First Aid

IF SWALLOWED: Immediately call a POISON CENTER/doctor/....

Measures: IF ON SKIN: Wash with plenty of soap and water.

IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.

IF exposed: Call a POISON CENTER or doctor/physician.
Call a POISON CENTER or doctor/physician if you feel unwell.

Specific treatment see section 4.

Rinse mouth.

Take off immediately all contaminated clothing and wash it before reuse. In case of fire: Use extinguishing media in section 5 for extinction.

Storage:

Keep container tightly closed.

Store in a well-ventilated place. Keep cool.

Store locked up.

Disposal:

Dispose of contents/container according to section 13 of the SDS.

Single Exposure Specific target organ toxicity - Single exposure - STOT SE 1: H370 Causes damage to organs. (C >= 10 %; No information to prove exclusion of certain routes of exposure); Specific target organ toxicity - Single exposure - STOT SE 2: H371 May cause damage to organs. (3 % <= C <10 %; Concentration limits for acute toxicity cannot

**Target Organs:** 

be translated into GHS from the DSD especially when minimum classifications are given)

Repeated

No data available

Exposure Target Organs:

## 3. COMPOSITION / INFORMATION ON INGREDIENT

Chemical Name	CAS#	EINEC#	% Composition
P&T Methanol	67-56-1	200-659-6	90
1-Bromo-4-fluorobenzene (BFB)	460-00-4	207-300-2	2.5
1,2-dichloroethane-d4	17060-07-0		2.5
dibromofluoromethane	1868-53-7		2.5
toluene-d8	2037-26-5	218-009-5	2.5

## 4. FIRST-AID MEASURES

Inhalation:

Remove to fresh air. If breathing is difficult, have a trained individual administer oxygen. If not

breathing, give artificial respiration and have a trained individual administer oxygen. Get

medical attention immediately

Eyes:

Flush eyes with plenty of water for at least 20 minutes retracting eyelids often. Tilt the head to prevent chemical from transferring to the uncontaminated eye. Get immediate medical

attention.

Skin Contact:

Wash with soap and water. Remove contaminated clothing and launder. Get medical

attention if irritation develops or persists.

Ingestion:

Do not induce vomiting and seek medical attention immediately. Drink two glasses of water or

milk to dilute. Provide medical care provider with this SDS.

## 5. FIRE- FIGHTING MEASURES

Extinguishing Media:

Use alcohol resistant foam, carbon dioxide, or dry chemical extinguishing agents. Water may be ineffective but water spray can be used extinguish a fire if swept across the base of the flames. Water can absorb heat and keep exposed material from being damaged by fire.

Fire and/or Explosion Hazards:

Vapors may be ignited by heat, sparks, flames or other sources of ignition at or above the low flash point giving rise to a fire (Class B). Vapors are heavier than air and may travel to a source of ignition and

flash back.

Fire Fighting Methods and Protection:

Do not enter fire area without proper protection including self-contained breathing apparatus and full protective equipment. Fight fire from a safe distance and a protected location due to the potential of hazardous vapors and decomposition products. Flammable component(s) of this material may be lighter than water and burn while floating on the surface.

Hazardous Combustion Products:

Carbon dioxide, Carbon monoxide

## 6. ACCIDENTAL RELEASE MEASURES

Personal Precautions and Equipment:

Exposure to the spilled material may be severely irritating or toxic. Follow personal protective equipment recommendations found in Section 8 of this SDS. Personal protective equipment needs must be evaluated based on information provided on this sheet and the special circumstances created by the spill including; the material spilled, the quantity of the spill, the area in which the spill occurred, and the expertise of employees in the area responding to the spill. Never exceed any occupational exposure

Methods for Clean-up:

Prevent the spread of any spill to minimize harm to human health and the

environment if safe to do so. Wear complete and proper personal protective equipment following the recommendation of Section 8 at a minimum. Dike with suitable absorbent material like granulated clay. Gather and store in a sealed container pending a waste disposal evaluation.

### 7. HANDLING AND STORAGE

Handling Technical Measures and Precautions: Toxic or severely irritating material. Avoid contacting and avoid

breathing the material. Use only in a well ventilated area. Use

spark-proof tools and explosion-proof equipment

Storage Technical Measures and Conditions: Store in a cool dry ventilated location. Isolate from

incompatible materials and conditions. Keep container(s)

closed. Keep away from sources of ignition

## 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

United States: Chemical Name	CAS No.	IDLH	ACGIH STEL	ACGIH TLV-TWA	OSHA Exposure Limit
P&T Methanol	67-56-1	6000 ppm IDLH	250 ppm STEL	200 ppm TWA	200 ppm TWA; 260 mg/m3 TWA
1-Bromo-4- fluorobenzene (BFB)	460-00-4	Not established	None Known	Not established	No data available
1,2-dichloroethane- d4	17060-07-0	Not established	None Known	Not established	No data available
dibromofluoromethan e	1868-53-7	Not established	None Known	Not established	No data available
toluene-d8	2037-26-5	Not established	None Known	Not established	No data available

Personal Protection:

Engineering Measures: Local exhaust ventilation is recommended when generating excessive levels of

vapours from handling or thermal processing.

Respiratory Protection: Respiratory protection may be required to avoid overexposure when handling this product. General or local exhaust ventilation is the preferred means of protection.

Use a respirator if general room ventilation is not available or sufficient to eliminate symptoms. If an exposure limit is exceeded or if an operator is experiencing symptoms of inhalation overexposure as explained in Section 3.

provide respiratory protection.

Eye Protection: Wear chemically resistant safety glasses with side shields when handling this

product. Do not wear contact lenses.

Skin Protection: Wear protective gloves. Inspect gloves for chemical break-through and replace at

regular intervals. Clean protective equipment regularly. Wash hands and other exposed areas with mild soap and water before eating, drinking, and when

leaving work

## 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance, color: No data available

Odor: Mild

Physical State: No data available
pH: Not applicable
Vapor Pressure: No data available

Vapor Pressure: No data available
Vapor Density: 1.1 (air = 1)

Boiling Point (°C): 151.5 °C Boiling Point (at 1013.25 hPa) 64.7 °C at 760

mmHg (HSDB)

Melting Point (°C): -98 °C Flash Point (°F): 50

Flammability: Highly Flammable

Upper Flammable/Explosive Limit, % in air: 36 Lower Flammable/Explosive Limit, % in air: 6

Autoignition Temperature (°C): 464 deg C
Decomposition Temperature (°C): No data available

Specific Gravity: 0.791 - 0.792 g/cm3 at 20 °C

Evaporation Rate: No data available
Odor Threshold: No data available
Solubility: Moderate; 50-99%

Partition Coefficient: n-octanol in water:

VOC % by weight: Molecular Weight:

32.04

10. STABILITY AND REACTIVITY

Stability:

Stable under normal conditions.

Conditions to Avoid:

None known.

No data available

Materials to Avoid / Chemical Incompatiability:

Strong oxidizing agents

**Hazardous Decomposition Products:** 

Carbon dioxide Carbon monoxide

11. TOXICOLOGICAL INFORMATION

Routes of Entry:

Inhalation, Skin Contact, Eye Contact, Ingestion Eyes, Central nervous system stimulation, Skin, GI

Target Organs Potentially Affected By Exposure:

Tract, Respiratory Tract

Chemical Interactions That Change Toxicity:

None Known

Immediate (Acute) Health Effects by Route of Exposure:

Inhalation Irritation:

Can cause moderate respiratory irritation, dizziness, weakness, fatigue, nausea

and headache.

Inhalation Toxicity:

Harmful! Can cause systemic damage (see "Target Organs)Methanol can cause

central nervous system depression and overexposure can cause damage to the

optic nerve resulting in visual impairment or blindness.

Skin Contact:

Can cause moderate skin irritation, defatting, and dermatitis. Not likely to cause

permanent damage.

**Eye Contact:** 

Can cause moderate irritation, tearing and reddening, but not likely to

permanently injure eye tissue.

Ingestion Irritation:

Ingestion Toxicity:

Irritating to mouth, throat, and stomach. Can cause abdominal discomfort.

nausea, vomiting and diarrhea. Highly toxic and may be fatal if swallowed. Toxic if swallowed. May cause target organ failure and/or death. May be fatal if

swallowed.

Long-Term (Chronic) Health Effects:

Carcinogenicity:

No data.

Reproductive and Developmental Toxicity:

No data available to indicate product or any components

present at greater than 0.1% may cause birth defects. Upon prolonged and/or repeated exposure, can cause moderate respiratory irritation, dizziness, weakness, fatique, nausea and headache. Harmful! Can cause systemic damage upon prolonged and/or repeated exposure (see

"Target Organs)

Skin Contact:

Inhalation:

Upon prolonged or repeated contact, can cause

moderate skin irritation, defatting, and dermatitis. Not

likely to cause permanent damage.

Ingestion: Toxic if swallowed. May cause target organ failure

and/or death.

Component Toxicological Data:

NIOSH:

Chemical Name

CAS No.

LD50/LC50

Benzene, 1-bromo-4-fluoro-

460-00-4

Inhalation LC50 Rat 18 g/m3 4 h; Oral LD50 Rat

2700 mg/kg

Methanol

67-56-1

Inhalation LC50 Rat 22500 ppm 8 h

Component Carcinogenic Data:

OSHA:

**Chemical Name** 

CAS No.

No data available

ACGIH-

**Chemical Name** 

CAS No.

No data available

NIOSH:

**Chemical Name** 

CAS No.

No data available

NTP:

**Chemical Name** 

CAS No.

No data available

IARC:

**Chemical Name** 

CAS No.

Group No.

12. ECOLOGICAL INFORMATION

Overview:

Moderate ecological hazard. This product may be dangerous

to plants and/or wildlife.

Mobility:

No data Persistence: No data Bioaccumulation: No data

Degradability:

Biodegrades slowly.

**Ecological Toxicity Data:** 

No data available

13. DISPOSAL CONSIDERATIONS

Waste Description of Spent Product:

Spent or discarded material is a hazardous waste. Mixing spent or discarded material with other materials may render the mixture hazardous. Perform a hazardous

waste determination on mixtures.

Disposal Methods:

Dispose of by incineration following Federal, State, Local,

or Provincial regulations.

Waste Disposal of Packaging:

Comply with all Local, State, Federal, and Provincial

Environmental Regulations.

14. TRANSPORTATION INFORMATION

**United States:** 

**DOT Proper Shipping Name:** 

Flammable liquids, n.o.s. (Methanol)

**UN Number:** Hazard Class: UN1993 3

Packing Group:

11

International:

IATA Proper Shipping Name:

Flammable liquids, n.o.s. (Methanol)

**UN Number:** 

UN1993

Hazard Class: Packing Group: 3 11

Marine Pollutant: No

Chemical Name	CAS#	Marine Pollutant	Severe Marine Pollutant
No data available			

## 15. REGULATORY INFORMATION

United States: Chemical Name	CAS#	CERCLA	SARA 313	SARA EHS 313	TSCA
P&T Methanol	67-56-1	X	X	-	X
1-Bromo-4-	460-00-4		=		X
fluorobenzene (BFB)					
1,2-dichloroethane-d4	17060-07-0	-	-	-	-
dibromofluoromethane	1868-53-7	**	-	-	-
toluene-d8	2037-26-5	_	-	_	_

The following chemicals are listed on CA Prop 65:

Chemical Name	CAS#	Regulation
Methanol	67-56-1	Prop 65 Devolop Tox

State Right To Know Listing:

Chemical Name	CAS#	New Jersey	Massachusetts	Pennsylvania	California	

P&T Methanol	67-56-1	X	X	X	l X
1-Bromo-4-	460-00-4	-	-	_	
fluorobenzene (BFB)			20.000		
1,2-dichloroethane-d4	17060-07-0	-	-	-	-
dibromofluoromethane	1868-53-7	-	-	-	
toluene-d8	2037-26-5	-	-	-	

## 16. OTHER INFORMATION

Prior Version Date:

07/20/18

Other Information:

Any changes to the SDS compared to previous versions are marked by a vertical

line in front of the concerned paragraph.

References:

No data available

Disclaimer:

Restek Corporation provides the descriptions, data and information contained herein in good faith but makes no representation as to its comprehensiveness or accuracy. It is provided for your guidance only. Because many factors may affect processing or application/use, Restek Corporation recommends you perform an assessment to determine the suitability of a product for your particular purpose prior to use. No warranties of any kind, either expressed or implied, including fitness for a particular purpose, are made regarding products described, data or information set forth. In no case shall the descriptions, information, or data provided be considered a part of our terms and conditions of sale. Further, the descriptions, data and information furnished hereunder are given gratis. No obligation or liability for the description, data and information given are assumed. All such being given

and accepted at your risk.



## CERTIFIED REFERENCE MATERIAL



Tel: (800)356-1688
Fax: (814)353-1309

**Gravimetric Certificate** 





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.

Lot No.: A0173020 555582 Catalog No.: Description: Custom 8260A/B Surrogate Mix Custom 8260A/B Surrogate Mix 25,000µg/mL, P&T Methanol, 1mL/ampul Pkg Amt: > 1 mL Container Size: 2 mL **Expiration Date:** 10°C or colder June 30, 2024 Storage: Ship: Ambient

## CERTIFIED VALUES

Component #	+	Compour	od	Grav. ( (weight/v			Expanded U (95% C.L.; K		
1	1,2-Dich CAS # Purity	loroethane-d4 17060-07-0 99%	(Lot PR-29377)	25,060.0	μg/mL	+/- +/- +/-	231.9100 1,416.6261 1,449.2417	μg/mL μg/mL μg/mL	Gravimetric Unstressed Stressed
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3	Dibromo	fluoromethane 1868-53-7 99%	(Lot 012021)	25,212.0	μg/mL	+/- +/- +/-	233.3166 1,425.2185 1,458.0320	μg/mL μg/mL μg/mL	Gravimetric Unstressed Stressed
4	Toluene- CAS # Purity	d8 2037-26-5 99%	(Lot PR-31750)	25,104.0	μg/mL	+/- +/- +/-	232.3171 1,419.1134 1,451.7863	μg/mL μg/mL μg/mL	Gravimetric Unstressed Stressed

Solvent:

P&T Methanol

CAS#

67-56-1

Purity

99%

Lane Kibe - Mix Technician

Date Mixed: 03-Jun-2021

Balance: B251644995

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

### General Certified Reference Material Notes

### **Expiration Notes:**

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

### **Purity Notes:**

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

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The uncertainties are determined in accordance with ISO 17034 and Guide 35. The certified combined stressed
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$$U_{combined \ stressed} = \ k \sqrt{U_{gravimetric}^2 + U_{homogeneity}^2 + U_{storage \ stability}^2 + U_{shipping \ stability}^2}$$

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

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

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

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

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Concentration is based upon gravimetric preparation using either a balance whose calibration has been verified daily
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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.

01-Aug-2020 rev. 3 of 3



### Safety Data Sheet

Revision Date: 05/24/21

www.restek.com

2 Letter ISO country code/language code: US/EN

### 1. IDENTIFICATION

Catalog Number / Product Name: 555582 / Custom 8260A/B Surrogate Mix

Company: Address: Restek Corporation 110 Benner Circle Bellefonte, Pa. 16823

Phone#: Fax#: 814-353-1300 814-353-1309 800-424-9300 (CH

Emergency#: 800-424-9300 (CHEMTREC) 703-527-3887 (Outside the US) Email: www.restek.com

Revision Number:

Intended use:

7

For Laboratory use only

### 2. HAZARD(S)IDENTIFICATION

### **Emergency Overview:**







GHS Hazard Symbols:

Specific Target Organ Systemic Toxicity (STOT) - Single Exposure Category 1

Classification: Flammable Liquid Category 2

Acute Toxicity - Dermal Category 3
Acute Toxicity - Oral Category 3

**GHS Signal** 

Word:

**GHS** 

Danger

GHS Hazard: Highly flammable liquid and vapour.

Toxic if swallowed or in contact with skin.

Causes damage to organs.

GHS

Precautions:

Safety

Keep away from heat/sparks/open flames/hot surfaces. - No smoking.

Precautions: Keep container tightly closed.

Ground/bond container and receiving equipment.

Use explosion-proof electrical/ventilation and lighting equipment.

Use only non-sparking tools.

Take precautionary measures against static discharge. Do not breathe dust/fume/gas/mist/vapours/spray. Wash hands and skin thoroughly after handling. Do not eat, drink or smoke when using this product.

Wear protective gloves/protective clothing/eye protection/face protection.

First Aid

IF SWALLOWED: Immediately call a POISON CENTER/doctor/....

Measures: IF ON SKIN: Wash with plenty of soap and water.

IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.

IF exposed: Call a POISON CENTER or doctor/physician.
Call a POISON CENTER or doctor/physician if you feel unwell.

Specific treatment see section 4.

Rinse mouth.

Take off immediately all contaminated clothing and wash it before reuse. In case of fire: Use extinguishing media in section 5 for extinction.

Storage:

Keep container tightly closed.

Store in a well-ventilated place. Keep cool.

Store locked up.

Disposal:

Dispose of contents/container according to section 13 of the SDS.

Single Exposure Specific target organ toxicity - Single exposure - STOT SE 1: H370 Causes damage to organs. (C >= 10 %; No information to prove exclusion of certain routes of exposure); Specific target organ toxicity - Single exposure - STOT SE 2: H371 May cause damage to organs. (3 % <= C <10 %; Concentration limits for acute toxicity cannot

**Target Organs:** 

be translated into GHS from the DSD especially when minimum classifications are given)

Repeated

No data available

Exposure Target Organs:

### 3. COMPOSITION / INFORMATION ON INGREDIENT

Chemical Name	CAS#	EINEC#	% Composition
P&T Methanol	67-56-1	200-659-6	90
1-Bromo-4-fluorobenzene (BFB)	460-00-4	207-300-2	2.5
1,2-dichloroethane-d4	17060-07-0		2.5
dibromofluoromethane	1868-53-7		2.5
toluene-d8	2037-26-5	218-009-5	2.5

### 4. FIRST-AID MEASURES

Inhalation:

Remove to fresh air. If breathing is difficult, have a trained individual administer oxygen. If not

breathing, give artificial respiration and have a trained individual administer oxygen. Get

medical attention immediately

Eyes:

Flush eyes with plenty of water for at least 20 minutes retracting eyelids often. Tilt the head to prevent chemical from transferring to the uncontaminated eye. Get immediate medical

attention.

Skin Contact:

Wash with soap and water. Remove contaminated clothing and launder. Get medical

attention if irritation develops or persists.

Ingestion:

Do not induce vomiting and seek medical attention immediately. Drink two glasses of water or

milk to dilute. Provide medical care provider with this SDS.

### 5. FIRE- FIGHTING MEASURES

Extinguishing Media:

Use alcohol resistant foam, carbon dioxide, or dry chemical extinguishing agents. Water may be ineffective but water spray can be used extinguish a fire if swept across the base of the flames. Water can absorb heat and keep exposed material from being damaged by fire.

Fire and/or Explosion Hazards:

Vapors may be ignited by heat, sparks, flames or other sources of ignition at or above the low flash point giving rise to a fire (Class B). Vapors are heavier than air and may travel to a source of ignition and flash back.

Fire Fighting Methods and Protection:

Do not enter fire area without proper protection including self-contained breathing apparatus and full protective equipment. Fight fire from a safe distance and a protected location due to the potential of hazardous vapors and decomposition products. Flammable component(s) of this material may be lighter than water and burn while floating on the surface. Carbon dioxide, Carbon monoxide

Hazardous Combustion Products:

### 6. ACCIDENTAL RELEASE MEASURES

Personal Precautions and Equipment:

Exposure to the spilled material may be severely irritating or toxic. Follow personal protective equipment recommendations found in Section 8 of this SDS. Personal protective equipment needs must be evaluated based on information provided on this sheet and the special circumstances created by the spill including; the material spilled, the quantity of the spill, the area in which the spill occurred, and the expertise of employees in the area responding to the spill. Never exceed any occupational exposure

Methods for Clean-up:

Prevent the spread of any spill to minimize harm to human health and the

environment if safe to do so. Wear complete and proper personal protective equipment following the recommendation of Section 8 at a minimum. Dike with suitable absorbent material like granulated clay. Gather and store in a sealed container pending a waste disposal evaluation.

### 7. HANDLING AND STORAGE

Handling Technical Measures and Precautions: Toxic or severely irritating material. Avoid contacting and avoid

breathing the material. Use only in a well ventilated area. Use

spark-proof tools and explosion-proof equipment

Store in a cool dry ventilated location. Isolate from

incompatible materials and conditions. Keep container(s)

closed. Keep away from sources of ignition

### 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Storage Technical Measures and Conditions:

United States: Chemical Name	CAS No.	IDLH	ACGIH STEL	ACGIH TLV-TWA	OSHA Exposure Limit
P&T Methanol	67-56-1	6000 ppm IDLH	250 ppm STEL	200 ppm TWA	200 ppm TWA; 260 mg/m3 TWA
1-Bromo-4- fluorobenzene (BFB)	460-00-4	Not established	None Known	Not established	No data available
1,2-dichloroethane- d4	17060-07-0	Not established	None Known	Not established	No data available
dibromofluoromethan e	1868-53-7	Not established	None Known	Not established	No data available
toluene-d8	2037-26-5	Not established	None Known	Not established	No data available

Personal Protection:

Engineering Measures: Local exhaust ventilation is recommended when generating excessive levels of

vapours from handling or thermal processing.

Respiratory Protection: Respiratory protection may be required to avoid overexposure when handling this product, General or local exhaust ventilation is the preferred means of protection.

Use a respirator if general room ventilation is not available or sufficient to eliminate symptoms. If an exposure limit is exceeded or if an operator is experiencing symptoms of inhalation overexposure as explained in Section 3.

provide respiratory protection.

Eye Protection: Wear chemically resistant safety glasses with side shields when handling this

product. Do not wear contact lenses.

Skin Protection: Wear protective gloves. Inspect gloves for chemical break-through and replace at

regular intervals. Clean protective equipment regularly. Wash hands and other exposed areas with mild soap and water before eating, drinking, and when

leaving work

### 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance, color: No data available

Odor: Mild

Physical State: No data available pH: Not applicable

Vapor Pressure:No data availableVapor Density:1.1 (air = 1)

Boiling Point (°C): 151.5 °C Boiling Point (at 1013.25 hPa) 64.7 °C at 760

mmHg (HSDB)

Melting Point (°C): -98 °C Flash Point (°F): 50

Flammability: Highly Flammable

Upper Flammable/Explosive Limit, % in air: 36 Lower Flammable/Explosive Limit, % in air: 6

Autoignition Temperature (°C): 464 deg C
Decomposition Temperature (°C): No data available

Specific Gravity: 0.791 - 0.792 g/cm3 at 20 °C

Evaporation Rate: No data available
Odor Threshold: No data available
Solubility: Moderate; 50-99%

Partition Coefficient: n-octanol in water:

No data available

VOC % by weight:

90 32.04

Molecular Weight:

### 10. STABILITY AND REACTIVITY

Stability:

Stable under normal conditions.

Conditions to Avoid:

None known.

Materials to Avoid / Chemical Incompatiability:

Strong oxidizing agents

**Hazardous Decomposition Products:** 

Carbon dioxide Carbon monoxide

### 11. TOXICOLOGICAL INFORMATION

Routes of Entry:

Inhalation, Skin Contact, Eye Contact, Ingestion Eyes, Central nervous system stimulation, Skin, GI

Target Organs Potentially Affected By Exposure:

Chemical Interactions That Change Toxicity:

None Known

### Immediate (Acute) Health Effects by Route of Exposure:

Inhalation Irritation:

Can cause moderate respiratory irritation, dizziness, weakness, fatigue, nausea

Tract, Respiratory Tract

and headache.

Inhalation Toxicity:

Harmful! Can cause systemic damage (see "Target Organs)Methanol can cause

central nervous system depression and overexposure can cause damage to the

optic nerve resulting in visual impairment or blindness.

Skin Contact:

Can cause moderate skin irritation, defatting, and dermatitis. Not likely to cause

permanent damage.

Eye Contact:

Can cause moderate irritation, tearing and reddening, but not likely to

permanently injure eye tissue.

Ingestion Irritation:

Ingestion Toxicity:

Irritating to mouth, throat, and stomach. Can cause abdominal discomfort.

nausea, vomiting and diarrhea. Highly toxic and may be fatal if swallowed. Toxic if swallowed. May cause target organ failure and/or death. May be fatal if

swallowed.

### Long-Term (Chronic) Health Effects:

Carcinogenicity:

No data.

Reproductive and Developmental Toxicity:

No data available to indicate product or any components present at greater than 0.1% may cause birth defects.

Upon prolonged and/or repeated exposure, can cause moderate respiratory irritation, dizziness, weakness, fatigue, nausea and headache.Harmful! Can cause systemic damage upon prolonged and/or repeated exposure (see

"Target Organs)

Skin Contact:

Inhalation:

Upon prolonged or repeated contact, can cause

moderate skin irritation, defatting, and dermatitis. Not

likely to cause permanent damage.

Ingestion:

Toxic if swallowed. May cause target organ failure

and/or death.

### Component Toxicological Data:

NIOSH:

**Chemical Name** 

CAS No.

LD50/LC50

Benzene, 1-bromo-4-fluoro-

460-00-4

Inhalation LC50 Rat 18 g/m3 4 h; Oral LD50 Rat

2700 mg/kg

Methanol

67-56-1

Inhalation LC50 Rat 22500 ppm 8 h

### Component Carcinogenic Data:

OSHA:

Chemical Name No data available CAS No.

ACGIH:

Chemical Name

CAS No.

No data available

NIOSH:

**Chemical Name** 

CAS No.

No data available

555582 / Custom 8260A/B Surrogate Mix

NTP:

**Chemical Name** 

CAS No.

No data available

IARC:

**Chemical Name** 

CAS No.

Group No.

12. ECOLOGICAL INFORMATION

Overview:

Moderate ecological hazard. This product may be dangerous

to plants and/or wildlife.

Mobility:

Persistence: Bioaccumulation:

No data No data

No data

Degradability: **Ecological Toxicity Data:**  Biodegrades slowly. No data available

13. DISPOSAL CONSIDERATIONS

Waste Description of Spent Product:

Spent or discarded material is a hazardous waste. Mixing spent or discarded material with other materials may render the mixture hazardous. Perform a hazardous

waste determination on mixtures.

Disposal Methods:

Dispose of by incineration following Federal, State, Local,

or Provincial regulations.

Waste Disposal of Packaging:

Comply with all Local, State, Federal, and Provincial

Environmental Regulations.

14. TRANSPORTATION INFORMATION

**United States:** 

**DOT Proper Shipping Name:** 

Flammable liquids, n.o.s. (Methanol)

**UN Number:** Hazard Class: Packing Group:

3 11

UN1993

International: IATA Proper Shipping Name:

Flammable liquids, n.o.s. (Methanol)

**UN Number:** 

UN1993

Hazard Class: Packing Group: 3 11

Marine Pollutant: No

Chemical Name	CAS#	Marine Pollutant	Severe Marine Pollutant
No data available			

### 15. REGULATORY INFORMATION

United States:	***				
Chemical Name	CAS#	CERCLA	SARA 313	SARA EHS 313	TSCA
P&T Methanol	67-56-1	X	X		X
1-Bromo-4-	460-00-4	-	-	-	X
fluorobenzene (BFB)					
1,2-dichloroethane-d4	17060-07-0	<b>-</b> €	-	-	-
dibromofluoromethane	1868-53-7	-	-	-	-
toluene-d8	2037-26-5	_	=	E	_

The following chemicals are listed on CA Prop 65:

Chemical Name	CAS#	Regulation
Methanol	67-56-1	Prop 65 Devolop Tox

State Right To Know Listing:

Chemical Name	CAS#	New Jersey	Massachusetts	Pennsylvania	California	

P&T Methanol	67-56-1	X	X	X	X
1-Bromo-4-	460-00-4	-	-	_	
fluorobenzene (BFB)					
1,2-dichloroethane-d4	17060-07-0	-	-	-	-
dibromofluoromethane	1868-53-7	-	-	-	
toluene-d8	2037-26-5	-	-	-	

### 16. OTHER INFORMATION

Prior Version Date:

07/20/18

Other Information:

Any changes to the SDS compared to previous versions are marked by a vertical

line in front of the concerned paragraph.

References:

No data available

Disclaimer:

Restek Corporation provides the descriptions, data and information contained herein in good faith but makes no representation as to its comprehensiveness or accuracy. It is provided for your guidance only. Because many factors may affect processing or application/use, Restek Corporation recommends you perform an assessment to determine the suitability of a product for your particular purpose prior to use. No warranties of any kind, either expressed or implied, including fitness for a particular purpose, are made regarding products described, data or information set forth. In no case shall the descriptions, information, or data provided be considered a part of our terms and conditions of sale. Further, the descriptions, data and information furnished hereunder are given gratis. No obligation or liability for the description, data and information given are assumed. All such being given

and accepted at your risk.



## CERTIFIED REFERENCE MATERIAL

ACCREDITED
ISO 17034 ACCREDITED
Certificate #3222201

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

## **Gravimetric Certificate**





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.

555581 Catalog No.: Lot No.: A0173600 Description: Custom 8260 Internal Standard Mix Custom 8260 Internal Standard Mix 25,000µg/mL, P&T Methanol, 1mL/ampul Container Size: 2 mL Pkg Amt: > 1 mL **Expiration Date:** June 30, 2024 10°C or colder Storage: Ship: Ambient

### CERTIFIED VALUES

Component #	-		Compound	Grav. (weight/	and the state of t		Expanded U (95% C.L.; K		
1	1,4-Dichl CAS# Purity	3855-82-1 99%	(Lot PR-30447)	25,040.0	μg/mL	+/- +/- +/-	231.7249 1,415.4955 1,448.0851	μg/mL μg/mL μg/mL	Gravimetric Unstressed Stressed
2	1,4-Diflu CAS# Purity	orobenzene 540-36-3 99%	(Lot MKBN8571V)	25,216.0	μg/mL	+/- +/- +/-	233.3536 1,425.4447 1,458.2633	μg/mL μg/mL μg/mL	Gravimetric Unstressed Stressed
3	Chlorobe CAS # Purity	nzene-d5 3114-55-4 99%	(Lot PR-29571)	25,120.0	μg/mL	+/- +/- +/-	232.4652 1,420.0178 1,452.7116	μg/mL μg/mL μg/mL	Gravimetric Unstressed Stressed
4	Pentafluo CAS# Purity	70benzene 363-72-4 99%	(Lot MKCK2250)	25,092.0	μg/mL	+/- +/- +/-	232.2061 1,418.4350 1,451.0923	μg/mL μg/mL μg/mL	Gravimetric Unstressed Stressed

Solvent: P&T Methanol

CAS# 67-56-1

Purity 99%

Walker Workman - Operations Technician I

Date Mixed:

18-Jun-2021

Balance: 1128360905

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

### General Certified Reference Material Notes

### **Expiration Notes:**

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

### **Purity Notes:**

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

### Certified Uncertainty Value Notes:

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

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

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

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

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

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

### Manufacturing Notes:

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

### Handling Notes:

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



### Safety Data Sheet

Revision Date: 05/24/21

www.restek.com

555581 / Custom 8260 Internal Standard Mix

2 Letter ISO country code/language code: US/EN

### 1. IDENTIFICATION

Catalog Number / Product Name:

Company:

Address:

Phone#: Fax#:

Emergency#:

Email: **Revision Number:** 

Intended use:

www.restek.com

For Laboratory use only

800-424-9300 (CHEMTREC)

703-527-3887 (Outside the US)

Restek Corporation

110 Benner Circle Bellefonte, Pa. 16823

814-353-1300

814-353-1309

### 2. HAZARD(S)IDENTIFICATION

### **Emergency Overview:**









Specific Target Organ Systemic Toxicity (STOT) - Single Exposure Category 1

Classification:

Flammable Liquid Category 2 Acute Toxicity - Dermal Category 3 Acute Toxicity - Oral Category 3

**GHS Signal** 

Word:

GHS

Danger

GHS Hazard:

Highly flammable liquid and vapour. Toxic if swallowed or in contact with skin.

Causes damage to organs.

**GHS** 

Precautions:

Safety Precautions: Keep away from heat/sparks/open flames/hot surfaces. - No smoking.

Keep container tightly closed.

Ground/bond container and receiving equipment.

Use explosion-proof electrical/ventilation and lighting equipment.

Use only non-sparking tools.

Take precautionary measures against static discharge. Do not breathe dust/fume/gas/mist/vapours/spray. Wash hands and skin thoroughly after handling. Do not eat, drink or smoke when using this product.

Wear protective gloves/protective clothing/eye protection/face protection.

First Aid

IF SWALLOWED: Immediately call a POISON CENTER/doctor/....

Measures: IF ON SKIN: Wash with plenty of soap and water.

IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.

IF exposed: Call a POISON CENTER or doctor/physician. Call a POISON CENTER or doctor/physician if you feel unwell.

Specific treatment see section 4.

Take off immediately all contaminated clothing and wash it before reuse. In case of fire: Use extinguishing media in section 5 for extinction.

Storage:

Keep container tightly closed.

Store in a well-ventilated place. Keep cool.

Store locked up.

Disposal:

Dispose of contents/container according to section 13 of the SDS.

Single Exposure Specific target organ toxicity - Single exposure - STOT SE 1: H370 Causes damage to organs. (C >= 10 %; No information to prove exclusion of certain routes of exposure); Specific target organ toxicity - Single exposure -STOT SE 2: H371 May cause damage to organs. (3 % <= C <10 %; Concentration limits for acute toxicity cannot

Target Organs:

be translated into GHS from the DSD especially when minimum classifications are given)

Repeated

Exposure **Target Organs:**  No data available

### 3. COMPOSITION / INFORMATION ON INGREDIENT

Chemical Name	CAS#	EINEC#	% Composition
P&T Methanol	67-56-1	200-659-6	90
1,4-difluorobenzene	540-36-3	208-742-9	2.5
pentafluorobenzene	363-72-4	206-658-7	2.5
1,4-dichlorobenzene-d4	3855-82-1		2.5
chlorobenzene-d5	3114-55-4	221-482-0	2.5

### 4. FIRST-AID MEASURES

Inhalation: Remove to fresh air. If breathing is difficult, have a trained individual administer oxygen. If not

breathing, give artificial respiration and have a trained individual administer oxygen. Get

medical attention immediately

Eyes:

Flush eyes with plenty of water for at least 20 minutes retracting eyelids often. Tilt the head to

prevent chemical from transferring to the uncontaminated eye. Get immediate medical

Skin Contact:

Wash with soap and water. Remove contaminated clothing and launder. Get medical

attention if irritation develops or persists.

Ingestion:

Do not induce vomiting and seek medical attention immediately. Drink two glasses of water or

milk to dilute. Provide medical care provider with this SDS.

### 5. FIRE- FIGHTING MEASURES

Extinguishing Media:

Use alcohol resistant foam, carbon dioxide, or dry chemical extinguishing agents. Water may be ineffective but water spray can be used extinguish a fire if swept across the base of the flames. Water can absorb heat and keep exposed material from being damaged by fire. Use alcohol resistant foam, carbon dioxide, dry chemical, or water spray when fighting fires. Water or foam may cause frothing if liquid is burning but it still may be a useful extinguishing agent if carefully applied to the fire. Do not direct a

water stream directly into the hot burning liquid.

Fire and/or Explosion Hazards:

Vapors may be ignited by heat, sparks, flames or other sources of ignition at or above the low flash point giving rise to a fire (Class B). Vapors are heavier than air and may travel to a source of ignition and

flash back.

Fire Fighting Methods and Protection:

Do not enter fire area without proper protection including self-contained breathing apparatus and full protective equipment. Fight fire from a safe distance and a protected location due to the potential of hazardous vapors and decomposition products. Flammable component(s) of this material may be lighter than water and burn while floating on the surface.

**Hazardous Combustion Products:** 

Carbon dioxide, Carbon monoxide

### 6. ACCIDENTAL RELEASE MEASURES

Personal Precautions and Equipment:

Exposure to the spilled material may be severely irritating or toxic. Follow personal protective equipment recommendations found in Section 8 of this SDS. Personal protective equipment needs must be evaluated based on information provided on this sheet and the special circumstances created by the spill including; the material spilled, the quantity of the spill, the area in which the spill occurred, and the expertise of employees in the area responding to the spill. Never exceed any occupational exposure

limits.

Methods for Clean-up: Prevent the spread of any spill to minimize harm to human health and the

environment if safe to do so. Wear complete and proper personal protective equipment following the recommendation of Section 8 at a minimum. Dike with suitable absorbent material like granulated clay. Gather and store in a sealed container pending a waste disposal

evaluation.

### 7. HANDLING AND STORAGE

Handling Technical Measures and Precautions: Toxic or severely irritating material. Avoid contacting and avoid

breathing the material. Use only in a well ventilated area. Use

spark-proof tools and explosion-proof equipment

Storage Technical Measures and Conditions: Store in a cool dry ventilated location. Isolate from

incompatible materials and conditions. Keep container(s)

closed. Keep away from sources of ignition

### 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

United States:					
Chemical Name	CAS No.	IDLH	ACGIH STEL	ACGIH TLV-TWA	OSHA Exposure Limit
P&T Methanol	67-56-1	6000 ppm IDLH	250 ppm STEL	200 ppm TWA	200 ppm TWA; 260 mg/m3 TWA
1,4-difluorobenzene	540-36-3	Not established	None Known	Not established	No data available
pentafluorobenzene	363-72-4	Not established	None Known	Not established	No data available
1,4-dichlorobenzene- d4	3855-82-1	Not established	None Known	Not established	No data available
chlorobenzene-d5	3114-55-4	Not established	None Known	Not established	No data available

Personal Protection:

Engineering Measures: Local exhaust ventilation is recommended when generating excessive levels of

vapours from handling or thermal processing.

Respiratory Protection: Respiratory protection may be required to avoid overexposure when handling this

product. General or local exhaust ventilation is the preferred means of protection. Use a respirator if general room ventilation is not available or sufficient to eliminate symptoms. If an exposure limit is exceeded or if an operator is

experiencing symptoms of inhalation overexposure as explained in Section 3,

provide respiratory protection.

Eye Protection: Wear chemically resistant safety glasses with side shields when handling this

product. Do not wear contact lenses.

Skin Protection: Wear protective gloves. Inspect gloves for chemical break-through and replace at

regular intervals. Clean protective equipment regularly. Wash hands and other exposed areas with mild soap and water before eating, drinking, and when

leaving work

### 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance, color: No data available

Odor: Mild

Physical State: No data available

pH: Not applicable
Vapor Pressure: No data available

Vapor Density: 1.1 (air = 1)
Boiling Point (°C): 64.7 °C at 760 mmHg (HSDB)

Melting Point (°C): -98 °C Flash Point (°F): 36

Flammability: Highly Flammable

Upper Flammable/Explosive Limit, % in air: 36 Lower Flammable/Explosive Limit, % in air: 6

Autoignition Temperature (°C): 464 deg C

Decomposition Temperature (°C): No data available

Specific Gravity: 0.791 - 0.792 g/cm3 at 20 °C

Evaporation Rate: No data available

Odor Threshold:

Solubility:

No data available Moderate; 50-99%

Partition Coefficient: n-octanol in water:

No data available

VOC % by weight: Molecular Weight:

32.04

### 10. STABILITY AND REACTIVITY

Stability:

Stable under normal conditions.

Conditions to Avoid:

None known.

Materials to Avoid / Chemical Incompatiability:

Strong oxidizing agents

**Hazardous Decomposition Products:** 

Carbon dioxide Carbon monoxide

### 11. TOXICOLOGICAL INFORMATION

Routes of Entry:

Inhalation, Skin Contact, Eye Contact, Ingestion Eyes, Central nervous system stimulation, Skin, GI

Tract, Respiratory Tract

Chemical Interactions That Change Toxicity:

Target Organs Potentially Affected By Exposure:

None Known

### Immediate (Acute) Health Effects by Route of Exposure:

Inhalation Irritation:

Can cause moderate respiratory irritation, dizziness, weakness, fatigue, nausea

and headache.

Inhalation Toxicity:

and neadache. Harmful! Can cause systemic damage (see "Target Organs)Methanol can cause

central nervous system depression and overexposure can cause damage to the

optic nerve resulting in visual impairment or blindness.

Skin Contact:

Can cause moderate skin irritation, defatting, and dermatitis. Not likely to cause

permanent damage.

Eye Contact:

Can cause moderate irritation, tearing and reddening, but not likely to

permanently injure eye tissue.

Ingestion Irritation:

Irritating to mouth, throat, and stomach. Can cause abdominal discomfort,

nausea, vomiting and diarrhea. Highly toxic and may be fatal if swallowed.

Ingestion Toxicity:

Toxic if swallowed. May cause target organ failure and/or death. May be fatal if

swallowed.

### Long-Term (Chronic) Health Effects:

Carcinogenicity:

No data.

Reproductive and Developmental Toxicity:

No data available to indicate product or any components present at greater than 0.1% may cause birth defects.

Upon prolonged and/or repeated exposure, can cause

Inhalation:

moderate respiratory irritation, dizziness, weakness, fatigue, nausea and headache. Harmful! Can cause systemic damage upon prolonged and/or repeated exposure (see

"Target Organs)

Skin Contact:

Upon prolonged or repeated contact, can cause

moderate skin irritation, defatting, and dermatitis. Not

likely to cause permanent damage.

Skin Absorption:

Upon prolonged or repeated exposure, harmful if absorbed through the skin. May cause severe irritation

and systemic damage

Ingestion:

Toxic if swallowed. May cause target organ failure

and/or death.

Component Toxicological Data:

NIOSH:

Chemical Name Benzene, 1,2,3,4,5-pentafluoroCAS No. 363-72-4

LD50/LC50 Oral LD50 Rat 2 g/kg

Methanol

67-56-1

Inhalation LC50 Rat 22500 ppm 8 h

Component Carcinogenic Data:

OSHA:

**Chemical Name** 

CAS No.

No data available

ACGIH:

Chemical Name

CAS No.

No data available

NIOSH:

**Chemical Name** 

CAS No.

No data available

NTP:

Chemical Name No data available CAS No.

IARC:

**Chemical Name** 

CAS No.

Group No.

### 12. ECOLOGICAL INFORMATION

Overview:

Moderate ecological hazard. This product may be dangerous

to plants and/or wildlife.

Mobility: Persistence: No data No data No data

Bioaccumulation:
Degradability:

Biodegrades slowly.

**Ecological Toxicity Data:** 

No data available

### 13. DISPOSAL CONSIDERATIONS

Waste Description of Spent Product:

Spent or discarded material is a hazardous waste. Mixing spent or discarded material with other materials may render the mixture hazardous. Perform a hazardous waste determination on mixtures.

**Disposal Methods:** 

Dispose of by incineration following Federal, State, Local,

or Provincial regulations.

Waste Disposal of Packaging:

Comply with all Local, State, Federal, and Provincial

Environmental Regulations.

### 14. TRANSPORTATION INFORMATION

**United States:** 

**DOT Proper Shipping Name:** 

Flammable liquids, n.o.s. (Methanol,

Pentafluorobenzene)

UN Number:

UN1993 3 II

Hazard Class: Packing Group:

International:

IATA Proper Shipping Name:

Flammable liquids, n.o.s. (Methanol,

Pentafluorobenzene)

UN Number: Hazard Class: UN1993 3

Packing Group:

II

### Marine Pollutant: No

Chemical Name	CAS#	Marine Pollutant	Severe Marine Pollutant
No data available			Foliatant

### 15. REGULATORY INFORMATION

The state of the s			and the second s		
United States:	040#	OFFICIAL A	CADAGAG	0.4.5.4.5.1.0	
Chemical Name	CAS#	CERCLA	SARA 313	SARA EHS 313	TSCA
P&T Methanol	67-56-1	X	X	-	X
1,4-difluorobenzene	540-36-3	-	-	-	-
pentafluorobenzene	363-72-4	-0	-		X
1,4-dichlorobenzene-d4	3855-82-1	<b>≟</b> %	-	-	·=
chlorobenzene-d5	3114-55-4	-		-	_

The following chemicals are listed on CA Prop 65:

Chemical Name	CAS#	Regulation
Methanol	67-56-1	Prop 65 Devolop Tox

State Right To Know Listing:

Chemical Name	CAS#	New Jersey	Massachusetts	Pennsylvania	California
P&T Methanol	67-56-1	X	X	X	X
1,4-difluorobenzene	540-36-3	-	-	-	-
pentafluorobenzene	363-72-4	-	-	-	7=
1,4-dichlorobenzene-d4	3855-82-1	-	-	-	-
chlorobenzene-d5	3114-55-4	-	-	-	-

### 16. OTHER INFORMATION

Prior Version Date: 12/15/

Other Information: Any changes to the SDS compared to previous versions are marked by a vertical

line in front of the concerned paragraph.

References:

No data available

Disclaimer:

Restek Corporation provides the descriptions, data and information contained herein in good faith but makes no representation as to its comprehensiveness or accuracy. It is provided for your guidance only. Because many factors may affect processing or application/use, Restek Corporation recommends you perform an assessment to determine the suitability of a product for your particular purpose prior to use. No warranties of any kind, either expressed or implied, including fitness for a particular purpose, are made regarding products described, data or information set forth. In no case shall the descriptions, information, or data provided be considered a part of our terms and conditions of sale. Further, the descriptions, data and information furnished hereunder are given gratis. No obligation or liability for the description, data and information given are assumed. All such being given



## CERTIFIED REFERENCE MATERIAL



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

## **Gravimetric Certificate**





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.

555581 Catalog No.: Lot No.: A0173600 Description: Custom 8260 Internal Standard Mix Custom 8260 Internal Standard Mix 25,000µg/mL, P&T Methanol, 1mL/ampul Container Size: 2 mL Pkg Amt: > 1 mL **Expiration Date:** June 30, 2024 10°C or colder Storage: Ship: Ambient

### CERTIFIED VALUES

Component #		C	ompound	Grav. (weight/	SCHOOL SC		Expanded U (95% C.L.; K	THE RESERVE THE PARTY OF THE PA	
1	1,4-Dich CAS# Purity	lorobenzene-d4 3855-82-1 99%	(Lot PR-30447)	25,040.0	μg/mL	+/- +/- +/-	231.7249 1,415.4955 1,448.0851	μg/mL μg/mL μg/mL	Gravimetric Unstressed Stressed
2	1,4-Diflu CAS# Purity	orobenzene 540-36-3 99%	(Lot MKBN8571V)	25,216.0	μg/mL	+/- +/- +/-	233.3536 1,425.4447 1,458.2633	μg/mL μg/mL μg/mL	Gravimetric Unstressed Stressed
3	Chlorobe CAS # Purity	enzene-d5 3114-55-4 99%	(Lot PR-29571)	25,120.0	μg/mĽ	+/- +/- +/-	232.4652 1,420.0178 1,452.7116	μg/mL μg/mL μg/mL	Gravimetric Unstressed Stressed
4	Pentafluo CAS # Purity	orobenzene 363-72-4 99%	(Lot MKCK2250)	25,092.0	μg/mL	+/- +/- +/-	232.2061 1,418.4350 1,451.0923	μg/mL μg/mL μg/mL	Gravimetric Unstressed Stressed

Solvent: P&T Methanol

CAS# 67-56-1

Purity 99%

Walker Workman - Operations Technician I

Date Mixed:

18-Jun-2021

Balance: 1128360905

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

### General Certified Reference Material Notes

### **Expiration Notes:**

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

### **Purity Notes:**

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

### Certified Uncertainty Value Notes:

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

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

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

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

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

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

### Manufacturing Notes:

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

### Handling Notes:

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



### Safety Data Sheet

Revision Date: 05/24/21

www.restek.com

555581 / Custom 8260 Internal Standard Mix

2 Letter ISO country code/language code: US/EN

### 1. IDENTIFICATION

Catalog Number / Product Name:

Company:

Address:

Phone#: Fax#:

Emergency#:

Email: **Revision Number:** 

Intended use:

800-424-9300 (CHEMTREC) 703-527-3887 (Outside the US) www.restek.com

814-353-1300

814-353-1309

Restek Corporation

110 Benner Circle Bellefonte, Pa. 16823

For Laboratory use only

### 2. HAZARD(S)IDENTIFICATION

### **Emergency Overview:**



**GHS Hazard** Symbols:





Specific Target Organ Systemic Toxicity (STOT) - Single Exposure Category 1

Classification:

Flammable Liquid Category 2 Acute Toxicity - Dermal Category 3 Acute Toxicity - Oral Category 3

**GHS Signal** 

Word:

GHS

Danger

GHS Hazard:

Highly flammable liquid and vapour. Toxic if swallowed or in contact with skin.

Causes damage to organs.

**GHS** 

Precautions:

Safety Precautions: Keep away from heat/sparks/open flames/hot surfaces. - No smoking.

Keep container tightly closed.

Ground/bond container and receiving equipment.

Use explosion-proof electrical/ventilation and lighting equipment.

Use only non-sparking tools.

Take precautionary measures against static discharge. Do not breathe dust/fume/gas/mist/vapours/spray. Wash hands and skin thoroughly after handling. Do not eat, drink or smoke when using this product.

Wear protective gloves/protective clothing/eye protection/face protection.

First Aid

IF SWALLOWED: Immediately call a POISON CENTER/doctor/....

Measures: IF ON SKIN: Wash with plenty of soap and water.

IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.

IF exposed: Call a POISON CENTER or doctor/physician. Call a POISON CENTER or doctor/physician if you feel unwell.

Specific treatment see section 4.

Take off immediately all contaminated clothing and wash it before reuse. In case of fire: Use extinguishing media in section 5 for extinction.

Storage:

Keep container tightly closed.

Store in a well-ventilated place. Keep cool.

Store locked up.

Disposal:

Dispose of contents/container according to section 13 of the SDS.

Single Exposure Specific target organ toxicity - Single exposure - STOT SE 1: H370 Causes damage to organs. (C >= 10 %; No information to prove exclusion of certain routes of exposure); Specific target organ toxicity - Single exposure -STOT SE 2: H371 May cause damage to organs. (3 % <= C <10 %; Concentration limits for acute toxicity cannot

Target Organs:

be translated into GHS from the DSD especially when minimum classifications are given)

Repeated

Exposure **Target Organs:**  No data available

### 3. COMPOSITION / INFORMATION ON INGREDIENT

Chemical Name	CAS#	EINEC#	% Composition
P&T Methanol	67-56-1	200-659-6	90
1,4-difluorobenzene	540-36-3	208-742-9	2.5
pentafluorobenzene	363-72-4	206-658-7	2.5
1,4-dichlorobenzene-d4	3855-82-1		2.5
chlorobenzene-d5	3114-55-4	221-482-0	2.5

### 4. FIRST-AID MEASURES

Inhalation: Remove to fresh air. If breathing is difficult, have a trained individual administer oxygen. If not

breathing, give artificial respiration and have a trained individual administer oxygen. Get

medical attention immediately

Eyes:

Flush eyes with plenty of water for at least 20 minutes retracting eyelids often. Tilt the head to

prevent chemical from transferring to the uncontaminated eye. Get immediate medical

attention.

Skin Contact:

Wash with soap and water. Remove contaminated clothing and launder. Get medical

attention if irritation develops or persists.

Ingestion:

Do not induce vomiting and seek medical attention immediately. Drink two glasses of water or

milk to dilute. Provide medical care provider with this SDS.

### 5. FIRE-FIGHTING MEASURES

Extinguishing Media:

Use alcohol resistant foam, carbon dioxide, or dry chemical extinguishing agents. Water may be ineffective but water spray can be used extinguish a fire if swept across the base of the flames. Water can absorb heat and keep exposed material from being damaged by fire. Use alcohol resistant foam, carbon dioxide, dry chemical, or water spray when fighting fires. Water or foam may cause frothing if liquid is burning but it still may be a useful extinguishing agent if carefully applied to the fire. Do not direct a

water stream directly into the hot burning liquid.

Fire and/or Explosion Hazards:

Vapors may be ignited by heat, sparks, flames or other sources of ignition at or above the low flash point giving rise to a fire (Class B). Vapors are heavier than air and may travel to a source of ignition and

flash back.

Fire Fighting Methods and Protection:

Do not enter fire area without proper protection including self-contained breathing apparatus and full protective equipment. Fight fire from a safe distance and a protected location due to the potential of hazardous vapors and decomposition products. Flammable component(s) of this material may be lighter than water and burn while floating on the surface.

Carbon dioxide, Carbon monoxide **Hazardous Combustion Products:** 

### 6. ACCIDENTAL RELEASE MEASURES

Personal Precautions and Equipment:

Exposure to the spilled material may be severely irritating or toxic. Follow personal protective equipment recommendations found in Section 8 of this SDS. Personal protective equipment needs must be evaluated based on information provided on this sheet and the special circumstances created by the spill including; the material spilled, the quantity of the spill, the area in which the spill occurred, and the expertise of employees in the area responding to the spill. Never exceed any occupational exposure

Methods for Clean-up: Prevent the spread of any spill to minimize harm to human health and the

> environment if safe to do so. Wear complete and proper personal protective equipment following the recommendation of Section 8 at a minimum. Dike with suitable absorbent material like granulated clay. Gather and store in a sealed container pending a waste disposal

evaluation.

### 7. HANDLING AND STORAGE

Handling Technical Measures and Precautions: Toxic or severely irritating material. Avoid contacting and avoid

breathing the material. Use only in a well ventilated area. Use

spark-proof tools and explosion-proof equipment

Storage Technical Measures and Conditions: Store in a cool dry ventilated location. Isolate from

incompatible materials and conditions. Keep container(s)

closed. Keep away from sources of ignition

### 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

United States:					
Chemical Name	CAS No.	IDLH	ACGIH STEL	ACGIH TLV-TWA	OSHA Exposure Limit
P&T Methanol	67-56-1	6000 ppm IDLH	250 ppm STEL	200 ppm TWA	200 ppm TWA; 260 mg/m3 TWA
1,4-difluorobenzene	540-36-3	Not established	None Known	Not established	No data available
pentafluorobenzene	363-72-4	Not established	None Known	Not established	No data available
1,4-dichlorobenzene- d4	3855-82-1	Not established	None Known	Not established	No data available
chlorobenzene-d5	3114-55-4	Not established	None Known	Not established	No data available

Personal Protection:

Vapor Density:

**Engineering Measures:** Local exhaust ventilation is recommended when generating excessive levels of

vapours from handling or thermal processing.

Respiratory Protection: Respiratory protection may be required to avoid overexposure when handling this

product. General or local exhaust ventilation is the preferred means of protection. Use a respirator if general room ventilation is not available or sufficient to eliminate symptoms. If an exposure limit is exceeded or if an operator is

experiencing symptoms of inhalation overexposure as explained in Section 3,

provide respiratory protection.

Eye Protection: Wear chemically resistant safety glasses with side shields when handling this

product. Do not wear contact lenses.

Wear protective gloves. Inspect gloves for chemical break-through and replace at Skin Protection:

regular intervals. Clean protective equipment regularly. Wash hands and other exposed areas with mild soap and water before eating, drinking, and when

leaving work

1.1 (air = 1)

### 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance, color: No data available

Odor: Mild

**Physical State:** No data available pH: Not applicable Vapor Pressure: No data available

Boiling Point (°C): 64.7 °C at 760 mmHg (HSDB)

Melting Point (°C): -98 °C Flash Point (°F): 36

Flammability: Highly Flammable

Upper Flammable/Explosive Limit, % in air: Lower Flammable/Explosive Limit, % in air: 6

Autoignition Temperature (°C): 464 deg C

Decomposition Temperature (°C): No data available

Specific Gravity: 0.791 - 0.792 g/cm3 at 20 °C

**Evaporation Rate:** No data available Odor Threshold:

Solubility:

No data available Moderate; 50-99%

Partition Coefficient: n-octanol in water:

No data available

VOC % by weight: Molecular Weight:

32.04

### 10. STABILITY AND REACTIVITY

Stability:

Stable under normal conditions.

Conditions to Avoid:

None known.

Materials to Avoid / Chemical Incompatiability:

Strong oxidizing agents

**Hazardous Decomposition Products:** 

Carbon dioxide Carbon monoxide

### 11. TOXICOLOGICAL INFORMATION

Routes of Entry:

Inhalation, Skin Contact, Eye Contact, Ingestion Eyes, Central nervous system stimulation, Skin, GI

Target Organs Potentially Affected By Exposure:

Tract, Respiratory Tract

Chemical Interactions That Change Toxicity:

None Known

### Immediate (Acute) Health Effects by Route of Exposure:

Inhalation Irritation:

Can cause moderate respiratory irritation, dizziness, weakness, fatigue, nausea

and headache.

Inhalation Toxicity:

Harmful! Can cause systemic damage (see "Target Organs)Methanol can cause

central nervous system depression and overexposure can cause damage to the

optic nerve resulting in visual impairment or blindness.

Skin Contact:

Can cause moderate skin irritation, defatting, and dermatitis. Not likely to cause

permanent damage.

Eye Contact:

Can cause moderate irritation, tearing and reddening, but not likely to

permanently injure eye tissue.

Ingestion Irritation:

Irritating to mouth, throat, and stomach. Can cause abdominal discomfort,

nausea, vomiting and diarrhea. Highly toxic and may be fatal if swallowed.

Ingestion Toxicity:

Toxic if swallowed. May cause target organ failure and/or death. May be fatal if

swallowed.

Long-Term (Chronic) Health Effects:

Carcinogenicity:

No data.

Reproductive and Developmental Toxicity:

No data available to indicate product or any components present at greater than 0.1% may cause birth defects.

Inhalation:

Upon prolonged and/or repeated exposure, can cause moderate respiratory irritation, dizziness, weakness, fatigue, nausea and headache Harmfull Can cause systemic

nausea and headache.Harmful! Can cause systemic damage upon prolonged and/or repeated exposure (see "Target Organs)

Skin Contact:

Upon prolonged or repeated contact, can cause

moderate skin irritation, defatting, and dermatitis. Not

likely to cause permanent damage.

Skin Absorption:

Upon prolonged or repeated exposure, harmful if

absorbed through the skin. May cause severe irritation

and systemic damage

Ingestion:

Toxic if swallowed. May cause target organ failure

and/or death.

Component Toxicological Data:

NIOSH:

Chemical Name

CAS No. 363-72-4

LD50/LC50

Benzene, 1,2,3,4,5-pentafluoro-

363-72-4

Oral LD50 Rat 2 g/kg

Methanol

67-56-1

Inhalation LC50 Rat 22500 ppm 8 h

Component Carcinogenic Data:

OSHA:

**Chemical Name** 

CAS No.

No data available

ACGIH:

Chemical Name

CAS No.

No data available

NIOSH:

**Chemical Name** 

CAS No.

No data available

NTP:

Chemical Name No data available CAS No.

IARC:

**Chemical Name** 

CAS No.

Group No.

### 12. ECOLOGICAL INFORMATION

Overview:

Moderate ecological hazard. This product may be dangerous

to plants and/or wildlife.

Mobility: Persistence: No data No data No data

Bioaccumulation:
Degradability:

Biodegrades slowly.

**Ecological Toxicity Data:** 

No data available

### 13. DISPOSAL CONSIDERATIONS

Waste Description of Spent Product:

Spent or discarded material is a hazardous waste. Mixing spent or discarded material with other materials may render the mixture hazardous. Perform a hazardous waste determination on mixtures.

Disposal Methods:

Dispose of by incineration following Federal, State, Local,

or Provincial regulations.

Waste Disposal of Packaging:

Comply with all Local, State, Federal, and Provincial

Environmental Regulations.

### 14. TRANSPORTATION INFORMATION

**United States:** 

**DOT Proper Shipping Name:** 

Flammable liquids, n.o.s. (Methanol,

Pentafluorobenzene)

UN Number:

UN1993 3

Hazard Class: Packing Group:

3 II

International:

IATA Proper Shipping Name:

Flammable liquids, n.o.s. (Methanol,

Pentafluorobenzene)

UN Number: Hazard Class:

Packing Group:

UN1993 3

11

Marine Pollutant: No

Chemical Name

CAS#

Marine Pollutant

Severe Marine
Pollutant

No data available

### 15. REGULATORY INFORMATION

United States:					
Chemical Name	CAS#	CERCLA	SARA 313	SARA EHS 313	TSCA
P&T Methanol	67-56-1	X	X	<u>-</u>	X
1,4-difluorobenzene	540-36-3	-	-	-	r <del>=</del>
pentafluorobenzene	363-72-4	=2	:=	=	X
1,4-dichlorobenzene-d4	3855-82-1	<u>-</u> :	_	_	=
chlorobenzene-d5	3114-55-4	-	.=	-	_

The following chemicals are listed on CA Prop 65:

Chemical Name	CAS#	Regulation
Methanol	67-56-1	Prop 65 Devolop Tox

State Right To Know Listing:

Chemical Name	CAS#	New Jersey	Massachusetts	Pennsylvania	California
P&T Methanol	67-56-1	X	X	X	X
1,4-difluorobenzene	540-36-3	-	-	-	-
pentafluorobenzene	363-72-4	-	-	-	7=
1,4-dichlorobenzene-d4	3855-82-1	-	-	-	-
chlorobenzene-d5	3114-55-4	-	-	-	-

### 16. OTHER INFORMATION

Prior Version Date: 12/15/

Other Information: Any changes to the SDS compared to previous versions are marked by a vertical

line in front of the concerned paragraph.

References:

No data available

Disclaimer:

Restek Corporation provides the descriptions, data and information contained herein in good faith but makes no representation as to its comprehensiveness or accuracy. It is provided for your guidance only. Because many factors may affect processing or application/use, Restek Corporation recommends you perform an assessment to determine the suitability of a product for your particular purpose prior to use. No warranties of any kind, either expressed or implied, including fitness for a particular purpose, are made regarding products described, data or information set forth. In no case shall the descriptions, information, or data provided be considered a part of our terms and conditions of sale. Further, the descriptions, data and information furnished hereunder are given gratis. No obligation or liability for the description, data and information given are assumed. All such being given



# CERTIFIED REFERENCE MATERIAL



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

Fax: (814)353-1309

www.restek.com

## **Certificate of Analysis**





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

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

Catalog No. :	30225	Lot No.:	A0176219	
Description :	Bromochloromethane Standard			
	Bromochloromethane 2000µg/mL	, P&T Methanol, 1mL	/ampul	
Container Size :	2 mL	Pkg Amt:	> 1 mL	
Expiration Date :	September 30, 2026	Storage:	0°C or colder	
		Ship:	Ambient	

### CERTIFIED VALUES

Elution Order	Compound		Grav. Conc. (weight/volume)			Expanded Uncertainty (95% C.L.; K=2)		
1	Bromochloromethane CAS # 74-97-5 Purity 99%	(Lot 00008541)	2,016.0	μg/mL	+/- +/- +/-	11.9744 113.0617 115.7059	μg/mL μg/mL μg/mL	Gravimetric Unstressed Stressed
Solvent:	P&T Methanol CAS # 67-56-1 Purity 99%					415-5-5		***************************************

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

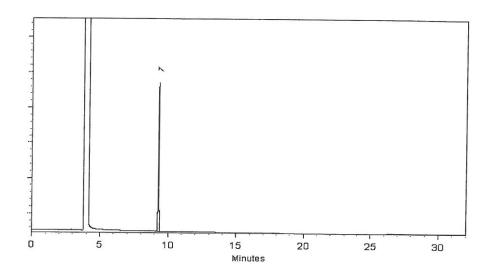
@ 8°C/min. (hold 5 min.)

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.

Date Mixed:

08-Sep-2021

Balance: 1128353505

Marlina Cowan - Operations Tech I

Date Passed:

10-Sep-2021

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

### General Certified Reference Material Notes

### **Expiration Notes:**

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

### **Purity Notes:**

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

### Certified Uncertainty Value Notes:

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

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

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

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

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

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

### Manufacturing Notes:

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

### Handling Notes:

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# CERTIFIED REFERENCE MATERIAL



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

Fax: (814)353-1309

www.restek.com

## **Certificate of Analysis**





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

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

Catalog No. :	30225	Lot No.:	A0176219	
Description :	Bromochloromethane Standard			
	Bromochloromethane 2000µg/mL	, P&T Methanol, 1mL	/ampul	
Container Size :	2 mL	Pkg Amt:	> 1 mL	
Expiration Date :	September 30, 2026	Storage:	0°C or colder	
		Ship:	Ambient	

### CERTIFIED VALUES

Elution Order	Compound		Grav. Conc. (weight/volume)			Expanded Uncertainty (95% C.L.; K=2)		
1	Bromochloromethane CAS # 74-97-5 Purity 99%	(Lot 00008541)	2,016.0	μg/mL	+/- +/- +/-	11.9744 113.0617 115.7059	μg/mL μg/mL μg/mL	Gravimetric Unstressed Stressed
Solvent:	P&T Methanol CAS # 67-56-1 Purity 99%					415-5-5		***************************************

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

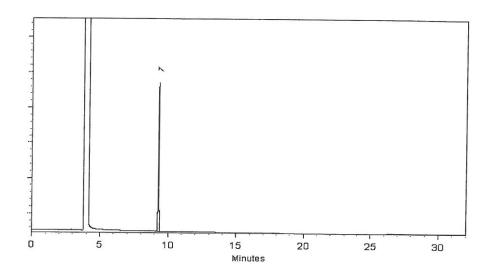
@ 8°C/min. (hold 5 min.)

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.

Date Mixed:

08-Sep-2021

Balance: 1128353505

Marlina Cowan - Operations Tech I

Date Passed:

10-Sep-2021

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

### General Certified Reference Material Notes

### **Expiration Notes:**

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

### **Purity Notes:**

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  correction factor is used to calculate the amount of compound necessary to achieve the desired concentration of the
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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 ordered item. Additionally, Restek sells DMDCS for the purpose of glassware deactivation as catalog number 31861, which includes complete instructions.





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

Fax: (814)353-1309

www.restek.com

# **Certificate of Analysis**





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

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

Catalog No. :	30225	Lot No.:	A0176219	
Description :	Bromochloromethane Standard			
	Bromochloromethane 2000µg/mL	, P&T Methanol, 1mL	/ampul	
Container Size :	2 mL	Pkg Amt:	> 1 mL	
Expiration Date :	September 30, 2026	Storage:	0°C or colder	
		Ship:	Ambient	

### CERTIFIED VALUES

Elution Order	Compound		Grav. Conc. (weight/volume)			Expanded Uncertainty (95% C.L.; K=2)		
1	Bromochloromethane CAS # 74-97-5 Purity 99%	(Lot 00008541)	2,016.0	μg/mL	+/- +/- +/-	11.9744 113.0617 115.7059	μg/mL μg/mL μg/mL	Gravimetric Unstressed Stressed
Solvent:	P&T Methanol CAS # 67-56-1 Purity 99%					41 - 53 *		***************************************

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

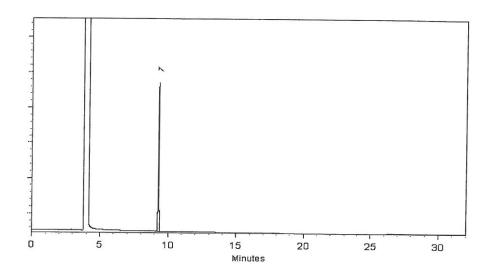
@ 8°C/min. (hold 5 min.)

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.

Date Mixed:

08-Sep-2021

Balance: 1128353505

Marlina Cowan - Operations Tech I

Date Passed:

10-Sep-2021

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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:

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

# Handling Notes:

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# **Certificate of Analysis**





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Container Size :	2 mL	Pkg Amt:	> 1 mL	
Expiration Date :	September 30, 2026	Storage:	0°C or colder	
		Ship:	Ambient	

### CERTIFIED VALUES

Elution Order	Compound		Grav. Conc. (weight/volume)			Expanded Uncertainty (95% C.L.; K=2)		
1	Bromochloromethane CAS # 74-97-5 Purity 99%	(Lot 00008541)	2,016.0	μg/mL	+/- +/- +/-	11.9744 113.0617 115.7059	μg/mL μg/mL μg/mL	Gravimetric Unstressed Stressed
Solvent:	P&T Methanol CAS # 67-56-1 Purity 99%					41 - 53 *		***************************************

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

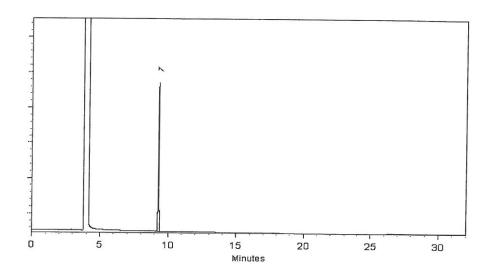
@ 8°C/min. (hold 5 min.)

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.

Date Mixed:

08-Sep-2021

Balance: 1128353505

Marlina Cowan - Operations Tech I

Date Passed:

10-Sep-2021

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# Manufacturing Notes:

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

# Handling Notes:

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# **Certificate of Analysis**





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Description :	Bromochloromethane Standard			
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Container Size :	2 mL	Pkg Amt:	> 1 mL	
Expiration Date :	September 30, 2026	Storage:	0°C or colder	
		Ship:	Ambient	

### CERTIFIED VALUES

Elution Order	Compound		Grav. Conc. (weight/volume)			Expanded Uncertainty (95% C.L.; K=2)		
1	Bromochloromethane CAS # 74-97-5 Purity 99%	(Lot 00008541)	2,016.0	μg/mL	+/- +/- +/-	11.9744 113.0617 115.7059	μg/mL μg/mL μg/mL	Gravimetric Unstressed Stressed
Solvent:	P&T Methanol CAS # 67-56-1 Purity 99%					41 - 53 *		***************************************

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

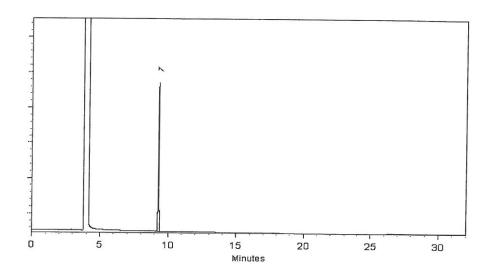
@ 8°C/min. (hold 5 min.)

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.

Date Mixed:

08-Sep-2021

Balance: 1128353505

Marlina Cowan - Operations Tech I

Date Passed:

10-Sep-2021

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# Handling Notes:

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ACCREDITED
ISO 17034 Accredited
Reference Material Producer
Certificate 43222.01

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

**Certificate of Composition** 





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.:

555408-SL

Lot No.: A0187421

Description:

Custom Vinyl Acetate Standard

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

Container Size:

2 mL

**Purity** 

99%

Pkg Amt:

> 1 mL

Expiration Date:

January 31, 2024

Storage:

-20°C or colder

Handling:

This product is photosensitive.

Ship: On Ice

# CERTIFIED VALUES

Elution Order		Compound		Grav. Conc. (weight/volume)			Expanded Uncertainty (95% C.L.; K=2)		
1	Vinyl ac CAS # Purity	cetate 108-05-4 99%	(Lot RD220630)	8,078.0	μg/mL	+/- +/- +/-	47.4062 487.4241 488.5812	μg/mL μg/mL μg/mL	Gravimetric Unstressed Stressed
Solvent:	P&T M	ethanol 67-56-1							

#### 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.

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.)

@ 8°C/min. (hold 5 r

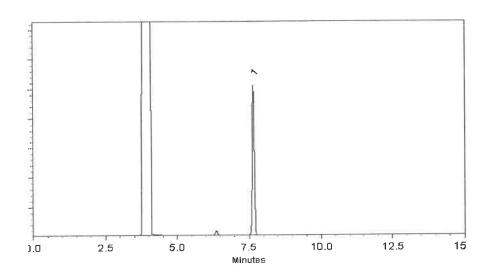
200°C

Det. Temp:

250°C

Det. Type:

FID FID



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Bethany Lowery - Operations Tech |

Date Mixed:

18-Jul-2022

Balance: B251644995

Fang-Yuri Weaver - Operations Lead Tech - ARM QC

Date Passed:

26-Jul-2022

SEASONED IN MARKANITA VILANI, SA. 20.7 SI

#### **Expiration Notes:**

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- Uncertainty, concentration, and expiration of the CRM are based on the unopened product being stored according to the recommended condition found in the storage field.

#### **Purity Notes:**

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

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

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

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

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

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

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

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

#### Manufacturing Notes

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

### **Handling Notes:**

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

***				



ACCREDITED
ISO 17034 Accredited
Reference Material Producer
Certificate 43222.01

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

**Certificate of Composition** 





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.:

555408-SL

Lot No.: A0187421

Description:

Custom Vinyl Acetate Standard

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

Container Size:

2 mL

**Purity** 

99%

Pkg Amt:

> 1 mL

Expiration Date:

January 31, 2024

Storage:

-20°C or colder

Handling:

This product is photosensitive.

Ship: On Ice

# CERTIFIED VALUES

Elution Order		Compound		Grav. Conc. (weight/volume)			Expanded Uncertainty (95% C.L.; K=2)		
1	Vinyl ac CAS # Purity	cetate 108-05-4 99%	(Lot RD220630)	8,078.0	μg/mL	+/- +/- +/-	47.4062 487.4241 488.5812	μg/mL μg/mL μg/mL	Gravimetric Unstressed Stressed
Solvent:	P&T M	ethanol 67-56-1							

#### 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.

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.)

@ 8°C/min. (hold 5 r

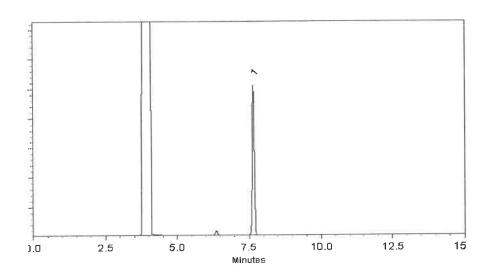
200°C

Det. Temp:

250°C

Det. Type:

FID 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 |

Date Mixed:

18-Jul-2022

Balance: B251644995

Fang-Yuri Weaver - Operations Lead Tech - ARM QC

Date Passed:

26-Jul-2022

SEASONED IN MARKANITA VILANI, SA. 20.7 SI

#### **Expiration Notes:**

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

#### **Purity Notes:**

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

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

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

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

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

- It is important to note that the shipping stability uncertainty was obtained under temperature extremes for specific time intervals; therefore, the certified combined stressed uncertainty value should only be applied to the product if it was stored at non-standard temperature conditions up to and including 7 days. Contact Restek Technical Service at <a href="https://www.restek.com/Contact-Us">www.restek.com/Contact-Us</a> for use recommendations if your shipment was in-transit for more than 7 days at non-standard temperature conditions.
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0°C or colder (Freezer) -20°C or colder (Deep Freezer)	< 25°C	≥ 25°C up to 7 days		

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

#### Manufacturing Notes

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

### **Handling Notes:**

Stability of the unopened product, when stored in compliance with the recommended conditions, is guaranteed through
the expiration displayed on the product label and certificate. Contact Restek for additional opened product stability
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most standards packed in 2mL ampules. Larger volume deactivated vials are available through Restek as a custom
ordered item. Additionally, Restek sells DMDCS for the purpose of glassware deactivation as catalog number 31861,
which includes complete instructions.

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Certificate 43222.01

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

**Certificate of Composition** 





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.:

555408-SL

Lot No.: A0187421

Description:

Custom Vinyl Acetate Standard

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

Container Size:

2 mL

**Purity** 

99%

Pkg Amt:

> 1 mL

Expiration Date:

January 31, 2024

Storage:

-20°C or colder

Handling:

This product is photosensitive.

Ship: On Ice

# CERTIFIED VALUES

Elution Order		Compound		Grav. Conc. (weight/volume)			Expanded Uncertainty (95% C.L.; K=2)		
1	Vinyl ac CAS # Purity	cetate 108-05-4 99%	(Lot RD220630)	8,078.0	μg/mL	+/- +/- +/-	47.4062 487.4241 488.5812	μg/mL μg/mL μg/mL	Gravimetric Unstressed Stressed
Solvent:	P&T M	ethanol 67-56-1							

#### 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.

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.)

@ 8°C/min. (hold 5 r

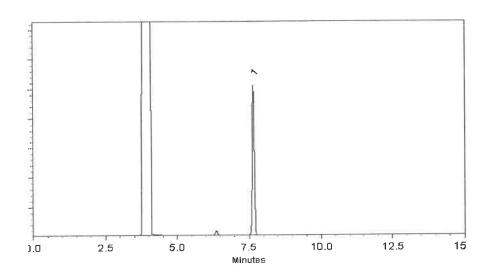
200°C

Det. Temp:

250°C

Det. Type:

FID 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 |

Date Mixed:

18-Jul-2022

Balance: B251644995

Fang-Yuri Weaver - Operations Lead Tech - ARM QC

Date Passed:

26-Jul-2022

SEASONED IN MARKANITA VILANI, SA. 20.7 SI

#### **Expiration Notes:**

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#### **Purity Notes:**

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

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

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

#### Manufacturing Notes

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

### **Handling Notes:**

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



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

**Certificate of Composition** 





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.:

555408-SL

Lot No.: A0187421

Description:

Custom Vinyl Acetate Standard

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

Container Size:

2 mL

**Purity** 

99%

Pkg Amt:

> 1 mL

Expiration Date:

January 31, 2024

Storage:

-20°C or colder

Handling:

This product is photosensitive.

Ship: On Ice

# CERTIFIED VALUES

Elution Order		Compound		Grav. Conc. (weight/volume)			Expanded Uncertainty (95% C.L.; K=2)		
1	Vinyl ac CAS # Purity	cetate 108-05-4 99%	(Lot RD220630)	8,078.0	μg/mL	+/- +/- +/-	47.4062 487.4241 488.5812	μg/mL μg/mL μg/mL	Gravimetric Unstressed Stressed
Solvent:	P&T M	ethanol 67-56-1							

#### 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.

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.)

@ 8°C/min. (hold 5 r

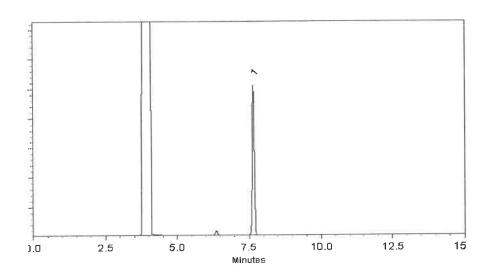
200°C

Det. Temp:

250°C

Det. Type:

FID 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 |

Date Mixed:

18-Jul-2022

Balance: B251644995

Fang-Yuri Weaver - Operations Lead Tech - ARM QC

Date Passed:

26-Jul-2022

SEASONED IN MARKANITA VILANI, SA. 20.7 SI

#### **Expiration Notes:**

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

#### **Purity Notes:**

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

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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 <a href="https://www.restek.com/Contact-Us">www.restek.com/Contact-Us</a> for use recommendations if your shipment was in-transit for more than 7 days at non-standard temperature conditions.
- Apply the certified combined unstressed uncertainty value if the product was received under standard shipping
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Label Conditions	Standard Conditions	Non-Standard Conditions		
25°C Nominal (Room Temperature)	< 60°C	≥ 60°C up to 7 days		
10°C or colder (Refrigerate)	< 40°C	≥ 40°C up to 7 days		
0°C or colder (Freezer) -20°C or colder (Deep Freezer)	< 25°C	≥ 25°C up to 7 days		

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

#### Manufacturing Notes

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

### **Handling Notes:**

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which includes complete instructions.

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



Expiration Date:

6202,05 linqA



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.

Ambient

0°C or colder

Storage:

Catalog No.: 30042 Lot No.: Ao188819

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

Container Size: 2 mL

Container Size: 2 mL

# CERTIFIED VALUES

	Trichloro CAS # Purity	oftworomethane (CFC-II) 75-69-4 99%	(F0f MKCL8411)	2,018.8	Jm/gu	-/+	245.31 2137.£11 9396.311	Layan Layan Layan	Gravimetric Unstressed Stressed
	Chloroetl Purity	hane (ethyl chloride) 75-00-3 99%	(I-411650104-701 to-I)	2,019.0	Jæ/g4	-/+ -/+ -/+	14.2283 1984.E11 41E1.A11	Дт\вц Дт\вц Дт\вц	Gravimetric Unstressed Stressed
ħ	Promom CAS #	ethane (methyl bromide) 74-83-9 99%	(Lot 101604)	2,017.0	Jm/g4	-/+ -/+ -/+	13.2023 113.2511 95939	Дт/g.ц Дт/g.ц Дт/g.ц	Gravimetric Unstressed Stressed
٤	Vinyl chi	əbirlo- 75-10-≥7 99%	(Lot 00015559)	2,018.0	hg/mJ.	-/+ -/+ -/+	0652.41 8974.611 9911.911	Jm/gu Jm/gu Jm/gu	Gravimetric Unstressed Stressed
7	Chlorom	iethane (methyl chloride) 74-87-3 99%	(Lot SHBK6571)	1,019,1	Jm/g4	-/+ -/+ -/+	07.60.41 2074.611 2611.611	Дт/g.ц Дт/g.ц	Gravimetric Unstressed Stressed
.1	Dichlord CAS# Purity	idifluoromethane (CFC-12) 75-71-8 99%	(Lot 00012554)	1.610,2	Дш/g <sub>ч</sub>	-/+ -/+ -/+	827.21 0264.211 8270.311	Дт/ди Дт/ди Дт/ди	Gravimetric Unstressed Stressed
Elution Order		unotimo		Grav. G MeightM			Expanded U		

P&T Methanol 67-56

**CV2 # 67-**26-1

Solvent:

Column: 60m x 0.25mm x 1.4µm 8tx-502.2 (cat.#10916) Carrier Gas:

helium-constant flow 2.0 mt/min.

Temp. Program:

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

:qməT .inl

Z000°C

Det. Temp: 250°C

250°C Det. Type:

**USM** 

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

Date Mixed: 22-Aug-2022 Balance: B251644995

Mitanda Kline - Operations Technician I

Date Passed: 25-Aug-2022

OD MAA - II nosT enoits 1900 - elliM eiteind

# Expiration Notes: • Expiration

- 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.
- Decimal, Echinal, Rt, sind/or metung 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 correction factor.

  A correction factor is used to calculate the amount of compound necessary to achieve the desired concentration of the parent.
- Purity of isomeric compounds is reported as the sum of the isomers.

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

# 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:

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

- 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 **includ**ing 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 non-standard temperature conditions.
- Apply the certified combined unstressed uncertainty value if the product was received under standard conditions. Apply the certified combined stressed uncertainty value if the product was received under non-standard conditions as specified below.

Non-Standard Conditions	Standard Conditions	Label Conditions
evsb 7 of qu 0°08 ≤	O.09 >	25°C Nominal (Room Temperature)
≥ 40°C up to 7 days	O₀0た >	10°C or colder (Refrigerate)
≥25°C up to 7 days	< 52°C	0°C or colder (Freezer) -20°C or colder (Deep Freezer)

- Separate (not combined) uncertainty values for gravimetric uncertainty are also displayed on the certificate, if needed, separate homogeneity between-ampul uncertainty, storage stability uncertainty and shipping stability uncertainty values are available by contacting Restek Technical Service at <a href="https://www.restek.com/Contact-Us">www.restek.com/Contact-Us</a>.
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### Manufacturing Notes:

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



Expiration Date:

6202,05 linqA



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.

Ambient

0°C or colder

Storage:

Catalog No.: 30042 Lot No.: Ao188819

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

Container Size: 2 mL

Container Size: 2 mL

# CERTIFIED VALUES

	Trichloro CAS # Purity	oftworomethane (CFC-II) 75-69-4 99%	(F0f MKCL8411)	2,018.8	Jm/gu	-/+	245.31 2137.£11 9396.311	Layan Layan Layan	Gravimetric Unstressed Stressed
	Chloroetl Purity	hane (ethyl chloride) 75-00-3 99%	(I-411650104-701 to-I)	2,019.0	Jæ/g4	-/+ -/+ -/+	14.2283 1984.E11 41E1.A11	Дт\вц Дт\вц Дт\вц	Gravimetric Unstressed Stressed
ħ	Promom CAS #	ethane (methyl bromide) 74-83-9 99%	(Lot 101604)	2,017.0	Jm/g4	-/+ -/+ -/+	13.2023 113.2511 95939	Дт/g.ц Дт/g.ц Дт/g.ц	Gravimetric Unstressed Stressed
٤	Vinyl chi	əbirlo- 75-10-≥7 99%	(Lot 00015559)	2,018.0	hg/mJ.	-/+ -/+ -/+	0652.41 8974.611 9911.911	Jm/gu Jm/gu Jm/gu	Gravimetric Unstressed Stressed
7	Chlorom	iethane (methyl chloride) 74-87-3 99%	(Lot SHBK6571)	1,019,1	Jm/g4	-/+ -/+ -/+	07.60.41 2074.611 2611.611	Дт/g.ц Дт/g.ц	Gravimetric Unstressed Stressed
.1	Dichlord CAS# Purity	idifluoromethane (CFC-12) 75-71-8 99%	(Lot 00012554)	1.610,2	Дш/g <sub>ч</sub>	-/+ -/+ -/+	827.21 0264.211 8270.311	Дт/ди Дт/ди Дт/ди	Gravimetric Unstressed Stressed
Elution Order		unotimo		Grav. G MeightM			Expanded U		

P&T Methanol 67-56

**CV2 # 67-**26-1

Solvent:

Column: 60m x 0.25mm x 1.4µm 8tx-502.2 (cat.#10916) Carrier Gas:

helium-constant flow 2.0 mt/min.

Temp. Program:

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

:qməT .inl

Z000°C

Det. Temp: 250°C

250°C Det. Type:

**USM** 

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

Date Mixed: 22-Aug-2022 Balance: B251644995

Mitanda Kline - Operations Technician I

Date Passed: 25-Aug-2022

OD MAA - II nosT enoits 1900 - elliM eiteind

# Expiration Notes: • Expiration

- 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.
- Decimal, Echinal, Rt, sind/or metung 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 correction factor.

  A correction factor is used to calculate the amount of compound necessary to achieve the desired concentration of the parent.
- Purity of isomeric compounds is reported as the sum of the isomers.

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

# 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:

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

- 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 **includ**ing 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 non-standard temperature conditions.
- Apply the certified combined unstressed uncertainty value if the product was received under standard conditions. Apply the certified combined stressed uncertainty value if the product was received under non-standard conditions as specified below.

Non-Standard Conditions	Standard Conditions	Label Conditions
evsb 7 of qu 0°08 ≤	O.09 >	25°C Nominal (Room Temperature)
≥ 40°C up to 7 days	O₀0た >	10°C or colder (Refrigerate)
≥25°C up to 7 days	< 52°C	0°C or colder (Freezer) -20°C or colder (Deep Freezer)

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

### Manufacturing Notes:

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

# Handling Notes:

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





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



Expiration Date:

6202,05 linqA



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the qualitative and/or quantitative determination of the analyte(s) listed.

Ambient

0°C or colder

Storage:

Catalog No.: 30042 Lot No.: Ao188819

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

Container Size: 2 mL

Container Size: 2 mL

#### CERTIFIED VALUES

	Trichloro CAS # Purity	oftworomethane (CFC-II) 75-69-4 99%	(F0f MKCL8411)	2,018.8	Jm/gu	-/+	245.31 2137.£11 9396.311	Jan/g.u Jan/g.u Jan/g.u	Gravimetric Unstressed Stressed
	Chloroetl CAS # Purity	hane (ethyl chloride) 75-00-3 99%	(I-411650104-701 to-I)	2,019.0	Jæ/g4	-/+ -/+ -/+	8822.41 1684.811 4181.811	Дт\g.ц Дт\g.ц Дт\g.ц	Gravimetric Unstressed Stressed
ħ	Promom CAS #	ethane (methyl bromide) 74-83-9 99%	(Lot 101604)	۵.۲10,2	Jan/g.u	-/+ -/+ -/+	13.2023 113.2511 95939	Дт/g.ц Дт/g.ц Дт/g.ц	Gravimetric Unstressed Stressed
٤	Vinyl chi	əbirlo- 75-10-≥7 99%	(Lot 00015559)	2,018.0	hg/mJ.	-/+ -/+ -/+	0652.41 8974.611 9911.911	Jm/gu Jm/gu Jm/gu	Gravimetric Unstressed Stressed
7	Chlorom	iethane (methyl chloride) 74-87-3 99%	(Lot SHBK6571)	1,610,1	Jm/g4	-/+ -/+ -/+	07.60.41 2074.611 2611.611	Дт/g.ц Дт/g.ц	Gravimetric Unstressed Stressed
.1	Dichlord CAS# Purity	idifluoromethane (CFC-12) 75-71-8 99%	(Lot 00012554)	1.610,2	Дш/ <sub>В</sub> ц	-/+ -/+ -/+	827.21 0264.211 8270.311	Jm/gu Jm/gu Jm/gu	Gravimetric Unstressed Stressed
Elution Order		unotimo		Grav. G MeightM			Expanded U		

P&T Methanol 67-56

**CV2 # 67-**26-1

Solvent:

Column: 60m x 0.25mm x 1.4µm 8tx-502.2 (cat.#10916) Carrier Gas:

helium-constant flow 2.0 mt/min.

Temp. Program:

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

:qməT .inl

Z000°C

Det. Temp: 250°C

250°C Det. Type:

**USM** 

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Date Mixed: 22-Aug-2022 Balance: B251644995

Mitanda Kline - Operations Technician I

Date Passed: 25-Aug-2022

OD MAA - II nosT enoits 1900 - elliM eiteind

## Expiration Notes: • Expiration

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   Uncertainty, concentration, and expiration of the CRM are based on the unopened product being stored according to the
- recommended condition found in the storage field.

#### Purity Notes:

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- Decimal, Echinal, Rt, sind/or metung point.

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  A correction factor is used to calculate the amount of compound necessary to achieve the desired concentration of the parent.
- Purity of isomeric compounds is reported as the sum of the isomers.

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

### Purity values are rounded to the nearest whole number. Certified Uncertainty Value Notes:

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

- 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 **includ**ing 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 non-standard temperature conditions.
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Non-Standard Conditions	Standard Conditions	Label Conditions		
evsb 7 of qu 0°08 ≤	O <sub>0</sub> 09 >	S5°C Nominal (Room Temperature)		
≥ 40°C up to 7 days	O₀0た >	10°C or colder (Refrigerate)		
≥25°C up to 7 days	< 52°C	0°C or colder (Freezer) -20°C or colder (Deep Freezer)		

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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:





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



Expiration Date:

6202,05 linqA



Certificate of Analysis

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Ambient

0°C or colder

Storage:

Catalog No.: 30042 Lot No.: Ao188819

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

Container Size: 2 mL

Container Size: 2 mL

#### CERTIFIED VALUES

	Trichloro CAS # Purity	oftworomethane (CFC-II) 75-69-4 99%	(F0f MKCL8411)	2,018.8	Jm/gu	-/+	245.31 2137.£11 9396.311	Jan/g.u Jan/g.u Jan/g.u	Gravimetric Unstressed Stressed
	Chloroetl CAS # Purity	hane (ethyl chloride) 75-00-3 99%	(I-411650104-701 to-I)	2,019.0	Jæ/g4	-/+ -/+ -/+	8822.41 1684.811 4181.811	Дт\g.ц Дт\g.ц Дт\g.ц	Gravimetric Unstressed Stressed
ħ	Promom CAS #	ethane (methyl bromide) 74-83-9 99%	(Lot 101604)	۵.۲10,2	Jan/g.u	-/+ -/+ -/+	13.2023 113.2511 95939	Дт/g.ц Дт/g.ц Дт/g.ц	Gravimetric Unstressed Stressed
٤	Vinyl chi	əbirlo- 75-10-≥7 99%	(Lot 00015559)	2,018.0	hg/mJ.	-/+ -/+ -/+	0652.41 8974.611 9911.911	Jm/gu Jm/gu Jm/gu	Gravimetric Unstressed Stressed
7	Chlorom	iethane (methyl chloride) 74-87-3 99%	(Lot SHBK6571)	1,610,1	Jm/g4	-/+ -/+ -/+	07.60.41 2074.611 2611.611	Дт/g.ц Дт/g.ц	Gravimetric Unstressed Stressed
.1	Dichlord CAS# Purity	idifluoromethane (CFC-12) 75-71-8 99%	(Lot 00012554)	1.610,2	Дш/ <sub>В</sub> ц	-/+ -/+ -/+	827.21 0264.211 8270.311	Jm/gu Jm/gu Jm/gu	Gravimetric Unstressed Stressed
Elution Order		unotimo		Grav. G MeightM			Expanded U		

P&T Methanol 67-56

**CV2 # 67-**26-1

Solvent:

Column: 60m x 0.25mm x 1.4µm 8tx-502.2 (cat.#10916) Carrier Gas:

helium-constant flow 2.0 mt/min.

Temp. Program:

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

:qməT .inl

Z000°C

Det. Temp: 250°C

250°C Det. Type:

**USM** 

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

Date Mixed: 22-Aug-2022 Balance: B251644995

Mitanda Kline - Operations Technician I

Date Passed: 25-Aug-2022

OD MAA - II nosT enoits 1900 - elliM eiteind

## Expiration Notes: • Expiration

- 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.
- Decimal, Echinal, Rt, sind/or metung 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 correction factor.

  A correction factor is used to calculate the amount of compound necessary to achieve the desired concentration of the parent.
- Purity of isomeric compounds is reported as the sum of the isomers.

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

### 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:

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

- 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 **includ**ing 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 non-standard temperature conditions.
- Apply the certified combined unstressed uncertainty value if the product was received under standard conditions. Apply the certified combined stressed uncertainty value if the product was received under non-standard conditions as specified below.

Non-Standard Conditions	Standard Conditions	Label Conditions		
evsb 7 of qu 0°08 ≤	O <sub>0</sub> 09 >	S5°C Nominal (Room Temperature)		
≥ 40°C up to 7 days	O₀0た >	10°C or colder (Refrigerate)		
≥25°C up to 7 days	< 52°C	0°C or colder (Freezer) -20°C or colder (Deep Freezer)		

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

#### Manufacturing Notes:

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

#### Handling Notes:



ISO 17034 Accredited Reference Material Produces Certificate #3222.01

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

**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.:

30006

Lot No.: A0190554

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:** 

January 31, 2026

Storage:

0°C or colder

Ship:

Ambient

#### CERTIFIED VALUES

Elution Order	Comp	ound -	Grav. Conc. (weight/volume)		Expanded (95% C.L.;	Uncertainty K=2)	
1	Acetone CAS # 67-64-1 Purity 99%	(Lot 103138L01T)	5,006.0 μg/mL	+/- +/- +/-	302.0342	μg/mL μg/mL μg/mL	Gravimetric Unstressed Stressed
2	2-Butanone (MEK) CAS # 78-93-3 Purity 99%	(Lot SHBN2844)	5,002.3 μg/mL	+/- +/- +/-	29.0840 301.8129 302.5295	μg/mL μg/mL μg/mL	Gravimetric Unstressed Stressed
3	4-Methyl-2-pentanone (MIBK) CAS # 108-10-1 Purity 99%	(Lot SHBP4724)	5,001.7 µg/mL	+/- +/- +/-	29.0801 301.7727 302.4892	μg/mL μg/mL μg/mL	Gravimetric Unstressed Stressed
4	2-Hexanone CAS # 591-78-6 Purity 99%	(Lot MKCQ6663)	5,000.8 μg/mL	+/- +/- +/-	29.0753 301.7224 302.4388	μg/mL μg/mL μg/mL	Gravimetric Unstressed Stressed

Solvent:

P&T Methanol/Water (90:10)

CAS#

67-56-1/7732-18-5

Purity

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.)

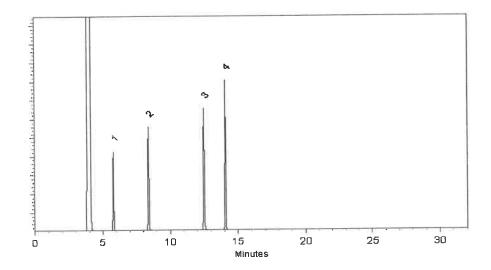
Inj. Temp:

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.

Josh McCloskey - Operations Technician 1

Date Mixed:

13-Oct-2022

Balance: B707717271

Fang-Yun Weaver - Operations Lead Tech - ARM QC

Date Passed:

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

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

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

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

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

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

#### Manufacturing Notes:

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

#### **Handling Notes:**



ISO 17034 Accredited Reference Material Produces Certificate #3222.01

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

**Certificate of Analysis** 





www.restek.com

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Catalog No.:

30006

Lot No.: A0190554

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:** 

January 31, 2026

Storage:

0°C or colder

Ship:

Ambient

#### CERTIFIED VALUES

Elution Order	Comp	ound -	Grav. Conc. (weight/volume)		Expanded (95% C.L.;	Uncertainty K=2)	
1	Acetone CAS # 67-64-1 Purity 99%	(Lot 103138L01T)	5,006.0 μg/mL	+/- +/- +/-	302.0342	μg/mL μg/mL μg/mL	Gravimetric Unstressed Stressed
2	2-Butanone (MEK) CAS # 78-93-3 Purity 99%	(Lot SHBN2844)	5,002.3 μg/mL	+/- +/- +/-	29.0840 301.8129 302.5295	μg/mL μg/mL μg/mL	Gravimetric Unstressed Stressed
3	4-Methyl-2-pentanone (MIBK) CAS # 108-10-1 Purity 99%	(Lot SHBP4724)	5,001.7 µg/mL	+/- +/- +/-	29.0801 301.7727 302.4892	μg/mL μg/mL μg/mL	Gravimetric Unstressed Stressed
4	2-Hexanone CAS # 591-78-6 Purity 99%	(Lot MKCQ6663)	5,000.8 μg/mL	+/- +/- +/-	29.0753 301.7224 302.4388	μg/mL μg/mL μg/mL	Gravimetric Unstressed Stressed

Solvent:

P&T Methanol/Water (90:10)

CAS#

67-56-1/7732-18-5

Purity

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.)

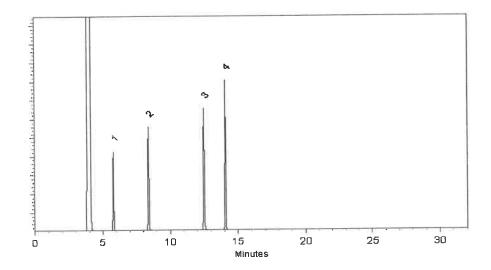
Inj. Temp:

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.

Josh McCloskey - Operations Technician 1

Date Mixed:

13-Oct-2022

Balance: B707717271

Fang-Yun Weaver - Operations Lead Tech - ARM QC

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#### **Purity Notes:**

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

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

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

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

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

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

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

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

#### **Manufacturing Notes:**

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

#### **Handling Notes:**



ISO 17034 Accredited Reference Material Produces Certificate #3222.01

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.:

30006

Lot No.: A0190554

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:** 

January 31, 2026

Storage:

0°C or colder

Ship:

Ambient

#### CERTIFIED VALUES

Elution Order	Comp	ound -	Grav. Conc. (weight/volume)		Expanded (95% C.L.;	Uncertainty K=2)	
1	Acetone CAS # 67-64-1 Purity 99%	(Lot 103138L01T)	5,006.0 μg/mL	+/- +/- +/-	302.0342	μg/mL μg/mL μg/mL	Gravimetric Unstressed Stressed
2	2-Butanone (MEK) CAS # 78-93-3 Purity 99%	(Lot SHBN2844)	5,002.3 μg/mL	+/- +/- +/-	29.0840 301.8129 302.5295	μg/mL μg/mL μg/mL	Gravimetric Unstressed Stressed
3	4-Methyl-2-pentanone (MIBK) CAS # 108-10-1 Purity 99%	(Lot SHBP4724)	5,001.7 µg/mL	+/- +/- +/-	29.0801 301.7727 302.4892	μg/mL μg/mL μg/mL	Gravimetric Unstressed Stressed
4	2-Hexanone CAS # 591-78-6 Purity 99%	(Lot MKCQ6663)	5,000.8 μg/mL	+/- +/- +/-	29.0753 301.7224 302.4388	μg/mL μg/mL μg/mL	Gravimetric Unstressed Stressed

Solvent:

P&T Methanol/Water (90:10)

CAS#

67-56-1/7732-18-5

Purity

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.)

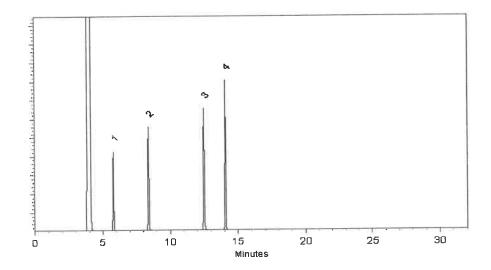
Inj. Temp:

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.

Josh McCloskey - Operations Technician 1

Date Mixed:

13-Oct-2022

Balance: B707717271

Fang-Yun Weaver - Operations Lead Tech - ARM QC

Date Passed:

17-Oct-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:**

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#### **Manufacturing Notes:**

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#### **Handling Notes:**



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**Certificate of Analysis** 





www.restek.com

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

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Catalog No.:

30006

Lot No.: A0190554

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:** 

January 31, 2026

Storage:

0°C or colder

Ship:

Ambient

#### CERTIFIED VALUES

Elution Order	Comp	ound -	Grav. Conc. (weight/volume)		Expanded (95% C.L.;	Uncertainty K=2)	
1	Acetone CAS # 67-64-1 Purity 99%	(Lot 103138L01T)	5,006.0 μg/mL	+/- +/- +/-	302.0342	μg/mL μg/mL μg/mL	Gravimetric Unstressed Stressed
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3	4-Methyl-2-pentanone (MIBK) CAS # 108-10-1 Purity 99%	(Lot SHBP4724)	5,001.7 µg/mL	+/- +/- +/-	29.0801 301.7727 302.4892	μg/mL μg/mL μg/mL	Gravimetric Unstressed Stressed
4	2-Hexanone CAS # 591-78-6 Purity 99%	(Lot MKCQ6663)	5,000.8 μg/mL	+/- +/- +/-	29.0753 301.7224 302.4388	μg/mL μg/mL μg/mL	Gravimetric Unstressed Stressed

Solvent:

P&T Methanol/Water (90:10)

CAS#

67-56-1/7732-18-5

Purity

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.)

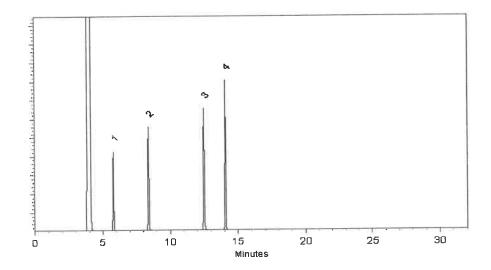
Inj. Temp:

200°C

Det. Temp: 250°C

Det. Type:

FID



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Josh McCloskey - Operations Technician 1

Date Mixed:

13-Oct-2022

Balance: B707717271

Fang-Yun Weaver - Operations Lead Tech - ARM QC

Date Passed:

17-Oct-2022

#### **Expiration Notes:**

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#### **Manufacturing Notes:**

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#### **Handling Notes:**



ISO 17034 Accredited Reference Material Produces Certificate #3222.01

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

**Certificate of Analysis** 





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

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Catalog No.:

30006

Lot No.: A0190554

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:** 

January 31, 2026

Storage:

0°C or colder

Ship:

Ambient

#### CERTIFIED VALUES

Elution Order	Comp	ound -	Grav. Conc. (weight/volume)		Expanded (95% C.L.;	Uncertainty K=2)	
1	Acetone CAS # 67-64-1 Purity 99%	(Lot 103138L01T)	5,006.0 μg/mL	+/- +/- +/-	302.0342	μg/mL μg/mL μg/mL	Gravimetric Unstressed Stressed
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3	4-Methyl-2-pentanone (MIBK) CAS # 108-10-1 Purity 99%	(Lot SHBP4724)	5,001.7 µg/mL	+/- +/- +/-	29.0801 301.7727 302.4892	μg/mL μg/mL μg/mL	Gravimetric Unstressed Stressed
4	2-Hexanone CAS # 591-78-6 Purity 99%	(Lot MKCQ6663)	5,000.8 μg/mL	+/- +/- +/-	29.0753 301.7224 302.4388	μg/mL μg/mL μg/mL	Gravimetric Unstressed Stressed

Solvent:

P&T Methanol/Water (90:10)

CAS#

67-56-1/7732-18-5

Purity

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.)

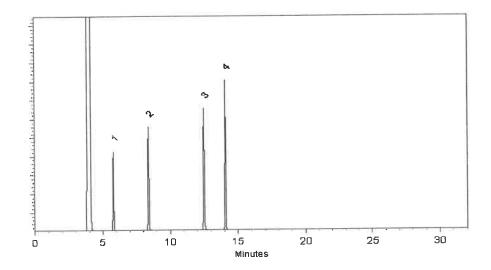
Inj. Temp:

200°C

Det. Temp: 250°C

Det. Type:

FID



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Josh McCloskey - Operations Technician 1

Date Mixed:

13-Oct-2022

Balance: B707717271

Fang-Yun Weaver - Operations Lead Tech - ARM QC

Date Passed:

17-Oct-2022

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**Certificate of Analysis** 





www.restek.com

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30006

Lot No.: A0190554

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:** 

January 31, 2026

Storage:

0°C or colder

Ship:

Ambient

#### CERTIFIED VALUES

Elution Order	Comp	ound -	Grav. Conc. (weight/volume)		Expanded (95% C.L.;	Uncertainty K=2)	
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Solvent:

P&T Methanol/Water (90:10)

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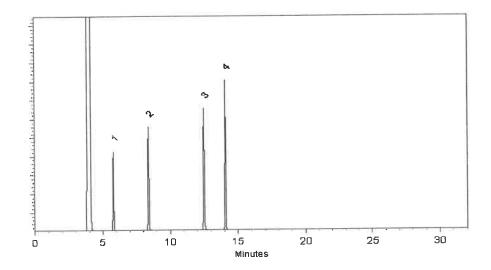
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200°C

Det. Temp: 250°C

Det. Type:

FID



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Josh McCloskey - Operations Technician 1

Date Mixed:

13-Oct-2022

Balance: B707717271

Fang-Yun Weaver - Operations Lead Tech - ARM QC

Date Passed:

17-Oct-2022

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#### **Manufacturing Notes:**

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#### **Handling Notes:**

Methanol
ULTRA RESI-ANALYZED
For Purge and Trap Analysis





Material No.: 9077-02

Batch No.: 22C2362001

Manufactured Date: 2022-02-15 Expiration Date: 2025-02-14

Revision No.: 0

### Certificate of Analysis

Test	Specification	Result
Assay (CH <sub>3</sub> OH) (by GC, corrected for water)	≥ 99.9 %	100.0 %
Residue after Evaporation	≤ 1.0 ppm	< 0.1 ppm
Titrable Acid (µeq/g)	≤ 0.3	0.3
Titrable Base (μeq/g)	≤ 0.10	0.03
Water (by KF, coulometric)	≤ 0.08 %	< 0.01 %
Volatile Organic Trace Analysis – Below EPA 8260B CRQL	Conforms	Conforms

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

Country of Origin: USA

Packaging Site: Phillipsburg Mfg Ctr & DC



Methanol
ULTRA RESI-ANALYZED
For Purge and Trap Analysis





Material No.: 9077-02

Batch No.: 22C2362001

Manufactured Date: 2022-02-15 Expiration Date: 2025-02-14

Revision No.: 0

### Certificate of Analysis

Test	Specification	Result
Assay (CH <sub>3</sub> OH) (by GC, corrected for water)	≥ 99.9 %	100.0 %
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Titrable Acid (µeq/g)	≤ 0.3	0.3
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For Laboratory, Research, or Manufacturing Use Performance Tested for Use in EPA Methods 500 Series for Drinking Water 600 Series for Wastewater 846 for Solid Waste

Country of Origin: USA

Packaging Site: Phillipsburg Mfg Ctr & DC



### Absolute Standards, Inc.

800-368-1131

www.absolutestandards.com



#### Certified Reference Material CRM



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

CERTIFIED WEIGHT REPORT

Part Number: 95317 Lot Number: 042921

Description: Universal VOA Megamix

69 components

Expiration Date: 042924 Recommended Storage: Freezer (0 °C) Nominal Concentration (µg/mL): 2000 NIST Test ID#: 6UTB Weight(s) shown below were combined and diluted to (mL);

5E-05 Balanco Uncertainty

100.0 0.012 Flask Uncertainty

Solvent(s): Lot# Methanol DY186-USQ8

042921 DATE 042921 Reviewed By: Pedro L. Rentas DATE

	weight(s) shown below were combine	o and dilute	ed to (ml.):	100.	.0 0.01	2 Flask Uncertain	hty							2000000			
		(RM#)	Lot	Dil.	Initia	d Initial	Nominal	Punty	Punty	Uncertainty	Target	Actual	Actual	Expanded Uncertainty	/Salu	SDS Information	
	Compound	Part Numbe	or Number	Facto		nL) Conc.(ug/mL)			Uncertainty		Weight(g)	Weight(g)				ent Safety Info. On Atta	
							Tana (Fig. 11.12)	(,	and a cantal	r specie (rine)	rreight(g)	rreignit(g)	COIL (PSPIRE)	) (+ <i>i-</i> ) (µg/mL)	LAS#	OSHA PEL (TWA)	LD50
1.	. Acetonitrile	(0324)	060812	NA	NA	NA	2000	99.9	0.2	NA	0.20021	0.20041	2002.0	8.1	7E 0E 0	10 775 1 4111	121 72122
2.		(0325)	102396	NA		NA	2000	99	0.2	NA	0.20203	0.20233	2002.0	8.2	75-05-8 107-05-1	40 ppm (70mg/m3/8H)	orl-rat 2450mg/l
3.		(0060)	MKCD960			NA	2000	100	0.2	NA	0.20001	0.20015	2003.0	8.1	75-15-0	1 ppm (3mg/m3/8H)	orl-rat 700mg/k
4.	THE RESERVE THE PROPERTY OF TH	(1196)	14718EF		_	NA	2000	95	0.2	NA	0.21054	0.21060	2000.6			4 ppm (12mg/m3) (skin)	orl-rat 1200mg/
5.		(0486)	MKBP6041				2000	96.5	0.2	NA	0.20726	0.20751	2002.4	8.5 8.4	1476-11-5	N/A	N/A
6.		(0153)	SHBK191				2000	99.9	0.2	NA NA	0.20023	0.20751	2002.4		110-57-6	N/A	N/A
7.		(0381)	06126PX				2000	99	0.2	NA NA	0.20203			8.1	60-29-7	400ppm (1200mg/m3/8H)	orl-rat 1215mg/l
8.		(0489)	SHBF8718				2000	99.5	0.2	NA NA		0.20230	2002.7	8.2	97-63-2	N/A	orl-ret 14800mg/
9.		(0445)	15241EB				2000	99.5			0.20101	0.20130	2002.8	8.1	74-88-4	5 ppm(28mg/m3/8H)(skin)	orl-rat 76mg/kg
100	Methacrylonitrile	(0442)	00427ET	NA			2000	99	0.2	NA	0.20101	0.20123	2002.1	8.1	78-83-1	50 ppm (150mg/m3/8H)	orl-rat 2460mg/l
		(1075)	SHBK0679				2000		0.2	NA	0.20203	0.20220	2001.7	8.2	126-98-7	1 ppm (3mg/m3/8H)(skin)	orl-rat 120mg/k
12.		(0404)	MKBW5137			NA NA		99.9	0.2	NA	0.20021	0.20046	2002.5	8.1	96-33-3	10 ppm(35mg/m3/8H)(skin)	orl-rat 277mg/k
13.		(0228)	01213TV	NA NA		NA NA	2000	99.9	0.2	NA	0.20021	0.20048	2002.7	8.1	80-62-6	100 ppm (410mg/m3/8H)	orl-rat 7872mg/k
	2-Nitropropane	(0461)	14002JX	NA		NA NA			0.2	NA NA	0.20203	0.20218	2001.5	8.2	98-95-3	1 ppm (5mg/m3/8H)(skin)	orl-rat 780mg/kg
		(0451)	HGA01	NA			2000	97.3	0.2	NA	0.20556	0.20566	2001.0	8.3	79-46-9	10 ppm (35mg/m3/8H)	orl-rat 720mg/kg
		(0474)	18930			NA NA	2000	98	0.2	NA	0.20409	0.20418	2000.9	8.2	76-01-7	N/A	N/A
	Bromodichloromethane	35171	100220	NA		NA .	2000	99	0.2	NA	0.20203	0.20221	2001.8	8.2	76-13-1	1000 ppm (7600mg/m3/8H)	orl-rat 43g/kg
				0.05			2000	NA	NA	0.017	NA	NA	2000.8	18.4	75-27-4	N/A	orl-rat 916mg/kg
	Dibromochloromethane	35171	100220	0.05			2000	NA	NA	0.017	NA	NA	2000.3	18.4	124-48-1	N/A	orl-rat 848mg/kg
	cis-1,2-Dichloroethene	35171	100220	0.05			2000	NA	NA	0.017	NA	NA	2000.5	18.4	156-59-2	N/A	NA
	trans-1,2-Dichloroethene	35171	100220	0.05			2000	NA	NA	0.017	NA	NA	2000.2	18.4	156-60-5	N/A	orl-rat 1235mg/k
	Methylene chloride	35171	100220	0.05			2000	NA	NA	0.017	NA	NA	2000.6	18.4	75-09-2	500 ppm	orl-rat 820mg/kg
	1,1-Dichlgroethene	32251	031821	0.10			2000	NA	NA NA	0.042	NA	NA	2000.8	19.3	75-35-4	1 ppm (4mg/m3/8H)	orl-rat 200mg/kg
	Bromoform	95321	010419	0.10			2000	NA	NA	0.042	NA	NA	2000.1	19.3	75-25-2	0.5 ppm (5mg/m3) (skin)	orl-rat 933mg/kg
	Carbon tetrachloride	95321	010419	0.10			2000	NA	NA	0.042	NA	NA	2000.0	19.2	56-23-5	2 ppm (12.6mg/m3/8H)	orl-rat 2350mg/kg
	Chloroform	95321	010419	0.10			2000	NA	NA	0.042	NA	NA	2000.1	19.2	67-66-3	50 ppm (240mg/m3) (CL)	orl-rat 908mg/kg
	Dibromomethane	95321	010419	0.10			2000	NA	NA	0.042	NA	NA	2000.1	19.3	74-95-3	N/A	orl-rat 108mg/kg
	1,1-Dichloroethane	95321	010419	0.10			2000	NA	NA	0.042	NA	NA	2000.0	19.3	75-34-3	100 ppm	orl-rat 725mg/kg
28.	2,2-Dichloropropane	95321	010419	0.10	10.00	20002.1	2000	NA	NA	0.042	NA	NA	2000.1	19.3	594-20-7	N/A	N/A
	Tetrachloroethene	95321	010419	0.10			2000	NA	NA	0.042	NA	NA	2000,1	19.3	127-18-4	25 ppm (170mg/m3/8H)(final)	orl-rat 2629mg/kg
30.	1,1,1-Trichloroethane	95321	010419	0.10	10.00	20001.7	2000	NA	NA	0.042	NA	NA	2000.1	19.3	71-55-6	350 ppm (1900mg/m3/8H)	orl-rat 10300mg/k
31.	1,2-Dibromo-3-chloropropane	35161	011421	0.05	5.00	40001.2	2000	NA	NA	0.017	NA	NA	2000.0	18.4	96-12-8	0.001 ppm	orl-rat 170mg/kg
32.	1,2-Dibromoethane	35161	011421	0.05	5.00	40003.9	2000	NA	NA	0.017	NA	NA	2000.1	18.4	106-93-4	20 ppm (8H)	orl-rat 108mg/kg
33.	1,2-Dichloroethane	35161	011421	0.05	5.00	40004.9	2000	NA	NA	0.017	NA	NA	2000.1	18.4	107-06-2	50 ppm (8H)	ori-rat 670mg/kg
14.	1,2-Dichloropropane	35161	011421	0.05	5.00	40002.2	2000	NA	NA	0.017	NA	NA	2000.0	18.4	78-87-5	75 ppm (350mg/m3/8H)	
15.	1,3-Dichloropropane	35161	011421	0.05	5.00	40013.9	2000	NA	NA	0.017	NA	NA	2000.6	18.4	142-28-9	N/A	ori-rat 1947mg/kg
6.	1,1-Dichloropropene	35161	011421	0,05	5.00	40015.0	2000	NA	NA	0.017	NA	NA	2000.7	26.1	563-58-6	N/A	unr-mus 3600mg/k
7.	cis-1,3-Dichloropropene	35161	011421	0.05	5.00	40004.4	2000	NA	NA	0.017	NA	NA	2000.1	18.4	10061-01-5	N/A	N/A
8.	trans-1,3-Dichloropropene	35161	011421	0.05	5.00	40009.1	2000	NA	NA	0.017	NA	NA	2000.4		10061-02-6	N/A	N/A
9.	Hexachloro-1,3-butadiene	35161	011421	0.05	5.00	40003.5	2000	NA	NA	0.017	NA	NA	2000.1	26.4	87-68-3		N/A
	1,1,1,2-Tetrachloroethane	35161	011421	0.05	5.00	40011.9	2000	NA	NA	0.017	NA	NA.	2000.5	18.4	630-20-6	0.02 ppm (0.24mg/m3/8H)	orl-rat 82mg/kg
	1,1,2,2-Tetrachioroethane	35161	011421	0.05	5.00	40011.0	2000	NA	NA	0.017	NA	NA NA	2000.5	18.4	79-34-5	N/A	orl-rat 670mg/kg
	1,1,2-Trichloroethane	35161	011421	0.05	5.00	40000.8	2000	NA	NA	0.017	NA	NA NA	1999.9	18.4		5 ppm (35mg/m3/9H)(skin)	orl-rat 800mg/kg
	Trichloroethene	35161	011421	0.05	5.00	40003.2	2000	NA	NA	0.017	NA	NA NA	2000.1	18.4	79-00-5	10 ppm (45mg/m3/8H)(skin)	ori-rat B36mg/kg
	1,2,3-Trichloropropane	35161	011421	0.05	5.00	40015.2	2000	NA	NA NA	0.017	NA NA	NA NA	2000.7		79-01-6	50 ppm (270mg/m3/8H)	orl-mus 2402mg/kg
	Benzene	35162	020821	0.05	5.00	40008.9	2000	NA	NA	0.017	NA NA	NA NA	2000.7	18.4	96-18-4	10 ppm (60mg/m3/8H)	ori-rat 149.6mg/kg
	Bromobenzene	35162	020821	0.05	5.00	40019.0	2000	NA	NA NA	0.017	NA NA	NA NA		18.4	71-43-2	1 ppm	orl-rat 4894mg/kg
	n-Butyl benzene	35162	020821	0.05	5.00	40019.8	2000	NA	NA NA	0.017	NA NA	NA NA	2000.9	18.4	108-86-1	N/A	orl-rat 2699mg/kg
	Ethyl benzene	35162	020821	0.05	5.00	40000.9	2000	NA	NA NA	0.017				18.4	104-51-8	N/A	N/A
	p-Isopropyi toluene	35162	020821	0.05							NA NA	NA NA	1999.9	18.4	100-41-4	100 ppm (435mg/m3/8H)	orl-rat >2000mg/kg
	Naphthalene	35162	020821	0.05	5.00	40056.4 40005.1	2000	NA NA	NA NA	0.017	NA	NA	2002.7	18.4	99-87-6	N/A	orl-rat 4750mg/kg
	Styrene	35162	020821	0.05	5.00					0.017	NA	NA NA	2000.2	18.3	91-20-3	10 ppm (50mg/m3/8H)	orl-rat 490mg/kg
	Toluene	35162	020821			40022.8	2000	NA	NA NA	0.017	NA NA	NA NA	2001.0	18.4	100-42-5	100 ррт	orl-rat 5000mg/kg
				0.05	5.00	40008.9	2000	NA	NA	0.017	NA	NA	2000.3	18.4	108-88-3	200 ppm	orl-rat 5000mg/kg
· -	1,2,3-Trichlorobenzene	35162	020821	0.05	5.00	40002.0	2000	NA	NA	0.017	NA	NA	2000.0	18.4	87-61-6	N/A	ipr-mus 1390mg/lo
	1,2,4-Trichlorobenzene	35162	020821	0.05	5.00	40027.4	2000	NA	NA	0.017	NA	NA	2001.3	18.4	120-82-1	5 ppm (CL) (40mg/m3)	orl-rat 756mg/kg
	1,2,4-Trimethylbenzene	35162	020821	0.05	5.00	40012.4	2000	NA	NA	0.017	NA	NA	2000.5	18.4	95-63-6	N/A	orl-rat 5g/kg
_	1,3,5-Trimethylbenzene	35162	020821	0.05	5.00	40011.5	2000	NA	NA	0.017	NA	NA	2000.5	18.5	108-67-8	N/A	orl-rat 5000mg/kg
	n-Xylene	35162	020821	0.05	5.00	40021.B	2000	NA	NA	0.017	NA	NA	2001.0	18,4	108-38-3	100 ppm (435mg/m3/8H)	orl-rat 5g/kg
	ert-Butyl benzene	35163	022521	0.05	5.00	40005.9	2000	NA	NA	0.017	NA	NA	2000.2	18.4	98-06-6	N/A	N/A
	sec-Butyl benzene	35163	022521	0.05	5.00	40011.7	2000	NA	NA	0.017	NA	NA	2000.5	18.4	135-98-8	N/A	orl-rat 2240mg/kg
	Chlorobenzene	35163	022521	0.05	5.00	40009.0	2000	NA	NA	0.017	NA	NA	2000.4	18.4	108-90-7	75 ppm (350mg/m3/8H)	ori-rat 2290mg/kg
	2-Chlorotoluene	35163	022521	0.05	5.00	40002.0	2000	NA	NA	0.017	NA	NA	2000.0	18.4	95-49-8	50 ppm (250mg/m3/8H)	orl-rat 3900mg/kg
	I-Chlorotoluene	35163	022521	0.05	5.00	40000.4	2000	NA	NA	0.017	NA	NA	1999.9	18.4	106-43-4	NA	orl-rat 2100mg/kg
	,2-Dichlorobenzene	35163	022521	0.05	5.00	40004.0	2000	NA	NA	0.017	NA	NA	2000.1	18.4	95-50-1	50 ppm (300mg/m3) (CL)	orl-rat 500mg/kg
	,3-Dichlorobenzene	35163	022521	0.05	5.00	40003.6	2000	NA	NA	0.017	NA	NA	2000.1		541-73-1	N/A	ipr-mus 1062mg/kg
. 1	,4-Dichlorobenzene	35163	022521	0.05	5.00	40005.0	2000	NA	NA	0.017	NA	NA	2000.2		106-46-7	75 ppm (450mg/m3/8H)	orl-rat 600mg/kg
. 15	sopropylbenzene	35163	022521	0.05	5.00	40007.4	2000	NA	NA	0.017	NA	NA	2000.3	18.4	98-82-8	50 ppm (245mg/m3/8H)	
. n	-Propylbenzene	35163	022521	0.05	5.00	40004.6	2000	NA	NA	0.017	NA	NA	2000.1	18.4	103-65-1	N/A	orl-rat 1400mg/kg
	-Xylene	35163	022521	0.05	5.00	40003.0	2000	NA	NA	0.017	NA	NA	2000.1	18.4	95-47-6	100 ppm (435mg/m3/8H)	orl-rat 6040mg/kg
. 0			******				2000	NA									lpr-mus 1384mg/kg
	-Xylene	35163	022521	0.05	5.00	40005.0	2000	NA	NA	0.017	NA	NA	2000.2	18.4	106-42-3	100 ppm (435mg/m3/8H)	orl-rat 5g/kg

Part # 95317

Lot # 042921

1 of 2

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

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

\*Standards are certified (vi.) 2-8% of the stated value, unless atherwise stated.

\*All Standards, after opening ampule, should be stored with caps tight and under appropriate laborator; conditions.

\*Lucertainty Reference: Taylor, INS., and Kuya, 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).



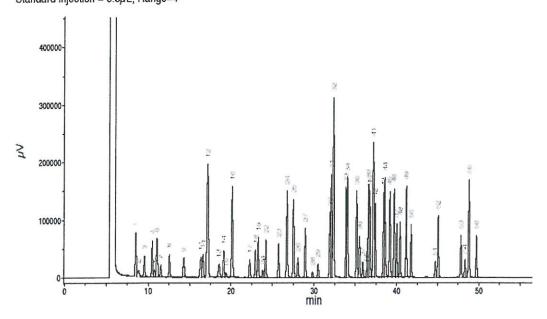
ANAB ISO 17034 Accredited AR-1539 Certificate Number https://Absolutestandards.com

#### Run 22, "P95317 L042921 [2000µg/mL in MeOH]"

Run Length: 60.00 min, 35999 points at 10 points/second. Created: Thu, Apr 29, 2021 at 3:49:30 PM. Sampled: Sequence "042521-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 = 0.5 ft. | Pange=4 Standard injection =  $0.5\mu$ L, Range=4



		FID RT
Peak #	Analyte	(min.)
1	Ether	8.48
2	1,1,2-Trichloro-1,2.2-trillugroethane	8.50
3	1,1-0-chloroethane	9.51
4	Acetonanie	10.44
5	lodomethane	10.71
6	Allyl chilinde	11.02
7	Carbon disultide/Hethylene chloride	11.51
8	trans-1,2 Dichlergethene	12.55
9	1,1-Dichtoroethane	14.28
10	2,2-Dichloropropane	16.33
11	cis-1.2-Dichtoroethene	16.59
12	Methacrylonitrile/Methyl acrylate/Chloroform	17.14
13	Isobutanol/1,1,1-Trichloroethane	18.52
14	1,1-Dichloropropene	19.08
15	Carbon tetrachloride	19.39
16	Benzene/1,2-Dichloroethane	20 10
17	Trichiorcethene	22.23
16	1,2-Enthloropropane	22.92
19	Methyl methacry inte	23.26
20	Bramouchlorumethane	23.79
21	D-bromomethane	23.98
22	2-Nitropropane	24.18
23	cis-1,3-Dich-ivapropene	25.71
24	Thuese	25.71
25	Ethyl methacrylate/trans-1,3-Dichloropropena	27 50
26	1,1,2-Trichlargement	28.04
27	Tetrachiaroethene/1,3-Dichiaropropane	29.92
28	Dibremochloromethane	29.79
29	1,2-Dibromietrane	30.46
30	Chlorobenzene	31.89
31	Ethylbenzene/1,1,1,2-Tetrachloroethane	37 07
22	m-Xylene/p-Xylene	32.33
33	o Xylene	33.87
34	Styrene	34.04
35	Is opropyibenzene/Bromoform	35.14
16	cis-1.4- Numburo 2-butene	35.49
37	1.1.2.2-Tetrachloroethane	35.90
1500	1,2,3-Trichlorepropane	36.34
39	n-Propyibenzena	36.58
40	trans-1,4-Dichiero-2-butene/Bremobenzene	35.73
	1,3,5-Trimethylbergene/2-Chlorotoluene	37.17
	4-Chorotoluene	37.17
	ten-Butylbentene	38.41
	1,2,4-Trimethylbenzene/Pentachloroethane	38.55
	sec-Bulyibenzene	39.16
46	p isopropytoluene	39 68
47	1.3-Dictionations	40 01
48	1.4-Delfordentene	40.42
49	n-Bu yibenzu e	
		41 16
50	1,7-Dichlorobenzene	41.74
51	1,2-Ditromo-3-chloroprepane	44.68
52	K-tropenzene	45.04
53	1,2,4-Thut/lorobenzene	47.80
54	Hexachion hutadents	48.29
	Kaphthalane	48.76
56	1,2,3-Trichicrobenzene	49 66

2 of 2 Part # 95317 Lot # 042921 Printed: 4/25/2022, 4:35:48

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

44 Rossotto Dr.

Emergency Telephone USA & CANADA

1-800-535-5053

Address

Hamden CT, 06514

Emergency Telephone International Date Prepared/Revised

1-352-323-3500 May 1, 2019

Section II - Hazards Identification

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

H225 H370 Highly Flammable Liquid and Vapor

Cause damage to organs P271 Use in ventilated area

H351 P280

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

Suspected of causing cancer Use gloves, eye protection/face sheild

P302,332

If on skin, wash with soap and water

P305,351,338

If in eyes, remove contacts, rinse with water







Signal Word: DANGER

Section III - Composition

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

METHYL ALCOHOL

CAS#: 67-56-1

% (optional) > 97

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

INTENDED USE: REFERENCE MATERIAL

Section IV. FIRST AID MEASURES

General advice Consult a physician. Show this safety data sheet to the doctor in attendance. Move to safe area. If inhaled

If inhaled, move person into fresh air. If not breathing, give artificial respiration. Consult a physician. Wash with soap and water. Consult a physician.

In case of skin contact

In case of eye contact

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

If swallowed

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

Section V. FIREFIGHTING MEASURES

Flammability

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

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

Suitable extinguishing media

Protective equipment for fire

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

Section VI. ACCIDENTAL RELEASE MEASURES

Personal precautions

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

ignition. Vapours accumulate to form explosive concentrations.

Environmental precautions

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

Clean up

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

Section VII. HANDLING AND STORAGE

Precautions for safe handling

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

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

Storage Conditions

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

and kept upright to prevent leakage.

Section VIII. EXPOSURE CONTROLS/PERSONAL PROTECTION

Methanol

67-56-1 TWA 200 ppm

Skin notation

TWA 200 ppm

Potential for skin absorption, ingestion and inhalation.

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

Eve protection.

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

PO Box 5585 Absolute Standards Inc.

Phone: 203-281-2917 Hamden, CT 06518-0585 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

COMPLETE Solubility in Water

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

#### Section X. STABILITY AND REACTIVITY

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

Heat, flames, sparks, extreme temperature and sunlight. Conditions to avoid

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.

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

#### Section XIII. DISPOSAL CONSIDERATIONS

Dispose with normal Laboratory Solvent Waste.

#### Section XIV. TRANSPORT INFORMATION

DOT (US)

UN number: 1230 Class: 3 Packing group: II

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

#### Section XV. REGULATORY INFORMATION

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

#### Section XVI. Misc. INFORMATION



#### 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. :	30067	Lot No.:	A0147670	
Description:	4-Bromofluorobenzene Standard	I		
	4-Bromofluorobenzene Standard 1mL/ampul	I 2,500µg/mL, Р&Т Ме	ethanol,	
Container Size :	2 mL	Pkg Amt:	> 1 mL	-
Expiration Date :	April 30, 2024	Storage:	0°C or colder	

#### CERTIFIED VALUES

Elution Order	Compound	Grav. Conc. (weight/volume)	Expanded Uncertainty (95% C.L.; K=2)
1	1-Bromo-4-fluorobenzene (BFB)  CAS# 460-00-4 (Lot 20401KO)  Purity 99%	2,511.0 μg/mL	+/- 14.7360 μg/mL Gravimetric +/- 140.8035 μg/mL Unstressed +/- 144.0975 μg/mL 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:

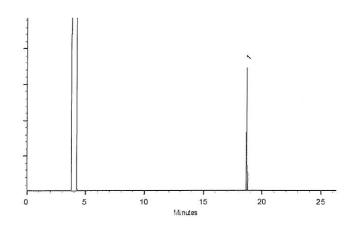
hydrogen-constant pressure 11.0 psi.

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.

Dustin Lidgett - Mix Technician

Date Mixed:

01-Apr-2019

Balance: 1127510105

\_

Date Passed:

04-Apr-2019

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

#### General Certified Reference Material Notes

#### **Expiration Notes:**

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

#### **Purity Notes:**

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

#### Certified Uncertainty Value Notes:

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

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

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

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

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

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

#### Manufacturing Notes:

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

#### **Handling Notes:**

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

			×

DATE

032922

032922

(AWT) JER AH2O

(Solvent Safety Info. On Attached pg.)

noitsmothil 202

Pedro L. Rentas

Prashant Chauhan

#### Reference Material CRM

0						(TOTAL - adio hand but hardely
'n	S.0	66	2000	08046KN	1627	Methylcyclohexane
	S.0	66	2000	1S604HBV	166	Hexachloroethane
4	S.0	66	0000₽	03823KE	SYS	ensxoid-9,f
0	S.0	66	2000	00412MX	<b>Z86</b>	Di-Isopropyl ether (DIPE)
0	S.0	66	2000	28930	1053	Cyclohexane
0	S.0	66.66	2000	MKCM5711	1072	1-Chlorobutane
ŀ	S.0	66	10000	4718CK	7	Acrylonitrile
M /	ginuq	(%)	Conc (µg/mL)	Number	KM#	Compound
L Kapu	Uncertai	Purity	IsnimoM	tot		
<b>Vanish</b>	Son'U alast	S10.0	100.0	:(јш) ој ре	iulib br	Weight(s) shown below were combined a
Yminstoo	Balance Un	2E-02		8109		:#GI IseT TSIN
				bensV		Nominal Concentration (µg/mL):
			(O. t	Heingerate (		Recommended Storage:
				032925		Expiration Date:
			sauce	11 compone		
			_	ibbA besiveA		Describtion:
M				035855		Lot Number:
os				61236		Part Number:
						TIFIED WEIGHT REPORT

	s unless otherwise stated.	ne messurement	and volumet	diving gravimetric	nation calculated	slue is the concent	v bestified v	4T •	G.918	LIC: 623		anahunda
en-rat 6408mg/kg		488-23-3	7.8	£.100S	0.21520	0.21506	2.0	26	2000	roda	1.04-	OLIOTE IS SELECTION OF THE SELECTION OF
orl-rat 1650mg/kg	(H8/Em/gm662) mqq 0S	6-66-601	1.04	10001	1.00120	20100.1	5.0	6.66			167	eneznedlyntemarteT-4,6,S,1
pAgmes 181-ho	Y/N	107-12-0	0.18	20001.5	2.02045	2.02030			10000	SHBH8330	380	Tetrahydrofuran
ga/g+ isi-ho	AW						S.0	66	20000	1395468	346	Propionitrile
		1-40-4691	1.8	2001.4	0.20055	14002.0	S.0	8.66	2000	LL7e1S0	509	Methyl tert-butyl ether (MTBE)
A/N	A/N ·	S-78-801	2.8	S.100S	0.20215	0.20203	S.0	66	2000	NX94080	1627	Methylcyclohexane
pylgm0784 gqg-ho	(nble)(H8\&m\gm01) mqq 1	1-27-78	S.8	0.1005	0.20213	0.20203	5.0	66	2000	12604HBV		
phgm0073 sum-ho	S5 ppm (90mg/m3/8H)(sldn)	1-16-EZ1	6,131	0.40004	00140.4	09040.4					66 L	Hexachloroethane
ort-rat 8470mg/kg							S.0	66	40000	03823KE	ETE	P.,f-Dioxane
		108-20-3	5.8	S.100S	31S0S.0	0.20203	2.0	66	2000	0041SWX	<b>Z86</b>	Di-isopropyl ether (DIPE)
Mgm207St 1sn-ho		110-82-7	2.8	S.100S	31S0S.0	0.20203	0.2	66	5000	28930	1023	
orl-rat 2670mg/kg	AW	£-69-601	1.8	7.100S	0.2002.0	0.20003	5.0					Cyclohexane
вууст ву тел-по	Y/N							66.66	2000	MKCM5711	1072	1-Chlorobutane
(3)	4114	1-61-701	6.0h	2.10001	1.01030	21010.f	2.0	66	10000	4718CK	7	Acrylonkrile

Weight (g)

Taget

IonsrheM

Solvent(s):

			00.09	00.22	20:00	42.00	00.0₽	32,00	001
	29'15	1,2,3,4-Tetramethylbenzene			1				-
	48.44	Hexachioroethane			bb 8	_			
	26.84	1,4-Dioxane			] VV 8	V			
	24.84	Methylcyclohexane			1				
	£8.0Z	1-Chlorobutane		2	.9 LS				
	20.58	Cyclohexane		,	, , , , , , , , , , , , , , , , , , ,				
	71.02	Tetrahydrofuran							_
	18.53	Propionitrile	1	stren.	W eoibns	uusq pA c	ikais beito	enA .esju	шш
	15,44	Di-isopropy) ether		8 :Yels	SOIVERE DI	'2.027 =	or remp.	മാലാമ 'പ	002
	67.E1	Acrylonitrile	= 'd	ameT rato	ejnI "nim	100 = 4°C	.A ,(.nim 2	7.8) 2.00	7 =
	13.56	Methyl tert-butyl ether (MTBE)	LX C	nat (.nim	35°C (10	emp. I =	ickness), T	hod GC6M thi	15.1
	(.nim)	SmeN	LAG	1, 36 0	X m03/ [	iwa. Noce	20-1-05	Pod GC6M	19M
	TA GEM								
fatorona and		Washington, DC, (1994).	ent Printing Office,	.2. Сочетип	U ,7921 asol	Technical )	LSIN		

Conc (µg/mL) (++-) (µg/mL)

Actual

Uncertainty

Expanded

Reviewed By:

Formulated By:

Weight(g)

Actual

**EC285-N2** 

	15			

#### 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 44 Rossotto Dr. ABSOLUTE STANDARDS INC Hamden CT, 06514 Emergency Telephone International Date Prepared/Revised Emergency Telephone USA & CANADA 1-352-323-3500 January 1, 2022 1-800-535-5053 January 1

Section II - Hazards Identification

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

Highly Flammable Liquid and Vapor Cause damage to organs
Use in ventilated area
If on skin, wash with soap and water

H225 H370 P271

P302,332

P280 P305,351,338 H301, 311, 331 H351 Toxic if swallowed, skin contact, inhaled

**(**-) Signal Word: DANGER Suspected of causing cancer
Use gloves, eye protection/face sheild
If in eyes, remove contacts, rinse with water

#### Section III - Composition

Components: CAS#: LD50 Oral - Rat 2,769 mg/kg OSHA PEL 200 ppm % (optional)

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

### Section IV. FIRST AID MEASURES

If inhaled General advice

In case of skin contact In case of eye contact 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

Wash with soap and water. Consult a physician.

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

### Section V. FIREFIGHTING MEASURES

Flammability

Suitable extinguishing media Protective equipment for fire

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.

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

Environmental precautions Clean up

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

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

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

# Section VII. HANDLING AND STORAGE

Precautions for safe handling

Storage Conditions

and kept upright to prevent leakage.

Section VIII. **EXPOSURE CONTROLS/PERSONAL PROTECTION** 

67-56-1 TWA 200 ppm TWA 200 ppm

Potential for skin absorption, ingestion and inhalation.

Personal protective equipment

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. Eye protection

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

Boiling Point	65°C	Specific Gravity (H2O = 1)	0.79
Vapor Pressure (mm Hg)	op.	Melting Point -98℃	-98°C
Vapor Density (AIH = 1) Evaporation rate 1.11 (Butyl Acetate = 1) 4.6	1.11	H = 1) Evaporation rate 1.11 (Butyl Acetate = 1) 4.6	4.6

Solubility in Water COMPLETE

Appearance and Odor CLEAR, COLORLESS LIQUID WITH CHARACTERISTIC PUNGENT ODOR

### Section X. STABILITY AND REACTIVITY

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

Heat, flames, sparks, extreme temperature and sunlight

Acid chlorides, Acid anhydrides, Oxidizing agents, Alkali metals, Reducing agents, Acids Hazardous decomposition products formed under fire conditions. - Carbon oxides

# Section XI. TOXICOLOGICAL INFORMATION

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

Eye damage/eye irritation

Toxic if inhaled. Causes respiratory tract irritation

Toxic if swallowed.

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

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

## Section XIII. DISPOSAL CONSIDERATIONS

Dispose with normal Laboratory Solvent Waste

### Section XIV. TRANSPORT INFORMATION

DOT (US)

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

### Section XV. REGULATORY INFORMATION

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

### Section XVI. Misc. INFORMATION

DATE

032922

032922

(AWT) JER AH2O

(Solvent Safety Info. On Attached pg.)

noitsmothil 202

Pedro L. Rentas

Prashant Chauhan

#### Reference Material CRM

0						(TOTAL - adio hand but hardely
'n	S.0	66	2000	08046KN	1627	Methylcyclohexane
	S.0	66	2000	1S604HBV	166	Hexachloroethane
4	S.0	66	0000₽	03823KE	SYS	ensxoid-9,f
0	S.0	66	2000	00412MX	<b>Z86</b>	Di-Isopropyl ether (DIPE)
0	S.0	66	2000	28930	1053	Cyclohexane
0	S.0	66.66	2000	MKCM5711	1072	1-Chlorobutane
ŀ	S.0	66	10000	4718CK	7	Acrylonitrile
M /	ginuq	(%)	Conc (µg/mL)	Number	KM#	Compound
L Kapu	Uncertai	Purity	IsnimoM	tot		
<b>Vanish</b>	Son'U alast	S10.0	100.0	:(јш) ој ре	iulib br	Weight(s) shown below were combined a
Yminstoo	Balance Un	2E-02		8109		:#GI IseT TSIN
				bensV		Nominal Concentration (µg/mL):
			(O. t	Heingerate (		Recommended Storage:
				032925		Expiration Date:
			sauce	11 compone		
			_	ibbA besiveA		Describtion:
M				035855		Lot Number:
os				61236		Part Number:
						TIFIED WEIGHT REPORT

	s unless otherwise stated.	ne messurement	and volumet	diving gravimetric	nation calculated	slue is the concent	v bestified v	4T •	G.918	LIC: 623		anahunda
en-rat 6408mg/kg		488-23-3	7.8	£.100S	0.21520	0.21506	2.0	26	2000	roda	1.04-	OLIOTE IS SELECTION OF THE SELECTION OF
orl-rat 1650mg/kg	(H8/Em/gm662) mqq 0S	6-66-601	1.04	10001	1.00120	20100.1	5.0	6.66			167	eneznedlyntemarteT-4,6,S,1
pAgmes 181-ho	Y/N	107-12-0	0.18	20001.5	2.02045	2.02030			10000	SHBH8330	380	Tetrahydrofuran
ga/g+ isi-ho	AW						S.0	66	20000	1395468	346	Propionitrile
		1-40-4691	1.8	2001.4	0.20055	14002.0	S.0	8.66	2000	LL7e1S0	509	Methyl tert-butyl ether (MTBE)
A/N	A/N ·	S-78-801	2.8	S.100S	0.20215	0.20203	S.0	66	2000	NX94080	1627	Methylcyclohexane
pylgm0784 gqg-ho	(nble)(H8\&m\gm01) mqq 1	1-27-78	S.8	0.1005	0.20213	0.20203	5.0	66	2000	12604HBV		
phgm0073 sum-ho	S5 ppm (90mg/m3/8H)(sldn)	1-16-EZ1	6,131	0.40004	00140.4	09040.4					66 L	Hexachloroethane
ort-rat 8470mg/kg							S.0	66	40000	03823KE	ETE	P.,f-Dioxane
		108-20-3	5.8	S.100S	31S0S.0	0.20203	2.0	66	2000	0041SWX	<b>Z86</b>	Di-isopropyl ether (DIPE)
Mgm207St 1sn-ho		110-82-7	2.8	S.100S	31S0S.0	0.20203	0.2	66	5000	28930	1023	
orl-rat 2670mg/kg	AW	£-69-601	1.8	7.100S	0.2002.0	0.20003	5.0					Cyclohexane
вууст ву тел-по	Y/N							66.66	2000	MKCM5711	1072	1-Chlorobutane
(3)	4114	1-61-701	6.0h	2.10001	1.01030	21010.f	2.0	66	10000	4718CK	7	Acrylonkrile

Weight (g)

Taget

IonsrheM

Solvent(s):

			00.09	00.22	20:00	42.00	00.0₽	32,00	001
	29'15	1,2,3,4-Tetramethylbenzene			1				-
	48.44	Hexachioroethane			bb 8	_			
	26.84	1,4-Dioxane			] VV 8	V			
	24.84	Methylcyclohexane			1				
	£8.0Z	1-Chlorobutane		2	.9 LS				
	20.58	Cyclohexane		,	, , , , , , , , , , , , , , , , , , ,				
	71.02	Tetrahydrofuran							_
	18.53	Propionitrile	1	arren.	W eoibns	uusq pA c	ikais beito	enA .esju	шш
	15,44	Di-isopropy) ether		8 :Yels	SOIVERE DI	'2.027 =	or remp.	മാലാമ 'പ	002
	67.E1	Acrylonitrile	= 'd	ameT rato	ejnI "nim	100 = 4°C	.A ,(.nim 2	7.8) 2.00	7 =
	13.56	Methyl tert-butyl ether (MTBE)	LX C	nat (.nim	35°C (10	emp. I =	ickness), T	hod GC6M thi	15.1
	(.nim)	SmeN	LAG	1 30 0	X m03/ [	iwa. Noce	20-1-05	Pod GC6M	19M
	TA GEM								
fatorona and		Washington, DC, (1994).	ent Printing Office,	.2. Сочетип	U ,7921 asol	Technical )	LSIN		

Conc (µg/mL) (++-) (µg/mL)

Actual

Uncertainty

Expanded

Reviewed By:

Formulated By:

Weight(g)

Actual

**EC285-N2** 

	15			

#### 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 44 Rossotto Dr. ABSOLUTE STANDARDS INC Hamden CT, 06514 Emergency Telephone International Date Prepared/Revised Emergency Telephone USA & CANADA 1-352-323-3500 January 1, 2022 1-800-535-5053 January 1

Section II - Hazards Identification

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

Highly Flammable Liquid and Vapor Cause damage to organs
Use in ventilated area
If on skin, wash with soap and water

H225 H370 P271

P302,332

P280 P305,351,338 H301, 311, 331 H351 Toxic if swallowed, skin contact, inhaled

**(**-) Signal Word: DANGER Suspected of causing cancer
Use gloves, eye protection/face sheild
If in eyes, remove contacts, rinse with water

#### Section III - Composition

Components: CAS#: LD50 Oral - Rat 2,769 mg/kg OSHA PEL 200 ppm % (optional)

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

### Section IV. FIRST AID MEASURES

If inhaled General advice

In case of skin contact In case of eye contact 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

Wash with soap and water. Consult a physician.

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

### Section V. FIREFIGHTING MEASURES

Flammability

Suitable extinguishing media Protective equipment for fire

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.

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

Environmental precautions Clean up

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

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

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

# Section VII. HANDLING AND STORAGE

Precautions for safe handling

Storage Conditions

and kept upright to prevent leakage.

Section VIII. **EXPOSURE CONTROLS/PERSONAL PROTECTION** 

67-56-1 TWA 200 ppm TWA 200 ppm

Potential for skin absorption, ingestion and inhalation.

Personal protective equipment

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. Eye protection

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

Boiling Point	65°C	Specific Gravity (H2O = 1)	0.79
Vapor Pressure (mm Hg)	op.	Melting Point -98℃	-98°C
Vapor Density (AIH = 1) Evaporation rate 1.11 (Butyl Acetate = 1) 4.6	1.11	H = 1) Evaporation rate 1.11 (Butyl Acetate = 1) 4.6	4.6

Solubility in Water COMPLETE

Appearance and Odor CLEAR, COLORLESS LIQUID WITH CHARACTERISTIC PUNGENT ODOR

### Section X. STABILITY AND REACTIVITY

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

Heat, flames, sparks, extreme temperature and sunlight

Acid chlorides, Acid anhydrides, Oxidizing agents, Alkali metals, Reducing agents, Acids Hazardous decomposition products formed under fire conditions. - Carbon oxides

# Section XI. TOXICOLOGICAL INFORMATION

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

Eye damage/eye irritation

Toxic if inhaled. Causes respiratory tract irritation

Toxic if swallowed.

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

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

## Section XIII. DISPOSAL CONSIDERATIONS

Dispose with normal Laboratory Solvent Waste

### Section XIV. TRANSPORT INFORMATION

DOT (US)

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

### Section XV. REGULATORY INFORMATION

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

### Section XVI. Misc. INFORMATION

DATE

032922

032922

(AWT) JER AH2O

(Solvent Safety Info. On Attached pg.)

noitsmothil 202

Pedro L. Rentas

Prashant Chauhan

#### Reference Material CRM

0						(TOTAL - adio hand but hardely
'n	S.0	66	2000	08046KN	1627	Methylcyclohexane
	S.0	66	2000	1S604HBV	166	Hexachloroethane
4	S.0	66	0000₽	03823KE	SYS	ensxoid-9,f
0	S.0	66	2000	00412MX	<b>Z86</b>	Di-Isopropyl ether (DIPE)
0	S.0	66	2000	28930	1053	Cyclohexane
0	S.0	66.66	2000	MKCM5711	1072	1-Chlorobutane
ŀ	S.0	66	10000	4718CK	7	Acrylonitrile
M /	ginuq	(%)	Conc (µg/mL)	Number	KM#	Compound
L Kapu	Uncertai	Purity	IsnimoM	tot		
<b>Vanish</b>	Son'U alast	S10.0	100.0	:(јш) ој ре	iulib br	Weight(s) shown below were combined a
Yminstoo	Balance Un	2E-02		8109		:#GI IseT TSIN
				bensV		Nominal Concentration (µg/mL):
			(O. t	Heingerate (		Recommended Storage:
				032925		Expiration Date:
			sauce	11 compone		
			_	ibbA besiveA		Describtion:
M				035855		Lot Number:
os				61236		Part Number:
						TIFIED WEIGHT REPORT

	s unless otherwise stated.	ne messurement	and volumet	diving gravimetric	nation calculated	slue is the concent	v bestified v	4T •	G.918	LIC: 623		anahunda
en-rat 6408mg/kg		488-23-3	7.8	£.100S	0.21520	0.21506	2.0	26	2000	roda	1.04-	OLIOTE IS SELECTION OF THE SELECTION OF
orl-rat 1650mg/kg	(H8/Em/gm662) mqq 0S	6-66-601	1.04	10001	1.00120	20100.1	5.0	6.66			167	eneznedlyntemarteT-4,6,S,1
pAgmes 181-ho	Y/N	107-12-0	0.18	20001.5	2.02045	2.02030			10000	SHBH8330	380	Tetrahydrofuran
ga/g+ isi-ho	AW						S.0	66	20000	1395468	346	Propionitrile
		1-40-4691	1.8	2001.4	0.20055	14002.0	S.0	8.66	2000	LL7e1S0	509	Methyl tert-butyl ether (MTBE)
A/N	A/N ·	S-78-801	2.8	S.100S	0.20215	0.20203	S.0	66	2000	NX94080	1627	Methylcyclohexane
pylgm0784 gqg-ho	(nble)(H8\&m\gm01) mqq 1	1-27-78	S.8	0.1005	0.20213	0.20203	5.0	66	2000	12604HBV		
phgm0072 sum-ho	S5 ppm (90mg/m3/8H)(sldn)	1-16-EZ1	6,131	0.40004	00140.4	09040.4					66 L	Hexachloroethane
ort-rat 8470mg/kg							S.0	66	40000	03823KE	ETE	P.,f-Dioxane
		108-20-3	5.8	S.100S	31S0S.0	0.20203	2.0	66	2000	0041SWX	<b>Z86</b>	Di-isopropyl ether (DIPE)
Mgm207St 1sn-ho		110-82-7	2.8	S.100S	31S0S.0	0.20203	0.2	66	5000	28930	1023	
orl-rat 2670mg/kg	AW	£-69-601	1.8	7.100S	0.2002.0	0.20003	5.0					Cyclohexane
вууст ву тел-по	Y/N							66.66	2000	MKCM5711	1072	1-Chlorobutane
(3)	4114	1-61-701	6.0h	2.10001	1.01030	21010.f	2.0	66	10000	4718CK	7	Acrylonkrile

Weight (g)

Taget

IonsrheM

Solvent(s):

			00.09	00.22	20:00	42.00	00.0₽	32,00	001
	29'15	1,2,3,4-Tetramethylbenzene			1				-
	48.44	Hexachioroethane			bb 8	_			
	26.84	1,4-Dioxane			] VV 8	V			
	24.84	Methylcyclohexane			1				
	£8.0Z	1-Chlorobutane		2	.9 LS				
	20.58	Cyclohexane		,	, , , , , , , , , , , , , , , , , , ,				
	71.02	Tetrahydrofuran							_
	18.53	Propionitrile	1	arren.	W eoibns	uusq pA c	ikais beito	enA .esju	шш
	15,44	Di-isopropy) ether		8 :Yels	SOIVERE DI	'2.027 =	or remp.	മാലാമ 'പ	002
	67.E1	Acrylonitrile	= 'd	ameT rato	ejnI "nim	100 = 4°C	.A ,(.nim 2	7.8) 2.00	7 =
	13.56	Methyl tert-butyl ether (MTBE)	LX C	nat (.nim	35°C (10	emp. I =	ickness), T	hod GC6M thi	15.1
	(.nim)	SmeN	LAG	1, 36 0	X m03/ [	iwa. Noce	20-1-05	Pod GC6M	19M
	TA GEM								
fatorona and		Washington, DC, (1994).	ent Printing Office,	.2. Сочетип	U ,7921 asol	Technical )	LSIN		

Conc (µg/mL) (++-) (µg/mL)

Actual

Uncertainty

Expanded

Reviewed By:

Formulated By:

Weight(g)

Actual

**EC285-N2** 

	15			

#### 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 44 Rossotto Dr. ABSOLUTE STANDARDS INC Hamden CT, 06514 Emergency Telephone International Date Prepared/Revised Emergency Telephone USA & CANADA 1-352-323-3500 January 1, 2022 1-800-535-5053 January 1

Section II - Hazards Identification

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

Highly Flammable Liquid and Vapor Cause damage to organs
Use in ventilated area
If on skin, wash with soap and water

H225 H370 P271

P302,332

P280 P305,351,338 H301, 311, 331 H351 Toxic if swallowed, skin contact, inhaled

**(**-) Signal Word: DANGER Suspected of causing cancer
Use gloves, eye protection/face sheild
If in eyes, remove contacts, rinse with water

#### Section III - Composition

Components: CAS#: LD50 Oral - Rat 2,769 mg/kg OSHA PEL 200 ppm % (optional)

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

### Section IV. FIRST AID MEASURES

If inhaled General advice

In case of skin contact In case of eye contact 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

Wash with soap and water. Consult a physician.

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

### Section V. FIREFIGHTING MEASURES

Flammability

Suitable extinguishing media Protective equipment for fire

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.

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

Environmental precautions Clean up

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

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

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

# Section VII. HANDLING AND STORAGE

Precautions for safe handling

Storage Conditions

and kept upright to prevent leakage.

Section VIII. **EXPOSURE CONTROLS/PERSONAL PROTECTION** 

67-56-1 TWA 200 ppm TWA 200 ppm

Potential for skin absorption, ingestion and inhalation.

Personal protective equipment

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. Eye protection

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

Boiling Point	65°C	Specific Gravity (H2O = 1)	0.79
Vapor Pressure (mm Hg)	op.	Melting Point -98℃	-98°C
Vapor Density (AIH = 1) Evaporation rate 1.11 (Butyl Acetate = 1) 4.6	1.11	H = 1) Evaporation rate 1.11 (Butyl Acetate = 1) 4.6	4.6

Solubility in Water COMPLETE

Appearance and Odor CLEAR, COLORLESS LIQUID WITH CHARACTERISTIC PUNGENT ODOR

### Section X. STABILITY AND REACTIVITY

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

Heat, flames, sparks, extreme temperature and sunlight

Acid chlorides, Acid anhydrides, Oxidizing agents, Alkali metals, Reducing agents, Acids Hazardous decomposition products formed under fire conditions. - Carbon oxides

# Section XI. TOXICOLOGICAL INFORMATION

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

Eye damage/eye irritation

Toxic if inhaled. Causes respiratory tract irritation

Toxic if swallowed.

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

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

## Section XIII. DISPOSAL CONSIDERATIONS

Dispose with normal Laboratory Solvent Waste

### Section XIV. TRANSPORT INFORMATION

DOT (US)

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

### Section XV. REGULATORY INFORMATION

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

### Section XVI. Misc. INFORMATION

DATE

032922

032922

(AWT) JER AH2O

(Solvent Safety Info. On Attached pg.)

noitsmothil 202

Pedro L. Rentas

Prashant Chauhan

#### Reference Material CRM

0						(TOTAL - adio hand but hardely
'n	S.0	66	2000	NX91080	1627	Methylcyclohexane
	S.0	66	2000	1S604HBV	166	Hexachloroethane
4	S.0	66	0000₽	03823KE	SYS	ensxoid-9,f
0	S.0	66	2000	00412MX	<b>Z86</b>	Di-Isopropyl ether (DIPE)
0	S.0	66	2000	28930	1053	Cyclohexane
0	S.0	66.66	2000	MKCM5711	1072	1-Chlorobutane
ŀ	S.0	66	10000	4718CK	7	Acrylonitrile
M /	ginuq	(%)	Conc (µg/mL)	Number	KM#	Compound
L Kapu	Uncertai	Purity	IsnimoM	tot		
<b>Vanish</b>	Son'U alast	S10.0	100.0	:(јш) ој ре	iulib br	Weight(s) shown below were combined a
Yminstoo	Balance Un	2E-02		8109		:#GI IseT TSIN
				bensV		Nominal Concentration (µg/mL):
			(O. t	Heingerate (		Recommended Storage:
				032925		Expiration Date:
			sauce	11 compone		
			_	ibbA besiveA		Describtion:
M				035855		Lot Number:
os				61236		Part Number:
						TIFIED WEIGHT REPORT

	s unless otherwise stated.	ne messurement	and volumet	diving gravimetric	nation calculated	slue is the concent	v bestified v	4T •	G.918	LIC: 623		anahunda
en-rat 6408mg/kg		488-23-3	7.8	£.100S	0.21520	0.21506	2.0	26	2000	roda	1.04-	OLIOTE IS SELECTION OF THE SELECTION OF
orl-rat 1650mg/kg	(H8/Em/gm662) mqq 0S	6-66-601	1.04	10001	1.00120	20100.1	5.0	6.66			167	eneznedlyntemarteT-4,6,S,1
pAgmes 181-ho	Y/N	107-12-0	0.18	20001.5	2.02045	2.02030			10000	SHBH8330	380	Tetrahydrofuran
ga/g+ isi-ho	AW						S.0	66	20000	1395468	346	Propionitrile
		1-40-4691	1.8	2001.4	0.20055	14002.0	S.0	8.66	2000	LL7e1S0	509	Methyl tert-butyl ether (MTBE)
A/N	A/N ·	S-78-801	2.8	S.100S	0.20215	0.20203	S.0	66	2000	NX94080	1627	Methylcyclohexane
pylgm0784 gqg-ho	(nble)(H8\&m\gm01) mqq 1	1-27-78	S.8	0.1005	0.20213	0.20203	5.0	66	2000	12604HBV		
phgm0072 sum-ho	S5 ppm (90mg/m3/8H)(sldn)	1-16-EZ1	6,131	0.40004	00140.4	09040.4					66 L	Hexachloroethane
ort-rat 8470mg/kg							S.0	66	40000	03823KE	ETE	P.,f-Dioxane
		108-20-3	5.8	S.100S	31S0S.0	0.20203	2.0	66	2000	0041SWX	<b>Z86</b>	Di-isopropyl ether (DIPE)
Mgm207St 1sn-ho		110-82-7	2.8	S.100S	31S0S.0	0.20203	0.2	66	5000	28930	1023	
orl-rat 2670mg/kg	AW	£-69-601	1.8	7.100S	0.2002.0	0.20003	5.0					Cyclohexane
вууст ву тел-по	Y/N							66.66	2000	MKCM5711	1072	1-Chlorobutane
(3)	4114	1-61-701	6.0h	2.10001	1.01030	21010.f	2.0	66	10000	4718CK	7	Acrylonkrile

Weight (g)

Taget

IonsrheM

Solvent(s):

			00.09	00.22	20:00	42.00	00.0₽	32,00	001
	29'15	1,2,3,4-Tetramethylbenzene			1				-
	48.44	Hexachioroethane			bb 8	_			
	26.84	1,4-Dioxane			] VV 8	V			
	24.84	Methylcyclohexane			1				
	£8.0Z	1-Chlorobutane		2	.9 LS				
	20.58	Cyclohexane		,	, , , , , , , , , , , , , , , , , , ,				
	71.02	Tetrahydrofuran							_
	18.53	Propionitrile	1	stren.	W eoibns	uusq pA c	ikais beito	enA .esju	шш
	15,44	Di-isopropy) ether		8 :Yels	SOIVERE DI	'2.027 =	or remp.	മാലാമ 'പ	002
	67.E1	Acrylonitrile	= 'd	ameT rato	ejnI "nim	100 = 4°C	.A ,(.nim 2	7.8) 2.00	7 =
	13.56	Methyl tert-butyl ether (MTBE)	LX C	nat (.nim	35°C (10	emp. I =	ickness), T	hod GC6M thi	15.1
	(.nim)	SmeN	LAG	1, 36 0	X m03/ [	iwa. Noce	20-1-05	Pod GC6M	19M
	TA GEM								
fatorona and		Washington, DC, (1994).	ent Printing Office,	.2. Сочетип	U ,7921 asol	Technical )	LSIN		

Conc (µg/mL) (++-) (µg/mL)

Actual

Uncertainty

Expanded

Reviewed By:

Formulated By:

Weight(g)

Actual

**EC285-N2** 

#### 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 44 Rossotto Dr. ABSOLUTE STANDARDS INC Hamden CT, 06514 Emergency Telephone International Date Prepared/Revised Emergency Telephone USA & CANADA 1-352-323-3500 January 1, 2022 1-800-535-5053 January 1

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

Highly Flammable Liquid and Vapor Cause damage to organs
Use in ventilated area
If on skin, wash with soap and water

H225 H370 P271

P302,332

P280 P305,351,338 H301, 311, 331 H351 Toxic if swallowed, skin contact, inhaled

**(**-) Signal Word: DANGER Suspected of causing cancer
Use gloves, eye protection/face sheild
If in eyes, remove contacts, rinse with water

#### Section III - Composition

Components: CAS#: LD50 Oral - Rat 2,769 mg/kg OSHA PEL 200 ppm % (optional)

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

### Section IV. FIRST AID MEASURES

If inhaled General advice

In case of skin contact In case of eye contact 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

Wash with soap and water. Consult a physician.

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

### Section V. FIREFIGHTING MEASURES

Flammability

Suitable extinguishing media Protective equipment for fire

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.

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

Wear self contained breathing apparatus for fire fighting if necessary.

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Environmental precautions Clean up

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

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Storage Conditions

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Section VIII. **EXPOSURE CONTROLS/PERSONAL PROTECTION** 

67-56-1 TWA 200 ppm TWA 200 ppm

Potential for skin absorption, ingestion and inhalation.

Personal protective equipment

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. Eye protection

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

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Vapor Pressure (mm Hg)	op.	Melting Point -98℃	-98°C
Vapor Density (AIH = 1) Evaporation rate 1.11 (Butyl Acetate = 1) 4.6	1.11	H = 1) Evaporation rate 1.11 (Butyl Acetate = 1) 4.6	4.6

Solubility in Water COMPLETE

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Eye damage/eye irritation

Toxic if inhaled. Causes respiratory tract irritation

Toxic if swallowed.

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

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

## Section XIII. DISPOSAL CONSIDERATIONS

Dispose with normal Laboratory Solvent Waste

### Section XIV. TRANSPORT INFORMATION

DOT (US)

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

### Section XV. REGULATORY INFORMATION

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

### Section XVI. Misc. INFORMATION